

## JRC TECHNICAL REPORTS

# Level(s) indicator 6.2: Value creation and risk exposure

*User manual: introductory  
briefing, instructions and  
guidance  
(Publication version 1.1)*

Nicholas Dodd, Shane Donatello (JRC,  
Unit B.5)

January 2021



European Commission  
Joint Research Centre  
Directorate B, Growth and Innovation  
Unit 5, Circular Economy and Industrial Leadership

*Contact information*

Shane Donatello  
Address: Edificio Expo. c/ Inca Garcilaso, 3. E-41092 Seville (Spain)  
E-mail: [jrc-b5-levels@ec.europa.eu](mailto:jrc-b5-levels@ec.europa.eu)  
<https://ec.europa.eu/jrc>  
<https://susproc.jrc.ec.europa.eu/product-bureau/product-groups/412/home>

**Legal Notice**

This publication is a Technical Report by the Joint Research Centre, the European Commission's in-house science service. It aims to provide evidence-based scientific support to the European policy-making process. The scientific output expressed does not imply a policy position of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use which might be made of this publication.

How to cite: Dodd N. & Donatello S., 2021. Level(s) indicator 6.2: Value creation and risk exposure user manual: introductory briefing, instructions and guidance (Publication version 1.1)

**Title**

Level(s) indicator 6.2: Value creation and risk exposure user manual: introductory briefing, instructions and guidance (Publication version 1.1)

**Abstract**

Developed as a common EU framework of core indicators for assessing the sustainability of office and residential buildings, Level(s) can be applied from the very earliest stages of conceptual design through to the projected end of life of the building. As well as environmental performance, which is the main focus, it also enables other important related performance aspects to be assessed using indicators and tools for health and comfort, life cycle cost and potential future risks to performance.

Level(s) aims to provide a common language of sustainability for buildings. This common language should enable actions to be taken at building level that can make a clear contribution to broader European environmental policy objectives. It is structured as follows:

1. **Macro-objectives:** An overarching set of 6 macro-objectives for the Level(s) framework that contribute to EU and Member State policy objectives in areas such as energy, material use, waste management, water and indoor air quality.
2. **Core Indicators:** A set of 16 common indicators, together with a simplified Life Cycle Assessment (LCA) methodology, that can be used to measure the performance of buildings and their contribution to each macro-objective.

In addition, the Level(s) framework aims to promote life cycle thinking. It guides users from an initial focus on individual aspects of building performance towards a more holistic perspective, with the aim of wider European use of Life Cycle Assessment (LCA) and Life Cycle Cost Assessment (LCCA) methods.

# Contents

|  |   |
|--|---|
| The Level(s) document structure .....                    | 4 |
| How this indicator user manual works.....                | 5 |
| Introductory briefing .....                              | 6 |
| Instructions on how to use the indicator at Level 1..... | 9 |
| Level 1 instructions .....                               | 9 |

## The Level(s) document structure



Figure 1. The Level(s) document structure

## How this indicator user manual works

Level(s) is a framework of core indicators of sustainability that can be applied to building projects in order to report on and improve their performance. The supporting documentation has been designed to be accessible to all the actors that may be involved in this process.

If you are new to the assessment of building sustainability, we recommend reading the **first part of the Level(s) user manual**. This will provide you with an introduction to the basic concepts behind Level(s) and how you can apply it to a building project.

If you haven't yet set up your building project to use Level(s), including completing the project plan and the building description, then we recommend reading the **second part of the Level(s) user manual**.

**This indicator user manual forms part of the third part of the Level(s) user manual** where you will find instructions on how to use the indicators themselves. It is designed to help you apply your chosen indicator to a building project. It will help you to do this in the following way:

- **Introductory briefing:** This section provides an overview of the indicator, including:
  - ✓ why you may wish to measure performance with it,
  - ✓ what it measures,
  - ✓ at which stages in a project it can be used,
  - ✓ the unit of measurement, and
  - ✓ the relevant calculation method and reference standards.
- **Instructions on how to use the indicators at each level:** This section provides:
  - ✓ step by step instructions for each level,
  - ✓ what is needed to make an assessment,
  - ✓ a design concept checklist (at Level 1), and
  - ✓ the reporting formats.

The instructions often refer to the guidance and further information section, which can be found after the instructions.

- **Guidance and further information for using the indicator:** This section provides more background information and guidance to support you in following specific steps in the instructions, including the design concepts introduced at Level 1 and the practical steps to calculate or measure performance at Levels 2 and 3. They are all cross-referenced to specific instruction steps at either level 1, 2 or 3.

This indicator user manual is structured so that once you are familiar with using the indicator and you know how to work with it, you may no longer need to refer to the guidance and background information, but only work directly with the instructions at the level of your choice.

## Introductory briefing

**Note for users:** This indicator user manual only currently provides instructions and guidance for using the indicator at **Level 1**. For those who wish to work at **Level 2 and 3** it provides some initial information about possible units of measurement, calculation methods and reference standards that could be used.

### Why measure performance with this indicator?

The aim of this indicator is to encourage the integration of sustainability aspects into market value appraisal and risk rating processes and to ensure that this is done in as informed and transparent a way as possible. This in turn should improve confidence in the assertions that can be made about present and future performance, as well as focussing attention on the need for more and better data on how costs, revenues and values are influenced in practice by sustainability features<sup>1</sup>.

The integration of sustainability valuation and risk considerations will, moreover, encourage the client and their professional team to learn about the sustainability characteristics of a property. Feedback from practitioners suggests that, in the process, those involved tend to learn things about the property that they may not have focused on otherwise. As a result, the additional value and quality that sustainability aspects can contribute to building designs and specifications become better understood.

The valuation and risk rating standards of the Royal Institute of Chartered Surveyors (RICS), the European Group of Valuer's Associations (TEGoVA) and the International Valuation Standards Council (IVSC) already integrate sustainability as an aspect to take into account. They generally highlight the possibility to make "*special assumptions*" about the future impact of sustainability on property value, as well as calling upon "*relevant expertise, certifications and reports*" to supplement their professional skills.

In terms of specific guidance, the RICS in its "*Red Book*" Valuation Practice Statement (VPS) number 2 advises valuers to:

*"collect and record appropriate and sufficient sustainability data, as and when it becomes available, for future comparability, even if it does not currently impact on value"*

This starts to emphasise the link that can potentially be made between the potential areas of influence on value highlighted by this indicator and the results and data obtained from the use of Level(s) indicators in order to substantiate performance claims. Moreover, the importance of the "*inputs and assumptions*" made in reaching a judgement are also highlighted, with the 2017 edition of the International Valuation Standard stating that:

*"The process of valuation requires the valuer to make impartial judgements as to the reliability of inputs and assumptions. For a valuation to be credible, it is important that those judgements are made in a way that promotes transparency and minimises the influence of any subjective factors on the process."*

The combination of indicator 6.2 and the other Level(s) indicators selected by users can therefore transparently provide the background inputs and assumptions.

### What does it measure?

The indicator is designed to measure and track the positive influence of improved sustainability performance on a property financial valuation and/or a financial risk rating. It seeks to do this by, at a simple level, checking the extent to which the valuation or risk rating methodology used has taken into account three main potential areas of influence:

- **Increased revenues from more stable investments:** This can be achieved by making properties more attractive within local markets, by keeping void rates low and by enabling properties to be adapted to future market conditions.

---

<sup>1</sup> Lutzkendorf.T and D.Lorenz, 2007. *Integrating sustainability into property risk assessments for market transformation*, Building research & information 35(6), p. 644-661.

- **Reduced operational overheads:** This can be achieved by minimising operational expenditure (OpEx) relating to energy and water utilities, as well as projected maintenance, repair and replacement costs.
- **Reduced exposure to future risk:** This can be achieved by anticipating potential future exposure to the effects of climate change, which could as a result of extreme weather events pushing elements of a building and its internal conditions to the limits of tolerances, potentially leading to:
  - increased operational expenditure,
  - unhealthy conditions,
  - stranded assets as a result of emerging client and regulatory performance expectations, and
  - an associated loss of income and increased insurance premiums.

Users can then go a step further and report on the potential difference that these influences make on the financial valuation. This is measured by the difference between the valuation for a baseline or benchmark building design and the valuation for a building design with an improved sustainability performance.

#### At what stage of a project?

Although this guidance currently only provides instructions for Level 1, there is the potential to carry forward a similar qualitative reporting of the influence of value through to Levels 2 and 3. The table below identifies the corresponding activities in which this potential influence can be considered and addressed.

| Level  | Activities related to the use of indicator 6.2   |
|--|--|
| 1. Conceptual design (following design principles) | <ul style="list-style-type: none"> <li>✓ Early stage identification of potential design influences on the appraisal of value and risk</li> </ul>   |
| 2. Detailed design and construction                | <p><i>Detailed design decisions</i></p> <ul style="list-style-type: none"> <li>✓ Support to the detailed appraisal and value engineering of design decisions</li> <li>✓ The development of more informed scenarios for the performance of the property in the market</li> </ul> <p><i>Financial approvals and due diligence</i></p> <ul style="list-style-type: none"> <li>✓ Support to demonstrate how performance aspects have been taken into account in the value engineering of the project</li> <li>✓ Support to demonstrate the tangible steps taken to address possible future risks to performance and value</li> </ul> <p><i>Cost control on site</i></p> <ul style="list-style-type: none"> <li>✓ Support to more clearly distinguish sustainability specifications that are important from a value and risk perspective</li> </ul> |
| 3. As-built and in-use performance                 | <ul style="list-style-type: none"> <li>✓ Greater ongoing awareness of design features that are intended to protect the future value and minimise risks</li> <li>✓ Management and monitoring of ongoing maintenance and replacement cycles, including the link to operational expenditure</li> <li>✓ Management of costs and overheads that may be influenced by the improved management of risks.</li> </ul>   |

#### Units of measurement

The focus of this version of the indicator is on addressing the three main areas of potential influence on value and risk appraisal. Reporting on whether a potential influence has been taken into account in an appraisal is a binary yes or no, but supporting information should be presented. This system has the potential to be carried forward to both Levels 2 and 3.

The potential exists to quantify and report on the financial difference between:

- a benchmark (business as usual) market valuation of a property, and
- a valuation of the property that incorporates and takes into account the influence on market value of sustainability features

A potential method to do this is briefly outlined under “*calculation methods and reference standards*” but, recognising that different valuation methods are used across the EU, the choice of method is currently left open to users. It is important therefore that the assumptions made and the methods used to obtain and report on quantified differences in market valuations are fully described.

#### **System boundary**

The indicator relates to all stages in the building life cycle, as per EN 15978, although the main focus is on the influence on costs and risks incurred during the use stage (B).

#### **Scope**

This indicator should consider the potential financial influence of design decisions relating to all the Level(s) indicators assessed in the project.

#### **Calculation method and reference standards**

The checklist of potential influences has been designed for Level(s) and has been partly adapted from the Japanese CASBEE property appraisal tool<sup>2</sup>.

In the current absence of a European standardised method, the CASBEE property appraisal method<sup>3</sup> is recommended as a transitional method for calculating and reporting on the difference in the market valuation obtained between:

- a benchmark (business as usual) building design or comparator(s) from the market, and
- an improved design that incorporates sustainability features that give an improved performance measured using Level(s) indicators.

---

<sup>2</sup> CASBEE, Property Appraisal (2009 edition), published by the Japan Sustainable Building Consortium (JSBC) and Institute for Building Environment and Energy Conservation (IBEC)

<sup>3</sup> The manual and excel calculator tool can be downloaded from this website:  
<http://www.ibec.or.jp/CASBEE/english/downloadE.htm>

## Instructions on how to use the indicator at Level 1

### Level 1 instructions

#### L1.1. The purpose of level 1

The focus of Level 1, at the concept design stage, is to support both clients and design professionals in understanding how sustainability aspects addressed by Level(s) can have an influence on property financial value and risk appraisals. It can also form a starting point for dialogue between the design team, the client and their property market specialists. The overall aim is to help ensure that improved sustainability performance, which can be reported on and verified using Level(s), is amongst the factors taken into account in making a property market valuation.

#### L1.2. Step-by step instructions

1. Consult the checklist of potential influences on value and risk appraisals to be found in section L1.4.
2. The design team in conjunction with the client and, if already appointed, their property market specialists, should review and identify:
  - which potential sustainability influences are likely to be taken into account,
  - how they will be taken into account in the property valuation method to be used, and,
  - what additional information or data will be needed in order to take them into account as far as possible.
3. Once the design concept is finalised with the client, record the potential financial value and risk influences that were taken into account using the L1 reporting format.

#### L1.3. Who should be involved and when?

At the concept stage, the main actors could include the concept design team, the building owner or investor, representatives for the occupier and, if already appointed, property market specialists.

#### L1.4. Checklist of relevant design concepts

In order to capture the potential financial value of a more sustainable building, it is necessary to be aware of how improved performance against each of the indicators within Level(s) can have a potential influence on a valuation. Each of the three main potential areas can be influenced by several of the indicators within Level(s):

| Level 1 design concept                          | Brief description  |
|---|--|
| Increased revenues from more stable investments | Here the influence of the property being recognised as a high-quality, sustainable building with a healthy internal environment on the potential for a property investment to maintain a high occupancy and therefore associated rental revenue over time, is a primarily considered. The ability of the building to adapt to changing needs and even mixes of uses in the future is also a potential consideration.<br><i>Indicators with a strong potential influence: 1.1, 2.3, 4.1, 4.2, 4.3, 4.4, 5.1</i>   |
| Reduced operational overheads                   | <i>Here the potential for a property investment to be designed and specified in a way that operational overheads and expenditure are minimised over the long-term. This can include the cost of utility supplies, such as energy and water, but it can also encompass the cost of maintaining, repairing and replacing elements of the building as they are worn out.</i><br><i>Indicators with a strong potential influence: 1.1 and 3.1 for utilities and for repair and durability/maintenance/replacement of materials, 2.1 (with links to 1.2 and 6.1).</i> |
| Reduced exposure to future risk                 | Here the potential for a property investment to be conceived and designed in order to minimise exposure to future risks of stranded assets, as well as unplanned costs and claims, are considered. This can include consideration of:  |

| Level 1 design concept | Brief description  |
|------------------------|--|
|                        | <ul style="list-style-type: none"> <li>- the tolerance of the building to projected future climate change and how this may affect both the need for repair or replacement of building elements that exceed their tolerance to, for example, wind, rain and temperature variations.</li> <li>- how changes in climatic conditions may influence the internal comfort conditions and health of the building occupiers.</li> </ul> <p><i>Indicators with a strong potential influence:</i> For repair and durability/maintenance/replacement of materials, 2.1 (with links to 1.2 and 6.1); for indoor comfort, 4.2 and 5.1 and for resilience of building design to extreme weather events, 5.2 and 5.3.</p> |

### L1.5. Reporting format

To complete the reporting format for Level 1, you should answer yes or no for each of the potential influences that have, in discussion with the client, been decided that they will be taken into account in the financial valuation. Where an influence is to be taken into account, a supporting description shall be provided of how and to what extent the influence will be taken into account. The property market valuation method used should also be declared.

| Level(s) indicators  | Has the potential influence been taken into account in discussion with the client and their property market valuers? |                                  |                                    |
|--|--|----------------------------------|------------------------------------|
|  | 1. Increased revenues from more stable investments   | 2. Reduced operational overheads | 3. Reduced exposure to future risk |
| 1.1. Use stage energy consumption  |  |                                  |                                    |
| 1.2. Life cycle Global Warming Potential ( <i>and potentially on other environmental impacts</i> ) |  |                                  |                                    |
| 2.1. Bill of quantities, materials and life spans  |  |                                  |                                    |
| 2.2. Construction & demolition waste and materials   |  |                                  |                                    |
| 2.3. Design for adaptability and refurbishment   |  |                                  |                                    |
| 2.4. Design for deconstruction, reuse and recyclability  |  |                                  |                                    |
| 3.1. Use stage water consumption   |  |                                  |                                    |
| 4.1. Indoor air quality  |  |                                  |                                    |
| 4.2. Time out of thermal comfort range   |  |                                  |                                    |
| 4.3. Lighting and visual comfort   |  |                                  |                                    |
| 4.4. Acoustics and protection against noise  |  |                                  |                                    |
| 5.1. Protection of occupier health and thermal comfort   |  |                                  |                                    |
| 5.2. Increased risk of extreme weather events  |  |                                  |                                    |
| 5.3. Sustainable drainage  |  |                                  |                                    |
| 6.1. Life cycle costs  |  |                                  |                                    |