

# LEED and the EU Taxonomy

A whitepaper on how LEED supports various European Union policies including the EU Taxonomy, a critical component of the EU green deal

January 2022



# Acknowledgements

This document was made possible with the invaluable contributions of:

Melissa Baker, U.S. Green Building Council

Ingemar Hunold, ES EnviroSustain GmbH

Kay Killmann, GBCI Europe

<b>Acknowledgements</b> .....	1
<b>Intent</b> .....	4
<b>Executive Summary</b> .....	4
<b>EU Frameworks</b> .....	5
EU Green Deal.....	5
EU Taxonomy .....	6
Recommendations of the technical expert group (TEG) on the EU Taxonomy .....	10
<b>LEED and EU Taxonomy</b> .....	11
LEED certification.....	11
LEED Zero .....	11
<b>LEED v4 and LEED v4.1 BD+C credits and EU Taxonomy</b> .....	12

# Intent

LEED is a global industry leading, internationally recognized tool to design, construct, and operate sustainable spaces, buildings, and places. This paper details how the use of LEED addresses recent policy developments of the European Union (EU), especially addressing the first objective “Climate Change Mitigation” construction and real estate activities of the EU Taxonomy. Further objectives such as “Climate Change Adaptation” and requirements for the manufacturing industry or forestry will be addressed in additional papers.

## Executive Summary

LEED is the globally recognized and most widely used high-performance green building program in the world. Today there are more than 110,000 projects participating in LEED in over 182 countries and territories. LEED is also rapidly growing to be a program to transform Europe's built environment.

LEED v4, LEED v4.1 and LEED Zero can help address the criteria in the EU Taxonomy and meet the objectives of the EU Climate Action Plan and EU Green Deal to ensure Europe becomes a carbon neutral society by 2050. USGBC will continue to provide more information on the alignment between LEED and the EU policy directives. The content will be updated as additional guidance is released on the EU Taxonomy or LEED is further adapted.

The guiding framework for LEED aligns with the goals of the EU policies. Specifically, LEED has system goals to guide the criteria included in the rating system. Those goals include:

- ✱ Reduce contribution to global climate change
- ✱ Enhance individual human health
- ✱ Protect and restore water resources
- ✱ Protect and enhance biodiversity and ecosystem services
- ✱ Promote sustainable and regenerative material cycles
- ✱ Build a green economy
- ✱ Enhance community quality of life

The EU Taxonomy provides a framework to guide decision making on whether a financial investment addresses environmental policy objectives such as the existing EU climate goals and the UN Sustainable Development Goals (SDGs). The Taxonomy is a classification tool and not a rating system like LEED.

Because LEED goals align with the principles of the EU Taxonomy, in particular for the real estate and construction sector, projects can take advantage of LEED certification to demonstrate their alignment with EU Taxonomy.

LEED and EU Taxonomy requirements both address strategies for climate change mitigation, including energy efficiency, commissioning, embodied carbon reductions and resilience. And as an example, the energy performance metric referenced in EU Taxonomy and allowed for use in LEED, have a high-level alignment in focusing on source/primary energy use reduction to measure energy performance.

LEED also includes metrics that are not yet defined in the EU Taxonomy. Though the EU Taxonomy specifies a 2050 net zero carbon goal, it has not defined any metric to measure carbon. The Taxonomy technical expert group (TEG) calls out that pathways to reach net zero carbon by 2050 need to be developed in the near future. The Taxonomy TEG can instantly leverage the carbon metric in LEED to bring specificity to projects.

Besides energy performance and carbon neutrality, the EU Taxonomy addresses various other environmental impacts of the built environment through the “Do No Significant Harm” (DNSH) criteria, which also squarely aligns with the overall LEED system goals. LEED either directly or indirectly measures most of the DNSH criteria and can quickly scale to meet all the requirements of EU Taxonomy. Additionally, LEED and EU Taxonomy requirements both

address strategies for building water efficiency and conservation, construction and demolition waste management, low emitting materials or pollution prevention control, and the protection and restoration of biodiversity and ecosystems on a project site.

When projects use LEED as their certification tool, they meet the EU Taxonomy requirements as they are:

- ✱ Designing for leadership with rigorous, consensus-based standard;
- ✱ Going through third-party review to demonstrate transparency on their design intent and implementation strategies;
- ✱ Committing to ongoing measuring and benchmarking operational performance; and
- ✱ Demonstrating their commitment and progress towards EU decarbonization goals.

In summary, LEED v4 & v4.1 and the current version of EU Taxonomy are well aligned, and LEED Zero goes beyond the current requirements of the EU Taxonomy highlighting the unique opportunity for EU projects to leverage LEED to meet the zero energy and carbon goals outlined in the EU green deal.

## EU Frameworks

In December of 2019, the European Commission introduced the European Green Deal with a stated goal of 2050 for the EU to be the first continent to be climate-neutral. As a component of this, the 2030 Climate Target Plan looks at a greenhouse gas reduction of 55% by 2030 compared to 1990.

Besides the overall targets of the EU Green Deal the following initiatives and directives are of relevance for the building sector and the real estate industry:

- ✱ Energy Performance of Buildings Directive (EPBD)
- ✱ Energy Efficiency Directive
- ✱ Energy Labelling and Repealing Directive
- ✱ Renewable Energy Directive
- ✱ Framework for the setting of eco-design requirements for energy-related products
- ✱ Circular Economy Action Plan
- ✱ EU Taxonomy

In this paper the EU Green Deal and the EU Taxonomy is introduced in detailed manner given the recent interests from stakeholders interested in knowing how they can use LEED v4, v4.1 and LEED Zero to meet these EU directives.

### EU Green Deal

The European Union introduced the EU Green Deal in December 2019. The Green Deal identifies climate change and environmental degradation as an essential threat to Europe and the world. This is also the EU growth strategy as tackling these threats head on can transform the EU into a modern, resource efficient and competitive economy. The three core principles are:

- ✱ No net emissions of greenhouse gases by 2050
- ✱ Economic growth is decoupled from resource use
- ✱ No person and no place is left behind

An action plan and targets were developed to ensure efficient use of resources across industry sectors to restore biodiversity, cut pollution and move to a clean and circular economy. Some of the key actions include:

- ✳ Investment in green technologies
- ✳ Support for industrial innovations
- ✳ Access to clean, highly affordable, and healthy private and public transportation
- ✳ Decarbonization of the energy sector
- ✳ Make buildings more energy efficient
- ✳ Collaborate with international partners to improve global environmental standards

For the built environment, the “renovation wave” was initiated under the umbrella of the EU Green Deal in October of 2020. The plan states that while 75% of today’s building stock is energy inefficient, almost 85-95% of them will still be in use in 2050. Since the current energy efficiency renovation rate is just around 1% the renovation wave aims on doubling this rate by 2030 for residential and non-residential buildings with support from appropriate financing programs.

In March of 2020 a European Climate Law was officially proposed to make the EU Green Deal a legal obligation.

*As Europe seeks to overcome the COVID-19 crisis, renovations offer a unique opportunity to rethink, redesign and modernize buildings to make them fit for a greener and digital society and sustain economic recovery.*

- *“A Renovation Wave for Europe - greening our buildings, creating jobs, improving lives”, Page 1, Paragraph 4, Brussels, 14<sup>th</sup> October 2020.*

## **EU Taxonomy**

The EU Taxonomy is a framework that helps corporations and investors to act on the EU Green Deal.

The EU Taxonomy sets out the following objectives:

- ✳ Climate change adaptation
- ✳ Sustainable use and protection of water and marine resources
- ✳ Transition to a circular economy, waste prevention and recycling
- ✳ Pollution prevention and control
- ✳ Protection of healthy ecosystems

Currently the Taxonomy covers activities which can make substantial contribution to climate-change mitigation in the following sectors:

- ✳ Agriculture and Forestry
- ✳ Manufacturing
- ✳ Electricity, gas, steam and air conditioning supply
- ✳ Water, sewerage, waste and remediation,
- ✳ Transport
- ✳ Information and Communication Technologies (ICT)
- ✳ Buildings

The EU Taxonomy identifies the construction and real estate sector to be the most energy intensive sector as it is responsible for approximately 40% of Europe’s energy consumption and 36% of its CO<sub>2</sub>-emissions. The Taxonomy considers 3/4ths of the European building stock to be inefficient and the renovation rate remains low at an annual average of about 1%. Additionally, efficient new construction buildings only represent about 2%, making the existing building sector a critical sector to decarbonize.

The criteria and thresholds set out in the first EU Taxonomy are a combination of an energy and resource efficiency benchmark and a set of Do No Significant Harm Criteria (DNSH).

New construction projects need to achieve a net primary energy demand that is at least 10% lower than the national regulations mandate.

Existing buildings have to provide at least an EPC class A or the building is within the top 15% of the best performing buildings based on the operational primary energy demand in the respective country.

The Taxonomy acknowledges that the overall sector emissions are not only caused by operational energy, but also that significant emissions are generated during the extraction, manufacture and transport of building materials, and during the construction and end-of-life demolition process.

Beyond the resource efficiency of buildings, the Taxonomy requires the assessment of the Do No Significant Harm Criteria (DNSH).

For the building sector, the Taxonomy requirements for the first target, Climate Change Mitigation, are set out in Table 1A.

The other currently approved target of the EU Taxonomy, Climate Change Adaptation, has a stronger focus on resilience. Further targets are still under development and will be introduced to the Taxonomy over time.

Table 1A: Summary of EU Taxonomy Requirements: Mitigation

	CONSTRUCTION OF NEW BUILDINGS	RENOVATION OF EXISTING BUILDINGS	ACQUISITION OF BUILDINGS
<b>MITIGATION</b>			
<b>Metric</b>	Primary Energy expressed as kWh/m <sup>2</sup> per year.	Either according to national regulation based on the EPBD for renovations or on energy savings calculated by annual primary energy demand.	Primary Energy expressed as kWh/m <sup>2</sup> per year.
<b>Threshold</b>	Achieve 10% lower primary energy demand than the relevant national NZEB requirements would allow for the building.	<p>Major Renovation: The building needs to be compliant with the national regulation based on the EPBD.</p> <p>Relative Improvement: The renovation achieves a primary energy saving of at least 30% compared to building operations prior to renovation.</p>	<p>Case A: Buildings built before 31<sup>st</sup> December 2020</p> <p>The building has at least an EPC class A.</p> <p><u>or</u></p> <p>The calculated performance of the building must be within the top 15% of the local existing stock in terms of operational Primary Energy Demand, expressed as kWh/m<sup>2</sup>y.</p> <p>Large non-residential buildings must ensure an energy management.</p> <p>Certification schemes such as Energy Performance Certificates (EPCs) may be used as evidence of eligibility when adequate data is available to demonstrate that a specific level (e.g. EPC A) clearly falls within the top 15% of the respective local stock.</p> <p>Case B: buildings built after 31<sup>st</sup> of December 2020</p> <p>The building must meet the criteria established for the “Construction of new buildings” that are relevant at the time of the acquisition.</p>



Table 1B: Summary of EU Taxonomy Requirements: Do No Significant Harm Assessment

	CONSTRUCTION OF NEW BUILDINGS	RENOVATION OF EXISTING BUILDINGS	ACQUISITION OF BUILDINGS
<b>DO NO SIGNIFICANT HARM ASSESSMENT</b>			
<b>Adaptation</b>	<p>The economic activity must reduce all material physical climate risks to the activity to the extent possible and on a best effort basis.</p> <p>Basis is a climate risk assessment.</p>	<p>The economic activity must reduce all material physical climate risks to the activity to the extent possible and on a best effort basis.</p> <p>Basis is a climate risk assessment.</p>	<p>The economic activity must reduce all material physical climate risks to the activity to the extent possible and on a best effort basis.</p> <p>Basis is a climate risk assessment.</p>
<b>Water</b>	<p>All relevant water appliances must meet certain flow-rate requirements; compare Appendix 4.</p>	<p>All relevant water appliances must meet certain flow-rate requirements; compare Appendix 4.</p>	No Requirement
<b>Circular Economy</b>	<p>At least 70% (by weight) of the non-hazardous construction and demolition waste) generated on the construction site must be prepared for re-use or sent for recycling or other material recovery.</p>	<p>At least 70% (by weight) of the non-hazardous construction and demolition waste) generated on the construction site must be prepared for re-use or sent for recycling or other material recovery.</p>	No Requirement
<b>Pollution</b>	<p>Building components and materials do not contain asbestos nor substances of very high concern as identified based on the Authorisation List of the REACH Regulation.</p> <p>If the new construction is located on a brownfield site, investigations for potential contaminants have to be carried out.</p> <p>Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.</p>	<p>Building components and materials do not contain asbestos nor substances of very high concern as identified based on the Authorisation List of the REACH Regulation.</p> <p>A building survey for asbestos and the identification of other materials containing substances of concern needs to be completed.</p> <p>Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.</p>	No Requirement

	CONSTRUCTION OF NEW BUILDINGS	RENOVATION OF EXISTING BUILDINGS	ACQUISITION OF BUILDINGS
<b>Ecosystems</b>	<p>An Environmental Impact Assessment (EIA) or screening has been completed in accordance with Directive 2011/92/EU.</p> <p>The building must not be built on protected natural areas (UNESCO, etc.).</p> <p>The building must not be built on arable (land that can be ploughed) or greenfield land of recognized high biodiversity value and land that serves as habitat of endangered species.</p>	No Requirement	No Requirement

**Recommendations of the technical expert group (TEG) on the EU Taxonomy**

Net-zero-energy and net-zero-carbon are a key goal of the EU Taxonomy for the construction and real estate sector when considering climate change mitigation. The technical expert group which developed the EU Taxonomy also provides an outlook on the following key issues. These remain as recommendations but have not yet been formally adopted into the Taxonomy.

- ✿ Review of the 10% relative improvement from NZEB requirement to fulfill the objective of converging towards 2030 net-zero energy and net-zero carbon targets for new buildings;
- ✿ Introduction of thresholds for embodied carbon by 2025;
- ✿ Net-Zero carbon pathway for buildings built before 2021 to reach net-zero operational carbon by 2050:
  - ✿ Performance of the top 15% of each national stock to be converted into absolute thresholds for energy and carbon emissions by 2025;
  - ✿ From 2025 onward, and every five years afterwards, the performance level should be lowered to reflect a pathway reaching net-zero operational carbon by 2050;
- ✿ Development of appropriate criteria and thresholds to address carbon emissions arising from unregulated energy use (i.e. plug-in electric loads) in buildings.

# LEED and EU Taxonomy

## LEED certification

In the last 23 years, LEED has been the pioneer of innovation, continuously providing new ways of enhancing the performance of buildings. LEED has steered projects to aim for higher performance and to reduce greenhouse gas emissions through integrated building strategies impacting energy, transportation, water, waste and materials. The LEED v4 and LEED v4.1 BD+C and O+M rating systems allow buildings a seamless transition from leadership in design to leadership in the operation and maintenance phase.

This whitepaper provides specific information and guidance on how LEED maps to the EU Taxonomy framework including the “Do No Significant Harm” requirements. While LEED addresses many of the requirements of EU Taxonomy, projects may have to take a targeted approach to meet certain specific threshold requirements of EU Taxonomy until future versions of LEED can incorporate all of the requirements.

LEED certification helps projects to cover majority of the DNSH requirements for the construction sector and provide the necessary information to authorities to demonstrate their compliance.

## LEED Zero

LEED Zero helps LEED certified projects to go further beyond and demonstrate their net zero leadership and achievements across four categories - carbon, energy, water and waste. Projects can obtain one or more of these certifications that are described below.

- ✦ LEED Zero Carbon recognizes buildings operating with net zero operational carbon emissions over a period of 12 months. This certification provides a transparent accounting of the balance of carbon from energy consumption, occupant transportation and emissions avoided or offset.
- ✦ LEED Zero Energy recognizes buildings that achieve a source energy use balance of zero over a period of 12 months.
- ✦ LEED Zero Water Certification recognizes buildings that achieve a potable water use balance of zero over a period of 12 months.
- ✦ LEED Zero Waste Certification recognizes buildings that achieve GBCI's TRUE Zero Waste Platinum certification.

Since the Green Deal and EU Taxonomy framework recognize the role of zero energy buildings in climate change mitigation, the LEED v4/v4.1 BD+C and O+M rating systems, along with the LEED Zero certification program offers the greatest opportunity for EU projects to achieve net-zero goals and demonstrate their leadership.

For more information please visit: <https://www.usgbc.org/programs/leed-zero>.

# LEED v4 and LEED v4.1 BD+C credits and EU Taxonomy

The following tables provides a mapping between LEED BD+C credits and the EU Taxonomy requirements for the first target, Climate Change Mitigation for new construction projects.

Table 2: Applicable LEED BD+C credits

	EU TAXONOMY – TECHNICAL CRITERIA	APPLICABLE LEED BD+C CREDIT
<b>Technical Screening</b>	Achieve low Primary Energy Demand (10% below NZEB)	Minimum / Optimize Energy Performance Alternative Energy Performance Metric (Pilot Credit v4)
<b>Technical Screening</b>	Quality assurance (testing of air-tightness & thermal integrity)	Enhanced Commissioning
<b>Technical Screening</b>	Calculation of GWP	Building Life-Cycle Impact Reduction (LEED v4-Option 4, LEED v4.1 Option 2)
<b>DNSH</b>	Climate Change adaptation	Pilot Credits: Assessment and Planning for Resilience Passive Survivability and Back-up Power During Disruptions Design for Enhanced Resilience
<b>DNSH</b>	Sustainable use and protection of water and marine resources	Indoor Water Use Reduction
<b>DNSH</b>	Transition to a circular economy	Construction & Demolition Waste Management
<b>DNSH</b>	Pollution prevention and control	Construction activity pollution prevention Low Emitting Materials Material Ingredients (Option 2)
<b>DNSH</b>	Protection and restoration of biodiversity and ecosystems	High Priority Site / Equitable Development

Table 3: Technical Screening criteria: Climate Change Mitigation

TAXONOMY	LEED BD+C v4 CREDIT	LEED BD+C v4.1 CREDIT
<p><b>Technical Screening criteria for Climate change mitigation</b></p>	<p><b>Prerequisite Minimum and Credit Optimize Energy Performance</b> <b>Alternative Energy Performance Metric (Pilot Credit LEED v4)</b></p>	<p><b>Prerequisite Minimum and Credit Optimize Energy Performance</b> <b>Alternative Energy Performance Metric (Pilot Credit LEED v4)</b></p>
<p>The Primary Energy Demand is at least 10 % lower than the threshold set for the nearly zero-energy building (NZEB) requirements in national measures implementing Directive 2010/31/EU.</p>	<p>Prerequisite: Demonstrate an improvement of 5% for new construction compared with the baseline building performance rating (ASHRAE Standard 90.1–2010). Metric: Cost Alternative: Source Energy, Primary Energy, GHG Emissions, Time Dependent Valuation  Credit awarded for savings beyond the prerequisite.</p>	<p>Prerequisite: Comply with ASHRAE Standard 90.1–2016, with errata as prerequisite and show improvement under optimize energy performance. Metric: Cost &amp; GHG Emissions  Credit awarded for savings beyond the prerequisite.</p>
<p><b>Technical Screening criteria for Climate change mitigation</b></p>	<p><b>Credit: Enhanced Commissioning</b></p>	<p><b>Credit: Enhanced Commissioning-</b></p>
<p>For buildings larger than 5,000 m<sup>2</sup>: testing for air-tightness and thermal integrity.</p>	<p>Option 2: Envelope Commissioning</p>	<p>Option 2. Building Enclosure Commissioning</p>
<p><b>Technical Screening criteria for Climate change mitigation</b></p>	<p><b>Credit: Building Life-Cycle Impact Reduction</b></p>	<p><b>Credit: Building Life-Cycle Impact Reduction</b></p>
<p>For buildings larger than 5,000 m<sup>2</sup>: The life-cycle Global Warming Potential of the building has been calculated for each stage in the life cycle and is disclosed to investors and clients on demand.</p>	<p>Demonstrate reduced environmental effects during initial project decision-making by reusing existing building resources or demonstrating a reduction in materials use through life-cycle assessment. Achieve one of the following options:</p>	
	<p>Option 4. Whole-Building Life Cycle Assessment (3 points)</p>	<p>Option 2. Whole-Building Life-Cycle Assessment (1-4 points)</p>

Table 4: Do No Significant Harm Criteria 2

TAXONOMY	LEED BD+C v4 CREDIT	LEED BD+C v4.1 CREDIT
<b>DNSH criteria (2) Climate change adaptation</b>	<b>Pilot credits: Assessment and Planning for Resilience</b>	
Physical climate risks have been identified from those listed in the table in Section II of Appendix A by performing a robust climate risk and vulnerability assessment.	Complete a Hazard Assessment plus at least one of two options: <ol style="list-style-type: none"> <li>1) Climate Related Risk Management Planning or</li> <li>2) Emergency Preparedness Planning</li> </ol>	

Table 5: Do No Significant Harm Criteria 3

TAXONOMY	LEED BD+C v4 CREDIT	LEED BD+C v4.1 CREDIT
<b>DNSH criteria (3) Sustainable use and protection of water and marine resources</b>	<b>Prerequisite: Indoor Water Use Reduction</b>	<b>Prerequisite: Indoor Water Use Reduction</b>
<p>(a) Wash hand basin taps and kitchen taps have a maximum water flow of 6 litres/min;</p> <p>(b) Showers have a maximum water flow of 8 litres/min;</p> <p>(c) WCs, including suites, bowls and flushing cisterns, have a full flush volume of a maximum of 6 litres and a maximum average flush volume of 3.5 litres;</p> <p>(d) Urinals use a maximum of 2 litres/bowl/hour. Flushing urinals have a maximum full flush volume of 1 litre.</p> <p>→ Attested by product datasheets, a building certification or an existing product label</p>	<p>Reduce aggregate water consumption by 20% from the baseline and meet WaterSense equivalent flow rates for eligible fixtures as defined in the LEED prerequisite.</p> <p>a) Private lavatory faucet* : <b>6.7 litres/min</b> (8.3 litres/min – 20%) at 415 kilopascals and kitchen faucet 8.3 litres/min at 415 kilopascals; Public lavatory (restroom) faucet : 1.9 litres/min at 415 kilopascals</p> <p>(b) Showerhead* : <b>7.6 litres/min</b> (9.5 litres/min – 20%) at 550 kilopascals per shower stall</p> <p>(c) Water closets (toilets)* : <b>4.8 litres per flush</b> (6 liters per flush – 20%)(lpf)</p> <p>(d) Urinal* : <b>1.9 litres per flush</b> (3.8 liters per flush – 20%)</p> <p>* WaterSense label available for this product type</p>	<p>Reduce aggregate water consumption by 20% from the baseline and meet WaterSense equivalent flow rates for eligible fixtures as defined in the LEED prerequisite:</p> <p>a) Private lavatory faucet* <b>6.7 litres/min</b> (8.3 litres/min – 20%) at 415 kilopascals and kitchen faucet : 8.3 litres/min at 45 kilopascals; Public lavatory (restroom) faucet :1.9 liters per minute at 415 kilopascals</p> <p>(b) Showerhead* : <b>7.6 litres/min</b> (9.5 litres per minute – 20%) at 550 kilopascals per shower stall</p> <p>(c) Water closets (toilets)* : <b>4.8 litres per flush</b> (6 liters per flush – 20%)(lpf)</p> <p>(d) Urinal* : <b>1.9 litres per flush</b> (3.8 liters per flush – 20%)</p> <p>* WaterSense label available for this product type</p>

TAXONOMY	LEED BD+C v4 CREDIT	LEED BD+C v4.1 CREDIT
<b>DNSH criteria (3) Sustainable use and protection of water and marine resources</b>	<b>Credit: Sensitive Land Protection</b>	<b>Credit: Sensitive Land Protection</b>
<p>To avoid impact from the construction site, the activity complies with Appendix B:</p> <p>Environmental degradation risks are identified and addressed for the potentially affected water bodies, in consultation with relevant stakeholders.</p> <p>Where an Environmental Impact Assessment is carried out no additional assessment of impact on water is required, provided the risks identified have been addressed.</p>	<p>The new construction is not located on or within 30 m of a waterbody or on or within 15 m of wetlands.</p>	<p>The new construction is not located on or within 30 m of a waterbody or on or within 15 m of wetlands.</p>
<b>DNSH criteria (3) Sustainable use and protection of water and marine resources</b>	<b>Prerequisite: Outdoor Water Use Reduction</b>	<b>Prerequisite: Outdoor Water use reduction</b>
<p>No requirement for outdoor irrigation.</p>	<p>Reduce the project's landscape water requirement by at least 30% from the calculated baseline or use no irrigation.</p> <p>Points awarded in the credit for reductions of 50% and 100% or no irrigation.</p>	<p>Reduce the project's landscape water requirement by at least 30% from the calculated baseline or use no irrigation.</p> <p>Points awarded in the credit for reductions of 50% or 100% or no irrigation.</p>

Table 6: Do No Significant Harm Criteria 4

TAXONOMY	LEED BD+C v4 CREDIT	LEED BD+C v4.1 CREDIT
<p><b>DNSH criteria (4) Transition to a circular economy</b></p>	<p><b>Prerequisite: Construction and Demolition Waste Management Planning</b></p>	
<p>At least 70 % (by weight) of the non-hazardous construction and demolition waste is prepared for reuse, recycling and other material recovery</p> <ul style="list-style-type: none"> <li>- In accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol</li> <li>- Operators limit waste generation</li> <li>- Building designs and construction techniques support circularity</li> <li>- ISO 20887 or other standards: assessing the disassemblability or adaptability of buildings, how they are designed to be more resource efficient, adaptable, flexible and dismantlable to enable reuse and recycling.</li> </ul>	<p>Develop and implement a construction and demolition waste management plan:</p> <ul style="list-style-type: none"> <li>- Establish waste diversion goals for the project by identifying at least five materials (both structural and nonstructural) targeted for diversion. Approximate a percentage of the overall project waste that these materials represent.</li> <li>- Specify whether materials will be separated or commingled and describe the diversion strategies planned for the project. Describe where the materials will be taken and how the recycling facility will process the material.</li> </ul>	
<p><b>DNSH criteria (4) Transition to a circular economy</b></p>	<p><b>Credit: Construction and Demolition Waste Management</b></p>	<p><b>Credit: Construction and Demolition Waste Management</b></p>
	<p>Option 1.</p> <p>Path 1. Divert 50% and Three Material Streams (1 point)</p> <p>Path 2. Divert 75% and Four Material Streams (2 points)</p> <p>Option 2.</p> <p>Reduction of Total Waste Material (2 points)</p>	<p>Requirements</p> <p>Develop and implement a construction and demolition waste management plan and achieve points through waste prevention and/or diversion.</p> <p>Option 1. Diversion (1 point): divert at least 50%</p> <p>Option 2. Waste Prevention (1-2 points):</p> <p>Path 1. Generate less than 15 lbs./ft2 (75 kg/m2) (1 point)</p> <p>Path 2. Generate less than 10 lbs./ft2 (50 kg/m2) (2 points)</p>



<b>DNSH criteria (4) Transition to a circular economy</b>	<b>Credit: Construction and Demolition Waste Management</b>	<b>Credit: Construction and Demolition Waste Management</b>
	<p>Option 1.</p> <p>Path 1. Divert 50% and Three Material Streams (1 point)</p> <p>Path 2. Divert 75% and Four Material Streams (2 points)</p> <p>Option 2.</p> <p>Reduction of Total Waste Material (2 points)</p>	<p>Requirements</p> <p>Develop and implement a construction and demolition waste management plan and achieve points through waste prevention and/or diversion.</p> <p>Option 1. Diversion (1 point): divert at least 50%</p> <p>Option 2. Waste Prevention (1-2 points):</p> <p>Path 1. Generate less than 15 lbs./ft<sup>2</sup> (75 kg/m<sup>2</sup>) (1 point)</p> <p>Path 2. Generate less than 10 lbs./ft<sup>2</sup> (50 kg/m<sup>2</sup>) (2 points)</p>

Table 7: Do No Significant Harm Criteria 5

TAXONOMY	LEED BD+C V4 CREDIT	LEED BD+C V4.1 CREDIT
<b>DNSH criteria (5) Pollution prevention and control</b>	<b>Credit: Low emitting materials</b>	<b>Credit: Low emitting materials</b>
	<p>At least</p> <ul style="list-style-type: none"> <li>- 90% of all paints and coatings and</li> <li>- 90% of all adhesives and sealants,</li> </ul> <p>by volume, meet the VOC emissions evaluation <u>AND</u> 100% meet the VOC content evaluation.</p> <p>100% of all flooring meet the VOC emissions evaluation.</p> <p>100% Ceilings, walls, thermal, and acoustic insulation meet the VOC emissions evaluation.</p> <p>If some products in a category do not meet the criteria, project teams may use the budget calculation method.</p>	<p>At least</p> <ul style="list-style-type: none"> <li>- 75% of all paints and coatings and</li> <li>- 75% of all adhesives and sealants,</li> </ul> <p>by volume or surface area, meet the VOC emissions evaluation <u>AND</u> 100% meet the VOC content evaluation.</p> <p>To meet the 100% requirement for VOC content evaluation, a VOC budget may be used:</p> <p>At least</p> <ul style="list-style-type: none"> <li>- 90% of all flooring,</li> <li>- 75% of all wall panels,</li> <li>- 90% of all ceilings,</li> <li>- 75% of all furniture,</li> </ul> <p>by cost or surface area, meets the VOC emissions evaluation <u>OR</u> inherently non-emitting sources criteria, <u>OR</u> salvaged and reused materials criteria.</p> <p>At least 75% of all insulation, by cost or surface area, meets the VOC emissions evaluation.</p> <p>At least 75% of all composite wood, by cost or surface area, meets the Formaldehyde emissions evaluation <u>OR</u> salvaged and reused materials criteria.</p> <p>Proof is provided by means of certain regulations.</p>

TAXONOMY	LEED BD+C V4 CREDIT	LEED BD+C V4.1 CREDIT
<p><b>DNSH criteria (5)</b></p> <p><b>Pollution prevention and control</b></p>		<p><b>Credit: Material ingredients</b></p>
<p>(a) Less than 0,06 mg of formaldehyde per m<sup>3</sup> of material or component that may come into contact with occupiers*</p> <p>(b) Less than 0,001 mg of other categories 1A and 1B carcinogenic volatile organic compounds per m<sup>3</sup> of material or component that may come into contact with occupiers*</p> <p>Exclusion of certain substances in Appendix C - e.g., mercury</p> <p>* paints and varnishes, ceiling tiles, floor coverings, including associated adhesives and sealants, internal insulation and interior surface treatments</p>		<p>The formaldehyde limit is 10 µg/m<sup>3</sup> (air) after 28 days. Proof is provided by means of certain regulations and recognised certifications and labels.</p> <p>Material Inventory to 100ppm with no substances found on the Authorization List (Annex XIV, the Restriction list – Annex XVII and the SVHC candidate list, REACH)</p> <p>Proof is provided by manufacturer documentation and/or certain recognized certifications and labels.</p>
<p><b>DNSH criteria (5) Pollution prevention and control</b></p>	<p><b>Credit: High Priority Site</b></p>	<p><b>Credit: High Priority Site and Equitable Development</b></p>
<p>(c) Where the new construction is located on a potentially contaminated site (brownfield site), the site has been subject to an investigation for potential contaminants, for example using standard ISO 18400.</p>	<p>Locate on a brownfield where soil or groundwater contamination has been identified, requires its remediation.</p>	<p>Locate on a brownfield where soil or groundwater contamination has been identified, and where the local, state, or national authority requires its remediation.</p>
<p><b>DNSH criteria (5)</b></p> <p><b>Pollution prevention and control</b></p>	<p><b>Prerequisite: Construction activity pollution prevention</b></p>	<p><b>Prerequisite: Construction activity pollution prevention</b></p>
<p>Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.</p>	<p>Create and implement an erosion and sedimentation control plan for all construction activities associated with the project: controlling soil erosion, waterway sedimentation, and airborne dust that disproportionately impact frontline communities.</p>	<p>Create and implement an erosion and sedimentation control plan for all construction activities associated with the project: controlling soil erosion, waterway sedimentation, and airborne dust that disproportionately impact frontline communities.</p>

Table 8: Do No Significant Harm Criteria 6

TAXONOMY	LEED BD+C v4 CREDIT	LEED BD+C v4.1 CREDIT
<p><b>DNSH criteria (6)</b></p> <p><b>Protection and restoration of biodiversity and ecosystems</b></p>	<p><b>Credit: Site assessment</b></p>	<p><b>Credit: Site assessment</b></p>
<p>Appendix D:</p> <p>1. An Environmental Impact Assessment (EIA) or screening has been completed in accordance with Directive 2011/92/EU and required mitigation and compensation measures for protecting the environment have been implemented.</p> <p>2. For sites/operations located in or near biodiversity-sensitive areas (including the Natura 2000 network of protected areas, UNESCO World Heritage sites and Key Biodiversity Areas), an appropriate assessment has been conducted and based on its conclusions the necessary mitigation measures are implemented.</p>	<p>Complete and document a site survey or assessment<sup>1</sup> that includes the following information:</p> <p>Topography, Hydrology, Climate, Vegetation, Soils, Human use, Human health effects.</p>	<p>Complete and document a site survey or assessment<sup>1</sup> that includes the following information:</p> <p>Topography, Hydrology, Climate, Vegetation, Soils, Human use, Human health effects.</p>

TAXONOMY	LEED BD+C v4 CREDIT	LEED BD+C v4.1 CREDIT
<p><b>DNSH criteria (6)</b></p> <p><b>Protection and restoration of biodiversity and ecosystems</b></p>	<p><b>Credit: Sensitive land protection</b></p>	<p><b>Credit: Sensitive land protection</b></p>
<p>Not built on one of the following:</p> <ul style="list-style-type: none"> <li>a. Arable land (any land capable of being ploughed) and crop land with a moderate to high level of soil fertility and below ground biodiversity as referred to the EU LUCAS survey;</li> <li>b. Greenfield land of recognised high biodiversity value and land that serves as habitat of endangered species (flora and fauna) listed on the European Red List or the IUCN Red List;</li> </ul> <p>Land matching the definition of forest as set out in national law used in the national greenhouse gas inventory, or where not available, is in accordance with the FAO definition of forest.</p>	<p>Option 1.</p> <p>Locate the development footprint on land that has been previously developed.</p> <p>Option 2.</p> <p>Locate the development footprint on land that has been previously developed or that does not meet the criteria for sensitive land.</p>	<p>Option 1.</p> <p>Locate the development footprint on land that has been previously developed.</p> <p>Option 2.</p> <p>Locate the development footprint on land that has been previously developed or that does not meet the criteria for sensitive land.</p>