

RICS PROFESSIONAL STANDARD

Sustainability and ESG in commercial property valuation and strategic advice

Global

3rd edition, December 2021

Effective from 31 January 2022



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Published by the Royal Institution of Chartered Surveyors (RICS)

Parliament Square

London

SW1P 3AD

www.rics.org

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This document was originally published in December 2021 as an RICS guidance note and reissued in May 2023 as an RICS professional standard.

ISBN 978 1 78321 453 2

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Typeset using Typefi.

Acknowledgements

Lead author

Philip Parnell MRICS (Deloitte)

Expert working group

Esther An (City Developments Limited)

Emily Chadwick MRICS (JLL)

Theddi Chappell FRICS (Sustainable Values Inc.)

John Goddard FRICS (J. Goddard & Co)

Alice Greenwood MRICS (Altus Group)

Lorraine Howells MRICS (CBRE)

Leticia Perez Galan MRICS (BNP Paribas)

Sarah Sayce FRICS (University of Reading)

Professional group lead

Charles Golding MRICS

Editor

Jo FitzLeverton

RICS would also like to thank all those who contributed to the webinars, panel sessions and advisory forums globally, contributions from which were fundamental to the development of this professional standard. Contributors included lenders, asset managers, institutional investors, sustainability experts, trade bodies, government, regulators, valuers and other built environment experts.

We also thank those who have contributed to the full public consultation this professional standard has gone through.

This professional standard is dedicated to the pioneering work on sustainability of our expert working group member Professor Sarah Sayce, who sadly passed away prior to publication. Sarah was a passionate champion of this subject and will be greatly missed.

Contents

Acknowledgements	ii
RICS standards framework	1
Document definitions	2
Glossary	3
1 Introduction	8
1.1 Scope	8
1.2 Key sustainability initiatives	8
1.3 Effective date	9
2 Role of the valuer	10
3 Valuation purpose	11
4 Valuation instructions and terms of engagement	12
4.1 Strategic advice	12
5 Inspection, investigation and data	14
5.1 Inspection and investigation	14
5.2 Investigations: data	14
6 Basis of value	16
7 Reporting	17
8 Comparables and evidence	18
9 Valuation methods and considerations	19
9.1 Income approach: discounted cash flow (DCF) model	19
9.2 Income approach: capitalisation model	20
9.3 Valuation considerations using the income approach	20
9.4 Market approach: direct comparison	21
10 Sustainability characteristics, considerations and risks	23
10.1 Carbon emissions, net zero and energy efficiency	23
10.2 Capital expenditure	23
10.3 Environmental, physical and transition risks	24
10.4 Property quality and market participants	25
10.5 Fiscal and legislative considerations	25
10.6 Certification, rating and other benchmarking	26

10.7 Planning, zoning and development considerations	27
10.8 Asset management	27
10.9 Utility	28
10.10 Accessibility by transport	29
10.11 Social and wellbeing considerations	29
Appendix A International sustainability/ESG rating, benchmarking and measurement schemes	31

RICS standards framework

RICS' standards setting is governed and overseen by the Standards and Regulation Board (SRB). The SRB's aims are to operate in the public interest, and to develop the technical and ethical competence of the profession and its ability to deliver ethical practice to high standards globally.

The RICS [Rules of Conduct](#) set high-level professional requirements for the global chartered surveying profession. These are supported by more detailed standards and information relating to professional conduct and technical competency.

The SRB focuses on the conduct and competence of RICS members, to set standards that are proportionate, in the public interest and based on risk. Its approach is to foster a supportive atmosphere that encourages a strong, diverse, inclusive, effective and sustainable surveying profession.

As well as developing its own standards, RICS works collaboratively with other bodies at a national and international level to develop documents relevant to professional practice, such as cross-sector guidance, codes and standards. The application of these collaborative documents by RICS members will be defined either within the document itself or in associated RICS-published documents.

Document definitions

Document status	Definition
<p>RICS professional standards</p>	<p>Set requirements or expectations for RICS members and regulated firms about how they provide services or the outcomes of their actions.</p> <p>RICS professional standards are principles-based and focused on outcomes and good practice. Any requirements included set a baseline expectation for competent delivery or ethical behaviour.</p> <p>They include practices and behaviours intended to protect clients and other stakeholders, as well as ensuring their reasonable expectations of ethics, integrity, technical competence and diligence are met. Members must comply with an RICS professional standard. They may include:</p> <ul style="list-style-type: none"> • mandatory requirements, which use the word ‘must’ and must be complied with, and/or • recommended best practice, which uses the word ‘should’. It is recognised that there may be acceptable alternatives to best practice that achieve the same or a better outcome. <p>In regulatory or disciplinary proceedings, RICS will take into account relevant professional standards when deciding whether an RICS member or regulated firm acted appropriately and with reasonable competence. It is also likely that during any legal proceedings a judge, adjudicator or equivalent will take RICS professional standards into account.</p>
<p>RICS practice information</p>	<p>Information to support the practice, knowledge and performance of RICS members and regulated firms, and the demand for professional services.</p> <p>Practice information includes definitions, processes, toolkits, checklists, insights, research and technical information or advice. It also includes documents that aim to provide common benchmarks or approaches across a sector to help build efficient and consistent practice.</p> <p>This information is not mandatory and does not set requirements for RICS members or make explicit recommendations.</p>

Glossary

The definitions below are included as a guide only – except where they refer to mandatory RICS standards. ESG and sustainability is a fast-developing topic, and the concepts and lexicon are evolving.

At a jurisdictional level there may be statutory or regulatory definitions which differ to those included in this glossary that valuers may be required to follow (see [RICS Valuation – Global Standards](#) PS 1 section 4).

Term	Definition
Basis of value	'A statement of the fundamental measurement assumptions of a valuation.' (Source: <i>RICS Valuation – Global Standards</i> Glossary).
Capital expenditure	Money spent by a business or other body on tangible items to develop, maintain or improve an asset. In a real estate context this might typically be maintenance and improvement of services, fitting out and alterations. It may be done to meet regulatory or statutory requirements, occupier or investor expectations, or to improve the lifecycle of the property.
Capitalisation (income)	A valuation model that applies a yield derived from transactional and other evidence to an income stream, usually a rent. The technique is referred to as 'implicit' as all of the assumptions around, for example, risk and growth are built into the capitalisation rate (yield) used. In some cases, a current and reversionary income are capitalised.
Discounted cash flow (DCF)	A valuation model where the forecasted cash flow is discounted back to the valuation date, resulting in a present value of the asset. The discount rate in a discounted cash flow model is based on the time cost of money and the risks and rewards of the income stream in question.

Term	Definition
Environmental, social and governance (ESG)	<p>‘The criteria that together establish the framework for assessing the impact of the sustainability and ethical practices of a company on its financial performance and operations. ESG comprises three pillars: environmental, social and governance, all of which collectively contribute to effective performance, with positive benefits for the wider markets, society and world as a whole.’ (IVS 2020 Agenda Consultation (p14)).</p> <p>‘Although ESG principally refers to companies and investors, ESG-related factors are also used to describe the characteristics and, where relevant, operation of individual assets. It is used throughout [Red Book Global Standards] in this context.’ (Source: <i>RICS Valuation – Global Standards Glossary</i>).</p>
Fair value	<p>“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.” (This definition derives from International Financial Reporting Standards IFRS 13).’ (Source: <i>RICS Valuation – Global Standards Glossary</i>).</p>
Generally Accepted Accounting Principles (GAAP)	<p>These may have regional variations and standards such as US GAAP and UK GAAP.</p>
International Financial Reporting Standards (IFRS)	<p>A set of common rules for financial reporting defined by the International Accounting Standards Board (IASB).</p>
Income approach	<p>‘[A valuation] approach that provides an indication of value by converting future cash flows to a single current capital value.’ (Source: <i>RICS Valuation – Global Standards Glossary</i>).</p>
Net-zero	<p>A balance between the carbon and other greenhouse gas emissions produced and the impact of measures to remove emissions. It can be referred to with different degrees of scope, for example at a global, company or portfolio level, or in respect of an individual asset.</p>

Term	Definition
Obsolescence	The decline of an asset over time. It can take a variety of forms, such as the physical condition, the remaining economic life, the comparative running costs and the comparative efficiency and functionality. The impact on value might not be linear and is subject to market factors and the nature of the asset. In sustainability and ESG terms, it can mean failure to meet market, investor and regulatory requirements.
Paris Agreement	<p>‘The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016.</p> <p>Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.</p> <p>To achieve this long-term temperature goal, countries aim to reach global peaking of greenhouse gas emissions as soon as possible to achieve a climate neutral world by mid-century.’ (Source: UNFCCC secretariat (UN Climate Change)).</p>
Physical risk	A measure of the impact of climate change on natural events physically impacting real estate such as flood, severe storms and wildfires.
Plant and equipment	<p>Tangible assets that fall under three broad categories as defined in <i>RICS Valuation – Global Standards</i>, VPGA 5:</p> <p>Plant: Assets that are combined with others and that may include items that form part of industrial infrastructure, utilities, building services installations, specialised buildings, and machinery and equipment forming a dedicated assemblage.</p> <p>Machinery: Individual, or a collection or a fleet or system of, configured machines/technology (including mobile assets such as vehicles, rail, shipping and aircraft) that may be employed, installed or remotely operated in connection with a user’s industrial or commercial processes, trade or business sector (a machine is an apparatus used for a specific process).</p> <p>Equipment: An all-encompassing term for other assets such as sundry machinery, tooling, fixtures, furniture and furnishings, trade fixtures and fittings, sundry equipment and technology, and loose tools that are used to assist the operation of the enterprise or entity.</p>

Term	Definition
Rent-free period	<p>An incentive commonly granted by a landlord to a tenant often at the start of a lease – where no payment is required. They vary in duration dependent on the market, some for a few months, whereas others can last years. They generally reflect one or more of the following factors:</p> <ul style="list-style-type: none"> • the time required to fit out the property to suit the tenant’s needs • overheads associated with the time required to reinstate the former premises • agreement by the tenant to carry out repairs or improve the property, which may benefit the landlord • commitment from the tenant to pay a higher rent over the term, benefiting the landlord in the long-run • acceptance of specific liabilities or restrictions under the lease.
Scenario testing	<p>A process of modelling and evaluating events or scenarios that could take place in the future and predicting the various feasible results or outcomes on value, commonly measured in terms of impact on cash flow (including rent), net present value and relevant investment performance indicators. IVS 105 recognises that valuers may apply multiple scenarios of, for example, possible future cash flows.</p>
Scope 1, 2, 3 – carbon emissions	<p>Scope 1: direct emissions from owned or controlled sources.</p> <p>Scope 2: indirect emissions from the generation of purchased energy.</p> <p>Scope 3: all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company.</p> <p>(Source: Greenhouse Gas Protocol)</p>
Sensitivity analysis	<p>An investigation of the degree to which valuation or modelling outcomes vary with a change in one of the assumptions or inputs. This helps demonstrate the importance of an individual assumption or input to the calculation as a whole.</p>
Social value	<p>‘The social benefits that flow to asset users (social investment) and the wider financial and non-financial impacts including the wellbeing of individuals and communities, social capital and the environment, that flow to non-asset users.’</p> <p>Source: IVSC Defining and Estimating ‘Social Value’</p>

Term	Definition
Strategic advice	<p>Engagement or consultancy beyond the scope of a typical valuation instruction that provides additional information to the client. The information does not have to form a single conclusion and may instead model a number of scenarios and involve sensitivity analysis. Strategic advice can include qualitative and quantitative information that describes property risk. The nature of strategic advice means it is typically tailored to suit the particular investment and operational requirements of a specific client and is therefore more akin to valuation on the basis of investment value or worth (as opposed to market value).</p>
Sustainability	<p>‘The consideration of matters such as (but not restricted to) environment and climate change, health and wellbeing, and personal and corporate responsibility that can or do impact on the valuation of an asset. In broad terms, it is a desire to carry out activities without depleting resources or having harmful impacts.</p> <p>There is as yet no universally recognised and globally adopted definition of ‘sustainability’. Therefore, members should exercise caution over the use of the term without additional appropriate explanation. In some jurisdictions, the term ‘resilience’ is being adopted to replace the term ‘sustainability’ when related to property assets.</p> <p>Sustainability may also be a factor in environmental, social and governance (ESG) considerations.’ (Source: <i>RICS Valuation – Global Standards Glossary</i>).</p>
Transition risks	<p>Transition risks are business-related risks that follow societal and economic shifts toward a low-carbon and more climate-friendly future.</p> <p>(Source: GRESB)</p>
UN Sustainable Development Goals	<p>A series of 17 targets developed by the UN in 2015 for their ‘Agenda 2030’ that address what they consider to be the most important economic, social, environmental and governance challenges of our time. They include: no poverty, zero hunger, good health and wellbeing, quality education, gender equality, clean water and sanitation, affordable and clean energy, decent work and economic growth, industry, innovation and infrastructure, reduced inequalities, sustainable cities and communities, responsible consumption and production, climate action, life below water, life on land, peace and justice and strong institutions, partnerships for the goals.</p>

1 Introduction

1.1 Scope

Corporate and investment requirements relating to sustainability; resilience; and environmental, social and governance (ESG) are some of the most important issues facing world financial markets. In a real estate context, these requirements influence investment approaches as they may affect prospects for rental and capital growth, and susceptibility to obsolescence. Some investors, occupiers and lenders may also have minimum requirements in order to transact.

This professional standard is principally intended for valuing **commercial property**: non-domestic real estate that fulfils an operational or occupational purpose for business and is commonly sold or let in the market. It may also be referred to as 'investment property'. Other asset classes such as rural, residential, public sector and infrastructure fall outside the remit of this professional standard.

Valuation is a component of a wider construction and management cycle, but this professional standard does not cover life cycle considerations or circular economy principles in detail. Some ESG analysis includes detailed consideration and reporting of non-financial matters – those that cannot be measured in monetary terms. This guidance does not substantially cover ESG disclosures or reporting relating to non-financial matters. The guidance also principally refers to the valuation of individual real estate assets or groups of real estate assets, and does not cover business and corporate level sustainability, ESG and net-zero carbon strategies and factors such as carbon off-setting.

Many commercial properties contain plant and equipment, which can be relevant to sustainability and ESG considerations. This professional standard does not cover plant and equipment assets in detail, though valuers should be acquainted with the wider principles where they impact the asset to be valued (see *RICS Valuation – Global Standards* VPGA 5.3).

Markets in different jurisdictions reflect sustainability and ESG considerations in varying ways and to different degrees. The degree and pace at which aspects of sustainability may feed into value can vary depending on the property type and the geographic market in which the asset is situated. For example, flooding, heat or severe storms may be a particular risk in some locations, and the degree to which resilience to these events affects value may require an accentuated level of coverage. Further specific detail covering environmental risks can be found in the current edition of RICS' [Environmental risks and global real estate](#).

1.2 Key sustainability initiatives

Sustainability covers a broad range of environmental, economic and social factors defined as the 'three dimensions' in the global [UN Sustainable Development Goals](#). This range of factors

is sometimes referred to in a corporate or investment context as environmental, social and governance (ESG).

There are political initiatives that support the consideration of sustainability and ESG at a global level. The Paris Agreement is a legally binding international treaty on climate change, signed by 196 parties, which came into effect in 2016. The countries party to this agreement have to implement legislative changes in their national economies to stay in line with these legally-binding targets, meaning that compliance will be increasingly important at an asset level.

In addition to the UN Sustainable Development Goals, there are other popular reference points for better understanding sustainability and ESG, some of which are particularly relevant or suited to real estate, finance and valuation. For example, the [Task Force on Climate-related Financial Disclosures](#) (TCFD) is supported by major financial and real estate stakeholders globally. A list of international sustainability and ESG rating and benchmarking schemes is included in Appendix A. Some of these schemes were designed for accountancy and asset management purposes, and valuers should be conscious of their relevance and weight in evidence. See RICS' [Comparable evidence in real estate valuation](#), 1st edition, sections 4.6.2 and 4.6.3.

1.3 Effective date

This professional standard becomes effective from 31 January 2022.

2 Role of the valuer

RICS valuers are required under the [RICS Rules of Conduct](#) to adhere to a number of professional and social responsibilities, act in the public interest, take responsibility for their actions and act to prevent harm. Valuers are also required to follow the PS and VPS standards in [RICS Valuation – Global Standards](#) (Red Book Global Standards) and should also follow the good practice advice in the VPGAs. Specific extracts relevant to sustainability and ESG are highlighted throughout this professional standard.

The role of the valuer is to assess and report value in the light of evidence obtained. Red Book Global Standards VPGA 8 section 2.6 (c), 'Valuation of real property interests', also states that:

'While valuers should reflect markets, not lead them, they should be aware of *sustainability* features and the implications these could have on property values in the short, medium and longer term.'

Valuers should have a working knowledge of the various ways that sustainability and ESG can impact value. These may be physical risks, transition risk related to policy or legislation to achieve ESG and sustainability targets, or simply those reflecting the views and needs of market participants. The valuer should look at evidence from current market analysis, but may also need to consider issues such as longer-term obsolescence and risk. This may include, for example, the capital expenditure required to maintain the utility of the asset.

There may be circumstances where valuers lack the necessary knowledge and skills for a particular valuation, such as providing detailed cost advice or a specialist environmental risk assessment. In such cases, a valuer must reflect these limitations in the terms of engagement or as part of the terms agreed to refer to additional specialist expert advice. Red Book Global Standards PS 2 section 2.1 states that 'Members and firms must ensure that services are provided by competent individuals who have the necessary expertise'.

Red Book Global Standards VPGA 8 section 2.6 also states that:

'Particular care should be taken when assessing or commenting on ESG factors, as valuers may not have the specialist knowledge and experience required. In appropriate cases the valuer may recommend making further enquiries and/or the obtaining of further specialist or expert advice in respect of these matters.'

3 Valuation purpose

Purpose is fundamental to all valuation activity, and this is amplified in the context of sustainability and ESG. Sustainability and ESG should be considered for all purposes, however, particular attention may need to be given to valuations for a regulated purpose. The valuer may be required to explicitly articulate the evidential basis for assumptions around sustainability and ESG. Examples include:

- **Secured lending:** the lender may want the valuer's insight into the resilience of a property as a security over the term of the loan (Red Book Global Standards, VPGA 8).
- **Financial reporting** (including in accordance with, for example, IFRS or GAAP): there may be a particular focus on the evidence base supporting the valuer's judgements.

4 Valuation instructions and terms of engagement

All valuation terms of engagement must be carried out in accordance with Red Book Global Standards VPS 1.

When agreeing instructions, valuers should ensure that the client is aware of sustainability and ESG issues relevant to the valuation purpose, basis and market, and their potential impact on value.

Terms of engagement as defined in Red Book Global Standards are the opportunity for the valuer to agree with the client the:

- nature and extent of the valuer's work – including investigations – and any limitations thereon (VPS 1 section 3.1 (i))
- nature and source(s) of information upon which the valuer will rely (VPS 1 section 3.1 (j)) and
- all assumptions and special assumptions to be made (VPS 1 section 3.1 (k)).

Specific requirements that a client may have around ESG considerations, such as alignment with a specific measure or strategy (for example TCFD), can be identified and agreed in the terms of engagement or as a separate instruction. It is also the opportunity for the valuer and client to identify and agree where additional expertise and third-party information might be required.

4.1 Strategic advice

Valuers may also be asked to provide commentary and, in some cases, strategic advice beyond valuation reporting engagements in relation to, for example, proposals for sale or purchase, or for asset management. This strategic advice may go beyond the requirements of a valuation instructed on the basis of market value or investment value (worth). Strategic advice may typically be undertaken through separate instructions to a valuation, however, where this is not possible, it should be clearly delineated from valuation advice in reporting.

Sustainability and ESG considerations may come into play for strategic advice, in relation to trends in both occupier and investor markets. Instructions may also be sought around longer-term physical and environmental risks to the asset.

Strategic advice may include an opinion or judgement on the level of risk the value may be susceptible to under different market scenarios, with one of these areas of risk being the level of sustainability. In this context, a valuer may be instructed not only to assess the extent to which an asset currently meets sustainability criteria, but also hold an informed

view on the likelihood of environmental and social factors impacting on values, either positively or negatively, over both the short and longer term.

Commentary and strategic advice may take the form of scenario testing, sensitivity analysis or additional advice around valuation risks. Red Book Global Standards VPS 4 paragraph 2.5 recognises that:

‘as markets continue to develop and advance, and as clients’ needs continue to grow in terms of sophistication, additional demands are being placed on valuers to provide advice involving some element of prediction or forecast. Great care is needed to ensure that such advice is not misunderstood or misrepresented, and that any sensitivity analysis is carefully presented so as not to undermine the basis of value adopted.’

Valuers should be mindful of potential liability around forecasting and predicting values or market impacts. Valuers should also be mindful of advice that directly impacts investment decisions.

Where a valuer is providing strategic advice, Red Book Global Standards VPGA 8 section 2.6 (c) (vi) states that:

‘the valuer should, subject to their competence and expertise, consult with the client on the use and applicability of sustainability and ESG metrics and benchmarks that are applicable in each case.’

Valuers should clarify the nature of the strategic advice being given in the terms of engagement and, where appropriate, advise and educate the client as to appropriate sustainability and ESG considerations.

Valuers should be mindful of whether all or part of the commentary or strategic advice instruction is defined as a valuation, and whether it is an exception to Red Book Global Standards PS 1 section 5.

Whenever undertaking strategic advice beyond the valuation, the valuer should be certain that in addition to following relevant standards and having competence, they also have the appropriate resources to undertake the work on the agreed terms.

5 Inspection, investigation and data

5.1 Inspection and investigation

The required extent of inspection and investigation is set out in Red Book Global Standards VPS 2. It should be agreed with the client at the time of instruction, along with relevant sustainability-related investigations.

Red Book Global Standards VPS 2 paragraph 1.5 states that sustainability and ESG matters:

‘are commonly important in terms of market and societal perception and influence, and valuers should have proper regard to their relevance and significance in relation to individual valuation assignments.’

Red Book Global Standards also includes a requirement for the valuer to consider ‘any sustainability and ESG factors that could affect the valuation’ (VPS 2 paragraph 2.3).

Valuers should be satisfied that they are able to obtain enough evidence to make a professional judgement around ESG and sustainability issues, and provide suitable advice to the client. Any limitations or restrictions on the inspection, inquiry and analysis for the purpose of valuation must be identified and recorded in the terms of engagement (see VPS 1 paragraph 3.2 (i)) and also in the report (VPS 3 paragraph 2.2 (h)).

Valuers should make themselves aware of the likely short- and longer-term use of the property. They should also explicitly consider and reflect upon how physical characteristics of the property and physical risks related to the locality impact resilience, including making themselves familiar with statute and other regulations that could impact value. This may need to include consideration of likely capital expenditure requirements, covered further in section 10.2.

5.2 Investigations: data

To inform their professional judgements, valuers should seek to obtain relevant sustainability data from their clients and, for example, through the use of, tools, third-party data and publicly available sources. This is to make sure valuation judgements about sustainability and ESG are appropriately evidence-based.

Data from property performance systems and metrics relating to the subject property and comparables should inform the valuation where relevant. Examples of such schemes are included at Appendix A. The time period the data reflects is also an important consideration.

Information may have been provided directly from the client or supplied through third-party sources. It is subject to appropriate verification and Red Book Global Standards requirements around 'professional scepticism' (PS 2 paragraph 1.5).

6 Basis of value

The most common instruction for valuations is on the basis of market value or fair value. A client may also instruct a valuation on the basis of investment value (worth) in order to make decisions related to the value of an asset for their specific needs.

Sustainability and ESG factors may be of varying levels of interest to valuation stakeholders subject to their own requirements, those of other relevant market participants, and regulation and statute relevant to the jurisdiction. Market value may not be reflective of an individual client's requirements or sustainability needs; these may instead reflect investment value (worth) – although this should not be assumed to be the case, with sustainability and ESG a key concern across markets.

Terms of engagement and agreed assumptions and special assumptions should be appropriate to the valuation purpose and basis. Where a valuer is providing a valuation on the basis of investment value (worth), factors not yet reflected in market value but that may influence an investor's decision-making may be considered.

7 Reporting

When reporting a valuation, the valuer should demonstrate how they have considered sustainability and ESG in their approach, calculations and commentary.

If sustainability and ESG factors are identified and recognised as having an impact on value, they should be reflected in valuation and reported. Red Book Global Standards VPS 3, section 2.2 (l) states that:

‘wherever appropriate, the relevance and significance of sustainability and ESG matters should form an integral part of the valuation approach and reasoning supporting the reported figure.’

In order to comply with good practice in reporting valuers should, where appropriate, adhere to the following points taken from Red Book Global Standards VPGA 8 section 2.6 (c) (vii):

- ‘assess the extent to which the subject property currently meets the sustainability and ESG criteria typically expected within the context of its market standing and arrive at an informed view on the likelihood of these impacting on value, e.g. how a well-informed purchaser would take account of them in making a decision as to offer price
- provide a description of the *sustainability*-related property characteristics and attributes that have been collected
- provide a statement of their opinion on the relationship between *sustainability* factors and the resultant *valuation*, including a comment on the current benefits/risks that are associated with these sustainability characteristics, or the lack of risks and
- provide an opinion on the potential impact of these benefits and/or risks to relative property values over time.’

Where there is an identified risk of material obsolescence, the valuer should provide appropriate explanations of the component elements of their valuation as well as specific commentary on the obsolescence impact. An example of this could be the case of an impending statutory or regulatory deadline for enhanced minimum energy efficiency standards or carbon emission requirements. In addition to assessing the risk of obsolescence the valuer may also need to understand who the potential costs for remediation fall upon (for example the tenant or an owner). Capital expenditure is covered further at section 10.2.

In respect of more subjective and intangible sustainability and ESG matters, which a valuer is unable to demonstrate with evidence quantitatively, appropriate commentary should still be included to provide a context and rationale for the valuer’s opinion and judgement.

8 Comparables and evidence

The ability to distinguish the relative sustainable performance of comparables may be possible in some cases (such as energy efficiency and carbon emissions) but may be far less apparent in others. There may not be the evidence to empirically support differential values based on the full range of sustainability criteria and characteristics. There can also be extensive geographical and market variances. However, valuers should make efforts from the evidence available to record and reflect upon ESG and sustainability data relating to comparables, such as statutory certification or classification schemes. RICS' [Comparable evidence in real estate valuation](#), 1st edition provides further advice on the recording and verification of evidence.

Due to the period in which they were built, existing stock may not meet current sustainability standards. This might, for example, affect the weighting given to the analysis of comparable evidence. Depending on the instruction and valuation purpose, valuers may take a view, if necessary supported by additional investigations by a specialist, as to the likely ability to bring an asset up to modern standards at a cost that is economic, subject to constraints around competence included in section 10.2 of this professional standard.

Valuers should also consider any special considerations that might apply in the case of a historic properties to which extra regulatory requirements or physical constraints might apply.

Valuers should consider the participants and stakeholders that influence a property's market. Appropriate macroeconomic indicators and other indirect evidence beyond transactions can be used to support a valuer's judgement accordingly.

9 Valuation methods and considerations

Red Book Global Standards VPS 5 paragraph 5 emphasises that:

‘the valuer is ultimately responsible for selection of the approach(es) and method(s) to be used in individual valuation assignments, unless statute or other mandatory authority imposes a particular requirement.’

Accordingly, this professional standard does not set out good practice recommendations on the valuation approach or method, but does look at models commonly adopted and their interaction with sustainability and ESG factors.

Whichever valuation approach is chosen, there are a range of ways in which a valuation can be undertaken, ranging from implicit models where the inputs and assumptions are built into a smaller number of core calculations and explicit models where inputs assumptions and calculations are presented in more detail and stages. In some cases, corporate governance and market regulation around sustainability and ESG is tending towards a preference for more explicit valuation modelling. Expectations around this should be agreed in the terms of engagement.

9.1 Income approach: discounted cash flow (DCF) model

Under the DCF model, the forecasted cash flow is discounted back to the valuation date, resulting in a present value of the asset (see IVS 105, 50.2). Investment value (worth) is commonly calculated using explicit DCF techniques and is normally prepared for investors who are seeking to judge not just current performance but also future. DCF may also be used to calculate, for example, fair value or market value. A DCF will normally require valuers to prepare detailed explicit income and cost assumptions relating to the subject property taking a specific time frame and calculating an exit value.

DCF has the advantage of clearly depicting the cash flow cost and income assumptions over time, and is the preference of some market participants for taking account of ESG and sustainability factors, as these can be modelled in detail and clearly depicted within the valuation. These could even be factors that are not yet clearly evidenced in market transactions, though an empirical basis should be used for making any adjustments, particularly where the basis is market value.

Although DCF analyses future income and cost streams, in the case of a market value basis this will be based on information known or capable of being evidenced at the time of the valuation.

The discount rate used for a DCF is typically based on market evidence (including transaction evidence) and the model does not mitigate the need to consider the matters covered in the comparables and evidence (see section 8).

9.2 Income approach: capitalisation model

The capitalisation model applies a yield to expected net income over a single or limited number of periods and therefore implicitly considers growth and risks. It is most appropriate when the asset is operating at a stabilised level of growth and profits at the valuation date (see IVS 105 50.10). Where the capitalisation model is used, the issue of analysing comparable transactions from which market yields, income and costs are derived is always a matter of valuer judgement. It can be difficult to identify sustainability and ESG elements within the evidence and attribute these to the valuation, although this can be improved through collecting specific sustainability and ESG data relating to the asset and comparables. Costs can be reflected in an income capitalisation model, though usually in a way less reflective of timing than a DCF model.

9.3 Valuation considerations using the income approach

The valuation techniques set out above allow the valuer to consider the factors relevant to sustainability and ESG, implicitly or explicitly.

An explicit valuation technique is beneficial in many cases as the specific reference to relevant valuation factors help understand their importance to the valuation. Valuation models do not need to be used in isolation, for example, the capitalisation model can be used to cross check a DCF and vice versa.

9.3.1 Rental growth

Various sustainability and ESG factors can form a part of rental bids. These may be based on environmental considerations such as energy efficiency but also economic sustainability and wellbeing factors. Changes in consumer and occupier behaviour over time can lead to structural change in markets. It is important for the valuer to be aware of such changes and their impact on both the immediate rental bid and the resilience of income over time.

9.3.2 Obsolescence and depreciation

Many sustainability factors can impact the rate of obsolescence and consequent value depreciation. Valuers should consider whether the subject property is below market and regulatory standards appropriate to its location and class, and the extent to which this is resolvable. Where retrofitting and capital expenditure (further details in section 10.2) can bring the property to a reasonable and appropriate level of sustainability, this can be factored in by referring to an opinion of the net cost of retrofitting. However, in some cases this may not be possible at an economic cost and the property's life could be compromised.

9.3.3 Risk premiums

Properties that do not meet the sustainability characteristics required in their market may suffer from decreasing occupier and investor demand and lending constraints. They may then represent a higher investment risk, and the risk premium attached to the discount rate in a valuation may need adjustment, either throughout the cash flow period or from the point where value erosion is thought likely to take place.

Sensitivity analyses or other explicit risk modelling may be needed to measure the potential impact on value. Where a discount rate based on a risk-adjusted rate is used, it is recommended that an explicit explanation is provided to the client. It is also important that the main sources of risk are identified. Finally, in considering risk it is important not to double-count. Risks to the actual cash flow should be placed within the annual anticipated income/expenditure estimates within the cash flow. Only those risks that do not relate to rent or direct outgoings should be applied to the discount rate.

9.3.4 Exit yield

A DCF calculation is undertaken for a fixed period. The degree to which differentials reflecting sustainability are observable in market transactions is likely to vary and may be difficult to separate from other characteristics – in some cases it may not be observable at all. Valuers are therefore advised to consider the likely impact of sustainability on the residual value at the end of the explicit cash flow period, reflecting on the need for adjustments to either exit yield or, where relevant, site value reversion assumptions.

9.3.5 Duration to sell or let

Valuers will need to consider whether income is likely to suffer interruption at the end of a lease term or in the event that a tenant operates a break clause, if the property is less sustainable than others on the market. While the impact is likely to relate to the prevailing economic and local markets conditions, the security of income is a critical consideration for investors. Therefore, valuers should consider the extent to which sustainability and ESG characteristics are likely to be determining factors in the length of time taken to either let or sell a property and any impact on incentives, discussed in 9.3.6.

9.3.6 Incentives

There may be greater market expectations for rent-free periods and higher risk of void periods where property does not meet market or regulatory sustainability and ESG requirements. There may also be an expectation that property owners make capital contributions to meet sustainability and ESG requirements.

9.4 Market approach: direct comparison

The market approach provides an indication of value by comparing the subject asset with identical or similar assets for which price information is available. Elements of the market approach may also be required to generate the inputs for the income methods above. The

issue of capturing relevant ESG and sustainability factors is challenging where using the market approach as assets are generally heterogenous. It is also difficult to distinguish from transaction evidence what the motivations of the parties are in respect of sustainability and ESG. Where using the market approach, valuers should analyse and set out the extent to which comparable evidence is relevant, including in specific relation to ESG and sustainability. Comparable evidence is further covered in section 8.

10 Sustainability characteristics, considerations and risks

Reflecting sustainability and ESG in commercial property valuation means reviewing and weighting a range of property characteristics, market considerations and risks. The most common of these are set out below; their weight and relevance are subject to the specific asset(s) being valued as well as the valuation purpose and basis.

10.1 Carbon emissions, net zero and energy efficiency

One of the most prominent factors in the minds of most industry stakeholders is decarbonisation and an aspiration towards 'net zero'. Further to this, regulatory, statutory and investment criteria drive requirements around decarbonisation, of which energy efficiency can form a substantial part. Given the prominence of this factor, it is advised that, where available, valuers obtain relevant carbon assessment and energy efficiency information relevant to the asset being valued from their client and, for example, third-party data and publicly available sources.

Carbon efficiency improvements can require substantial capital expenditure (see section 10.2). Improvements undertaken to reduce carbon emissions may result in more economical operational performance, but in some circumstances, this may not be in excess of the required development or refurbishment costs. Valuation that explicitly considers medium- to long-term performance is better placed to factor in carbon emission performance. Regulatory, statutory and investment criteria (where they exist), may be a more substantial lever in respect of value than predicted operational savings.

Energy prices and the regulation of energy efficiency may vary across different jurisdictions and markets. Valuers should be aware that in high-value areas the cost of energy is likely to form a very small proportion of overall occupancy costs. It should be further noted that excess energy generated by sustainability measures such as photovoltaics can, in some locations, generate a measurable income that can be factored into valuation.

Valuation at the individual asset level is likely to focus on the impact of scope 1 emissions, but the valuers should also be aware of scope 2 and scope 3 implications, particularly where providing strategic advice or valuation in respect of a portfolio of assets.

10.2 Capital expenditure

While a building survey or environmental assessment may not always be undertaken as part of a valuation, matters relevant to this may need to be recorded and considered – including

in respect of reasonable judgements around likely capital expenditure requirements to meet market and regulatory needs. These might include, but are not limited to:

- the servicing and replacement of construction materials
- services such as air-conditioning and heating installations
- energy efficiency and carbon emission reduction
- water efficiency
- waste management provision.

The suitability of certain construction materials or services can vary between property type, age, use and location. The ability and cost for a property to be upgraded to particular sustainability and ESG requirements can also vary. Valuers are therefore advised to familiarise themselves with valuation impacting characteristics relevant to the particular market.

Given the embedded crossover with cost development and management disciplines, valuers should reflect on competence in the area of capital expenditure and whether additional advice or expertise is required. Specialist advice may be from, for example, a sustainability assessor, cost consultant, building surveyor or building services engineer. The need for additional specialist advice should be agreed with the client in the terms of engagement.

It is accepted that in certain circumstances, and subject to their experience and competence, valuers may need to make professional judgements around capital expenditure cost estimates. This will depend on the nature of the asset, the purpose and basis of valuation and the details of the specific instruction. Valuers should appropriately support professional judgements through, for example, the use of cost and benchmarking data and indices, where available. Valuers may need to assess the use of technology intended to improve sustainability and consider them within the context of the local market. Technology can make substantial efficiency improvements with resultant benefits but may also become obsolete. As a result, valuers should be aware of the differences in the technology available, as well as financial incentives or grants associated with the technology.

Explicit valuation techniques are often best suited to modelling cost implications relative to value over time. Any limitations on cost assumptions need to be agreed with the client in advance.

Cost should not be assumed to equal value. Planned capital expenditure may also be reflective of individual need. Valuation judgements around potential levels of capital expenditure should be reflective of, for example, market demand and regulatory requirement.

10.3 Environmental, physical and transition risks

RICS' [Environmental risks and global real estate](#), 1st edition, sets out in detail the many environmental risks that may affect property. Climate change and its implications for

heightened physical risks from, for example, flooding, heat, wildfires and severe storms is a key issue for the occupation and ownership of real estate globally. It can impact factors such as investment, lending, management, insurance and development viability. It is not just the physical impact of climate change that presents environmental risk. For example, soil and air pollution, and waste materials all present risks that require management, with consequent implications for values in some circumstances.

Valuers should ensure that, as far as reasonably possible, up-to-date information on environmental and physical risks is gathered in respect of the subject property and considered when comparing it to others used as part of the evidence base.

Governments may legislate to mitigate, where possible, against climate change and other physical and environmental implications, presenting a changing regulatory framework within which valuations take place. The inability of some assets to perform against contemporary and pending sustainability standards and regulation presents additional risks to the property owner and/or occupier. These transition risks may impact usability and interrupt business but also may need to be mitigated against through capital expenditure (see 10.2).

A valuation undertaken on the basis of market value or fair value reflects the evidence available to the valuer and information known at the valuation date, and any commentary around environmental, physical and transition risk will be reflective of this.

10.4 Property quality and market participants

The diverse nature of market participants and jurisdictions for certain levels of property quality means the explicit impact on valuation of near-term sustainability factors may be muted. Nonetheless, valuers should be aware of the continued escalation of regulatory reform leading to tightening minimum standards of compliance, coupled with the broadening range of stakeholders expressing heightening expectations and demands linked to ESG and sustainability. It is the responsibility of valuers to understand the market in which they are engaged and to be able to determine with confidence the extent to which such matters are impacting on the behaviour and actions of market participants.

10.5 Fiscal and legislative considerations

The exact type and focus of fiscal and legislative measures can vary between countries and might focus on particular aspects of sustainability such as net zero carbon. Legislative changes can impact transition risk referenced at 10.3. Valuers should be aware of public information relating to existing measures and potential future measures, the relevance of which is subject to the purpose and basis of value.

Making progress towards sustainable development goals is a high government priority in a number of countries, and in some cases specific goals are linked to fiscal initiatives including tax breaks and incentives in respect of improvements, renovation and retrofit, construction or use. Non-compliant assets may be at risk of penalties and, in some cases, depreciation in value. Taxes levied on emissions or unsustainable aspects of properties may also detract

from value. Credits from validated and (usually) registered schemes such as in relation to carbon emissions could also potentially affect value.

10.6 Certification, rating and other benchmarking

Developers, owners, governments and regulatory authorities may seek to certify the sustainability and ESG credentials of property using a range of rating systems, codes and schemes.

Examples of rating schemes for real assets include [Leadership in Energy and Environmental Design](#) (LEED), [Building Research Establishment's Environmental Assessment Method](#) (BREEAM), [Global Real Estate Sustainability Benchmark](#) (GRESB) and the [National Australian Built Environment Rating System](#) (NABERS). While some of these were originally designed for use with new buildings, they have evolved and are increasingly applied to existing stock.

In some jurisdictions there are government and regulatory codes that may apply, such as the Energy Conservation Building Code for new buildings in India. Such regulations may also apply to existing buildings in some locations. Examples include the European Energy Performance of Buildings Directive and Minimum Energy Efficiency Standards in the UK.

Many schemes and regulatory codes are multi-criteria, which makes comparison between buildings complex. These schemes and codes are often updated regularly, so a past rating may not accurately indicate the current rating at the date of valuation. Voluntary certification schemes may be less transparent or well understood, but, where properly instigated and managed, they can help inform property performance.

The criteria used and details recorded in order to achieve ESG and sustainability accreditation may contain useful information about the sustainability features of an asset and therefore be of assistance to the valuer. However, these should not be the sole determinative of a property's weight as a comparable or any adjustment to the valuation. Credentials and expectations also change over time. Additionally, schemes do not usually provide quantifiable cost reduction metrics.

Some companies and other organisations use accreditation and rating data to make occupational and ownership decisions. Where such occupiers are the most likely bidders for the property, rental and capital value may be impacted. Certain investors and lenders may also have minimum requirements in order to transact – impacting bidding trends.

The absence or presence of certification, ESG reporting or benchmarking detail relating to a property is not an absolute measure of its sustainability. Valuers should understand the measures used, seek to establish the age of any certificate or rating and take this into account when assessing overall characteristics, in order to provide more accurate valuation.

Where the client is explicitly seeking the certification or rating of a property/portfolio as a factor in a valuation or strategic advice, the valuer should reflect on the appropriate valuation basis and the terms of engagement agreed. Valuation undertaken in accordance with particular client needs around certification and rating may either require additional

instructions or special assumptions to reflect this or, in some circumstances, more appropriately reflect investment value (worth) rather than market value – but note their needs may be reflective of the wider market.

In addition to the property certification listed above, valuers should be aware of other international benchmarking and performance measurement schemes that enable companies to consider ESG. These range from high level overarching standards such as the UN Sustainable Development Goals to technical standards such as ISO 14001, which measures a company's progress towards more sustainable management. These standards can be useful in valuation but may not be specifically designed for this purpose, particularly in respect of application at an individual asset level.

Included in Appendix A is a list of accreditation and rating schemes, the relevance or applicability of which will need to be judged by the individual valuer.

10.7 Planning, zoning and development considerations

Most jurisdictions have statutory land use or spatial planning frameworks within which development takes place. Additionally, in 2015 the UN set out an agenda for 2030 including [17 sustainable development goals](#).

The above can be translated into planning and zoning policies and regulations, so the valuation of commercial properties with development potential may be impacted by the need for such redevelopment or refurbishment to be delivered to sustainability standards. Valuers should consider whether such standards have an impact on sustainability and commercial property valuation, and the likely costs of development/refurbishment on the potential rental or capital value realised upon development. It should be noted that RICS produces standalone guidance related to development both in relation to valuation for development purposes and development costing. IVS also specifically defines and provides commentary on residual valuation where this may be appropriate. Valuation or other consultancy for the purpose of development is a specialist area and may require expertise outside the valuer's knowledge such as cost and planning advice.

10.8 Asset management

Similar to the development considerations above, management and leasing is a specialist area of surveying and the guidance below is not intended to comprehensively cover this subject.

Different property owners and occupiers may have a range of perspectives around sustainability and ESG, which valuers may need to consider. Occupiers are likely to focus on their operational needs. Investment property owners are also interested in the capital value of property and may take steps that prioritise the resilience and growth of this – through a variety of strategies. Where a saving is only attractive to a particular operator or owner it may not be reflected in market pricing (but could be a factor in investment value/worth).

When seeking to improve a property's inherent sustainability performance, owners or occupiers may look towards management strategies, improvements to fixtures, fittings and services and ultimately, in some cases, specific ESG and sustainability-orientated retrofit or reconstruction of the property itself. If a property is inappropriately managed it may not perform to its specification standards or its full potential.

10.8.1 ESG in leasing and finance

Within the investment sector, some stakeholders make arrangements that encourage, or even contractually impose, standards of sustainable asset management and ongoing sustainable performance on either or both the landlord and the tenant. These contracts (leases, licenses, management agreements) aim to address the inequities of investment and return inherent in traditional leases, in which the landlord has responsibility for capital investment, but the beneficiary is the tenant. A common version of these agreements are so-called 'green leases'. The concept is to share the tenant's savings with the landlord so that both benefit, and there is an incentive for the landlord to undertake investment to improve the sustainable performance of the asset. Some leases may place the tenant under potentially onerous liabilities in relation to repair, including specification of materials and hand-back clauses. In all cases where contractual arrangements exist relating to sustainability performance, valuers should assess whether they may have an impact (positive or negative) on value.

The use of leases containing specific sustainability criteria is a feature of some markets and jurisdictions. Such leases contain clauses within the lease, or the addition of a memorandum of understanding attached to the lease, that place additional responsibilities and potentially additional costs on the tenant. While these clauses are not necessarily punitive, some are. If they involve the tenant in actual or potential additional costs, they could result in a lesser rental bid. Alternatively, some tenants could regard the acceptance of a 'green lease' as fulfilment of their ESG requirements. As with all matters of lease interpretation, valuers should take care to analyse the inter-relationship of clauses against each other, and between the subject property and those of comparable properties.

In some markets, such as the US with its 'C-pace' system, finance is available to fund retrofitting which then involves a subsequent charge against the property. Other forms of finance and secured lending based on sustainability and ESG criteria are also available.

10.9 Utility

Valuers are capable of assessing the utility of a property, which can be improved by its design and configuration. This utility may have direct economic impacts such as increased capacity in a hotel or office, but may also have more intangible factors such as the wellbeing of occupants. Capturing relevant utility characteristics of the assets being valued and relevant comparables is helpful to the valuation process. There may also be specific metrics relevant to utility that may be of interest to the valuer. Levels of utility can be used as a measure of an asset's overall quality, but it is appreciated that this is subjective and may require the application of professional judgement.

The design and subsequent utility of a property may influence its sustainability and ESG, for example by achieving a longer lifecycle.

Flexibility can have a key impact on the utility of a property. Property design is not something that can normally be altered without large-scale capital expenditure. However, even when occupiers hold only short-term legal interests, they may need to make changes to the way they use space during the period of possession. If a property does not accommodate this, it may be less attractive to occupiers who require flexibility in how they use space. Even when the period of occupation is anticipated to be lengthy, flexibility may be important: rapidly evolving work patterns mean that inflexible properties will require capital expenditure and may exacerbate waste problems as adaptation takes place.

10.10 Accessibility by transport

In order for the valuer to consider the impact of accessibility on a property, records should be taken at the inspection and investigation stage of the available modes of transport capable of facilitating access and their corresponding capacity. For example, the amount of private parking, bicycle storage and proximity to public transport hubs. Dependent on the basis of valuation, these records will then need to be compared to the requirements of the relevant stakeholder or market. Assumptions should not be made about the impact of sustainable transport offerings upon value unless these can be evidenced. A further important aspect of accessibility relates to provision of facilities for the disabled, which should be recorded with reference to the requirements of the relevant jurisdiction or market.

10.11 Social and wellbeing considerations

Sustainability is not purely about environmental issues, as demonstrated by the definition in the glossary. Within the commercial valuation context, for example, considerations such as the 'social' element of ESG and the health and wellbeing of employees (for example, ventilation in offices) can be important in property decision-making. The Red Book Global Standards Glossary definition of sustainability refers to 'health and wellbeing'.

In relation to workplaces as an example of service provision, factors considered in relation to sustainability include fit out and design that assists with productivity, mental and physical wellbeing, and subsequent employee recruitment and retention. This can include access to social space, natural lighting and individual temperature control, and facilities such as showers, creches and refreshment concessions.

Where valuers believe that such considerations will be material, they should be noted and accounted for within the valuation, including an understanding of whether they are provided by the occupier, owner or management company.

10.11.1 Social value

In common with 'sustainability', there is no universally agreed definition of social value. It is defined in the [IVSC perspectives paper: Defining and Estimating 'Social Value'](#) as including

'the social benefits that flow to asset users (social investment) and the wider financial and non-financial impacts including the wellbeing of individuals and communities, social capital and the environment, that flow to non asset users'.

The financial implications of social value should be implicit to the valuation. The need to reflect non-financial impacts and all impacts to other stakeholders (including public impacts) will depend on the nature of the instruction, valuation purpose and basis. In some jurisdictions and for some purposes such as development there may be specific requirements to take account of financial and non-financial elements of social value.

10.11.2 Governance

The final component of ESG relates to governance, an important part of which is the capability of demonstrating the application of recognised standards to meet statutory and regulatory requirements. The interface between corporate ESG requirements and impact on individual asset valuations is considered throughout this professional standard. It is important that corporate and regulatory requirements are properly considered in valuation instructions, including the specific requirements of the client.

RICS valuers must meet the mandatory standards set out in the Red Book Global Standards, and the Rules of Conduct. The use of regulated valuation professionals is a mandatory governance requirement for some locations and valuation purposes.

Appendix A International sustainability/ESG rating, benchmarking and measurement schemes

This list is not exhaustive and contains details of schemes correct at the date of publication. It is a list of international schemes and does not refer to details of country specific items.

Inclusion in this list is not an RICS endorsement. RICS does not accept any responsibility, duty or liability to any party in respect of the contents of this appendix. Any such responsibility, duty or liability is expressly disclaimed.

Standard	Summary
Building Research Establishment Environmental Assessment Method (BREEAM)	A third-party certification system assessing an asset's environmental, social and economic sustainability performance, using a set of standards developed by the Building Research Establishment (BRE).
Carbon Risk Real Estate Monitor (CRREM)	A publicly available tool that assists with assessing decarbonisation strategies for real estate assets. The tool 'offers the possibility to evaluate the progress of a portfolio's carbon reduction performance against reduction targets'. Source: CRREM Risk Assessment Reference Guide
Dow Jones Sustainability Indices (DJSI)	A 'family' of indices evaluating the sustainability performance of thousands of publicly traded companies globally.
Global Real Estate Sustainability Benchmark (GRESB)	An ESG benchmarking system for real assets. Collected data is also used to create and present ESG analytics.

Standard	Summary
EU Taxonomy	A range of regulations, standards and initiatives applicable in the European Union, including the Sustainable Finance Disclosure Regulation (SFDR) and Corporate Sustainability Reporting Directive (CSRD).
FTSE4Good	A series of indices measuring the performance of companies demonstrating strong environmental, social and governance in a number of territories globally.
Leadership in Energy and Environmental Design (LEED)	A building certification and rating system stated to provide 'independent verification of a building or neighbourhood's green features, allowing for the design, construction, operations and maintenance of resource-efficient, high-performing, healthy, cost-effective buildings'.
MSCI ESG Rating	A rating system designed to measure a company's resilience to long-term, industry material environmental, social and governance (ESG) risks. It is based on company responses and external data. Note this is not specifically in respect of real estate assets.
Standard and Poor (S&P) Global – ESG Scores	A scoring system designed to analyse performance against ESG criteria. It is based on company responses and external data. Note this is not specifically in respect of real estate assets.

Standard	Summary
Taskforce for climate related financial disclosures (TCFD)	<p>A series of eleven disclosure recommendations to support companies in providing better information around climate-related issues when making financial disclosures.</p> <p>The disclosure recommendations are structured around four interlinking areas: governance, strategy, risk management, and metrics and targets as follows:</p> <p>Governance</p> <p>Disclose the company's governance around climate-related risks and opportunities.</p> <ul style="list-style-type: none"> a) Describe the board's oversight of climate related risks and opportunities. b) Describe management's role in assessing and managing climate related risks and opportunities. <p>Strategy</p> <p>Disclose the actual and potential impacts of climate-related risks and opportunities on the company's businesses, strategy, and financial planning where such information is material</p> <ul style="list-style-type: none"> a) Describe the climate related risks and opportunities the company has identified over the short, medium, and long term b) Describe the impact of climate-related risks and opportunities on the company's businesses, strategy, and financial planning c) Describe the resilience of the company's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.

Standard	Summary
	<p data-bbox="627 297 884 331">Risk Management</p> <p data-bbox="627 362 1334 439">Disclose how the company identifies, assesses, and manages climate-related risks.</p> <ul style="list-style-type: none"> <li data-bbox="651 468 1426 544">a) Describe the company's processes for identifying and assessing climate related risks. <li data-bbox="651 548 1358 624">b) Describe the company's processes for managing climate related risks. <li data-bbox="651 629 1378 741">c) Describe how processes for identifying, assessing, and managing climate related risks are integrated into the company's overall risk management. <p data-bbox="627 750 906 784">Metrics and Targets</p> <p data-bbox="627 815 1402 934">Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.</p> <ul style="list-style-type: none"> <li data-bbox="651 965 1426 1077">a) Disclose the metrics used by the company to assess climate-related risks and opportunities in line with its strategy and risk management process. <li data-bbox="651 1081 1414 1193">b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risk <li data-bbox="651 1198 1390 1310">c) Describe the targets used by the company to manage climate-related risks and opportunities and performance against targets. <p data-bbox="627 1328 1362 1404">Source: Take from Table ES2 in Task Force on Climate-related Financial Disclosures – 2021 Status Report</p>

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Americas, Europe, Middle East & Africa
aemea@rics.org

Asia Pacific
apac@rics.org

United Kingdom & Ireland
contactrics@rics.org



[rics.org](https://www.rics.org)