

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2022

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission file number 001-32205

CBRE
CBRE GROUP, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

2100 McKinney Avenue, Suite 1250, Dallas, Texas

(Address of principal executive offices)

94-3391143

(I.R.S. Employer Identification No.)

75201

(Zip Code)

(214) 979-6100

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Class A Common Stock, \$0.01 par value per share	"CBRE"	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firms that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of June 30, 2022, the aggregate market value of Class A Common Stock held by non-affiliates of the registrant was \$22.9 billion based upon the last sales price on June 30, 2022 on the New York Stock Exchange of \$73.61 for the registrant's Class A Common Stock.

As of February 16, 2023, the number of shares of Class A Common Stock outstanding was 309,891,986.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the proxy statement for the registrant's 2023 Annual Meeting of Stockholders to be held May 17, 2023 are incorporated by reference in Part III of this Annual Report on Form 10-K.

CBRE GROUP, INC.
ANNUAL REPORT ON FORM 10-K

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PART I

Item 1. Business.

Company Overview

CBRE Group, Inc. is a Delaware corporation. References to “CBRE,” “the company,” “we,” “us” and “our” refer to CBRE Group, Inc. and include all of its consolidated subsidiaries, unless otherwise indicated or the context requires otherwise.

We are the world’s largest commercial real estate services and investment firm, based on 2022 revenue, with leading global market positions in our leasing, property sales, occupier outsourcing and valuation businesses. As of December 31, 2022, the company had approximately 115,000 employees (excluding Turner & Townsend Holdings Limited employees) serving clients in more than 100 countries.

We provide services to real estate investors and occupiers. For investors, our services include capital markets (property sales and mortgage origination), mortgage sales and servicing, property leasing, investment management, property management, valuation and development services, among others. For occupiers, our services include facilities management, project management, transaction (property sales and leasing) and consulting services, among others. We provide services under the following brand names: “CBRE” (real estate advisory and outsourcing services); “CBRE Investment Management” (investment management); “Trammell Crow Company” (primarily U.S. development); “Telford Homes” (U.K. development); and “Turner & Townsend Holdings Limited” (Turner & Townsend).

We generate revenue from stable, recurring sources (large multi-year portfolio and per project contracts) and from cyclical, non-recurring sources, including commissions on transactions. Our revenue mix has become heavily weighted towards stable revenue sources, particularly occupier outsourcing, and our dependence on highly cyclical property sales and lease transaction revenue has declined. We believe we are well-positioned to capture a substantial and growing share of market opportunities at a time when investors and occupiers increasingly prefer to purchase integrated, account-based services on a national and global basis.

In 2022, we generated revenue from a highly diversified base of clients, including more than 95 of the *Fortune* 100 companies. We have been an S&P 500 company since 2006 and in 2022 we were ranked #126 on the *Fortune* 500. We have been voted the most recognized commercial real estate brand in the Lipsey Company survey for 22 years in a row (including 2022). We have also been rated a World’s Most Ethical Company by the Ethisphere Institute for nine consecutive years (including 2022, the most recent year the award has been announced) and have been included in the Dow Jones World Sustainability Index for four years in a row and the Bloomberg Gender-Equality Index for four years in a row (including 2023).

CBRE History

We will mark our 117th year of continuous operations in 2023, tracing our origins to a company founded in San Francisco in the aftermath of the 1906 earthquake. Since then, we have grown into the largest global commercial real estate services and investment firm (in terms of 2022 revenue) through organic growth and strategic acquisitions, including our acquisition of a majority interest in Turner & Townsend in November 2021.

Our Business Segments and Primary Services

CBRE Group, Inc. is a holding company that conducts all of its operations through its indirect subsidiaries. CBRE Group, Inc. does not have any independent operations or employees. CBRE Services, Inc., our direct wholly owned subsidiary, is also a holding company and is the primary obligor or issuer with respect to most of our long-term indebtedness.

We report our operations through the following reportable segments: (1) Advisory Services, (2) Global Workplace Solutions, and (3) Real Estate Investments. In addition, we also have a Corporate and other segment.

Advisory Services

Advisory Services provides a comprehensive range of services globally, including property leasing, capital markets (property sales and mortgage origination), mortgage sales and servicing, property management and valuation. Most of our Advisory Services operations are conducted through our indirect wholly owned subsidiary CBRE, Inc. and its subsidiaries around the world. Our mortgage services, the vast majority of which are in the United States (U.S.), are conducted exclusively through our indirect wholly-owned subsidiary operating under the name CBRE Capital Markets, Inc. (CBRE Capital Markets) and its affiliates.

The primary services within Advisory Services are further described below.

Leasing Services

We provide strategic advice and execution for owners/investors, and occupiers/tenants of real estate, primarily in connection with the leasing of office, industrial and retail space. In 2022, we negotiated leases valued at more than \$165.0 billion globally.

We generate significant business from account-based occupier clients, where we are retained to negotiate leases for all or a portion of their portfolio. This results in recurring revenue over time. We believe we are the market leader for leasing services to both occupiers and owners in most leading U.S. metropolitan statistical areas (as defined by the U.S. Census Bureau), including Atlanta, Austin, Boston, Denver, Kansas City, Los Angeles, Minneapolis, New York, Phoenix, San Francisco, Seattle and St. Louis.

Capital Markets and Mortgage Services

We provide property sales and mortgage services, which are closely integrated to meet marketplace demand for comprehensive capital markets solutions. During 2022, we closed approximately \$290.2 billion of property sales transactions globally.

We are the leading property sales advisor globally. In the U.S., we accounted for approximately 15.6% of investment sales transactions greater than \$2.5 million across all property types in 2022, according to Real Capital Analytics. Our mortgage brokerage professionals arrange, originate and service commercial mortgage loans through relationships established with investment banking firms, national and regional banks, credit companies, insurance companies, U.S. Government-Sponsored Enterprises (GSEs), and pension funds.

In the U.S., our loan origination and sales volume in 2022 was \$62.7 billion, including approximately \$13.6 billion for U.S. GSEs. Most of the GSE loans were financed through revolving warehouse credit lines through a CBRE subsidiary that is dedicated exclusively for this purpose and were substantially risk mitigated by either obtaining a contractual purchase commitment from the GSE or confirming a forward-trade commitment for the issuance and purchase of a mortgage-backed security to be secured by the loan. We also oversee a loan servicing portfolio, which totaled approximately \$381.2 billion globally at year-end 2022.

In many countries that we operate in (including the U.S.), our real estate services professionals (both leasing and capital markets) are compensated primarily through commissions, which are payable upon completion of an assignment. This mitigates the effect of compensation, our largest expense, on our operating margins during difficult market conditions. We strive to retain top professionals through an attractive compensation program tied to productivity as well as investments in support resources, including professional development and training, market research and data/information, technology, branding and marketing.

Property Management Services

We provide property management services on a contractual basis, primarily for owners of and investors in office, industrial and retail properties. These services include marketing, building engineering, lease administration, accounting and financial services. As of December 31, 2022, we managed 2.9 billion square feet of properties globally for property owners/investors. We are compensated for our services through a monthly management fee earned based on either a specified percentage of the monthly rental income, rental receipts generated from the property under management or a fixed fee. We are also often reimbursed for our administrative and payroll costs directly attributable to the properties under management. Our management agreements with our property management services clients may be terminated by either party with notice generally ranging between 30 to 90 days; however, we have developed long-term relationships with many of these clients and the typical

contract continues for multiple years. We believe our contractual relationships with these clients put us in an advantageous position to provide other services to them, including leasing, refinancing, disposition and appraisal.

Valuation Services

We provide valuation services that include market-value appraisals, litigation support, discounted cash flow analyses, feasibility studies as well as consulting services such as property condition reports, hotel advisory and environmental consulting. Our valuation business has developed proprietary systems for data management, analysis and valuation report preparation, which we believe provide us with an advantage over our competitors. We believe that our valuation business is one of the largest in the commercial real estate industry. During 2022, we completed over 667,249 valuation, appraisal and advisory assignments globally, including residential valuations in Asia Pacific.

Global Workplace Solutions

Global Workplace Solutions provides a broad suite of integrated, contractually based outsourcing services to occupiers of real estate, including facilities management and project management. We also offer account-based Advisory services, particularly leasing, property sales and portfolio administration, for Global Workplace Solutions clients.

We believe the outsourcing of corporate real estate services is a long-term trend, with multi-national corporations, and other large occupiers of space utilizing global, full-service real estate firms to achieve better workplaces for their people, while endeavoring to lower their cost of occupancy. We typically enter into multi-year, often multi-service, outsourcing contracts with services delivered via dedicated account teams and/or an on-demand basis. The key outsourcing services offered through this business segment are described below.

Facilities Management Services

Facilities management services involves the day-to-day management of client-occupied space for traditional office space, such as headquarter buildings, regional offices and administrative offices, as well as facilities serving specialized industries, such as data centers, life science and medical facilities, distribution warehouses, government facilities and retail stores. Contracts for facilities management services are often structured so that we are reimbursed for client-dedicated personnel costs and subcontracted vendor costs as well as associated overhead expenses plus a monthly fee, and in some cases, annual incentives tied to agreed-upon performance targets, with any penalties typically capped. These are referred to as cost-plus contracts. In addition, we have contracts for facilities management services based on fixed-fee unit prices or guaranteed maximum prices. Fixed-fee contracts are typically structured where an agreed-upon scope of work is delivered for a fixed price while guaranteed maximum price contracts are structured with an agreed upon scope of work that will be provided to the client for a not-to-exceed price. We furnish facilities management services to clients with single or multiple-location assets as well as regional, national and global portfolios. As of December 31, 2022, we managed approximately 4.4 billion square feet of facilities on behalf of occupiers.

Our facilities management services are managed across three sub-lines of business – enterprise, local and data center services – by client type. Cost-plus contracts are most common for enterprise customers while fixed-price contracts are predominately for local and data center clients.

Project Management Services

Project management services can be provided on a one-off or programmatic basis to owners, investors and occupiers of real estate in markets around the world. Revenues from project management services generally include fixed management fees, variable fees, lump sum and incentive fees if certain agreed-upon performance targets are met. Revenues from project management may also include reimbursement of payroll and related costs for personnel providing the services and subcontracted vendor costs. In 2022, CBRE was directly responsible for implementing more than 52,000 projects with a combined contract value of approximately \$148.0 billion. Our majority-owned subsidiary, Turner & Townsend, which was acquired in November 2021, plays a key role in providing cost, project, program management and project controls for a broad range of clients across the infrastructure, real estate and natural resources sectors. Turner & Townsend was involved in more than 5,000 projects in 2022 with an aggregate capital value of approximately \$1.1 trillion.

Real Estate Investments

Real Estate Investments includes: (i) investment management services provided globally and (ii) development services in the U.S., United Kingdom (U.K.) and Continental Europe.

Investment Management Services

Investment management services are conducted through our indirect wholly owned subsidiary, CBRE Investment Management, LLC (CBRE Investment Management) and its global affiliates. CBRE Investment Management provides investment management services to pension funds, insurance companies, sovereign wealth funds, foundations, endowments and other institutional investors seeking to generate returns and diversification through investment in real assets such as real estate, infrastructure, master limited partnerships and other assets. We sponsor investment programs that span the risk/return spectrum in North America, Europe, Asia and Australia. In some strategies, CBRE Investment Management and its investment teams co-invest with its limited partners. Increasingly, real estate assets we are developing through our development services business are being placed into CBRE investment management strategies creating greater operational synergies among the Real Estate Investments businesses.

CBRE Investment Management manages real assets investments across five principal investment categories: (1) Private Direct Real Estate, through which CBRE Investment Management invests directly into properties; (2) Private Indirect Real Estate, through which CBRE Investment Management invests with specialist managers and operators in funds, programmatic ventures, joint ventures, and other indirect investment formats; (3) Listed Real Assets, through which CBRE Investment Management invests in public market real estate and infrastructure securities; (4) Private Infrastructure, through which CBRE Investment Management invests both directly and indirectly in infrastructure companies, projects, and ventures; and (5) Real Estate Credit, through which CBRE Investment Management manages loan portfolios backed by underlying real estate. Across these investment categories, CBRE Investment Management manages capital both through commingled fund strategies and custom separate account implementations.

Assets under management (AUM) totaled \$149.3 billion at December 31, 2022 as compared to \$141.9 billion at December 31, 2021, an increase of \$7.4 billion (\$13.1 billion in local currency).

Development Services

Development services are conducted through our indirect wholly owned subsidiary Trammell Crow Company, LLC, which provides commercial real estate development services in the U.S., U.K., and Continental Europe, and Telford Homes Plc (Telford), a developer of residential multi-family properties in the U.K.

Within Development Services, Trammell Crow Company pursues opportunistic, risk-mitigated development and investment strategies for users of and investors in commercial real estate, as well as for our own account. Our development business is active in industrial, office, residential multi-family/mixed-use projects, life sciences and healthcare facilities of all types (medical office buildings, hospitals and ambulatory surgery centers) and retail properties. We are compensated by our clients on a fee basis with no, or limited, ownership interest in a property; in partnership with our clients through co-investment – either on an individual project basis or through programs with certain strategic capital partners or for our own account with 100% ownership. Development services activity in which Trammell Crow Company has an ownership interest is conducted through subsidiaries that are consolidated or unconsolidated for financial reporting purposes, depending primarily on the extent and nature of our ownership interest.

Our Telford Homes business within Development Services is focused on residential real estate development in the United Kingdom, including for-sale and build-to-rent properties.

At December 31, 2022, we had \$16.9 billion of development projects in process, and our development pipeline (prospective projects that we estimate have a greater than 50% chance of closing or where land has been acquired and the projected construction start date is more than one year out) totaled \$12.9 billion at December 31, 2022.

Corporate and Other

Our Corporate function primarily consists of corporate headquarters costs for executive officers and certain other central functions. We track our strategic non-core non-controlling equity investments in “other” which is considered an operating segment and reported together with Corporate as it does not meet the aggregation criteria for presentation as a separate reportable segment. These activities are not allocated to the other business segments. Corporate and other also includes eliminations related to inter-segment revenue.

Competition

We face competition across our lines of business on a global, multi-national, national, regional and local level. Although we are the largest commercial real estate services firm in the world in terms of 2022 revenue, our relative competitive position varies significantly across geographic markets, property types and services. We face competition from other global, national, regional and local commercial real estate service providers; companies that traditionally competed in limited portions of our facilities management business and have expanded into other outsourcing offerings; in-house corporate real estate departments and property owners/developers that self-perform real estate services; investment banking firms, investment managers and developers that compete with us to raise and place investment capital; accounting/consulting firms that advise on real estate strategies; and providers of flexible office-space solutions that offer space directly to the occupier.

Despite ongoing consolidation, the commercial real estate services industry remains highly fragmented and competitive. Although many of our competitors are substantially smaller than we are, some of them are larger on a regional or local-market basis or have a stronger position in a specific market segment or service offering. Among our primary competitors are other large national and global firms, such as Jones Lang LaSalle Incorporated (JLL), Cushman & Wakefield plc, Colliers International Group Inc., Savills plc, and Newmark Group Inc., market-segment specialists, such as Eastdil Secured, Marcus & Millichap, Inc. and Walker & Dunlop, Inc.; firms with business lines that compete with some business lines within our occupier outsourcing business, such as ISS and Sodexo S.A., firms engaged in project management such as Arcadis and AECOM, and firms that provide flexible office-space solutions, such as WeWork and IWG/Regus/Spaces. These flexible space providers also compete directly with Industrious National Management Company LLC (Industrious), in which we have a non-controlling interest.

Seasonality

In a typical year, a significant portion of our revenue is seasonal, which an investor should keep in mind when comparing our financial condition and results of operations on a quarter-by-quarter basis. Historically, our revenue, operating income, net income and cash flow from operating activities have tended to be lowest in the first quarter and highest in the fourth quarter of each year. Revenue, earnings and cash flow have generally been concentrated in the fourth calendar quarter due to the focus on completing sales, financing and leasing transactions prior to year-end. The sharp rise in interest rates to combat inflation and resultant economic uncertainty may cause seasonality to deviate from historical patterns.

Human Capital

People & Culture

People are at the center of our strategy to deliver measurably superior outcomes for clients, and therefore we place a high priority on attracting, retaining and developing the best talent. Our human capital programs are designed to help prepare our professionals to succeed in their current and future roles, develop our leaders of tomorrow, reward our people with competitive pay and benefits, foster an engaging and inclusive workplace, and improve productivity through investments in technology, tools and resources. At December 31, 2022, we had approximately 115,000 employees (excluding Turner & Townsend employees) worldwide, approximately 46% of whose costs are fully reimbursed by clients and are mainly in our Global Workplace Solutions segment and our property management line of business within our Advisory Services segment. At December 31, 2022, approximately 14% of our employees worldwide were subject to collective bargaining agreements. Our global workforce at December 31, 2022 is comprised of approximately 34.3% female and 65.7% male employees.

RISE Values

We champion four key values—Respect, Integrity, Service, Excellence—which serve as the foundation upon which our company is built and as a touchstone for how our employees conduct themselves.

Diversity, Equity & Inclusion (DE&I)

We believe that our company is at its best when people of different background and life experiences come together to produce great results for our clients, communities and each other. We are committed to increasing the diversity of our workforce, strengthening an inclusive culture where everyone is valued and supported in achieving their full potential, and investing in the communities where we live and work. These efforts are led by our Chief Responsibility Officer, a senior executive level position reporting directly to our Chief Executive Officer. We have many programs and initiatives focused on driving these outcomes. These include collaborating with partners to reach diverse talent underrepresented in our industry, enhancing data analysis, improving technological capabilities to better inform decisions, and building a diverse talent pool and interview process. We are committed to driving economic impact in the marketplace through our supplier diversity initiatives and spent more than \$1.5 billion with diverse suppliers in 2022, with a goal to lift that annual spend to \$3 billion by the end of 2025. Also, as part of our Community Impact Initiative, we made significant financial contributions to nonprofit organizations that are helping to improve education and career development opportunities for women, racial/ethnic minorities, people with disabilities, LGBTQ individuals, and people with military service. These efforts will help to build the pipeline of talent well into the future and enable CBRE's workforce to reflect the diversity of our communities. Our employee business resource groups have more than 19,000 members globally and are an essential element of our DE&I activities. They facilitate career and professional development sessions, create networking opportunities, and organize conversations and events on DE&I issues. We publicly report demographics, including diversity data, for our U.S. workforce annually in our Corporate Responsibility Report.

Total Rewards

We provide competitive total rewards programs in all the markets in which we operate, including fixed and variable pay, and comprehensive, company-specific benefits. Additionally, managers may implement flexible work arrangements, such as compressed work weeks and flextime, after considering several factors such as the nature of the employee's work. We remain committed to providing eligible employees with meaningful and affordable benefits. We provide a variety of programs to support holistic physical and behavioral health, short and long-term financial stability, family planning and emotional resiliency for employees at any stage in their career.

Learning and Talent Development

We prioritize and invest in a range of learning and talent development programs that enable employees to thrive at CBRE and develop their careers. To this end, we leverage a range of different learning approaches including: webinars, live virtual and in-person training, self-paced e-digital learning, coaching, mentoring and on-the-job learning. To increase diversity, equity and inclusion awareness, we offer training programs in 32 languages.

Communication and Engagement

Our success depends on employees understanding how their work contributes to the company's overall strategy. We use a variety of channels to facilitate two-way communication, including open forums with executives, annual employee engagement surveys, regularly scheduled performance review processes and participation in employee business resource groups globally for professional development, networking and advancing diversity, equity and inclusion goals.

Workplace Safety and Wellbeing

We drive a culture where safety and wellbeing are integrated into every business decision. We insist on high global standards and leadership accountability, striving to continually improve safety and wellbeing outcomes. Our wellbeing programs focus on five dimensions: occupational, social, environmental, physical, and intellectual. In 2022, we hosted our annual Global Safety and Wellbeing Week, themed "Safe and Well Across Every Dimension." Our "Be Well" campaign supports employee wellbeing through benefits enhancements, information and resources, an internal podcast series and other engagement programs that received external recognition.

Communities and Giving

We are committed to supporting and adding value to the communities where our employees live and work around the world, as well as in communities where the need is greatest. In 2022, we launched fundraising programs to support refugees from Ukraine, including affected employees of our Ukraine affiliate, and victims of hurricanes, fires and floods. We align our philanthropy with the company's overarching environmental, social and governance (ESG) priorities and focus on three main areas: driving climate action solutions, building the workforce of tomorrow by expanding opportunities for underrepresented individuals in our industry and improving our global headquarters city of Dallas, Texas.

Intellectual Property

We regard our intellectual property as an important part of our business. We hold various trademarks and trade names worldwide, which include the "CBRE," "Turner & Townsend" and "Telford" marks. Although we believe our intellectual property plays a role in maintaining our competitive position in a number of the markets that we serve, we do not believe we would be materially, adversely affected by the expiration or termination of our trademarks or trade names or the loss of any of our other intellectual property rights other than the "CBRE" and "Trammell Crow Company" marks. We maintain trademark registrations for the "CBRE," "Turner & Townsend" and "Telford" service marks in jurisdictions where we conduct significant business.

We hold a license to use the "Trammell Crow Company" trade name pursuant to a license agreement with CF98, L.P., an affiliate of Crow Realty Investors, L.P., d/b/a Crow Holdings, which may be revoked if we fail to satisfy usage and quality control covenants under the license agreement.

In addition to trademarks and trade names, we have acquired and developed proprietary technologies for the provision of complex services and analysis. We have a number of issued and pending patent applications relating to these proprietary technologies. We will continue to file additional patent applications on new inventions, as appropriate, demonstrating our commitment to technology and innovation. We also offer proprietary research to clients through our CBRE Research and CBRE Econometric Advisors commercial real estate market information and forecasting groups and we offer proprietary investment analysis and structures through our CBRE Investment Management business.

Material Governmental Matters

Environment

Federal, state and local laws and regulations in the countries in which we do business impose environmental liabilities, controls, disclosure rules and zoning restrictions that affect the ownership, management, development, use or sale of commercial real estate. Certain of these laws and regulations may impose liability on current or previous real property owners or operators for the cost of investigating, cleaning up or removing contamination caused by hazardous or toxic substances at a property, including contamination resulting from above-ground or underground storage tanks or the presence of asbestos or lead at a property. If contamination occurs or is present during our role as a property or facility manager or developer, we could be held liable for such costs as a current “operator” of a property, regardless of the legality of the acts or omissions that caused the contamination and without regard to whether we knew of, or were responsible for, the presence of such hazardous or toxic substances. The operator of a site also may be liable under common law to third parties for damages and injuries resulting from exposure to hazardous substances or environmental contamination at a site, including liabilities arising from exposure to asbestos-containing materials. Under certain laws and common law principles, any failure by us to disclose environmental contamination at a property could subject us to liability to a buyer or lessee of the property. Further, federal, state and local governments in the countries in which we do business have enacted various laws, regulations and treaties governing climate change, particularly for “greenhouse gas emissions” which seek to tax, penalize or limit their release. Such regulations could lead to increased operational or compliance costs over time.

While we are aware of the presence or the potential presence of regulated substances in the soil or groundwater at or near several properties owned, operated or managed by us that may have resulted from historical or ongoing activities on those properties, we are not aware of any material noncompliance with the environmental laws or regulations currently applicable to us, and we are not the subject of any material claim for liability with respect to contamination at any location. However, these laws and regulations may discourage sales and leasing activities and mortgage lending with respect to some properties, which may adversely affect both the commercial real estate services industry in general and us. Environmental contamination or other environmental liabilities may also negatively affect the value of commercial real estate assets held by entities that are managed by our investment management and development services businesses, which could adversely affect the results of operations of these business lines.

Environmental Sustainability

We have developed measurable environmental and sustainability goals for 2035, grounded in science and an assessment of where our operations have the most significant potential to impact on the environment, as well as the areas where we can most effectively mitigate that impact. These include goals to reduce Scope 1 and 2 greenhouse gas emissions 68% from the 2019 base year. Additional information about our approach to corporate social responsibility and to environmental, social and governance (ESG) issues is available on our Corporate Responsibility website (<https://www.cbre.com/about-us/corporate-responsibility#overview>), including the CBRE Corporate Responsibility Report. The contents of our website and Corporate Responsibility Report are referenced for general information only and are not incorporated in this Annual Report on Form 10-K.

Available Information

Our Annual Report on Form 10-K (Annual Report), Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, Proxy Statements and amendments to those reports filed or furnished pursuant to Sections 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the Exchange Act), are available on the Investor Relations section of our website (<https://ir.cbre.com>) as soon as reasonably practicable after we electronically file such material with, or furnish it to, the U.S. Securities and Exchange Commission (the SEC). We also make available through our website other reports filed with or furnished to the SEC under the Exchange Act, including reports filed by our officers and directors under Section 16(a) of the Exchange Act. All of the information on our Investor Relations website is available to be viewed free of charge. The SEC maintains a website (<https://www.sec.gov>) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

Our website (<https://www.cbre.com>) contains information concerning us. We routinely use our website as a channel of distribution for our information, including financial and other material information. Information contained on our website is not part of this Annual Report or our other filings with the SEC. We have included the web addresses of the company and the SEC as inactive textual references only. Except as specifically incorporated by reference into this document, information on these websites is not part of this document.

Cautionary Note on Forward-Looking Statements

This Annual Report contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the Securities Act) and Section 21E of the Exchange Act. The words “anticipate,” “believe,” “could,” “should,” “propose,” “continue,” “estimate,” “expect,” “intend,” “may,” “plan,” “predict,” “project,” “will” and similar terms and phrases are used in this Annual Report to identify forward-looking statements. Except for historical information contained herein, the matters addressed in this Annual Report are forward-looking statements. These statements relate to analyses and other information based on forecasts of future results and estimates of amounts not yet determinable. These statements also relate to our future prospects, developments and business strategies.

These forward-looking statements are made based on our management’s expectations and beliefs concerning future events affecting us and are subject to uncertainties and factors relating to our operations and business environment, all of which are difficult to predict and many of which are beyond our control. These uncertainties and factors could cause our actual results to differ materially from those matters expressed in or implied by these forward-looking statements.

The following factors are among those, but are not only those, that may cause actual results to differ materially from the forward-looking statements:

- disruptions in general economic, political and regulatory conditions and significant public health events, particularly in geographies or industry sectors where our business may be concentrated;
- volatility or adverse developments in the securities, capital or credit markets, interest rate increases and conditions affecting the value of real estate assets, inside and outside the U.S.;
- poor performance of real estate investments or other conditions that negatively impact clients’ willingness to make real estate or long-term contractual commitments and the cost and availability of capital for investment in real estate;
- foreign currency fluctuations and changes in currency restrictions, trade sanctions and import/export and transfer pricing rules;
- our ability to compete globally, or in specific geographic markets or business segments that are material to us;
- our ability to identify, acquire and integrate accretive businesses;
- costs and potential future capital requirements relating to businesses we may acquire;
- integration challenges arising out of companies we may acquire;
- increases in unemployment and general slowdowns in commercial activity;
- trends in pricing and risk assumption for commercial real estate services;
- the effect of significant changes in capitalization rates across different property types;
- a reduction by companies in their reliance on outsourcing for their commercial real estate needs, which would affect our revenues and operating performance;
- client actions to restrain project spending and reduce outsourced staffing levels;
- our ability to further diversify our revenue model to offset cyclical economic trends in the commercial real estate industry;
- our ability to attract new user and investor clients;
- our ability to retain major clients and renew related contracts;
- our ability to leverage our global services platform to maximize and sustain long-term cash flow;
- our ability to continue investing in our platform and client service offerings;
- our ability to maintain expense discipline;
- the emergence of disruptive business models and technologies;
- negative publicity or harm to our brand and reputation;

- the failure by third parties to comply with service level agreements or regulatory or legal requirements;
- the ability of our investment management business to maintain and grow assets under management and achieve desired investment returns for our investors, and any potential related litigation, liabilities or reputational harm possible if we fail to do so;
- our ability to manage fluctuations in net earnings and cash flow, which could result from poor performance in our investment programs, including our participation as a principal in real estate investments;
- the ability of CBRE Capital Markets to periodically amend, or replace, on satisfactory terms, the agreements for its warehouse lines of credit;
- declines in lending activity of U.S. GSEs, regulatory oversight of such activity and our mortgage servicing revenue from the commercial real estate mortgage market;
- changes in U.S. and international law and regulatory environments (including relating to anti-corruption, anti-money laundering, trade sanctions, tariffs, currency controls and other trade control laws), particularly in Asia, Africa, Russia, Eastern Europe and the Middle East, due to the level of political instability in those regions;
- litigation and its financial and reputational risks to us;
- our exposure to liabilities in connection with real estate advisory and property management activities and our ability to procure sufficient insurance coverage on acceptable terms;
- our ability to retain, attract and incentivize key personnel;
- our ability to manage organizational challenges associated with our size;
- liabilities under guarantees, or for construction defects, that we incur in our development services business;
- variations in historically customary seasonal patterns that cause our business not to perform as expected;
- our leverage under our debt instruments as well as the limited restrictions therein on our ability to incur additional debt, and the potential increased borrowing costs to us from a credit-ratings downgrade;
- our and our employees' ability to execute on, and adapt to, information technology strategies and trends;
- cybersecurity threats or other threats to our information technology networks, including the potential misappropriation of assets or sensitive information, corruption of data or operational disruption;
- our ability to comply with laws and regulations related to our global operations, including real estate licensure, tax, labor and employment laws and regulations, fire and safety building requirements and regulations, as well as data privacy and protection regulations, ESG matters, and the anti-corruption laws and trade sanctions of the U.S. and other countries;
- changes in applicable tax or accounting requirements;
- any inability for us to implement and maintain effective internal controls over financial reporting;
- the effect of implementation of new accounting rules and standards or the impairment of our goodwill and intangible assets;
- the performance of our equity investments in companies we do not control; and
- the other factors described elsewhere in this Annual Report, included under the headings "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies," "Quantitative and Qualitative Disclosures About Market Risk" or as described in the other documents and reports we file with the SEC.

Forward-looking statements speak only as of the date the statements are made. You should not put undue reliance on any forward-looking statements. We assume no obligation to update forward-looking statements to reflect actual results, changes in assumptions or changes in other factors affecting forward-looking information, except to the extent required by applicable securities laws. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward-looking statements. Additional information concerning these and other risks and uncertainties is contained in our other periodic filings with the SEC.

Investors and others should note that we routinely announce financial and other material information using our Investor Relations website (<https://ir.cbre.com>), SEC filings, press releases, public conference calls and webcasts. We use these channels of distribution to communicate with our investors and members of the public about our company, our services and other items of interest. Information contained on our website is not part of this Annual Report or our other filings with the SEC.

Item 1A. Risk Factors.

Set forth below and elsewhere in this Annual Report and in other documents we file with the SEC are risks and uncertainties that could cause our actual results to differ materially from the results contemplated by the forward-looking statements contained in this Annual Report and other public statements we make. Based on the information currently known to us, we believe that the matters discussed below identify the material risk factors affecting our business. However, the risks and uncertainties we face are not limited to those described below. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial, but that could later become material, may also adversely affect our business.

Risks Related to our Business Environment

Our performance is significantly related to general economic, political and regulatory conditions and, accordingly, our business, operations and financial condition could be materially adversely affected by economic slowdowns, liquidity constraints, significant rises in interest rates, significant public health events, fiscal or political uncertainty and possible subsequent downturns in commercial real estate asset values, property sales and leasing activities in the geographies or industry sectors that we or our clients serve.

Periods of economic weakness or recession, fiscal or political uncertainty, market volatility, declining employment levels, declining demand for commercial real estate, falling real estate values, disruption to the global capital or credit markets, significant rises in interest rates or the public perception that any of these events may occur, may materially and negatively affect the performance of some or all of our business lines.

Our business is significantly affected by generally prevailing economic conditions in the markets where we operate. Adverse economic conditions, political or regulatory uncertainty and significant public health events can result in declines in real estate sale and leasing volumes and the value of commercial real estate. It may also lead to a decrease in funds invested in commercial real estate assets and development projects. Such developments in turn may reduce our revenue from property management fees and commissions derived from property sales, leasing, valuation and financing, as well as revenues associated with development or investment management activities. For example, during the onset of the Covid-19 pandemic, commercial real estate markets globally were severely impacted by a sharp decline in economic activity due to the spread of Covid-19, which put downward pressure on certain parts of our business, and has likely engendered structural changes to the utilization of many types of commercial real estate, which will have ongoing repercussions for our business. Our businesses could also suffer from political or economic disruptions (or the perception that such disruptions may occur) that affect interest rates or liquidity or create financial, market or regulatory uncertainty. For example, Russia's invasion of Ukraine in 2022 heightened risks for our operations in Europe, caused us to exit most of our business in Russia, and exacerbated a number of existing macroeconomic challenges that adversely impacted our markets and our business.

We also make co-investments alongside our investor clients in our development and investment management businesses. During an economic downturn, capital for our investment activities could be constrained and it may take longer for us to dispose of real estate investments or sale prices we achieve may be lower than originally anticipated. As a result, the value of our commercial real estate investments may be reduced, and we could realize losses or diminished profitability. In addition, economic downturns may reduce the volume of loans our capital markets business originates and/or services. Fees within our property management business are generally based on a percentage of rent collections, making them sensitive to macroeconomic conditions that negatively impact rent collections and the performance of the properties we manage.

Economic, political and regulatory uncertainty as well as significant changes and volatility in the financial markets and business environment, and in the global landscape, make it difficult for us to predict our financial performance into the future. As a result, any guidance or outlook that we provide on our performance is based on then-current conditions, and there is a risk that such guidance may turn out to be inaccurate.

Adverse developments in the credit markets may materially harm our business, results of operations and financial condition.

Our investment management, development services, capital markets (including property sales and mortgage origination) and mortgage services businesses are sensitive to credit cost and availability as well as financial liquidity. Additionally, the revenues in all of our businesses are dependent to some extent on the overall volume of activity (and pricing) in the commercial real estate markets.

Disruptions in the credit markets may have a material adverse effect on our business of providing advisory services to owners, investors and occupiers of real estate in connection with the leasing, disposition and acquisition of property. If our clients are unable to obtain credit on favorable terms, there may be fewer property leasing, disposition and acquisition transactions. For example, in the second half of 2022, central banks around the world sharply raised interest rates in efforts to rein in inflation, reducing credit availability. Less available and more expensive debt capital had pronounced effects on our capital markets, mortgage origination and property sales businesses. In addition, under such conditions, our investment management and development services businesses may be unable to attract capital or achieve returns sufficient to earn incentive fees and we may also experience losses of co-invested equity capital if any such disruption causes a prolonged decline in the value of investments made.

Our operations are subject to social, political and economic risks in foreign countries as well as foreign currency volatility.

We conduct a significant portion of our business and employ a substantial number of people outside of the U.S. and, as a result, we are subject to risks associated with doing business globally. During the year ended December 31, 2022, approximately 43% of our revenue was transacted in foreign currencies. Fluctuations in foreign currency exchange rates may result in corresponding fluctuations in revenue and earnings as well as the assets under management for our investment management business, which could have a material adverse effect on our business, financial condition and operating results. Due to the constantly changing currency exposures to which we are subject and the volatility of currency exchange rates, we cannot predict the effect of exchange rate fluctuations upon future operating results.

In addition, international economic trends, foreign governmental policy actions and the following factors may have a material adverse effect on the performance of our business:

- difficulties and costs of staffing and managing international operations among diverse geographies, languages and cultures;
- currency restrictions, transfer-pricing regulations and adverse tax consequences, which may affect our ability to transfer capital and profits;
- adverse changes in regulatory or tax requirements and regimes or uncertainty about the application of or the future of such regulatory or tax requirements and regimes;
- responsibility for complying with numerous, potentially conflicting and frequently complex and changing laws in multiple jurisdictions (*e.g.*, with respect to data privacy and protection, corrupt practices, embargoes, trade sanctions, employment and licensing);
- the impact of regional or country-specific business cycles and economic instability, including those related to public health or safety events;
- greater difficulty in collecting accounts receivable or delays in client payments in some geographic regions;
- rising interest rates and less available and more expensive debt capital resulting from efforts by central banks outside the U.S. to rein in inflation;
- foreign ownership restrictions in certain countries, particularly in Asia Pacific and the Middle East, or the risk that such restrictions will be adopted in the future; and
- changes in laws or policies governing foreign trade or investment and use of foreign operations or workers, and any negative sentiments towards multinational companies as a result of any such changes to laws or policies as well as other geopolitical risks.

We maintain anti-corruption and anti-money-laundering compliance programs throughout the company as well as programs designed to enable us to comply with any potential government economic sanctions, embargoes or other import/export controls. However, coordinating our activities to deal with the broad range of complex legal and regulatory environments in which we operate presents significant challenges. We may not be successful in complying with regulations in all situations and violations may result in criminal or material civil sanctions and other costs against us or our employees, and may have a material adverse effect on our reputation and business. Furthermore, our efforts to comply with developments in these laws may adversely impact our business. For example, in 2022, we exited most of our business in Russia in light of newly adopted U.S. sanctions.

We have committed additional resources to expand our worldwide sales and marketing activities, to globalize our service offerings and products in select markets and to develop local sales and support channels. If we are unable to successfully implement these plans, maintain adequate long-term strategies that successfully manage the risks associated with our global business or adequately manage operational fluctuations, our business, financial condition or results of operations could be harmed. In addition, we have established operations and seek to grow our presence in many emerging markets to further expand our global platform. However, we may not be successful in effectively evaluating and monitoring the key business, operational, legal and compliance risks specific to those markets. The political and cultural risks present in emerging countries could also harm our ability to successfully execute our operations or manage our businesses there.

Risks Related to Our Operations

We have numerous local, regional and global competitors across all of our business lines and the geographies that we serve, and further industry consolidation, fragmentation or innovation could lead to significant future competition.

We compete across a variety of business disciplines within the commercial real estate services and investment industry, including property management, facilities management, project and transaction management, tenant and landlord leasing, capital markets solutions (property sales and commercial mortgage origination) and mortgage services, flexible space solutions, real estate investment management, valuation, loan servicing, development services and proprietary research. Although we are the largest commercial real estate services firm in the world in terms of 2022 revenue, our relative competitive position varies significantly across geographies, property types and services and business lines.

Depending on the geography, property type or service or business line, we face competition from other commercial real estate services providers and investment firms, including outsourcing companies that traditionally competed in limited portions of our facilities management business and have expanded their offerings from time to time, in-house corporate real estate departments, developers, flexible space providers, institutional lenders, insurance companies, investment banking firms, investment managers and accounting and consulting firms. Some of these firms may have greater financial resources allocated to a particular geography, property type or service or business line than we have allocated to that geography, property type, service or business line. In addition, future changes in laws could lead to the entry of other new competitors, such as financial institutions.

Although many of our existing competitors are local or regional firms that are smaller than we are, some of these competitors are larger on a local or regional basis. We are further subject to competition from large national and multi-national firms that have similar service and investment competencies to ours, and it is possible that further industry consolidation could lead to much larger and more formidable competitors globally or in the particular geographies, property types, service or business lines that we serve. In addition, disruptive innovation by existing or new competitors could alter the competitive landscape in the future and require us to accurately identify and assess such changes and make timely and effective changes to our strategies and business model to compete effectively. Furthermore, we are substantially dependent on long-term client relationships and on revenue received for services under various service agreements. Many of these agreements may be canceled by the client for any reason with as little as 30 to 60 days' notice, as is typical in the industry.

In this competitive market, if we are unable to effectively execute on our strategy and differentiate ourselves from our competitors, maintain long-term client relationships or are otherwise unable to retain existing clients and develop new clients, our business, results of operations and/or financial condition may be materially adversely affected. There is no assurance that we will be able to compete effectively, to maintain current fee levels or margins, or maintain or increase our market share.

Our growth and financial performance have benefited significantly from acquisitions, which may not perform as expected and similar opportunities may not be available in the future.

Acquisitions have accounted for a significant component of our growth over time. Any future growth through acquisitions will depend in part upon the continued availability of suitable acquisition candidates at attractive prices, terms and conditions, as well as sufficient liquidity and credit to fund these acquisitions. We may incur significant additional debt from time to time to finance any such acquisitions, which could increase the risks associated with our leverage, including our ability to service our debt. Acquisitions involve risks that business judgments made concerning the value, strengths and weaknesses of businesses acquired may prove to be incorrect. Future acquisitions and any necessary related financings also may involve significant transaction-related expenses, which could include severance, lease termination, transaction and deferred financing costs, among others.

We have had, and may continue to experience, challenges in integrating operations and information technology systems acquired from other companies. This could result in the diversion of management's attention from other business concerns and the potential loss of our key employees or clients or those of the acquired operations. The integration process itself may be costly and may adversely impact our business and the acquired company's business as it requires coordination of geographically diverse organizations and implementation of accounting and information technology systems.

We complete acquisitions with the expectation that they will result in various benefits, but the anticipated benefits of these acquisitions are subject to a number of uncertainties, including the ability to timely realize accretive benefits, the level of attrition from professionals licensed or associated with the acquired companies and whether we can successfully integrate the acquired business. Failure to achieve these anticipated benefits could result in increased costs, decreases in the amount of expected revenues and diversion of management's time and energy, which could in turn materially and adversely affect our overall business, financial condition and operating results.

Our brand and reputation are key assets of our company, and our business may be affected by how we are perceived in the marketplace.

Our brand and reputation are key assets, and we believe our continued success depends on our ability to preserve, grow and leverage the value of our brand. Our ability to attract and retain clients is highly dependent upon the external perceptions of our level of service, trustworthiness, business practices, management, workplace culture, financial condition, our response to unexpected events and other subjective qualities. Negative perceptions or publicity regarding these matters, even if related to seemingly isolated incidents and whether or not factually correct, could erode trust and confidence and damage our reputation among existing and potential clients, which could make it difficult for us to attract new clients and maintain existing ones. Negative public opinion could result from actual or alleged conduct in any number of activities or circumstances, including handling of complaints, regulatory compliance, such as compliance with government sanctions, the Foreign Corrupt Practices Act (FCPA), the U.K. Bribery Act and other antibribery, anti-money laundering and corruption laws, the use and protection of client and other sensitive information and from actions taken by regulators or others in response to such conduct. Furthermore, as a company with headquarters and operations located in the U.S., a negative perception of the U.S. arising from its political or other positions could harm the perception of our company and our brand abroad. Although we monitor developments for areas of potential risk to our reputation and brand, negative perceptions or publicity would materially and adversely affect our revenues and profitability. Social media channels can also cause rapid, widespread reputational harm to our brand. Our brand and reputation may also be harmed by the actions of third parties that are outside of our control, including vendors and joint venture partners.

The protection of our brand, including related trademarks, may require the expenditure of significant financial and operational resources. Moreover, the steps we take to protect our brand may not adequately protect our rights or prevent third parties from infringing or misappropriating our trademarks. Even when we detect infringement or misappropriation of our trademarks, we may not be able to enforce all such trademarks. Any unauthorized use by third parties of our brand may adversely affect our brand. Furthermore, as we continue to expand our business, especially internationally, there is a risk we may face claims of infringement or other alleged violations of third-party intellectual property rights, which may restrict us from leveraging our brand in a manner consistent with our business goals.

Our Real Estate Investments businesses, including our real estate investment programs and co-investment activities, subject us to performance and real estate investment risks which could cause fluctuations in our earnings and cash flow and impact our ability to raise capital for future investments.

The revenue, net income and cash flow generated by our investment management business line within our Real Estate Investments segment can be volatile primarily because the management, transaction and incentive fees can vary as a result of market movements. In the event that any of the investment programs that our investment management business manages were to perform poorly, our revenue, net income and cash flow could decline because the value of the assets we manage would decrease, which would result in a reduction in some of our management fees, and our investment returns would decrease, resulting in a reduction in the incentive compensation we earn. Moreover, we could experience losses on co-investments of our own capital in such programs as a result of poor performance. Investors and potential investors in our programs continually assess our performance, and our ability to raise capital for existing and future programs and maintaining our current fee structure will depend on our continued satisfactory performance.

An important part of the strategy for our Real Estate Investments segment involves co-investing our capital in certain real estate investments with our clients, and there is an inherent risk of loss of our investments. As of December 31, 2022, we had a net investment of approximately \$339.8 million and had committed \$106.9 million to fund future co-investments in our investment funds, approximately \$47.3 million of which is expected to be funded during 2023. In addition to required future capital contributions, some of the co-investment entities may request additional capital from us and our subsidiaries holding investments in those assets. The failure to provide these contributions could have adverse consequences to our interests in these investments, including damage to our reputation with our co-investment partners and clients, as well as the necessity of obtaining alternative funding from other sources that may be on disadvantageous terms for us and the other co-investors. Participating as a co-investor is an important part of our investment management line of business, which might suffer if we were unable to make these investments.

Selective investment in real estate projects is critical to our development services business strategy within our Real Estate Investments segment, and there is an inherent risk of loss of our investments. As of December 31, 2022, we were involved as a principal in 29 real estate projects that were consolidated in our financial statements with invested equity of \$471.8 million and co-invested with our clients in approximately 135 unconsolidated real estate projects with a net investment of \$283.0 million. We had committed additional capital of \$81.0 million and \$85.9 million to consolidated and unconsolidated projects, respectively, as of December 31, 2022.

During the ordinary course of business within our development services business line, we provide numerous completion and budget guarantees requiring us to complete the relevant project within a specified timeframe and/or within a specified budget, with us potentially being liable for costs to complete in excess of such timeframe or budget. There can be no assurance that we will not have to perform under any such guarantees. If we are required to perform under a significant number of such guarantees, it could harm our business, results of operations and financial condition.

Because the disposition of a single significant investment can affect our financial performance in any period, our real estate investment activities could cause fluctuations in our net earnings and cash flow. In many cases, we have limited control over the timing of the disposition of these investments and the recognition of any related gain or loss, or incentive participation fee.

The success of our Global Workplace Solutions segment depends on our ability to enter into mutually beneficial contracts, deliver high quality levels of service and accurately assess working capital requirements.

Contracts for our Global Workplace Solutions clients often include complex terms regarding payment of fees, risk transfer, liability limitations, termination, due diligence and transition timeframes. Further, the facilities management and project management businesses within our Global Workplace Solutions segment are often impacted by transition activities in the first year of a contract as well as the timing of starting operations on these large client contracts. If we are unable to negotiate contracts with our clients in a timely manner and on mutually beneficial terms, or there is a delay in becoming fully operational, our business and results of operation may be negatively impacted. Further, if we fail to deliver the high-quality levels of service expected by our clients, it may result in reputational and financial damage, and could impact our ability to retain existing clients and attract new clients.

Our Global Workplace Solutions segment also requires us to accurately model the working capital needs of this business. Should we fail to accurately assess working capital requirements, the cash flow generated by this business may be adversely impacted. In addition, if we do not accurately assess the creditworthiness of a client or if a client's creditworthiness changes during the term of the contract, we could potentially be unable to collect on any outstanding payments.

A significant portion of our loan origination and servicing business depends upon our relationships with U.S. Government Sponsored Enterprises.

A significant portion of our loan origination and servicing business (which we conduct through certain of our wholly-owned subsidiaries) depends upon our relationship with the Federal National Mortgage Association (Fannie Mae), and the Federal Home Loan Mortgage Corporation (Freddie Mac), collectively the Government Sponsored Enterprises (GSEs). As an approved seller/servicer for the GSEs, we are required to comply with various eligibility criteria and are required to originate and service loans in accordance with their individual program requirements, including participation in loss sharing and repurchase arrangements. Failure to comply with these requirements may result in termination or withdrawal of our approval to sell and service the GSE loans.

A failure by third parties to comply with service level agreements or regulatory or legal requirements could result in economic and reputational harm to us.

We rely on third parties, and in some cases subcontractors, to perform activities on behalf of our organization to improve quality, increase efficiencies, cut costs and lower operational risks across our business and support functions. We have instituted a Supplier Code of Conduct, which is intended to communicate to our vendors the standards of conduct we expect them to uphold. Our contracts with vendors typically impose a contractual obligation to comply with our Supplier Code of Conduct. In addition, we leverage technology to help us better screen vendors, with the aim of gaining a deeper understanding of the compliance, data privacy, health and safety, environmental, sustainability and other risks posed to our business by potential and existing vendors. If our third parties do not have the proper safeguards and controls in place, or appropriate oversight cannot be provided, we could be exposed to increased operational, regulatory, financial or reputational risks. A failure by third parties to comply with service level agreements or regulatory or legal requirements in a high quality and timely manner could result in economic and reputational harm to us. In addition, these third parties face their own technology, operating, business and economic risks, and any significant failures by them, including the improper use or disclosure of our confidential client, employee or company information, could cause damage to our reputation and harm to our business.

Our success depends upon the retention of our senior management, as well as our ability to attract and retain qualified and experienced employees.

Our continued success is highly dependent upon the efforts of our executive officers and other key employees. While certain of our executive officers and key employees are subject to long-term compensatory arrangements, there can be no assurance that we will be able to retain all key members of our senior management. We also are highly dependent upon the retention of our property sales and leasing professionals, who generate a significant amount of our revenues, as well as other revenue producing professionals. The departure of any of our key employees, or the loss of a significant number of key revenue producers, if we are unable to quickly hire and integrate qualified replacements, including diverse talent, could cause our business, financial condition and results of operations to materially suffer. Competition for employee talent is intense and we may not be able to successfully recruit, integrate or retain sufficiently qualified personnel, including diverse talent. In addition, the growth of our business is largely dependent upon our ability to attract and retain qualified personnel in all areas of our business. If we were to experience significant employee attrition or turnover, it could lead to increased recruitment and training costs as well as operating inefficiencies that could adversely impact our results of operation. We and our competitors use equity incentives and sign-on and retention bonuses to help attract, retain and incentivize key personnel. As competition is significant for the services of such personnel, the expense of such incentives and bonuses may increase, which could negatively impact our profitability, or result in our inability to attract or retain such personnel to the same extent that we have in the past. If we are unable to attract and retain these qualified personnel, our growth may be limited, and our business and operating results could materially suffer.

If we are unable to manage the organizational challenges associated with our global operations, we might be unable to achieve our business objectives.

Our global operations present significant management and organizational challenges. It might become increasingly difficult to maintain effective standards across a large enterprise and effectively institutionalize our knowledge. It might also become more difficult to maintain our culture, effectively manage and monitor our personnel and operations and effectively communicate our core values, policies and procedures, strategies and goals. The size of our employee base increases the possibility that we will have individuals who engage in unlawful or fraudulent activity, or otherwise expose us to business and reputational risks. If we are not successful in continuing to develop and implement the processes and tools designed to manage our enterprise and instill our culture and core values into all of our employees, our reputation and ability to compete successfully and achieve our business objectives could be impaired. In addition, from time to time, we have made, and may continue to make, changes to our operating model, including how we are organized, as the needs and size of our business change. If we do not successfully implement any such changes, our business and results of operation may be negatively and materially impacted.

Our policies, procedures and programs to safeguard the health, safety and security of our employees and others may not be adequate.

We have approximately 115,000 employees (excluding Turner & Townsend employees) as well as independent contractors working in over 100 countries. We have undertaken to implement what we believe to be best practices to safeguard the health, safety and security of our employees, independent contractors, clients and others at our worksites. However, if these policies, procedures and programs are not adequate, or employees do not receive related adequate training or follow them for any reason, the consequences may be severe to us, including serious injury or loss of life, which could impair our operations and cause us to incur significant legal liability or fines as well as reputational damage. Our insurance may not cover, or may be insufficient to cover, any legal liability or fines that we incur for health, safety or security incidents.

We may be subject to actual or perceived conflicts of interest.

Similar to other global services companies with different business lines and a broad client base, we may be subject to potential conflicts of interests in the provision of our services. For example, conflicts may arise from our role in advising or representing both owners and tenants in commercial real estate lease transactions. In certain cases, we are also subject to fiduciary obligations to our clients. In such situations, our policies are designed to give full disclosure and transparency to all parties as well as implement appropriate barriers on information-sharing and other activities to ensure each party's interests are protected; however, there can be no assurance that our policies will be successful in every case. If we fail, or appear to fail, to identify, disclose and appropriately address potential conflicts of interest or fiduciary obligations, there could be an adverse effect on our business or reputation regardless of whether any such claims have merit. In addition, it is possible that in some jurisdictions, regulations could be changed to limit our ability to act for certain parties where potential conflicts may exist even with informed consent, which could limit our market share in those markets. There can be no assurance that potential conflicts of interest will not materially adversely affect us.

Infrastructure disruptions may disrupt our ability to manage real estate for clients or may adversely affect the value of real estate investments we make on behalf of clients.

Our ability to conduct a global business may be adversely impacted by disruptions to the infrastructure that supports our businesses and the communities in which they are located. This may include disruptions as a result of political instability, public health crises, attacks on our information technology systems, war or other hostilities, terrorist attacks, interruptions or delays in services from third-party data center hosting facilities or cloud computing platform providers, employee errors or malfeasance, building defects, utility outages, the effects of climate change and natural disasters such as fires, earthquakes, floods and hurricanes. The infrastructure disruptions we may experience as a result of such events could also disrupt our ability to manage real estate for clients or may adversely affect the value of our real estate investments in our investment management and development services businesses. Furthermore, to the extent climate change causes changes in weather patterns, certain regions where we operate could experience increases in storm intensity, extreme temperatures, rising sea-levels and/or drought. Over time, these conditions could result in declining demand for commercial real estate, decreased value of any real estate investments we hold in those regions or result in increases in our operating costs. The buildings we manage for clients, which include some of the world's largest office properties and retail centers, are used by people daily. We also manage the critical facilities (including data centers) that our clients rely on to serve the public and their customers, where unplanned downtime could potentially disrupt other parts of their businesses or society. As a result, fires, earthquakes, floods, hurricanes, other natural disasters, building defects, acts of war, terrorist attacks, mass shootings or infrastructure disruptions can result in significant loss of life or injury, and, to the extent we are held to have been negligent in connection with our management of the affected properties, we could incur significant financial liabilities and reputational harm.

Our joint venture activities and affiliate program involve risks that are often outside of our control and that, if realized, could materially harm our business.

We have utilized joint ventures for commercial investments, select local brokerage and other affiliations both in the U.S. and internationally, and we may acquire interests in other joint ventures in the future. Under our affiliate program, we enter into contractual relationships with local brokerage, property management or other operations pursuant to which we license to that operation our name and make available certain of our resources, in exchange for a royalty or economic participation in that operation's revenue, profits or transactional activity. In many of these joint ventures and affiliations, we may not have the right or power to direct the management and policies of the joint ventures or affiliates, and other participants or operators of affiliates may take action contrary to our instructions or requests and against our policies and objectives. In addition, the other participants and operators may become bankrupt or have economic or other business interests or goals that are inconsistent with

ours. If a joint venture participant or affiliate acts contrary to our interest, it could harm our brand, business, results of operations and financial condition.

A significant portion of our revenue is seasonal, which could cause our financial results to fluctuate significantly.

A significant portion of our revenue is seasonal. Historically, our revenue, operating income, net income and cash flow from operating activities tend to be lowest in the first calendar quarter, and highest in the fourth calendar quarter of each year. Earnings and cash flow have generally been concentrated in the fourth calendar quarter due to the focus on completing sales, financing and leasing transactions prior to calendar year-end. This variance among periods makes it difficult to compare our financial condition and results of operations on a quarter-by-quarter basis. In addition, as a result of the seasonal nature of our business, political, economic or other unforeseen disruptions occurring in the fourth quarter, particularly those that impact our ability to close large transactions, may have a proportionally larger effect on our financial condition and results of operations.

Risks Related to Our Indebtedness

Our debt instruments impose operating and financial restrictions on us, and in the event of a default, all of our borrowings would become immediately due and payable.

As of December 31, 2022, our total debt, excluding notes payable on real estate (which are generally non-recourse to us) and warehouse lines of credit (which are recourse only to our wholly-owned subsidiary, CBRE Capital Markets, and are secured by our related warehouse receivables), was \$1.7 billion. For the year ended December 31, 2022, our interest expense was \$97.5 million.

Our debt instruments impose, and the terms of any future debt may impose, operating and other restrictions on us and many of our subsidiaries. These restrictions affect, and in many respects limit or prohibit, our ability to:

- plan for or react to market conditions;
- meet capital needs or otherwise restrict our activities or business plans; and
- finance ongoing operations, strategic acquisitions, investments or other capital needs or to engage in other business activities that would be in our interest, including:
 - incurring or guaranteeing additional indebtedness;
 - entering into mergers and consolidations;
 - creating liens; and
 - entering into sale/leaseback transactions.

Our credit agreements require us to maintain a minimum interest coverage ratio of consolidated EBITDA (as defined in the applicable credit agreement) to consolidated interest expense (as defined in the applicable credit agreement) and a maximum leverage ratio of total debt (as defined in the applicable credit agreement) less available cash (as defined in the applicable credit agreement) to consolidated EBITDA as of the end of each fiscal quarter. Our ability to meet these financial ratios may be affected by events beyond our control, and we cannot give assurance that we will be able to meet those ratios when required. We continue to monitor our projected compliance with these financial ratios and other terms of our credit agreements.

A breach of any of these restrictive covenants or the inability to comply with the required financial ratios could result in a default under our debt instruments. If any such default occurs, the lenders under our credit agreements and noteholders with respect to our senior notes may elect to declare all outstanding borrowings, together with accrued interest and other fees, to be immediately due and payable. The lenders under our credit agreement also have the right in these circumstances to terminate any commitments they have to provide further borrowings. In addition, a default under our credit agreements or senior notes could trigger a cross default or cross acceleration under our other debt instruments.

We have limited restrictions on the amount of additional recourse debt we are able to incur, which may intensify the risks associated with our leverage, including our ability to service our indebtedness. In addition, in the event of a credit-ratings downgrade, our ability to borrow and the costs of such borrowings could be adversely affected.

Subject to the maximum amounts of indebtedness permitted by our credit agreement covenants, we are not restricted in the amount of additional recourse debt we are able to incur, and so we may in the future incur such indebtedness in order to finance our operations and investments. In addition, Moody's Investors Service, Inc. and Standard & Poor's Ratings Services, rate our significant outstanding debt. These ratings, and any downgrades of them, may affect our ability to borrow as well as the costs of our current and future borrowings.

Our variable rate indebtedness subjects us to interest rate risk, which could cause our debt service obligations to increase significantly and potentially limit our ability to effectively refinance our indebtedness as it matures.

Borrowings under certain of our indebtedness bear interest at variable rates and expose us to interest rate risk. If interest rates increase, our debt service obligations on the variable rate indebtedness will increase even though the amount borrowed will remain the same, and our net income and operating cash flows, including cash available for servicing our indebtedness, will correspondingly decrease.

Additionally, our ability to refinance portions of our indebtedness in advance of their maturity dates depends on securing new financing bearing interest at rates that we are able to service. While we believe that we currently have adequate cash flows to service the interest rates currently applicable to our indebtedness, if interest rate were to continue to rise significantly, we might be unable to maintain a level of cash flows from operating activities sufficient to meet our debt service obligations at such increased rates.

Risks Related to our Information Technology, Cybersecurity and Data Protection

Failure to maintain and execute information technology strategies and ensure that our employees adapt to changes in technology could materially and adversely affect our ability to remain competitive in the market.

Our business relies heavily on information technology, including solutions provided by third parties, to deliver services that meet the needs of our clients. If we are unable to effectively execute or maintain our information technology strategies or adopt new technologies and processes relevant to our service platform, our ability to deliver high-quality services may be materially impaired. In addition, we make significant investments in new systems and tools to achieve competitive advantages and efficiencies. Implementation of such investments in information technology could exceed estimated budgets and we may experience challenges that prevent new strategies or technologies from being realized according to anticipated schedules. If we are unable to maintain current information technology and processes or encounter delays, or fail to exploit new technologies, then the execution of our business plans may be disrupted. Similarly, our employees require effective tools and techniques to perform functions integral to our business. Failure to successfully provide such tools and systems, or ensure that employees have properly adopted them, could materially and adversely impact our ability to achieve positive business outcomes.

Interruption or failure of our information technology, communications systems or data services could impair our ability to provide our services effectively, which could damage our reputation and materially harm our operating results.

Our business requires the continued operation of information technology and communication systems and network infrastructure. Our ability to conduct our global business may be materially adversely affected by disruptions to these systems or our infrastructure. Our information technology and communications systems are vulnerable to damage or disruption from fire, power loss, telecommunications failure, system malfunctions, computer viruses, cyberattacks, natural disasters such as hurricanes, earthquakes and floods, acts of war or terrorism, employee errors or malfeasance, or other events which are beyond our control. Cyberattacks and viruses pose growing threats to many companies, and we have been a target and may continue to be a target of such threats, which could expose us to liability, reputational harm and significant remediation costs and cause material harm to our business and financial results. In addition, the operation and maintenance of these systems and networks is in some cases dependent on third-party technologies, systems and service providers for which there is no certainty of uninterrupted availability. Any of these events could cause system interruption, delays and loss, corruption or exposure of critical data or intellectual property and may also disrupt our ability to provide services to or interact with our clients, contractors and vendors, and we may not be able to successfully implement contingency plans that depend on communication or travel. Furthermore, while we have certain business interruption and cyber insurance coverage and various contractual

arrangements that can serve to mitigate costs, damages and liabilities, any such event could result in substantial recovery and remediation costs and liability to customers, business partners and other third parties. We have crises management, business continuity and disaster recovery plans and backup systems to reduce the potentially adverse effect of such events, but our disaster recovery planning may not be sufficient and cannot account for all eventualities, and a catastrophic event that results in the destruction or disruption of any of our data centers and third-party cloud hosting providers or our critical business or information technology systems could severely affect our ability to conduct normal business operations, and as a result, our future operating results could be materially adversely affected.

Our business relies heavily on the use of commercial real estate data. A portion of this data is purchased or licensed from third-party providers for which there is no certainty of uninterrupted availability or accuracy. A disruption of our ability to provide data to our professionals and/or our clients or an inadvertent exposure of proprietary data could damage our reputation and competitive position, and our operating results could be adversely affected.

Failure to maintain the security of our information and technology networks, including personal information and other client information, intellectual property and proprietary business information could materially adversely affect us.

Security breaches and other disruptions of our information and technology networks, as well as that of third-party vendors, could compromise our information and intellectual property and expose us to liability, reputational harm and significant remediation costs, which could cause material harm to our business and financial results. In the ordinary course of our business, we collect and store sensitive data, including our proprietary business information and intellectual property, and that of our clients and personal information (also referred to as “personal data” or “personally identifiable information”) of our employees, contractors and vendors, in our data centers, networks and third-party cloud hosting providers. The secure collection, use, storage, retention, maintenance, sharing, processing, transfer, transmission, disclosure, and protection (collectively, “Processing”) of this information is critical to our operations. Although we and our vendors continue to implement new security measures and regularly conduct employee training, our information technology and infrastructure may nevertheless be vulnerable to cyberattacks by third parties or breached due to employee error, malfeasance or other disruptions. These risks have been heightened in connection with the ongoing conflict between Russia and Ukraine and we cannot be certain how this new risk landscape will impact our operations. When geopolitical conflicts develop, critical infrastructures may be targeted by state-sponsored cyberattacks even if they are not directly involved in the conflict. An increasing number of companies that rely on information and technology networks have disclosed breaches of their security, some of which have involved sophisticated and highly targeted attacks on portions of their websites or infrastructure. The techniques used to obtain unauthorized access, disable, or degrade service, or sabotage systems, change frequently, may be difficult to detect, and often are not recognized until launched against a target. To date, we have not yet experienced any cybersecurity breaches that have been material, either individually or in the aggregate. However, there can be no assurance that we will be able to prevent any material events from occurring in the future.

Our business is subject to complex and evolving United States and international laws and regulations regarding privacy, data protection, and cybersecurity. Many of these laws and regulations are subject to change and uncertain interpretation and could result in claims, increased cost of operations or otherwise harm our business.

We are subject to numerous United States federal, state, local, and international laws and regulations regarding privacy, data protection and cybersecurity that govern the Processing of certain data (including personal information, sensitive information, health information, and other regulated data). For example, the European Union General Data Protection Regulation (GDPR) became effective on May 25, 2018, and has resulted and will continue to result in significantly greater compliance burdens and costs for businesses with users and operations in the European Union (EU) and European Economic Area (EEA), including with respect to cross-border transfers of personal information. Under GDPR, fines of up to 20 million Euros or up to 4% of the annual global revenues of the infringer, whichever is greater, can be imposed for violations. In addition, the California Consumer Privacy Act of 2018 (CCPA) took effect on January 1, 2020, which broadly defines personal information, gives California residents expanded privacy rights and protections, and provides for civil penalties for certain violations. Furthermore, in November 2020, California voters passed the California Privacy Rights and Enforcement Act of 2020 (CPRA), which amends and expands CCPA with additional data privacy compliance requirements and establishes a regulatory agency dedicated to enforcing those requirements. Additional countries, including Brazil and China, and states including Virginia, Colorado, Utah, and Connecticut, have also passed comprehensive privacy laws with additional obligations and requirements on businesses. These laws and regulations are increasing in severity, complexity and number, change frequently, and increasingly conflict among the various jurisdictions in which we operate, which has resulted in greater

compliance risk and cost for us. In addition, we are also subject to the possibility of security breaches and other incidents, which themselves may result in a violation of these laws.

A significant actual or potential theft, loss, corruption, exposure, fraudulent use or misuse of client, employee or other personal information or proprietary business data, whether by third parties or as a result of employee malfeasance or otherwise, perceived or actual non-compliance with our contractual or other legal obligations regarding such data or intellectual property or a violation of our privacy and security policies with respect to such data could result in significant remediation and other costs, fines, litigation or regulatory actions against us. Such an event could additionally disrupt our operations and the services we provide to clients, harm our relationships with contractors and vendors, damage our reputation, result in the loss of a competitive advantage, impact our ability to provide timely and accurate financial data and cause a loss of confidence in our services and financial reporting, which could adversely affect our business, revenues, competitive position and investor confidence. Additionally, we rely on third parties to support our information and technology networks, including cloud storage solution providers, and as a result have less direct control over our data and information technology systems. Such third parties are also vulnerable to security breaches and compromised security systems, for which we may not be indemnified and which could materially adversely affect us and our reputation.

Legal and Regulatory Related Risks

We are subject to various litigation and regulatory risks and may face financial liabilities and/or damage to our reputation as a result of litigation or regulatory investigations or proceedings.

Our businesses are exposed to various litigation and regulatory risks, especially within our valuations business. Although we maintain insurance coverage for most of this risk, insurance coverage is unavailable at commercially reasonable pricing for certain types of exposures. Additionally, our insurance policies may not cover us in the event of grossly negligent or intentionally wrongful conduct. Accordingly, an adverse result in a litigation against us, or a lawsuit that results in a substantial legal liability for us (and particularly a lawsuit that is not insured), could have a disproportionate and material adverse effect on our business, financial condition and results of operations. Furthermore, an adverse result in regulatory proceedings, if applicable, could result in fines or other liabilities or adversely impact our operations. Prolonged or complex investigations, even if they do not result in regulatory or other proceedings or adverse findings, may result in significant costs that may not be covered by insurance and in diversion of employee resources. In addition, we depend on our business relationships and our reputation for high-caliber professional services to attract and retain clients. As a result, allegations against us, or the announcement of a regulatory investigation involving us, irrespective of the ultimate outcome of that allegation or investigation, may harm our professional reputation and as such materially damage our business and its prospects.

Our businesses, financial condition, results of operations and prospects could be adversely affected by new laws or regulations or by changes in existing laws or regulations or the application thereof. If we fail to comply with laws and regulations applicable to us, or make incorrect determinations in complex tax regimes, we may incur material financial penalties.

We are subject to numerous federal, state, local and non-U.S. laws and regulations specific to the services we perform in our business. Brokerage of real estate sales and leasing transactions and the provision of property management and valuation services require us and our employees to maintain applicable licenses in each U.S. state and certain non-U.S. jurisdictions in which we perform these services. If we and our employees fail to maintain our licenses or conduct these activities without a license, or violate any of the regulations covering our licenses, we may be required to pay fines (including treble damages in certain states) or return commissions received or have our licenses suspended or revoked. A number of our services, including the services provided by our indirect wholly-owned subsidiaries, CBRE Capital Markets and CBRE Investment Management, are subject to regulation by the SEC, Financial Industry Regulatory Authority (FINRA), or other self-regulatory organizations and state securities regulators and compliance failures or regulatory action could adversely affect our business. We could be subject to disciplinary or other actions in the future due to claimed noncompliance with these regulations, which could have a material adverse effect on our operations and profitability.

We are also subject to laws of broader applicability, such as tax, securities, environmental, employment laws and anti-bribery, anti-money laundering and corruption laws, including the Fair Labor Standards Act, occupational health and safety regulations, U.S. state wage-and-hour laws, the U.S. FCPA and the U.K. Bribery Act. Failure to comply with these requirements could result in the imposition of significant fines by governmental authorities, awards of damages to private litigants and significant amounts paid in legal fees or settlements of these matters.

Telford Homes, our residential development subsidiary in the U.K., is subject to certain recently promulgated U.K. laws and requirements that will obligate U.K. homebuilders to remediate or fund the remediation work relating to certain fire-safety issues on their constructed buildings. The aggregate costs and liabilities related to these remediations are uncertain and may be material. In the event Telford Homes is unable to satisfy its obligations and liabilities under such government requirements and U.K. laws, Telford Homes and potentially its affiliates could face material business interruption, litigation, liabilities and reputational damage.

As the size and scope of our business has increased significantly, compliance with numerous licensing and other regulatory requirements and the possible loss resulting from non-compliance have both increased. New or revised legislation or regulations applicable to our business, both within and outside of the U.S., as well as changes in administrations or enforcement priorities may have an adverse effect on our business, including increasing the costs of regulatory compliance or preventing us from providing certain types of services in certain jurisdictions or in connection with certain transactions or clients. We are unable to predict how any of these new laws, rules, regulations and proposals will be implemented or in what form, or whether any additional or similar changes to laws or regulations, including the interpretation or implementation thereof, will occur in the future. Any such action could affect us in substantial and unpredictable ways and could have an adverse effect on our businesses, financial condition, results of operations and prospects.

Our business is subject to evolving corporate governance and public disclosure regulations and expectations, including with respect to environmental, social and governance (ESG) matters, that could expose us to numerous risks.

Recently, there has been heightened interest from advocacy groups, government agencies and the general public in ESG matters and increasingly regulators, customers, investors, employees and other stakeholders are focusing on ESG matters and related disclosures. Such governmental, investor and societal attention to ESG matters, including expanding mandatory and voluntary reporting, diligence, and disclosure on topics such as climate change, human capital, labor and risk oversight, could expand the nature, scope, and complexity of matters that we are required to control, assess and report.

We are subject to changing rules and regulations promulgated by a number of governmental and self-regulatory organizations, including the SEC, the New York Stock Exchange and the Financial Accounting Standards Board. Further, new and emerging regulatory initiatives in the U.S., EU and U.K. related to climate change and ESG could adversely affect our business, including, for example, initiatives such as the European Commission's May 2018 "action plan on financing sustainable growth" and Taskforce on Climate-related Financial Disclosures (TCFD)-aligned disclosure requirements in the U.K. These and other rules and regulations continue to evolve in scope and complexity and many new requirements have been created in response to laws enacted by the U.S. congress, making compliance more difficult and uncertain. These changing rules, regulations and stakeholder expectations have resulted in, and are likely to continue to result in, increased general and administrative expenses and increased management time and attention spent complying with or meeting such regulations and expectations. For example, developing and acting on new or ongoing initiatives within the scope of ESG, and collecting, measuring and reporting ESG related information and metrics can be costly, difficult and time consuming and subject to evolving reporting standards, including the SEC's recently proposed climate-related reporting requirements, and similar proposals by other international regulatory bodies. Further, we may choose to communicate certain initiatives and goals, regarding environmental matters, diversity, responsible sourcing and social investments and other ESG related matters, in our SEC filings or in other public disclosures. These initiatives and goals within the scope of ESG could be difficult and expensive to implement and we could be criticized for the accuracy, adequacy or completeness of the disclosure. Statements about our ESG related initiatives and goals, and progress against those goals, may be based on standards for measuring progress that are still developing, internal controls and processes that continue to evolve, and assumptions that are subject to change in the future. We could also be criticized for the scope or nature of such initiatives or goals, or for any revisions thereto. If we are unable to adequately address such ESG matters or if we fail to achieve progress with respect to our goals within the scope of ESG on a timely basis, or at all, or if we or our borrowers fail or are perceived to fail to comply with all laws, regulations, policies and related interpretations, it could negatively impact our reputation and our business results.

Exposure to additional tax liabilities and changes in tax laws and regulations could adversely affect our financial results.

We operate in many jurisdictions with complex and varied tax regimes and are subject to different forms of taxation resulting in a variable effective tax rate. Due to the different tax laws in the many jurisdictions where we operate, we are often required to make subjective determinations. The tax authorities in the various jurisdictions where we carry on business may not agree with the determinations that are made by us with respect to the application of tax law. Such disagreements could result in disputes and, ultimately, in the payment of additional funds to the government authorities in the jurisdictions where we carry on business, which could have an adverse effect on our results of operations. In addition, changes in tax rules or the outcome of tax assessments and audits could have an adverse effect on our results in any particular quarter.

In addition, changes in tax laws or regulations, including developments arising from proposed U.S. tax legislation, the final form of which is uncertain and multi-jurisdictional changes enacted in response to the action items provided by the Organization for Economic Co-operation and Development (OECD), increase tax uncertainty and could impact the company's effective tax rate and provision for income taxes. Given the unpredictability of possible further changes to and the potential interdependency of the United States or foreign tax laws and regulations, it is difficult to predict the cumulative effect of such tax laws and regulations on the company's results of operations.

We may be subject to environmental liability as a result of our role as a property or facility manager or developer of real estate.

Various laws and regulations impose liability on real property owners or operators for the cost of investigating, cleaning up or removing contamination caused by hazardous or toxic substances at a property. In our role as a property or facility manager or developer, we could be held liable as an operator for such costs. This liability may be imposed without regard to the legality of the original actions and without regard to whether we knew of, or were responsible for, the presence of the hazardous or toxic substances. If we fail to disclose environmental issues, we could also be liable to a buyer or lessee of a property. If we incur any such liability, our business could suffer significantly as it could be difficult for us to develop or sell such properties, or borrow funds using such properties as collateral. In the event of a substantial liability, our insurance coverage might be insufficient to pay the full damages, or the scope of available coverage may not cover certain of these liabilities. Additionally, liabilities incurred to comply with more stringent future environmental requirements could adversely affect any or all of our lines of business.

Risks Related to our Internal Controls and Accounting Policies

If we are unable to implement and maintain effective internal control over financial reporting, investors may lose confidence in the accuracy and completeness of our financial reports and our results of operations and stock price could be materially adversely affected.

The accuracy of our financial reporting is dependent on the effectiveness of our internal controls. We are required to provide a report from management to our stockholders on our internal control over financial reporting that includes an assessment of the effectiveness of these controls. Internal control over financial reporting has inherent limitations, including human error, the possibility that controls could be circumvented or become inadequate because of changed conditions, and fraud. Because of these inherent limitations, internal control over financial reporting might not prevent or detect all misstatements or fraud. If we cannot maintain and execute adequate internal control over financial reporting or implement required new or improved controls that provide reasonable assurance of the reliability of the financial reporting and preparation of our financial statements for external use, we could suffer harm to our reputation, incur incremental compliance costs, fail to meet our public reporting requirements on a timely basis, be unable to properly report on our business and our results of operations, or be required to restate our financial statements, and our results of operations, our stock price and our ability to obtain new business could be materially adversely affected.

Our goodwill and other intangible assets could become impaired, which may require us to take material non-cash charges against earnings.

Under current accounting guidelines, we must assess, at least annually and potentially more frequently, whether the value of our goodwill and other intangible assets has been impaired. Any impairment of goodwill or other intangible assets as a result of such analysis would result in a non-cash charge against earnings, and such charge could materially adversely affect our reported results of operations, stockholders' equity and our stock price. A significant and sustained decline in our future cash flows, a significant adverse change in the economic environment, slower growth rates or if our stock price falls below our net book value per share for a sustained period, could result in the need to perform additional impairment analysis in future periods. If we were to conclude that a future write-down of goodwill or other intangible assets is necessary, then we would record such additional charges, which could materially adversely affect our results of operations.

Risks Related to our Investments

We have equity investments in certain companies or projects that we do not control, which subject us to risks related to their respective businesses.

As of December 31, 2022, we had over \$1.3 billion invested in certain companies and projects that we do not control that were accounted for under the cost method of accounting, equity method or fair value. These investments are subject to risks related to the businesses in which we invest, which may be different than the risks inherent in our own business. Factors beyond our control can significantly influence the value of these investments and may cause their fair value to decrease or adversely impact our ability to recognize a gain on such investments. These factors include decisions made by management or controlling stockholders of such businesses, who may have interests different than those of CBRE, and instability in the capital markets. Any of these factors, among others, could cause an impairment, realized and/or unrealized losses in future periods, which could have an adverse effect on our financial condition and results of operations. In the future, we may acquire more equity investments that are not consolidated and may sponsor additional special purpose acquisition companies (SPACs), which could increase our exposure to the risks described above.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

As of December 31, 2022, we occupied offices, excluding affiliates, in the following geographical regions:

	Sales Offices ⁽¹⁾	Corporate Offices	Total
Americas	255	1	256
Europe, Middle East and Africa (EMEA)	250	1	251
Asia Pacific	149	1	150
Total	654	3	657

⁽¹⁾ Includes 122 offices of Turner & Townsend, including 33 in the Americas, 58, in EMEA, and 31 offices in APAC regions.

Some of our offices house employees from more than one of our business segments (i.e. an office might house employees from all three of our business segments). As such, we have provided the above office totals by geographic region rather than by business segment in order to avoid double counting or triple counting our offices.

We do not own any material real property and generally lease our office space and believe it is adequate for our current needs. The most significant terms of the leasing arrangements for our offices are the length of the lease and rent. Our leases have terms varying in duration. The rent payable under our office leases varies significantly from location to location as a result of differences in prevailing commercial real estate rates in different geographic areas. Our management believes that no single office lease is material to our business, results of operations or financial condition. In addition, we believe there is adequate alternative office space available at acceptable rental rates to meet our needs, although adverse movements in rental rates in some markets may negatively affect our profits in those markets when we enter into new leases.

Item 3. Legal Proceedings.

We are a party to a number of pending or threatened lawsuits arising out of, or incident to, our ordinary course of business. We believe that any losses in excess of the amounts accrued therefore as liabilities on our consolidated financial statements are unlikely to be significant, but litigation is inherently uncertain and there is the potential for a material adverse effect on our consolidated financial statements if one or more matters are resolved in a particular period in an amount materially in excess of what we anticipated.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Stock Price Information

Our Class A common stock has traded on the NYSE under the symbol “CBRE” since March 19, 2018. Prior to that, from June 10, 2004 to March 18, 2018, our Class A common stock traded on the NYSE under the symbol “CBG.”

As of February 16, 2023, there were 47 stockholders of record of our Class A common stock. This figure does not include beneficial owners who hold shares in nominee name.

Dividend Policy

We have not declared or paid any cash dividends on any class of our common stock since our inception on February 20, 2001. Any future determination to pay cash dividends will be at the discretion of our board of directors and will depend on our financial condition, acquisition or other opportunities to invest capital, results of operations, capital requirements and other factors that the board of directors deems relevant.

Recent Sales of Unregistered Securities

None.

Issuer Purchases of Equity Securities

Open market share repurchase activity during the three months ended December 31, 2022 was as follows (dollars in thousands, except per share amounts):

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares That May Yet Be Purchased Under the Plans or Programs ⁽¹⁾
October 1, 2022 - October 31, 2022	1,710,392	\$ 70.10	1,710,392	
November 1, 2022 - November 30, 2022	2,103,417	73.53	2,103,417	
December 1, 2022 - December 31, 2022	2,293,711	76.90	2,293,711	
	<u>6,107,520</u>	<u>\$ 73.84</u>	<u>6,107,520</u>	<u>\$ 2,115,795</u>

⁽¹⁾ In November 2021, our board of directors authorized a program for the company to repurchase up to \$2.0 billion of our Class A common stock over five years, effective November 19, 2021 (the “2021 program”). In August 2022, our board of directors authorized an additional \$2.0 billion under this program, bringing the total authorized amount under the 2021 program to a total of \$4.0 billion. During the fourth quarter of 2022, we repurchased \$451.0 million of our common stock under the 2021 program. The remaining \$2.1 billion in the table represents the amount available to repurchase shares under the 2021 program as of December 31, 2022.

Our stock repurchase program does not obligate us to acquire any specific number of shares. Under this program, shares may be repurchased in privately negotiated and/or open market transactions, including under plans complying with Rule 10b5-1 under the Exchange Act. Our stock repurchases have been funded with cash on hand and we intend to continue funding future repurchases with existing cash. We may utilize our stock repurchase programs to continue offsetting the impact of our stock-based compensation program and on a more opportunistic basis if we believe our stock presents a compelling investment compared to other discretionary uses. The timing of any future repurchases and the actual amounts repurchased will depend on a variety of factors, including the market price of our common stock, general market and economic conditions and other factors.

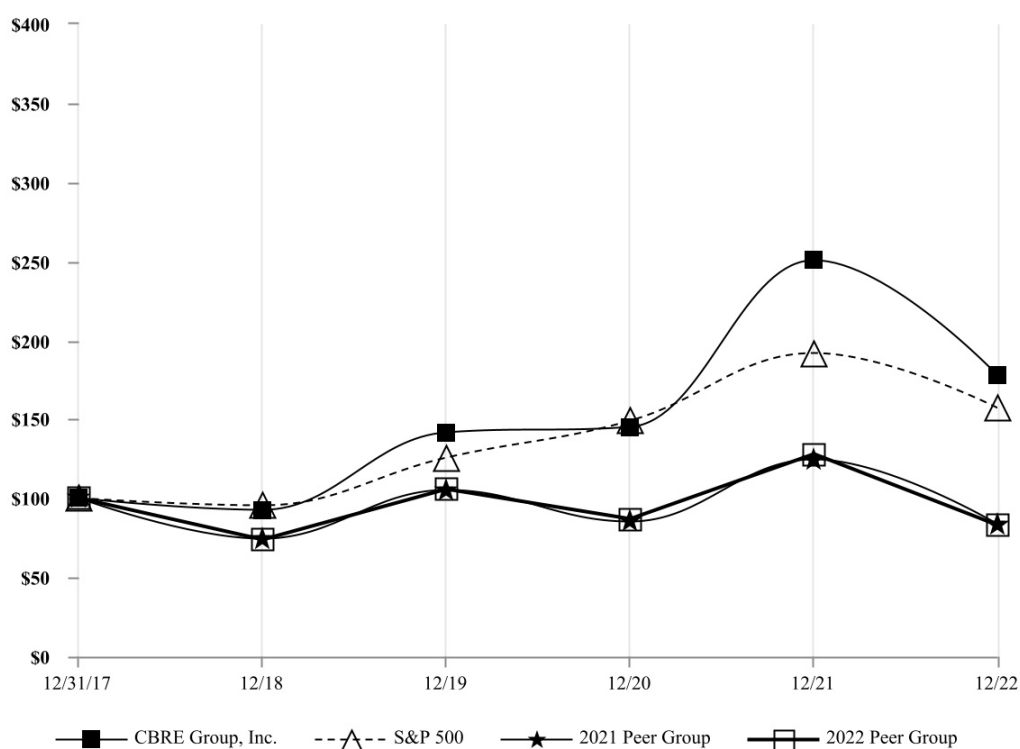
Stock Performance Graph

The graph below matches the 5 Year Cumulative Total Return of holders of CBRE Group, Inc.'s common stock with the cumulative total returns of the S&P 500 Index and a customized peer group of eight companies that includes: JLL, a global commercial real estate services company publicly traded in the U.S., as well as the following companies that have significant commercial real estate or real estate capital markets businesses within the U.S. or globally, that in each case are publicly traded in the U.S. or abroad: Colliers International Group Inc. (CIGI), Cushman & Wakefield plc (CWK), ISS A/S (ISS), Marcus & Millichap, Inc. (MMI), Newmark Group Inc. (NMRK), Savills plc (SVS.L), and Walker & Dunlop, Inc. (WD). These companies are or include divisions with business lines reasonably comparable to some or all of ours, and which represent our current primary competitors. In 2022, we elected to remove Sodexo S.A. (EXHO.PA) from our peer group given that facilities management is a relatively small portion of Sodexo's overall service offerings.

The graph assumes that the value of the investment in our common stock, in each index, and in the peer group (including reinvestment of dividends) was \$100 on December 31, 2017 and tracks it through December 31, 2022. Our stock price performance shown in the graph below is not necessarily indicative of future stock price performance.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN ⁽¹⁾

AMONG CBRE GROUP, INC., THE S&P 500 INDEX ⁽²⁾,
A 2021 PEER GROUP AND A 2022 PEER GROUP



	12/31/17	12/18	12/19	12/20	12/21	12/22
CBRE Group, Inc.	\$ 100.00	\$ 92.45	\$ 141.51	\$ 144.82	\$ 250.54	\$ 177.70
S&P 500	100.00	95.62	125.72	148.85	191.58	156.89
2021 Peer Group	100.00	74.55	105.11	85.40	124.37	83.72
2022 Peer Group	100.00	73.92	105.47	86.74	127.84	83.14

⁽¹⁾ \$100 invested on December 31, 2017 in stock or index-including reinvestment of dividends. Fiscal year ending December 31.

⁽²⁾ Copyright© 2023 Standard & Poor's, a division of S&P Global. All rights reserved.

This graph shall not be deemed incorporated by reference by any general statement incorporating by reference this Annual Report into any filing under the Securities Act or the Exchange Act, except to the extent that we specifically incorporate this information by reference therein, and shall not otherwise be deemed filed under the Securities Act or the Exchange Act.

Item 6. [Reserved]

Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations.

Management’s Discussion and Analysis of Financial Condition and Results of Operations (MD&A) is designed to provide the reader of our financial statements with a narrative from the perspective of management on our financial condition, results of operations, liquidity and certain other factors that may affect future results. This MD&A should be read in conjunction with our consolidated financial statements and related notes included elsewhere in this Annual Report. Discussion regarding our financial condition and results of operations for the year ended December 31, 2021 and comparisons between the years ended December 31, 2021 and 2020 is included in Part II, Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in the company’s 2021 [Annual Report](#) filed with the SEC on February 28, 2022.

Overview

We are the world’s largest commercial real estate services and investment firm, based on 2022 revenue, with leading global market positions in our leasing, property sales, occupier outsourcing and valuation businesses. As of December 31, 2022, the company has approximately 115,000 employees (excluding Turner & Townsend employees) serving clients in more than 100 countries.

We provide services to real estate investors and occupiers. For investors, our services include capital markets (property sales and mortgage origination), mortgage sales and servicing, property leasing, investment management, property management, valuation and development services, among others. For occupiers, our services include facilities management, project management and transaction (property sales and leasing) and consulting services, among others. We provide services under the following brand names: “CBRE” (real estate advisory and outsourcing services); “CBRE Investment Management” (investment management); “Trammell Crow Company” (primarily U.S. development); “Telford Homes” (U.K. development); and “Turner & Townsend Holdings Limited” (Turner & Townsend).

We generate revenue from stable, recurring sources (large multi-year portfolio and per project contracts) and from cyclical, non-recurring sources, including commissions on transactions. Our revenue mix has become heavily weighted towards stable revenue sources, particularly occupier outsourcing, and our dependence on cyclical property sales and lease transaction revenue has declined. We believe we are well-positioned to capture a substantial and growing share of market opportunities at a time when investors and occupiers increasingly prefer to purchase integrated, account-based services on a national and global basis.

In 2022, we generated revenue from a highly diversified base of clients, including more than 95 of the *Fortune* 100 companies. We have been an S&P 500 company since 2006 and in 2022 we were ranked #126 on the *Fortune* 500. We have been voted the most recognized commercial real estate brand in the Lipsey Company survey for 22 years in a row (including 2022). We have also been rated a World’s Most Ethical Company by the Ethisphere Institute for nine consecutive years (including 2022, the most recent year the award has been announced), and included in the Dow Jones World Sustainability Index for four years in a row and the Bloomberg Gender-Equality Index for four years in a row (including 2023).

Critical Accounting Policies and Estimates

Our consolidated financial statements have been prepared in accordance with GAAP, which require us to make estimates and assumptions that affect reported amounts. The estimates and assumptions are based on historical experience and on other factors that we believe to be reasonable. Actual results may differ from those estimates. We believe that the following critical accounting policies represent the areas where more significant judgments and estimates are used in the preparation of our consolidated financial statements.

Revenue Recognition

To recognize revenue in a transaction with a customer, we evaluate the five steps of the Accounting Standards Codification (ASC) Topic 606 revenue recognition framework: (1) identify the contract; (2) identify the performance obligations in the contract; (3) determine the transaction price; (4) allocate the transaction price to the performance obligations and (5) recognize revenue when (or as) the performance obligations are satisfied.

Our revenue recognition policies are consistent with this five step framework. Understanding the complex terms of agreements and determining the appropriate time, amount, and method to recognize revenue for each transaction requires significant judgement. These significant judgements include: (i) determining what point in time or what measure of progress depicts the transfer of control to the customer; (ii) applying the series guidance to certain performance obligations satisfied over

time; (iii) estimating how and when contingencies, or other forms of variable consideration, will impact the timing and amount of recognition of revenue and (iv) determining whether we control third party services before they are transferred to the customer in order to appropriately recognize the associated fees on either a gross or net basis. The timing and amount of revenue recognition in a period could vary if different judgments were made. Our revenues subject to the most judgment are brokerage commission revenue, incentive-based management fees, development fees and third party fees associated with our occupier outsourcing and property management services. For a detailed discussion of our revenue recognition policies, see the Revenue Recognition section within Note 2 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

Business Combinations, Goodwill and Other Intangible Assets

Our acquisitions require the application of purchase accounting, which results in tangible and identifiable intangible assets and liabilities of the acquired entity being recorded at fair value. The difference between the purchase price and the fair value of net assets acquired is recorded as goodwill. Deferred consideration arrangements granted in connection with a business combination are evaluated to determine whether all or a portion is, in substance, additional purchase price or compensation for services. Additional purchase price is added to the fair value of consideration transferred in the business combination and compensation is included in operating expenses in the period it is incurred. In determining the fair values of assets and liabilities acquired in a business combination, we use a variety of valuation methods including present value, depreciated replacement cost, market values (where available) and selling prices less costs to dispose. We are responsible for determining the valuation of assets and liabilities and for the allocation of purchase price to assets acquired and liabilities assumed.

Assumptions must often be made in determining fair values, particularly where observable market values do not exist. Assumptions may include discount rates, growth rates, cost of capital, royalty rates, tax rates and remaining useful lives. These assumptions can have a significant impact on the value of identifiable assets and accordingly can impact the value of goodwill recorded. Different assumptions could result in different values being attributed to assets and liabilities. Since these values impact the amount of annual depreciation and amortization expense, different assumptions could also impact our statement of operations and could impact the results of future asset impairment reviews.

We are required to test goodwill and other intangible assets deemed to have indefinite useful lives for impairment at least annually, or more often if circumstances or events indicate a change in the impairment status, in accordance with ASC Topic 350, “*Intangibles – Goodwill and Other*” (Topic 350). We have the option to perform a qualitative assessment with respect to any of our reporting units to determine whether a quantitative impairment test is needed. We are permitted to assess based on qualitative factors whether it is more likely than not that a reporting unit’s fair value is less than its carrying amount before applying the quantitative goodwill impairment test. If it is more likely than not that the fair value of a reporting unit is less than its carrying amount, we would conduct a quantitative goodwill impairment test. If not, we do not need to apply the quantitative test. The qualitative test is elective and we can go directly to the quantitative test rather than making a more-likely-than-not assessment based on an evaluation of qualitative factors. When performing a quantitative test, we use a discounted cash flow approach to estimate the fair value of our reporting units. Management’s judgment is required in developing the assumptions for the discounted cash flow model. These assumptions include revenue growth rates, profit margin percentages, discount rates, etc. Due to the many variables inherent in the estimation of a business’s fair value and the relative size of our goodwill, if different assumptions and estimates were used, it could have an adverse effect on our impairment analysis.

For additional information on business combinations, goodwill and intangible asset impairment testing, see Notes 2 and 9 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

Income Taxes

Income taxes are accounted for under the asset and liability method in accordance with the “*Accounting for Income Taxes*,” Topic of the FASB ASC (Topic 740). Deferred tax assets and liabilities are determined based on temporary differences between the financial reporting and tax basis of assets and liabilities and operating loss and tax credit carry forwards. Deferred tax assets and liabilities are measured by applying enacted tax rates and laws and are released in the years in which the temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Valuation allowances are provided against deferred tax assets when it is more likely than not that some portion or all of the deferred tax asset will not be realized.

Accounting for tax positions requires judgments, including estimating reserves for potential uncertainties. We also assess our ability to utilize tax attributes, including those in the form of carryforwards, for which the benefits have already been reflected in the financial statements. We do not record valuation allowances for deferred tax assets that we believe will be realized in future periods. While we believe the resulting tax balances as of December 31, 2022 and 2021 are appropriately accounted for in accordance with Topic 740, as applicable, the ultimate outcome of such matters could result in favorable or unfavorable adjustments to our consolidated financial statements and such adjustments could be material.

Our future effective tax rate could be adversely affected by earnings being lower than anticipated in countries that have lower statutory rates and higher than anticipated in countries that have higher statutory rates, changes in the valuation of our deferred tax assets or liabilities, or changes in tax laws, regulations, or accounting principles, as well as certain discrete items.

See Note 15 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report for further information regarding income taxes.

Contingencies

Pursuant to ASC Topic 450, we evaluate whether any existing conditions existed as of the financial statement issuance date which may result in a loss contingent upon one or more future events occurring or not occurring. Assessing contingent liabilities involves significant judgment. If the assessment indicates that a loss is probable and the amount is reasonably estimable, we accrue an estimated liability in our financial statements. If the assessment indicates that a potentially material loss contingency is not probable but is reasonably possible, or is probable but cannot be estimated, then the nature of the contingent liability and an estimate of the range of potential losses, if determinable and material, would be disclosed. We determine the amount of estimated liability to accrue, if any, after thorough evaluation of key information available that could impact the size and timing of the potential loss on a case-by-case basis. Given the significant judgment involved with such estimates, the potential liability may change in the future as new information becomes available. We do not recognize gain contingencies until the contingency is completely resolved and the associated amounts are probable of collection.

See Notes 13 and 22 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report for further information regarding Commitments and Contingencies and Telford Fire Safety Remediation, respectively.

Investments in unconsolidated subsidiaries – fair value option

We have elected the fair value option for certain of our investments in non-public entities to align with our strategy for these investments. Such investments without readily determinable fair values are classified as Level 3 in the fair value hierarchy. We estimate the fair market value on a recurring basis using significant unobservable inputs which requires judgment due to the absence of market prices or similar assets in active markets. In determining the estimated fair value of these investments, we utilize appropriate valuation techniques including discounted cash flow analyses and Monte Carlo simulations. Key inputs to the discounted cash flow analyses include projected cash flows, terminal growth rate, and discount rate. Key inputs to Monte Carlo simulations include stock price, volatility, risk free rate, and dividend yield.

Changes in the fair value of equity investments under the fair value option are recorded as Equity income from unconsolidated subsidiaries in the Consolidated Statements of Operations.

New Accounting Pronouncements

See New Accounting Pronouncements discussion within Note 3 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

Seasonality

In a typical year, a significant portion of our revenue is seasonal, which an investor should keep in mind when comparing our financial condition and results of operations on a quarter-by-quarter basis. Historically, our revenue, operating income, net income and cash flow from operating activities have tended to be lowest in the first quarter and highest in the fourth quarter of each year. Revenue, earnings and cash flow have generally been concentrated in the fourth calendar quarter due to the focus on completing sales, financing and leasing transactions prior to year-end. The sharp rise in interest rates to combat inflation and resultant economic uncertainty may cause seasonality to deviate from historical patterns.

Inflation

Our business was affected by high inflation in 2022. Most notably, the central banks' moves to tame high inflation by rapidly raising interest rates sharply increased the cost of debt and dramatically constrained its availability, resulting in a significant decline in sales and financing transaction activity throughout the year's second half. In addition, rising price levels across the economy required us to increase compensation expense to retain top talent and our development businesses incurred higher input costs for construction materials. On the other hand, we believe that parts of our business have protections against inflation. The company continues to monitor inflation, monetary policy changes in response to inflation and potentially adverse effects on our business.

Items Affecting Comparability

When you read our financial statements and the information included in this Annual Report, you should consider that we have experienced, and continue to experience, several material trends and uncertainties (particularly those caused or exacerbated by Covid-19) that have affected our financial condition and results of operations that make it challenging to predict our future performance based on our historical results. We believe that the following material trends and uncertainties are crucial to an understanding of the variability in our historical earnings and cash flows and the potential for continued variability in the future.

Macroeconomic Conditions

Economic trends and government policies affect global and regional commercial real estate markets as well as our operations directly. These include overall economic activity and employment growth, with specific sensitivity to growth in office-based employment; interest rate levels and changes in interest rates; the cost and availability of credit; and the impact of tax and regulatory policies. Periods of economic weakness or recession, significantly rising interest rates, fiscal uncertainty, declining employment levels, decreasing demand for commercial real estate, falling real estate values, disruption to the global capital or credit markets, or the public perception that any of these events may occur, will negatively affect the performance of our business.

Compensation is our largest expense and our sales and leasing professionals generally are paid on a commission and/or bonus basis that correlates with their revenue production. As a result, the negative effects on our operating margins during difficult market conditions, such as the environment that prevailed in the early months of the Covid-19 pandemic, are partially mitigated by the inherent variability of our compensation cost structure. In addition, when negative economic conditions have been particularly severe, like during the Covid-19 pandemic, we have moved decisively to lower operating expenses to improve financial performance. We began efforts in 2022 and will continue to reduce expenses in 2023 in light of the intensifying macroeconomic challenges, including rapidly rising interest rates to combat inflation. Additionally, our contractual revenue has increased primarily as a result of growth in our outsourcing business, and we believe this contractual revenue should partially offset the negative impacts that macroeconomic deterioration could have on other parts of our business. We also believe that we have significantly improved the resiliency of our business by expanding the business strategically across asset types, clients, geographies and lines of business. Nevertheless, adverse global and regional economic trends will pose significant risks to the performance of our consolidated operations and financial condition.

Effects of Acquisitions and Investments

We have historically made significant use of strategic acquisitions to add and enhance service capabilities around the world. On November 1, 2021, we acquired a 60% controlling ownership interest in Turner & Townsend Holdings Limited (Turner & Townsend). Turner & Townsend is a leading professional services company specializing in program management, project management, cost and commercial management and advisory services across the real estate, infrastructure and natural resources sectors, and is consolidated and reported in our Global Workplace Solutions segment.

Strategic in-fill acquisitions have also played a key role in strengthening our service offerings. The companies we acquired have generally been regional or specialty firms that complement our existing platform, or independent affiliates, which, in some cases, we held a small equity interest.

During 2022, we completed eleven in-fill acquisitions: four in the Global Workplace Solutions segment and seven in the Advisory Services segment.

We believe strategic acquisitions can significantly decrease the cost, time and resources necessary to attain a meaningful competitive position – or expand our capabilities – within targeted markets or business lines. In general, however, most acquisitions will initially have an adverse impact on our operating income and net income as a result of transaction-related expenditures, including severance, lease termination, transaction and deferred financing costs, as well as costs and charges associated with integrating the acquired business and integrating its financial and accounting systems into our own.

Our acquisition structures often include deferred and/or contingent purchase consideration in future periods that are subject to the passage of time or achievement of certain performance metrics and other conditions. As of December 31, 2022, we have accrued deferred purchase and contingent considerations totaling \$574.3 million, which is included in “Accounts payable and accrued expenses” and in “Other long-term liabilities” in the accompanying consolidated balance sheets set forth in Item 8 of this Annual Report.

We believe there are attractive companies that do not fit seamlessly into our services offering but that would benefit from an investment from and strategic partnership with us. These benefits include for our company, more tools and services with which to meet our clients’ needs, and for the companies with which we partner, more sales channels and faster growth. During 2022, we made a \$100.7 million investment in VTS, a technology company that helps leasing agents better serve property owners and enables property managers to create more engaging experiences for building tenants. Also, during 2022, we made an incremental investment of \$100 million in Industrious, a leading provider of premium flexible workplace solutions in the U.S., bringing our current non-controlling ownership stake to approximately 45%. During 2021, our company-sponsored SPAC merged with and into Altus Power, Inc. (Altus), which trades on the NYSE under the symbol “AMPS”. We have approximately 15.5% common shares ownership in AMPS at December 31, 2022.

International Operations

We conduct a significant portion of our business and employ a substantial number of people outside the U.S. As a result, we are subject to risks associated with doing business globally. Our Real Estate Investments business has significant euro and British pound denominated assets under management, as well as associated revenue and earnings in Europe. In addition, our Global Workplace Solutions business also derives significant revenue and earnings in foreign currencies, such as the euro and British pound sterling. Our business has been significantly impacted this year by the sharp appreciation of the U.S. dollar against these and other foreign currencies. Further fluctuations in foreign currency exchange rates may continue to produce corresponding changes in our AUM, revenue and earnings.

Our businesses could suffer from the effects of public health crises (such as the ongoing Covid-19 pandemic), geopolitical events (such as the war in Ukraine) or economic disruptions (or the perception that such disruptions may occur), rapid changes in interest rates, liquidity, the macroeconomic backdrop or regulatory or financial market uncertainty.

During the year ended December 31, 2022, approximately 43.3% of our revenue was transacted in foreign currencies. The following table sets forth our revenue derived from our most significant currencies (dollars in thousands):

	Year Ended December 31,				
	2022		2021		
United States dollar	\$	17,470,227	56.7 %	\$ 15,700,279	56.6 %
British pound sterling		4,084,408	13.2 %	3,617,504	13.0 %
euro		2,854,233	9.3 %	2,840,203	10.2 %
Canadian dollar		1,232,134	4.0 %	1,068,838	3.9 %
Australian dollar		769,244	2.5 %	613,847	2.2 %
Chinese yuan		534,276	1.7 %	475,185	1.7 %
Indian rupee		533,545	1.7 %	454,859	1.6 %
Japanese yen		407,308	1.3 %	373,828	1.3 %
Swiss franc		391,549	1.3 %	391,062	1.4 %
Singapore dollar		353,689	1.1 %	309,376	1.1 %
Other currencies ⁽¹⁾		2,197,633	7.2 %	1,901,055	7.0 %
Total revenue	\$	30,828,246	100.0 %	\$ 27,746,036	100.0 %

⁽¹⁾ Approximately 48 currencies comprise 7.2% of our revenue for the year ended December 31, 2022, and approximately 48 currencies comprise 7.0% of our revenue for the year ended December 31, 2021.

Although we operate globally, we report our results in U.S. dollars. As a result, the strengthening or weakening of the U.S. dollar may positively or negatively impact our reported results. For example, we estimate that had the British pound sterling-to-U.S. dollar exchange rates been 10% higher during the year ended December 31, 2022, the net impact would have been a decrease in pre-tax income of \$24.1 million. Had the euro-to-U.S. dollar exchange rates been 10% higher during the year ended December 31, 2022, the net impact would have been an increase in pre-tax income of \$14.8 million. These hypothetical calculations estimate the impact of translating results into U.S. dollars and do not include an estimate of the impact that a 10% change in the U.S. dollar against other currencies would have had on our foreign operations.

Fluctuations in foreign currency exchange rates may result in corresponding fluctuations in revenue and earnings as well as the assets under management for our investment management business, which could have a material adverse effect on our business, financial condition and operating results. Due to the constantly changing currency exposures to which we are subject and the volatility of currency exchange rates, we cannot predict the effect of exchange rate fluctuations upon future operating results. In addition, fluctuations in currencies relative to the U.S. dollar may make it more difficult to perform period-to-period comparisons of our reported results of operations. Our international operations also are subject to, among other things, political instability and changing regulatory environments, which affect the currency markets and which as a result may adversely affect our future financial condition and results of operations. We routinely monitor these risks and related costs and evaluate the appropriate amount of oversight to allocate towards business activities in foreign countries where such risks and costs are particularly significant.

Results of Operations

The following table sets forth items derived from our consolidated statements of operations for the years ended December 31, 2022 and 2021 (dollars in thousands):

	Year Ended December 31,			
	2022		2021	
Revenue:				
Net revenue:				
Facilities management	\$ 5,136,565	16.7 %	\$ 4,872,230	17.6 %
Property management	1,777,477	5.8 %	1,691,948	6.1 %
Project management	2,735,113	8.9 %	1,537,215	5.5 %
Valuation	764,453	2.5 %	733,523	2.6 %
Loan servicing	311,492	1.0 %	305,736	1.1 %
Advisory leasing	3,872,379	12.6 %	3,306,548	11.9 %
Capital markets:				
Advisory sales	2,522,728	8.2 %	2,789,573	10.1 %
Commercial mortgage origination	562,807	1.8 %	701,368	2.5 %
Investment management	594,867	1.9 %	556,154	2.0 %
Development services	514,742	1.7 %	535,562	1.9 %
Corporate, other and eliminations	(16,090)	(0.1) %	(20,356)	0.0 %
Total net revenue	18,776,533	60.9 %	17,009,501	61.3 %
Pass through costs also recognized as revenue	12,051,713	39.1 %	10,736,535	38.7 %
Total revenue	30,828,246	100.0 %	27,746,036	100.0 %
Costs and expenses:				
Cost of revenue	24,239,488	78.6 %	21,579,507	77.8 %
Operating, administrative and other	4,649,460	15.1 %	4,074,184	14.7 %
Depreciation and amortization	613,088	2.0 %	525,871	1.9 %
Asset impairments	58,713	0.2 %	—	0.0 %
Total costs and expenses	29,560,749	95.9 %	26,179,562	94.4 %
Gain on disposition of real estate	244,418	0.8 %	70,993	0.3 %
Operating income	1,511,915	4.9 %	1,637,467	5.9 %
Equity income from unconsolidated subsidiaries	228,998	0.7 %	618,697	2.2 %
Other (loss) income	(11,864)	0.0 %	203,609	0.7 %
Interest expense, net of interest income	68,999	0.2 %	50,352	0.2 %
Write-off of financing costs on extinguished debt	1,860	0.0 %	—	0.0 %
Income before provision for income taxes	1,658,190	5.4 %	2,409,421	8.7 %
Provision for income taxes	234,230	0.8 %	567,506	2.0 %
Net income	1,423,960	4.6 %	1,841,915	6.6 %
Less: Net income attributable to non-controlling interests	16,590	0.1 %	5,341	0.0 %
Net income attributable to CBRE Group, Inc.	1,407,370	4.6 %	1,836,574	6.6 %
Core EBITDA	\$ 2,924,264		\$ 2,863,653	
Consolidated Adjusted EBITDA	\$ 2,749,111		\$ 3,074,412	

Net revenue, segment operating profit on revenue margin, segment operating profit on net revenue margin, core EBITDA and consolidated adjusted EBITDA are not recognized measurements under accounting principles generally accepted in the United States, or GAAP. When analyzing our operating performance, investors should use these measures in addition to, and not as an alternative for, their most directly comparable financial measure calculated and presented in accordance with GAAP. We generally use these non-GAAP financial measures to evaluate operating performance and for other discretionary purposes. We believe these measures provide a more complete understanding of ongoing operations, enhance comparability of current results to prior periods and may be useful for investors to analyze our financial performance because they eliminate the impact of selected costs and charges that may obscure the underlying performance of our business and related trends. Because not all companies use identical calculations, our presentation of net revenue, core EBITDA and consolidated adjusted EBITDA may not be comparable to similarly titled measures of other companies.

Net revenue is gross revenue less costs largely associated with subcontracted vendor work performed for clients and generally has no margin. Segment operating profit on revenue margin is computed by dividing segment operating profit by revenue and provides a comparable profitability measure against our peers. Segment operating profit on net revenue margin is computed by dividing segment operating profit by net revenue and is a better indicator of the segment's margin since it does not include the diluting effect of pass through revenue which generally has no margin.

We use core EBITDA and consolidated adjusted EBITDA as indicators of consolidated financial performance. Consolidated adjusted EBITDA represents earnings before the portion attributable to non-controlling interests, net interest expense, write-off of financing costs on extinguished debt, income taxes, depreciation and amortization, asset impairments, adjustments related to certain carried interest incentive compensation expense (reversal) to align with the timing of associated revenue, fair value adjustments to real estate assets acquired in the Telford acquisition (purchase accounting) that were sold in the period, costs incurred related to legal entity restructuring, integration and other costs related to acquisitions, costs associated with efficiency and cost-reduction initiatives, and a provision associated with Telford's fire safety remediation efforts. Core EBITDA removes from adjusted EBITDA the impact of fair value changes on certain non-core non-controlling equity investments that are not directly related to our business segments as these could fluctuate significantly period over period and also net gain on deconsolidation upon merger of the SPAC with and into Altus Power, net of associated costs, in 2021. We believe that investors may find these measures useful in evaluating our operating performance compared to that of other companies in our industry because their calculations generally eliminate the effects of acquisitions, which would include impairment charges of goodwill and intangibles created from acquisitions, the effects of financings and income taxes and the accounting effects of capital spending.

Consolidated adjusted EBITDA and core EBITDA are not intended to be a measure of free cash flow for our discretionary use because they do not consider certain cash requirements such as tax and debt service payments. These measures may also differ from the amounts calculated under similarly titled definitions in our credit facilities and debt instruments, which are further adjusted to reflect certain other cash and non-cash charges and are used by us to determine compliance with financial covenants therein and our ability to engage in certain activities, such as incurring additional debt. We also use core EBITDA as a significant component when measuring our operating performance under our employee incentive compensation programs.

Consolidated adjusted EBITDA and core EBITDA are calculated as follows (dollars in thousands):

	Year Ended December 31,	
	2022	2021
Net income attributable to CBRE Group, Inc.	\$ 1,407,370	\$ 1,836,574
Net income attributable to non-controlling interests	16,590	5,341
Net income	1,423,960	1,841,915
Add:		
Depreciation and amortization	613,088	525,871
Asset impairments	58,713	—
Interest expense, net of interest income	68,999	50,352
Write-off of financing costs on extinguished debt	1,860	—
Provision for income taxes	234,230	567,506
Carried interest incentive compensation (reversal) expense to align with the timing of associated revenue	(4,228)	49,941
Impact of fair value adjustments to real estate assets acquired in the Telford acquisition (purchase accounting) that were sold in period	(5,115)	(5,725)
Costs incurred related to legal entity restructuring	13,447	—
Integration and other costs related to acquisitions	40,702	44,552
Costs associated with efficiency and cost-reduction initiatives	117,534	—
Provision associated with Telford's fire safety remediation efforts	185,921	—
Consolidated Adjusted EBITDA	\$ 2,749,111	\$ 3,074,412
Adjustments:		
Net fair value adjustments on strategic non-core investments	175,153	(54,354)
Net gain on deconsolidation upon merger of the SPAC with and into Altus Power, net of associated costs	—	(156,405)
Core EBITDA	\$ 2,924,264	\$ 2,863,653

Year Ended December 31, 2022 Compared to Year Ended December 31, 2021

We reported consolidated net income of \$1.4 billion for the year ended December 31, 2022 on revenue of \$30.8 billion as compared to consolidated net income of \$1.8 billion on revenue of \$27.7 billion for the year ended December 31, 2021.

Our revenue on a consolidated basis for the year ended December 31, 2022 increased by \$3.1 billion, or 11.1%, as compared to the year ended December 31, 2021. Although revenue increased across all three of our segments, Global Workplace Solutions segment (GWS) revenue growth was the main driver. Revenue in our GWS segment increased by \$2.8 billion or 16.1% as compared to 2021 primarily due to an increase in the project management revenue stream which also now reflects a full year contribution from our Turner & Townsend partnership, supplemented by modest growth in our facilities management business. Advisory Services revenue increased by \$307.7 million, or 3.2%, mainly due to growth in leasing, property management and valuation, offset by challenges experienced by our capital markets (sales and commercial mortgage origination) business. Revenue in the Real Estate Investment segment was relatively flat as higher asset management fees driven by asset appreciation were offset by lower carried interest revenue and decreased development and construction revenue. Foreign currency translation had a 4.2% negative impact on total revenue during the year ended December 31, 2022, primarily driven by weakness in the British pound sterling, euro and Japanese yen.

Our cost of revenue on a consolidated basis increased by \$2.7 billion, or 12.3%, during the year ended December 31, 2022 as compared to the same period in 2021. This increase was primarily due to higher costs associated with our Global Workplace Solutions segment given the growth in our facilities management and project management businesses, including full year contribution from Turner & Townsend, and higher commission expense associated with our Advisory Services segment primarily due to growth in our leasing business. Foreign currency translation had a 4.1% positive impact on total cost of revenue during the year ended December 31, 2022. Cost of revenue as a percentage of revenue increased slightly from 77.8% for the year ended December 31, 2021 to 78.6% for the year ended December 31, 2022, mainly due to significant growth in the sales and leasing businesses earlier in the year leading to higher commission payouts.

Our operating, administrative and other expenses on a consolidated basis increased by \$575.3 million, or 14.1%, during the year ended December 31, 2022 as compared to the same period in 2021. The increase was primarily due to an increase in compensation and benefits for support staff given the expansion of the overall business, travel and entertainment related expenses during the first half of the year, provision related to Telford Home's building and fire safety remediation work, and charges associated with efficiency and cost reduction initiatives as compared to the same period in 2021. In addition, the current year also included operating expenses from our Turner & Townsend business. This increase was partially offset by lower overall incentive compensation in the current year as compared to the prior year. Foreign currency translation also had a 4.6% positive impact on total operating expenses during the year ended December 31, 2022. Operating expenses as a percentage of revenue increased slightly to 15.1% for the year ended December 31, 2022 from 14.7% for the year ended December 31, 2021.

Our depreciation and amortization expense on a consolidated basis increased by \$87.2 million, or 16.6%, during the year ended December 31, 2022 as compared to the same period in 2021. This increase was primarily attributable to amortization of backlog and customer relationship intangibles from the acquisition of Turner & Townsend, with minimal comparable activity in the prior period.

Our asset impairments on a consolidated basis totaled \$58.7 million during the year ended December 31, 2022. We recorded \$10.4 million in asset impairment related to our exit of the Advisory Services business in Russia; \$26.4 million and \$21.9 million of non-cash goodwill impairment and trade name impairment charges, respectively, in our Real Estate Investment segment related to Telford Homes. The charges are attributable to the effect of elevated inflation on construction, materials and labor costs, which will reduce Telford Homes' profitability because the sales prices for the build-to-rent developments are fixed at the time the developments are sold to a long-term investor. This resulted in a need to impair the above assets due to an expected reduction in cash flows and profitability. We did not record any asset impairments during the year ended December 31, 2021.

Our gain on disposition of real estate on a consolidated basis increased by \$173.4 million during the year ended December 31, 2022 as compared to the same period in 2021 due to significant gains associated with certain property sales on consolidated deals within our Real Estate Investments segment.

Our equity income from unconsolidated subsidiaries on a consolidated basis decreased by \$389.7 million, or 63.0%, during the year ended December 31, 2022 as compared to the same period in 2021, primarily driven by a lower equity pickup and net negative fair value adjustment in our non-core investment portfolio this year. In addition, we recorded higher equity earnings associated with property sales reported in our Real Estate Investments segment last year as compared to this year.

Our other losses on a consolidated basis were \$11.9 million for the year ended December 31, 2022 versus other income of \$203.6 million for the same period in the prior year. In the prior year we recorded a non-cash gain of \$187.5 million as part of the deconsolidation of CBRE Acquisition Holdings, Inc. (CBAH) upon its merger with and into Altus Power, Inc.

Our consolidated interest expense, net of interest income, increased by \$18.6 million, or 37.0%, for the year ended December 31, 2022 as compared to the same period in 2021. This increase was primarily due to interest expense related to deferred purchase consideration associated with the Turner & Townsend acquisition and interest expense associated with the net borrowings on the revolving credit facilities.

Our provision for income taxes on a consolidated basis was \$234.2 million for the year ended December 31, 2022 as compared to \$567.5 million for the same period in 2021. Our effective tax rate decreased from 23.6% for the year ended December 31, 2021 to 14.1% for the year ended December 31, 2022. The decrease is primarily due to the outside basis differences recognized as a result of a legal entity restructuring.

On August 16, 2022, the Inflation Reduction Act (IRA), a budget reconciliation package that contained legislation targeting energy security and climate changes, healthcare and taxes, was signed into law. With respect to corporate-level taxes, the IRA included a 1% excise tax on stock buybacks and a 15% minimum corporate minimum tax (CAMT) based on financial statement income of certain U.S. companies that meet the \$1 billion profitability threshold criteria, effective after December 31, 2022. We continue to evaluate the impact of the legislation and forthcoming administrative guidance and regulations to our financial statements and results of operations.

Segment Operations

We organize our operations around, and publicly report our financial results on, three global business segments: (1) Advisory Services; (2) Global Workplace Solutions; and (3) Real Estate Investments. We also have a Corporate and other segment. Corporate primarily consists of corporate overhead costs. Other consists of activities from strategic non-core non-controlling equity investments and is considered an operating segment but does not meet the aggregation criteria for presentation as a separate reportable segment and is, therefore, combined with Corporate and reported as Corporate and other. It also includes eliminations related to inter-segment revenue. For additional information on our segments, see Note 19 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

Advisory Services

The following table summarizes our results of operations for our Advisory Services operating segment for the years ended December 31, 2022 and 2021 (dollars in thousands):

	Year Ended December 31,			
	2022		2021	
Revenue:				
Net revenue:				
Property management	\$ 1,777,477	18.0 %	\$ 1,691,948	17.7 %
Valuation	764,453	7.7 %	733,523	7.7 %
Loan servicing	311,492	3.2 %	305,736	3.2 %
Advisory leasing	3,872,379	39.2 %	3,306,548	34.5 %
Capital markets:				
Advisory sales	2,522,728	25.5 %	2,789,573	29.1 %
Commercial mortgage origination	562,807	5.7 %	701,368	7.3 %
Total segment net revenue	9,811,336	99.3 %	9,528,696	99.5 %
Pass through costs also recognized as revenue	72,170	0.7 %	47,063	0.5 %
Total segment revenue	9,883,506	100.0 %	9,575,759	100.0 %
Costs and expenses:				
Cost of revenue	5,979,935	60.5 %	5,642,202	58.9 %
Operating, administrative and other	2,055,494	20.8 %	1,886,308	19.7 %
Depreciation and amortization	310,823	3.1 %	311,397	3.3 %
Asset impairments	10,351	0.1 %	—	0.0 %
Total costs and expenses	8,356,603	84.5 %	7,839,907	81.9 %
Gain on disposition of real estate	27	0.0 %	—	0.0 %
Operating income	1,526,930	15.5 %	1,735,852	18.1 %
Equity income from unconsolidated subsidiaries	14,662	0.1 %	24,778	0.3 %
Other income (loss)	1,423	0.0 %	(8,800)	(0.1)%
Add-back: Depreciation and amortization	310,823	3.1 %	311,397	3.3 %
Add-back: Asset impairments	10,351	0.1 %	—	0.0 %
Adjustments:				
Costs associated with efficiency and cost-reduction initiatives	45,735	0.5 %	—	0.0 %
Segment operating profit and segment operating profit on revenue margin	\$ 1,909,924	19.3 %	\$ 2,063,227	21.5 %
Segment operating profit on net revenue margin		19.5 %		21.7 %

Year Ended December 31, 2022 Compared to Year Ended December 31, 2021

Revenue increased by \$307.7 million, or 3.2%, for the year ended December 31, 2022 as compared to the year ended December 31, 2021 driven by growth in leasing, valuation and property management, offset by a significant decline in capital markets (property sales and commercial mortgage origination) business. Leasing revenue increased 17.1%, primarily due to an uptick in office and industrial sectors in the U.S. Our valuation revenue was up 4% driven by increased revenue per assignment and higher demand given the market conditions, mainly in the U.S. and U.K. markets. We also experienced an increase in our property management business in the Americas due to client wins. The above growth was partially offset by a drop in sales revenue and commercial mortgage origination revenue, mainly in the Americas region. The current macroeconomic and fiscal environment has put significant stress on the lending market making it difficult to access capital at a reasonable cost. Sales activity remained strong in the EMEA and APAC region, growing at 4% and 13%, respectively, on a local currency basis. Foreign currency translation had a 3.5% negative impact on total revenue during the year ended December 31, 2022, primarily driven by weakness in the euro, British pound sterling and Japanese yen.

Cost of revenue increased by \$337.7 million, or 6.0%, for the year ended December 31, 2022 as compared to the same period in 2021, primarily due to increased commission expense resulting from higher sales generated earlier in the year and an overall increase in leasing revenue. Foreign currency translation also had a 3.3% positive impact on total cost of revenue during the year ended December 31, 2022. Cost of revenue as a percentage of revenue increased to 60.5% for the year ended December 31, 2022 from 58.9% for the same period in 2021. This was due to a shift in the composition of total revenue where high margin debt origination revenue decreased as a percentage of total revenue this year versus the same period last year and also due to growth in sales revenue in the earlier part of the year triggering higher commissions for certain producers.

Operating, administrative and other expenses increased by \$169.2 million, or 9.0%, for the year ended December 31, 2022 as compared to the year ended December 31, 2021. This increase was primarily due to severance expense incurred under the cost savings initiatives, an increase in travel and entertainment expenses during the first half of the year, support staff compensation and related benefits, employee recruitment and temporary help related charges, partially offset by lower incentive compensation expense, as compared to the year ended December 31, 2021. Foreign currency translation also had a 4.6% positive impact on total operating expenses during the year ended December 31, 2022.

In connection with the origination and sale of mortgage loans for which the company retains servicing rights, we record servicing assets or liabilities based on the fair value of the retained mortgage servicing rights (MSRs) on the date the loans are sold. Upon origination of a mortgage loan held for sale, the fair value of the mortgage servicing rights to be retained is included in the forecasted proceeds from the anticipated loan sale and results in a net gain (which is reflected in revenue). Subsequent to the initial recording, MSRs are amortized (within amortization expense) and carried at the lower of amortized cost or fair value in other intangible assets in the accompanying consolidated balance sheets. They are amortized in proportion to and over the estimated period that the servicing income is expected to be received. For the year ended December 31, 2022, MSRs contributed to operating income \$134.1 million of gains recognized in conjunction with the origination and sale of mortgage loans, offset by \$163.7 million of amortization of related intangible assets. For the year ended December 31, 2021, MSRs contributed \$185.1 million of gains recognized in conjunction with the origination and sale of mortgage loans, offset by \$172.3 million of amortization of related intangible assets. The decline was associated with lower origination activity given the higher cost of debt.

Equity income from unconsolidated subsidiaries decreased by \$10.1 million, or 40.8%, for the year ended December 31, 2022 compared to the same period in the prior year, due to a lower net fair value adjustment on one of our strategic non-controlling equity investments.

Depreciation expense was up by \$5.7 million, or 4.5%, due to accelerated depreciation expense associated with certain cost savings initiatives. Amortization expense during the year ended December 31, 2022 decreased by \$6.2 million, as compared to the same period in 2021, primarily due to lower amortization on the MSRs.

Global Workplace Solutions

The following table summarizes our results of operations for our Global Workplace Solutions operating segment for the years ended December 31, 2022 and 2021 (dollars in thousands):

	Year Ended December 31,			
	2022		2021	
Revenue:				
Net revenue:				
Facilities management	\$	5,136,565	25.9 %	\$ 4,872,230 28.5 %
Project management		2,735,113	13.8 %	1,537,215 9.0 %
Total segment net revenue		7,871,678	39.7 %	6,409,445 37.5 %
Pass through costs also recognized as revenue		11,979,543	60.3 %	10,689,472 62.5 %
Total segment revenue		19,851,221	100.0 %	17,098,917 100.0 %
Costs and expenses:				
Cost of revenue		17,947,859	90.4 %	15,601,137 91.2 %
Operating, administrative and other		1,080,493	5.4 %	839,117 4.9 %
Depreciation and amortization		253,013	1.3 %	158,757 0.9 %
Total costs and expenses		19,281,365	97.1 %	16,599,011 97.1 %
Operating income		569,856	2.9 %	499,906 3.0 %
Equity income from unconsolidated subsidiaries		1,118	0.0 %	1,720 0.0 %
Other income		6,615	0.0 %	3,104 0.1 %
Add-back: Depreciation and amortization		253,013	1.3 %	158,757 0.9 %
Adjustments:				
Integration and other costs related to acquisitions		40,702	0.2 %	44,552 0.3 %
Costs associated with efficiency and cost-reduction initiatives		27,917	0.1 %	— 0.0 %
Segment operating profit and segment operating profit on revenue margin	\$	899,221	4.5 %	\$ 708,039 4.1 %
Segment operating profit on net revenue margin			11.4 %	11.0 %

Year Ended December 31, 2022 Compared to Year Ended December 31, 2021

Revenue increased by \$2.8 billion, or 16.1%, for the year ended December 31, 2022 as compared to the year ended December 31, 2021. The increase was primarily attributable to growth in our project management line of business, supplemented by moderate growth in facilities management revenue. We recorded approximately \$1.3 billion in revenue from Turner & Townsend during the year with only two months of activity in the prior comparable period. Excluding Turner & Townsend, revenue rose nearly 9.5% with project management up 21.1% due to certain large projects and focused growth initiatives. Foreign currency translation had a 4.4% negative impact on total revenue during the year ended December 31, 2022, primarily driven by weakness in the British pound sterling and euro.

Cost of revenue increased by \$2.3 billion, or 15.0%, for the year ended December 31, 2022 as compared to the same period in 2021, driven by higher revenue leading to higher pass through costs and increased professional compensation. In addition, we recorded cost of revenue incurred by Turner & Townsend for the year ended December 31, 2022 with only two months of such activity in the prior comparable period. Foreign currency translation had a 4.2% positive impact on total cost of revenue during the year ended December 31, 2022. Cost of revenue as a percentage of revenue decreased slightly to 90.4% for the year ended December 31, 2022 from 91.2% for the same period in 2021, primarily due to an increase in project management revenue which generally has higher margins.

Operating, administrative and other expenses increased by \$241.4 million, or 28.8%, for the year ended December 31, 2022 as compared to the year ended December 31, 2021. Compensation expense increased due to severance expense incurred under the costs savings initiatives and investment in new roles to drive business growth. We also recorded higher travel and entertainment expenses during the first half of the year, incentive compensation expense, and employee recruitment costs. In addition, we recorded operating expenses incurred by Turner & Townsend for the year ended December 31, 2022 with only two months of such activity in the prior comparable period. Foreign currency translation also had a 5.0% positive impact on total operating expenses during the year ended December 31, 2022.

Depreciation and amortization expense increased by \$94.3 million, or 59.4%, during the year ended December 31, 2022 as compared to the same period in 2021. This increase was primarily attributable to amortization of backlog and customer relationship intangibles from the acquisition of Turner & Townsend, with minimal comparable activity in the prior period.

Real Estate Investments

The following table summarizes our results of operations for our Real Estate Investments (REI) operating segment for the years ended December 31, 2022 and 2021 (dollars in thousands):

	Year Ended December 31,			
	2022		2021	
Revenue:				
Investment management	\$ 594,867	53.6 %	\$ 556,154	50.9 %
Development services	514,742	46.4 %	535,562	49.1 %
Total segment revenue	1,109,609	100.0 %	1,091,716	100.0 %
Costs and expenses:				
Cost of revenue	322,152	29.0 %	349,432	32.0 %
Operating, administrative and other	1,082,231	97.5 %	896,375	82.1 %
Depreciation and amortization	16,250	1.5 %	27,111	2.5 %
Asset impairments	48,362	4.4 %	—	0.0 %
Total costs and expenses	1,468,995	132.4 %	1,272,918	116.6 %
Gain on disposition of real estate	244,391	22.0 %	70,993	6.5 %
Operating loss	(114,995)	(10.4)%	(110,209)	(10.1)%
Equity income from unconsolidated subsidiaries	380,566	34.3 %	555,341	50.9 %
Other (loss) income	(1,066)	(0.1)%	3,542	0.3 %
Add-back: Depreciation and amortization	16,250	1.5 %	27,111	2.5 %
Add-back: Asset impairments	48,362	4.4 %	—	0.0 %
Adjustments:				
Carried interest incentive compensation (reversal) expense to align with the timing of associated revenue	(4,228)	(0.4)%	49,941	4.6 %
Impact of fair value adjustments to real estate assets acquired in the Telford acquisition (purchase accounting) that were sold in period	(5,115)	(0.5)%	(5,725)	(0.5)%
Costs associate with efficiency and cost-reduction initiatives	12,499	1.1 %	—	0.0 %
Provision associated with Telford's fire safety remediation efforts	185,921	16.8 %	—	0.0 %
Segment operating profit and segment operating profit on revenue margin	\$ 518,194	46.7 %	\$ 520,001	47.6 %

Year Ended December 31, 2022 Compared to Year Ended December 31, 2021

Revenue increased by \$17.9 million, or 1.6%, for the year ended December 31, 2022 as compared to the year ended December 31, 2021, primarily driven by an increase in investment management fees supported by net growth in assets under management, offset by lower carried interest revenue, and lower real estate sales, development and construction management fees, in our development business, primarily in the U.K. Foreign currency translation had a 6.7% negative impact on total revenue during the year ended December 31, 2022 primarily driven by weakness in the British pound sterling and euro.

Cost of revenue decreased by \$27.3 million, or 7.8%, for the year ended December 31, 2022 as compared to the year ended December 31, 2021. Cost of revenue as a percent of revenue was 29.0% for the year ended December 31, 2022 as compared to 32.0% for the year ended December 31, 2021. This was mainly due to a change in composition of overall revenue. Revenue from investment management, which has no associated cost of revenue, contributed 53.6% to total segment revenue as compared to 50.9% last year. Foreign currency translation had a 9.1% positive impact on total cost of revenue during the year ended December 31, 2022.

Operating, administrative and other expenses increased by \$185.9 million, or 20.7%, for the year ended December 31, 2022 as compared to the same period in 2021. We recorded an estimated provision of \$185.9 million related to fire and building safety remediation work that our Telford Homes business will undertake based on the pledge signed in the second quarter of 2022. Additionally, we noted an increase in overall compensation, including severance expense related to cost savings initiatives, higher travel and entertainment expenses during the first half of the year, partially offset by lower overall incentive compensation. Foreign currency translation had a 6.5% positive impact on total operating expenses during the year ended December 31, 2022.

Equity income from unconsolidated subsidiaries decreased by \$174.8 million, or 31.5%, during the year ended December 31, 2022 as compared to the same period in 2021. Gain on disposition of real estate increased by \$173.4 million for the year ended December 31, 2022 as compared to the same period in 2021. This was primarily due to the composition of the portfolio, deal structures, and timing.

A roll forward of our AUM by product type for the year ended December 31, 2022 is as follows (dollars in billions):

	Funds	Separate Accounts	Securities	Total
Balance at December 31, 2021	\$ 56.6	\$ 73.6	\$ 11.7	\$ 141.9
Inflows	15.6	10.8	2.7	29.1
Outflows	(5.1)	(8.0)	(1.9)	(15.0)
Market depreciation	(0.9)	(3.2)	(2.6)	(6.7)
Balance at December 31, 2022	\$ 66.2	\$ 73.2	\$ 9.9	\$ 149.3

AUM generally refers to the properties and other assets with respect to which we provide (or participate in) oversight, investment management services and other advice, and which generally consist of real estate properties or loans, securities portfolios and investments in operating companies and joint ventures. Our AUM is intended principally to reflect the extent of our presence in the real estate market, not the basis for determining our management fees. Our assets under management consist of:

- the total fair market value of the real estate properties and other assets either wholly-owned or held by joint ventures and other entities in which our sponsored funds or investment vehicles and client accounts have invested or to which they have provided financing. Committed (but unfunded) capital from investors in our sponsored funds is not included in this component of our AUM. The value of development properties is included at estimated completion cost. In the case of real estate operating companies, the total value of real properties controlled by the companies, generally through joint ventures, is included in AUM; and
- the net asset value of our managed securities portfolios, including investments (which may be comprised of committed but uncalled capital) in private real estate funds under our fund of funds investments.

Our calculation of AUM may differ from the calculations of other asset managers, and as a result, this measure may not be comparable to similar measures presented by other asset managers.

Corporate and Other

Our Corporate segment primarily consists of corporate overhead costs. Other consists of activities from strategic non-core non-controlling equity investments and is considered an operating segment but does not meet the aggregation criteria for presentation as a separate reportable segment and is, therefore, combined with our core Corporate function and reported as Corporate and other. The following table summarizes our results of operations for our Corporate and other segment for the years ended December 31, 2022 and 2021 (dollars in thousands):

	Year Ended December 31, ⁽¹⁾	
	2022	2021
Elimination of inter-segment revenue	\$ (16,090)	\$ (20,356)
Costs and expenses:		
Cost of revenue ⁽²⁾	(10,458)	(13,264)
Operating, administrative and other	431,242	452,384
Depreciation and amortization	33,002	28,606
Operating loss	(469,876)	(488,082)
Equity (loss) income from unconsolidated subsidiaries	(167,348)	36,858
Other (loss) income	(18,836)	205,763
Add-back: Depreciation and amortization	33,002	28,606
Adjustments:		
Costs incurred related to legal entity restructuring	13,447	—
Costs associated with efficiency and cost-reduction initiatives	31,383	—
Segment operating loss	<u>\$ (578,228)</u>	<u>\$ (216,855)</u>

⁽¹⁾ Percentage of revenue calculations are not meaningful and therefore not included.

⁽²⁾ Primarily relates to inter-segment eliminations.

Year Ended December 31, 2022 Compared to Year Ended December 31, 2021

Core corporate

Operating, administrative and other expenses for our core corporate function remained relatively flat at approximately \$430.0 million during the year ended December 31, 2022, as compared to \$427.6 million for the prior year. This was primarily due to severance charges associated with efficiency and cost reduction initiatives, partially offset by lower stock compensation and bonus expense as compared to the prior period. In addition, operating expenses associated with our sponsorship of CBRE Acquisition Holdings, Inc. (now known as Altus Power, Inc.) up until its merger with and into Altus on December 9, 2021 were also recorded in this segment.

Other loss was approximately \$12.2 million for the year ended December 31, 2022 versus an income of \$7.1 million in the same period last year. This is primarily comprised of net unfavorable activity related to unrealized and realized gain/loss on equity and available for sale debt securities owned by our wholly-owned captive insurance company. These mark to market adjustments were in a net unfavorable position this year compared to the prior year.

Other (non-core)

We recorded equity loss of approximately \$167.3 million for the year ended December 31, 2022 from unfavorable fair value adjustments related to certain non-core investments as compared to a \$36.9 million positive fair value adjustments last year.

We recorded other loss of \$6.6 million which is mainly due to realized losses on sale of marketable securities this year. In the prior year, we recorded income of \$198.7 million, mainly due to a non-cash gain of \$187.5 million as part of the deconsolidation of CBAH upon its merger with and into Altus.

Liquidity and Capital Resources

We believe that we can satisfy our working capital and funding requirements with internally generated cash flow and, as necessary, borrowings under our revolving credit facilities. Our expected capital requirements for 2023 include up to approximately \$326.8 million of anticipated capital expenditures, net of tenant concessions. During the year ended December 31, 2022, we incurred \$248.5 million of capital expenditures, net of tenant concessions received. As of December 31, 2022, we had aggregate future commitments of \$106.9 million related to co-investments funds in our Real Estate Investments segment, \$47.3 million of which is expected to be funded in 2023. Additionally, as of December 31, 2022, we are committed to fund additional capital of \$81.0 million and \$85.9 million to consolidated and unconsolidated projects, respectively, within our Real Estate Investments segment. As of December 31, 2022, we had \$3.5 billion of borrowings available under our revolving credit facilities (under both the Revolving Credit Agreement, as described below, and the Turner & Townsend revolving credit facility) and \$1.3 billion of cash and cash equivalents.

We have historically relied on our internally generated cash flow and our revolving credit facilities to fund our working capital, capital expenditure and general investment requirements (including strategic in-fill acquisitions) and have not sought other external sources of financing to help fund these requirements. In the absence of extraordinary events or a large strategic acquisition, we anticipate that our cash flow from operations and our revolving credit facilities would be sufficient to meet our anticipated cash requirements for the foreseeable future, and at a minimum for the next 12 months. Given compensation is our largest expense and our sales and leasing professionals are generally paid on a commission and/or bonus basis that correlates with their revenue production, the negative effect of difficult market conditions is partially mitigated by the inherent variability of our compensation cost structure. In addition, when negative economic conditions have been particularly severe, we have moved decisively to lower operating expenses to improve financial performance, and then have restored certain expenses as economic conditions improved. We may seek to take advantage of market opportunities to refinance existing debt instruments, as we have done in the past, with new debt instruments at interest rates, maturities and terms we deem attractive. We may also, from time to time in our sole discretion, purchase, redeem, or retire our existing senior notes, through tender offers, in privately negotiated or open market transactions, or otherwise.

In March 2021, we took advantage of favorable market conditions and low interest rates and conducted a new issuance for \$500.0 million in aggregate principal amount of 2.500% senior notes due 2031. On November 23, 2021, we redeemed the \$300.0 million aggregate outstanding principal amount of our tranche A term loan facility due 2024 in full. We funded this redemption using cash on hand.

As noted above, we believe that any future significant acquisitions we may make could require us to obtain additional debt or equity financing. In the past, we have been able to obtain such financing for material transactions on terms that we believed to be reasonable. However, it is possible that we may not be able to obtain acquisition financing on favorable terms, or at all, in the future.

Our long-term liquidity needs, other than those related to ordinary course obligations and commitments such as operating leases, are generally comprised of three elements. The first is the repayment of the outstanding and anticipated principal amounts of our long-term indebtedness. If our cash flow is insufficient to repay our long-term debt when it comes due, then we expect that we would need to refinance such indebtedness or otherwise amend its terms to extend the maturity dates. We cannot make any assurances that such refinancing or amendments would be available on attractive terms, if at all.

The second long-term liquidity need is the payment of obligations related to acquisitions. Our acquisition structures often include deferred and/or contingent purchase consideration in future periods that are subject to the passage of time or achievement of certain performance metrics and other conditions. As of December 31, 2022 and 2021, we had accrued deferred purchase consideration totaling \$574.3 million (\$117.3 million of which was a current liability) and \$630.1 million (\$32.0 million of which was a current liability), respectively, which was included in “Accounts payable and accrued expenses” and in “Other liabilities” in the accompanying consolidated balance sheets set forth in Item 8 of this Annual Report.

Lastly, as described in Note 16 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report, in 2019, our board of directors authorized a program for the repurchase of up to \$500.0 million of our Class A common stock over three years (the 2019 program). During the first quarter of 2022, we fully utilized the remaining capacity under the 2019 program and repurchased 615,108 shares of our Class A common stock with an average price of \$101.88 per share using cash on hand for \$62.7 million.

In November 2021, our board of directors authorized a new program for the company to repurchase up to \$2.0 billion of our Class A common stock over five years, effective November 19, 2021 (the 2021 program). In August 2022, our board of directors authorized an additional \$2.0 billion, bringing the total authorized repurchase amount under the 2021 program to a total of \$4.0 billion. During the year ended December 31, 2022, we repurchased 22,275,498 shares of our Class A common stock with an average price of \$80.74 per share using cash on hand for \$1.8 billion under the 2021 program. As of December 31, 2022 and February 16, 2023, respectively, we had \$2.1 billion and \$2.0 billion of capacity remaining under the 2021 program.

Our stock repurchases have been funded with cash on hand and we intend to continue funding future repurchases with existing cash. We may utilize our stock repurchase programs to continue offsetting the impact of our stock-based compensation program and on a more opportunistic basis if we believe our stock presents a compelling investment compared to other discretionary uses. The timing of any future repurchases and the actual amounts repurchased will depend on a variety of factors, including the market price of our common stock, general market and economic conditions and other factors.

As more fully described in Note 22 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report, following a request by the U.K. government to the majority of significant residential developers within the U.K. including Telford Homes, Telford Homes signed the U.K. government's non-binding Fire Safety Pledge (the "Pledge") on April 28, 2022. The Pledge states that subject to entering into mutually acceptable legally binding agreements with the U.K. government, Telford Homes will (1) take responsibility for performing or funding self-remediation works relating to certain life-critical fire-safety issues on all Telford Homes-constructed buildings of 11 meters in height or greater in England constructed in the last 30 years (in-scope buildings) and (2) withdraw Telford Homes-developed buildings from certain government-sponsored building safety funds or reimburse the government funds for the cost of remediation of in-scope buildings.

We believe there is a potential risk of loss attributable to past events, including as a result of retrospective changes in building fire-safety regulations, under the Pledge, and also under existing contracts and/or the U.K.'s Building Safety Act of 2022 (BSA) or its Defective Premises Act of 1972 (DPA). The estimated costs for in-scope buildings are subjective, highly complex and dependent on a number of variables outside of Telford Homes' control. These include, but are not limited to, the time required for the remediation to be completed, the size and number of buildings that may require remediation, cost of construction or remediation materials, availability of construction materials, potential discoveries made during remediation that could necessitate incremental work, investigation costs, availability of qualified fire safety engineers, potential business disruption costs, potential changes to or new regulations and regulatory approval.

As a result of signing the Pledge, the introduction of the BSA, the extension of liability under the DPA, and the potential for us to be required to pay for remediation under any definitive agreements that may be negotiated by the parties under the Pledge or under existing legal contracts, we recorded charges of approximately \$138.9 million and \$185.9 million for the three months and twelve months ended December 31, 2022, respectively. Of the \$185.9 million in estimated liability as of December 31, 2022, approximately \$51.6 million was recorded as a current liability in "accounts payable and accrued expenses" and the remaining was recorded as non-current in "other liabilities" in the accompanying consolidated balance sheets. Although the foregoing includes significant subjective judgments, management believes that there is enough information to reasonably estimate the potential liability. The potential liability and number of buildings affected may change as new information becomes available and full cost estimates are assessed and tendered for each building, which is anticipated to be a lengthy process due to the various steps required to fully remediate. We will continue to assess new information as it becomes available and adjust our estimated liability accordingly. For more information, see "Telford Fire Safety Remediation" in Note 22 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

Historical Cash Flows

Year Ended December 31, 2022 Compared to Year Ended December 31, 2021

Operating Activities

Net cash provided by operating activities totaled \$1.6 billion for the year ended December 31, 2022, a decrease of \$735.1 million as compared to the year ended December 31, 2021. The primary drivers that contributed to the decline were as follows: (1) lower operating performance and (2) the net cash outflow associated with net working capital increased in the current year as compared to last year by approximately \$992.9 million. This was primarily due to (i) higher outflow related to net bonus payments, compensation and other employee benefits, (ii) increased issuance of incentive compensation in the form of producer based loans, and (iii) timing of certain cash tax payments and refunds. This change in working capital was partially offset by lower outflow associated with accounts receivable, prepaids and contract assets. Additionally, we had lower distribution of equity income from unconsolidated subsidiaries; a decline in tenant concessions received in the current year; lower net inflows related to mortgage loan activities and associated warehouse line of credit draws.

Investing Activities

Net cash used in investing activities totaled \$832.5 million for the year ended December 31, 2022, a decrease of \$448.4 million as compared to the year ended December 31, 2021. This decrease was primarily due to the Turner & Townsend transaction in 2021 as compared a to lower volume of acquisitions in the current year. This was partially offset by the following outflows: a \$100.7 million investment in VTS during 2022; higher capital expenditures to support the growth in business; and higher net contributions to unconsolidated subsidiaries.

Financing Activities

Net cash used in financing activities totaled \$1.8 billion for the year ended December 31, 2022, an increase of \$1.3 billion as compared to the year ended December 31, 2021. The increased usage during the year was primarily due to \$1.9 billion used to repurchase shares of our common stock as compared to \$368.6 million in the prior year; as well as net inflows in the prior year from issuance and settlement activities associated with our long term debt thus increasing the year over year usage. This was partially offset by (i) \$151.4 million in net proceeds from our revolving credit facility received this year as compared to last year, (ii) payment of \$205.1 million for redemption of non-controlling interest for CBAH and (iii) payment of deferred underwriting costs related to CBAH's initial public offering in the prior year with no comparable activity in the current year.

Summary of Contractual Obligations and Other Commitments

The following is a summary of our various contractual obligations and other commitments as of December 31, 2022 (dollars in thousands):

Contractual Obligations	Payments Due by Period	
	Total	Less than 1 year
Total gross long-term debt ⁽¹⁾	\$ 1,527,792	\$ 427,792
Short-term borrowings ⁽²⁾	668,754	668,754
Operating leases ⁽³⁾	2,180,313	229,748
Financing leases ⁽³⁾	299,380	33,213
Total gross notes payable on real estate ⁽⁴⁾	25,073	10,245
Deferred purchase consideration ⁽⁵⁾	574,300	117,335
Total contractual obligations	\$ 5,275,612	\$ 1,487,087

Other Commitments	Amount of Other Commitments Expiration	
	Total	Less than 1 year
Self-insurance reserves ⁽⁶⁾	\$ 167,918	\$ 167,918
Tax liabilities ⁽⁷⁾	54,761	—
Co-investments ⁽⁸⁾⁽⁹⁾	192,756	133,197
Letters of credit ⁽⁸⁾	206,809	206,809
Guarantees ⁽⁸⁾⁽¹⁰⁾	79,441	79,441
Total other commitments	\$ 701,685	\$ 587,365

The table above excludes estimated payment obligations for our qualified defined benefit pension plans. For information about our future estimated payment obligations for these plans, see Note 14 of our Notes to the Consolidated Financial Statements set forth in Item 8 of this Annual Report.

⁽¹⁾ Reflects gross outstanding long-term debt balances as of December 31, 2022, assumed to be paid at maturity, excluding unamortized discount, premium and deferred financing costs. See Note 11 of our Notes to the Consolidated Financial Statements set forth in Item 8 of this Annual Report. Figures do not include scheduled interest payments. Assuming each debt obligation is held until maturity, we estimate that we will make \$205.1 million of interest payments, \$51.1 million of which will be made in 2023.

⁽²⁾ The majority of this balance represents our warehouse lines of credit, which are recourse only to our wholly-owned subsidiary CBRE Capital Markets, Inc. (CBRE Capital Markets) and are secured by our related warehouse receivables. See Notes 5 and 11 of our Notes to the Consolidated Financial Statements set forth in Item 8 of this Annual Report.

⁽³⁾ See Note 12 of our Notes to the Consolidated Financial Statements set forth in Item 8 of this Annual Report.

⁽⁴⁾ Reflects gross outstanding notes payable on real estate as of December 31, 2022 (none of which is recourse to us, beyond being recourse to the single-purpose entity that held the real estate asset and was the primary obligor on the note payable), assumed to be paid at maturity, excluding unamortized deferred financing costs. Amounts do not include scheduled interest payments. The notes have either fixed or variable interest rates, ranging from 2.25% to 7.50% at December 31, 2022.

⁽⁵⁾ Represents deferred obligations related to previous acquisitions, which are included in accounts payable and accrued expenses and other long-term liabilities in the consolidated balance sheets at December 31, 2022 set forth in Item 8 of this Annual Report.

⁽⁶⁾ Represents outstanding reserves for claims under certain insurance programs, which are included in other current and other long-term liabilities in the consolidated balance sheets at December 31, 2022 set forth in Item 8 of this Annual Report. Due to the nature of this item, payments could be due at any time upon the occurrence of certain events. Accordingly, the entire balance has been reflected as expiring in less than one year.

⁽⁷⁾ As of December 31, 2022, we have a remaining federal tax liability of \$54.8 million associated with the Transition Tax on mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017. We are paying the federal tax liability for the Transition Tax in annual interest-free installments over a period of eight years through 2025 as allowed by the Tax Act. The next installment is due in 2024 for the 2023 fiscal year.

In addition, as of December 31, 2022, our gross unrecognized tax benefits, totaled \$391.4 million. Of this amount, we can reasonably estimate that none will require cash settlement in less than one year. We are unable to reasonably estimate the timing of the effective settlement of tax positions for the gross amount. See Note 15 of our Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

⁽⁸⁾ See Note 13 of our Notes to the Consolidated Financial Statements set forth in Item 8 of this Annual Report.

⁽⁹⁾ Includes \$106.9 million to fund future co-investments in our Real Estate Investments segment, \$47.3 million of which is expected to be funded in 2023, and \$85.9 million committed to invest in unconsolidated real estate subsidiaries, which is callable at any time. This amount does not include capital committed to consolidated projects of \$81.0 million as of December 31, 2022.

⁽¹⁰⁾ Due to the nature of guarantees, payments could be due at any time upon the occurrence of certain triggering events, including default. Accordingly, all guarantees are reflected as expiring in less than one year.

Indebtedness

We use a variety of financing arrangements, both long-term and short-term, to fund our operations in addition to cash generated from operating activities. We also use several funding sources to avoid becoming overly dependent on one financing source, and to lower funding costs.

Long-Term Debt

On July 9, 2021, CBRE Services, Inc. (CBRE Services) entered into an additional incremental assumption agreement with respect to its credit agreement, dated October 31, 2017 (such agreement, as amended by a December 20, 2018 incremental term loan assumption agreement, a March 4, 2019 incremental assumption agreement and such July 9, 2021 incremental assumption agreement, collectively, the 2021 Credit Agreement) for purposes of increasing the revolving credit commitments previously available under the 2021 Credit Agreement by an aggregate principal amount of \$350.0 million.

On May 21, 2021, we entered into a definitive agreement whereby our subsidiary guarantors were released as guarantors from the 2021 Credit Agreement.

On December 10, 2021, CBRE Services and certain of the other borrowers entered into a first amendment to the 2021 Credit Agreement which (i) changed the interest rate applicable to revolving borrowings denominated in Sterling from a LIBOR-based rate to a rate based on the Sterling Overnight Index Average (SONIA) and (ii) changed the interest rate applicable to revolving borrowings denominated in Euros from a LIBOR-based rate to a rate based on EURIBOR. The revised interest rates described above went into effect on January 1, 2022.

On August 5, 2022, CBRE Group, Inc., as Holdings, and CBRE Global Acquisition Company, as the Luxembourg Borrower, entered into a second amendment to the 2021 Credit Agreement which, among other things (i) amended certain of the representations and warranties, affirmative covenants, negative covenants and events of default in the 2021 Credit Agreement in a manner consistent with the new 5-year senior unsecured Revolving Credit Agreement (as described below), (ii) terminated all revolving commitments previously available to the subsidiaries of the company thereunder and (iii) reflected the resignation of the previous administrative agent and the appointment of Wells Fargo Bank, National Association as the new administrative agent (the 2021 Credit Agreement, as amended by the first amendment and second amendment is referred to in this Annual Report as the 2022 Credit Agreement).

The 2022 Credit Agreement is a senior unsecured credit facility that is guaranteed by CBRE Group, Inc. As of December 31, 2022, the 2022 Credit Agreement provided for a €400.0 million term loan facility due and payable in full at maturity on December 20, 2023. The \$300.0 million tranche A term loan facility that was also covered under this agreement was repaid on November 23, 2021. In addition, a \$3.15 billion revolving credit facility, which included the capacity to obtain letters of credit and swingline loans and would have terminated on March 4, 2024, was also previously provided under this agreement and was replaced with a new \$3.5 billion 5-year senior unsecured Revolving Credit Agreement entered into on August 5, 2022 (as described below).

On March 18, 2021, CBRE Services issued \$500.0 million in aggregate principal amount of 2.500% senior notes due April 1, 2031 (the 2.500% senior notes) at a price equal to 98.451% of their face value. The 2.500% senior notes are unsecured obligations of CBRE Services and are guaranteed on a senior basis by CBRE Group, Inc. Interest accrues at a rate of 2.500% per year and is payable semi-annually in arrears on April 1 and October 1 of each year, beginning on October 1, 2021. The amount of the 2.500% senior notes, net of unamortized discount and unamortized debt issuance costs, included in the accompanying consolidated balance sheet was \$489.3 million and \$488.1 million at December 31, 2022 and 2021, respectively.

On August 13, 2015, CBRE Services issued \$600.0 million in aggregate principal amount of 4.875% senior notes due March 1, 2026 (the 4.875% senior notes) at a price equal to 99.24% of their face value. The 4.875% senior notes are unsecured obligations of CBRE Services and are guaranteed on a senior basis by CBRE Group, Inc. Interest accrues at a rate of 4.875% per year and is payable semi-annually in arrears on March 1 and September 1. The amount of the 4.875% senior notes, net of unamortized discount and unamortized debt issuance costs, included in the accompanying consolidated balance sheet was \$596.4 million and \$595.5 million at December 31, 2022 and 2021, respectively.

The indentures governing our 4.875% senior notes and 2.500% senior notes contain restrictive covenants that, among other things, limit our ability to create or permit liens on assets securing indebtedness, enter into sale/leaseback transactions and enter into consolidations or mergers.

On May 21, 2021, all existing subsidiary guarantors were released from their guarantees of our 2022 Credit Agreement, 4.875% senior notes and 2.500% senior notes. Our 2022 Credit Agreement, Revolving Credit Agreement, 4.875% senior notes and 2.500% senior notes remain fully and unconditionally guaranteed by CBRE Group, Inc. Combined summarized financial information for CBRE Group, Inc. (parent) and CBRE Services (subsidiary issuer) is as follows (dollars in thousands):

	December 31,	
	2022	2021
Balance Sheet Data:		
Current assets	\$ 8,628	\$ 8,604
Non-current assets ⁽¹⁾	13,002	34,711
Total assets ⁽¹⁾	21,630	43,315
Current liabilities	\$ 206,026	\$ 17,610
Non-current liabilities ⁽¹⁾	1,804,975	1,083,584
Total liabilities ⁽¹⁾	2,011,001	1,101,194
Statement of Operations Data:		
	Year Ended December 31,	
	2022	2021 ⁽²⁾
Revenue	\$ —	\$ —
Operating loss	(2,539)	(2,246)
Net income	6,465	27,487

⁽¹⁾ Includes \$719.3 million of intercompany loan payables and \$25.3 million of intercompany loan receivables from non-guarantor subsidiaries as of December 31, 2022 and 2021, respectively. All intercompany balances and transactions between CBRE Group, Inc. and CBRE Services have been eliminated.

⁽²⁾ Amounts include activity related to our subsidiaries that were still listed as guarantors for the period presented.

For additional information on all of our long-term debt, see Note 11 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

Short-Term Borrowings

On August 5, 2022, we entered into a new 5-year senior unsecured Revolving Credit Agreement (the “Revolving Credit Agreement”). The Revolving Credit Agreement provides for a senior unsecured revolving credit facility available to CBRE Services with a capacity of \$3.5 billion and a maturity date of August 5, 2027. Borrowings bear interest at (i) CBRE Services’ option, either (a) a Term SOFR rate published by CME Group Benchmark Administration Limited for the applicable interest period or (b) a base rate determined by reference to the greatest of (1) the prime rate determined by Wells Fargo, (2) the federal funds rate plus 1/2 of 1% and (3) the sum of (x) a Term SOFR rate published by CME Group Benchmark Administration Limited for an interest period of one month and (y) 1.00% plus (ii) 10 basis points, plus (iii) a rate equal to an applicable rate (in the case of borrowings based on the Term SOFR rate, 0.630% to 1.100% and in the case of borrowings based on the base rate, 0.0% to 0.100%, in each case, as determined by reference to our Debt Rating (as defined in the Revolving Credit Agreement)). The applicable rate is also subject to certain increases and/or decreases specified in the Revolving Credit Agreement linked to achieving certain sustainability goals.

The Revolving Credit Agreement requires us to pay a fee based on the total amount of the revolving credit facility commitment (whether used or unused). In addition, the Revolving Credit Agreement also includes capacity for letters of credit of an outstanding aggregate amount of \$300.0 million.

As of December 31, 2022, \$178.0 million was outstanding under the Revolving Credit Agreement. No letters of credit were outstanding as of December 31, 2022. As of February 16, 2023, \$438.0 million was outstanding under the Revolving Credit Agreement. Letters of credit are issued in the ordinary course of business and would reduce the amount we may borrow under the Revolving Credit Agreement.

In addition, Turner & Townsend maintains a £120.0 million revolving credit facility pursuant to a credit agreement dated March 31, 2022, with an additional accordion option of £20.0 million. As of December 31, 2022 and February 16, 2023, respectively, \$31.9 million (£26.3 million) and \$31.6 million (£26.3 million) was outstanding under this revolving credit facility and bears interest at SONIA plus 0.75%.

We also maintain warehouse lines of credit with certain third-party lenders. For additional information on all of our short-term borrowings, see Notes 5 and 11 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Our exposure to market risk primarily consists of foreign currency exchange rate fluctuations related to our international operations and changes in interest rates on debt obligations. We manage such risk primarily by managing the amount, sources, and duration of our debt funding and by using derivative financial instruments. We apply FASB ASC (Topic 815), “*Derivatives and Hedging*,” when accounting for derivative financial instruments. In all cases, we view derivative financial instruments as a risk management tool and, accordingly, do not use derivatives for trading or speculative purposes.

Exchange Rates

Our foreign operations expose us to fluctuations in foreign exchange rates. These fluctuations may impact the value of our cash receipts and payments in terms of our functional (reporting) currency, which is the U.S. dollar. See the discussion of international operations, which is included in Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” under the caption “International Operations” and is incorporated by reference herein.

Interest Rates

We manage our interest expense by using a combination of fixed and variable rate debt. Historically, we have entered into interest rate swap agreements to attempt to hedge the variability of future interest payments due to changes in interest rates. As of December 31, 2022, we do not have any outstanding interest rate swap agreements.

The estimated fair value of our senior term loans was approximately \$424.6 million at December 31, 2022. Based on dealers’ quotes, the estimated fair value of our 4.875% and 2.500% senior notes was \$595.2 million and \$396.8 million, respectively, at December 31, 2022.

We utilize sensitivity analyses to assess the potential effect on our variable rate debt. If interest rates were to increase 100 basis points on our outstanding variable rate debt at December 31, 2022, the net impact of the additional interest cost would be a decrease of \$6.4 million on pre-tax income and a decrease of \$6.4 million in cash provided by operating activities for the year ended December 31, 2022.

Item 8. Financial Statements and Supplementary Data.**INDEX TO CONSOLIDATED FINANCIAL STATEMENTS
AND FINANCIAL STATEMENT SCHEDULES**

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All other schedules are omitted because they are either not applicable, not required or the information required is included in the Consolidated Financial Statements, including the notes thereto.

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
CBRE Group, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of CBRE Group, Inc. and subsidiaries (the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income, cash flows, and equity for each of the years in the three-year period ended December 31, 2022, and the related notes and financial statement schedule II (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 24, 2023 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Evaluation of contingent liability for Telford fire safety remediation

As discussed in Note 22 to the consolidated financial statements, on April 28, 2022, the United Kingdom (“UK”) passed the Building Safety Act of 2022 (“BSA”). The BSA introduced new laws related to building safety and the remediation of historic building safety defects, effectively requiring developers to remediate certain buildings with critical fire safety issues. Telford Homes (a wholly owned subsidiary of CBRE Group, Inc.) signed the UK government’s non-binding Fire Safety Pledge (the “Pledge”) on April 28, 2022. The Pledge states that, subject to entering into mutually acceptable legally binding agreements with the UK government, Telford Homes will (1) take responsibility for performing or funding self-remediation works relating to certain life-critical fire-safety issues on all Telford Homes-constructed buildings of 11 meters in height or greater in England constructed in the last 30 years and (2) withdraw Telford Homes-developed buildings from the government-sponsored BSF and ACM Funds or reimburse the government funds for the cost of remediation of in-scope buildings. The Company has recorded a \$185.9 million contingent liability related to the Pledge as of December 31, 2022, of which \$134.3 million is related to management’s estimate for the potential additional costs to be incurred for buildings to be remediated directly by Telford Homes, based on the best available data including third-party cost estimates for remediation.

We identified the Company’s evaluation of the estimate of potential additional costs associated with the Pledge (Additional Costs) as a critical audit matter. Due to the nature of the Pledge, a high degree of subjectivity was required to evaluate which buildings are subject to the Additional Costs and estimated remediation cost for those buildings.

The following are the primary procedures we performed to address this critical audit matter:

- We evaluated the design and tested the operating effectiveness of certain internal controls over the Company’s loss contingency process, including estimates related to which buildings are subject to the Additional Costs and remediation cost for those buildings,
- We assessed the completeness of the Additional Costs by obtaining a listing of all Telford Homes’ buildings built since inception of Telford Homes. For a sample of the buildings, we evaluated the Company’s determination of which buildings are subject to the Additional Costs by assessing the sample selected to building specifications, external fire review reports and the resulting risk profile assigned to each building, and
- We obtained the Company’s estimation of the Additional Costs recorded and evaluated the accuracy of the Additional Costs by comparing the Company’s estimate of the remediation cost associated with each building to industry data.

Assessment of gross unrecognized tax benefits

As discussed in Notes 2 and 15 to the consolidated financial statements, the Company has recorded gross unrecognized tax benefits of \$391.4 million as of December 31, 2022. The Company utilizes a two-step approach to recognizing and measuring unrecognized tax positions. The first step is to evaluate the tax position for recognition by determining if the available evidence indicates there is more than a 50% likelihood that the position will be sustained upon examination, including resolution of related appeals or litigation processes. The second step is to measure the tax benefit as the largest amount which is more than 50% likely of being realized (MLTN) upon ultimate settlement.

We identified the assessment of the gross unrecognized tax benefits as a critical audit matter. Complex auditor judgment and the involvement of tax professionals with specialized skills and knowledge were required in evaluating the Company’s interpretation of tax law and its estimate of the resolution of certain tax positions underlying the unrecognized tax benefits.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Company's unrecognized tax benefits process, including the interpretation of tax law and the estimate of the unrecognized tax benefits. Since tax law is complex and often subject to interpretations, we involved tax professionals with specialized skills and knowledge, who assisted in:

- Obtaining an understanding of the Company's tax planning strategies including changes in legal entity structures and intercompany financing arrangements,
- Evaluating the Company's interpretation of tax law and the potential impact on the Company's tax positions,
- Inspecting correspondence with applicable taxing authorities, and assessing the expiration of statutes of limitations,
- Testing management's process and evaluating their supporting evidence for the MLTN determination, and performing our evaluation of whether it is MLTN that the unrecognized tax position taken by the Company will be sustained,
- Reading and evaluating the Company's external specialist reports, and considering its impact on the measurement, if applicable, of the unrecognized tax positions, and
- Evaluating the Company's assessment of settlement outcomes, probabilities, and inputs to the Company's calculation of unrecognized tax positions.

/s/ KPMG LLP

We have served as the Company's auditor since 2008.

Los Angeles, California

February 24, 2023

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
CBRE Group, Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited CBRE Group, Inc. and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income, cash flows and equity for each of the years in the three-year period ended December 31, 2022, and the related notes and financial statement schedule II (collectively, the consolidated financial statements), and our report dated February 24, 2023 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

Los Angeles, California

February 24, 2023

CBRE GROUP, INC.
CONSOLIDATED BALANCE SHEETS
(Dollars in thousands, except share data)

	December 31,	
	2022	2021
ASSETS		
Current Assets:		
Cash and cash equivalents	\$ 1,318,290	\$ 2,430,951
Restricted cash	86,559	108,830
Receivables, less allowance for doubtful accounts of \$92,354 and \$97,588 at December 31, 2022 and 2021, respectively	5,326,807	5,150,473
Warehouse receivables	455,354	1,303,717
Contract assets	391,626	338,749
Prepaid expenses	311,508	333,885
Income taxes receivable	81,528	44,104
Other current assets	557,009	371,656
Total Current Assets	8,528,681	10,082,365
Property and equipment, net of accumulated depreciation and amortization of \$1,386,261 and \$1,288,509 at December 31, 2022 and 2021, respectively	836,041	816,092
Goodwill	4,868,382	4,995,175
Other intangible assets, net of accumulated amortization of \$1,915,725 and \$1,725,280 at December 31, 2022 and 2021, respectively	2,192,706	2,409,427
Operating lease assets	1,033,011	1,046,377
Investments in unconsolidated subsidiaries (with \$973,635 and \$918,226 at fair value at December 31, 2022 and 2021, respectively)	1,317,705	1,196,088
Non-current contract assets	137,480	135,626
Real estate under development	172,253	326,416
Non-current income taxes receivable	51,910	33,150
Deferred tax assets, net	265,554	157,032
Other assets, net	1,109,666	875,743
Total Assets	\$ 20,513,389	\$ 22,073,491
LIABILITIES AND EQUITY		
Current Liabilities:		
Accounts payable and accrued expenses	\$ 3,078,781	\$ 2,916,331
Compensation and employee benefits payable	1,459,001	1,539,291
Accrued bonus and profit sharing	1,691,118	1,694,590
Operating lease liabilities	229,591	232,423
Contract liabilities	276,334	280,659
Income taxes payable	184,453	246,035
Warehouse lines of credit (which fund loans that U.S. Government Sponsored Enterprises have committed to purchase)	447,840	1,277,451
Revolving credit facility	178,000	—
Other short-term borrowings	42,914	32,668
Current maturities of long-term debt	427,792	—
Other current liabilities	226,170	199,421
Total Current Liabilities	8,241,994	8,418,869
Long-term debt, net of current maturities	1,085,712	1,538,123
Non-current operating lease liabilities	1,080,385	1,116,562
Non-current income taxes payable	54,761	54,761
Non-current tax liabilities	148,806	144,884
Deferred tax liabilities, net	282,073	405,258
Other liabilities	1,013,926	1,035,917
Total Liabilities	11,907,657	12,714,374
Commitments and contingencies	—	—
Equity:		
CBRE Group, Inc. Stockholders' Equity:		
Class A common stock; \$0.01 par value; 525,000,000 shares authorized; 311,014,160 and 332,875,959 shares issued and outstanding at December 31, 2022 and 2021, respectively	3,110	3,329
Additional paid-in capital	—	798,892
Accumulated earnings	8,832,943	8,366,631
Accumulated other comprehensive loss	(982,780)	(640,659)
Total CBRE Group, Inc. Stockholders' Equity	7,853,273	8,528,193
Non-controlling interests	752,459	830,924
Total Equity	8,605,732	9,359,117
Total Liabilities and Equity	\$ 20,513,389	\$ 22,073,491

The accompanying notes are an integral part of these consolidated financial statements.

CBRE GROUP, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(Dollars in thousands, except share and per share data)

	Year Ended December 31,		
	2022	2021	2020
Revenue	\$ 30,828,246	\$ 27,746,036	\$ 23,826,195
Costs and expenses:			
Cost of revenue	24,239,488	21,579,507	19,047,620
Operating, administrative and other	4,649,460	4,074,184	3,306,205
Depreciation and amortization	613,088	525,871	501,728
Asset impairments	58,713	—	88,676
Total costs and expenses	29,560,749	26,179,562	22,944,229
Gain on disposition of real estate	244,418	70,993	87,793
Operating income	1,511,915	1,637,467	969,759
Equity income from unconsolidated subsidiaries	228,998	618,697	126,161
Other (loss) income	(11,864)	203,609	17,394
Interest expense, net of interest income	68,999	50,352	67,753
Write-off of financing costs on extinguished debt	1,860	—	75,592
Income before provision for income taxes	1,658,190	2,409,421	969,969
Provision for income taxes	234,230	567,506	214,101
Net income	1,423,960	1,841,915	755,868
Less: Net income attributable to non-controlling interests	16,590	5,341	3,879
Net income attributable to CBRE Group, Inc.	\$ 1,407,370	\$ 1,836,574	\$ 751,989
<i>Basic income per share:</i>			
Net income per share attributable to CBRE Group, Inc.	\$ 4.36	\$ 5.48	\$ 2.24
Weighted average shares outstanding for basic income per share	322,813,345	335,232,840	335,196,296
<i>Diluted income per share:</i>			
Net income per share attributable to CBRE Group, Inc.	\$ 4.29	\$ 5.41	\$ 2.22
Weighted average shares outstanding for diluted income per share	327,696,115	339,717,401	338,392,210

The accompanying notes are an integral part of these consolidated financial statements.

CBRE GROUP, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Dollars in thousands)

	Year Ended December 31,		
	2022	2021	2020
Net income	\$ 1,423,960	\$ 1,841,915	\$ 755,868
Other comprehensive (loss) income:			
Foreign currency translation (loss) gain	(408,685)	(159,722)	124,260
Amounts reclassified from accumulated other comprehensive loss to interest expense, net of \$143, \$151 and \$156 income tax expense for the years ended December 31, 2022, 2021 and 2020, respectively	439	431	426
Unrealized holding (losses) gains on available for sale debt securities, net of \$1,755 and \$415 income tax benefit and \$382 income tax expense for the years ended December 31, 2022, 2021 and 2020, respectively	(5,819)	(1,964)	1,436
Pension liability adjustments, net of \$5,243, \$8,281 and \$1,663 income tax expense for the years ended December 31, 2022, 2021 and 2020, respectively	(14,602)	35,304	7,343
Other, net of \$1,022, \$699 and \$3,068 income tax expense for the years ended December 31, 2022, 2021 and 2020, respectively	(7,565)	3,164	16,772
Total other comprehensive (loss) income	(436,232)	(122,787)	150,237
Comprehensive income	987,728	1,719,128	906,105
Less: Comprehensive (loss) income attributable to non-controlling interests	(77,521)	(6,513)	4,094
Comprehensive income attributable to CBRE Group, Inc.	\$ 1,065,249	\$ 1,725,641	\$ 902,011

The accompanying notes are an integral part of these consolidated financial statements.

CBRE GROUP, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Dollars in thousands)

	Year Ended December 31,		
	2022	2021	2020
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net income	\$ 1,423,960	\$ 1,841,915	\$ 755,868
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	613,088	525,871	501,728
Amortization and write-off of financing costs on extinguished debt	7,741	8,315	82,705
Gains related to mortgage servicing rights, premiums on loan sales and sales of other assets	(202,507)	(142,929)	(297,980)
Asset impairments	58,713	—	88,676
Net realized and unrealized losses (gains), primarily from investments	30,482	(41,982)	(17,394)
Provision for doubtful accounts	17,026	24,489	44,366
Net compensation expense for equity awards	160,325	184,934	60,391
Gain recognized upon deconsolidation of SPAC	—	(187,456)	—
Equity income from unconsolidated subsidiaries	(228,998)	(618,697)	(126,161)
Distribution of earnings from unconsolidated subsidiaries	389,276	520,382	155,975
Proceeds from sale of mortgage loans	14,526,920	17,194,606	20,937,521
Origination of mortgage loans	(13,651,807)	(17,015,839)	(21,268,114)
(Decrease) increase in warehouse lines of credit	(829,611)	(106,513)	406,789
Tenant concessions received	11,605	31,176	48,030
Purchase of equity securities	(28,232)	(7,154)	(11,113)
Proceeds from sale of equity securities	30,360	8,709	13,741
Decrease (increase) in real estate under development	94,599	(54,658)	(105,619)
(Increase) decrease in receivables, prepaid expenses and other assets (including contract and lease assets)	(503,365)	(765,959)	371,009
Increase in accounts payable and accrued expenses and other liabilities (including contract and lease liabilities)	64,102	104,749	105,491
(Decrease) increase in compensation and employee benefits payable and accrued bonus and profit sharing	(1,995)	729,703	(100,142)
(Increase) decrease in net income taxes receivable/payable	(133,244)	248,293	173,648
Other operating activities, net	(219,350)	(117,777)	11,364
Net cash provided by operating activities	1,629,088	2,364,178	1,830,779
CASH FLOWS FROM INVESTING ACTIVITIES:			
Capital expenditures	(260,140)	(209,851)	(266,575)
Acquisition of businesses, including net assets acquired, intangibles and goodwill, net of cash acquired	(173,582)	(781,489)	(27,848)
Contributions to unconsolidated subsidiaries	(385,164)	(334,544)	(146,409)
Distributions from unconsolidated subsidiaries	87,170	75,853	88,731
Investment in VTS	(100,720)	—	—
Investment in Altus Power, Inc. Class A stock	—	(220,001)	—
Proceeds from sale of marketable securities - special purpose acquisition company trust account	—	212,722	—
Purchase of marketable securities - special purpose acquisition company trust account	—	—	(402,500)
Other investing activities, net	(19)	(23,587)	10,516
Net cash used in investing activities	(832,455)	(1,280,897)	(744,085)

The accompanying notes are an integral part of these consolidated financial statements.

CBRE GROUP, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Dollars in thousands)

	Year Ended December 31,		
	2022	2021	2020
CASH FLOWS FROM FINANCING ACTIVITIES:			
Repayment of senior term loans	—	(300,000)	—
Proceeds from revolving credit facility	1,833,000	26,599	835,671
Repayment of revolving credit facility	(1,655,000)	—	(835,671)
Repayment of 5.25% senior notes (including premium)	—	—	(499,652)
Sale of non-controlling interest - special purpose acquisition company	—	—	393,661
Redemption of non-controlling interest-special purpose acquisition company and payment of deferred underwriting commission	—	(205,110)	—
Proceeds from notes payable on real estate	39,265	78,428	90,552
Repayment of notes payable on real estate	(27,723)	(109,461)	(24,704)
Proceeds from issuance of 2.500% senior notes	—	492,255	—
Repurchase of common stock	(1,850,318)	(368,603)	(50,028)
Acquisition of businesses (cash paid for acquisitions more than three months after purchase date)	(34,443)	(17,769)	(44,700)
Units repurchased for payment of taxes on equity awards	(37,932)	(38,864)	(43,835)
Non-controlling interest contributions	2,427	862	2,173
Non-controlling interest distributions	(893)	(4,572)	(4,330)
Other financing activities, net	(34,476)	(44,396)	(41,893)
Net cash used in financing activities	(1,766,093)	(490,631)	(222,756)
Effect of currency exchange rate changes on cash and cash equivalents and restricted cash	(165,472)	(92,116)	81,564
NET (DECREASE) INCREASE IN CASH AND CASH EQUIVALENTS AND RESTRICTED CASH	(1,134,932)	500,534	945,502
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH, AT BEGINNING OF YEAR	2,539,781	2,039,247	1,093,745
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH, AT END OF YEAR	\$ 1,404,849	\$ 2,539,781	\$ 2,039,247
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:			
Cash paid during the year for:			
Interest	\$ 89,223	\$ 41,068	\$ 67,463
Income tax payments, net	\$ 604,366	\$ 330,426	\$ 51,681
Non-cash investing and financing activities:			
Deferred purchase consideration - Turner & Townsend	\$ —	\$ 485,414	\$ —
Non-controlling interest as part of Turner & Townsend Acquisition	—	774,122	—
Investment in alignment shares and private placement warrants of Altus Power, Inc.	—	141,871	—
Reduction in redeemable non-controlling interest - special purpose acquisition company	—	211,501	—
Reduction of trust account - special purpose acquisition company	—	189,801	—

The accompanying notes are an integral part of these consolidated financial statements.

CBRE GROUP, INC.
CONSOLIDATED STATEMENTS OF EQUITY
(Dollars in thousands, except share data)
CBRE Group, Inc. Stockholders'

					Accumulated other comprehensive loss			
	Shares	Class A common stock	Additional paid-in capital	Accumulated earnings	Minimum pension liability	Foreign currency translation and other	Non-controlling interests	Total
Balance at December 31, 2019	334,752,283	\$ 3,348	\$ 1,115,944	\$ 5,793,149	\$ (146,963)	\$ (532,785)	\$ 40,419	\$ 6,273,112
Net income	—	—	—	751,989	—	—	3,879	755,868
Pension liability adjustments, net of tax	—	—	—	—	7,343	—	—	7,343
Restricted stock awards vesting	1,859,146	19	(19)	—	—	—	—	—
Compensation expense for equity awards	—	—	60,391	—	—	—	—	60,391
Units repurchased for payment of taxes on equity awards	—	—	(43,835)	—	—	—	—	(43,835)
Repurchase of common stock	(1,050,084)	(11)	(50,017)	—	—	—	—	(50,028)
Foreign currency translation gain	—	—	—	—	—	124,045	215	124,260
Amounts reclassified from accumulated other comprehensive loss to interest expense, net of tax	—	—	—	—	—	426	—	426
Unrealized holding gains on available for sale debt securities, net of tax	—	—	—	—	—	1,436	—	1,436
Contributions from non-controlling interests	—	—	—	—	—	—	2,173	2,173
Distributions to non-controlling interests	—	—	—	—	—	—	(4,330)	(4,330)
Other	—	—	(7,825)	(15,081)	—	16,772	(595)	(6,729)
Balance at December 31, 2020	335,561,345	3,356	1,074,639	6,530,057	(139,620)	(390,106)	41,761	7,120,087
Net income	—	—	—	1,836,574	—	—	5,341	1,841,915
Pension liability adjustments, net of tax	—	—	—	—	35,304	—	—	35,304
Restricted stock awards vesting	1,268,983	13	(13)	—	—	—	—	—
Compensation expense for equity awards	—	—	184,934	—	—	—	—	184,934
Units repurchased for payment of taxes on equity awards	—	—	(38,864)	—	—	—	—	(38,864)
Repurchase of common stock	(3,954,369)	(40)	(372,909)	—	—	—	—	(372,949)
Foreign currency translation loss	—	—	—	—	—	(147,868)	(11,854)	(159,722)

The accompanying notes are an integral part of these consolidated financial statements.

CBRE GROUP, INC.
CONSOLIDATED STATEMENTS OF EQUITY
(Dollars in thousands, except share data)

CBRE Group, Inc. Stockholders'								
	Shares	Class A common stock	Additional paid-in capital	Accumulated earnings	Accumulated other comprehensive loss		Non- controlling interests	Total
					Minimum pension liability	Foreign currency translation and other		
Amounts reclassified from accumulated other comprehensive loss to interest expense, net of tax	—	—	—	—	—	431	—	431
Unrealized holding losses on available for sale debt securities, net of tax	—	—	—	—	—	(1,964)	—	(1,964)
Contributions from non-controlling interests	—	—	—	—	—	—	862	862
Distributions to non-controlling interests	—	—	—	—	—	—	(4,572)	(4,572)
Acquisition of non-controlling interests	—	—	—	—	—	—	808,633	808,633
Other	—	—	(48,895)	—	—	3,164	(9,247)	(54,978)
Balance at December 31, 2021	332,875,959	3,329	798,892	8,366,631	(104,316)	(536,343)	830,924	9,359,117
Net income	—	—	—	1,407,370	—	—	16,590	1,423,960
Pension liability adjustments, net of tax	—	—	—	—	(14,602)	—	—	(14,602)
Restricted stock awards vesting	1,028,807	10	(10)	—	—	—	—	—
Compensation expense for equity awards	—	—	160,325	—	—	—	—	160,325
Units repurchased for payment of taxes on equity awards	—	—	(37,932)	—	—	—	—	(37,932)
Repurchase of common stock	(22,890,606)	(229)	(912,453)	(948,849)	—	—	—	(1,861,531)
Foreign currency translation loss	—	—	—	—	—	(314,574)	(94,111)	(408,685)
Amounts reclassified from accumulated other comprehensive loss to interest expense, net of tax	—	—	—	—	—	439	—	439
Unrealized holding losses on available for sale debt securities, net of tax	—	—	—	—	—	(5,819)	—	(5,819)
Contributions from non-controlling interests	—	—	—	—	—	—	2,427	2,427
Distributions to non-controlling interests	—	—	—	—	—	—	(893)	(893)
Other	—	—	(8,822)	7,791	—	(7,565)	(2,478)	(11,074)
Balance at December 31, 2022	311,014,160	\$ 3,110	\$ —	\$ 8,832,943	\$ (118,918)	\$ (863,862)	\$ 752,459	\$ 8,605,732

The accompanying notes are an integral part of these consolidated financial statements.

CBRE GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Nature of Operations

CBRE Group, Inc., a Delaware corporation (which may be referred to in these financial statements as “the company,” “we,” “us” and “our”), was incorporated on February 20, 2001. We are the world’s largest commercial real estate services and investment firm, based on 2022 revenue, with leading global market positions in our leasing, property sales, occupier outsourcing and valuation businesses.

Our business is focused on providing services to real estate investors and occupiers. For investors, we provide capital markets (property sales and mortgage origination), mortgage sales and servicing, property leasing, investment management, property management, valuation and development services, among others. For occupiers, we provide facilities management, project management, transaction (both property sales and leasing) and consulting services, among others. We generate revenue from both management fees (large multi-year portfolio and per-project contracts) and commissions on transactions. As of December 31, 2022, the company has more than 115,000 employees (excluding Turner & Townsend employees) serving clients in more than 100 countries providing services under the following brand names: “CBRE” (real estate advisory and outsourcing services); “CBRE Investment Management” (investment management); “Trammell Crow Company” (primarily U.S. development); “Telford Homes” (U.K. development) and “Turner & Townsend Holdings Limited” (Turner & Townsend).

Considerations Related to the Covid-19 Pandemic, the war in Ukraine and Tightening Monetary Policy

During the first quarter of 2020, the emergence of the novel coronavirus (Covid-19) resulted in a sharp contraction of economic and commercial real estate activity across much of the world. Commercial real estate markets recovered strongly beginning in 2021 and continuing into the second quarter of 2022. However, the pandemic has likely engendered structural changes to the utilization of many types of commercial real estate, which will have ongoing repercussions for our business. In addition, the ongoing military conflict in Ukraine poses heightened risks for our operations in Europe, exacerbating supply chain disruptions, worsening inflation and raising the specter of energy shortages during the winter months. In March of 2022, we elected to exit most of our business in Russia, although we continue to have a limited number of employees in the country, managing facilities for existing corporate clients under pre-existing global outsourcing contracts. In addition, the second half of 2022 has been marked by significant macroeconomic challenges as central banks around the world have rapidly and sharply raised interest rates in efforts to reduce inflation, thereby significantly limiting credit availability. Less available and more expensive debt capital has pronounced effects on our capital markets (mortgage origination and property sales) businesses, making property acquisitions and dispositions harder to finance. Similar factors also impact the timing and ultimate proceeds realized for property sales within our development business.

2. Significant Accounting Policies***Principles of Consolidation***

The accompanying consolidated financial statements include our accounts and those of our consolidated subsidiaries, which are comprised of variable interest entities in which we are the primary beneficiary and voting interest entities, in which we determined we have a controlling financial interest, under the “Consolidations” Topic of the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) (Topic 810). The equity attributable to non-controlling interests in subsidiaries is shown separately in the accompanying consolidated balance sheets. All significant intercompany accounts and transactions have been eliminated in consolidation.

Variable Interest Entities (VIEs)

We determine whether an entity is a VIE and, if so, whether it should be consolidated by utilizing judgments and estimates that are inherently subjective. Our determination of whether an entity in which we hold a direct or indirect variable interest is a VIE is based on several factors, including whether the entity’s total equity investment at risk upon inception is sufficient to finance the entity’s activities without additional subordinated financial support. We make judgments regarding the sufficiency of the equity at risk based first on a qualitative analysis, and then a quantitative analysis, if necessary.

We analyze any investments in VIEs to determine if we are the primary beneficiary. In evaluating whether we are the primary beneficiary, we evaluate our direct and indirect economic interests in the entity. A reporting entity is determined to be the primary beneficiary if it holds a controlling financial interest in the VIE. Determining which reporting entity, if any, has a controlling financial interest in a VIE is primarily a qualitative approach focused on identifying which reporting entity has both: (i) the power to direct the activities of a VIE that most significantly impact such entity’s economic performance; and (ii) the

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

obligation to absorb losses or the right to receive benefits from such entity that could potentially be significant to such entity. Performance of that analysis requires the exercise of judgment.

We consider a variety of factors in identifying the entity that holds the power to direct matters that most significantly impact the VIE's economic performance including, but not limited to, the ability to direct financing, leasing, construction and other operating decisions and activities. In addition, we consider the rights of other investors to participate in those decisions, to replace the manager and to sell or liquidate the entity. We determine whether we are the primary beneficiary of a VIE at the time we become involved with a variable interest entity and reconsider that conclusion continually.

We consolidate any VIE of which we are the primary beneficiary and disclose significant VIEs of which we are not the primary beneficiary, if any, as well as disclose our maximum exposure to loss related to VIEs that are not consolidated (see Note 6).

Voting Interest Entities (VOEs)

For VOEs, we consolidate the entity if we have a controlling financial interest. We have a controlling financial interest in a VOE if: (i) for legal entities other than limited partnerships, we own a majority voting interest in the VOE or, for limited partnerships and similar entities, we own a majority of the entity's kick-out rights through voting limited partnership interests; and (ii) non-controlling shareholders or partners do not hold substantive participating rights and no other conditions exist that would indicate that we do not control the entity.

Marketable Securities and Other Investments

Debt securities are classified as held to maturity when we have the positive intent and ability to hold the securities to maturity. Marketable debt securities not classified as held to maturity are classified as available for sale. Available for sale debt securities are carried at their fair value and any difference between cost and fair value is recorded as an unrealized gain or loss, net of income taxes, and is reported as accumulated other comprehensive income (loss) in the consolidated statements of equity. Premiums and discounts are recognized in interest using the effective interest method. Realized gains and losses and declines in value resulting from credit losses on available for sale debt securities have not been significant. The cost of securities sold is based on the specific identification method. Interest and dividends on securities classified as available for sale are included in interest income.

Our investments in unconsolidated subsidiaries in which we have the ability to exercise significant influence over operating and financial policies, but do not control, or entities which are VIEs in which we are not the primary beneficiary are accounted for under the equity method in accordance with the "Instruments - Equity Method and Joint Ventures" topic of the FASB ASC (Topic 323). We eliminate transactions with such equity method subsidiaries to the extent of our ownership in such subsidiaries. Accordingly, our share of the earnings from these equity-method basis companies, generally recognized on a lag of three months or less, is included in consolidated net income. We have elected to account for certain eligible investments and related interests at fair value in accordance with the "Financial Instruments" topic of the FASB ASC (Topic 825).

For a portion of our investments in unconsolidated subsidiaries reported at fair value, we estimate fair value using the net asset value (NAV) per share (or its equivalent) our investees provide. These investments are considered investment companies, or are the equivalent of investment companies, as they carry all investments at fair value, with unrealized gains and losses resulting from changes in fair value reflected in earnings. Accordingly, we effectively carry our investments at an amount that is equivalent to our proportionate share of the net assets of each investment that would be allocated to us if each investment was liquidated at the net asset value as of the measurement date.

All equity investments that do not result in consolidation and are not accounted for under the equity method (primarily marketable equity securities) are measured at fair value with changes therein reflected in net income. Equity instruments that do not have readily determinable fair values and do not qualify for using the net asset value per share practical expedient in the "Fair Value Measurements" topic of the FASB ASC (Topic 820) are measured at cost, less any impairment, and adjusted for subsequent observable transactions for the same or similar investments of the same issuer.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Impairment Evaluation

Impairment losses on investments, other than available for sale debt securities and investments otherwise measured at fair value, are recognized upon evidence of other-than-temporary losses of value. When testing for impairment on investments that are not actively traded on a public market, we generally use a discounted cash flow approach to estimate the fair value of our investments and/or look to comparable activities in the marketplace. Management's judgment is required in developing the assumptions for the discounted cash flow approach. These assumptions include net asset values, internal rates of return, discount and capitalization rates, interest rates and financing terms, rental rates, timing of leasing activity, estimates of lease terms and related concessions, etc. When determining if impairment is other-than-temporary, we also look to the length of time and the extent to which fair value has been less than cost as well as the financial condition and near-term prospects of each investment. Based on our review, we did not record any significant other-than-temporary impairment losses during the years ended December 31, 2022, 2021 and 2020.

Use of Estimates

Our consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States (GAAP), which require management to make estimates and assumptions about future events, including the ongoing effects of the pandemic. These estimates and the underlying assumptions affect the amounts of assets and liabilities reported and reported amounts of revenue and expenses. Such estimates include the value of goodwill, intangibles and other long-lived assets, real estate assets, accounts receivable, contract assets, operating lease assets, investments in unconsolidated subsidiaries and assumptions used in the calculation of income taxes, retirement, other post-employment benefits, and loss contingencies, among others. These estimates and assumptions are based on our best judgment. We evaluate our estimates and assumptions on an ongoing basis using historical experience and other factors, including consideration of the current economic environment, and adjust such estimates and assumptions when facts and circumstances dictate. As future events and their effects cannot be determined with precision, actual results could differ significantly from these estimates. Changes in estimates resulting from continuing changes in the economic environment will be reflected in the financial statements in future periods.

Cash and Cash Equivalents

Cash and cash equivalents generally consist of cash and highly liquid investments with an original maturity of three months or less. We also manage certain cash and cash equivalents as an agent for our investment and property and facilities management clients. These amounts are not included in the accompanying consolidated balance sheets (see *Fiduciary Funds* discussion below).

Restricted Cash

Included in the accompanying consolidated balance sheets as of December 31, 2022 and 2021 is restricted cash of \$86.6 million and \$108.8 million, respectively. The balances primarily include restricted cash set aside to cover funding obligations as required by contracts executed by us in the ordinary course of business.

Fiduciary Funds

The accompanying consolidated balance sheets do not include the net assets of escrow, agency and fiduciary funds, which are held by us on behalf of clients, and which amounted to \$7.5 billion and \$8.6 billion at December 31, 2022 and 2021, respectively.

Concentration of Credit Risk

Financial instruments that potentially subject us to credit risk consist principally of trade receivables and interest-bearing investments. Users of real estate services account for a substantial portion of trade receivables and collateral is generally not required. The risk associated with this concentration is limited due to the large number of users and their geographic dispersion.

We place substantially all our interest-bearing investments with several major financial institutions to limit the amount of credit exposure with any one financial institution.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Property and Equipment

Property and equipment, which includes leasehold improvements, is stated at cost, net of accumulated depreciation and impairment. Depreciation and amortization of property and equipment is computed primarily using the straight-line method over estimated useful lives ranging up to 10 years. Leasehold improvements are amortized over the term of their associated leases, excluding options to renew unless we are reasonably certain that we will exercise the option to renew. We capitalize expenditures that significantly increase the life of our assets and expense the costs of maintenance and repairs.

We review property and equipment for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If this review indicates that such assets are considered impaired, the impairment is recognized in the period the changes occur and represents the amount by which the carrying value exceeds the fair value of the asset.

Certain costs related to the development or purchase of internal-use software are capitalized. Internal-use software costs incurred in the preliminary project stage are expensed as incurred. Significant direct consulting costs and certain payroll and related costs, which are incurred during the development stage of a project are generally capitalized and amortized over a three-year period (except for enterprise software development platforms, which range from three to seven years) when placed into production.

Real Estate***Classification and Impairment Evaluation***

We classify real estate in accordance with the criteria of the “*Property, Plant and Equipment*” Topic of the FASB ASC (Topic 360) as follows: (i) real estate held for sale, which includes completed assets or land for sale in its present condition that meet all of Topic 360’s “held for sale” criteria; (ii) real estate under development (current), which includes real estate that we are in the process of developing that is expected to be completed and disposed of within one year of the balance sheet date; (iii) real estate under development (non-current), which includes real estate that we are in the process of developing that is expected to be completed and disposed of more than one year from the balance sheet date; or (iv) real estate held for investment, which consists of land on which development activities have not yet commenced and completed assets or land held for disposition that do not meet the “held for sale” criteria. Any asset reclassified from real estate held for sale to real estate under development (current or non-current) or real estate held for investment is recorded individually at the lower of its fair value at the date of the reclassification or its carrying amount before it was classified as “held for sale,” adjusted (in the case of real estate held for investment) for any depreciation that would have been recognized had the asset been continuously classified as real estate held for investment.

Real estate held for sale is recorded at the lower of cost or fair value less cost to sell. If an asset’s fair value less cost to sell, based on discounted future cash flows, management estimates or market comparisons, is less than its carrying amount, an allowance is recorded against the asset. Real estate under development and real estate held for investment are carried at cost less depreciation and impairment, as applicable. Buildings and improvements included in real estate held for investment are depreciated using the straight-line method over estimated useful lives, generally up to 39 years. Tenant improvements included in real estate held for investment are amortized using the straight-line method over the shorter of their estimated useful lives or terms of the respective leases. Land improvements included in real estate held for investment are depreciated over their estimated useful lives, up to 15 years.

Real estate under development and real estate held for investment are evaluated for impairment and losses are recorded when undiscounted cash flows estimated to be generated by an asset are less than the asset’s carrying amount. The amount of the impairment loss, if any, is calculated as the excess of the asset’s carrying value over its fair value, which is determined using a discounted cash flow analysis, management estimates or market comparisons.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

A summary of our real estate assets is as follows (dollars in thousands):

	December 31,	
	2022	2021
Real estate under development, current (included in other current assets)	\$ 193,334	\$ 96,237
Real estate and other assets held for sale (included in other current assets)	96,405	142
Real estate under development	172,253	326,416
Real estate held for investment (included in other assets, net)	44,984	4,447
Total real estate	<u>\$ 506,976</u>	<u>\$ 427,242</u>

Cost Capitalization and Allocation

When acquiring, developing, and constructing real estate assets, we capitalize recoverable costs. Capitalization begins when the activities related to development have begun and ceases when activities are substantially complete and the asset is available for occupancy. Recoverable costs capitalized include pursuit costs, or pre-acquisition/pre-construction costs, taxes and insurance, interest, development and construction costs and costs of incidental operations. We do not capitalize any internal costs when acquiring, developing, and constructing real estate assets. We expense transaction costs for acquisitions that qualify as a business in accordance with the “*Business Combinations*” Topic of the FASB ASC (Topic 805). Pursuit costs capitalized in connection with a potential development project that we have determined not to pursue are written off in the period that determination is made.

At times, we purchase bulk land that we intend to sell or develop in phases. The land basis allocated to each phase is based on the relative estimated fair value of the phases before construction. We allocate construction costs incurred relating to more than one phase between the various phases; if the costs cannot be specifically attributed to a certain phase or the improvements benefit more than one phase, we allocate the costs between the phases based on their relative estimated sales values, where practicable, or other value methods as appropriate under the circumstances. Relative allocations of the costs are revised as the sales value estimates are revised.

When acquiring real estate with existing buildings, we allocate the purchase price between land, land improvements, building and intangibles related to in-place leases, if any, based on their relative fair values. The fair values of acquired land and buildings are determined based on an estimated discounted future cash flow model with lease-up assumptions as if the building was vacant upon acquisition. The fair value of in-place leases includes the value of lease intangibles for above or below-market rents and tenant origination costs, determined on a lease-by-lease basis. The capitalized values for both lease intangibles and tenant origination costs are amortized over the term of the underlying leases. Amortization related to lease intangibles is recorded as either an increase to or a reduction of rental income and amortization for tenant origination costs is recorded to amortization expense.

Disposition of Real Estate

We account for gains and losses on the sale of real estate and other nonfinancial assets or in substance nonfinancial assets to noncustomers that are not an output of our ordinary activities and are not a business in accordance with Topic 610-20, “*Other Income – Gains and Losses from the Derecognition of Nonfinancial Assets*.” Where we do not have a controlling financial interest in the entity that holds the transferred assets after the transaction, we derecognize the assets or in substance nonfinancial assets and recognize a gain or loss when control of the underlying assets transfers to the counterparty.

We may also dispose of real estate through the transfer of a long-term leasehold representing a major part of the remaining economic life of the property. We account for these transfers as sales-type leases in accordance with the “*Leases*” Topic of the FASB ASC (Topic 842) by derecognizing the carrying amount of the underlying asset, recognizing any net investment in the lease and recognizing selling profit or loss in net income.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Goodwill and Other Intangible Assets

Our acquisitions require the application of purchase accounting, which results in tangible and identifiable intangible assets and liabilities of the acquired entity being recorded at fair value. The difference between the purchase price and the fair value of net assets acquired is recorded as goodwill. Deferred consideration arrangements granted in connection with a business combination are evaluated to determine whether all or a portion is, in substance, additional purchase price or compensation for services. Additional purchase price is added to the fair value of consideration transferred in the business combination and compensation is included in operating expenses in the period it is incurred. The majority of our existing goodwill balance has resulted from our acquisition of CBRE Services, Inc. (CBRE Services) in 2001 (the 2001 Acquisition), our acquisition of Insignia Financial Group, Inc. (Insignia) in 2003 (the Insignia Acquisition), our acquisition of the Trammell Crow Company in 2006 (the Trammell Crow Company Acquisition), our acquisition of substantially all of the ING Group N.V. (ING) Real Estate Investment Management (REIM) operations in Europe and Asia, as well as substantially all of Clarion Real Estate Securities (CRES) in 2011 (collectively referred to as the REIM Acquisitions), our acquisition of Norland Managed Services Ltd (Norland) in 2013 (the Norland Acquisition), our acquisition of Johnson Controls, Inc. (JCI)'s Global Workplace Solutions (JCI-GWS) business in 2015, our acquisition of FacilitySource Holdings, LLC (FacilitySource) in 2018, and our acquisition of a majority interest in Turner & Townsend in 2021. Other intangible assets that have indefinite estimated useful lives that are not being amortized include certain management contracts identified in the REIM Acquisitions, a trademark, which was separately identified as a result of the 2001 Acquisition, and a trademark identified as part of the Turner & Townsend Acquisition. The remaining other intangible assets primarily include customer relationships, mortgage servicing rights and trade names/trademarks, which are all being amortized over estimated useful lives ranging up to 20 years.

We are required to test goodwill and other intangible assets deemed to have indefinite useful lives for impairment at least annually, or more often if circumstances or events indicate a change in the impairment status, in accordance with FASB ASC Topic 350, "*Intangibles – Goodwill and Other.*" ASC paragraphs 350-20-35-3 through 35-3B permit, but do not require an entity to perform a qualitative assessment with respect to any of its reporting units or indefinite-lived intangible assets to determine whether a quantitative impairment test is needed. Entities are permitted to assess based on qualitative factors whether it is more likely than not that a reporting unit's or indefinite-lived intangible asset's fair value is less than its carrying amount before applying the quantitative impairment test. If it is more likely than not that the fair value of a reporting unit or indefinite-lived intangible asset is less than its carrying amount, the entity conducts the quantitative impairment test. If not, the entity does not need to apply the quantitative test. The qualitative test is elective, and an entity can go directly to the quantitative test rather than making a more-likely-than-not assessment based on an evaluation of qualitative factors. When performing a quantitative test, we primarily use a discounted cash flow approach to estimate the fair value of our reporting units and indefinite-lived intangible assets. Management's judgment is required in developing the assumptions for the discounted cash flow model. These assumptions include revenue growth rates, profit margin percentages, discount rates, etc. We record an impairment loss when the amount by which a reporting unit's or indefinite-lived intangible asset's carrying value exceeds its fair value, not to exceed the carrying amount of the goodwill or indefinite-lived intangible asset.

Business Combinations

We estimate the fair value of identifiable assets, liabilities and any non-controlling interests acquired in a business combination and recognize goodwill as the excess of the purchase price over the recorded value of the acquired assets and liabilities in accordance with ASC Topic 805. When estimating the fair value of acquired assets, we utilize various valuation models which may require significant judgment, particularly where observable market values do not exist. Inputs requiring significant judgment may include discount rates, growth rates, cost of capital, royalty rates, tax rates, market values, depreciated replacement costs, selling prices less costs to dispose, and remaining useful lives, among others. Reasonable differences in these inputs could have a significant impact on the estimated value of acquired assets, the resulting value of goodwill, subsequent depreciation and amortization expense, and the results of future asset impairment evaluations.

Leases

We are the lessee in contracts for our office space tenancies, for leased vehicles, and for some leases of land in our global development business. We monitor our service arrangements to evaluate whether they meet the definition of a lease.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The present value of lease payments, which are either fixed payments, in-substance fixed payments, or variable payments tied to an index or rate are recognized on the consolidated balance sheet with corresponding lease liabilities and right-of-use assets upon the commencement of the lease. These lease costs are expensed over the respective lease term in accordance with the classification of the lease (i.e., operating versus finance classification). Variable lease payments not tied to an index or rate are expensed as incurred and are not subject to capitalization.

The base terms for our lease arrangements typically do not extend beyond 10 years, except for land leases. We commonly have renewal options in our leases, but most of these options do not create a significant economic incentive for us to extend the lease term. Therefore, payments during periods covered by these renewal options are typically not included in our lease liabilities and right-of-use assets. Specific to our vehicle leases, early termination options are common and economic penalties associated with early termination of these contracts are typically significant enough to make it reasonably certain that we will not exercise such options. Therefore, payments during periods covered by these early termination options in vehicle leases are typically included in our lease liabilities and right-of-use assets. As an accounting policy election, our short-term leases with an initial term of 12 months or less are not recognized as lease liabilities and right-of-use assets in the consolidated balance sheets. The rent expense associated with short term leases is recognized on a straight-line basis over the lease term and was not significant.

Most of our office space leases include variable payments based on our share of actual common area maintenance and operating costs of the leased property. Many of our vehicle leases include variable payments based on actual service and fuel costs. For both office space and vehicle leases, we have elected the practical expedient to not separate lease components from non-lease components. Therefore, these costs are classified as variable lease payments.

Lease payments are typically discounted at our incremental borrowing rate because the interest rate implicit in the lease cannot be readily determined in the absence of key inputs which are typically not reported by our lessors. Because we do not generally borrow on a collateralized basis, judgement was used to estimate the secured borrowing rate associated with our leases based on relevant market data and our inputs applied to accepted valuation methodologies. The incremental borrowing rate calculated for each lease also reflects the lease term, currency, and geography specific to each lease.

Deferred Financing Costs

Costs incurred in connection with financing activities are generally deferred and amortized over the terms of the related debt agreements ranging up to ten years. Debt issuance costs related to a recognized debt liability are presented in the accompanying consolidated balance sheets as a direct deduction from the carrying amount of that debt liability. Amortization of these costs is charged to interest expense in the accompanying consolidated statements of operations. Accounting Standards Update (ASU) 2015-15, *“Interest—Imputation of Interest (Subtopic 835-30): Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements”* permits classifying debt issuance costs associated with a line of credit arrangement as an asset, regardless of whether there are any outstanding borrowings on the arrangement. Total deferred financing costs, net of accumulated amortization, related to our revolving line of credit have been included in other assets in the accompanying consolidated balance sheets and were \$11.1 million and \$9.5 million as of December 31, 2022 and 2021, respectively.

See Note 11 for additional information on activities associated with our debt.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Revenue Recognition

We account for revenue with customers in accordance with FASB ASC Topic, “*Revenue from Contracts with Customers*” (Topic 606). Topic 606 also includes Subtopic 340-40, “*Other Assets and Deferred Costs – Contracts with Customers*,” which requires deferral of incremental costs to obtain and fulfill a contract with a customer. Revenue is recognized when or as control of the promised services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those services.

The following is a description of principal activities – separated by reportable segments – from which we generate revenue. For more detailed information about our reportable segments, see Notes 18 and 19.

Advisory Services

Our Advisory Services segment provides a comprehensive range of services globally, including property leasing, property sales, mortgage services, property management and valuation services.

Property Leasing and Property Sales

We provide strategic advice and execution for owners, investors, and occupiers of real estate in connection with the leasing of office, industrial and retail space. We also offer clients fully integrated property sales services under the CBRE Capital Markets brand. We are compensated for our services in the form of a commission and, in some instances, may earn various forms of variable incentive consideration. Our commission is paid upon the occurrence of certain contractual event(s) which may be contingent. For example, a portion of our leasing commission may be paid upon signing of the lease by the tenant, with the remaining paid upon occurrence of another future contingent event (e.g., payment of first month’s rent or tenant move-in). For leases, we typically satisfy our performance obligation at a point in time when control is transferred; generally, at the time of the first contractual event where there is a present right to payment. We look to history, experience with a customer, and deal specific considerations as part of the most likely outcome estimation approach to support our judgement that the second contingency (if applicable) will be met. Therefore, we typically accelerate the recognition of the revenue associated with the second contingent event. For sales, our commission is typically paid at the closing of the sale, which represents transfer of control for services to the customer.

In addition to our commission, we may recognize other forms of variable consideration which can include, but are not limited to, commissions subject to concession or claw back and volume-based discounts or rebates. We assess variable consideration on a contract-by-contract basis, and when appropriate, recognize revenue based on our assessment of the outcome (using the most likely outcome approach or weighted probability) and historical results, if comparable and representative. We recognize variable consideration if it is deemed probable that there will not be significant reversal in the future.

Mortgage Originations and Loan Sales

We offer clients commercial mortgage and structured financing services. Fees from services within our mortgage brokerage business that are in the scope of Topic 606 include fees earned for the brokering of commercial mortgage loans primarily through relationships established with investment banking firms, national and regional banks, credit companies, insurance companies and pension funds. We are compensated for our brokerage services via a fee paid upon successful placement of a commercial mortgage borrower with a lender who will provide financing. The fee earned is contingent upon the funding of the loan, which represents the transfer of control for services to the customer. Therefore, we typically satisfy our performance obligation at the point in time of the funding of the loan.

We also earn fees from the origination and sale of commercial mortgage loans for which the company retains the servicing rights. These fees are governed by the “*Fair Value Measurements and Disclosures*” topic (Topic 820) and “*Transfers and Servicing*” topic (Topic 860) of the FASB ASC. Upon origination of a mortgage loan held for sale, the fair value of the mortgage servicing rights (MSR) to be retained is included in the forecasted proceeds from the anticipated loan sale and results in a net gain (which is reflected in revenue). Upon sale, we record a servicing asset or liability based on the fair value of the retained MSR associated with the transferred loan. Subsequent to the initial recording, MSRs are amortized and carried at the lower of amortized cost or fair value in other intangible assets in the accompanying consolidated balance sheets. They are amortized in proportion to and over the estimated period that the servicing income is expected to be received.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Property Management Services

We provide property management services on a contractual basis for owners of and investors in office, industrial and retail properties. These services include marketing, building engineering, accounting, and financial services. We are compensated for our services through a monthly management fee earned based on either a specified percentage of the monthly rental income, rental receipts generated from the property under management or a fixed fee. We are also often reimbursed for our administrative and payroll costs directly attributable to the properties under management. Property management services represent a series of distinct daily services rendered over time. Consistent with the transfer of control for distinct, daily services to the customer, revenue is recognized at the end of each period for the fees associated with the services performed. The amount of revenue recognized is presented gross for any services provided by our employees, as we control them. We generally do not control third-party services delivered to property management clients. As such, we generally report revenues net of third-party reimbursements.

Valuation Services

We provide valuation services that include market-value appraisals, litigation support, discounted cash flow analyses, feasibility studies as well as consulting services such as property condition reports, hotel advisory and environmental consulting. We are compensated for valuation services in the form of a fee, which is payable on the occurrence of certain events (e.g., a portion on the delivery of a draft report with the remaining on the delivery of the final report). For consulting services, we may be paid based on the occurrence of time or event-based milestones (such as the delivery of draft reports). We typically satisfy our performance obligation for valuation services as services are rendered over time.

Global Workplace Solutions

Our Global Workplace Solutions segment provides a broad suite of integrated, contractually-based outsourcing services globally for occupiers of real estate, including facilities management, and project management services.

Facilities Management and Project Management Services

Facilities management involves the day-to-day management of client-occupied space and includes headquarters, regional offices, administrative offices, data centers and other critical facilities, manufacturing and laboratory facilities, distribution facilities and retail space. Contracts for facilities management services are often structured so we are reimbursed for client-dedicated personnel costs and subcontracted vendor costs as well as associated overhead expenses plus a monthly fee, and, in some cases, annual incentives tied to agreed upon performance targets, with any penalties typically capped. In addition, we have contracts for facilities management services based on fixed fees or guaranteed maximum prices. Fixed fee contracts are typically structured where an agreed upon scope of work is delivered for a fixed price while guaranteed maximum price contracts are structured with an agreed upon scope of work that will be provided to the client for a not to exceed price. Facilities management services represent a series of distinct daily services rendered over time. Consistent with the transfer of control for distinct, daily services to the customer, revenue is typically recognized at the end of each period for the fees associated with the services performed.

Project management services are often provided on a portfolio wide or programmatic basis. Revenues from project management services generally include construction management, fixed management fees, variable fees, and incentive fees if certain agreed upon performance targets are met. Revenues from project management may also include reimbursement of payroll and related costs for personnel providing the services and subcontracted vendor costs. Project management services represent a series of distinct daily services rendered over time. Consistent with the transfer of control for distinct, daily services to the customer, revenue is typically recognized at the end of each period for the fees associated with the services performed.

The amount of revenue recognized is presented gross for any services provided by our employees, as we control them. This is evidenced by our obligation for their performance and our ability to direct and redirect their work, as well as negotiate the value of such services. The amount of revenue recognized related to the majority of facilities management contracts and certain project management arrangements is presented gross (with offsetting expense recorded in cost of revenue) for reimbursements of costs of third-party services because we control those services that are delivered to the client. In the instances when we do not control third-party services delivered to the client, we report revenues net of the third-party reimbursements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

In addition to our management fee, we receive various types of variable consideration which can include but is not limited to key performance indicator bonuses or penalties which may be linked to subcontractor performance, gross maximum price, glidepaths, savings guarantees, shared savings, or fixed fee structures. We assess variable consideration on a contract-by-contract basis, and when appropriate, recognize revenue based on our assessment of the outcome (using the most likely outcome approach or weighted probability) and historical results, if comparable and representative. Using management assessments and historical results and statistics, we recognize revenue if it is deemed probable there will not be significant reversal in the future.

Real Estate Investments

Our Real Estate Investments segment is comprised of investment management services provided globally and development services in the U.S., the U.K. and Continental Europe.

Investment Management Services

Our investment management services are provided to pension funds, insurance companies, sovereign wealth funds, foundations, endowments, and other institutional investors seeking to generate returns and diversification through investment in real assets. We sponsor investment programs that span the risk/return spectrum in North America, Europe, Asia, and Australia. We are typically compensated in the form of a base management fee, disposition fees, acquisition fees and incentive fees in the form of performance fees or carried interests based on fund type (open or closed ended, respectively). For the base management fees, we typically satisfy the performance obligation as service is rendered over time pursuant to the series guidance. Consistent with the transfer of control for distinct, daily services to the customer, revenue is recognized at the end of each period for the fees associated with the services performed. For acquisition and disposition services, we typically satisfy the performance obligation at a point in time (at acquisition or upon disposition). For contracts with contingent fees, including performance fees, incentive fees and carried interests, we assess variable consideration on a contract-by-contract basis, and when appropriate, recognize revenue based on our assessment of the outcome (using the most likely outcome approach or weighted probability) and historical results, if comparable and representative. Revenue associated with performance fees and carried interests are typically constrained due to volatility in the real estate market, a broad range of possible outcomes, and other factors in the market that are outside of our control.

Development Services

Our development services consist of real estate development and investment activities in the U.S., the U.K. and Europe to users of and investors in commercial real estate, as well as for our own account.

We pursue opportunistic, risk-mitigated development and investment in commercial real estate across a wide spectrum of property types, including industrial, office and retail properties; healthcare facilities of all types (medical office buildings, hospitals and ambulatory surgery centers); and residential/mixed-use projects. We pursue development and investment activity on behalf of our clients on a fee basis with no, or limited, ownership interest in a property, in partnership with our clients through co-investment – either on an individual project basis or through programs with certain strategic capital partners or for our own account with 100% ownership. Development services represent a series of distinct daily services rendered over time. Consistent with the transfer of control for distinct, daily services to the customer, revenue is recognized at the end of each period for the fees associated with the services performed. Fees are typically payable monthly over the service term or upon contractual defined events, like project milestones. In addition to development fee revenue, we receive various types of variable consideration which can include, but is not limited to, contingent lease-up bonuses, cost saving incentives, profit sharing on sales and at-risk fees. We assess variable consideration on a contract-by-contract basis, and when appropriate, recognize revenue based on our assessment of the outcome (using the most likely outcome approach or weighted probability) and historical results, if comparable and representative. We accelerate revenue if it is deemed probable there will not be significant reversal in the future. Sales of real estate to customers which are considered an output of ordinary activities are recognized as revenue when or as control of the assets are transferred to the customer.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Accounts Receivable and Allowance for Doubtful Accounts

We record accounts receivable for our unconditional rights to consideration arising from our performance under contracts with customers. The carrying value of such receivables, net of the allowance for doubtful accounts, represents their estimated net realizable value. We estimate our allowance for doubtful accounts for specific accounts receivable balances based on historical collection trends, the age of outstanding accounts receivables and existing economic conditions associated with the receivables. Past-due accounts receivable balances are written off when our internal collection efforts have been unsuccessful. As a practical expedient, we do not adjust the promised amount of consideration for the effects of a significant financing component when we expect, at contract inception, that the period between our transfer of a promised service to a customer and when the customer pays for that service will be one year or less. We do not typically include extended payment terms in our contracts with customers.

Remaining Performance Obligations

Remaining performance obligations represent the aggregate transaction prices for contracts where our performance obligations have not yet been satisfied. As of December 31, 2022, the aggregate amount of transaction price allocated to remaining performance obligations in our property leasing business was not significant. We apply the practical expedient related to remaining performance obligations that are part of a contract that has an original expected duration of one year or less and the practical expedient related to variable consideration from remaining performance obligations pursuant to the series guidance. All of our remaining performance obligations apply to one of these practical expedients.

Contract Assets and Contract Liabilities

Contract assets represent assets for revenue that has been recognized in advance of billing the customer and for which the right to bill is contingent upon something other than the passage of time. This is common for contingent portions of commissions in brokerage, development and construction revenue in development services and incentive fees present in various businesses. Billing requirements vary by contract but are generally structured around fixed monthly fees, reimbursement of employee and other third-party costs, and the achievement or completion of certain contingent events.

When we receive consideration, or such consideration is unconditionally due, from a customer prior to transferring services to the customer under the terms of the services contract, we record deferred revenue, which represents a contract liability. We recognize the contract liability as revenue once we have transferred control of the service to the customer and all revenue recognition criteria are met.

Contract assets and contract liabilities are determined for each contract on a net basis. For contract assets, we classify the short-term portion as a separate line item within current assets and the long-term portion as a separate line item in the accompanying consolidated balance sheets. For contract liabilities, we classify the short-term portion as a separate line item within current liabilities and the long-term portion within other liabilities, long-term in the accompanying consolidated balance sheets.

Contract Costs

Contract costs primarily consist of upfront costs incurred to obtain or to fulfill a contract. These costs are typically found within our Global Workplace Solutions segment. Such costs relate to transition costs to fulfill contracts prior to services being rendered and are included within other intangible assets in the accompanying consolidated balance sheets. Capitalized transition costs are amortized based on the transfer of services to which the assets relate which can vary on a contract-by-contract basis and are included in cost of revenue in the accompanying consolidated statement of operations. For contract costs that are recognized as assets, we periodically review for impairment.

Applying the contract cost practical expedient, we recognize the incremental costs of obtaining contracts as an expense when incurred if the amortization period of the assets that we otherwise would have recognized is one year or less.

Business Promotion and Advertising Costs

The costs of business promotion and advertising are expensed as incurred. Business promotion and advertising costs of \$85.1 million, \$68.9 million and \$57.2 million were included in operating, administrative and other expenses for the years ended December 31, 2022, 2021 and 2020, respectively.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Foreign Currencies

The financial statements of subsidiaries located outside the U.S. are generally measured using the local currency as the functional currency. The assets and liabilities of these subsidiaries are translated at the rates of exchange at the balance sheet date, and income and expenses are translated at the average monthly rate. The resulting translation adjustments are included in the accumulated other comprehensive income/loss component of equity. Gains and losses resulting from foreign currency transactions are included in the results of operations.

Comprehensive Income

Comprehensive income consists of net income and other comprehensive income/loss. In the accompanying consolidated balance sheets, accumulated other comprehensive income/loss primarily consists of foreign currency translation adjustments, fees associated with the termination of interest rate swaps, unrealized gains (losses) on interest rate swaps, unrealized holding gains on available for sale debt securities and pension liability adjustments. Foreign currency translation adjustments exclude any income tax effects given that earnings of non-U.S. subsidiaries are deemed to be reinvested for an indefinite period of time (see Note 15).

Warehouse Receivables

Our wholly-owned subsidiary CBRE Capital Markets, Inc. (CBRE Capital Markets) is a Federal Home Loan Mortgage Corporation (Freddie Mac) approved Multifamily Program Plus Seller/Servicer and an approved Federal National Mortgage Association (Fannie Mae) Aggregation and Negotiated Transaction Seller/Servicer. In addition, CBRE Capital Markets' wholly-owned subsidiary CBRE Multifamily Capital, Inc. (CBRE MCI) is an approved Fannie Mae Delegated Underwriting and Servicing (DUS) Seller/Servicer and CBRE Capital Markets' wholly-owned subsidiary CBRE HMF, Inc. (CBRE HMF) is a U.S. Department of Housing and Urban Development (HUD) approved Non-Supervised Federal Housing Authority (FHA) Title II Mortgagee, an approved Multifamily Accelerated Processing (MAP) lender and an approved Government National Mortgage Association (Ginnie Mae) issuer of mortgage-backed securities (MBS). Under these arrangements, before loans are originated through proceeds from warehouse lines of credit, we obtain either a contractual loan purchase commitment from either Freddie Mac or Fannie Mae or a confirmed forward trade commitment for the issuance and purchase of a Fannie Mae or Ginnie Mae MBS that will be secured by the loans. The warehouse lines of credit are generally repaid within a one-month period when Freddie Mac or Fannie Mae buys the loans or upon settlement of the Fannie Mae or Ginnie Mae MBS, while we retain the servicing rights. Loans are funded at the prevailing market rates. We elect the fair value option for all warehouse receivables. At December 31, 2022 and 2021, all of the warehouse receivables included in the accompanying consolidated balance sheets were either under commitment to be purchased by Freddie Mac or had confirmed forward trade commitments for the issuance and purchase of Fannie Mae or Ginnie Mae mortgage-backed securities that will be secured by the underlying loans.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Mortgage Servicing Rights (MSRs)

In connection with the origination and sale of mortgage loans with servicing rights retained, we record servicing assets or liabilities based on the fair value of the mortgage servicing rights on the date the loans are sold. Our MSRs are initially recorded at fair value. Subsequent to the initial recording, MSRs are amortized and carried at the lower of amortized cost or fair value in other intangible assets in the accompanying consolidated balance sheets. They are amortized in proportion to and over the estimated period that net servicing income is expected to be received based on projections and timing of estimated future net cash flows.

Our initial recording of MSRs at their fair value resulted in net gains, as the fair value of servicing contracts that result in MSR assets exceeded the fair value of servicing contracts that result in MSR liabilities. The net assets and net gains are presented in the accompanying consolidated financial statements. The amount of MSRs recognized during the years ended December 31, 2022 and 2021 was as follows (dollars in thousands):

	Year Ended December 31,	
	2022	2021
Beginning balance, mortgage servicing rights	\$ 578,516	\$ 556,931
Mortgage servicing rights recognized	145,775	193,835
Mortgage servicing rights sold	—	—
Amortization expense	(163,652)	(172,250)
Ending balance, mortgage servicing rights	<u>\$ 560,639</u>	<u>\$ 578,516</u>

MSRs do not actively trade in an open market with readily available observable prices; therefore, fair value is determined based on certain assumptions and judgments, including the estimation of the present value of future cash flows realized from servicing the underlying mortgage loans. Management's assumptions include the benefits of servicing (servicing fee income and interest on escrow deposits), inflation, the cost of servicing, prepayment rates, delinquencies, discount rates and the estimated life of servicing cash flows. The assumptions used are subject to change based on management's judgments and estimates of changes in future cash flows and interest rates, among other things. The key assumptions used during the years ended December 31, 2022, 2021 and 2020 in measuring fair value were as follows:

	Year Ended December 31,		
	2022	2021	2020
Discount rate	12.87 %	12.62 %	11.73 %
Conditional prepayment rate	10.12 %	9.78 %	9.80 %

The estimated fair value of our MSRs was \$1.1 billion and \$891.0 million as of December 31, 2022 and 2021, respectively. Impairment is evaluated through a comparison of the carrying amount and fair value of the MSRs, and recognized with the establishment of a valuation allowance. We did not incur any impairment charges related to our MSRs during the years ended December 31, 2022, 2021 or 2020. No valuation allowance was created previously and we did not record a valuation allowance for MSRs in 2022 or 2021.

Included in revenue in the accompanying consolidated statements of operations are contractually specified servicing fees from loans serviced for others of \$309.5 million, \$288.0 million and \$212.9 million for the years ended December 31, 2022, 2021 and 2020, respectively, and includes prepayment fees/late fees/ancillary income earned from loans serviced for others of \$22.7 million, \$41.7 million and \$11.0 million for the years ended December 31, 2022, 2021 and 2020, respectively.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Accounting for Broker Draws

As part of our recruitment efforts relative to new U.S. brokers, we offer a transitional broker draw arrangement. Our broker draw arrangements generally last until such time as a broker's pipeline of business is sufficient to allow him or her to earn sustainable commissions. This program is intended to provide the broker with a minimal amount of cash flow to allow adequate time for his or her training as well as time for him or her to develop business relationships. Similar to traditional salaries, the broker draws are paid irrespective of the actual revenues generated by the broker. Often these broker draws represent the only form of compensation received by the broker. Furthermore, it is not our general policy to pursue collection of unearned broker draws paid under this arrangement. As a result, we have concluded that broker draws are economically equivalent to salaries paid and accordingly charge them to compensation expense as incurred over the service period. The broker is also entitled to earn a commission on completed revenue transactions, less any amounts previously paid to the broker in the form of a draw.

Stock-Based Compensation

We account for all employee awards under the fair value recognition provisions of the “*Compensation – Stock Compensation*” Topic of the FASB ASC (Topic 718). Topic 718 requires the measurement of compensation cost at the grant date, based upon the estimated fair value of the award, and requires amortization of the related expense over the employee's requisite service period. We do not estimate forfeitures, but instead recognize forfeitures when they occur. See Note 14 for additional information on our stock-based compensation plans.

Income Per Share

Basic income per share attributable to CBRE Group, Inc. is computed by dividing net income attributable to CBRE Group, Inc. stockholders by the weighted average number of common shares outstanding during each period. The computation of diluted income per share attributable to CBRE Group, Inc. generally further assumes the dilutive effect of potential common shares, which include certain contingently issuable shares. Contingently issuable shares consist of non-vested stock awards.

Income Taxes

Income taxes are accounted for under the asset and liability method in accordance with the “*Accounting for Income Taxes*” Topic of the FASB ASC (Topic 740). Deferred tax assets and liabilities are determined based on temporary differences between the financial reporting and tax basis of assets and liabilities and operating loss and tax credit carry forwards. Deferred tax assets and liabilities are measured by applying enacted tax rates and laws and are released in the years in which the temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Valuation allowances are provided against deferred tax assets when it is more likely than not that some portion or all the deferred tax asset will not be realized.

We utilize a two-step approach to recognizing and measuring uncertain tax positions. The first step is to evaluate the tax position for recognition by determining if the available evidence indicates there is more than a 50% likelihood that the position will be sustained upon examination, including resolution of related appeals or litigation processes. The second step is to measure the tax benefit as the largest amount which is more than 50% likely of being realized upon ultimate settlement.

See Note 15 for additional information on income taxes.

Self-Insurance

Our wholly-owned captive insurance company, which is subject to applicable insurance rules and regulations, insures our exposure related to workers' compensation insurance, general liability insurance and automotive insurance for our U.S. operations risk on a primary basis and we purchase excess coverage from unrelated insurance carriers. The captive insurance company also insures primary risk relating to professional indemnity claims globally. Given the nature of these types of claims, it may take several years for resolution and determination of the cost of these claims. We are required to estimate the cost of these claims in our financial statements.

The estimates that we utilize to record our potential losses on claims are inherently subjective, and actual claims could differ from amounts recorded, which could result in increased or decreased expense in future periods. As of December 31, 2022 and 2021, our reserves for claims under these insurance programs were \$167.9 million and \$153.4 million, respectively, of which \$3.0 million and \$2.2 million, respectively, represented our estimated current liabilities.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Contingencies

Pursuant to ASC Topic 450, we evaluate whether any existing conditions existed as of the financial statement issuance date which may result in a loss contingent upon one or more future events occurring or not occurring. Assessing contingent liabilities involves significant judgment. If the assessment indicates that a loss is probable and the amount is reasonably estimable, we accrue an estimated liability in our financial statements. If the assessment indicates that a potentially material loss contingency is not probable but is reasonably possible, or is probable but cannot be estimated, then the nature of the contingent liability and an estimate of the range of potential losses, if determinable and material, would be disclosed. We determine the amount of estimated liability to accrue, if any, after thorough evaluation of key information available that could impact the size and timing of the potential loss on a case-by-case basis. Given the significant judgment involved with such estimates, the potential liability may change in the future as new information becomes available. We do not recognize gain contingencies until the contingency is completely resolved and the associated amounts are probable of collection.

3. New Accounting Pronouncements***Recently Adopted Accounting Pronouncements***

In March 2020, January 2021, and December 2022, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2020-04, “*Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting*”, ASU 2021-01, “*Reference Rate Reform: Scope*,” and ASU 2022-06, “*Reference Rate Reform (Topic 848) – Deferral of the Sunset Date of Topic 848*,” respectively. Together, the ASUs provide temporary optional expedients and exceptions to the U.S. GAAP guidance on contract modifications and hedge accounting to ease the financial reporting burdens related to the expected market transition from the London Interbank Offered Rate (LIBOR) and other interbank offered rates to alternative reference rates. This guidance is effective for a limited time for all entities through December 31, 2024. We have completed our evaluation of significant contracts and concluded that our adoption of the ASUs referenced above did not have a material impact on our consolidated financial statements and related disclosures.

In July 2021, the FASB issued ASU 2021-05, “*Leases (Topic 842): Lessors—Certain Leases with Variable Lease Payments (Topic 842)*.” The ASU amends the lease classification requirements for lessors to align them with practice under Topic 840. Lessors should classify and account for a lease with variable lease payments that do not depend on a reference index or a rate as an operating lease if certain criteria are met. This guidance is effective for fiscal years beginning after December 15, 2021, and interim periods within those fiscal years. We adopted ASU 2021-05 in the first quarter of 2022 and the adoption did not have a material impact on our consolidated financial statements and related disclosures.

In November 2021, the FASB issued ASU 2021-10, “*Disclosures by Business Entities about Government Assistance*.” This ASU requires annual disclosures that increase the transparency of transactions with a government accounted for by applying a grant or contribution accounting model by analogy, including (1) the types of transactions, (2) the accounting for those transactions, and (3) the effect of those transactions on an entity’s financial statements. This ASU is effective for fiscal years beginning after December 15, 2021. The amendments should be applied either (1) prospectively to all transactions within the scope of the amendments that are reflected in financial statements at the date of initial application and new transactions that are entered into after the date of initial application or (2) retrospectively to those transactions. We adopted ASU 2021-10 prospectively in the first quarter of 2022 and the adoption did not have a material impact on our annual disclosures.

Recent Accounting Pronouncements Pending Adoption

In October 2021, the FASB issued ASU 2021-08, “*Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*.” This ASU requires that an acquirer entity in a business combination recognize and measure contract assets and liabilities acquired in a business combination at the acquisition date in accordance with Topic 606 as if the acquirer entity had originated the contracts. This ASU is effective for fiscal years beginning after December 15, 2022, and interim periods within those years. Early application of the amendments is permitted but should be applied to all acquisitions occurring in the annual period of adoption. The amendment should be applied prospectively to business combinations occurring on or after the effective date of the amendments. We are evaluating the effect that ASU 2021-08 will have on our consolidated financial statements and related disclosures, but do not expect it to have a material impact.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

In March 2022, the FASB issued ASU 2022-01, “*Derivatives and Hedging (Topic 815): Fair Value Hedging - Portfolio Layer Method*.” This ASU allows nonprepayable financial assets to be included in a closed portfolio hedged using the portfolio layer method. The expanded scope permits an entity to apply the same portfolio hedging method to both prepayable and nonprepayable financial assets, thereby allowing consistent accounting for similar hedges. This guidance is effective for fiscal years beginning after December 15, 2022, and interim periods within those fiscal years. We are evaluating the effect that this guidance will have on our consolidated financial statements and related disclosures, but do not expect it to have a material impact.

In March 2022, the FASB issued ASU 2022-02, “*Financial Instruments - Credit Losses (Topic 326): Troubled Debt Restructuring and Vintage Disclosures*.” This ASU eliminates the accounting guidance for Troubled Debt Restructuring by creditors in 310-40 and enhances disclosure requirements for certain loan refinancings and restructurings by creditors when a borrower is experiencing financial difficulty. Additionally, this ASU requires entities to disclose current-period gross write-offs by year of origination for financing receivables and net investments in leases within the scope of ASC 326-20. This guidance is effective for fiscal years beginning after December 15, 2022, and interim periods within those fiscal years. We are evaluating the effect that this guidance will have on our consolidated financial statements and related disclosures, but do not expect it to have a material impact.

In June 2022, the FASB issued ASU 2022-03, “*Fair Value Measurement (Topic 820): Fair Value Measurement of Equity Securities Subject to Contractual Sale Restrictions*.” Topic 820, Fair Value Measurement, states that a reporting entity should consider the characteristics of the asset or liability when measuring the fair value, including restrictions on the sale of the asset or liability, if a market participant would take those characteristics into account and the key to that determination is the unit of account for the asset or liability being measured at fair value. Topic 820 contains conflicting guidance on what the unit of account is when measuring the fair value of an equity security and this has resulted in diversity in practice on whether the effects of a contractual restriction that prohibits the sale of an equity security should be considered in measuring the equity security’s fair value. To address this, the amendments in the ASU clarify that a contractual restriction on the sale of an equity security is not considered part of the unit of account of the equity security and, therefore, is not considered in measuring fair value. The ASU introduces new disclosure requirements to provide investors with information about the restriction including the nature and remaining duration of the restriction. This guidance is effective for fiscal years beginning after December 15, 2022, and interim periods within those fiscal years. We are evaluating the effect that this guidance will have on our consolidated financial statements and related disclosures, but do not expect it to have a material impact.

In September 2022, the FASB issued ASU 2022-04, “*Supplier Finance Programs (Sub Topic 405-50): Disclosure of Supplier Finance Program Obligations*.” This ASU requires a buyer in a supplier finance program to disclose qualitative and quantitative information about its supplier finance programs in each annual reporting period including the key terms of the program and the following for obligations that the buyer has confirmed as valid to the provider: (1) the amount outstanding that remains unpaid by the buyer as of the end of the annual period, (2) a description of where those obligations are presented in the balance sheet, and (3) a rollforward of those obligations during the annual period, including the amount of obligations confirmed and the amount of obligations subsequently paid. Additionally, in each interim period, the buyer should disclose the amount of obligations outstanding that the buyer has confirmed as valid to the finance provider as of the end of the interim period. This guidance is effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years, except for the amendment on rollforward information, which is effective for fiscal years beginning after December 15, 2023. Early adoption is permitted. We are evaluating the effect that this guidance will have on our consolidated financial statements and related disclosures.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

4. Turner & Townsend Acquisition

On November 1, 2021, we acquired a 60% ownership interest in, and entered into a strategic partnership with Turner & Townsend Holdings Limited (Turner & Townsend). Turner & Townsend is a leading professional services company specializing in program management, project management, cost and commercial management and advisory services across the real estate, infrastructure and natural resources sectors, and is reported in our Global Workplace Solutions segment. The combined partnership is expected to generate strategic growth opportunities in the project management space for both entities.

The Turner & Townsend Acquisition was treated as a business combination under ASC 805 and was accounted for using the acquisition method of accounting. We were deemed the accounting acquirer as we obtained control through an all-cash transaction and were the larger entity by revenue and by assets.

The Turner & Townsend Acquisition was funded with cash on hand. The following summarizes the consideration transferred at closing for the Turner & Townsend Acquisition (dollars in thousands):

Cash consideration ⁽¹⁾	\$	722,595
Deferred consideration ⁽²⁾		494,349
Total consideration	\$	<u>1,216,944</u>

⁽¹⁾ Represents cash paid at closing

⁽²⁾ Represents the fair value of deferred consideration, to be settled in cash, with the only remaining condition on such payments being the passage of time

The deferred consideration amount above represents a total payment of \$591.2 million less a discount of \$96.9 million which will be accreted through the payment date. A portion of the discount is attributable to the time value associated with the contractual payment dates of 3-4 years and will be recorded as interest expense. The remaining discount is attributable to the time value associated with the deferred payment date (10th anniversary of closing) if a seller is no longer employed on the contractual payment date and will be recorded as compensation expense.

The following represents the summary of the excess purchase price over the fair value of net assets acquired and fair value of non-controlling interest (dollars in thousands):

Purchase price	\$	1,216,944
Less: Estimated fair value of net assets acquired (see table below)		152,027
Plus: Estimated fair value of non-controlling interest ⁽¹⁾		<u>32,416</u>
Excess purchase price over estimated fair value of net assets acquired	\$	<u>1,097,333</u>

⁽¹⁾ Represents fair value of legacy non-controlling interest of Turner & Townsend

The purchase accounting adjustments related to the Turner & Townsend Acquisition has been finalized in the accompanying consolidated financial statements with no significant changes made in 2022 to the preliminary purchase accounting recorded in 2021. The excess purchase price over the fair value of net assets acquired and non-controlling interest has been recorded to goodwill. The goodwill arising from the Turner & Townsend Acquisition consists largely of the synergies and opportunities to deliver a premier project, program and cost management services. The goodwill recorded in connection with the Turner & Townsend Acquisition was not deductible for tax purposes.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The following table summarizes the preliminary fair values assigned to the identified assets acquired and liabilities assumed at the acquisition date on November 1, 2021.

(Dollars in thousands)

Assets Acquired:	
Cash and cash equivalents	\$ 44,007
Trade and other receivables	239,269
Prepaid expenses	7,969
Other current assets	19,359
Property and equipment, net	57,138
Other intangible assets, net	1,104,968
Operating lease assets	44,249
Other assets, net	8,427
Total assets acquired	1,525,386
Liabilities Assumed:	
Accounts payable and accrued expenses	59,986
Compensation and employee benefits	34,557
Operating lease liabilities	11,144
Contract liabilities	44,943
Other current liabilities	126,034
Non-current operating lease liabilities	30,939
Deferred tax liability	291,634
Total liabilities assumed	599,237
Non-controlling Interest Acquired	774,122
Estimated Fair Value of Net Assets Acquired	\$ 152,027

In connection with the Turner & Townsend Acquisition, below is a summary of the value allocated to the intangible assets acquired (dollars in thousands):

Asset Class	Amortization Period	Amount Assigned at Acquisition Date	December 31, 2021	
			Accumulated Amortization and Foreign Currency Translation	Net Carrying Value
Customer relationships	5-11 years	\$ 753,935	\$ 21,577	\$ 732,358
Backlog	2-4 years	75,407	5,255	70,152
Trademark	Indefinite	275,626	3,202	272,424

The accompanying consolidated statement of operations for the year ended December 31, 2021 includes revenue, operating income and net loss of \$194.0 million, \$0.5 million and \$0.5 million, respectively, attributable to the Turner & Townsend Acquisition. This does not include direct transaction and integration costs of \$44.6 million which were incurred during the year ended December 31, 2021 in connection with the Turner & Townsend Acquisition.

The fair value of customer relationships and backlog was determined using the Multi-Period Excess Earnings Method (MPEEM), a form of the Income Approach. The MPEEM is a specific application of the Discounted Cash Flow Method. The principle behind the MPEEM is that the value of an intangible asset is equal to the present value of the incremental cash flows attributable only to the subject intangible asset. This estimation used certain unobservable key inputs such as timing of projected cash flows, growth rates, customer attrition rates, discount rates, and the assessment of useful life.

The fair value of the trademark was determined by using the Relief-from-Royalty Method, a form of the Income Approach, and relied on key unobservable inputs such as timing of the projected cash flows, growth rates, and royalty rates. The basic tenet of the Relief-from-Royalty Method is that without ownership of the subject intangible asset, the user of that intangible asset would have to make a stream of payments to the owner of the asset in return for the rights to use that asset. By acquiring the intangible asset, the user avoids these payments.

CBRE GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The fair value of the non-controlling interest was estimated by multiplying the implied value of a 100 percent equity interest in Turner & Townsend Holdings Limited by 40 percent. A discount for lack of marketability was not applied as the equity owners from Turner & Townsend Partners LLP maintain a significant equity stake and remain actively involved in the day to day operations of the business.

Unaudited pro forma results, assuming the Turner & Townsend Acquisition had occurred as of January 1, 2020 for purposes of the pro forma disclosures for the years ended December 31, 2021 and 2020 are presented below. They include certain adjustments for increased amortization expense related to the intangible assets acquired (approximately \$81.3 million and \$97.5 million in 2021 and 2020, respectively) as well as increased depreciation expense related to the fixed assets acquired (approximately \$5.5 million and \$6.6 million in 2021 and 2020, respectively). Direct transaction and integration costs of \$44.6 million as well as the tax impact of all pro forma adjustments are also included in the pro forma results.

These unaudited pro forma results have been prepared for comparative purposes only and do not purport to be indicative of what operating results would have been had the Turner & Townsend Acquisition occurred on January 1, 2020 and may not be indicative of future operating results (dollars in thousands, except share data):

	Year Ended December 31,	
	2021	2020
Revenue	\$ 28,545,833	\$ 24,715,787
Operating income	1,705,982	944,102
Net income attributable to CBRE Group, Inc.	1,873,426	705,375
<i>Basic income per share:</i>		
Net income per share attributable to CBRE Group, Inc.	\$ 5.59	\$ 2.10
Weighted average shares outstanding for basic income per share	335,232,840	335,196,296
<i>Diluted income per share:</i>		
Net income per share attributable to CBRE Group, Inc.	\$ 5.51	\$ 2.08
Weighted average shares outstanding for diluted income per share	339,717,401	338,392,210

5. Warehouse Receivables & Warehouse Lines of Credit

A rollforward of our warehouse receivables is as follows (dollars in thousands):

Beginning balance at December 31, 2021	\$ 1,303,717
Origination of mortgage loans	13,651,807
Gains (premiums on loan sales)	40,038
Proceeds from sale of mortgage loans:	
Sale of mortgage loans	(14,486,882)
Cash collections of premiums on loan sales	(40,038)
Proceeds from sale of mortgage loans	(14,526,920)
Net decrease in mortgage servicing rights included in warehouse receivables	(13,288)
Ending balance at December 31, 2022	\$ 455,354

CBRE GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The following table is a summary of our warehouse lines of credit in place as of December 31, 2022 and 2021 (dollars in thousands):

Lender	Current Maturity	Pricing	December 31, 2022		December 31, 2021	
			Maximum Facility Size	Carrying Value	Maximum Facility Size	Carrying Value
JP Morgan Chase Bank, N.A. (JP Morgan) ⁽¹⁾	12/15/2023	daily floating rate SOFR rate plus 1.60%, with a SOFR adjustment rate of 0.05%	\$ 1,335,000	\$ 330,509	\$ 1,335,000	\$ 742,124
JP Morgan (Business Lending Activity) ⁽¹⁾	12/15/2023	daily floating rate SOFR rate plus 2.75%, with a SOFR adjustment rate of 0.05%	15,000	—	15,000	4,326
Fannie Mae Multifamily As Soon As Pooled Plus Agreement and Multifamily As Soon As Pooled Sale Agreement (ASAP) Program	Cancelable anytime	daily one-month LIBOR plus 1.45%, with a LIBOR floor of 0.25%	650,000	—	650,000	133,084
TD Bank, N.A. (TD Bank) ⁽²⁾	7/15/2023	daily floating rate SOFR plus 1.30%, with a SOFR adjustment rate of 0.10%	800,000	—	800,000	217,672
Bank of America, N.A. (BoFA) ⁽³⁾	5/24/2023	daily floating SOFR rate plus 1.25%, with a SOFR adjustment rate of 0.10%	350,000	115,206	350,000	178,600
BoFA ⁽⁴⁾	5/24/2023	daily floating rate SOFR plus 1.25%, with a SOFR adjustment rate of 0.10%	250,000	—	250,000	—
MUFG Union Bank, N.A. (Union Bank) ⁽⁵⁾	6/27/2023	daily floating rate SOFR plus 1.30%	200,000	2,125	200,000	1,645
			<u>\$ 3,600,000</u>	<u>\$ 447,840</u>	<u>\$ 3,600,000</u>	<u>\$ 1,277,451</u>

⁽¹⁾ Effective October 18, 2021, this facility was renewed and amended and the maximum facility size was increased to \$1,350.0 million. This facility was revised on October 17, 2022 with a revised interest rate to a Secured Overnight Finance Rate (SOFR) term plus 1.60%, with a SOFR adjustment rate of 0.05%, noting the Business Lending sublimit has a revised interest rate of daily adjusted term SOFR plus 2.75%, with a SOFR adjustment rate of 0.05%. Effective December 16, 2022, this facility was renewed with a revised maturity date of December 15, 2023.

⁽²⁾ Effective July 1, 2020, this facility was amended and provides for a maximum aggregate principal amount of \$400.0 million, in addition to an uncommitted \$400.0 million temporary line of credit. Effective July 15, 2022, this facility was renewed with a revised interest rate of daily floating rate SOFR plus 1.30%, with a SOFR adjustment rate of 0.10% and a maturity date of July 15, 2023. As of December 31, 2022, the uncommitted \$400.0 million temporary line of credit was not utilized.

⁽³⁾ The total commitment amount of \$350.0 million includes a separate sublimit borrowing in the amount of \$100.0 million, which can be utilized for specific purposes as defined within the agreement. Effective May 25, 2022, this facility was renewed with a revised interest rate of daily floating rate SOFR plus 1.25%, with a SOFR adjustment rate of 0.10% and a maturity date of May 24, 2023. The sublimit is subject to an interest rate of daily floating rate SOFR plus 1.75%, with a SOFR adjustment rate of 0.10%. As of December 31, 2022, the sublimit borrowing has not been utilized.

⁽⁴⁾ Effective May 25, 2022, the advised consent line was renewed for \$250.0 million of capacity with a revised interest rate of daily floating rate SOFR plus 1.25%, with a SOFR adjustment rate of 0.10%, and a maturity date of May 24, 2023.

⁽⁵⁾ Effective June 27, 2022, this facility was renewed with a facility size of \$200.0 million and a revised interest rate of daily floating rate SOFR rate plus 1.30% and a maturity date of June 27, 2023.

During the year ended December 31, 2022, we had a maximum of \$1.7 billion of warehouse lines of credit principal outstanding.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

6. Variable Interest Entities

We hold variable interests in certain VIEs primarily in our Real Estate Investments segment which are not consolidated as it was determined that we are not the primary beneficiary. Our involvement with these entities is in the form of equity co-investments and fee arrangements.

As of December 31, 2022 and 2021, our maximum exposure to loss related to the VIEs that are not consolidated was as follows (dollars in thousands):

	December 31,	
	2022	2021
Investments in unconsolidated subsidiaries	\$ 152,762	\$ 109,530
Other current assets	—	4,219
Co-investment commitments	83,835	90,328
Maximum exposure to loss	\$ 236,597	\$ 204,077

7. Fair Value Measurements

Topic 820 of the FASB ASC defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Topic 820 also establishes a three-level fair value hierarchy that prioritizes the inputs used to measure fair value. This hierarchy requires entities to maximize the use of observable inputs and minimize the use of unobservable inputs. The three levels of inputs used to measure fair value are as follows:

- Level 1 – Quoted prices in active markets for identical assets or liabilities.
- Level 2 – Observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets; quoted prices for identical or similar assets and liabilities in markets that are not active; or other inputs that are observable or can be corroborated by observable market data.
- Level 3 – Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. This includes certain pricing models, discounted cash flow methodologies and similar techniques that use significant unobservable inputs.

The following tables present the fair value of assets and liabilities measured at fair value on a recurring basis as of December 31, 2022 and 2021 (dollars in thousands):

	December 31, 2022			
	Fair Value Measured and Recorded Using			Total
	Level 1	Level 2	Level 3	
Assets				
Available for sale securities:				
Debt securities:				
U.S. treasury securities	\$ 6,164	\$ —	\$ —	\$ 6,164
Debt securities issued by U.S. federal agencies	—	8,249	—	8,249
Corporate debt securities	—	44,091	—	44,091
Asset-backed securities	—	3,201	—	3,201
Total available for sale debt securities	6,164	55,541	—	61,705
Equity securities	33,724	—	—	33,724
Investments in unconsolidated subsidiaries	160,093	—	460,540	620,633
Warehouse receivables	—	455,354	—	455,354
Other assets	—	—	14,452	14,452
Total assets at fair value	\$ 199,981	\$ 510,895	\$ 474,992	\$ 1,185,868

There were no liabilities measured at fair value on a recurring basis as of December 31, 2022.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

	December 31, 2021			
	Fair Value Measured and Recorded Using			
	Level 1	Level 2	Level 3	Total
Assets				
Available for sale securities:				
Debt securities:				
U.S. treasury securities	\$ 7,002	\$ —	\$ —	\$ 7,002
Debt securities issued by U.S. federal agencies	—	9,276	—	9,276
Corporate debt securities	—	50,897	—	50,897
Asset-backed securities	—	3,428	—	3,428
Collateralized mortgage obligations	—	725	—	725
Total available for sale debt securities	7,002	64,326	—	71,328
Equity securities	69,880	—	—	69,880
Investments in unconsolidated subsidiaries	229,900	23,741	406,690	660,331
Warehouse receivables	—	1,303,717	—	1,303,717
Total assets at fair value	\$ 306,782	\$ 1,391,784	\$ 406,690	\$ 2,105,256
Liabilities				
Other liabilities				
	—	—	10,700	10,700
Total liabilities at fair value	\$ —	\$ —	\$ 10,700	\$ 10,700

Fair value measurements for our available for sale debt securities are obtained from independent pricing services which utilize observable market data that may include quoted market prices, dealer quotes, market spreads, cash flows, the U.S. treasury yield curve, trading levels, market consensus prepayment speeds, credit information and the instrument's terms and conditions.

The equity securities are generally valued at the last reported sales price on the day of valuation or, if no sales occurred on the valuation date, at the mean of the bid and ask prices on such date. The above table does not include our \$100.7 million capital investment in VTS, a leading proptech company, made during the third quarter of 2022 as it is a non-marketable equity investment accounted for under the measurement alternative, defined as cost minus impairment. No adjustments or impairments were recorded on this investment during the year ended December 31, 2022. It is included in "other assets, net" in the accompanying consolidated balance sheets.

The fair values of the warehouse receivables are primarily calculated based on already locked in purchase prices. At December 31, 2022 and 2021, all of the warehouse receivables included in the accompanying consolidated balance sheets were either under commitment to be purchased by Freddie Mac or had confirmed forward trade commitments for the issuance and purchase of Fannie Mae or Ginnie Mae mortgage backed securities that will be secured by the underlying loans (See Notes 2 and 5). These assets are classified as Level 2 in the fair value hierarchy as a substantial majority of inputs are readily observable.

As of December 31, 2022 and 2021, investments in unconsolidated subsidiaries at fair value using NAV were \$353.0 million and \$257.9 million, respectively. These fund investments fall under practical expedient rules that do not require them to be included in the fair value hierarchy and as a result have been excluded from the tables above.

CBRE GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The tables below present a reconciliation for assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) (dollars in thousands):

	Investment in Unconsolidated Subsidiaries	Other assets (liabilities)
Balance as of December 31, 2020	\$ 50,000	\$ —
Transfer in	5,174	—
Net change in fair value	36,432	(10,700)
Purchases/ Additions	315,084	—
Balance as of December 31, 2021	406,690	(10,700)
Transfer out	(15,001)	—
Net change in fair value	(38,149)	2,585
Purchases/ Additions	107,000	22,567
Balance as of December 31, 2022	\$ 460,540	\$ 14,452

Net change in fair value, included in the table above, is reported in Net income as follows:

Category of Assets/Liabilities using Unobservable Inputs	Consolidated Statements of Operations
Investments in unconsolidated subsidiaries	Equity income from unconsolidated subsidiaries
Other assets (liabilities)	Other income (loss)

The table below presents information about the significant unobservable inputs used for recurring fair value measurements for certain Level 3 instruments as of December 31, 2022:

	Valuation Technique	Unobservable Input	Range	Weighted Average
Investment in unconsolidated subsidiaries	Discounted cash flow	Discount rate	28% - 41%	30 %
	Monte Carlo	Volatility	50% - 70%	53 %
		Risk free interest rate	4 %	—
		Discount Yield	25 %	—
Other assets	Discounted cash flow	Discount rate	28 %	—

During the year ended December 31, 2022, we recorded non-cash asset impairment charges of \$58.7 million. Approximately \$10.4 million of such charges related to the exit of our Advisory Services business in Russia in the first quarter (primarily comprised of receivables); \$26.4 million related to goodwill impairment charge recorded in the second quarter; and \$21.9 million related to trade name impairment charge recorded in the fourth quarter. The goodwill and the trade name impairment charges represent a full impairment of such assets associated with the Telford Homes business in our Real Estate Investment segment. The charges were attributable to the effects of elevated inflation on construction, materials and labor costs which increased Telford Homes' risk as the contractor and reduced the profitability of current projects. The fair value measurements employed for our impairment evaluation of goodwill were based on a discounted cash flow approach and a relief from royalty fair value method for the trade name. Significant inputs used in the evaluation included a risk-free rate of return, estimated risk premium, terminal growth rates, working capital assumptions, royalty rate, income tax rates as well as other economic variables.

There were no asset impairment charges or other significant non-recurring fair value measurements recorded during the year ended December 31, 2021.

During the year ended December 31, 2020, we recorded \$50.2 million of non-cash asset impairment charges in our Global Workplace Solutions segment; a non-cash goodwill impairment charge of \$25.0 million and certain non-cash asset impairment charges of \$13.5 million in our Real Estate Investments segment. Primarily as a result of the global economic disruption and uncertainty due to Covid-19, we deemed there to be triggering events during 2020 that required testing of goodwill and certain assets for impairment. Based on these events, we recorded the aforementioned non-cash impairment charges, which were primarily driven by lower anticipated cash flows in certain businesses directly resulting from a downturn in forecasts as well as increased forecast risk due to Covid-19 and changes in our business going forward.

CBRE GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

All of the above-mentioned asset impairment charges were included within the line item “Asset impairments” in the accompanying consolidated statements of operations.

FASB ASC Topic 825, “*Financial Instruments*,” requires disclosure of fair value information about financial instruments, whether or not recognized in the accompanying consolidated balance sheets. Our financial instruments are as follows:

- *Cash and Cash Equivalents and Restricted Cash* – These balances include cash and cash equivalents as well as restricted cash with maturities of less than three months. The carrying amount approximates fair value due to the short-term maturities of these instruments.
- *Receivables, less Allowance for Doubtful Accounts* – Due to their short-term nature, fair value approximates carrying value.
- *Warehouse Receivables* – These balances are carried at fair value. The primary source of value is either a contractual purchase commitment from Freddie Mac or a confirmed forward trade commitment for the issuance and purchase of a Fannie Mae or Ginnie Mae MBS (see Notes 2 and 5).
- *Investments in Unconsolidated Subsidiaries* – A portion of these investments are carried at fair value as discussed above. It includes our equity investment and related interests in both public and non-public entities. Our ownership of common shares in Altus Power, Inc. (Altus) is considered level 1 and is measured at fair value using a quoted price in an active market. Private placement warrants related to Altus are considered level 2 and measured at fair value using observable inputs for similar assets in an active market. Our ownership of alignment shares of Altus and our investment in Industrious and certain other non-controlling equity investments are considered level 3 which are measured at fair value using Monte Carlo and discounted cash flows. The valuation of Altus’ common shares, private placement warrants and alignment shares are dependent on its stock price which could be volatile and subject to wide fluctuations in response to various market conditions. Transfer out activities from level 3, as shown in the table above, represent annual conversion of a portion of our alignment shares in Altus to its common shares.
- *Available for Sale Debt Securities* – Primarily held by our wholly-owned captive insurance company, these investments are carried at their fair value.
- *Equity Securities* – Primarily held by our wholly-owned captive insurance company, these investments are carried at their fair value.
- *Other assets / liabilities* – Represents the fair value of the unfunded commitment related to a revolving facility in our Advisory Services segment. Valuations are based on discounted cash flow techniques, for which the significant inputs are the amount and timing of expected future cash flows, market comparables and recovery assumptions. It also includes approximately \$10 million of investment in a non-public entity designated as trading debt security that the company purchased in the fourth quarter of 2022.
- *Short-Term Borrowings* – The majority of this balance represents outstanding amounts under our warehouse lines of credit of our wholly-owned subsidiary, CBRE Capital Markets and our revolving credit facility. Due to the short-term nature and variable interest rates of these instruments, fair value approximates carrying value (see Notes 5 and 11).
- *Senior Term Loans* – Based upon information from third-party banks (which falls within Level 2 of the fair value hierarchy), the estimated fair value of our senior term loans was approximately \$424.6 million and \$451.8 million at December 31, 2022 and 2021, respectively. Their actual carrying value, net of unamortized debt issuance costs, totaled \$427.8 million and \$454.5 million at December 31, 2022 and 2021, respectively (see Note 11).
- *Senior Notes* – Based on dealers’ quotes (which falls within Level 2 of the fair value hierarchy), the estimated fair value of our 4.875% senior notes was \$595.2 million and \$671.7 million at December 31, 2022 and 2021, respectively. The actual carrying value of our 4.875% senior notes, net of unamortized debt issuance costs and unamortized discount, totaled \$596.4 million and \$595.5 million at December 31, 2022 and 2021, respectively. The estimated fair value of our 2.500% senior notes was \$396.8 million and \$502.1 million at December 31, 2022 and 2021. The actual carrying value of our 2.500% senior notes, net of unamortized debt issuance costs and discount, totaled \$489.3 million and \$488.1 million at December 31, 2022 and 2021 (See Note 11).

CBRE GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

- *Notes Payable on Real Estate* – As of December 31, 2022 and 2021, the carrying value of our notes payable on real estate, net of unamortized debt issuance costs, was \$52.7 million and \$48.2 million, respectively. These notes payable were not recourse to CBRE Group, Inc., except for being recourse to the single-purpose entities that held the real estate assets and were the primary obligors on the notes payable. These borrowings have either fixed interest rates or floating interest rates at spreads added to a market index. Although it is possible that certain portions of our notes payable on real estate may have fair values that differ from their carrying values, based on the terms of such loans as compared to current market conditions, or other factors specific to the borrower entity, we do not believe that the fair value of our notes payable is significantly different than their carrying value.

8. Property and Equipment

Property and equipment consists of the following (dollars in thousands):

	Useful Lives	December 31,	
		2022	2021
Computer hardware and software	2-10 years	\$ 1,158,284	\$ 1,101,248
Leasehold improvements	1-15 years	611,082	622,771
Furniture and equipment	1-10 years	267,604	260,551
Construction in progress	N/A	185,332	120,031
Total cost		2,222,302	2,104,601
Accumulated depreciation and amortization		1,386,261	1,288,509
Property and equipment, net		\$ 836,041	\$ 816,092

Depreciation and amortization expense associated with property and equipment was \$260.8 million, \$244.9 million and \$268.3 million for the years ended December 31, 2022, 2021 and 2020, respectively. During the year ended December 31, 2020, we recorded \$29.2 million in asset impairment charges related to property and equipment (see Note 7). There were no asset impairment charges related to property and equipment during the years ended December 31, 2022 and 2021.

Construction in progress includes capitalizable costs incurred during the development stage of computer software and leasehold improvements that have not yet been placed in service.

CBRE GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

9. Goodwill and Other Intangible Assets

Our annual assessment of goodwill and other intangible assets deemed to have indefinite lives has historically been completed as of the beginning of the fourth quarter of each year. We performed the 2022, 2021 and 2020 annual assessments as of October 1 and determined that no impairment existed as the estimated fair value of our reporting units was in excess of their carrying value.

During second quarter of 2022, we identified a triggering event due to changing market conditions in our Real Estate Investment segment for the Telford Homes business. We recorded a non-cash goodwill impairment charge of \$26.4 million associated with this reporting unit attributable to the effects of elevated inflation on construction, materials and labor costs, driving an increase in Telford Homes' risk as the contractor and reducing the profitability of current projects.

The following table summarizes the changes in the carrying amount of goodwill for the years ended December 31, 2022 and 2021 (dollars in thousands):

	Advisory Services	Global Workplace Solutions	Real Estate Investments	Total
Balance as of December 31, 2020				
Goodwill	\$ 3,348,788	\$ 937,797	\$ 628,530	\$ 4,915,115
Accumulated impairment losses	(761,448)	(175,473)	(156,585)	(1,093,506)
	2,587,340	762,324	471,945	3,821,609
Reallocation	(101,390)	101,390	—	—
Purchase accounting entries related to acquisitions	77,616	1,167,678	—	1,245,294
Impairment	—	—	—	—
Foreign exchange movement	(26,520)	(32,836)	(12,372)	(71,728)
Balance as of December 31, 2021				
Goodwill	3,298,494	2,174,029	616,158	6,088,681
Accumulated impairment losses	(761,448)	(175,473)	(156,585)	(1,093,506)
	2,537,046	1,998,556	459,573	4,995,175
Purchase accounting entries related to acquisitions	19,909	60,443	—	80,352
Impairment	—	—	(26,405)	(26,405)
Foreign exchange movement	(35,973)	(123,837)	(20,930)	(180,740)
Balance as of December 31, 2022				
Goodwill	3,282,430	2,110,635	595,228	5,988,293
Accumulated impairment losses	(761,448)	(175,473)	(182,990)	(1,119,911)
	\$ 2,520,982	\$ 1,935,162	\$ 412,238	\$ 4,868,382

During 2022, we completed eleven in-fill acquisitions: a leading project management firm in Spain and Portugal; two niche firms in the United Kingdom – one focused on retail/leisure assets and the other a regional property agent in the Oxfordshire area; a property consulting firm in Scotland; a consulting firm focused on real-estate-related sustainability issues in France; a valuation firm in New Zealand; a property tax consultancy in the United States; a technology company serving clients in our occupier outsourcing business; a professional services company in Australia focused on project development, execution and operation services; our former real estate brokerage affiliate in Iowa; and a technical services specialist focused on laboratory systems in our occupier outsourcing business.

CBRE GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Other intangible assets totaled \$2.2 billion, net of accumulated amortization of \$1.9 billion as of December 31, 2022, and \$2.4 billion, net of accumulated amortization of \$1.7 billion, as of December 31, 2021 and are comprised of the following (dollars in thousands):

	December 31,			
	2022		2021	
	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Unamortizable intangible assets:				
Management contracts	\$ 60,176		\$ 63,153	
Trademarks	311,644		329,224	
	371,820		392,377	
Amortizable intangible assets:				
Customer relationships	1,637,237	\$ (774,385)	1,612,308	\$ (667,668)
Mortgage servicing rights	1,029,540	(468,901)	1,005,357	(426,841)
Trademarks/Trade names	305,486	(129,244)	350,548	(126,468)
Management contracts	148,890	(145,650)	151,912	(137,906)
Covenant not to compete	3,720	(811)	73,750	(73,750)
Other	611,738	(396,734)	548,455	(292,647)
	3,736,611	(1,915,725)	3,742,330	(1,725,280)
Total intangible assets	\$ 4,108,431	\$ (1,915,725)	\$ 4,134,707	\$ (1,725,280)

Unamortizable intangible assets include management contracts identified as a result of the REIM Acquisitions relating to relationships with open-end funds, a trademark separately identified as a result of the 2001 Acquisition, a trade name separately identified in connection with the REIM Acquisitions and a trademark separately identified as part of the Turner & Townsend transaction.

Customer relationships relate to existing relationships acquired through acquisitions mainly in our Global Workplace Solutions segment that are being amortized over useful lives of up to 20 years.

Mortgage servicing rights represent the carrying value of servicing assets in the U.S. in our Advisory Services segment. The mortgage servicing rights are being amortized over the estimated period that net servicing income is expected to be received, which is typically up to 10 years. See Mortgage Servicing Rights discussion within Note 2 for additional information.

Trademarks are primarily from our 2015 GWS Acquisition which are being amortized over 20 years. During the fourth quarter of 2022, we recorded a non-cash impairment of approximately \$21.9 million for trademarks associated with our Telford Homes business in the Real Estate Investment segment due to the impact of the inflationary conditions on construction materials negatively impacting cash flows (see Note 7).

Management contracts consist primarily of asset management contracts relating to relationships with closed-end funds and separate accounts in the U.S., Europe and Asia that were separately identified as a result of the REIM Acquisitions. These management contracts are being amortized over useful lives of up to 13 years.

Other amortizable intangible assets mainly represent transition costs, which primarily get amortized to cost of revenue over the life of the associated contract. It also includes a backlog related intangible identified as part of the Turner & Townsend transaction.

Amortization expense related to intangible assets, excluding amortization of transition costs, was \$348.0 million, \$276.5 million and \$227.1 million for the years ended December 31, 2022, 2021 and 2020, respectively. The estimated annual amortization expense for each of the years ending December 31, 2023 through December 31, 2027 and thereafter approximates \$300.1 million, \$261.4 million, \$219.9 million, \$171.9 million, \$141.8 million and \$579.7 million, respectively.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

10. Investments in Unconsolidated Subsidiaries

Investments in unconsolidated subsidiaries are accounted for under the equity method of accounting. Our investment ownership percentages in equity method investments vary, generally ranging from 1.0% to 50.0%. The following table represents the composition of investment in unconsolidated subsidiaries (dollars in thousands):

Investment type	December 31,	
	2022	2021
Real estate investments (in projects and funds)	\$ 622,826	\$ 453,813
Investment in Altus:		
Class A common stock (24.55 million shares)	160,093	229,900
Alignment shares ⁽¹⁾	59,530	114,727
Private placement warrants ⁽²⁾	—	23,741
Subtotal	\$ 219,624	\$ 368,368
Other ⁽³⁾	\$ 475,256	\$ 373,907
Total investment in unconsolidated subsidiaries	\$ 1,317,705	\$ 1,196,088

⁽¹⁾ The alignment shares, also known as Class B common shares, will automatically convert into Altus Class A common shares based on the achievement of certain total return thresholds on Altus Class A common shares as of the relevant measurement date over the seven fiscal years following the merger. As of March 31, 2022 (the first measurement date), 201,250 of alignment shares automatically converted into 2,011 shares of Class A common stock, which were issued on April 11, 2022.

⁽²⁾ On September 21, 2022, we exercised all of the private placement warrants on a “cashless basis” and received 2,552,390 shares of Class A common stock based on a 0.2763 conversion rate.

⁽³⁾ Consists of our investments in Industrious and other non-public entities.

Combined condensed financial information for the entities accounted for using the equity method is as follows (dollars in thousands):

	December 31,		
	2022	2021	
Combined Condensed Balance Sheets Information:			
Current assets	\$ 9,043,686	\$ 7,127,598	
Non-current assets	45,616,330	30,586,991	
Total assets	\$ 54,660,016	\$ 37,714,589	
Current liabilities	\$ 2,346,015	\$ 3,128,205	
Non-current liabilities	15,857,710	8,875,779	
Total liabilities	\$ 18,203,725	\$ 12,003,984	
Non-controlling interests	\$ 926,390	\$ 588,067	
	Year Ended December 31,		
	2022	2021	2020
Combined Condensed Statements of Operations Information:			
Revenue	\$ 2,782,660	\$ 2,680,675	\$ 2,036,818
Operating income	1,215,456	1,371,014	587,689
Net income ⁽¹⁾	4,102,329	3,260,051	483,224

⁽¹⁾ Included in net income are realized and unrealized earnings and losses in investments in unconsolidated investment funds and realized earnings and losses from sales of real estate projects in investments in unconsolidated subsidiaries. These realized and unrealized earnings and losses are not included in revenue and operating income.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Our Real Estate Investments segment invests our own capital in certain real estate investment funds with clients. We provided investment management, property management, brokerage and other professional services in connection with these real estate investments and earned revenues from these unconsolidated subsidiaries of \$268.9 million, \$213.5 million and \$145.9 million during the years ended December 31, 2022, 2021 and 2020, respectively. Additionally, in our global development business, we earned development and construction management revenues from our investments in unconsolidated subsidiaries of \$103.0 million, \$68.2 million and \$45.2 million during the years ended December 31, 2022, 2021 and 2020.

During the second quarter of 2022, we made an additional \$100 million investment in Industrious bringing our total ownership percentage to approximately 45%. We have elected the fair value option for the overall equity investment in Industrious (see Note 7).

11. Long-Term Debt and Short-Term Borrowings

Total long-term debt and short-term borrowings consist of the following (dollars in thousands):

	December 31,	
	2022	2021
Long-Term Debt		
Senior Euro term loan, with interest of 0.75% plus EURIBOR adj	\$ 427,792	\$ 455,166
4.875% senior notes due in 2026, net of unamortized discount	598,374	597,911
2.500% senior notes due in 2031, net of unamortized discount	493,476	492,782
Total long-term debt	1,519,642	1,545,859
Less: current maturities of long-term debt	427,792	—
Less: unamortized debt issuance costs	6,138	7,736
Total long-term debt, net of current maturities	\$ 1,085,712	\$ 1,538,123
Short-Term Borrowings		
Warehouse lines of credit, with interest ranging from 1.40% to 7.16%, due in 2023	\$ 447,840	\$ 1,277,451
Revolving credit facility, with interest ranging from 5.03% to 5.23%	178,000	—
Other	42,914	32,668
Total short-term borrowings	\$ 668,754	\$ 1,310,119

Future annual aggregate maturities of total consolidated gross debt (excluding unamortized discount, premium and debt issuance costs) at December 31, 2022 are as follows (dollars in thousands): 2023—\$1,096,546; 2024—\$0; 2025—\$0; 2026—\$600,000; 2027—\$0 and \$500,000 thereafter.

Long-Term Debt

We maintain credit facilities with third-party lenders, which we use for a variety of purposes. On July 9, 2021, CBRE Services, Inc. (CBRE Services) entered into an incremental assumption agreement with respect to its credit agreement, dated October 31, 2017 (such agreement, as amended by a December 20, 2018 incremental term loan assumption agreement, and such, a March 4, 2019 incremental assumption agreement and such, a July 9, 2021 incremental assumption agreement, collectively, the 2021 Credit Agreement) for purposes of increasing the revolving credit commitments previously available under the 2021 Credit Agreement by an aggregate principal amount of \$350.0 million.

On May 21, 2021, we entered into a definitive agreement whereby our subsidiary guarantors were released as guarantors from the 2021 Credit Agreement.

On December 10, 2021, CBRE Services and certain of the other borrowers entered into a first amendment to the 2021 Credit Agreement which (i) changed the interest rate applicable to revolving borrowings denominated in Sterling from a LIBOR-based rate to a rate based on the Sterling Overnight Index Average (SONIA) and (ii) changed the interest rate applicable to revolving borrowings denominated in Euros from a LIBOR-based rate to a rate based on EURIBOR. The revised interest rates described above went into effect on January 1, 2022.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

On August 5, 2022, CBRE Group, Inc., as Holdings, and CBRE Global Acquisition Company, as the Luxembourg Borrower, entered into a second amendment to the 2021 Credit Agreement which, among other things (i) amended certain of the representations and warranties, affirmative covenants, negative covenants and events of default in the 2021 Credit Agreement in a manner consistent with the new 5-year senior unsecured Revolving Credit Agreement (as described below), (ii) terminated all revolving commitments previously available to the subsidiaries of the company thereunder and (iii) reflected the resignation of the previous administrative agent and the appointment of Wells Fargo Bank, National Association as the new administrative agent (the 2021 Credit Agreement, as amended by the first amendment and second amendment is referred to in this Annual Report as the 2022 Credit Agreement).

The 2022 Credit Agreement is a senior unsecured credit facility that is guaranteed by CBRE Group, Inc. As of December 31, 2022, the 2022 Credit Agreement provided for a €400.0 million term loan facility due and payable in full at maturity on December 20, 2023. The \$300.0 million tranche A term loan facility that was also covered under this agreement was repaid on November 23, 2021. In addition, a \$3.15 billion revolving credit facility, which included the capacity to obtain letters of credit and swingline loans and would have terminated on March 4, 2024, was also previously provided under this agreement and was replaced with a new \$3.5 billion 5-year senior unsecured Revolving Credit Agreement entered into on August 5, 2022 (as described below).

Borrowings under the euro term loan facility under the 2022 Credit Agreement bear interest at a minimum rate of 0.75% plus EURIBOR and revolving borrowings bear interest, based at our option, on either (1) the applicable fixed rate plus 0.68% to 1.075% or (2) the daily rate plus 0.0% to 0.075% in each case as determined by reference to our Credit Rating (as defined in the 2022 Credit Agreement). As of December 31, 2022, we had \$427.8 million of euro term loan borrowings outstanding under the 2022 Credit Agreement (at an interest rate of 0.75% plus EURIBOR), net of unamortized debt issuance costs, included as current maturities of long-term debt in the accompanying consolidated balance sheet.

On March 18, 2021, CBRE Services issued \$500.0 million in aggregate principal amount of 2.500% senior notes due April 1, 2031 (the 2.500% senior notes) at a price equal to 98.451% of their face value. The 2.500% senior notes are unsecured obligations of CBRE Services, senior to all of its current and future subordinated indebtedness. The 2.500% senior notes are guaranteed on a senior basis by CBRE Group, Inc. Interest accrues at a rate of 2.500% per year and is payable semi-annually in arrears on April 1 and October 1 of each year. The 2.500% senior notes are redeemable at our option, in whole or in part, on or after January 1, 2031 at a redemption price of 100% of the principal amount on that date, plus accrued and unpaid interest, if any, to, but excluding the date of redemption. At any time prior to January 1, 2031, we may redeem all or a portion of the notes at a redemption price equal to the greater of (1) 100% of the principal amount of the notes to be redeemed and (2) the sum of the present value at the date of redemption of the remaining scheduled payments of principal and interest thereon to January 1, 2031, assuming the notes matured on January 1, 2031, discounted to the date of redemption on a semi-annual basis at an adjusted rate equal to the treasury rate plus 20 basis points, minus accrued and unpaid interest to, but excluding, the date of redemption, plus, in either case, accrued and unpaid interest, if any, to, but not including, the redemption date. The amount of the 2.500% senior notes, net of unamortized discount and unamortized debt issuance costs, included in the accompanying consolidated balance sheet was \$489.3 million and \$488.1 million at December 31, 2022 and 2021, respectively.

On August 13, 2015, CBRE Services issued \$600.0 million in aggregate principal amount of 4.875% senior notes due March 1, 2026 (the 4.875% senior notes) at a price equal to 99.24% of their face value. The 4.875% senior notes are unsecured obligations of CBRE Services, senior to all of its current and future subordinated indebtedness. The 4.875% senior notes are guaranteed on a senior basis by CBRE Group, Inc. Interest accrues at a rate of 4.875% per year and is payable semi-annually in arrears on March 1 and September 1. The 4.875% senior notes are redeemable at our option, in whole or in part, prior to December 1, 2025 at a redemption price equal to the greater of (1) 100% of the principal amount of the 4.875% senior notes to be redeemed and (2) the sum of the present values of the remaining scheduled payments of principal and interest thereon to December 1, 2025 (not including any portions of payments of interest accrued as of the date of redemption) discounted to the date of redemption on a semi-annual basis at the Adjusted Treasury Rate (as defined in the indenture governing these notes). In addition, at any time on or after December 1, 2025, the 4.875% senior notes may be redeemed by us, in whole or in part, at a redemption price equal to 100% of the principal amount, plus accrued and unpaid interest, if any, to (but excluding) the date of redemption. If a change of control triggering event (as defined in the indenture governing these notes) occurs, we are obligated to make an offer to purchase the then outstanding 4.875% senior notes at a redemption price of 101% of the principal amount, plus accrued and unpaid interest, if any, to the date of purchase. The amount of the 4.875% senior notes, net of unamortized discount and unamortized debt issuance costs, included in the accompanying consolidated balance sheets was \$596.4 million and \$595.5 million at December 31, 2022 and 2021, respectively.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The indentures governing our 4.875% senior notes and 2.500% senior notes (1) contain restrictive covenants that, among other things, limit our ability to create or permit liens on assets securing indebtedness, enter into sale/leaseback transactions and enter into consolidations or mergers, and (2) require that the notes be jointly and severally guaranteed on a senior basis by CBRE Group, Inc. and any domestic subsidiary that guarantees the 2022 Credit Agreement. Our 2022 Credit Agreement also requires us to maintain a minimum coverage ratio of consolidated EBITDA (as defined in the 2022 Credit Agreement) to consolidated interest expense of 2.00x and a maximum leverage ratio of total debt less available cash to consolidated EBITDA (as defined in the 2022 Credit Agreement) of 4.25x (and in the case of the first four full fiscal quarters following consummation of a qualified acquisition (as defined in the 2022 Credit Agreement), 4.75x) as of the end of each fiscal quarter. The indentures also contain other customary affirmative and negative covenants and events of default. We were in compliance with the covenants under our debt instruments as of December 31, 2022.

Short-Term Borrowings

We had short-term borrowings of \$668.8 million and \$1.3 billion as of December 31, 2022 and 2021, respectively, with related weighted average interest rates of 5.6% and 1.6%, respectively, which are included in the accompanying consolidated balance sheets.

Revolving Credit Agreement

On August 5, 2022, we entered into a new 5-year senior unsecured Revolving Credit Agreement (the “Revolving Credit Agreement”). The Revolving Credit Agreement provides for a senior unsecured revolving credit facility available to CBRE Services with a capacity of \$3.5 billion and a maturity date of August 5, 2027. Borrowings bear interest at (i) CBRE Services’ option, either (a) a Term SOFR rate published by CME Group Benchmark Administration Limited for the applicable interest period or (b) a base rate determined by reference to the greatest of (1) the prime rate determined by Wells Fargo, (2) the federal funds rate plus 1/2 of 1% and (3) the sum of (x) a Term SOFR rate published by CME Group Benchmark Administration Limited for an interest period of one month and (y) 1.00% plus (ii) 10 basis points, plus (iii) a rate equal to an applicable rate (in the case of borrowings based on the Term SOFR rate, 0.630% to 1.100% and in the case of borrowings based on the base rate, 0.0% to 0.100%, in each case, as determined by reference to our Debt Rating (as defined in the Revolving Credit Agreement). The applicable rate is also subject to certain increases and/or decreases specified in the Revolving Credit Agreement linked to achieving certain sustainability goals.

The Revolving Credit Agreement requires us to pay a fee based on the total amount of the revolving credit facility commitment (whether used or unused). In addition, the Revolving Credit Agreement also includes capacity for letters of credit of an outstanding aggregate amount of \$300.0 million.

The Revolving Credit Agreement also requires us to maintain a minimum coverage ratio of consolidated EBITDA (as defined in the Revolving Credit Agreement) to consolidated interest expense of 2.00x and a maximum leverage ratio of total debt less available cash to consolidated EBITDA (as defined in the Revolving Credit Agreement) of 4.25x (and in the case of the first four full fiscal quarters following consummation of a qualified acquisition (as defined in the Revolving Credit Agreement), 4.75x) as of the end of each fiscal quarter. In addition, the Revolving Credit Agreement also contains other customary affirmative and negative covenants and events of default. We were in compliance with the covenants under this agreement as of December 31, 2022.

On August 5, 2022, CBRE Services made an initial borrowing of \$220.0 million under the Revolving Credit Agreement. These proceeds, in addition to cash on hand, were used to repay in full all revolving credit borrowings outstanding under the 2021 Credit Agreement and terminate the revolving commitments thereunder. As of December 31, 2022, \$178.0 million was outstanding under the Revolving Credit Agreement. No letters of credit were outstanding as of December 31, 2022. Letters of credit are issued in the ordinary course of business and would reduce the amount we may borrow under the Revolving Credit Agreement.

Revolving Credit Facilities under the 2021 Credit Agreement

The revolving credit facility under the 2021 Credit Agreement allowed for borrowings outside of the U.S., with a \$200.0 million sub-facility available to CBRE Services, one of our Canadian subsidiaries, one of our Australian subsidiaries and one of our New Zealand subsidiaries and a \$320.0 million sub-facility available to CBRE Services and one of our U.K. subsidiaries. Borrowings under the revolving credit facility bore interest at varying rates, based at our option, on either (1) the applicable fixed rate plus 0.68% to 1.075% or (2) the daily rate plus 0.0% to 0.075%, in each case as determined by reference to our Credit Rating (as defined in the 2021 Credit Agreement). The 2021 Credit Agreement required us to pay a fee based on the total amount of the revolving credit facility commitment (whether used or unused).

CBRE GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

As of January 1, 2022, pursuant to a first amendment to the 2021 Credit Agreement entered into on December 10, 2021, the applicable fixed rate for revolving borrowings denominated in Euros was changed to EURIBOR and the applicable fixed rate for revolving borrowings denominated in Sterling was changed to SONIA (with SONIA-based borrowings subject to a “credit spread adjustment” of an additional 0.0326% in addition to the interest rate spreads described above).

On August 5, 2022, pursuant to a second amendment to the 2021 Credit Agreement, among other things, all revolving commitments previously available to the subsidiaries of the company under the 2021 Credit Agreement were terminated and replaced with a new \$3.5 billion 5-year senior unsecured Revolving Credit Agreement (as described above).

Turner & Townsend Revolving Credit Facilities

Turner & Townsend has a revolving credit facility with a capacity of £120.0 million and an additional accordion option of £20.0 million that matures on March 31, 2027. As of December 31, 2022, \$31.9 million (£26.3 million) was outstanding under this revolving credit facility bearing interest at SONIA plus 0.75%, maturing in February 2023.

Turner & Townsend had a revolving credit facility with a capacity of £80.0 million and a maturity date of May 5, 2022. Borrowings under this revolving credit facility bore interest at the SONIA overnight rate plus 1.0266% to 2.0266%, determined by reference to gearing (as defined in its 2021 credit agreement). As of December 31, 2021, \$27.0 million (£20.0 million) was outstanding under this revolving credit facility. On March 31, 2022, this revolving credit facility was replaced by a new revolving credit facility (as described above).

Warehouse Lines of Credit

CBRE Capital Markets has warehouse lines of credit with third-party lenders for the purpose of funding mortgage loans that will be resold, and a funding arrangement with Fannie Mae for the purpose of selling a percentage of certain closed multifamily loans to Fannie Mae. These warehouse lines are recourse only to CBRE Capital Markets and are secured by our related warehouse receivables. See Note 5 for additional information.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

12. Leases

Supplemental balance sheet information related to our leases is as follows (dollars in thousands):

Category	Classification	December 31,	
		2022	2021
Assets			
Operating	Operating lease assets	\$ 1,033,011	\$ 1,046,377
Financing	Other assets, net	91,028	110,809
Total leased assets		\$ 1,124,039	\$ 1,157,186
Liabilities			
Current:			
Operating	Operating lease liabilities	\$ 229,591	\$ 232,423
Financing	Other current liabilities	33,039	38,103
Non-current:			
Operating	Non-current operating lease liabilities	1,080,385	1,116,562
Financing	Other liabilities	58,094	73,257
Total lease liabilities		\$ 1,401,109	\$ 1,460,345

Components of lease cost are as follows (dollars in thousands):

Component	Classification	Year Ended December 31,	
		2022	2021
Operating lease cost	Operating, administrative and other	\$ 196,218	\$ 196,685
Financing lease cost:			
Amortization of right-to-use assets	(1)	30,601	36,376
Interest on lease liabilities	Interest expense	934	1,301
Variable lease cost	(2)	79,249	70,091
Sublease income	Revenue	(4,092)	(2,271)
Total lease cost		<u>\$ 302,910</u>	<u>\$ 302,182</u>

(1) Amortization costs of \$26.4 million and \$31.9 million from vehicle finance leases utilized in client outsourcing arrangements are included in the “Cost of revenue” line item in the accompanying consolidated statements of operations for the years ended December 31, 2022 and 2021, respectively. Amortization costs of \$4.2 million and \$4.4 million from all other finance leases are included in the “Depreciation and amortization” line item in the accompanying consolidated statements of operations for the years ended December 31, 2022 and 2021, respectively.

(2) Variable lease costs of \$23.6 million and \$16.8 million from leases in client outsourcing arrangements are included in the “Cost of revenue” line item in the accompanying consolidated statements of operations for the years ended December 31, 2022 and 2021, respectively. Variable lease costs of \$55.6 million and \$53.3 million from all other leases are included in the “Operating, administrative, and other” line item in the accompanying consolidated statements of operations for the years ended December 31, 2022 and 2021, respectively.

Weighted average remaining lease term and discount rate for our operating and finance leases are as follows:

	December 31,	
	2022	2021
Weighted-average remaining lease term:		
Operating leases ⁽¹⁾	42 years	8 years
Financing leases ⁽²⁾	75 years	72 years
Weighted-average discount rate:		
Operating leases ⁽¹⁾	4.5%	2.9%
Financing leases ⁽²⁾	5.1%	5.0%

(1) In 2022, we entered into two 99-year operating leases and one 90-year operating lease on real estate under development. If excluded, the weighted-average remaining lease term and weighted-average discount rate would be 7 years and 3.0%, respectively, as of December 31, 2022.

(2) Finance leases as of December 31, 2022 and 2021 included a 99 year lease on a real estate under development. If excluded, the weighted-average remaining lease term and weighted-average discount rate would be 3 years and 1.7%, respectively, as of December 31, 2022 and 3 years and 1.8%, respectively, as of December 31, 2021.

CBRE GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Maturities of lease liabilities by fiscal year as of December 31, 2022 are as follows (dollars in thousands):

	Operating Leases	Financing Leases
2023	\$ 229,748	\$ 33,213
2024	226,036	23,556
2025	210,518	12,921
2026	179,126	6,659
2027	130,284	2,227
Thereafter	1,204,601	220,804
Total remaining lease payments at December 31, 2022	2,180,313	299,380
Less: Interest	870,337	208,247
Present value of lease liabilities at December 31, 2022	\$ 1,309,976	\$ 91,133

Supplemental cash flow information and non-cash activity related to our operating and financing leases are as follows (dollars in thousands):

	Year Ended December 31,	
	2022	2021
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	\$ 236,758	\$ 202,690
Operating cash flows from financing leases	2,432	2,876
Financing cash flows from financing leases	37,987	41,211
Right-of-use assets obtained in exchange for new operating lease liabilities	164,275	199,275
Right-of-use assets obtained in exchange for new financing lease liabilities	31,272	39,460
Other non-cash increases in operating lease right-of-use assets ⁽¹⁾	31,856	12,126
Other non-cash increases (decreases) in financing lease right-of-use assets ⁽¹⁾	5,779	(2,754)

⁽¹⁾ The non-cash activity in the right-of-use assets resulted from lease modifications and remeasurements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

13. Commitments and Contingencies

We are a party to a number of pending or threatened lawsuits arising out of, or incident to, our ordinary course of business. We believe that any losses in excess of the amounts accrued therefore as liabilities on our consolidated financial statements are unlikely to be significant, but litigation is inherently uncertain and there is the potential for a material adverse effect on our consolidated financial statements if one or more matters are resolved in a particular period in an amount materially in excess of what we anticipated.

In January 2008, CBRE MCI, a wholly-owned subsidiary of CBRE Capital Markets, entered into an agreement with Fannie Mae under Fannie Mae's Delegated Underwriting and Servicing Lender Program (DUS Program) to provide financing for multifamily housing with five or more units. Under the DUS Program, CBRE MCI originates, underwrites, closes and services loans without prior approval by Fannie Mae, and typically, is subject to sharing up to one-third of any losses on loans originated under the DUS Program. CBRE MCI has funded loans with unpaid principal balances of \$37.9 billion at December 31, 2022, of which \$34.2 billion is subject to such loss sharing arrangements. CBRE MCI, under its agreement with Fannie Mae, must post cash reserves or other acceptable collateral under formulas established by Fannie Mae to provide for sufficient capital in the event losses occur. As of December 31, 2022 and 2021, CBRE MCI had \$113.0 million and \$100.0 million, respectively, of letters of credit under this reserve arrangement and had recorded a liability of approximately \$65.1 million and \$64.0 million, respectively, for its loan loss guarantee obligation under such arrangement. Fannie Mae's recourse under the DUS Program is limited to the assets of CBRE MCI, which assets totaled approximately \$681.2 million (including \$204.9 million of warehouse receivables, a substantial majority of which are pledged against warehouse lines of credit and are therefore not available to Fannie Mae) at December 31, 2022.

CBRE Capital Markets participates in Freddie Mac's Multifamily Small Balance Loan (SBL) Program. Under the SBL program, CBRE Capital Markets has certain repurchase and loss reimbursement obligations. We could potentially be obligated to repurchase any SBL loan originated by CBRE Capital Markets that remains in default for 120 days following the forbearance period, if the default occurred during the first 12 months after origination and such loan had not been earlier securitized. In addition, CBRE Capital Markets may be responsible for a loss not to exceed 10% of the original principal amount of any SBL loan that is not securitized and goes into default after the 12-month repurchase period. CBRE Capital Markets must post a cash reserve or other acceptable collateral to provide for sufficient capital in the event the obligations are triggered. As of both December 31, 2022 and 2021, CBRE Capital Markets had posted a \$5.0 million letter of credit under this reserve arrangement.

We had outstanding letters of credit totaling \$206.8 million as of December 31, 2022, excluding letters of credit for which we have outstanding liabilities already accrued on our consolidated balance sheet related to our subsidiaries' outstanding reserves for claims under certain insurance programs as well as letters of credit related to operating leases. The CBRE Capital Markets letters of credit totaling \$118.0 million as of December 31, 2022 referred to in the preceding paragraphs represented the majority of the \$206.8 million outstanding letters of credit as of such date. The remaining letters of credit are primarily executed by us in the ordinary course of business and expire at the end of each of the respective agreements.

We had guarantees totaling \$79.4 million as of December 31, 2022, excluding guarantees related to pension liabilities, consolidated indebtedness and other obligations for which we have outstanding liabilities already accrued on our consolidated balance sheet, and excluding guarantees related to operating leases. The \$79.4 million primarily represents guarantees executed by us in the ordinary course of business, including various guarantees of management and vendor contracts in our operations overseas, which expire at the end of each of the respective agreements.

In addition, as of December 31, 2022, we had issued numerous non-recourse carveout, completion and budget guarantees relating to development projects for the benefit of third parties. These guarantees are commonplace in our industry and are made by us in the ordinary course of our Real Estate Investments business. Non-recourse carveout guarantees generally require that our project-entity borrower not commit specified improper acts, with us potentially liable for all or a portion of such entity's indebtedness or other damages suffered by the lender if those acts occur. Completion and budget guarantees generally require us to complete construction of the relevant project within a specified timeframe and/or within a specified budget, with us potentially being liable for costs to complete in excess of such timeframe or budget. While there can be no assurance, we do not expect to incur any material losses under these guarantees.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

An important part of the strategy for our Real Estate Investments segment involves investing our capital in certain real estate investments with our clients. For our investment funds, we generally co-invest up to 2.0% of the equity in a particular fund. As of December 31, 2022, we had aggregate future commitments of \$106.9 million related to co-investment funds. Additionally, we make selective investments in real estate development projects on our own account or co-invest with our clients with up to 50% of the project's equity as a principal in unconsolidated real estate projects. We had committed capital of \$81.0 million and \$85.9 million to consolidated and unconsolidated projects, respectively, as of December 31, 2022.

Also refer to Note 22 for the Telford Fire Safety Remediation provision.

14. Employee Benefit Plans***Stock Incentive Plans******2012 Equity Incentive Plan and 2017 Equity Incentive Plan***

Our 2012 Equity Incentive Plan (the 2012 Plan) and 2017 Equity Incentive Plan (the 2017 Plan) were adopted by our board of directors and approved by our stockholders on May 8, 2012 and May 19, 2017, respectively. Both the 2012 Plan and 2017 Plan authorized the grant of stock-based awards to our employees, directors and independent contractors. Our 2012 Plan was terminated in May 2017 in connection with the adoption of our 2017 Plan. Our 2017 Plan was terminated in May 2019 in connection with the adoption of our 2019 Equity Incentive Plan (the 2019 Plan), which is described below. At termination of the 2012 Plan, no unissued shares from the 2012 Plan were allocated to the 2017 Plan for potential future issuance. At termination of the 2017 Plan, no unissued shares from the 2017 Plan were allocated to the 2019 Plan for potential future issuance. Since our 2012 Plan and 2017 Plan have been terminated, no new awards may be granted under them. As of December 31, 2022, assuming the maximum number of shares under our performance-based awards will later be issued, 25,290 outstanding restricted stock unit (RSU) awards to acquire shares of our Class A common stock granted under the 2012 Plan remain outstanding according to their terms, and we will continue to issue shares to the extent required under the terms of such outstanding awards. Shares underlying awards that expire, terminate or lapse under the 2012 Plan will not become available for grant under the 2017 Plan or the 2019 Plan. As of December 31, 2022, 2,604,344 RSU awards to acquire shares of our Class A common stock granted under the 2017 Plan remain outstanding according to their terms, and we will continue to issue shares to the extent required under the terms of such outstanding awards (noting that any shares granted above target will get deducted from the 2019 Plan reserve as noted below). Shares underlying awards outstanding under the 2017 Plan at termination that are subsequently canceled, forfeited or terminated without issuance to the holder thereof will be available for grant under the 2019 Plan.

2019 Equity Incentive Plan

Our 2019 Plan was adopted by our board of directors on March 1, 2019 and approved by our stockholders on May 17, 2019. The 2019 Plan authorizes the grant of stock-based awards to employees, directors and independent contractors. Unless terminated earlier, the 2019 Plan will terminate on March 1, 2029. A total of 9,900,000 shares of our Class A common stock are reserved for issuance under the 2019 Plan, less 189,499 shares granted under the 2017 Plan between March 1, 2019, the date our board of directors approved the plan, and May 17, 2019, the date our stockholders approved the 2019 Plan. Additionally, as mentioned above, shares underlying awards outstanding under the 2017 Plan at termination that are subsequently canceled, forfeited or terminated without issuance to the holder thereof will be available for reissuance under the 2019 Plan. On May 27, 2022, an additional 7,700,000 shares of our Class A common stock was reserved for issuance under the 2019 Plan. As of December 31, 2022, 808,723 shares were cancelled and 795,624 shares were withheld for payment of taxes under the 2017 Plan and added to the authorized pool for the 2019 Plan, bringing the total authorized amount under the 2019 Plan to 19,014,848 shares of our Class A common stock.

Shares underlying expired, canceled, forfeited or terminated awards under the 2019 Plan (other than awards granted in substitution of an award previously granted), plus those utilized to pay tax withholding obligations with respect to an award (other than an option or stock appreciation right) will be available for reissuance. Awards granted under the 2019 Plan are subject to a minimum vesting condition of one year. As of December 31, 2022, assuming the maximum number of shares under our performance-based awards will later be issued (which includes shares that could be issued over target related to performance awards issued and outstanding under the 2017 Plan), 10,087,368 shares remained available for future grants under this plan.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The number of shares issued or reserved pursuant to the 2012 Plan, 2017 Plan and 2019 Plan are subject to adjustment on account of a stock split of our outstanding shares, stock dividend, dividend payable in a form other than shares in an amount that has a material effect on the price of the shares, consolidation, combination or reclassification of the shares, recapitalization, spin-off, or other similar occurrences.

Non-Vested Stock Awards

We have issued non-vested stock awards, including RSUs and restricted shares, in our Class A common stock to certain of our employees, independent contractors and members of our board of directors. The following is a summary of the awards granted during the years ended December 31, 2022, 2021 and 2020.

- During the year ended December 31, 2022, we granted RSUs that are performance vesting in nature, with 1,223,849 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at their highest levels, and 1,154,113 RSUs that are time vesting in nature.
- During the year ended December 31, 2021, we granted RSUs that are performance vesting in nature, with 734,352 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at their highest levels, and 969,299 RSUs that are time vesting in nature.
- During the year ended December 31, 2020, we granted RSUs that are performance vesting in nature, with 910,346 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at their highest levels, and 1,150,761 RSUs that are time vesting in nature.

Our annual performance-vesting awards generally vest in full three years from the grant date, based on our achievement against various adjusted income per share performance targets. Our time-vesting awards generally vest 25% per year over four years from the grant date.

In December 2017, we made a special grant of RSUs under our 2017 Plan (2017 Special RSU grant) to certain of our employees, with 3,288,618 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at their highest levels, and 939,605 RSUs that are time vesting in nature. During 2021, we granted additional RSUs, under our 2019 Plan, to certain of our employees, with 146,080 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at their highest levels. There were no time vesting RSUs associated with the 2021 grants. No such grants under the 2017 Plan were made during 2022 and 2020. As a condition to this 2017 Special RSU grant, each participant has agreed to execute a Restrictive Covenants Agreement. Each 2017 Special RSU grant (except the ones granted during 2021, which are all performance based) consisted of:

- (i) Total Shareholder Return (TSR) Performance RSUs with respect to 33.3% of the total number of target RSUs subject to the grant. The actual number of TSR Performance RSUs that will vest is determined by measuring our cumulative TSR against the cumulative TSR of each of the other companies comprising the S&P 500 on the Grant Date (the Comparison Group) over a six year measurement period commencing on the Grant Date and ending on December 1, 2023. For purposes of measuring TSR, the initial value of our common stock was the average closing price of such common stock for the 60 trading days immediately preceding the Grant Date and the final value of our common stock will be the average closing price of such common stock for the 60 trading days immediately preceding December 1, 2023.
- (ii) Time Vesting RSUs with respect to 33.3% of the total number of target RSUs subject to the grant.
- (iii) EPS Performance RSUs with respect to 33.3% of the total number of target RSUs subject to the grant. The actual number of EPS Performance RSUs that will vest is determined by measuring our cumulative adjusted income per share growth against the cumulative EPS growth, as reported under GAAP (GAAP EPS), of each of the other members of the Comparison Group over a six year measurement period commencing on January 1, 2018 and ending on December 31, 2023.

The Time Vesting and TSR Performance RSUs subject to the 2017 Special RSU grants vest on December 1, 2023, while the EPS Performance RSUs subject to the 2017 Special RSU grants vest on December 31, 2023.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

In February 2022, we made a special grant of RSUs under our 2019 Plan (2022 Special RSU grant) to our CEO, with 88,715 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at their highest levels, and 25,347 RSUs that are time vesting in nature. As a condition to this 2022 Special RSU grant, the CEO has agreed to execute a Restrictive Covenants Agreement. This 2022 Special RSU grant consisted of:

- (i) Total Shareholder Return (TSR) Performance RSUs with respect to 33.3% of the total number of target RSUs subject to the grant. The actual number of TSR Performance RSUs that will vest is determined by measuring our cumulative TSR against the cumulative TSR of each of the other companies comprising the S&P 500 on the Grant Date (the Comparison Group) over a five year measurement period commencing on January 1, 2022 and ending on December 31, 2026. For purposes of measuring TSR, the initial value of our common stock was the average closing price of such common stock for the 60 trading days immediately preceding January 1, 2022, and the final value of our common stock will be the average closing price of such common stock for the 60 trading days immediately preceding December 31, 2026.
- (ii) Time Based RSUs with respect to 33.3% of the total number of target RSUs subject to the grant, vesting on February 25, 2027.
- (iii) EPS Performance RSUs with respect to 33.3% of the total number of target RSUs subject to the grant. The actual number of EPS Performance RSUs that will vest is determined by measuring our cumulative adjusted income per share growth against the cumulative EPS growth, as reported under GAAP (GAAP EPS), of each of the other members of the Comparison Group over a five year measurement period commencing on January 1, 2022 and ending on December 31, 2026. These RSUs vest on December 31, 2026.

We estimated the fair value of the TSR Performance RSUs referred to above on the dates of the grants using a Monte Carlo simulation with the following assumptions:

	Year Ended December 31 ⁽¹⁾ ,	
	2022 ⁽²⁾	2021 ⁽²⁾
Volatility of common stock	35.55 %	42.71% - 45.80%
Expected dividend yield	0.00 %	0.00 %
Risk-free interest rate	1.84 %	0.25% - 0.28%

⁽¹⁾ There were no grants during 2020.

⁽²⁾ One grant was awarded in February 2022. 2021 grants were made during different dates therefore a range of inputs is presented.

In November 2021, we made a special grant of RSUs under our 2019 Plan (Segment RSU Grant) to certain of our employees in Advisory Services and GWS segments, with 1,297,345 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at their highest levels, and 370,670 RSUs that are time vesting in nature. In 2022, we made additional grants under this plan, with 333,501 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at the highest levels, and 95,286 RSUs that are time vesting in nature. As a condition to this Segment RSU Grant, each participant has agreed to execute a Restrictive Covenants Agreement. Each Segment RSU Grant consisted of:

- (i) Time Vesting RSUs with respect to 33.3% of the total number of target RSUs subject to the grant, which cliff vests on November 10, 2026.
- (ii) Segment Performance RSUs with respect to 33.3% of the total number of target RSUs subject to the grant. The actual number of Segment Performance RSUs that will vest is determined by measuring growth in certain segment specific metrics such as client operating profit, segment operating profit and major markets over a five year measurement period commencing on January 1, 2022 and ending on December 31, 2026.
- (iii) EPS Performance RSUs with respect to 33.3% of the total number of target RSUs subject to the grant. The actual number of EPS Performance RSUs that will vest is determined by measuring our cumulative adjusted earnings per share growth against the cumulative EPS growth, as reported under GAAP, to a comparative group comprised of each of the other companies comprising the S&P 500 on the grant date over a five year measurement period commencing on January 1, 2022 and ending on December 31, 2026.

CBRE GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

A summary of the status of our non-vested stock awards is presented in the table below:

	Shares/Units	Weighted Average Market Value Per Share
Balance at December 31, 2019	7,709,699	\$ 43.89
Granted	1,605,934	56.45
Performance award achievement adjustments	560,563	39.89
Vested	(2,780,377)	39.81
Forfeited	(412,407)	48.27
Balance at December 31, 2020	6,683,412	47.99
Granted	2,531,959	92.16
Performance award achievement adjustments	(189,930)	49.76
Vested	(1,883,652)	46.34
Forfeited	(292,998)	55.80
Balance at December 31, 2021	6,848,791	64.10
Granted	1,796,196	95.01
Performance award achievement adjustments	409,851	77.99
Vested	(1,372,123)	57.74
Forfeited	(269,636)	79.33
Balance at December 31, 2022	7,413,079	73.67

Total compensation expense related to non-vested stock awards was \$160.3 million, \$184.9 million and \$60.4 million for the years ended December 31, 2022, 2021 and 2020, respectively. At December 31, 2022, total unrecognized estimated compensation cost related to non-vested stock awards was approximately \$235.1 million, which is expected to be recognized over a weighted average period of approximately 2.9 years.

Bonuses

We have bonus programs covering select employees, including senior management. Awards are based on the position and performance of the employee and the achievement of pre-established financial, operating and strategic objectives. The amounts charged to expense for bonuses were \$843.1 million, \$871.7 million and \$557.6 million for the years ended December 31, 2022, 2021 and 2020, respectively.

401(k) Plan

Our CBRE 401(k) Plan (401(k) Plan) is a defined contribution savings plan that allows participant deferrals under Section 401(k) of the Internal Revenue Code (IRC). Most of our U.S. employees, other than qualified real estate agents having the status of independent contractors under section 3508 of the IRC of 1986, as amended, and non-plan electing union employees, are eligible to participate in the plan. The 401(k) Plan provides for participant contributions as well as a company match. A participant is allowed to contribute to the 401(k) Plan from 1% to 75% of his or her compensation, subject to limits imposed by applicable law. Effective October 1, 2021, all active participants vest in company match contributions at 33% per year for each plan year they are employed. For 2021 and 2020, we contributed a 67% match on the first 6% of annual compensation for participants with an annual base salary of less than \$100,000 and we contributed a 50% match on the first 6% of annual compensation for participants with an annual base salary of \$100,000 or more, or who are commissioned employees (up to \$150,000 of compensation). Effective January 1, 2022, we contribute 67% on the first 6% of eligible compensation contributed to the plan (up to \$150,000 of eligible pay) for all employees regardless of base compensation or commissioned status. In connection with the 401(k) Plan, we charged to expense \$91.1 million, \$72.4 million and \$83.5 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Participants are entitled to invest up to 25% of their 401(k) account balance in shares of our common stock. As of December 31, 2022, approximately 1.1 million shares of our common stock were held as investments by participants in our 401(k) Plan.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Pension Plans

We have two primary non-U.S. contributory defined benefit pension plans (major plans), both based in the U.K. Our subsidiaries maintain these plans to provide retirement benefits to existing and former employees participating in these plans. With respect to these plans, our historical policy has been to contribute annually to the plans, an amount to fund pension liabilities as actuarially determined and as required by applicable laws and regulations. Our contributions to these plans are invested by the plan trustee and, if these investments do not perform well in the future, we may be required to provide additional contributions to cover any pension underfunding. Effective July 1, 2007, we reached agreements with the active members of these plans to freeze future pension plan benefits. In return, the active members became eligible to enroll in a defined contribution plan. For these plans, as of December 31, 2022 and 2021, the fair values of pension plan assets were \$221.1 million and \$411.1 million, respectively, and the fair values of projected benefit obligations were \$247.1 million and \$437.5 million, respectively. As a result, these plans were underfunded by approximately \$26.0 million and \$26.4 million at December 31, 2022 and 2021, respectively.

Items not yet recognized as a component of net periodic pension cost (benefit) for the major plans were \$127.7 million and \$119.9 million as of December 31, 2022 and 2021, respectively, and were included in accumulated other comprehensive loss in the accompanying consolidated balance sheets. During 2022, on the major plans, there were gains on plan obligations of \$159.3 million as a result of changes in actuarial assumptions which was partially offset by \$19.1 million in losses due to plan experience. During 2021, there were gains on plan obligations of \$22.1 million as a result of changes in actuarial assumptions.

As of December 31, 2022, for all plans where total projected benefit obligations exceed plan assets, projected benefit obligations and the fair value of plan assets were \$339.9 million and \$270.3 million as of December 31, 2022, respectively, and \$524.3 million and \$438.2 million as of December 31, 2021, respectively.

As of December 31, 2022, for all plans where total accumulated benefit obligations exceed plan assets, accumulated benefit obligations and the fair value of plan assets were \$329.5 million and \$270.3 million as of December 31, 2022, respectively, and \$510.6 million and \$438.2 million as of December 31, 2021, respectively.

Net periodic pension benefit for all plans was \$3.4 million and \$8.9 million for the years ended December 31, 2022 and 2021, respectively, and not material for the year ended December 31, 2020.

The following table provides amounts recognized related to all of our defined benefit pension plans within the following captions on our consolidated balance sheets (dollars in thousands):

	December 31,	
	2022	2021
Other assets, net	\$ 56,192	\$ 73,990
Other current liabilities	—	19,788
Other liabilities	79,513	69,478

The following table presents estimated future benefit payments over the next ten years, as of December 31, 2022. We will fund these obligations from the assets held by these plans. If the assets these plans hold are not sufficient to fund these payments, the company will fund the remaining obligations (dollars in thousands):

	2023	2024	2025	2026	2027	2028-2032
Estimated future benefit payments for defined benefit plans	\$ 42,695	\$ 42,054	\$ 43,537	\$ 44,193	\$ 44,511	\$ 255,444

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

15. Income Taxes

The components of income before provision for income taxes consisted of the following (dollars in thousands):

	Year Ended December 31,		
	2022	2021	2020
Domestic	\$ 1,274,655	\$ 1,683,710	\$ 470,181
Foreign	383,535	725,711	499,788
Total	\$ 1,658,190	\$ 2,409,421	\$ 969,969

Our tax provision (benefit) consisted of the following (dollars in thousands):

	Year Ended December 31,		
	2022	2021	2020
Current provision:			
Federal	\$ 338,234	\$ 274,987	\$ 18,951
State	98,881	115,196	33,291
Foreign	207,890	238,273	88,994
Total current provision	645,005	628,456	141,236
Deferred provision:			
Federal	(248,927)	34,607	61,034
State	(56,068)	(4,395)	3,872
Foreign	(105,780)	(91,162)	7,959
Total deferred provision	(410,775)	(60,950)	72,865
Total provision for income taxes	\$ 234,230	\$ 567,506	\$ 214,101

The following is a reconciliation stated as a percentage of pre-tax income of the U.S. statutory federal income tax rate to our effective tax rate:

	Year Ended December 31,		
	2022	2021	2020
Federal statutory tax rate	21 %	21 %	21 %
Foreign rate differential	—	—	—
State taxes, net of federal benefit	3	4	3
Non-deductible expenses	2	—	1
Reserves for uncertain tax positions	1	1	—
Credits and exemptions	(2)	(1)	(2)
Outside basis differences recognized as a result of a legal entity restructuring	(10)	—	—
Other	(1)	(1)	(1)
Effective tax rate	14 %	24 %	22 %

In 2022, we recognized a net tax benefit of approximately \$165.8 million attributable to outside basis differences recognized as a result of a legal entity restructuring. The recognition of the outside tax basis differences generated a capital loss that offset capital gains generated during 2022. The remaining capital loss will be carried forward and will be available to offset future capital gains. Based on our strong history of capital gains in the prior three years and the nature of our business we expect to generate sufficient capital gains in the five year carry forward period and therefore concluded that it is more likely than not that we will realize the full tax benefit from the capital loss carried forward. Accordingly, we have not provided any valuation allowance against the deferred tax asset for the capital loss carried forward.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Cumulative tax effects of temporary differences are shown below (dollars in thousands):

	December 31,	
	2022	2021
Assets:		
Tax losses and tax credits	\$ 368,790	\$ 307,507
Operating lease liabilities	315,651	269,960
Bonus and deferred compensation	372,136	381,408
Bad debt and other reserves	102,659	65,188
Pension obligation	809	5,007
All other	64,777	65,710
Deferred tax assets, before valuation allowance	\$ 1,224,822	\$ 1,094,781
Less: Valuation allowance	(254,721)	(273,256)
Deferred tax assets	\$ 970,101	\$ 821,525
Liabilities:		
Property and equipment	(21,234)	(92,166)
Unconsolidated affiliates and partnerships	(92,756)	(128,170)
Capitalized costs and intangibles	(562,077)	(583,219)
Operating lease assets	(272,741)	(240,261)
All other	(37,812)	(25,935)
Deferred tax liabilities	\$ (986,620)	\$ (1,069,751)
Net deferred tax liabilities	\$ (16,519)	\$ (248,226)

As of December 31, 2022, there were deferred tax assets related to U.S. federal and state capital loss carryforward, net of reserves for uncertain tax position, of approximately \$41 million which will expire after 2027. As of December 31, 2022, there were deferred tax assets before valuation allowances of approximately \$327 million related to U.S. state and foreign net operating losses (NOLs). The majority of the NOLs are carried forward indefinitely and primarily related to the foreign jurisdictions. In certain foreign and state jurisdictions NOLs expire each year beginning in 2022 and 2027, respectively. The utilization of NOLs may be subject to certain limitations under U.S. federal, state and foreign laws. We have recorded a valuation allowance for deferred tax assets where we believe that it is more likely than not that the NOLs will not be utilized.

We determined that as of December 31, 2022, \$254.7 million of deferred tax assets do not satisfy the realization criteria set forth in Topic 740. Accordingly, a valuation allowance has been recorded for this amount. If released, the entire amount would result in a benefit to continuing operations. During the year ended December 31, 2022, our valuation allowance decreased by approximately \$18.5 million. The decrease was attributed to a reversal of the beginning of year valuation allowance of \$9.2 million as certain foreign subsidiaries expect to utilize deferred tax assets before expiration as a result of current and forecasted earnings within the applicable jurisdiction, a reduction of \$16.3 million due to foreign currency translation and tax rate changes, and an increase in valuation allowance of \$7.0 million due to current year activities. We believe it is more likely than not that future operations will generate sufficient taxable income to realize the benefit of our deferred tax assets recorded as of December 31, 2022, net of valuation allowance.

At December 31, 2022, we have undistributed earnings of certain foreign subsidiaries of approximately \$5.1 billion for which we have indefinitely reinvested and not recognized deferred taxes. Estimating the amount of the unrecognized deferred tax is not practicable due to the complexity and variety of assumptions necessary to estimate the tax. As of December 31, 2022, we have recorded \$24.9 million of deferred tax liability relating to book over tax basis in Turner & Townsend undistributed earnings.

The total amount of gross unrecognized tax benefits was approximately \$391.4 million and \$191.9 million as of December 31, 2022 and 2021, respectively. The total amount of unrecognized tax benefits that would affect our effective tax rate, if recognized, is \$267.7 million as of December 31, 2022. The increase of \$199.4 million resulted from accrual of gross unrecognized tax benefits of \$201.3 million primarily related to certain legal entity reorganizations and a release of \$1.9 million of gross unrecognized tax benefits primarily related to the expiration of statute of limitations in various tax jurisdictions.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows (dollars in thousands):

	Year Ended December 31,	
	2022	2021
Beginning balance, unrecognized tax benefits	\$ (191,938)	\$ (168,516)
Gross increases - tax positions in prior period	(42,175)	(4,478)
Gross decreases - tax positions in prior period	576	2,675
Gross increases - current-period tax positions	(166,445)	(25,619)
Decreases relating to settlements	518	390
Reductions as a result of lapse of statute of limitations	1,852	3,610
Foreign exchange movement	6,233	—
Ending balance, unrecognized tax benefits	\$ (391,379)	\$ (191,938)

Our continuing practice is to recognize accrued interest and/or penalties related to income tax matters within income tax expense. During the years ended December 31, 2022, 2021, and 2020, we (reversed)/accrued an additional \$(0.5) million, \$0.6 million and \$0.4 million, respectively, in interest and penalties associated with uncertain tax positions. As of December 31, 2022 and 2021, we have recognized a liability for interest and penalties of \$3.3 million and \$3.8 million, respectively. We believe the amount of gross unrecognized tax benefits that will be settled during the next twelve months due to filing amended returns and settling ongoing exams cannot be reasonably estimated but will not be significant.

We conduct business globally and, as a result, one or more of our subsidiaries files income tax returns in the U.S. federal jurisdiction and in multiple state, local and foreign tax jurisdictions. Our U.S. federal income tax returns for years 2016 through 2019 are currently under audit by the Internal Revenue Service. We are under audit by various states including New York, California, Texas, and Michigan. We are also under audit by various foreign tax jurisdictions including France, Hungary, Mexico, and Spain. With limited exception, our significant foreign and state tax jurisdictions are no longer subject to audit by the various tax authorities for tax years prior to 2017 and 2012, respectively.

On August 16, 2022, the Inflation Reduction Act (IRA), a budget reconciliation package that contained legislation targeting energy security and climate changes, healthcare and taxes, was signed into law. With respect to corporate-level taxes, the IRA included a 1% excise tax on stock buybacks and a 15% corporate alternative minimum tax (CAMT) based on financial statement income of certain U.S. companies that meet the \$1 billion profitability threshold criteria, effective after December 31, 2022. We continue to evaluate the impact of the legislation and forthcoming administrative guidance and regulations to our financial statements and results of operations.

16. Stockholders' Equity

Our board of directors is authorized, subject to any limitations imposed by law, without the approval of our stockholders, to issue a total of 25,000,000 shares of preferred stock, in one or more series, with each such series having rights and preferences including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, as our board of directors may determine. As of December 31, 2022 and 2021, no shares of preferred stock have been issued.

Our board of directors is authorized to issue up to 525,000,000 shares of Class A common stock, \$0.01 par value per share (common stock), of which 311,014,160 shares and 332,875,959 shares were issued and outstanding as of December 31, 2022 and 2021, respectively.

Stock Repurchase Program

In February 2019, our board of directors authorized a program for the repurchase of up to \$300.0 million of our Class A common stock over three years, effective March 11, 2019 (the 2019 program). In both August and November 2019, our board of directors authorized an additional \$100.0 million under our program, bringing the total authorized repurchase amount under the 2019 program to a total of \$500.0 million. During the first quarter of 2022, we repurchased 615,108 shares of our common stock under the 2019 program at an average price of \$101.88 per share using cash on hand for \$62.7 million, fully utilizing the remaining capacity under this program. During the year ended December 31, 2021, we repurchased 3,122,054 shares of our common stock at an average price of \$92.03 per share using cash on hand for \$287.3 million.

On November 19, 2021, our board of directors authorized a new program for the repurchase of up to \$2.0 billion of our Class A common stock over five years (the 2021 program). On August 18, 2022, our board of directors authorized an additional

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

\$2.0 billion, bringing the total authorized repurchase amount under this program to a total of \$4.0 billion. During the year ended December 31, 2022, we repurchased 22,275,498 shares of our common stock with an average price of \$80.74 per share using cash on hand for \$1.8 billion under the 2021 program. During the year ended December 31, 2021, we repurchased 832,315 shares of our common stock with an average price of \$102.82 per share using cash on hand for \$85.6 million.

Our stock repurchase program does not obligate us to acquire any specific number of shares. Under this program, shares may be repurchased in privately negotiated and/or open market transactions, including under plans complying with Rule 10b5-1 under the Securities Exchange Act of 1934. Our stock repurchases have been funded with cash on hand and we intend to continue funding future repurchases with existing cash. We may utilize our stock repurchase program to continue offsetting the impact of our stock-based compensation program and on a more opportunistic basis if we believe our stock presents a compelling investment compared to other discretionary uses. The timing of any future repurchases and the actual amounts repurchased will depend on a variety of factors, including the market price of our common stock, general market and economic conditions and other factors. As of December 31, 2022, we had approximately \$2.1 billion of capacity remaining under the 2021 program.

17. Income Per Share Information

The calculations of basic and diluted income per share attributable to CBRE Group, Inc. stockholders are as follows (dollars in thousands, except share and per share data):

	Year Ended December 31,		
	2022	2021	2020
Basic Income Per Share			
Net income attributable to CBRE Group, Inc. stockholders	\$ 1,407,370	\$ 1,836,574	\$ 751,989
Weighted average shares outstanding for basic income per share	322,813,345	335,232,840	335,196,296
Basic income per share attributable to CBRE Group, Inc. stockholders	\$ 4.36	\$ 5.48	\$ 2.24
Diluted Income Per Share			
Net income attributable to CBRE Group, Inc. stockholders	\$ 1,407,370	\$ 1,836,574	\$ 751,989
Weighted average shares outstanding for basic income per share	322,813,345	335,232,840	335,196,296
Dilutive effect of contingently issuable shares	4,882,770	4,484,561	3,195,914
Weighted average shares outstanding for diluted income per share	327,696,115	339,717,401	338,392,210
Diluted income per share attributable to CBRE Group, Inc. stockholders	\$ 4.29	\$ 5.41	\$ 2.22

For the years ended December 31, 2022, 2021 and 2020, 1,312,197, 186,241 and 567,589, respectively, of contingently issuable shares were excluded from the computation of diluted income per share because their inclusion would have had an anti-dilutive effect.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

18. Revenue from Contracts with Customers

We account for revenue with customers in accordance with Topic 606. Revenue is recognized when or as control of the promised services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to receive in exchange for those services.

Disaggregated Revenue

The following tables represent a disaggregation of revenue from contracts with customers by type of service and/or segment (dollars in thousands):

Year Ended December 31, 2022					
	Advisory Services	Global Workplace Solutions	Real Estate Investments	Corporate, other and eliminations	Consolidated
Topic 606 Revenue:					
Facilities management	\$ —	\$ 15,201,178	\$ —	\$ —	\$ 15,201,178
Advisory leasing	3,872,379	—	—	2,940	3,875,319
Advisory sales	2,522,728	—	—	—	2,522,728
Property management	1,849,647	—	—	(19,030)	1,830,617
Project management	—	4,650,043	—	—	4,650,043
Valuation	764,453	—	—	—	764,453
Commercial mortgage origination ⁽¹⁾	273,078	—	—	—	273,078
Loan servicing ⁽²⁾	57,742	—	—	—	57,742
Investment management	—	—	594,867	—	594,867
Development services	—	—	403,727	—	403,727
Topic 606 Revenue	9,340,027	19,851,221	998,594	(16,090)	30,173,752
Out of Scope of Topic 606 Revenue:					
Commercial mortgage origination	289,729	—	—	—	289,729
Loan servicing	253,750	—	—	—	253,750
Development services ⁽³⁾	—	—	111,015	—	111,015
Total Out of Scope of Topic 606 Revenue	543,479	—	111,015	—	654,494
Total Revenue	\$ 9,883,506	\$ 19,851,221	\$ 1,109,609	\$ (16,090)	\$ 30,828,246

CBRE GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Year Ended December 31, 2021					
	Advisory Services	Global Workplace Solutions	Real Estate Investments	Corporate, other and eliminations	Consolidated
Topic 606 Revenue:					
Facilities management	\$ —	\$ 14,166,987	\$ —	\$ —	\$ 14,166,987
Advisory leasing	3,306,548	—	—	1,623	3,308,171
Advisory sales	2,789,573	—	—	—	2,789,573
Property management	1,739,011	—	—	(21,979)	1,717,032
Project management	—	2,931,930	—	—	2,931,930
Valuation	733,523	—	—	—	733,523
Commercial mortgage origination ⁽¹⁾	313,704	—	—	—	313,704
Loan servicing ⁽²⁾	43,218	—	—	—	43,218
Investment management	—	—	556,154	—	556,154
Development services	—	—	390,074	—	390,074
Topic 606 Revenue	8,925,577	17,098,917	946,228	(20,356)	26,950,366
Out of Scope of Topic 606 Revenue:					
Commercial mortgage origination	387,664	—	—	—	387,664
Loan servicing	262,518	—	—	—	262,518
Development services ⁽³⁾	—	—	145,488	—	145,488
Total Out of Scope of Topic 606 Revenue	650,182	—	145,488	—	795,670
Total Revenue	\$ 9,575,759	\$ 17,098,917	\$ 1,091,716	\$ (20,356)	\$ 27,746,036

Year Ended December 31, 2020					
	Advisory Services	Global Workplace Solutions	Real Estate Investments	Corporate, other and eliminations	Consolidated
Topic 606 Revenue:					
Facilities management	\$ —	\$ 13,484,692	\$ —	\$ —	\$ 13,484,692
Advisory leasing	2,460,392	—	—	(2,274)	2,458,118
Advisory sales	1,663,959	—	—	—	1,663,959
Property management	1,658,593	—	—	(25,656)	1,632,937
Project management	—	2,323,341	—	—	2,323,341
Valuation	614,157	—	—	—	614,157
Commercial mortgage origination ⁽¹⁾	130,897	—	—	—	130,897
Loan servicing ⁽²⁾	45,692	—	—	—	45,692
Investment management	—	—	474,939	—	474,939
Development services	—	—	341,387	—	341,387
Topic 606 Revenue	6,573,690	15,808,033	816,326	(27,930)	23,170,119
Out of Scope of Topic 606 Revenue:					
Commercial mortgage origination	446,968	—	—	—	446,968
Loan servicing	193,904	—	—	—	193,904
Development services ⁽³⁾	—	—	15,204	—	15,204
Total Out of Scope of Topic 606 Revenue	640,872	—	15,204	—	656,076
Total Revenue	\$ 7,214,562	\$ 15,808,033	\$ 831,530	\$ (27,930)	\$ 23,826,195

⁽¹⁾ We earn fees for arranging financing for borrowers with third-party lender contacts. Such fees are in scope of Topic 606.

⁽²⁾ Loan servicing fees earned from servicing contracts for which we do not hold mortgage servicing rights are in scope of Topic 606.

⁽³⁾ Out of scope revenue for development services represents selling profit from transfers of sales-type leases in the scope of Topic 842.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Contract Assets and Liabilities

We had contract assets totaling \$529.1 million (\$391.6 million of which was current) and \$474.4 million (\$338.7 million of which was current) as of December 31, 2022 and 2021, respectively. During the year ended December 31, 2022, our contract assets increased by \$54.7 million, within our Real Estate Investment and Advisory Services segments.

We had contract liabilities totaling \$284.3 million (\$276.3 million of which was current) and \$288.9 million (\$280.7 million of which was current) as of December 31, 2022 and 2021, respectively. During the year ended December 31, 2022, we recognized revenue of \$247.8 million that was included in the contract liability balance at December 31, 2021.

Contract Costs

We capitalized \$29.9 million, \$84.9 million and \$64.2 million, respectively, of transition costs during the years ended December 31, 2022, 2021 and 2020. We recorded amortization of transition costs of \$42.1 million, \$40.3 million and \$46.9 million, respectively, during the years ended December 31, 2022, 2021 and 2020.

19. Segments

We organize our operations around, and publicly report our financial results on, three global business segments: (1) Advisory Services; (2) Global Workplace Solutions and (3) Real Estate Investments. In addition, we also have a “Corporate, other and elimination” component. Our Corporate segment primarily consists of corporate headquarters costs for executive officers and certain other central functions. We track our strategic non-core non-controlling equity investments in “other” which is considered an operating segment and reported together with Corporate as it does not meet the aggregation criteria for presentation as a separate reportable segment. These activities are not allocated to the other business segments. Corporate and other also includes eliminations related to inter-segment revenue.

Segment operating profit (SOP) is the measure reported to the CODM for purposes of making decisions about allocating resources to each segment and assessing performance of each segment. Segment operating profit represents earnings, inclusive of amount attributable to non-controlling interest, before net interest expense, write-off of financing costs on extinguished debt, income taxes, depreciation and amortization and asset impairments, as well as adjustments related to the following: certain carried interest incentive compensation expense (reversal) to align with the timing of associated revenue, fair value adjustments to real estate assets acquired in the Telford acquisition (purchase accounting) that were sold in the period, costs incurred related to legal entity restructuring, costs associated with transformation initiatives, workforce optimization, efficiency and cost-reduction initiatives, integration and other costs related to acquisitions, and provision associated with Telford’s fire safety remediation efforts. This metric excludes the impact of corporate overhead as these costs are now reported under Corporate and other.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Summarized financial information by segment is as follows (dollars in thousands):

	Year Ended December 31,		
	2022	2021	2020
Revenue			
Advisory Services	\$ 9,883,506	\$ 9,575,759	\$ 7,214,562
Global Workplace Solutions	19,851,221	17,098,917	15,808,033
Real Estate Investments	1,109,609	1,091,716	831,530
Corporate, other and eliminations ⁽¹⁾	(16,090)	(20,356)	(27,930)
Total revenue	<u>\$ 30,828,246</u>	<u>\$ 27,746,036</u>	<u>\$ 23,826,195</u>
Depreciation and Amortization			
Advisory Services	\$ 310,823	\$ 311,397	\$ 311,445
Global Workspace Solutions	253,013	158,757	134,383
Real Estate Investments	16,250	27,111	27,367
Corporate, other and eliminations	33,002	28,606	28,533
Total depreciation and amortization	<u>\$ 613,088</u>	<u>\$ 525,871</u>	<u>\$ 501,728</u>
Equity Income (Loss) from Unconsolidated Subsidiaries			
Advisory Services	\$ 14,662	\$ 24,778	\$ 4,526
Global Workspace Solutions	1,118	1,720	90
Real Estate Investments	380,566	555,341	123,548
Corporate, other and eliminations	(167,348)	36,858	(2,003)
Total equity income from unconsolidated subsidiaries	<u>\$ 228,998</u>	<u>\$ 618,697</u>	<u>\$ 126,161</u>
Segment Operating Profit			
Advisory Services	\$ 1,909,924	\$ 2,063,227	\$ 1,347,826
Global Workplace Solutions	899,221	708,039	575,299
Real Estate Investments	518,194	520,001	257,700
Total reportable segment operating profit	<u>\$ 3,327,339</u>	<u>\$ 3,291,267</u>	<u>\$ 2,180,825</u>

⁽¹⁾ Eliminations represent revenue from transactions with other operating segments. See Note 18.

CBRE GROUP, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Reconciliation of total reportable segment operating profit to net income is as follows (dollars in thousands):

	Year Ended December 31,		
	2022	2021	2020
Net income attributable to CBRE Group, Inc.	\$ 1,407,370	\$ 1,836,574	\$ 751,989
Net income attributable to non-controlling interests	16,590	5,341	3,879
Net income	1,423,960	1,841,915	755,868
Adjustments to increase (decrease) net income:			
Depreciation and amortization	613,088	525,871	501,728
Asset impairments	58,713	—	88,676
Interest expense, net of interest income	68,999	50,352	67,753
Write-off of financing costs on extinguished debt	1,860	—	75,592
Provision for income taxes	234,230	567,506	214,101
Costs associated with transformation initiatives	—	—	155,148
Carried interest incentive compensation (reversal) expense to align with the timing of associated revenue	(4,228)	49,941	(22,912)
Impact of fair value adjustments to real estate assets acquired in the Telford acquisition (purchase accounting) that were sold in period	(5,115)	(5,725)	11,598
Costs incurred related to legal entity restructuring	13,447	—	9,362
Integration and other costs related to acquisitions	40,702	44,552	1,756
Costs associated with workforce optimization efforts	—	—	37,594
Costs associated with efficiency and cost-reduction initiatives	117,534	—	—
Provision associated with Telford's fire safety remediation efforts ⁽¹⁾	185,921	—	—
Corporate and other loss, including eliminations	578,228	216,855	284,561
Total reportable segment operating profit	\$ 3,327,339	\$ 3,291,267	\$ 2,180,825

⁽¹⁾ See Note 22 for additional information.

Our CODM is not provided with total asset information by segment and accordingly, does not measure or allocate total assets on a segment basis. As a result, we have not disclosed any asset information by segment.

Geographic Information

Revenue in the table below is allocated based upon the country in which services are performed (dollars in thousands):

	Year Ended December 31,		
	2022	2021	2020
Revenue			
United States	\$ 17,464,098	\$ 15,700,279	\$ 13,472,013
United Kingdom	4,084,408	3,617,504	3,083,810
All other countries	9,279,740	8,428,253	7,270,372
Total revenue	\$ 30,828,246	\$ 27,746,036	\$ 23,826,195

20. Related Party Transactions

The accompanying consolidated balance sheets include loans to related parties, primarily employees other than our executive officers, of \$600.1 million and \$475.2 million as of December 31, 2022 and 2021, respectively. The majority of these loans represent sign-on and retention bonuses issued or assumed in connection with acquisitions and prepaid commissions as well as prepaid retention and recruitment awards issued to employees. These loans are at varying principal amounts, bear interest at rates up to 3.97% per annum and mature on various dates through 2032.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

21. Restructuring Activities

Efficiency and Cost Reduction - 2022 Activities

During the third quarter of 2022, we launched certain cost and operational efficiency initiatives that will further improve the company's resiliency in an economic downturn while enabling continued operating platform investments that support future growth. The efficiency initiatives include management and workforce structure simplification, occupancy footprint rationalization and certain third-party spending reductions. As part of this, we incurred certain cash and non-cash charges. Non-cash charges are primarily associated with acceleration of depreciation and write-down of lease and related assets as part of our lease termination activities. Cash-based charges are primarily related to employee separation, lease exit costs, and professional fees. During the year ended December 31, 2022, total charges (excluding depreciation) incurred were \$117.5 million, related to employee separation, lease termination, and professional fees. Management continues to evaluate and modify these initiatives, which are likely to continue over the next few months. The following table presents the detail of expenses incurred by segment (dollars in thousands):

	Year Ended December 31, 2022				
	Advisory Services	Global Workplace Solutions	Real Estate Investments	Corporate	Consolidated
Employee separation benefits	\$ 32,594	\$ 19,961	\$ 9,761	\$ 19,198	\$ 81,514
Lease exit costs	9,695	2,916	—	—	12,611
Professional fees and other	3,446	5,040	2,738	12,185	23,409
Subtotal	45,735	27,917	12,499	31,383	117,534
Depreciation expense	5,564	3,258	—	—	8,822
Total	\$ 51,299	\$ 31,175	\$ 12,499	\$ 31,383	\$ 126,356

The following table shows ending liability balance associated with major cash-based charges (dollars in thousands):

	Employee separation benefits	Professional fees
Balance at January 1, 2022	\$ —	\$ —
Expense incurred	81,514	23,409
Payments made	(44,500)	(12,809)
Balance at December 31, 2022	\$ 37,014	\$ 10,600

Ending balance related to employee separation was included in "compensation and employee benefits payable" and the balance related to professional fees and other was included in "accounts payable and accrued expenses" in the accompanying consolidated balance sheets. Of the total charges incurred, net of depreciation expense, \$33.4 million was included within the "Cost of revenue" line item and \$84.1 million was included in the "Operating, administrative, and other" line item in the accompanying consolidated statement of operations for the year ended December 31, 2022.

We did not incur significant restructuring charges during the year ended December 31, 2021.

Transformation and Workforce Optimization - 2020 Activities

During the third quarter of 2020, management embarked on the implementation of certain transformation initiatives to enable the company to reduce costs, streamline operations and support future growth.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

As part of these initiatives, we incurred the following costs, primarily in cash, for the year ended December 31, 2020 (dollars in thousands):

	Year Ended December 31, 2020			
	Advisory Services	Global Workplace Solutions	Real Estate Investments	Consolidated
Employee separation benefits	\$ 57,550	\$ 31,083	\$ 2,444	\$ 91,077
Lease termination costs	43,225	4,586	—	47,811
Professional fees and other	13,212	2,510	538	16,260
Subtotal	113,987	38,179	2,982	155,148
Depreciation expense	14,184	166	6,342	20,692
Total	\$ 128,171	\$ 38,345	\$ 9,324	\$ 175,840

Of the total charges incurred, net of depreciation expense, \$42.1 million was included within the “Cost of revenue” line item and \$113.0 million was included in the “Operating, administrative, and other” line item in the accompanying consolidated statement of operations for the year ended December 31, 2020.

22. Telford Fire Safety Remediation

On April 28, 2022, the United Kingdom (U.K.) passed the Building Safety Act of 2022 (BSA). The BSA introduced new laws related to building safety and the remediation of historic building safety defects, effectively requiring developers to remediate certain buildings with critical fire safety issues. The BSA also retrospectively amended the Defective Premises Act of 1972 (DPA) to allow claims to be made within a 30-year limitation period for dwellings completed before June 28, 2022. The U.K. government had previously established a Building Safety Fund (BSF) and an Aluminum Composite Material (ACM) fund, whereby applicants to the fund would be funded by the government to remediate certain fire safety defects if certain criteria were met. Following a request by the U.K. government to the majority of significant residential developers within the U.K. including Telford Homes, Telford Homes signed the U.K. government’s non-binding Fire Safety Pledge (the Pledge) on April 28, 2022. The Pledge states that subject to entering into mutually acceptable legally binding agreements with the U.K. government, Telford Homes will (1) take responsibility for performing or funding self-remediation works relating to certain life-critical fire-safety issues on all Telford Homes-constructed buildings of 11 meters in height or greater in England constructed in the last 30 years (in-scope buildings) and (2) withdraw Telford Homes-developed buildings from the government-sponsored BSF and ACM Funds or reimburse the government funds for the cost of remediation of in-scope buildings.

We believe there is a potential risk of loss attributable to past events, including as a result of retrospective changes in building fire-safety regulations, under the Pledge, and also under existing contracts and/or the BSA or DPA. The estimated costs for in-scope buildings are subjective, highly complex and dependent on a number of variables outside of Telford Homes’ control. These include, but are not limited to, the time required for the remediation to be completed, the size and number of buildings that may require remediation, cost of construction or remediation materials, availability of construction materials, potential discoveries made during remediation that could necessitate incremental work, investigation costs, availability of qualified fire safety engineers, potential business disruption costs, potential changes to or new regulations and regulatory approval.

As a result of signing the Pledge, the introduction of the BSA, the extension of liability under the DPA, and the potential for us to be required to pay for remediation under any definitive agreements that may be negotiated by the parties under the Pledge or under existing legal contracts, we recorded charges of approximately \$138.9 million and \$185.9 million for the three months and twelve months ended December 31, 2022, respectively. Of the \$185.9 million in estimated liability as of December 31, 2022, approximately \$51.6 million was recorded as a current liability in “accounts payable and accrued expenses” and the remaining was recorded as non-current in “other liabilities” in the accompanying consolidated balance sheets. This potential liability is comprised of two primary components: (1) adjusted amounts the U.K. government has already paid or quantified through the BSF for remediation of Telford-constructed buildings, included as a current liability as described above, and (2) management’s estimate for the potential additional losses that could occur for buildings withdrawn from the BSF (i.e., to be remediated directly by Telford Homes) based on the best available data, including industry data, certain third-party verified cost estimates obtained for remediation for the remaining buildings, as well as a contingency percentage applied per unit to account for unknown remediation costs that may arise in respect of other buildings that we believe may be impacted, included as a non-current liability as described above. While several Telford developed buildings were deemed to be out of

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

scope due to height or an already compliant structure, we believe approximately 84 buildings are at risk of requiring remediation at this time based on information available, suggesting potential fire-safety compliance gaps as a result of the current regulation. Although the foregoing includes significant subjective judgments, management believes that there is enough information to reasonably estimate the potential liability. The potential liability and number of buildings affected may change as new information becomes available and full cost estimates are assessed and tendered for each building, which is anticipated to be a lengthy process due to the various steps required to fully remediate. We will continue to assess new information as it becomes available and adjust our estimated liability accordingly.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.**Management's Report on Internal Control Over Financial Reporting**

Management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Securities Exchange Act of 1934, as amended (the Exchange Act)). The company's management, with participation of the CEO and CFO, under the oversight of our Board of Directors, evaluated the effectiveness of the company's internal control over financial reporting as of December 31, 2022, using the framework in Internal Control - Integrated Framework (2013), issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). A company's internal control over financial reporting includes those policies and procedures that:

- (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company;
- (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and
- (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness towards future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Based on the evaluation under this framework, management concluded that the company's internal control over financial reporting was effective as of December 31, 2022.

The effectiveness of the company's internal control over financial reporting as of December 31, 2022 has been audited by KPMG LLP, an independent registered public accounting firm, as stated in their report, which is included herein on page 59.

Disclosure Controls and Procedures

Our Chief Executive Officer and Chief Financial Officer ("certifying officers") have conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act as of December 31, 2022. Based on this evaluation, our certifying officers concluded that our disclosure controls and procedures are effective as of December 31, 2022.

Rule 13a-15 of the Exchange Act requires that we conduct an evaluation of the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Annual Report, and we have a disclosure policy in furtherance of the same. This evaluation is designed to ensure that all corporate disclosure is complete and accurate in all material respects. The evaluation is further designed to ensure that all information required to be disclosed in our SEC reports is accumulated and communicated to management to allow timely decisions regarding required disclosures and recorded, processed, summarized and reported within the time periods and in the manner specified in the SEC's rules and forms. Any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. Our Chief Executive Officer and Chief Financial Officer supervise and participate in this evaluation, and they are assisted by members of our Disclosure Committee. Our Disclosure Committee consists of our General Counsel, our Chief Accounting Officer, our Senior Officers of significant business lines and other select employees.

Changes in Internal Control Over Financial Reporting

There have been no changes in our internal control over financial reporting during the fiscal quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting except as disclosed below.

Remediation of Prior Material Weaknesses Relating to Global Workplace Solutions EMEA

As previously reported, management identified that the company had material weaknesses in its internal control over financial reporting as of December 31, 2019, related to its GWS EMEA business, which continued through December 31, 2021. During the year ended December 31, 2022, management executed its remediation plan related to these material weaknesses, including (i) implementation of focused training, including mandatory On-the-Job-Training for revenue and receivables and journal entries; (ii) redesign and refinement of the processes and controls related to journal entries; and (iii) testing the operating effectiveness of the controls impacted by our remediation efforts. As a result of the measures described above, the previously disclosed material weaknesses that existed as of December 31, 2021 have been remediated as of December 31, 2022.

Item 9B. Other Information.

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information under the headings “Elect Directors,” “Corporate Governance,” “Executive Management” and “Stock Ownership” in the definitive proxy statement for our 2023 Annual Meeting of Stockholders is incorporated herein by reference.

We are filing the certifications by the Chief Executive Officer and Chief Financial Officer required under Section 302 of the Sarbanes-Oxley Act as exhibits to this Annual Report.

Item 11. Executive Compensation.

The information contained under the headings “Corporate Governance,” “Compensation Discussion and Analysis” and “Executive Compensation” in the definitive proxy statement for our 2023 Annual Meeting of Stockholders is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information contained under the heading “Stock Ownership” in the definitive proxy statement for our 2023 Annual Meeting of Stockholders is incorporated herein by reference.

Equity Compensation Plan Information

The following table summarizes information about our equity compensation plans as of December 31, 2022. All outstanding awards relate to our Class A common stock.

	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted-average Exercise Price of Outstanding Options, Warrants and Rights (b)	Number of Securities Remaining Available for Future Issuance under Equity Compensation Plans (Excluding Securities Reflected in Column (a)) (c)
Equity compensation plans approved by security holders ⁽¹⁾	10,186,742	\$ —	10,087,368
Equity compensation plans not approved by security holders	—	—	—
Total	10,186,742	\$ —	10,087,368

⁽¹⁾ Consists of restricted stock units (RSUs) issued under our 2019 Equity Incentive Plan (the 2019 Plan), our 2017 Equity Incentive Plan (the 2017 Plan) and our 2012 Equity Incentive Plan (the 2012 Plan). Our 2012 Plan terminated in May 2017 in connection with the adoption of the 2017 Plan. Our 2017 Plan terminated in May 2019 in connection with the adoption of the 2019 Plan. We cannot issue any further awards under both the 2012 Plan and the 2017 Plan.

In addition:

- The figures in the foregoing table include:
 - 6,709,560 RSUs that are performance vesting in nature, with the figures in the table reflecting the maximum number of RSUs that may be issued if all performance-based targets are satisfied and
 - 3,477,182 RSUs that are time vesting in nature.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information contained under the headings “Elect Directors,” “Corporate Governance” and “Related-Party Transactions” in the definitive proxy statement for our 2023 Annual Meeting of Stockholders is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services.

The information contained under the heading “Audit and Other Fees” in the definitive proxy statement for our 2023 Annual Meeting of Stockholders is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

1. *Financial Statements*

See [Index to Consolidated Financial Statements and Financial Statement Schedules](#) located on page 55 of this report.

2. *Financial Statement Schedules*

See [Schedule II](#) located on page 124 of this report.

3. *Exhibits*

See [Exhibit Index](#) located on page 125 of this report.

Item 16. Form 10-K Summary.

Not applicable.

CBRE GROUP, INC.
SCHEDULE II – VALUATION AND QUALIFYING ACCOUNTS
(Dollars in thousands)

	Allowance for Doubtful Accounts
Balance, December 31, 2019	\$ 72,725
Additions: Charges to expense	47,240
Deductions: Write-offs, payments and other	24,432
Balance, December 31, 2020	95,533
Additions: Charges to expense	17,818
Deductions: Write-offs, payments and other	15,763
Balance, December 31, 2021	97,588
Additions: Charges to expense	16,893
Deductions: Write-offs, payments and other	22,127
Balance, December 31, 2022	\$ 92,354

EXHIBIT INDEX

Exhibit No.	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	SEC File No.	Exhibit	Filing Date	
2.1	<u>Share Sale Agreement, dated November 12, 2013, by and among William Investments Limited, the individual vendors named therein, CBRE Holdings Limited, CBRE U.K. Acquisition Company Limited and CBRE Group, Inc.</u>	8-K	001-32205	1.01	11/13/2013	
2.2	<u>Stock and Asset Purchase Agreement, dated as of March 31, 2015, by and between Johnson Controls, Inc. and CBRE, Inc.</u>	8-K	001-32205	2.1	04/03/2015	
2.3	<u>Acquisition Agreement, dated as of July 26, 2021, among Turner & Townsend Partners LLP, CBRE Titan Acquisition Co. Limited, CBRE Group, Inc.</u>	8-K	001-32205	2.1	07/29/2021	
2.4	<u>Amended and Restated Variation Agreement, dated as of November 9, 2021, between Turner & Townsend Partners LLP, CBRE Titan Acquisition Co. Limited, CBRE Group, Inc. and Turner & Townsend Holdings Limited</u>	10-K	001-32205	2.4	03/01/2022	
3.1	<u>Amended and Restated Certificate of Incorporation of CBRE Group, Inc.</u>	8-K	001-32205	3.1	05/23/2018	
3.2	<u>Amended and Restated By-Laws of CBRE Group, Inc.</u>	8-K	001-32205	3.1	02/17/2023	
4.1	<u>Form of Class A common stock certificate of CBRE Group, Inc.</u>	10-Q	001-32205	4.1	08/09/2017	
4.2(a)	<u>Indenture, dated as of March 14, 2013, among CBRE Group, Inc., CBRE Services, Inc., certain subsidiaries of CBRE Services, Inc. and Wells Fargo Bank, National Association, as trustee</u>	10-Q	001-32205	4.4(a)	05/10/2013	
4.2(b)	<u>Fourth Supplemental Indenture, dated as of August 13, 2015, between CBRE Services, Inc., CBRE Group, Inc., certain subsidiaries of CBRE Services, Inc. and Wells Fargo Bank, National Association, as trustee, for the issuance of 4.875% Senior Notes due 2026, including the Form of 4.875% Senior Notes due 2026</u>	8-K	001-32205	4.2	08/13/2015	
4.2(c)	<u>Fifth Supplemental Indenture, dated as of September 25, 2015, between CBRE GWS LLC, CBRE Services, Inc. and Wells Fargo Bank, National Association, as trustee, relating to the 5.00% Senior Notes due 2023, the 5.25% Senior Notes due 2025 and the 4.875% Senior Notes due 2026</u>	8-K	001-32205	4.1	09/25/2015	
4.2(d)	<u>Sixth Supplemental Indenture, dated as of January 28, 2020, among CBRE Holdings, LLC, CBRE Services, Inc. and Wells Fargo Bank, National Association, as trustee, relating to the 5.25% Senior Notes due 2025 and the 4.875% Senior Notes due 2026</u>	10-K	001-32205	4.2(g)	03/02/2020	
4.2(e)	<u>Seventh Supplemental Indenture, dated as of March 18, 2021, among CBRE Group, Inc., CBRE Services, Inc., certain subsidiaries of CBRE Services, Inc. named therein and Wells Fargo Bank, National Association, as trustee, for the issuance of 2.500% Senior Notes due 2031, including the Form of 2.500% Senior Notes due 2031</u>	8-K	001-32205	4.2	03/18/2021	
4.3	<u>Description of Securities</u>	10-K	001-32205	4.3	03/02/2020	

Exhibit No.	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	SEC File No.	Exhibit	Filing Date	
10.1	Credit Agreement, dated as of October 31, 2017, among CBRE Group, Inc., CBRE Services, Inc., certain subsidiaries of CBRE Services, Inc., the lenders party thereto and Credit Suisse AG, Cayman Islands Branch, as administrative agent	8-K	001-32205	10.1	11/01/2017	
10.2	Borrowing Subsidiary Agreement, dated as of December 20, 2018, among CBRE Group, Inc., CBRE Services, Inc., CBRE Global Acquisition Company and Credit Suisse AG, Cayman Islands Branch, as administrative agent	10-K	001-32205	10.2	03/01/2019	
10.3	Incremental Term Loan Assumption Agreement, dated as of December 20, 2018, among CBRE Group, Inc., CBRE Services, Inc., certain subsidiaries of CBRE Services, Inc., the lenders party thereto and Credit Suisse AG, Cayman Islands Branch, as administrative agent	8-K	001-32205	10.1	12/21/2018	
10.4	Incremental Term Loan Assumption Agreement, dated as of March 4, 2019 among CBRE Group, Inc., CBRE Services, Inc., certain subsidiaries of CBRE Services, Inc., the lenders party thereto and Credit Suisse AG, Cayman Islands Branch, as administrative agent	8-K	001-32205	10.1	03/05/2019	
10.5	Incremental Assumption Agreement, dated as of July 9, 2021, among CBRE Group, Inc., CBRE Services, Inc., CBRE Limited, the lenders party thereto and Credit Suisse AG, Cayman Islands Branch, as administrative agent	8-K	001-32205	10.1	07/13/2021	
10.6	Amendment, dated as of December 10, 2021, among CBRE Group, Inc., CBRE Services Inc., certain subsidiaries of CBRE Services, Inc., the lenders party thereto and Credit Suisse AG, Cayman Islands Branch, as administrative agent	10-K	001-32205	10.6	02/18/2021	
10.7	Amendment No. 2, dated as of August 5, 2022, among CBRE Group, Inc., CBRE Global Acquisition Company, the lenders party thereto, Credit Suisse AG, Cayman Islands Branch and Wells Fargo Bank, National Association.	8-K	001-32205	10.1	08/08/2022	
10.8	Guarantee Agreement, dated as of October 31, 2017, among CBRE Group, Inc., CBRE Services, Inc., the subsidiary guarantors party thereto and Credit Suisse AG, Cayman Islands Branch, as administrative agent	8-K	001-32205	10.2	11/01/2017	
10.9	Supplement No. 1, dated December 20, 2018, to the Guarantee Agreement, among CBRE Group, Inc., CBRE Services, Inc., the subsidiary guarantors party thereto and Credit Suisse AG, Cayman Islands Branch, as administrative agent	10-K	001-32205	10.5	03/01/2019	
10.10	Revolving Credit Agreement, dated as of August 5, 2022, among CBRE Group, Inc., CBRE Services, Inc., the lenders party thereto, the issuing banks party thereto and Wells Fargo Bank, National Association, as administrative agent	8-K	001-32205	10.2	08/08/2022	
10.11	Holdings Guaranty Agreement, dated as of August 5, 2022, among CBRE Group, Inc., CBRE Services, Inc. and Wells Fargo Bank, National Association, as administrative agent.	8-K	001-32205	10.3	08/08/2022	
10.12	CBRE Group, Inc. Executive Bonus Plan +	8-K	001-32205	10.1	03/08/2021	
10.13	Form of Indemnification Agreement for Directors and Officers +	8-K	001-32205	10.1	12/08/2009	
10.14	Form of Indemnification Agreement for Directors and Officers +	10-Q	001-32205	10.3	05/10/2016	

Exhibit No.	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	SEC File No.	Exhibit	Filing Date	
10.15	CBRE Group, Inc. 2017 Equity Incentive Plan +	S-8	333-218113	99.1	05/19/2017	
10.16	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (Time Vest) +	8-K	001-32205	10.2	03/05/2019	
10.17	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (Performance Vest) +	8-K	001-32205	10.3	03/05/2019	
10.18	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (Non-Employee Director) +	S-8	333-218113	99.4	05/19/2017	
10.19	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (Time Vesting RSU) +	10-K	001-32205	10.27	03/01/2018	
10.20	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (TSR Performance RSU) +	10-K	001-32205	10.28	03/01/2018	
10.21	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (EPS Performance RSU) +	10-K	001-32205	10.29	03/01/2018	
10.22	CBRE Group, Inc. Amended and Restated 2019 Equity Incentive Plan +	S-8	333-26594	99.1	05/27/2022	
10.23	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2019 Equity Incentive Plan (Time Vest) +	10-K	001-32205	10.23	03/01/2022	
10.24	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2019 Equity Incentive Plan (Performance Vest) +	10-K	001-32205	10.24	03/01/2022	
10.25	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2019 Equity Incentive Plan (Non-Employee Director) +	10-K	001-32205	10.25	03/01/2022	
10.26	CBRE Deferred Compensation Plan, effective January 1, 2019 +	10-K	001-32205	10.22	03/01/2019	
10.27	CBRE Adoption Agreement +	10-K	001-32205	10.23	03/01/2019	
10.28	CBRE Group, Inc. Amended and Restated Change in Control and Severance Plan for Senior Management, including form of Designation Letter +	10-Q	001-32205	10.1	10/29/2020	
10.29	Form of Restricted Covenants Agreement +	10-K	001-32205	10.33	03/01/2018	
10.30	Letter Agreement, dated as of July 28, 2021, by and between CBRE, Inc. and Emma Giamartino +	10-Q	001-32205	10.3	07/30/2021	
10.31	Form of Restrictive Covenants Agreement +	10-Q	001-32205	10.4	07/30/2021	
10.32	Letter Agreement, dated as of February 23, 2022, by and between CBRE, Inc. and Chandra Dhandapani +	10-K	001-32205	10.34	03/01/2022	
10.33	Separation Agreement, dated as of January 20, 2023 by and between CBRE Group, Inc. and Michael J. Lafitte +					X
21	Subsidiaries of CBRE Group, Inc.					X
22.1	Subsidiary Issuers and Guarantors of CBRE Group, Inc.'s Registered Debt					X
23.1	Consent of Independent Registered Public Accounting Firm					X
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to §302 of the Sarbanes-Oxley Act of 2002					X

Exhibit No.	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	SEC File No.	Exhibit	Filing Date	
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to §302 of the Sarbanes-Oxley Act of 2002					X
32	Certifications of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002					X
101.INS	Inline XBRL Instance Document (the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document)					X
101.SCH	Inline XBRL Taxonomy Extension Schema Document					X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document					X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document					X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document					X
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)					X

+ Denotes a management contract or compensatory arrangement

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

CBRE GROUP, INC.

Registrant

Date: February 24, 2023

/s/ ROBERT E. SULENTIC

Robert E. Sulentic
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ BRANDON B. BOZE Brandon B. Boze	Chair of the Board	February 24, 2023
/s/ LINDSEY S. CAPLAN Lindsey S. Caplan	Chief Accounting Officer (Principal Accounting Officer)	February 24, 2023
/s/ BETH F. COBERT Beth F. Cobert	Director	February 24, 2023
/s/ EMMA E. GIAMARTINO Emma E. Giamartino	Chief Financial Officer (Principal Financial Officer)	February 24, 2023
/s/ REGINALD H. GILYARD Reginald H. Gilyard	Director	February 24, 2023
/s/ SHIRA D. GOODMAN Shira D. Goodman	Director	February 24, 2023
/s/ E.M. BLAKE HUTCHESON E.M. Blake Hutcheson	Director	February 24, 2023
/s/ CHRISTOPHER T. JENNY Christopher T. Jenny	Director	February 24, 2023
/s/ GERARDO I. LOPEZ Gerardo I. Lopez	Director	February 24, 2023
/s/ SUSAN MEANEY Susan Meaney	Director	February 24, 2023
/s/ OSCAR MUNOZ Oscar Munoz	Director	February 24, 2023
/s/ ROBERT E. SULENTIC Robert E. Sulentic	Director and President and Chief Executive Officer (Principal Executive Officer)	February 24, 2023
/s/ SANJIV YAJNIK Sanjiv Yajnik	Director	February 24, 2023

SEPARATION AGREEMENT

Michael J. Lafitte

SEPARATION AGREEMENT (this “Agreement”), dated as of January 20, 2023, by and between CBRE Group, Inc. a Delaware corporation, (the “Company”) and Michael J. Lafitte (“Executive” and, together with the Company, the “Parties”).

WHEREAS, Executive holds or has held employment and/or officerships/directorships with various entities which are subsidiaries of and/or affiliates of the Company;

WHEREAS, Executive is a participant under the CBRE Group, Inc. Amended and Restated Change in Control and Severance Plan for Senior Management (eff. As of March 24, 2015) (“Severance Plan”);

WHEREAS, Executive owns shares of stock in CBRE Group, Inc. (hereafter the “CBRE Stock of Executive”);

WHEREAS, Executive and his spouse are participants in the Company’s group health insurance plan (“Executive Group Health Benefits”);

WHEREAS, Executive is a participant in the Company’s 401K Plan;

WHEREAS, Executive has rights to the extent provided under certain equity grants he has received during his employment/affiliation with CBRE Group, Inc. and/or one or more of its subsidiaries and affiliates (hereafter the “Company Group”), with these equity grants including but not limited to the following, where are hereafter collectively referred to as the “Equity Grants”):

1. the CBRE Group, Inc. 2017 Equity Incentive Plan Restricted Stock Units Grant dated December 1, 2017, awarded under the 2017 Equity Incentive Plan, with the associated Restricted Stock Unit Agreement and (hereafter collectively referred to as the “2017 Strategic TSR Performance Grant”),
 2. the CBRE Group, Inc. 2017 Equity Incentive Plan Restricted Stock Units Grant dated December 1, 2017, awarded under the 2017 Equity Incentive Plan, with the associated Restricted Stock Unit Agreement and (hereafter collectively referred to as the “2017 Strategic Time Grant”),
 3. the CBRE Group, Inc. 2017 Equity Incentive Plan Restricted Stock Units Grant dated December 1, 2017, awarded under the 2017 Equity Incentive Plan, with the associated Restricted Stock Unit Agreement and (hereafter collectively referred to as the “2017 Strategic EPS Performance Grant”),
 4. the CBRE Group, Inc. 2017 Equity Incentive Plan Restricted Stock Units Grant dated February 28, 2019, awarded under the 2017 Equity Incentive Plan, with the associated Restricted Stock Unit Agreement and (hereafter collectively referred to as the “2019 Strategic Time Grant”),
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5. the CBRE Group, Inc. 2019 Equity Incentive Plan Restricted Stock Units Grant dated March 3, 2020, awarded under the 2019 Equity Incentive Plan, with the associated Restricted Stock Unit Agreement and (hereafter collectively referred to as the “2020 Strategic Time Grant”),
6. the CBRE Group, Inc. 2019 Equity Incentive Plan Restricted Stock Units Grant dated March 3, 2020, awarded under the 2019 Equity Incentive Plan, with the associated Restricted Stock Unit Agreement and (hereafter collectively referred to as the “2020 Strategic EPS Performance Grant”),
7. the CBRE Group, Inc. 2019 Equity Incentive Plan Restricted Stock Units Grant dated March 3, 2021, awarded under the 2019 Equity Incentive Plan, with the associated Restricted Stock Unit Agreement and (hereafter collectively referred to as the “2021 Strategic Time Grant”),
8. the CBRE Group, Inc. 2019 Equity Incentive Plan Restricted Stock Units Grant dated March 3, 2021, awarded under the 2019 Equity Incentive Plan, with the associated Restricted Stock Unit Agreement and (hereafter collectively referred to as the “2021 Strategic EPS Performance Grant”),
9. the CBRE Group, Inc. 2019 Equity Incentive Plan Restricted Stock Units Grant dated February 25, 2022, awarded under the 2019 Equity Incentive Plan, with the associated Restricted Stock Unit Agreement and (hereafter collectively referred to as the “2022 Strategic Time Grant”), and
10. the CBRE Group, Inc. 2019 Equity Incentive Plan Restricted Stock Units Grant dated February 25, 2022, awarded under the 2019 Equity Incentive Plan, with the associated Restricted Stock Unit Agreement and (hereafter collectively referred to as the “2022 Strategic EPS Performance Grant”).

WHEREAS, the Parties desire to enter into this Agreement to set forth certain terms (a) with respect to Executive's separation from the Company, and its affiliates and subsidiaries as of the Separation Date (defined below) and (b) provide for (i) certain payments, rights and benefits that Executive will receive, and (ii) certain restrictive covenants that will apply, in accordance with the terms and conditions below.

NOW, THEREFORE, in consideration of the promises and the mutual covenants herein contained, the Parties hereby agree as follows:

1. **Effective Date.** This Agreement shall become effective on the date of execution by Executive (such date, the "Effective Date"); provided that Executive does not revoke this Agreement in accordance with Section 6(g) below.
2. **Duties.** From the Effective Date to the Separation Date (as defined below) (with that time period referred to as the "Transitional Period"), Executive will remain on the active payroll at his current rate of salary and bonus, and retain all rights under the Equity Grants but will receive no new equity award to be granted to others in management for 2023 ("Continued Employment"), Executive will no longer be performing the duties of CEO of Trammel Crow Company and Global Group President CBRE Client Care, and Executive will remain available to perform any duties assigned to him by the Company's CEO, Real Estate Investments during the Transitional Period. The Parties agree the Transitional Period shall be considered as included within Executive's period of Continuous Service under the Equity Grants and Severance Plan.
3. **Termination of Employment, Officerships, Directorships.** Except as otherwise expressly required by law or as specifically provided in this Section 3 and Section 4 below, all of Executive's rights to salary, severance, equity awards, benefits, bonuses and other amounts (if any) shall cease upon the termination of Executive's employment with CBRE Investment Management, LLC hereunder, which shall occur as of **February 17, 2023** (the "Separation Date"). Executive's sole and exclusive remedy with regard to the compensation for services shall be to receive salary through the Separation Date, the payments, rights, and benefits described in this Section 3 and Section 4 below, as applicable, and Executive's rights with respect to the restricted stock units previously granted to Executive shall be governed by the terms thereof. For the avoidance of doubt, Executive's separation shall be deemed to be subject to the accelerated vesting provisions applicable to a Resignation by Executive with Good Reason and/or a Qualifying Termination (but not a Termination for Cause, a Termination for Poor Performance or a resignation by Executive without Good Reason), each as defined in the Severance Plan and Equity Grants. The Company agrees that during the Transitional Period, it, and its affiliates, will (1) cause Executive to no longer be an officer, director, employee, or serve on the board of managers of the Company, or any of its subsidiaries or affiliates, or its associated foundation, and (2) remove his name from lists on the Internet, or otherwise, that currently show Executive as being an officer, director, employee or member of the board of managers of particular entities which are subsidiaries or affiliates of the Company; provided that Executive will cooperate upon Company's request to take any action required by him to effectuate such Company actions. A list of those entities as supplied by the Company is attached as Exhibit A.
4. **Termination upon the Separation Date.** Following the Separation Date, subject to Executive's executing and not revoking the general release of claims set forth in Exhibit B, Executive shall receive in satisfaction of the terms of the Severance Plan:

- a. in a lump sum cash payment within ten (10) days following such Separation Date or on such earlier date as may be required by applicable law (A) any unpaid base salary and any unused vacation pay (if any) accrued through such date of termination; (B) any unreimbursed expenses in accordance with Company policy; and in accordance with their terms (C) any vested or accrued benefits provided for under the applicable terms of applicable Company employee benefit plans or arrangements (the “Accrued Amounts”),
- b. Subject to Executive’s not revoking this Agreement, the Company and/or one or more of its affiliates or subsidiaries shall make the severance payments, deliver the Shares of stock, and provide the rights, and benefits provided for in Section 5.1 of the Severance Plan (i.e., such termination shall be deemed to be a Qualifying Termination as defined in and under the Severance Plan, including but not limited to Section 2(z) and 5.1 of the Severance Plan), including the making the payments, benefits, and delivering the Shares (as defined in the CBRE Group, Inc. 2017 Equity Incentive Plan and the Amended and Restated CBRE Group, Inc. 2019 Equity Incentive Plan, as applicable), rights, and interests set forth on the attached Schedule 1, which shall be incorporated into and made part of this Agreement (collectively, the “Schedule 1 Interests”). In the event of any discrepancy between the Schedule 1 Interests and the applicable Equity Awards and provisions of the Severance Plan, such provisions shall prevail.
- c. COBRA continuation coverage for himself and his spouse, to the extent she is a current participant, under the Company’s group health insurance plan for the 18-month period following the Separation Date, with Executive (or his estate, spouse or eligible dependents, as applicable) continuing to pay the same amount of monthly premium as in effect for an active employee with the same coverage, subject to the terms and conditions of Section 5.1(f) of the Severance Plan, or as otherwise provided in Section 5.1(f) of the Severance Plan (the “Continuation Coverage”); and
- d. reasonable outplacement services pursuant to Sections 5.1(g) and 14.2 of the Severance Plan, each of which is hereby incorporated into and made part of this Agreement.
- e. The Parties hereby acknowledge and agree that any and all applicable federal, state and local income, employment, payroll and other withholding and tax obligations related to the Shares shall be satisfied by using a net settlement mechanism whereby the Company will withhold a number of Shares that would otherwise be issued to Executive as permitted under the terms of the applicable equity-based plans.
- f. Company represents that it is aware of no facts which would require for a delay in payment to Executive or reductions of shares to Executive due to considerations applicable to IRC 409A, section 4999 of the Code, or 280G of the Code, as referred to in Sections 5.01(b), 5.01(c), 5.01(d)(ii), Section 8, or Section 14 of the Severance Plan.

5. Restrictive Covenants. Because Executive’s separation shall not be deemed a Termination for Cause, as Termination for Poor Performance, or a resignation without Good Reason as defined in the Severance Plan or any other applicable agreement, the restrictive covenants set forth in the Severance Plan (the “Restrictive Covenants”) as set forth in Exhibit C shall continue to be in full effect in accordance with their terms; however, all other restrictive covenants (including without

limitation those set forth in any Equity Awards, the Restrictive Covenants Agreement entered into between Executive and the Company on December 1, 2017, and the Restrictive Covenants Agreement entered into between Executive and the Company on March 7, 2022) shall no longer be effective. For avoidance of doubt, so long as Executive does not misuse or disclose the Company's confidential information he may serve on the board of Ball Ventures, a private family board which is a passive owner of real estate. real estate.

6. Miscellaneous.

a. Amendments. No provision of this Agreement may be modified, waived or discharged unless such waiver, modification or discharge is agreed to in a writing signed by Executive and either the CEO Real Estate Investments or the Company's CEO.

b. Successors and Assigns.

i. This Agreement is personal to Executive and without the prior written consent of the Company shall not be assignable by Executive otherwise than by will or the laws of descent and distribution. This Agreement shall inure to the benefit of and be enforceable by Executive's legal representatives.

ii. This Agreement shall inure to the benefit of and be binding upon the Company and its successors, and the Company Group, and its successors.

c. Notice. For the purpose of this Agreement, notices and all other communications provided for in this Agreement shall be in writing and shall be deemed to have been duly given if delivered personally, if delivered by overnight courier service, or if mailed by registered mail, or if sent by electronic mail.

If to Executive, to the following address:
Mike Lafitte
3659 Maplewood Avenue, Dallas, TX 75205,

and also to his legal counsel:
Rory Divin
Suite 2700, 777 Main
Fort Worth, Texas 76102.

If to the Company, to:
CBRE Investment Management, LLC
601 S. Figueroa Street, 49th Floor
Los Angeles, California 90071
Attention: General Counsel
Email: pasha.zargarof@cbre.com

d. Arbitration. Section 13.2 of the Severance Plan is hereby incorporated into and made part of this Agreement.

e. GOVERNING LAW; JURY TRIAL WAIVER. THIS AGREEMENT WILL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, WITHOUT GIVING EFFECT TO ANY CHOICE OF LAW OR CONFLICTING PROVISION OR RULE (WHETHER OF THE STATE OF TEXAS OR ANY OTHER JURISDICTION) THAT WOULD CAUSE THE LAWS OF ANY JURISDICTION OTHER THAN THE STATE OF TEXAS TO BE APPLIED. EACH PARTY TO THIS AGREEMENT WAIVES ALL RIGHT TO TRIAL BY JURY IN ANY ACTION, PROCEEDING, CLAIM OR COUNTERCLAIM.

f. Entire Agreement. This Agreement, any pension or welfare plan covered by Section 6(g) below; any agreements, bylaws, policies, or other documents regarding any rights to indemnification Executive may have, as set forth in Section 6(g), below; the award agreements related to the Equity Awards; and the specific terms of the Severance Plan cross-referenced herein, constitute the entire agreement between the parties as of the Effective Date and supersede all previous agreements and understandings between the Parties with respect to the subject matter hereof.

g. Release. For and in consideration of the Continued Employment and the payments and benefits described in Section 4, Executive hereby agrees on behalf of himself, his agents, assignees, attorneys, successors, assigns, heirs and executors, to, and Executive does hereby, fully and completely forever release the Company and its past, current and future affiliates, predecessors and successors and all of their respective past and/or present officers, directors, partners, members, managing members, managers, employees, agents, representatives, administrators, attorneys, insurers and fiduciaries, in their individual and/or representative capacities (hereinafter collectively referred to as the "Company Releasees"), from any and all causes of action, suits, agreements, promises, damages, disputes, controversies, contentions, differences, judgments, claims, debts, dues, sums of money, accounts, reckonings, bonds, bills, specialties, covenants, contracts, variances, trespasses, extents, executions and demands of any kind whatsoever, which Executive or his agents, assignees, attorneys, successors, assigns, heirs and executors ever had, now have or may have against the Company Releasees or any of them, in law or equity, whether known or unknown to Executive, for, upon, or by reason of, any matter, action, omission, course or thing whatsoever occurring up to the date this Agreement is signed by Executive, arising out of or in connection with or in relationship to Executive's employment or other service relationship with the Company or the termination thereof, and any applicable employment, compensatory or equity arrangement with the Company, any claims of breach of contract, wrongful termination, retaliation, fraud, defamation, infliction of emotional distress or national origin, race, age, sex, sexual orientation, disability, medical condition or other discrimination or harassment, (such released claims are collectively referred to herein as the "Released Claims"); provided, that, Executive does not waive or release (i) any claims with respect to the right to enforce this Agreement, or rights, if any, under the Equity Grants, or the Severance Plan, (ii) claims with respect to any vested right Executive may have under any employee pension or welfare benefit plan of the Company, including the 401K Plan, (iii) any rights Executive may have for indemnification or a legal defense or to the providing of Executive's defense costs by or from the Company or any of its affiliates or under any insurance policy, organizational document or by-law, or the CB Richard Ellis Group, Inc. Indemnification Agreement or other written indemnification agreement covering Executive, (iv) any rights, if any, of Executive to portability or conversion of supplemental life insurance, (v) rights of Executive as a shareholder regarding the CBRE Stock of Executive and (vi) any claims that may not be waived by law.

Notwithstanding the generality of the immediately preceding paragraph, the Released Claims include, without limitation, all of the following claims occurring up to the date this Agreement is signed by Executive: (A) any and all claims under Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act of 1967 (the “ADEA,” a law which prohibits discrimination on the basis of age), the Civil Rights Act of 1971, the Civil Rights Act of 1991, the Fair Labor Standards Act, Employee Retirement Income Security Act of 1974, the Americans with Disabilities Act, the Family and Medical Leave Act of 1993, the National Labor Relations Act, the Equal Pay Act, the Securities Act of 1933, the Securities Exchange Act of 1934, the Rehabilitation Act of 1973, and the Worker Adjustment and Retraining Notification Act, all as amended, and any and all other federal, state or local laws, statutes, rules and regulations pertaining to employment or otherwise, and (B) any claims for wrongful discharge, breach of contract, fraud, misrepresentation or any compensation claims, or any other claims under any statute, rule or regulation or under the common law, including compensatory damages, punitive damages, attorney’s fees, costs, expenses and all claims for any other type of damage or relief, provided, that, Executive does not waive or release (i) any claims with respect to the right to enforce this Agreement, or rights, if any, under the Equity Grants, or the Severance Plan, (ii) claims with respect to any vested right Executive may have under any employee pension or welfare benefit plan of the Company, including the 401K Plan, (iii) any rights Executive may have for indemnification or a legal defense or to the providing of defense costs by or from the Company or any of its affiliates or under any insurance policy, organizational document or by-law, or the CB Richard Ellis Group, Inc. Indemnification Agreement or other written indemnification agreement covering Executive, (iv) any rights, if any, of Executive to portability or conversion of supplemental life insurance, (v) rights of Executive as a shareholder regarding the CBRE Stock of Executive and (vi) any claims that may not be waived by law.

THIS MEANS THAT, BY SIGNING THIS AGREEMENT, EXECUTIVE WILL HAVE WAIVED ANY RIGHT EXECUTIVE MAY HAVE HAD TO BRING A LAWSUIT OR MAKE ANY CLAIM AGAINST THE COMPANY RELEASEES BASED ON ANY ACTS OR OMISSIONS OF THE COMPANY RELEASEES UP TO THE DATE OF THE SIGNING OF THIS AGREEMENT. NOTWITHSTANDING THE ABOVE, NOTHING IN THIS SECTION 6(G) SHALL PREVENT EXECUTIVE FROM (X) INITIATING OR CAUSING TO BE INITIATED ON HIS BEHALF ANY COMPLAINT, CHARGE, CLAIM OR PROCEEDING AGAINST THE COMPANY BEFORE ANY LOCAL, STATE OR FEDERAL AGENCY, COURT OR OTHER BODY CHALLENGING THE VALIDITY OF THE WAIVER OF HIS CLAIMS UNDER ADEA CONTAINED IN THIS SECTION 6(G) (BUT NO OTHER PORTION OF SUCH WAIVER); OR (Y) INITIATING OR PARTICIPATING IN (BUT NOT BENEFITING FROM) AN INVESTIGATION OR PROCEEDING CONDUCTED BY THE EQUAL EMPLOYMENT OPPORTUNITY COMMISSION WITH RESPECT TO ADEA.

Executive represents that he has read carefully and fully understands the terms of this Agreement, and that Executive has been advised to consult with an attorney and has availed himself

of the opportunity to consult with an attorney prior to signing this Agreement. Executive acknowledges and agrees that he is executing this Agreement willingly, voluntarily and knowingly, of his own free will, in exchange for the payments and benefits described in Section 2 or Section 4 of this Agreement, and that he has not relied on any representations, promises or agreements of any kind made to him in connection with his decision to accept the terms of this Agreement, other than those set forth in this Agreement. **Executive acknowledges that he could take up to twenty-one (21) days to consider whether he wants to sign this Agreement and that the ADEA gives him the right to revoke the Agreement within seven (7) days after it is signed, and Executive understands that he will not receive any payments or benefits under Section 2 or Section 4 of this Agreement (other than payment of Accrued Amounts), subject to the terms and conditions hereof, until such seven (7) day revocation period has passed and then, only if he has not revoked the Agreement. To the extent Executive has executed the Agreement within less than twenty-one (21) days after its delivery to him, Executive hereby waives the twenty-one (21) day period and acknowledges that his decision to execute the Agreement prior to the expiration of such twenty-one (21) day period was entirely voluntary. If Executive revokes this Agreement, it shall be null and void.**

The Company, and its affiliates and subsidiaries, release Executive of any and all claims, other than claims based upon Executive's actions or omissions about which the Company's executives, directors, and officers have no knowledge as of the Separation Date. The Company's executives, directors, and officers represent that they are aware of no facts which would give rise to a legal or equitable claim by the Company, or any of its affiliates and subsidiaries, against Executive.

h. Non-Disparagement. Following the date of this Agreement (and continuing following the termination of Executive's employment hereunder), Executive hereby agrees not to defame or disparage any member of the Company Group or any executive, manager, director, or officer of any member of the Company Group in any medium to any person. Notwithstanding the preceding, Executive may confer in confidence with his legal representatives and make truthful statements as required by law or legal process.

The Company agrees that the Company Group, and its executives, directors, and officers shall not defame or disparage Executive in any medium to any person. Notwithstanding the preceding, The Company Group, and its executives, directors, and officers may confer in confidence with their legal representatives and make truthful statements as required by law or legal process.

Nothing in this Agreement shall prohibit or impede Executive from communicating, cooperating or filing a complaint with any U.S. or foreign federal, state or local governmental or law enforcement branch, agency, entity, commission or other governmental authority or instrumentality of competent jurisdiction (collectively, a "Governmental Entity") with respect to possible violations of any U.S. or foreign federal, state or local law or regulation, or otherwise making disclosures to any Governmental Entity, in each case, that are protected under the whistleblower provisions of any such law or regulation; provided, that in each case such communications and disclosures are consistent with applicable law. Executive does not need the prior authorization of (or to give notice to) the Company regarding any such communication or

disclosure. Executive understands and acknowledges that an individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that is made (A) in confidence to a Federal, State, or local government official or to an attorney solely for the purpose of reporting or investigating a suspected violation of the law; or (B) in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Executive understands and acknowledges further that an individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual files any document containing the trade secret under seal; and does not disclose the trade secret, except pursuant to court order. Notwithstanding the foregoing, under no circumstance is Executive authorized to disclose any information covered by the Company's attorney-client privilege or attorney work product without the prior written consent of the Company's General Counsel.

i. Continuing Obligation Not to Use Any Confidential Information; and Return of All Confidential Information and Other Company Property.

- (i) Executive acknowledges and agrees that all confidential, proprietary, trade secret and other business information belonging to the Company Group, whether in tangible form or otherwise, including all documents and records, whether printed, typed, handwritten, videotaped, transmitted or transcribed on data files or on any other type of media, and whether or not labeled or identified as confidential and/or proprietary, made or compiled by Executive or made available to Executive during his employment with the Company, is and remains the sole property of the Company Group which Executive shall not knowingly at any time use or disclose to any third party.
- (ii) Executive agrees that Executive has an obligation to make a reasonable search for, and return, all originals and all copies of all documents and records made or compiled by, provided to or made available to Executive that contain confidential, proprietary, trade secret or other business information belonging to the Company Group, whether printed, typed, handwritten, videotaped, transmitted or transcribed on data files or on any other type of media and whether or not labeled or identified as confidential, proprietary or trade secret.
- (iii) Executive agrees that Executive has an obligation to, no later than ten (10) business days following the earlier of the date on which his employment terminates or the date on which he is placed on garden leave, return all other Company-owned property and materials that he is aware of, including, but not limited to, credit cards, calling cards, keys, key fobs, identification badges, files, records, product samples, marketing materials, computer disks, tablets, printers, personal digital assistants, pagers, cellular telephones and all associated accessories for technology (e.g. power cords, mouse, etc.).
- (iv) To the extent that after signing this Agreement, Executive becomes aware that he has access to any confidential, proprietary, trade secret or other business information belonging to the Company Group, including on any personal computer equipment or other personal electronic storage devices, or is aware or becomes aware that he has uploaded or downloaded such information to any cloud or other file

sharing service to which Executive has access, Executive shall (A) make prompt reasonable steps to delete such information, and (B) not review or use such information for any purpose.

(v) Nothing in this Agreement shall prohibit or impede Executive from communicating, cooperating or filing a complaint with any Governmental Entity with respect to possible violations of any U.S. federal, state or local law or regulation, or otherwise making disclosures to any Governmental Entity, in each case, that are protected under the whistleblower provisions of any such law or regulation; provided, that in each case such communications and disclosures are consistent with applicable law. Executive does not need the prior authorization of (or to give notice to) the Company regarding any such communication or disclosure. Executive understands and acknowledges that an individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that is made (A) in confidence to a Federal, State, or local government official or to an attorney solely for the purpose of reporting or investigating a suspected violation of the law; or (B) in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Executive understands and acknowledges further that an individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual files any document containing the trade secret under seal; and does not disclose the trade secret, except pursuant to court order. Notwithstanding the foregoing, under no circumstance is Executive authorized to disclose any information covered by the Company's attorney-client privilege or attorney work product without the prior written consent of the Company's General Counsel.

(vi) Company agrees that its IT specialist who has supported Executive shall offer assistance to him in removing and obtaining Executive's personal information on his CBRE Laptop during the Transition Period. Company also agrees Executive may have a copy of all his contacts, and his calendar from the Microsoft Outlook program accessible prior the Separation Date. Company will assist Executive, if necessary, in migrating his phone so that he can take his cell number with him after the Separation Date.

j. Cooperation. Executive shall cooperate with the Company in any internal investigation or administrative, regulatory or judicial proceeding, or to provide information to the Company for any project or assignment in which he was involved during his employment, as reasonably requested by the Company (including, without limitation, Executive being available to the Company upon reasonable notice and at mutually-acceptable times and locations) for interviews and factual investigations, providing testimony without requiring service of a subpoena or other legal process, volunteering to the Company all pertinent information that he recalls, and turning over to the Company all relevant documents which are requested by the Company and which may come into Executive's possession, all at times and on schedules that are reasonably consistent with Executive's other permitted activities and commitments). Such services will be without additional compensation to Executive, but the Company will reimburse Executive for any reasonable travel

and out-of-pocket costs and expenses (including, without limitation, attorneys' fees and expenses in accordance with the Company's charter and by-laws and directors and officers insurance policy) incurred by Executive in providing such cooperation. To the extent consistent with applicable law, Executive will provide the Company advance written notice of any subpoena or legal proceeding and perform all acts reasonably and commercially practicable, at the Company's expense, to assist the Company to obtain a protective order to the extent the Company seeks such protection. Furthermore, if such a protective order or other remedy is not obtained, or the Company waives compliance with the provision of this Section 6(j), Executive will furnish only such information or take only such action which his lawyers advise him is legally advisable and will exercise reasonable commercial efforts to obtain reliable assurance that confidential treatment will be accorded any information so furnished. For avoidance of doubt, nothing in this Section 6(j) shall (A) require Executive to cooperate with the Company in any dispute that arises under this Agreement or on any other any matter in which the Company's and Executive's interests are adverse or (B) prohibit or impede Executive from communicating, cooperating or filing a complaint with any Governmental Entity with respect to possible violations of any U.S. or foreign federal, state or local law or regulation, or otherwise making disclosures to any Governmental Entity, in each case, that are protected under the whistleblower provisions of any such law or regulation; provided, that in each case such communications and disclosures are consistent with applicable law. Notwithstanding the foregoing, under no circumstance is Executive authorized to disclose any information covered by the Company's attorney-client privilege or attorney work product without the prior written consent of the Company's General Counsel.

k. Withholding Taxes. The Company shall be entitled to withhold from any payment due to Executive hereunder any amounts required to be withheld by applicable tax laws or regulations.

l. Survival. Sections 4, 5 and 6 shall survive and continue in full force in accordance with their terms notwithstanding any termination of Executive's employment with the Company.

m. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together will constitute one and the same instrument.

[Signature page follows.]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first above written.

CBRE Group, Inc.

By: /s/ Danny Queenan
Name: Daniel Queenan
Title: CEO, Real Estate Investments

Executive

/s/ Mike Lafitte
Michael J. Lafitte

EXHIBIT A

Personnel Name: Lafitte, Michael J.

Entity Name	Title	Title Role	Role Start	Business Group
CBRE Foundation, Inc. (in process of Dissolution)	Director	Director	06/01/2018	CBRE Corporate
CBRE Group, Inc.	Global Group President, Client Care and CEO, Trammell Crow Company	Officer	05/19/2022	CBRE Corporate
CBRE Services, Inc.	Global Group President, Client Care and CEO, Trammell Crow Company	Officer	05/19/2022	CBRE Corporate
CBRE Caledon Holdings Inc.	Director	Director	09/30/2020	CBRE IM
CBRE Hana Company Holdings, LLC	Manager	Board of Managers	01/01/2020	CBRE IM
CBRE Investment Management Listed Real Assets LLC	Member	Board of Managers	--	CBRE IM
CBRE TCC USLP Co-Invest, LLC	Global CEO, Real Estate Investments	Officer - Administrative	09/07/2021	CBRE IM
CBRE US Mall Partners GP, LLC	Global CEO, Real Estate Investments	Officer - Administrative	03/13/2018	CBRE IM
USMP Arlington Investor GP, LLC	Global CEO, Real Estate Investments	Officer - Administrative	07/23/2018	CBRE IM
USMP Cumberland Investor GP, LLC	Global CEO, Real Estate Investments	Officer - Administrative	07/23/2018	CBRE IM
Environmental Asset Services, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street Arizona, Inc.	Executive Vice President (update needed-see below)	Officer	01/01/2021	CBRE TCC Development Services
High Street Arizona, Inc.	President and Chief Executive Officer	Officer	01/01/2021	CBRE TCC Development Services
High Street Atlanta Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street Austin Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street Chicago Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street Crestview Station GP, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street Denver, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street DFW Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street District Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street Houston Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street LA Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street NE Metro, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street No. Cal. Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street Northwest Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street Portland Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street Residential, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
High Street So. Cal. Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
HS Boston Development, Inc.	Executive Vice President	Officer	12/01/2022	CBRE TCC Development Services
NE Metro Development 2, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Atlanta Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Austin Development II, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Austin Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Austin Industrial Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Austin Office Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Boston Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services

TC Campus Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Denver Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Florida Development, Inc.	Executive Vice President	Officer	04/12/2021	CBRE TCC Development Services
TC Fort Lincoln Retail Manager, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Houston Healthcare Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Houston Industrial Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Houston Life Science Development, Inc.	Executive Vice President	Officer	01/24/2022	CBRE TCC Development Services
TC Houston Office Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Houston Retail Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Industrial Associates, Inc.	President	Officer	01/01/2021	CBRE TCC Development Services
TC Industrial Associates, Inc.	President and Chief Executive Officer	Officer	01/01/2021	CBRE TCC Development Services
TC Industrial, Inc.	President and Chief Executive Officer	Officer	01/01/2021	CBRE TCC Development Services
TC LA Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC LA Healthcare Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC LA Industrial Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC LA MF Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC MidAtlantic Development II, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC MidAtlantic Development III, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC MidAtlantic Development IV, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services

Entity Name	Title	Title Role	Role Start	Business Group
TC MidAtlantic Development V, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC MidAtlantic Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC MIRAI Development Member, LLC	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC NE Metro Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC No. Cal. Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Northwest Development Services, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Northwest Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TC Office Associates Development, Inc.	President and Chief Executive Officer	Officer	01/01/2021	CBRE TCC Development Services
TC Pursuit Services, Inc.	President and Chief Executive Officer	Officer	01/01/2021	CBRE TCC Development Services
TC West Houston, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TCC Investors, Inc.	President and Chief Executive Officer	Officer	01/01/2021	CBRE TCC Development Services
TCC West Plano GP, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TCCNV, Inc.	President and Chief Executive Officer	Officer	01/01/2021	CBRE TCC Development Services
TCDFW Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TCDFW Industrial Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TCDFW Investment and Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TCDFW MF Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services

TCDFW Office Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TCDFW Retail Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TCH CBD, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
TCNE Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Telford Homes Limited	Director	Director	09/29/2022	CBRE TCC Development Services
Trammell Crow Acquisitions I-II, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Arizona Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Brokerage, Inc.	President and Chief Executive Officer	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Carolinas Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Central Texas Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Chicago Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Co-Investment Acquisitions I-II, L.P.	Limited Partner	Limited Partner	01/01/2021	CBRE TCC Development Services
Trammell Crow Company European Logistics s.r.o.	Director	Officer	04/20/2021	CBRE TCC Development Services
Trammell Crow Company Logistics Limited	Director	Officer	05/12/2021	CBRE TCC Development Services
Trammell Crow Company Logistics SAS	Director	Director	10/18/2021	CBRE TCC Development Services
Trammell Crow Company, LLC	Manager and Chief Executive Officer	Officer and Board of Managers	07/01/2020	CBRE TCC Development Services
Trammell Crow Denver Development II, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Denver Development III, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Denver Development IV, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Denver Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Development & Investment, Inc.	President and Chief Executive Officer	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Houston Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Individual Investment Fund 2003 L.P.	Limited Partner	Limited Partner	01/01/2021	CBRE TCC Development Services
Trammell Crow Investments V, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Kansas City Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow NW Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Portland Development II, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow Portland Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow So. Cal. Development Services, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow So. Cal. Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow So. Cal. Healthcare Development, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
Trammell Crow So. Cal. Properties, Inc.	Executive Vice President	Officer	01/01/2021	CBRE TCC Development Services
USMP Ridgedale Investor GP, LLC	Global CEO, Real Estate Investments	Officer - Administrative	07/23/2018	CBRE TCC Development Services
USREA, Inc.	President and Chief Executive Officer	Officer	01/01/2021	CBRE TCC Development Services

Exhibit B

General Release

For and in consideration of the payments and benefits described in Section 3 of the Employment and Transition Agreement (the “Agreement”) dated as of January __, 2023, by and between CBRE, Inc., a Delaware corporation (the “Company”) and Mike Lafitte (“Executive”), Executive hereby agrees on behalf of himself, his agents, assignees, attorneys, successors, assigns, heirs and executors, to, and Executive does hereby, fully and completely forever release the Company Releasees, from any and all causes of action, suits, agreements, promises, damages, disputes, controversies, contentions, differences, judgments, claims, debts, dues, sums of money, accounts, reckonings, bonds, bills, specialties, covenants, contracts, variances, trespasses, extents, executions and demands of any kind whatsoever, which Executive or his agents, assignees, attorneys, successors, assigns, heirs and executors ever had, now have or may have against the Company Releasees or any of them, in law or equity, whether known or unknown to Executive, for, upon, or by reason of, any matter, action, omission, course or thing whatsoever occurring up to the date this release is signed by Executive, arising out of or in connection with or in relationship to Executive’s employment or other service relationship with the Company or the termination thereof, and any applicable employment, compensatory or equity arrangement with the Company, any claims of breach of contract, wrongful termination, retaliation, fraud, defamation, infliction of emotional distress or national origin, race, age, sex, sexual orientation, disability, medical condition or other discrimination or harassment, (such released claims are collectively referred to herein as the “Released Claims”); provided, that, Executive does not waive or release (i) any claims with respect to the right to enforce the Separation Agreement, or rights, if any, under the Equity Grants, or the Severance Plan, (ii) claims with respect to any vested right Executive may have under any employee pension or welfare benefit plan of the Company, including the 401K Plan, (iii) any rights Executive may have for indemnification or a legal defense or to the providing of Executive’s defense costs by or from the Company or any of its affiliates or under any insurance policy, organizational document or by-law, or the CB Richard Ellis Group, Inc. Indemnification Agreement or other written indemnification agreement covering Executive, (iv) rights, if any, of Executive to portability or conversion of supplemental life insurance, (v) rights of Executive as a shareholder regarding the CBRE Stock of Executive and (vi) any claims that may not be waived by law.

Notwithstanding the generality of the immediately preceding paragraph, the Released Claims include, without limitation, all of the following claims occurring up to the date this release is signed by Executive: (A) any and all claims under Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act of 1967 (the “ADEA,” a law which prohibits discrimination on the basis of age), the Civil Rights Act of 1971, the Civil Rights Act of 1991, the Fair Labor Standards Act, Employee Retirement Income Security Act of 1974, the Americans with Disabilities Act, the Family and Medical Leave Act of 1993, the National Labor Relations Act, the Equal Pay Act, the Securities Act of 1933, the Securities Exchange Act of 1934, the Rehabilitation Act of 1973, and the Worker Adjustment and Retraining Notification Act, all as amended, and any and all other federal, state or local laws, statutes, rules and regulations pertaining to employment or otherwise, and (B) any claims for wrongful discharge, breach of contract, fraud, misrepresentation or any compensation claims, or any other claims under any statute, rule or regulation or under the common law, including compensatory damages, punitive damages, attorney’s fees, costs, expenses and all claims for any other type of damage or relief; provided, Executive does not waive or release

(i) any claims with respect to the right to enforce the Separation Agreement, or rights, if any, under the Equity Grants, or the Severance Plan, (ii) claims with respect to any vested right Executive may have under any employee pension or welfare benefit plan of the Company, including the 401K Plan, (iii) any rights Executive may have for indemnification or a legal defense or the providing of Executive's defense costs by or from the Company or any of its affiliates or under any insurance policy, organizational document or by-law, or the CB Richard Ellis Group, Inc. Indemnification Agreement or other written indemnification agreement covering Executive, (iv) rights, if any, of Executive to portability or conversion of supplemental life insurance, (v) rights of Executive as a shareholder regarding the CBRE Stock of Executive and (vi) any claims that may not be waived by law, and (vi) any claims that may not be waived by law.

THIS MEANS THAT, BY SIGNING THIS RELEASE, EXECUTIVE WILL HAVE WAIVED ANY RIGHT EXECUTIVE MAY HAVE HAD TO BRING A LAWSUIT OR MAKE ANY CLAIM AGAINST THE COMPANY RELEASEES BASED ON ANY ACTS OR OMISSIONS OF THE COMPANY RELEASEES UP TO THE DATE OF THE SIGNING OF THIS RELEASE. NOTWITHSTANDING THE ABOVE, NOTHING IN THIS RELEASE SHALL PREVENT EXECUTIVE FROM (X) INITIATING OR CAUSING TO BE INITIATED ON HIS BEHALF ANY COMPLAINT, CHARGE, CLAIM OR PROCEEDING AGAINST THE COMPANY BEFORE ANY LOCAL, STATE OR FEDERAL AGENCY, COURT OR OTHER BODY CHALLENGING THE VALIDITY OF THE WAIVER OF HIS CLAIMS UNDER ADEA CONTAINED IN THIS RELEASE (BUT NO OTHER PORTION OF SUCH WAIVER); OR (Y) INITIATING OR PARTICIPATING IN (BUT NOT BENEFITING FROM) AN INVESTIGATION OR PROCEEDING CONDUCTED BY THE EQUAL EMPLOYMENT OPPORTUNITY COMMISSION WITH RESPECT TO ADEA.

Executive represents that he has read carefully and fully understands the terms of this release, and that Executive has been advised to consult with an attorney and has availed himself of the opportunity to consult with an attorney prior to signing this release. Executive acknowledges and agrees that he is executing this release willingly, voluntarily and knowingly, of his own free will, in exchange for the payments and benefits described in Section 4 of the Agreement, and that he has not relied on any representations, promises or agreements of any kind made to him in connection with his decision to accept the terms of the Agreement and this release, other than those set forth in the Agreement and this release. **Executive acknowledges that he could take up to twenty-one (21) days to consider whether he wants to sign this release and that the ADEA gives him the right to revoke this release within seven (7) days after it is signed, and Executive understands that he will not receive any payments or benefits under Section 4 of the Agreement (other than payment of Accrued Amounts), subject to the terms and conditions thereof, until such seven (7) day revocation period has passed and then, only if he has not revoked this release. To the extent Executive has executed this release within less than twenty-one (21) days after its delivery to him, Executive hereby waives the twenty-one (21) day period and acknowledges that his decision to execute this release prior to the expiration of such twenty-one (21) day period was entirely voluntary. If Executive revokes this release, it and the Agreement shall be null and void as of the date of such revocation.**

Capitalized terms used in this release but not defined herein shall have the meanings ascribed to such terms in the Agreement.

Executive

Michael J. Lafitte

Schedule 1

Separation Package

Assumptions:

Separation Date: February 17, 2023

Base Salary: \$775,000

Target Bonus: \$1,160,000

Schedule 1 Interests

Summary Upon Separation Date

	Category	Payout
Cash payment	Target cash compensation (base + target bonus) x 1.5	\$2,902,500
2022 Bonus	2022 Full-Year Bonus at target.	\$1,160,000
2023 Bonus	2023 Pro-rated Bonus	\$152,548
Total Payout in Cash		\$4,215,048

Summary of Annual Equity Delivered After Separation Date

Delivery Date *	Equity Grants	Shares TO BE DELIVERED**	Payout
2/25/2023	2022 Time-Based Award	4,958	N/A
2/28/2023	2019 Time-Based Award	8,577	N/A
3/3/2023	2020 Time-Based Award	5,544	N/A
3/3/2023	2020 Performance-Based Award	44,357***	N/A
3/3/2023	2021 Time-Based Award	4,401	N/A
2/25/2024	2022 Time-Based Award	4,960	N/A
3/3/2024	2020 Time-Based Award	5,545	N/A
3/3/2024	2021 Time-Based Award	4,402	N/A
3/3/2024	2021 Performance-Based Award	18,290 **	N/A
2/25/2025	2022 Time-Based Award	2,083	N/A
2/25/2025	2022 Performance-Based Award	17,019 **	N/A
3/3/2025	2021 Time Based Award	1,938	N/A
Total Annual Equity Delivered *		122,074	N/A

Summary of 2017 Special Equity Delivered After Separation Date*			
Delivery Date *	Equity Grants	Shares	Payout
2/17/2023	2017 Special Equity Time-Based	35,751	N/A
2/28/2024	2017 Special Equity TSR Performance-Based	36,907 **	N/A
2/28/2024	2017 Special Equity EPS Performance-Based	36,392 **	N/A
Total Equity Delivered *		109,050	N/A
* Actual delivery dates may differ and be subject to the certification timing of particular awards, which will be the same date that all other shares are delivered to other Company employees who are also receiving shares under the applicable awards.			
** Actual number of shares delivered will be reduced by any tax withholdings described in <u>Section 4(e)</u> of the Agreement, and for awards where the performance period has not yet ended, the number of shares noted reflects the number subject to continued vesting, assuming target performance; however, Executive will remain eligible to receive the number of shares that are subject to the award after the pro-rata calculation provided by the Severance Plan and/or applicable Grant Awards, is applied and performance is certified. Once certified, the performance achievement factor contained in each award will be applied to calculate the number of shares due Executive pursuant to each award. Delivery date shown is the approximate delivery date.			
*** 2020 Performance-Based Awards have been certified at 200% and Shares listed reflect that amount			

EXHIBIT C TO SEPARATION AGREEMENT
RESTRICTIVE COVENANT

Restrictions. In order to preserve the Confidential Information, and to protect the Company Group's proprietary interest in its trade secrets, and to protect the goodwill of the Company Group, and in consideration of the payments and benefits contained in the Release and other good and valuable consideration, Michale J. Lafitte agrees that, for the Restricted Period, he will not, directly or indirectly: (i) solicit, induce or attempt to induce, on his own behalf or on behalf of any other person or organization, any of the Company Group's clients whom he solicited or with whom he substantially and directly dealt or became acquainted while he was employed with the Company Group for the purpose of either (a) inducing said client to terminate, diminish, or materially alter in a manner harmful to the Company Group its relationship with the Company Group, or (b) providing, or offering to provide, Conflicting Services to said client; or (ii) solicit for employment, hire or attempt to hire, on his own behalf or on behalf of any other person or organization, any of the Company Group's consultants, personnel or employees (or anyone who was a client, consultant, member of the Company Group's personnel or employee at any time within the twelve (12) month period immediately preceding your Date of Termination). In addition, during the Restricted Period, Michael J. Lafitte will not disparage, criticize or ridicule, or otherwise engage in any conduct that is injurious to the reputation or interest of the Company Group. If any court of competent jurisdiction shall determine that the provisions of this paragraph exceed the time, geographic or scope limitations permitted by applicable law, then such provisions shall nevertheless be enforceable by such court against Michael J. Lafitte upon such shorter term, or within such lesser geographic area or scope, as may be determined by such court to be reasonable and enforceable.

The "Restricted Period" means 18 months after the Separation Date.

"Conflicting Services" means services of any entity (other than the Company Group) that are the same or substantially similar to those services of the Company Group (x) provided by Michael J. Lafitte (directly or indirectly through others) during the twelve (12) months preceding the Separation Date of Michael J. Lafitte, or (y) about which Michael J. Lafitte acquired Confidential Information or trade secrets during his employment by the Company Group.

"Territory" means any national, state, provincial, territorial or other jurisdiction globally in which Michael J. Lafitte performed services for the Company Group at any time during the twelve (12) months prior to the Separation Date, including but not limited to any such jurisdiction in which he, directly or indirectly through others, provided the Company Group's services to clients or marketed or offered to provide the Company Group's services.

“Company Group” refers to CBRE Group, Inc., and its subsidiaries from time to time.

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SUBSIDIARIES OF CBRE GROUP, INC.

AT DECEMBER 31, 2022

The following is a list of subsidiaries of CBRE Group, Inc. (the “Company”) as of December 31, 2022, omitting subsidiaries which, considered in the aggregate as if they were a single subsidiary, would not constitute a significant subsidiary.

Name	State (or Country) of Incorporation
CBRE Services, Inc.	Delaware
CB/TCC, LLC	Delaware
CBRE, Inc.	Delaware
CBRE Holdco, Inc.	Delaware
CBRE Holdings, LLC	Delaware
CBRE Partner, Inc.	Delaware
CBRE Capital Markets, Inc.	Texas
CB/TCC Global Holdings Limited	United Kingdom
CBRE Holdings Limited	United Kingdom
CBRE Limited	United Kingdom
Turner & Townsend Holdings Limited	United Kingdom
CBRE Global Holdings	Luxembourg
CBRE Luxembourg Holdings	Luxembourg
CBRE Global Acquisition Company	Luxembourg
Relam Amsterdam Holdings B.V.	The Netherlands

**SUBSIDIARY ISSUERS AND GUARANTORS OF CBRE GROUP, INC.'S
REGISTERED DEBT**

AT DECEMBER 31, 2022

CBRE Services, Inc., a subsidiary of CBRE Group, Inc., is the issuer of the 4.875% and 2.500% senior notes (as defined in CBRE Group, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2022), which are guaranteed by CBRE Group, Inc.

Consent of Independent Registered Public Accounting Firm

The Board of Directors
CBRE Group, Inc.:

We consent to the incorporation by reference in the registration statements (Nos. 333-116398, 333-181235, 333-218113, 333-231572 and 333-2265294 on Form S-8 and No. 333-251514 on Form S-3) of our reports dated February 24, 2023, with respect to the consolidated financial statements and financial statements of CBRE Group, Inc. and the effectiveness of internal control over financial reporting.

/s/ KPMG LLP
Los Angeles, California
February 24, 2023

**Certification of Chief Executive Officer Pursuant to
Rule 13a-14(a) Under the Securities Exchange Act of 1934, as Amended**

I, Robert E. Sulentic, certify that:

- 1) I have reviewed this Annual Report on Form 10-K of CBRE Group, Inc.;
- 2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
- 3) Based on my knowledge, the financial statements and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
- 4) The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
- 5) The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 24, 2023

/s/ ROBERT E. SULENTIC

Robert E. Sulentic

President and Chief Executive Officer

**Certification of Chief Financial Officer Pursuant to
Rule 13a-14(a) Under the Securities Exchange Act of 1934, as Amended**

I, Emma E. Giamartino, certify that:

- 1) I have reviewed this Annual Report on Form 10-K of CBRE Group, Inc.;
- 2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
- 3) Based on my knowledge, the financial statements and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
- 4) The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
- 5) The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 24, 2023

/s/ EMMA E. GIAMARTINO

Emma E. Giamartino

Chief Financial Officer

(Principal Financial Officer)

**Certifications of Chief Executive Officer and Chief Financial Officer
Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act Of 2002**

The undersigned, Robert E. Sulentic, Chief Executive Officer, and Emma E. Giamartino, Chief Financial Officer of CBRE Group, Inc. (the “Company”), hereby certify as of the date hereof, solely for the purposes of 18 U.S.C. §1350, that:

- (i) the Annual Report on Form 10-K for the period ended December 31, 2022, of the Company (the “Report”) fully complies with the requirements of Section 13(a) and 15(d), as applicable, of the Securities Exchange Act of 1934; and
- (ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company at the dates and for the periods indicated.

Date: February 24, 2023

/s/ ROBERT E. SULENTIC

Robert E. Sulentic
President and Chief Executive Officer

Date: February 24, 2023

/s/ EMMA E. GIAMARTINO

Emma E. Giamartino
*Chief Financial Officer
(Principal Financial Officer)*

The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of the Report or as a separate disclosure document.