

THE VALUE OF ARCHITECTURE IN THE CONTEXT OF THE EU TAXONOMY

ABSTRACT

In order to capitalise on the opportunities the EU Taxonomy offers for built environment professionals, this slide deck explains the EU Taxonomy and shows how it creates opportunities for sustainable architectural design, mapping design elements against existing Taxonomy criteria.

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- **European regulatory context**
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THE EU GREEN DEAL AIMS TO TRANSFORM EUROPE'S ECONOMY INTO A MODERN, RESOURCE-EFFICIENT AND COMPETITIVE ONE.

The [European Green Deal](#) is the Commission's response to tackle environmental challenges. It aims to transform Europe's economy into a modern, resource-efficient and competitive one.

Building and real estate are crucial for the successful transition to a low-carbon economy, as they represent 40% of global energy consumption and are responsible for about the same amount of greenhouse gas emissions. In order to stay on a global warming path well below 2°C, buildings-related emissions need to decrease significantly.

EUROPEAN SUSTAINABLE FINANCE STRATEGY

For the transformation to a Paris-conformant European economy, approximately € 175bn – 290bn annual investments are required until 2050, according to EU Commissioner Miguel Arias Cañete (2018). It is private investors who are going to have to cover the lion's share of these investments.

Accordingly, the [European Sustainable Finance Strategy](#), derived from the EU Sustainable Finance Action Plan, sets objectives to:

- massively increase sustainable investments
- define the qualities of sustainable investments

Enabling companies to have access to green financing options by standardising reporting requirements to reflect sustainability risks and integrate them in the risk management of banks.

It is hoped that the taxonomy will play a key role in ensuring that both public and private investments delivering the **economic recovery** from the COVID19-pandemic, will ensure resilience and sustainability.

TAXONOMY RELEVANCE



Recent years have seen a significant rise in investments that carry the adjectives “**green**”, “**sustainable**”, or “**ESG**” (products considering **e**nvironmental, **s**ocial and **g**overnance aspects) in the name.

However, until very recently, there were no principles and metrics for the assessment of the sustainability of economic activities. The Taxonomy Regulation aims to classify business activities for their sustainability.

Both financial market participants and larger businesses will have to be conformant with the taxonomy requirements from 2022 onwards, in order to classify their activities as sustainable.

EU TAXONOMY: THE ENVIRONMENTAL OBJECTIVES

The [Taxonomy Regulation](#) will set technical requirements for six set environmental objectives*:

1. CLIMATE CHANGE MITIGATION
2. CLIMATE CHANGE ADAPTATION
3. WATER
4. CIRCULAR ECONOMY
5. POLLUTION
6. BIODIVERSITY

* As of October, 2021 the technical requirements for [Climate Change Mitigation](#) and [Climate Change Adaptation](#) have been defined. The technical requirements for the other four environmental objectives are partly available as a draft.

EU TAXONOMY: ENSURING TAXONOMY COMPLIANCE

Note: For Taxonomy compliance one must choose to contribute significantly to one environmental objective, while also complying with all the defined “Do No Significant Harm” criteria for the other environmental objectives and the minimum safeguard requirements.

Significantly contribute to one environmental objective



“Do No Significant Harm” (DSNH) Criteria for all five other environmental objectives



Minimum Requirements ensuring social safeguards

TAXONOMY RELEVANCE



As of October, 2021, the taxonomy has defined the technical requirements for [Climate Change Mitigation](#) and [Climate Change Adaptation](#). For buildings, these requirements encompass the following business activities:

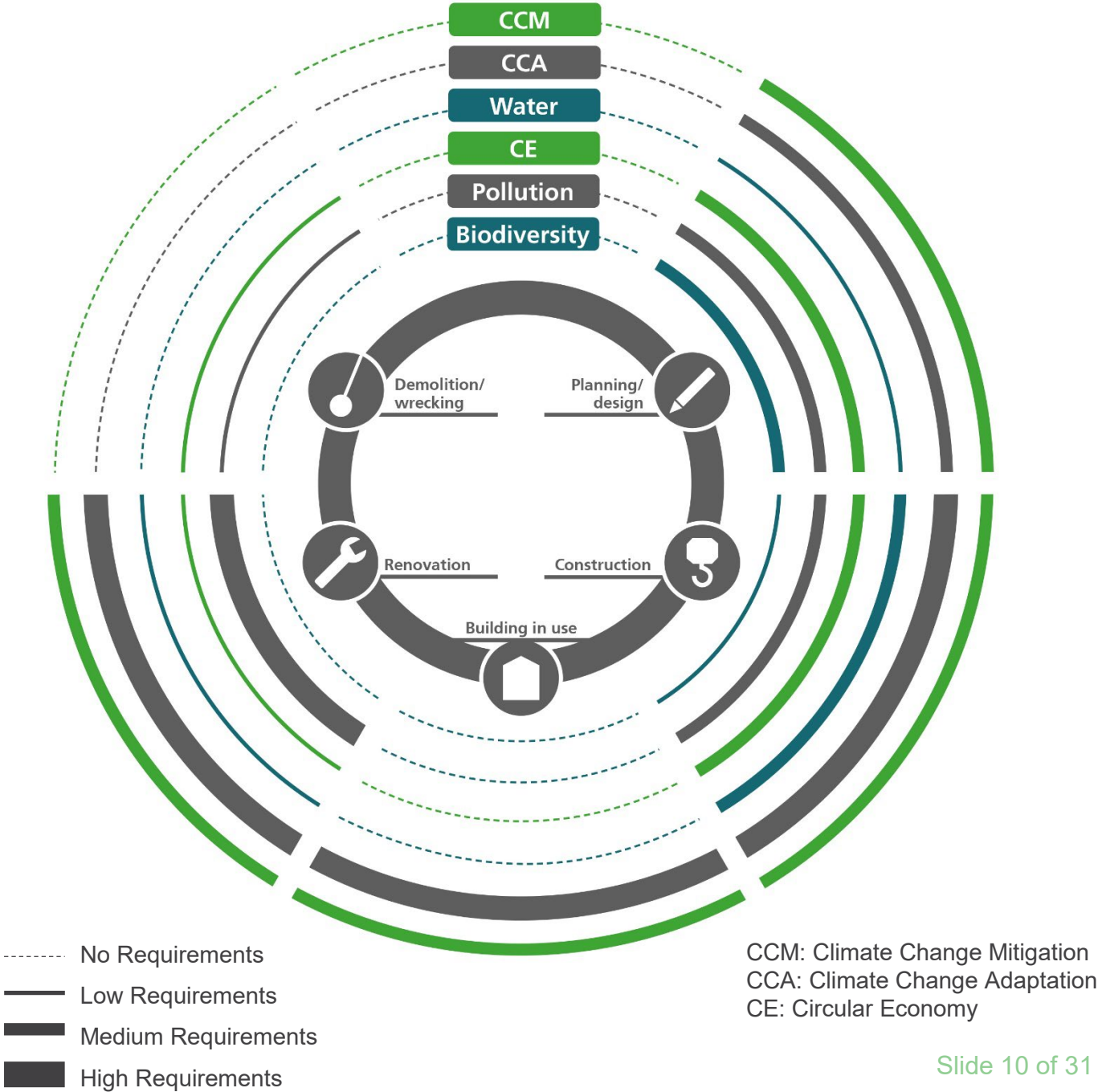
**New
Construction**

**Acquisition &
Ownership**

Renovation

**Individual
Measures**

The following graph illustrates how the Taxonomy requirements of significantly contributing to climate change mitigation influences different stages of the building lifecycle.



WHY IS THE TAXONOMY RELEVANT FOR ARCHITECTS?

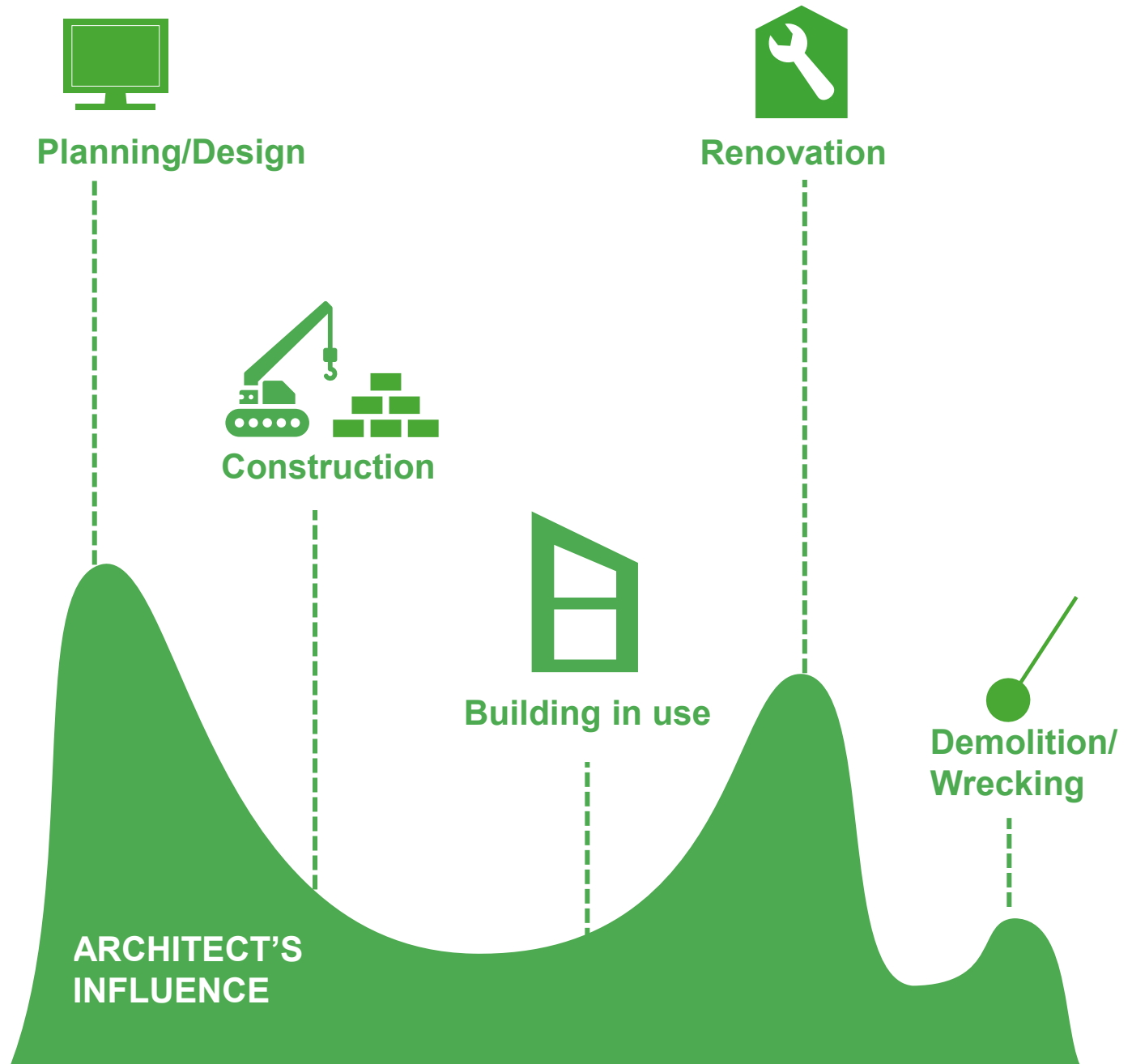
Project developers and building owners will be driven by the investment gap and the EU's Sustainable Finance Regulations to ensure that **projects are resilient** and have **minimised risks** for accessing green financing. Accordingly, the demand for Taxonomy eligible assets is expected to increase.

Consequently, **designing Taxonomy conformant buildings** will create **more value** for those clients, who must comply to the regulation.

As an architect, you can **significantly influence** the early stages of the building lifecycle. To ensure information on design features is not lost between designing and commissioning of the building, you could ensure that knowledge is transferred so that the buildings' circularity and sustainability potential is utilised.

INFLUENCING TAXONOMY COMPLIANCE THROUGH THE BUILDING LIFECYCLE

The following slides will depict the existing Taxonomy requirements applicable during the building's lifecycle and show how architects can ensure and influence compliance through the design.



TAXONOMY REQUIREMENTS PLANNING



- **Mitigate climate change***
Keep the primary energy demand 10% below NZEB# standard.
- **Support circularity***
Design buildings that are resource-efficient, adaptable, flexible, and dismantlable.
- **Ensure sustainable use of water***
Use water-saving appliances.
- **Protect and restore biodiversity and ecosystems****
Implement mitigation and compensation measures for protecting the environment identified in an EIA#.
- **Adapt to Climate Change***
Depending on the project site, ensure to design resilient buildings according to the identified climate risks.

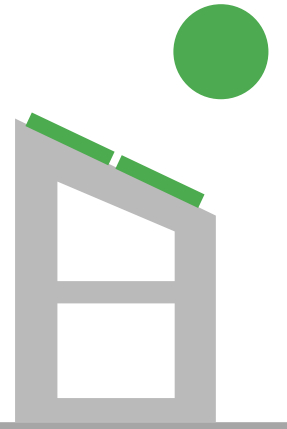


AS AN ARCHITECT YOU CAN...

...implement **innovative energy concepts***

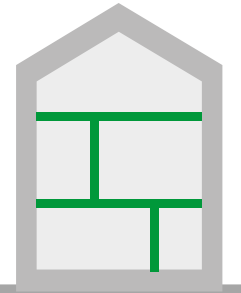
and **increase energy efficiency***, e.g. by

- optimising solar exposure with solar panels
- choosing a more compact design to minimise transmission
- connecting energy concepts on district level



...increase **flexibility and adaptability*** of the building,
which can be converted for different uses, e.g. by

- modular designing spaces
- minimising load-bearing and interior walls
- considering building depth and ceiling heights
- designing more communal spaces



- up-cycle materials
 - recycling architecture on roofs and facades
 - use bio-based materials
 - avoid excess use of materials
- ..for more **resource-efficiency***



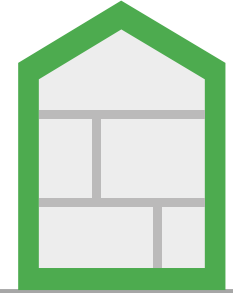
* Relevant for both, renovation and new construction



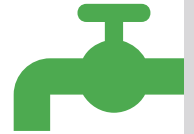
AS AN ARCHITECT YOU CAN...

...choose materials and their quality for **increased dismantlability***. Favour

- assembling or other fixings
- high-quality finishing
- use of mono-materials



...favour **water-saving appliances*** and use **innovative water concepts.**



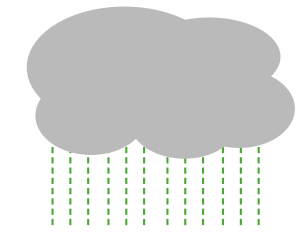
...**create ecological value**** by improving the micro-climate.

- create diverse habitats and green spaces
- design the landscape by favouring indigenous flora and fauna



...design for **resilience***, by adapting to today's and future local climate conditions:

- improve thermal comfort in outdoor spaces thereby improving micro-climate
- create multi-functional land use concepts, which encourage sustainable rain water management

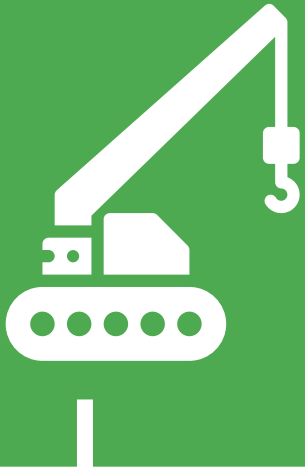


* Relevant for both, renovation and new construction

**Only relevant for new construction

TAXONOMY REQUIREMENTS

PROJECT SITE



Adapt to Climate Change*

Conduct a climate risk analysis of the site and vulnerability analysis of the building design

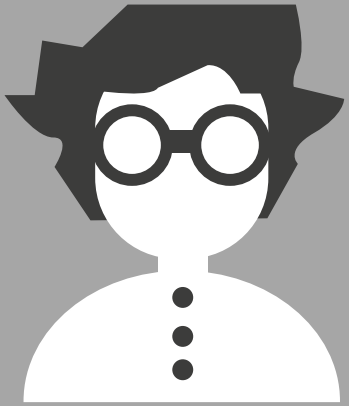
Control pollution*

Examine the construction site for contaminants

Protect and restore biodiversity and ecosystems**

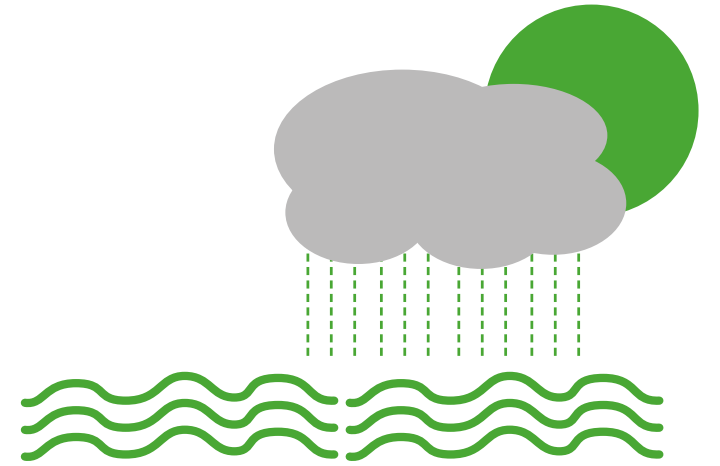
Select project site which is not arable/crop land, forest or a greenfield land with high biodiversity value.

Conduct an EIA or fulfill requirements of a conducted EIA and implement mitigation measures.



AS AN ARCHITECT YOU CAN...

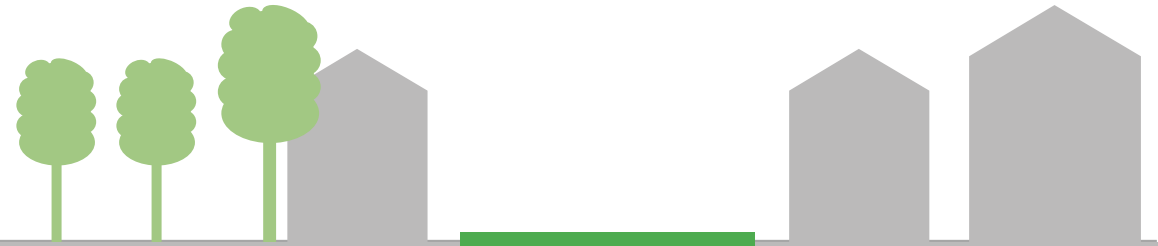
...screen the site for future climate scenarios* and consequently use **autochthonous design**.



...commission a soil pollution analysis.**



by preferring **conversion of existing brownfield sites and underused areas** and striving for **higher density**, you can protect existing ecosystems and ensure land use efficiency**



* Relevant for both, renovation and new construction

**Only relevant for new construction

TAXONOMY REQUIREMENTS BUILDING MATERIALS



Mitigate climate change**

Analyse the life cycle global warming potential of the building

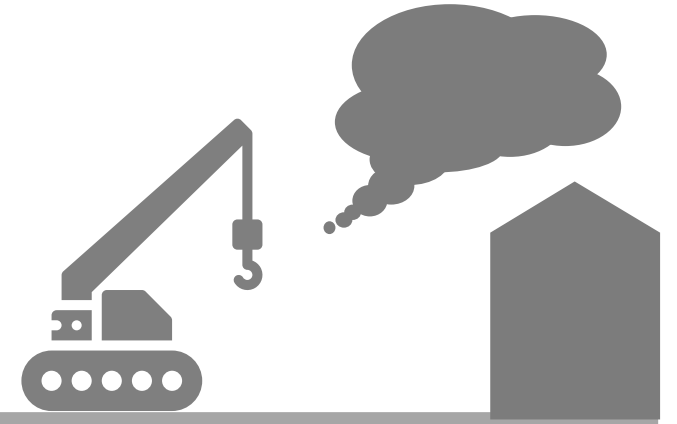
Prevent Pollution*

The Taxonomy strictly regulates what type of materials can be used: limit formaldehyde and carcinogenic volatile organic compounds emissions



AS AN ARCHITECT YOU CAN...

...optimise the **life cycle global warming potential of the building**** by using bio-based, upcycled, recycled and secondary raw materials.



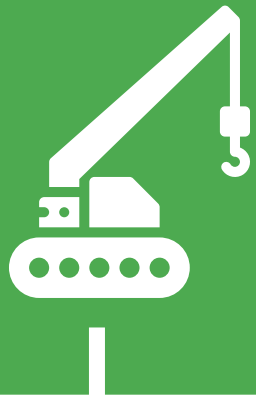
...Avoid using hazardous building materials and choose **materials with the lowest possible environmental impact***.



TAXONOMY REQUIREMENTS

CONSTRUCTION

SITE



Protect water and marine resources**

Identify risks from the construction site for maintaining water quality.

Support circularity*

Re-use and recycle at least 70% of the non-hazardous construction and demolition waste.

Control pollution*

Reduce noise, dust and pollutant emissions.

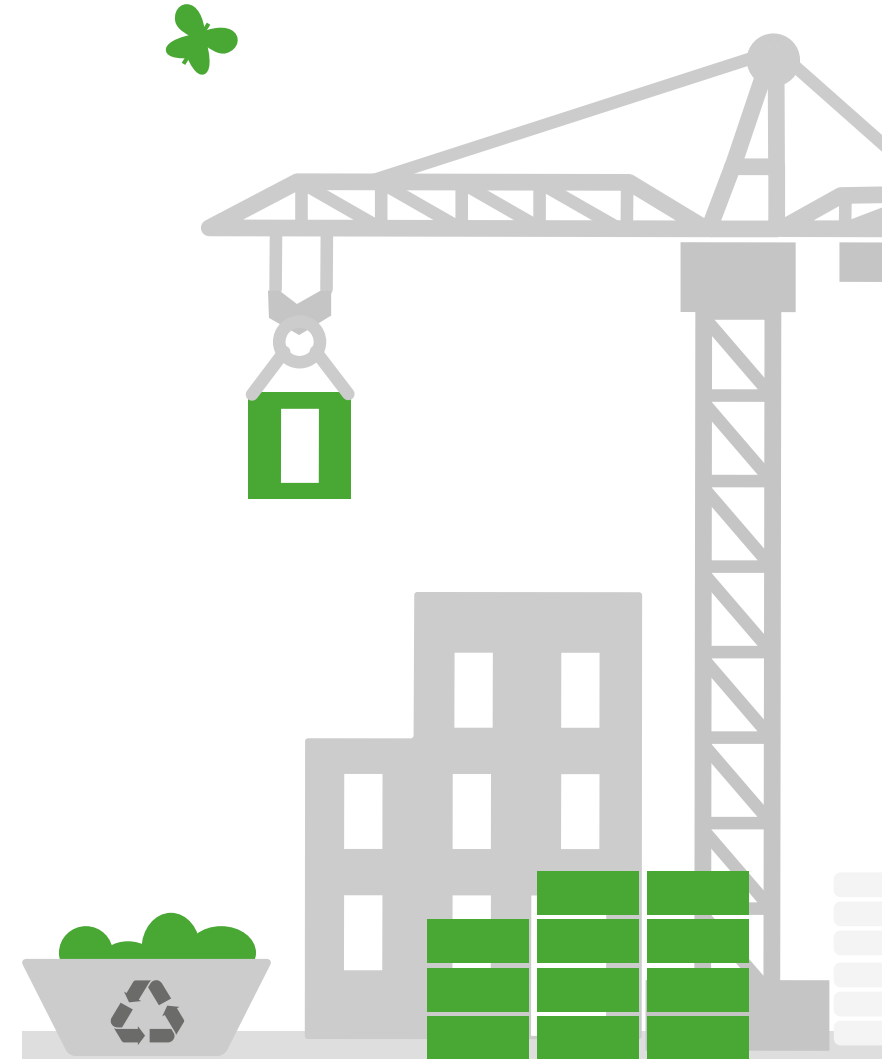


AS AN ARCHITECT YOU CAN...

...choose materials which ensure that water and marine resources are protected.

- Design for enabling reuse* of materials from previous construction on site
- Recycle* existing materials on site

- Use prefabricated elements to reduce noise and dust*
- Use constructive solutions*, which do not require glues/ foams
- Work with manufacturers / select solutions that do not generate dust, noise and pollutants**



TAXONOMY REQUIREMENTS BUILDING AFTER COMPLETION



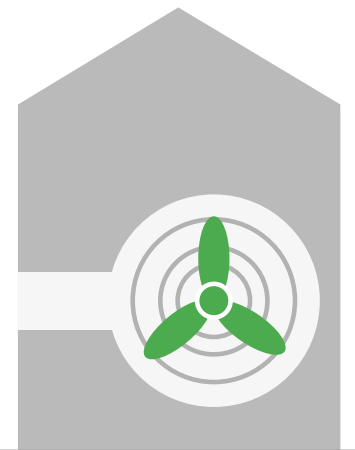
AS AN
ARCHITECT
YOU CAN...



Mitigate climate change:

Ensure air tightness and conduct a thermography measurement.

You can **prove your expertise** and the **quality** of your detailed planning and quality assurance, showing that no mistakes were made during execution.**



ADVOCATE FOR MORE ACCOUNTABILITY

Building and planning requires interconnected working and **shared responsibilities**. Therefore, while you can ensure that sustainability aspects derived from the Taxonomy are complied with, you can advocate for other building stakeholders and policy makers to be made accountable, too. Advocate for:

- more **transparency** regarding the environmental impact of building materials and more **sustainable** solutions from product manufacturers
- cities and municipalities to set up **location-specific climate change adaptation plans** and ensure **land use efficiency** when reclassifying areas
- Energy designers and building owners to calculate **real life cycle costs** of energy alternatives

AN ARCHITECT'S CONTRIBUTION

Considering that stakeholders of the building sector are affected by the Taxonomy regulations, architects can support Taxonomy eligibility by adapting their designs.

By increasing the know-how on the Taxonomy requirements, ensuring **Taxonomy conformity in design**, choosing eligible building materials and documenting all sustainability aspects for the Taxonomy, architects can ensure that established sustainability standards are met. Further they can also provide information required for standardised disclosure to enable comparability between different projects and deliver not only **higher data quality** required for documentation of compliance, but also for the **closing of data gaps**.

INCREASING VALUE FOR INVESTORS

Investor

Higher sales price

Lower design and
construction costs

Quicker sales

Improved risk
management

Reduced vacancy rates

Ability to secure
finance

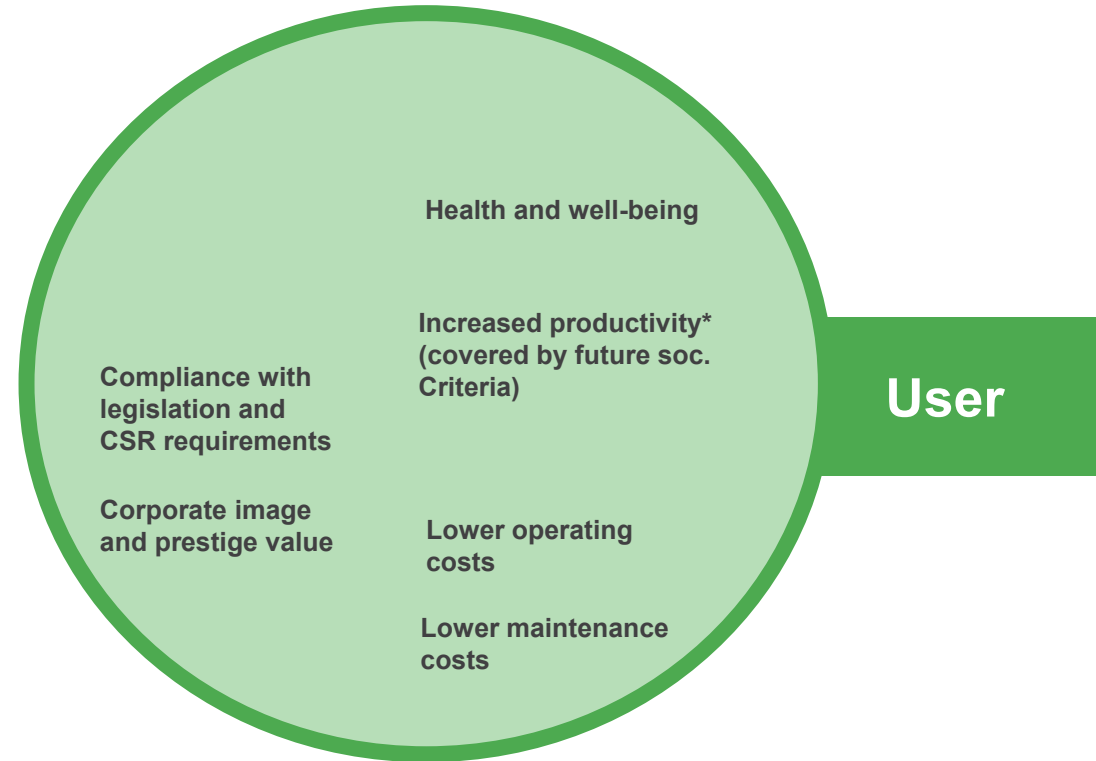
Rapid return on
investment

Better value
preservation/potential

Compliance with
legislation and
CSR requirements

Corporate image
and prestige value

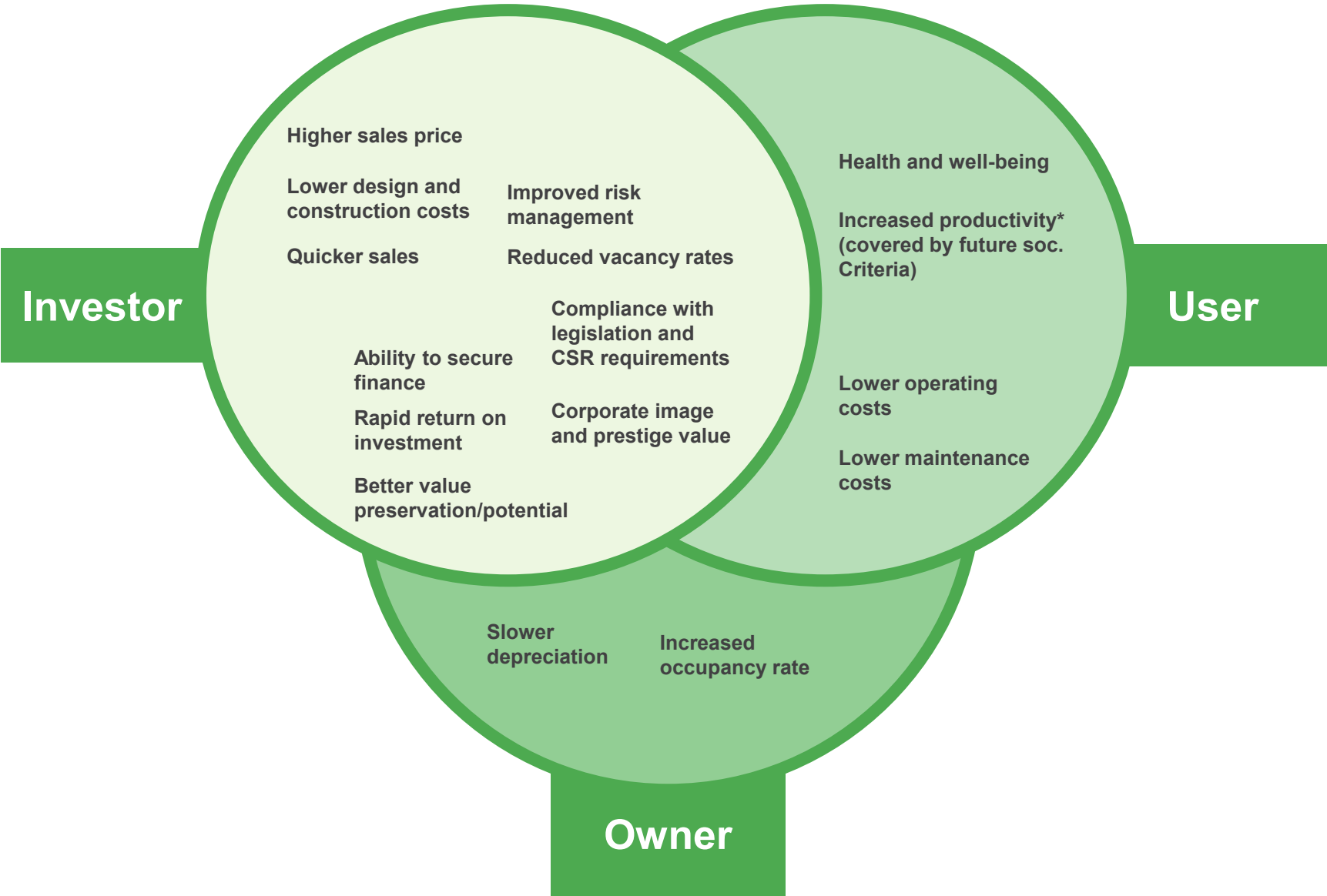
INCREASING VALUE FOR USERS



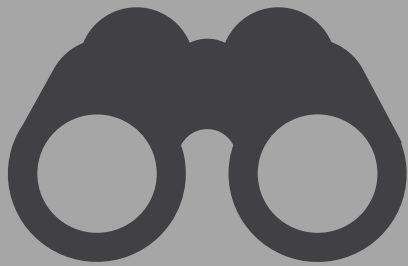
INCREASING VALUE FOR OWNERS



INCREASING VALUE FOR ALL STAKEHOLDERS



OUTLOOK FOR SUSTAINABLE FINANCE AND ARCHITECTURE



As of October, 2021, the technical requirements for buildings are still to be defined for the remaining **four environmental objectives**

- **Water**
- **Circular Economy**
- **Pollution**
- **Biodiversity**

A [draft for Circular Economy and Biodiversity](#) is already available – setting out further requirements for the building sector. These are to be applied by 2023. The project developer will then be able to choose to which environmental objective a significant contribution should be made.

Furthermore, a [social taxonomy](#) may be introduced with the objective of contributing substantially to basic needs and infrastructure.

GLOSSARY

- **DNSH:** Do No Significant Harm
- **EIA:** The [Environmental Impact Assessment \(EIA\)](#) is a procedure that ensures that environmental implications of decisions are considered for infrastructural projects. It provides high level of protection of the environment
- **ESG:** Environmental, Social, and Governance
- **Environmental Objectives:** The Taxonomy Regulation has defined six environmental objectives: (1) Climate change mitigation, (2) Climate change adaptation, (3) Sustainable use and protection of water and marine resources, (4) Transition to a circular economy, (5) Pollution prevention and control, (6) Protection and restoration of biodiversity and ecosystems
- **NZEB:** The European Energy performance of buildings directive (EPBD) requires all new buildings from 2021 to be nearly zero-energy buildings (NZEB). The EU countries' nearly zero-energy building national plans can be found [here](#).

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