

Construction (CNAE F)

BRAZILIAN SUSTAINABLE TAXONOMY

SECRETARIAT OF
ECONOMIC POLICY

MINISTRY OF
FINANCE



Credits

Ministry of Finance

Fernando Haddad

Secretary of Economic Policy

Guilherme Santos Mello

Ministry of Transports

José Renan Calheiros Filho

Executive Secretary

George Santoro

Responsible team

Working Group coordinators

Ayuni Larissa Mendes Sena – MF

Matias Rebello Cardomingo – MF

Cloves Eduardo Benevides – MT

Fani Mamede – MT

Working Group members

Rodolfo Torres dos Santos – BNDES

Wendel Macedo – CEF

Mara Motta – CEF

Mariana Ferrini Giacon – CEF

Fernanda Teodoro Pontes – CEF

Alexandre Honorio Cayres – CEF

Silvia Regina Merendas Raymundo – CEF

Bruno Diniz Braga – CEF

Marina Abramides – CEF

Gabriela Podcameni – CC

Edson Ribeiro – MCidades

Alessandra Teixeira – MDIC

Rafael Ramos Codeço – MDIC

Rafael Aguiar – MDIC

Luiz Henrique Ramos Lopes – MTE

Laura Leão Oliveira – MTE

Alexandra Maciel – MME

Samira de Souza Carmo – MME

Cloves Benevides – MT

Fani Mamede – MT

Working Group consultants

Roberto Oranje – Independente consultant

Bridget Mary Boule – Climate Bonds Initiative

Sofia Borges – Climate Bonds Initiative

Graphic design

André Oliveira Nóbrega



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Christine Majowski – GIZ

Gustavo de Melo Ribeiro – GIZ

José Henrique Lima – GIZ

Alana Stankiewicz Peters – GIZ

Tomas Rosenfeld – GIZ

Mercedes García Fariña – UNEP FI

David Batista de Paula – UNEP FI

Paula Peirão – UNEP FI

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Construction (CNAE F)

Sector overview

The civil construction sector encompasses a wide range of activities, including the construction and renovation of buildings, infrastructure works, and specialized engineering services that are part of the construction process. In 2022, the sector achieved BRL 415.6 billion in construction works and services, accounting for 3.2% of Brazil's gross domestic product (GDP). Buildings accounted for 42.4% of this total, infrastructure for 33.7%, and specialized services for 23.9% (IBGE, 2024). The sector is not only economically important, but also socially relevant, accounting for 6.2% of formal jobs in Brazil in 2024 (BRASIL, 2024). Civil construction activities contribute to job creation, as well as to accessing to affordable housing and mobility.

However, according to the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística*, IBGE), 68% of workers in the sector are engaged in informal employment (IBGE, 2021 *apud* CBIC, 2022), and this percentage differs depending on the region. It is also estimated that more than 70% of houses in Brazil are self-built (SNIC, 2021 *apud* Rede de Pesquisa MORE, 2024), meaning construction carried out without specialized technical supervision.

Buildings are responsible for 14% of energy consumption and 43% of electricity use (EPE, 2023). Due to economic stability and rising incomes, electricity consumption in residential buildings is expected to grow between 1.2% and 1.7% per year until 2050, while growth in non-residential buildings is expected to be between 2.3% and 3.3% per year during the same period (EPE, 2020). Therefore, priority should be given to energy efficiency and the use of non-fossil energy sources, increasing the share of renewable energy, as mentioned in Brazil's Nationally Determined Contribution (NDC).

The inclusion of building construction in the Brazilian Sustainable Taxonomy (TSB) is essential due to the sector's significant impact on the climate, environment, and the economy, especially in the use of natural resources, land, energy, water, waste, and greenhouse gas (GHG) emissions. Brazil is one of the ten largest consumers of cement in the world, with production exceeding 66 million tons in 2023 (SNIC, 2023). The construction industry presents substantial opportunities to improve energy efficiency, reduce waste, and adopt sustainable materials and practices. By establishing clear sustainability criteria for new construction projects, the TSB can promote environmentally responsible construction, reduce the carbon footprint of urban development, and drive the market towards greener solutions, contributing to Brazil's broader climate, environmental, and socio-economic goals.

It is also important to encourage sustainable construction given the long lifespan of buildings, since design decisions made today will determine energy use for decades to come.

Likewise, the inclusion of the sector in the TSB is essential due to the vulnerability of buildings to climate change. Rising temperatures and heatwaves will affect indoor thermal comfort and are expected to increase energy consumption by 56% to 112% by 2050 (Invidiata and Ghisi, 2016). In particular, energy use for air conditioning systems is projected to grow by around 70% (Bezerra *et al.*, 2021). Buildings and their occupants will also be vulnerable to other hazards caused by extreme events, such as water stress, flooding, and landslides. Exposure to these hazards is proportionally higher among low-income populations. A survey by the MapBiomias Project indicates that 18% of Brazil's *favela* [slums] areas are at risk, while this proportion total urbanized area is 3% (MapBiomias Project, 2022). These figures reinforce the social role of the construction sector, not only in job creation but also in improving living conditions for the population.

Prioritization of activities

Objective 1 — Climate change mitigation: The prioritization of economic activities in the TSB Action Plan sectors was carried out through both quantitative and qualitative analysis, considering available data. The indicators used for this assessment include a five-year historical series of the following indicators: 1) GDP, employment and the Economic Complexity Index, which measure the social and economic relevance of activities; 2) GHG emissions and other climate indicators based on scenarios from the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA), which assess the potential for climate change mitigation; 3) the existence of economic activities in other taxonomies, which favors interoperability; and 4) an expert assessment, which considers climate priorities and sector regulations, reflecting the importance in the Brazilian context. The data were normalized and scored, with different weights according to the importance of each sector to organize activities by priority according to a standardized system.

Public consultation updates and considerations for future editions

The preliminary proposals for the first edition of the TSB were submitted for public consultation between November 16, 2024 and March 31, 2025, structured in two disclosure stages. The first stage of the consultation included introductory taxonomy documents, while the second stage provided technical and thematic chapters, with technical criteria for mitigation and adaptation, sectoral safeguards and adjustments to economic activities. Civil society was able to contribute freely throughout the process.

This technical chapter incorporates the contributions received and the adjustments made during the public consultation. Below are specific considerations for future updates:

- Inclusion of an activity aimed at small works, with eligibility criteria accessible to small- and medium-sized companies in the sector. This suggestion was made in the Public Consultation, but there was not enough time to discuss suitable criteria for this activity, which were simple but relevant to TSB's objectives;
- Updating the criteria to ensure that the TSB's long-term objectives are achieved in stages. The criteria adopted in this version are intended to induce more sustainable practices and, at the same time, to create a database on GHG emissions in the building's life cycle, in both construction and operation phases. These criteria will need to be reviewed periodically to align with a trajectory leading to net-zero-carbon buildings by 2050;
- Development of methodologies for measuring GHG emissions across the building life cycle, including both embodied emissions in the construction process and operational emissions during the building's lifespan. This involves developing tools and defining thresholds based on recognized protocols, such as the Greenhouse Gas (GHG) Protocol and the Brazilian Association of Technical Standards (*Associação Brasileira de Normas Técnicas, ABNT*) — Brazilian Regulatory Standards (*Normas Brasileiras Regulamentadoras, NBR*) and the International Organization for Standardization (*Organização Internacional para Padronização, ISO*) 14064 standard, to standardize results and produce sector-wide indicators.

Objective 1 — Climate change mitigation

Categories of eligible activities

- F1: Construction of new buildings
- F2: Retrofitting of existing buildings
- F3: Installation of energy-efficient components and systems
- F4: Installation of charging stations for electric vehicles in buildings
- F5: Installation of technologies for on-site generation of renewable energy
- F6: Real estate activities
- F7: Research, development, and innovation activities for the sector

Sector-specific activities

F1: Construction of new buildings

CNAEs:

- 41.10-7: Real estate project development
- 41.20-4: Building construction

Description:

This activity includes the construction of new buildings of all kinds—residential, commercial, industrial, and public. It also includes the undertaking of real estate projects, residential or not, providing financial, technical, and material resources for their completion and subsequent sale. It further includes building installation work that enables the building to function and operate (activities classified under CNAE 43), when carried out during the construction phase.

Building construction is carried out either by the contracted company or by subcontracting to third parties. The full responsibility for the development of construction projects must be assumed by companies classified under the CNAEs listed above. This does not prevent or restrict the subcontracting of services classified under other CNAEs, if necessary.

Examples of activities:¹

- Construction of single-family and multi-family houses and residential buildings, including high-rise buildings;
- Construction of commercial or public buildings of any kind;
- Construction of buildings for other specific uses;
- Construction of industrial buildings.

Out-of-scope activities:

- Buildings must not be constructed for the extraction, storage, transportation, or manufacture of fossil fuels;

¹ For an extensive list, see the National Classification of Economic Activities (CNAE) F 41.20-4 — Building construction. Available at: <https://cnae.ibge.gov.br/?view=classe&tipo=cnae&versao=10&classe=41204>. Accessed on: May 28, 2025.

- Buildings must not be constructed in areas with a high or very high risk of geo-hydrological disasters, such as landslides, floods, flash floods, and inundation, except for projects that have an environmental and/or urban planning license approved by the competent bodies for these locations;
- Buildings must not be constructed in specially protected areas (APA, Permanent Preservation Area (PPA), legal reserve, conservation units etc.), indigenous and *quilombola* lands, or historical sites registered by historical heritage authorities, except for projects licensed by competent authorities that are of interest to indigenous or *quilombola* communities.

Eligibility condition:

The company responsible for carrying out the work must be certified under the Assessment System for Company Compliance with Conformity Assessment System for Construction Services and Works Companies (*Sistema de Avaliação da Conformidade de Empresas de Serviços e Obras da Construção Civil*, SIAC), of the Brazilian Habitat Quality and Productivity Program (PBQP-H), at level A.

Note: In alignment with this version of the TSB, as an alternative, the company may present a management system certified by the ABNT NBR ISO9001 standard, provided that it includes requirements ensuring formality and legality in the supplier assessment process, in accordance with item 8.4.1.2 of the SIAC general regulations.

Substantial contribution to Objective 1 — Climate change mitigation

The criteria take into account the type of building to be constructed —non-residential (commercial, public, service, industrial, etc.), residential, or social housing—with specific limits for each case.

A. Buildings that meet the following criteria:

- i. Non-residential buildings: Obtain the National Label for Energy Conservation (ENCE for the project and for the constructed building, according to the construction stage, from Brazilian Building Labeling Program (*Programa Brasileiro de Etiquetagem de Edificações*, PBE Edifica)) with an "A" rating, general (for buildings completed with integrated lighting, air conditioning, and/or water heating systems), or provide evidence that the annual primary energy demand (DEP — kwh/m²/year) is equal to or less than the DEP calculated through simulation, based on the minimum requirements of the 2016 version of the American National Standards Institute (*Instituto Nacional Americano de Padrões*, ANSI)/American Society of Heating, Refrigerating and Air-Conditioning Engineers (*Sociedade Americana de Engenheiros de Aquecimento, Refrigeração e Ar-Condicionado*, ASHRAE)/Illuminating Engineering Society (IESNA) 90.1 standard, by means of the assessment described in Appendix G: Performance Rating Method (PRM).
- ii. Non-residential buildings for sale or rental of commercial or lease, delivered without integrated air conditioning and lighting systems: Obtain the ENCE for the project and for the constructed building, according to the construction stage, from PBE Edifica, with a "B" rating, partial, or provide evidence that the annual primary energy demand (DEP — kwh/m²/year) is equal to or less than the DEP calculated through simulation, based on the minimum requirements of the 2016 version of the ANSI/ASHRAE/IESNA 90.1 standard, by means of the assessment described in Appendix G: Performance Rating Method (PRM), except section G1.2.1.
- iii. Residential buildings: Obtain the ENCE for the project and for the constructed building, according to the construction stage, from PBE Edifica, for all the housing units (HUs) in the project, with a "B" rating, or provide evidence that the annual primary energy demand (DEP — kwh/m²/year) is equal to or less than the DEP calculated through simulation, based on the minimum requirements of the 2016 version of the ANSI/ASHRAE/IESNA 90.1 standard, by means of the assessment described in Appendix G: Performance Rating Method (PRM), except section G1.2.1.

- iv. Social interest housing (HIS):² 1) obtain the Selo Casa Azul certification from Caixa Econômica Federal, at the "Crystal" level; 2) the ENCE for the project and for the constructed building, according to the construction stage, from PBE Edifica, for all the housing units (HUs) in the project, with a "C" rating; 3) provide evidence for the requirements of item A.iv.2, calculated through simulation, followed by Technical Responsibility Certificate (*Anotação de Responsabilidade Técnica*, ART) or Technical Responsibility Registry (*Registro de Responsabilidade Técnica*, RRT); or 4) provide evidence that the annual primary energy demand (DEP — kWh/m²/year) is equal to or less than the DEP calculated through simulation, based on the minimum requirements of the 2010 version of the ANSI/ASHRAE/IESNA 90.1 standard, by means of the assessment described in Appendix G: Performance Rating Method (PRM), except section G1.2, which refers exclusively to mandatory items.
- B.** Buildings that have obtained any of the sustainable construction certifications below. For residential buildings, in addition to certification, evidence of compliance with the "intermediate" or "superior" levels for thermal and lighting performance must be provided in the assessment of the performance standard (ABNT NBR 15575).
- i. Selo Casa Azul, Crystal level,
 - ii. Leadership in Energy and Environmental Design (LEED) V4 or higher versions,
 - iii. Excellence in Design for Greater Efficiencies (EDGE) Certified,
 - iv. AQUA, "Very good" level or higher, or best practice in category 4: energy,
 - v. GBC Casa Condomínio - Gold or Platinum,
 - vi. Building Research Establishment Environmental Assessment Method (BREEAM) — Pass or higher,
 - vii. Zero Carbon.
 - viii. Other certifications will only be accepted if the equivalence to the criteria defined in item A is demonstrated through an ART or RRT.
- C.** In addition to fulfilling any of the options in items A and B, at least one of the following alternatives must be presented:
- i. Inventory of embodied emissions in the building construction, encompassing the material production and construction process phases, as defined in European standard EN 15978, and in accordance with ABNT NBR ISO 14044, or another suitable ABNT standard. Available market calculators may be used to draw up the inventory; whenever feasible, it is recommended to use data from the Information System for Environmental Performance in Construction (SIDAC).
 - ii. Comprehensive organizational greenhouse gas inventory, covering scopes 1, 2 and 3, according to the Brazilian GHG Protocol Program, or the ABNT NBR ISO 14064 standard, verified by a third party.

Note: Whenever technically and economically feasible, the use of Building Information Modeling (BIM) is recommended for the planning and execution of interventions, in accordance with the National Strategy for the Dissemination of BIM in Brazil (Decree No. 11888 of January 22, 2024).

² Social interest housing aims to promote the right to housing for families living in urban areas, according to the definitions and provisions contained in Federal Law No. 14620/2023, associated with economic development, the creation of jobs and income, as well as the improvement of habitability standards and quality of life for the population. Provided that the regulated or updated income limits of the aforementioned law are observed, the following can be considered as HIS:

- Projects carried out under Federal Law 14620/2023, especially with financial support from the National Social Interest Housing Fund (FNHIS), the Residential Lease Fund (FAR), the Social Development Fund (FDS), and the Government Severance Indemnity Fund for Employees (*Fundo de Garantia do Tempo de Serviço*, FGTS), among others permitted by law.
- Housing units defined as such in specific municipal or state legislation.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	<ul style="list-style-type: none"> According to the substantial contribution criteria for climate change adaptation.
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> Minimize the need for native vegetation suppression and maximize the use of species that are native to the region and attractive to local fauna, when replanting or during landscape implementation. Control legality of materials in the construction supply chain, to minimize the risk of negative impacts when extracting raw materials from ecosystems. This control must be documented in the company's management system and will be demonstrated by invoices, current licenses, and/or proof of compliance with technical standards.
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> Use wood products from reforestation or from a sustainable forest management plan (PMFS), in which case they must be traced by the Document of Forest Origin (DOF), or products certified by the Forest Stewardship Council (<i>Conselho de Manejo Florestal</i>, FSC) or Brazilian Forest Certification Program (<i>Programa Brasileiro de Certificação Florestal</i>, CERFLOR).
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> Promote the efficient use of water, as evidenced by a feasibility study in accordance with technical standard NBR 16782 (ABNT, 2019b), including, among others: <ul style="list-style-type: none"> Water-saving devices from manufacturers qualified in the Quality Sector Programs of the Brazilian Habitat Quality and Productivity Program (PBQP-H), or that can demonstrate compliance with technical standards; Practices for measuring water, as well as monitoring and detecting waste and leaks; Analysis of the potential for using alternative non-potable sources, such as rainwater, graywater, blackwater, process water etc., in accordance with technical standard NBR 16783 (ABNT, 2019c).
Transition to a circular economy	<ul style="list-style-type: none"> Use and recovery of existing structures, minimizing the need for demolition and waste disposal. Increase the use of industrialized construction systems and reusable components (such as forms and props). Seek maximum efficiency in the use of materials, promoting the reduction, reuse, and recycling of materials, such as sand and recycled aggregates, and the use of materials with recycled content. All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).
Pollution prevention and control	<ul style="list-style-type: none"> Carry out a prior inquiry into possible soil contamination and, where applicable, draw up a mitigation, removal, and remediation plan in accordance with ABNT NBR 15515, ABNT NBR 16209, ABNT NBR 16210, and specific legislation.

Do no significant harm (to any of the following objectives):

	<ul style="list-style-type: none"> • Provide spaces for segregation at source and temporary storage of non-hazardous waste, with the aim of preparing materials for reuse or recycling, as described in activity E7 of the water, sewage, and waste chapter. • Ensure traceability of the collection and proper disposal of construction and demolition waste, especially hazardous waste. Waste management must be demonstrated by a Civil Construction Waste Management Plan, in accordance with National Environmental Council (<i>Conselho Nacional do Meio Ambiente, CONAMA</i>) Resolution No. 307 of 05/Jul/2002, and subsequent legislation. • Implement solutions to reduce the generation of construction and hazardous waste, as well as mitigation measures should accidents happen. • Promote the use of materials with low volatile organic compound (VOC) emissions and avoid the use of materials that pose a health risk. • Adopt measures during work to reduce the impact on the neighborhood in terms of air pollution (dust), noise pollution, sediment dispersion, siltation of water bodies etc.
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> • Annex A1: Do no significant harm criteria for socio-economic Objective 9.

F2: Retrofitting of existing buildings**CNAEs:**

- 41.10-7: Real estate project development
- 41.20-4: Building construction

Description:

This activity covers the retrofitting of existing buildings of all types — residential, commercial, industrial, and public — including changes in building use. Retrofitting differs from conventional renovation by encompassing the technological upgrade of facilities and the rehabilitation of structures, enabling reuse and adaptation to new functions. This extends the life cycle of buildings, adds market value, reduces demolition and waste generation, and limits the occupation of new land, promoting urban densification and mobility.

It also includes installation works necessary for building functionality and operation (classified under CNAE 43), when carried out during the retrofitting.

Building retrofitting is carried out either by the contracted company or by subcontracting to third parties. The total responsibility for the development of construction projects must be assumed by companies classified under the CNAEs above, and it does not prevent or hinder the subcontracting of services classified under other CNAEs, if necessary.

Examples of activities:

- Retrofitting of office buildings, creation of housing units in buildings originally designed for other purposes, transformation of warehouses into commercial spaces etc.

Out-of-scope activities:

- Maintenance-only renovations without updating technology or facilities;
- Renovations for buildings used for the extraction, storage, transportation, or manufacture of fossil fuels;
- Renovations in areas with high or very high risk of geo-hydrological disasters, such as landslides, floods, flash floods, and inundation, except for projects that have an environmental and/or urban planning license approved by the competent bodies for these locations;
- Renovations in specially protected areas (APA, APP, legal reserve, conservation units etc.), indigenous and *quilombola* lands, or historical sites registered by historical heritage bodies, except for projects that have an environmental and/or urban planning license approved by the competent bodies for these locations, which are of interest to indigenous and *quilombola* communities.

Eligibility condition:

The construction company responsible for carrying out the work must be certified by the PBQP-H SIAC, at level A.

Note: In alignment with this edition of TSB, the company may present, as an alternative, a management system certified by the ABNT NBR ISO9001 standard, on the condition that it includes a requirement that ensures formality and legality in the supplier assessment process, in accordance with item 8.4.1.2 of the SIAC general regulations.

Substantial contribution to Objective 1 — Climate change mitigation

The criteria take into account the type of building to be constructed, i.e., commercial, residential, or social housing, with specific limits for each case.

- A. If the building reaches the levels established by typology under Activity F1, after retrofitting.
- B. If the building meets the following criteria:
 - In commercial or service buildings, the reduction in the annual primary energy demand (DEP — kwh/m²/year) must reach 20% compared to the annual DEP before retrofitting. The performance analysis can be weighted according to the building's climate and occupational data.
 - In residential buildings, the reduction in the annual primary energy demand (DEP — kwh/m²/year) must reach 10% compared to the annual DEP before retrofitting.
- C. The provision of social interest housing (HIS)³ in retrofitted or requalified buildings in consolidated urban areas, as defined in Law No. 13465/2017, will be automatically qualified. The activity can be aligned with existing programs, such as social renting and Law No. 14620/2023 (BRASIL, 2023). Evidence of compliance with the minimum level of standard NBR 15575 for thermal and lighting performance must be provided.

Note: Where technically and economically viable, the use of Building Information Modeling (BIM) is recommended for the planning and execution of interventions, according to the National Strategy for the Dissemination of BIM in Brazil (Decree No. 11888 of January 22, 2024).

³ Social interest housing aims to promote the right to housing for families living in urban areas, according to the definitions and provisions contained in Federal Law No. 14620/2023, associated with economic development, the creation of jobs and income, as well as the improvement of habitability standards and quality of life for the population. Provided that the regulated or updated income limits of the aforementioned law are observed, the following can be considered as HIS:

- Projects carried out under Federal Law 14620/2023, especially with financial support from the National Social Interest Housing Fund (FNHIS), the Residential Lease Fund (FAR), the Social Development Fund (FDS), and the Government Severance Indemnity Fund for Employees (FGTS), among others permitted by law.
- Housing units defined as such in specific municipal or state legislation.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	<ul style="list-style-type: none"> • According to the substantial contribution criteria climate change adaptation.
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • Control legality in the construction material supply chain, to minimize the risk of negative impacts when extracting raw materials from ecosystems. This control must be documented in the company's management system and will be demonstrated by invoices, current licenses, and/or proof of compliance with technical standards.
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> • Use wood products from reforestation or from a sustainable forest management plan (PMFS), in which case they must be traced by the Document of Forest Origin (DOF), or products certified by the Forest Stewardship Council (FSC) or CERFLOR — Brazilian Forest Certification Program.
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> • Promote the efficient use of water, as evidenced by a feasibility study in accordance with technical standard NBR 16782 (ABNT, 2019b), including, among others: <ul style="list-style-type: none"> ○ Water-saving devices from manufacturers qualified in the Quality Sector Programs of PBQP-H, or that can demonstrate compliance with technical standards; ○ Practices for measuring water, as well as monitoring and detecting waste and leaks; ○ Analysis of the potential for using alternative non-potable sources, such as rainwater, graywater, blackwater, process water etc., in accordance with technical standard NBR 16783 (ABNT, 2019c).
Transition to a circular economy	<ul style="list-style-type: none"> • Use and recovery of existing structures, minimizing the need for demolition and waste disposal. • Increase the use of industrialized construction systems and reusable components (such as forms and props). • Seek maximum efficiency in the use of materials, promoting the reduction, reuse, and recycling of materials, such as sand and recycled aggregates, and the use of materials with recycled content. • All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).
Pollution prevention and control	<ul style="list-style-type: none"> • Carry out a prior investigation into possible presence of contaminated materials, in particular asbestos, and where applicable, draw up a mitigation, removal, and remediation plan in accordance with ABNT standards NBR 15515, NBR 16209, and NBR 16210, as well as and specific legislation.

Do no significant harm (to any of the following objectives):

	<ul style="list-style-type: none"> • Provide spaces for segregation at source and temporary storage of non-hazardous waste, with the aim of preparing materials for reuse or recycling, as described in the activity of Collection and transportation of non-hazardous waste in the CNAE E — Water, Sewage, Waste Management, and Decontamination chapter. • Ensure traceability of the collection and proper disposal of construction and demolition waste, especially hazardous waste. Waste management must be demonstrated by a Civil Construction Waste Management Plan, in accordance with CONAMA Resolution No. 307 of 05/Jul/2002, and subsequent legislation. • Implement solutions to reduce the generation of construction and hazardous waste, as well as mitigation measures should accidents happen. • Assess existing air conditioning systems to determine the need to replace and dispose of substances controlled by the Montreal Protocol, ensuring proper disposal without atmospheric release, in accordance with the Brazilian HCFC Phase-Out Management Plan (<i>Programa Brasileiro de Eliminação de HCFCs</i>, PBH). • Promote the use of materials with low volatile organic compound (VOC) emissions and avoid the use of materials that pose a health risk. • Adopt measures during work to reduce the impact on the neighborhood in terms of air pollution (dust), noise pollution, sediment dispersion, siltation of water bodies etc.
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> • Annex A1: Do no significant harm criteria for socio-economic Objective 9.

Specialized construction services

The inclusion of specialized construction services comprises a set of activities that contribute to improving the performance of buildings and include the installation of systems to increase energy efficiency, the implementation of infrastructure for recharging electric vehicles in buildings, as well as the local generation of energy from renewable sources.

F3: Installation of energy-efficient components and systems**CNAEs:**

- 25.12-8: Manufacture of metal frames
- 41.20-4: Building construction

- 43.21-5: Electrical installation and maintenance
- 43.22-3/01: Hydraulic, sanitary, and gas installations
- 43.22-3/02: Installation and maintenance of central air-conditioning, ventilation, and refrigeration systems
- 43.29-1/05: Thermal, acoustic, or vibration treatments
- 43.30-4/01: Waterproofing in civil engineering works
- 43.30-4/02: Installation of doors, windows, ceilings, partitions, and built-in cupboards of any material
- 43.30-4/03: Plaster and stucco finishing work
- 43.30-4/04: Painting services for buildings in general
- 43.30-4/05: Application of interior and exterior coatings and resins
- 43.30-4/99: Other construction finishing work

Description:

This activity comprises individual measures that contribute to improving the building's performance in terms of its energy efficiency.

The aim of this activity is to highlight the contribution of each individual measure to reducing energy consumption. Therefore, choosing more than one eligible measure is not necessary. Individual measures are not cumulative and cannot take place in conjunction with activities F1 or F2. Methodologically, the measures begin with passive energy-saving strategies, aimed at making use of resources such as ventilation and natural lighting. Then, they address active strategies involving electrical, hydraulic, and air conditioning installations.

Substantial contribution to Objective 1 — Climate change mitigation

The following individual measures are considered qualified. For each, technical documentation demonstrating compliance with applicable standards and evidence of reduced energy consumption must be provided. Acceptable evidence includes a performance report, an Environmental Product Declaration (EPD) where available, or a supplier or installer self-declaration, accompanied by a Technical Responsibility Certificate (ART) or Technical Responsibility Registration (RRT):

- A. Bioclimatic strategies to improve the thermal performance of the building envelope. The reduction in energy consumption must be demonstrated by a thermal performance report using a computer simulation procedure, proving a reduction in the building's energy consumption of at least 5% compared to the previous condition. Strategies may include, among others:
 - Treatment of the building envelope and roof;
 - Shading and solar control elements for façades and roofs;
 - Nature-Based Solutions (NBS), and other devices that support the vegetation growth;
 - Replacement of doors, windows, or glass with higher-performing models;
 - Devices enhancing natural lighting, such as light shelves.
- B. Installation and replacement of air conditioning systems. The efficiency of the system must be demonstrated in accordance with the requirements of INMETRO Ordinance No. 309 of 06/Sep/2022 (INMETRO, 2022), with evidence of compliance with the "A" general rating for energy efficiency. Compliance with the requirements of the Brazilian HCFC Phase-Out Program – PBH should also be demonstrated, with a view to specifying alternative fluids and the proper disposal of HCFCs when replacing existing systems. This measure can be expanded with strategies to reduce the demand for cooling, such as making use of the forced ventilation system to cool the room (free cooling) when conditions are favorable, treating, or pre-cooling the outside air using energy recovery ventilators etc.
- C. Specification and installation of more efficient artificial lighting systems, such as INMETRO-certified LED (light emitting diode) lamps, with a maximum Dots per inch (DPI) in accordance with the requirements of INMETRO

Ordinance No. 309/2022 (INMETRO, 2022), and with evidence of compliance with the ENCE A rating. In the case of replacing fluorescent lamps, proper disposal must be demonstrated, avoiding contamination of soil and water with heavy metals.

- D.** Assembly and operation of electric heat pumps that use refrigerants with low Global Warming Potential (GWP), in line with the elimination and reduction programs of the Montreal Protocol and the Kigali Amendment, and that comply with the requirements of technical standard ABNT NBR ISO 5149 (ABNT, 2022).

The following individual measures are directly qualified and do not require direct demonstration of energy reduction:

- E.** Zonal thermostats, intelligent thermostat systems, and detection devices (e.g., motion, CO₂ and natural light sensors);
- F.** Building management systems (BMS) and energy management systems (EMS);
- G.** Smart metering systems for water, gas, and electricity, including sectorized measurements enabling real-time monitoring and remote data reading.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	<ul style="list-style-type: none"> According to the substantial contribution criteria for climate change adaptation.
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> N/A
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> N/A
Transition to a circular economy	<ul style="list-style-type: none"> N/A
Pollution prevention and control	<ul style="list-style-type: none"> Ensure traceability of the collection and proper disposal of construction and demolition waste, especially hazardous waste. Assess existing air conditioning systems to determine the need to replace and dispose of substances controlled by the Montreal Protocol, ensuring proper disposal without atmospheric release, in accordance with the Brazilian HCFC Phase-Out Program — PBH.

Do no significant harm (to any of the following objectives):

Reduction of socio-economic inequalities, considering racial and gender aspects

- Annex A1: Do no significant harm criteria for socio-economic Objective 9.

F4: Installation of charging points for electric vehicles in buildings**CNAEs:**

- 41.20-4: Building construction
- 43.21-5: Electrical installation and maintenance

Description:

This activity covers the construction or adaptation of interior streets, sidewalks, garages, and parking lots, including electrical installation to power the charging points, and finishing as required.

Substantial contribution to Objective 1 — Climate change mitigation

The activity is considered qualified when the following conditions are met:

- At least 5% of the available parking spaces are equipped with charging infrastructure, with provisions for future expansion to reach at least 20% of the spaces, and
- The installation is accompanied by a proportionally equivalent investment in renewable energy generation for local self-consumption, ensuring that the energy used for charging vehicles is derived from sustainable sources.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):

Climate change adaptation

- According to the substantial contribution criteria for climate change adaptation.

Protection and restoration of biodiversity and ecosystems

- N/A

Do no significant harm (to any of the following objectives):	
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> N/A
Transition to a circular economy	<ul style="list-style-type: none"> N/A
Pollution prevention and control	<ul style="list-style-type: none"> Ensure traceability of the collection and proper disposal of construction and demolition waste, especially hazardous waste.
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> Annex A1: Do no significant harm criteria for socio-economic Objective 9.

F5: Installation of technologies for on-site generation of renewable energy

CNAEs:

- 41.20-4: Building construction
- 43.21-5: Electrical installation and maintenance
- 43.22-3/01: Hydraulic, sanitary, and gas installations
- 43.22-3/02: Installation and maintenance of central air-conditioning, ventilation, and refrigeration systems

Description:

This activity covers the generation of energy from renewable sources within the area where the building is located, which can be internal areas, roofs, or external areas such as parking lots. It is classified as micro- or mini-generation for local self-consumption, according to National Electricity Agency (*Agência Nacional de Energia Elétrica, ANEEL*) Normative Resolution No. 1098 of July 23, 2024. The activity includes photovoltaic systems, wind turbines, solar water heating, energy recovery devices⁴, among others.

Out-of-scope activities:

- Power Purchase Agreements in the Free Contracting Environment (ACL) or in the short-term market of the National Interconnected System (*Sistema Interligado Nacional, SIN*), or even through the purchase of energy in the regulated market, directly from distributors, are not eligible under this activity.

⁴ The electricity used must come from systems that use energy generation sources and technologies included in the CNAE D — Electricity and Gas chapter, through own generation.

Substantial contribution to Objective 1 — Climate change mitigation:

The activity is considered qualified when the following conditions are met:

- i. The building is classified as energy efficient within its typology, or measures to improve energy performance, such as those described in activity F3, have been previously implemented;
- ii. Local self-generation of renewable energy covers at least 20% of the system's or building's average energy consumption, with a planned increase to 50% by 2030.

Individual measures include, among others:

- A. Solar photovoltaic systems (and auxiliary technical equipment);
- B. Solar or biomass water heating equipment;
- C. Wind turbines (and auxiliary technical equipment);
- D. Thermal energy or electricity storage units (and auxiliary technical equipment);
- E. Heat exchangers/energy recovery systems.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	<ul style="list-style-type: none"> • According to the substantial contribution criteria for climate change adaptation.
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • Prior assessment to locate wind turbines away from migratory bird routes and in areas that require less plant suppression and earthworks, or with the requirement for environmental licensing.
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> • N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> • N/A

Do no significant harm (to any of the following objectives):

Transition to a circular economy	<ul style="list-style-type: none"> N/A
Pollution prevention and control	<ul style="list-style-type: none"> Ensure traceability of the collection and proper disposal of construction and demolition waste, especially hazardous waste.
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> Annex A1: Do no significant harm criteria for socio-economic Objective 9.

F6: Real estate activities**CNAEs:**

- 68.22-6: Real estate property management and administration

Description:

This activity includes the operations of real estate management companies that combine real estate services with operational and administrative management functions. It also covers the activities of shopping mall managers and condominium management entities responsible for building operations, maintenance, and service coordination.

Out-of-scope activities:

- Intermediation in the rental of third-party properties.
- Combined building support services.

Substantial contribution to Objective 1 — Climate change mitigation:

To qualify, activities must demonstrate alignment with either Criterion A or Criterion B below:

- A. Evidence of efficient operational management, through the monitoring and assessment of energy performance, by presenting one of the following:
 - i. Energy Performance Contract (EPC) / Energy Service Company (ESCO);
 - ii. Certification of the building's energy management system according to ABNT NBR ISO 50001 standard;
 - iii. Certification of the building's environmental management system, encompassing objectives to reduce water and energy consumption, as well as waste sent to landfill, according to ABNT NBR ISO 14001 standard;
 - iv. LEED certification for existing buildings.
- B. Demonstrated reductions in the annual DEP (kwh/m²/year), and reduction in water consumption, in accordance with documented annual or multi-annual savings plans, and the water management plan drawn up in accordance with standard NBR 17682. The reduction will be demonstrated by a self-

declaration from the technical manager, along with an ART or RRT issued to guarantee compliance, and available to all stakeholders.

Do no significant harm

The DNSH criteria applicable to this activity are based on the adoption of complementary criteria to the substantial contribution criteria, to ensure that their implementation does not cause adverse impacts on TSB's other climate, environmental, and socio-economic objectives.

Do no significant harm (to any of the following objectives):	
Climate change adaptation	<ul style="list-style-type: none"> According to the substantial contribution criteria for climate change adaptation.
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> N/A
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> Define water consumption targets, implement leak detection programs.
Transition to a circular economy	<ul style="list-style-type: none"> N/A
Pollution prevention and control	<ul style="list-style-type: none"> According to aspects and impacts documented in the environmental management system
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> Annex A1: Do no significant harm criteria for socio-economic Objective 9.

F7: Research, development, and innovation activities for the sector

CNAEs:

- 71.0: Architecture and engineering services; technical testing and analysis
- 72.10-0: Research and experimental development in physical and natural sciences

Description:

This category covers activities related to research, development, and implementation of innovative solutions, processes, technologies, and business models aimed at reducing, eliminating, or preventing emissions in the CNAE F sector. It also includes individual measures and professional services needed to ensure that economic activities comply with the objectives of the TSB. The solutions developed must demonstrate their ability to contribute significantly to the climate change mitigation objective of the sector's activities.

Out-of-scope activities:

Activities linked to the improvement of technologies and processes for the use of fossil fuels.

Substantial contribution to Objective 1 — Climate change mitigation

Creation of intangible assets and conduction of research, development, and innovation activities explicitly aimed at facilitating compliance with the TSB's substantial contribution criteria and achieving the limits established for the CNAE F sector.

Objective 2 — Climate change adaptation

The construction sector in Brazil is essential for the country's economic and social development, but it faces major challenges due to climate change. Rapid urban growth and increased energy demands make buildings more vulnerable to extreme weather events such as floods, heavy rain, heat waves, and storms. Adapting the sector is key to ensuring resilient and sustainable infrastructure, involving the adoption of nature-based solutions, as well as materials with a lower environmental impact and greater energy and water efficiency. These strategies not only strengthen the ability of buildings to withstand adverse weather events but also contribute to the reduction of emissions and the well-being of the population, improving the quality of life in urban and rural areas.

The frequency and intensity of weather events, as well as their geographic spread, are uncertain, but they are already affecting urban populations. The vulnerability of urban infrastructure and buildings must also be considered. Deficiencies in the design, implementation, and maintenance of urban infrastructure increase the potential impacts of weather events, making their consequences more severe. In the case of buildings, especially social housing, deficiencies in thermal performance are common, often worsened by renovations and extensions carried out by residents themselves to meet their space needs (Bortoli & Villa, 2020). This condition compromises their resilience to current and future heat stress.

In terms of adaptation, cities and their buildings must be viewed as interconnected systems for resilience measures to be effective. It is important to strengthen coordination among sectors such as basic sanitation, urban transport, and zoning, so that building adaptations do not result in adverse consequences (for example, redirecting floodwater onto public roads). An isolated resilient building will not solve flooding problems if the urban environment is not properly planned. Partnerships with municipal governments and infrastructure agencies are therefore essential to achieve a systemic approach.

Categories of eligible activities

- FA1: Improvement of building resilience
- FA2: Implementation of Sustainable Urban Drainage Systems (SUDS) or other green and blue infrastructures for rainwater management in urban environments
- FA3: Rainwater management in buildings

Criteria for substantial contribution: types of technical criteria applied

The qualified activities and measures in the construction sector apply the following types of technical criteria:

- **Directly qualified:** activities or measures with low risk of poor adaptation and high potential for a substantial contribution to climate change adaptation are directly qualified.
- **Quantitative/verifiable criteria:** substantial contribution criteria for activities that are based on verifiable indicators (e.g., trust index rating, % water savings etc.).
- **Qualitative criteria:** substantial contribution criteria determined by a set of qualitative requirements and verifications (e.g., sustainable forest management plan, audit, stakeholder engagement etc.).
- **Vulnerability assessment:** for any other measure not listed in the Adapted and Enabling activities and measures, a detailed vulnerability assessment is required to demonstrate that the activity/measure mentioned

contributes to improving the sector's resilience. This applies to both adapted and enabling activities/measures. The methodology for this assessment is described in Annex A2.

How to use these criteria:

Listed below are the activities and measures that have specific criteria for making a substantial contribution to the climate change adaptation objective. The activities are defined as those that are entire economic activities that generally have a CNAE code, while measures are the smaller-scale components of an activity. Each activity and measure indicates the hazard (or hazards) it addresses. In addition to this, it is also possible to present a vulnerability assessment along with an activity aimed at mitigating its risk. The criteria for this assessment are described in Annex A2. All measures with a substantial contribution to the climate change adaptation objective must also meet the cross-cutting DNSH criteria presented in Table 1.

Adapted and enabling activities and measures

FA1: Improvement of building resilience

CNAEs:

- 41.10-7: Real estate project development
- 41.20-4: Building construction

Description

Activities aimed at increasing the capacity of buildings to withstand and recover from the adverse impacts of climate change, such as extreme weather events, through the use of sustainable technologies, materials, and designs, such as:

- A. Implementation of a structural project to increase the building's resilience, using strategies such as reinforcing the foundation and structure and installing movement joints.
- B. Raising of the structure(s) and/or the main equipment (e.g., electrical equipment)
- C. Construction of a floating foundation
- D. Installation of flood barriers and flood proofing
- E. Construction of flood-resistant health facilities
- F. Adoption of nature-based solutions in buildings.

Hazards

Heat stress, water stress, flood damage, landslide damage.

Substantial contribution to Objective 2 — Climate change adaptation:

Demonstrate climate risk reduction or improved resilience through:

- For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study;
- For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2.

Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2.

Do no significant harm:

In addition to the criteria described in the table below, the DNSH criteria for the socio-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the climate change adaptation objective.

Do no significant harm (to any of the following objectives):	
Climate change mitigation	<ul style="list-style-type: none"> N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> Minimize the need for native vegetation suppression and maximize the use of species that are native to the region and attractive to local fauna, when replanting or during landscape implementation;
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> Identify, assess, and manage the risks associated with water consumption and quality. Water quality risk analysis tools should be used when available.
Transition to a circular economy	<ul style="list-style-type: none"> Use and recovery of existing structures, minimizing the need for demolition and waste disposal. Increase the use of industrialized construction systems and reusable components (such as forms and props). Seek maximum efficiency in the use of materials, promoting the reduction, reuse, and recycling of materials, such as sand and recycled aggregates, and the use of materials with recycled content. All activities must be aligned with the guidelines and objectives of the National Circular Economy Strategy, according to Decree No. 12082/2024 (BRASIL, 2024).
Pollution prevention and control	<ul style="list-style-type: none"> Carry out a prior inquiry into possible soil contamination and, where applicable, draw up a mitigation, removal, and remediation plan in accordance with ABNT NBR 15515, ABNT NBR 16209, ABNT NBR 16210, and specific legislation. Ensure traceability of the collection and proper disposal of construction and demolition waste, especially hazardous waste. Implement solutions to reduce the generation of construction and hazardous waste, as well as mitigation measures should accidents happen. Promote the use of materials with low volatile organic compound (VOC) emissions and avoid the use of materials that pose a health risk. Adopt measures during work to reduce the impact on the neighborhood in terms of air pollution (dust), noise pollution, sediment dispersion, siltation of water bodies etc.

Reduction of socio-economic inequalities, considering racial and gender aspects

- Annex A1: Do no significant harm criteria for socio-economic Objective 9.

FA2: Implementation of Sustainable Urban Drainage Systems (SUDS) or other green and blue infrastructures for rainwater management in urban and urban development environments

CNAEs:

- 41.10-7: Real estate project development
- 41.20-4: Building construction
- 42.2 — Construction of infrastructure works for electricity, telecommunications, water, sewage and pipeline transportation
- 42.22-7: Construction of water supply and sewage and construction collection networks
- 43: Specialized construction services

Description

Implementation of green and blue infrastructure in urban and urban development areas to manage rainwater, with a focus on water retention, infiltration, and improvement of quality, contributing to flood reduction and adapting to climate change.

Hazards

Damage caused by floods.

Substantial contribution to Objective 2 — Climate change adaptation:

The activity leads to the retention of rainwater in a specific area or an improvement in water quality and must meet the following criteria:

- The construction and operation of the sustainable urban drainage system must be integrated into the urban drainage network and must provide for the construction and expansion of permeable urban surfaces and consider the adoption of nature-based solutions. If there is no urban drainage network, provide for the implementation of drainage solutions based on the information above. It must be demonstrated as well, through a flood risk management plan or other relevant urban planning instruments, that the activity contributes substantially to achieving the good status and ecological potential of surface and groundwater bodies or to preventing the deterioration of water bodies.
- The following return periods should be considered when designing rainwater systems (BRASIL, MCID 2023):
 - o Microdrainage — residential: Return period of at least 10 years.
 - o Microdrainage — commercial: Return period of at least 10 years.
 - o Macrodrainage — residential: Return period of at least 50 years (at least 100 years for high-density areas).
 - o Macrodrainage — commercial: Return period of at least 50 years (at least 100 years for high-density areas).

The design of the sustainable urban drainage system must also achieve at least one of the following effects:

- A quantified percentage of the rainwater in the harvesting area of the drainage system is retained and discharged with a staggered delay into the receiving water bodies.
- A quantified percentage of pollutants, including oils, heavy metals, hazardous chemicals, and others, are removed from urban run-off instead of being discharged into receiving water bodies.
- The maximum run-off flow is reduced by a quantified percentage, with a return period in accordance with the requirements of the flood risk management plans or other local provisions in force.

Do no significant harm:

In addition to the criteria described in the table below, the DNSH criteria for the socio-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the climate change adaptation objective.

Do no significant harm (to any of the following objectives):	
Climate change mitigation	<ul style="list-style-type: none"> • N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> • N/A
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> • N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> • N/A
Transition to a circular economy	<ul style="list-style-type: none"> • N/A
Pollution prevention and control	<ul style="list-style-type: none"> • Depending on the source of the receiving water and the different pollutant loads, such as rainwater, roof runoff, road runoff, or rainwater runoff, sustainable drainage systems (SUDS) treat this water before it is discharged or infiltrated into other natural media.
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> • Annex A1: Do no significant harm criteria for socio-economic Objective 9.

FA3: Rainwater management in buildings

CNAEs:

- 41.10-7: Real estate project development
- 41.20-4: Building construction
- 43.20-0: Electrical, hydraulic, and other building installations

Description

The activity aims to optimize the rainwater use and run-off in buildings, helping to reduce drinking water consumption and mitigate urban flooding. This is done by harnessing rainwater for non-potable uses (such as flushing toilets and cleaning) and by controlling surface run-off, promoting its staggered release into water bodies.

This activity includes, separately or jointly, activities such as:

- A. Adjusting the collection and run-off capacity of the roof and gutter system
- B. Installation of adjusted drainage capacity
- C. Installation of warning and detection systems for floods or leaks
- D. Development of flood emergency response plans and protocols
- E. Installation of check valves
- F. Adoption of nature-based solutions in buildings.

Hazards

Damage caused by floods.

Substantial contribution to Objective 2 — Climate change adaptation:

The activity must meet the following criteria:

- Prioritization of systems based on the use of green and blue infrastructure. If this is not feasible, conventional systems must be specified, but those designed taking into account the change in climate for higher return and rainfall intensity periods. The following return periods should be considered when designing rainwater systems (BRASIL MCID, 2023):
 - o Microdrainage — residential: Return period of at least 10 years.
 - o Microdrainage — residential: Return period of at least 10 years.
 - o Microdrainage — commercial: Return period of at least 10 years.
 - o Macrodrainage — residential: Return period of at least 50 years (at least 100 years for high-density areas).
 - o Macrodrainage — commercial: Return period of at least 50 years (at least 100 years for high-density areas).
- For the construction of these systems, the National Water Resources Plan (*Plano Nacional de Recursos Hídricos*, PNRH), the local, state, or national Building and Construction Code, the ABNT Technical Standards, among other applicable standards, must be consulted.

Do no significant harm:

In addition to the criteria described in the table below, the DNSH criteria for the socio-economic objective of reducing socio-economic inequalities, considering gender and race aspects, listed in Annex A1, must also be met, along with the cross-cutting DNSH criteria specific to the climate change adaptation objective.

Do no significant harm (to any of the following objectives):	
Climate change mitigation	<ul style="list-style-type: none"> N/A
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> N/A
Conservation and sustainable management and use of soil and forests	<ul style="list-style-type: none"> N/A
Sustainable use and protection of water and marine resources	<ul style="list-style-type: none"> N/A
Transition to a circular economy	<ul style="list-style-type: none"> N/A
Pollution prevention and control	<ul style="list-style-type: none"> There must be a management plan for the waste, sludge, or sediment generated in the system (pollution prevention and control).
Reduction of socio-economic inequalities, considering racial and gender aspects	<ul style="list-style-type: none"> Annex A1: Do no significant harm criteria for socio-economic Objective 9.

Qualified measures

Measures	Hazards	Criteria
<p>FA4. Investment in projects for the efficient use of water in buildings and urban environments</p> <p>Water conservation in buildings includes measures to optimize the operation of the building system and reduce water consumption (demand management), as well as the use of alternative non-potable sources (supply management), with the aim of reducing pressure on existing water sources.</p>	Water stress	<p>Measures will be considered eligible if they meet the following criteria:</p> <ul style="list-style-type: none"> Reduction in <i>per capita</i> drinking water consumption by 15% compared to the previous average consumption or to a baseline such as the Ministry of Cities' SINISA; Use of at least 25% of alternative non-potable sources in total water

<p>The measures must be included in a feasibility study prepared under technical standard NBR 16782 (ABNT, 2019b), and may include, among others:⁵</p> <ul style="list-style-type: none"> A. Water-saving devices, such as dual-flow toilets, faucets with aerators or automatic shut-off, water-saving showers etc., must have consumption equal to or less than the maximum flow rates established by technical standard NBR 16782 (ABNT, 2019b), and must come from manufacturers certified under the Quality Sector Programs of the Brazilian Habitat Quality and Productivity Program (PBQP-H) or that can demonstrate compliance with technical standards; B. Individualized metering in all residential or commercial units in the building, preferably with smart meters, so as to allow real-time monitoring and remote reading; C. Consumption monitoring and actions to detect leaks; D. Use of alternative non-potable sources, such as rainwater, graywater, blackwater, process water, water table lowering etc., in accordance with technical standard NBR 16783 (ABNT, 2019c); E. Capture and use of condensation water from air-conditioning units. 		<p>consumption in commercial buildings, and 15% in residential buildings;</p>
<p>FA5. Development of contingency plans, with installation of backup power supplies/energy storage.</p>	<p>Heat stress</p>	<p>Directly qualified</p>
<p>FA6. Development of contingency plans, with the implementation of diversification of water supply sources.</p>	<p>Water stress</p>	<p>Directly qualified</p>
<p>FA7. Expansion of personnel and equipment for fire prevention and firefighting services</p>	<p>Heat stress</p>	<p>Directly qualified</p>

⁵ The examples cited are illustrative and not exhaustive and must be subject to assessment of their technical and economic feasibility, as well as the performance over their lifespan. Solutions should not be analyzed independently; they must take into account the characteristics of the building, its location, maintainability, lifespan, and integration with other environmental requirements.

FA8. Implementation of preventive services and works against vegetation fires, including Ecosystem-Based Adaptation (EbA) actions	Heat stress	Directly qualified
FA9. Set up a monitoring and warning center; and install equipment to monitor weather events	Multi-risk	Directly qualified
<p>FA10. Use of bioclimatic strategies to improve the comfort and well-being of the building's users, for example:⁶</p> <ul style="list-style-type: none"> A. Increased green space to reduce the heat island effect and improve natural ventilation conditions B. Installation of shading devices, including, among others, balconies, eaves, window shading, and vegetation C. Nature-Based Solutions D. Implementation of design strategies to maximize passive or natural ventilation E. Implementation of design strategies to maximize daylight use F. Installation of heat pumps (for cooling) G. Improvement of indoor air quality control Installation or replacement of façades, doors, windows, showcases, and glazed walls using high-performance glass (efficient glass) 	Heat stress	<p>Demonstrate climate risk reduction or improved resilience through:</p> <ul style="list-style-type: none"> • For asset or activity with low or moderate risk: presentation of a qualitative and/or quantitative study; • For asset or activity with high risk: implementation of a vulnerability assessment in accordance with the full process described in the specific methodology in Annex A2. <p>Risk levels must be determined in accordance with sections 1.1 and 1.2 of Annex A2</p>

Source: Own elaboration.

Cross-cutting criteria of do no significant harm (specific approach to Objective 2)

The following criteria apply to all activities and measures listed in the Adapted and Enabling activities and measures, as well as any other activity that contributes to the sector's resilience, provided it is backed up by a Vulnerability assessment (Annex A2). The do no significant harm criteria is based on the adoption of complementary criteria to the substantial contribution criteria, with the aim of ensuring that their implementation does not cause adverse impacts on TSB's other climate, environmental, economic and social objectives.

⁶ The examples cited are illustrative and not exhaustive and must be subject to assessment of their technical and economic feasibility, as well as the performance over their lifespan. Solutions should not be analyzed independently; they must take into account the characteristics of the building, its location, maintainability, lifespan, and integration with other environmental requirements.

Table 1. Specific do no significant harm criteria for climate change adaptation (Objective 2).

Do no significant harm (DNSH)	
Climate change mitigation	<ul style="list-style-type: none"> The activity/measure does not negatively affect the mitigation efforts of other public or private agents. Economic activity is consistent with sectoral, regional, and/or national mitigation efforts.
Protection and restoration of biodiversity and ecosystems	<ul style="list-style-type: none"> New constructions should not be located in areas that are strategic for food security, rich in biodiversity, or that serve as habitat for endangered species, such as those protected by national laws or included on the Biodiversity Extinction Risk Assessment System – SALVE (ICMBio, 2025) or on the International Union for Conservation of Nature (IUCN) Red List. If the facilities are close to sensitive areas, such as United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage sites or protected areas, an assessment must be carried out according to the criteria of the International Finance Corporation’s (IFC) Performance Standard No. 6 or an equivalent national instrument. It is also necessary to implement a long-term biodiversity monitoring program.
Sustainable soil use and conservation, management and sustainable use of forests.	<ul style="list-style-type: none"> The activity or asset does not alter the physico-chemical and biological integrity of the soil but instead improves the state of this resource.
Transition to a circular economy	<ul style="list-style-type: none"> Apply the principles of the Circular Economy, in accordance with the National Circular Economy Strategy — Decree No. 12082 of June 27, 2024 (BRASIL, 2024a). Seek maximum efficiency in the use of materials, promoting their reduction, repair, recycling, and reuse, as well as ensuring the proper treatment and disposal of waste, such as batteries or Waste Electrical and Electronic Equipment (WEEE), complying with the reverse logistics requirements established in the National Solid Waste Policy (BRASIL, 2010). Design and build new facilities so that they are durable and easy to dismantle, renovate, and recycle. Ensure the proper repair of facilities and equipment, and the accessibility and interchangeability of equipment components.
Pollution prevention and control	<ul style="list-style-type: none"> Water discharges must be licensed, if necessary, and comply with current legislation Air pollution sources must be licensed, if necessary, and comply with current legislation. The integrated management of the waste generated must be carried out by duly authorized waste managers, and comply with current legislation, with special attention to hazardous waste.

Sustainable use and protection of water and marine resources

- Identify, assess, and manage the risks associated with water consumption and quality. Water quality risk analysis tools should be used when available.
- If the assets or activities are located in water stress areas, the implementation of water use and conservation plans, developed in coordination with the relevant local entities, must be guaranteed.

Source: Own elaboration.

References

- AGÊNCIA NACIONAL DE ENERGIA ELÉTRICA (ANEEL). **Resolução normativa ANEEL nº 1.098, de 23 de julho de 2024**. Aprimora a Resolução Normativa nº 1.000/2021, em função da publicação da Lei que dispõe sobre o Programa Minha Casa, Minha Vida. 2024. Available at: <https://www2.aneel.gov.br/cedoc/ren20241098.pdf>. Accessed: 12 sep. 2025.
- ASSOCIAÇÃO BRASILEIRA DE NORMAS TÉCNICAS (ABNT). **NBR15527:2019. Aproveitamento de água de chuva de coberturas para fins não potáveis – Requisitos**. 2019a. Available at: <https://www.normas.com.br/visualizar/abnt-nbr-nm/26536/abnt-nbr15527-aproveitamento-de-agua-de-chuva-de-coberturas-para-fins-nao-potaveis-requisitos>. Accessed: 12 sep. 2025.
- _____. **NBR 16782:2019. Conservação de água em edificações – Requisitos, procedimentos e diretrizes**. 2019b. Available at: <https://www.normas.com.br/visualizar/abnt-nbr-nm/11513/abnt-nbr16782-conservacao-de-agua-em-edificacoes-requisitos-procedimentos-e-diretrizes>. Accessed: 12 sep. 2025.
- _____. **NBR 16783:2019. Uso de fontes alternativas de água não potável em edificações**. 2019c. Available at: <https://www.normas.com.br/visualizar/abnt-nbr-nm/11516/abnt-nbr16783-uso-de-fontes-alternativas-de-agua-nao-potavel-em-edificacoes>. Accessed: 12 sep. 2025.
- _____. **NBR 15575:2021. Edificações habitacionais — Desempenho Parte 1: Requisitos gerais**. 2021. Available at: <https://www.normas.com.br/visualizar/abnt-nbr-nm/27214/abnt-nbr15575-1-edificacoes-habitacionais-desempenho-parte-1-requisitos-gerais>. Accessed: 12 sep. 2025.
- _____. **NBR ISO 5149:2020. Sistemas de refrigeração e bombas de calor**. 2020.
- BARANDIARÁN, M.; ESQUIVEL, M.; LACAMBRA, S.; SUAREZ, G.; ZULOAGA, D.; TROCH, S.H. **Metodologia de avaliação de riscos de desastres e mudanças climáticas**: Um documento de referência técnica para as equipes de projetos do BID. 2019. Available at: <https://publications.iadb.org/pt/metodologia-de-avaliacao-de-riscos-de-desastres-e-mudancas-climaticas>. Accessed: 12 sep. 2025.
- BANCO INTERAMERICANO DE DESENVOLVIMENTO (BID). **Adaptation Solutions Taxonomy**. 2020. Available at: <https://publications.iadb.org/publications/english/viewer/Adaptation-Solutions-Taxonomy.pdf>. Accessed: 12 sep. 2025.
- BEZERRA, P.; DA SILVA, F.; CRUZ, T.; MISTRY, M.; VASQUEZ-ARROYO, E.; MAGALAR, L.; DE CIAN, E.; LUCENA, A. F. P.; SCHAEFFER, R. Impacts of a warmer world on space cooling demand in Brazilian households. **Energy and Buildings**, **234**. 2021. Available at: <https://doi.org/10.1016/j.enbuild.2020.110696>. Accessed: 12 sep. 2025.
- BORTOLI, K. C. R. de; VILLA, S. B. Adequação ambiental como atributo facilitador da resiliência no ambiente construído em Habitações de Interesse Social. **Ambiente Construído**, **20(1)**, p. 391–422. 2020. Available at: <https://doi.org/10.1590/s1678-86212020000100381>. Accessed: 12 sep. 2025.
- BRASIL. **Lei nº 12.305, de 2 de agosto de 2010**. Institui a Política Nacional de Resíduos Sólidos. 2010. Available at: https://www.planalto.gov.br/ccivil_03/ato2007-2010/2010/lei/l12305.htm. Accessed: 12 sep. 2025.
- _____. **Lei nº 13.465, de 11 de julho de 2017**. Dispõe sobre a regularização fundiária rural e urbana, sobre a liquidação de créditos concedidos aos assentados da reforma agrária e sobre a regularização fundiária no âmbito da Amazônia Legal. 2017a. Available at: https://www.planalto.gov.br/ccivil_03/ato2015-2018/2017/lei/l13465.htm. Accessed: 12 sep. 2025.

_____. **Lei nº 13.501, de 30 de outubro de 2017**. Inclui o aproveitamento de águas pluviais como objetivo da Política Nacional de Recursos Hídricos. 2017b. Available at: https://www.planalto.gov.br/ccivil_03/_ato2015-2018/2017/lei/l13501.htm. Accessed: 12 sep. 2025.

_____. **Lei nº 14.620, de 13 de julho de 2023**. Dispõe sobre o Programa Minha Casa Minha Vida. 2023. Available at: https://www.planalto.gov.br/ccivil_03/_ato2023-2026/2023/lei/l14620.htm. Accessed: 12 sep. 2025.

_____. **Decreto 11.888, de 22 de janeiro de 2024**. Dispõe sobre a Estratégia Nacional de Disseminação do Building Information Modelling (BIM) no Brasil. 2024a. Available at: https://www.planalto.gov.br/ccivil_03/_ato2023-2026/2024/decreto/d11888.htm. Accessed: 12 sep. 2025.

_____. **Decreto 12.082, de 27 de junho de 2024**. Institui a Estratégia Nacional de Economia Circular. 2024b. Available at: https://www.planalto.gov.br/ccivil_03/_ato2023-2026/2024/decreto/D12082.htm. Accessed: 12 sep. 2025.

BRASIL. MINISTÉRIO DAS CIDADES (MDIC). Secretaria Nacional de Saneamento Ambiental (SNSA). **Diagnóstico Temático Drenagem e Manejo das Águas Pluviais Urbanas**. 2023. Available at: https://www.gov.br/cidades/pt-br/aceso-a-informacao/acoes-e-programas/saneamento/snis/produtos-do-snis/diagnosticos/DIAGNOSTICO_TEMATICO_VISAO_GERAL_AP_SNIS_2023.pdf. Accessed: 12 sep. 2025.

BRASIL. MINISTÉRIO DO MEIO AMBIENTE (MMA). **Plano Nacional de Adaptação à Mudança do Clima**. 2016. Available at: <http://antigo.mma.gov.br/clima/adaptacao/plano-nacional-de-adaptacao.html>. Accessed: 12 sep. 2025.

_____. **Resolução CONAMA 307, de 5 de julho de 2002**. Estabelece diretrizes, critérios e procedimentos para a gestão dos resíduos da construção civil. Brasília, DF: CONAMA, 2022. Available at: https://conama.mma.gov.br/?option=com_sisconama&task=arquivo.download&id=305. Accessed: 12 sep. 2025.

BRASIL. MINISTÉRIO DO TRABALHO E EMPREGO (MTE). **Estatísticas mensais do emprego formal. Novo CAGED**. 2024. Available at: <https://www.gov.br/trabalho-e-emprego/pt-br/assuntos/estatisticas-trabalho/novo-caged/novo-caged-2024/setembro/apresentacao-setembro-de-2024.pdf>. Accessed: 12 sep. 2025.

BUILDING RESILIENCE INDEX. **Building Resilience Index**. S.d. Available at: <https://www.resilienceindex.org/>. Accessed: 12 sep. 2025.

CÂMARA BRASILEIRA DA INDÚSTRIA DA CONSTRUÇÃO (CBIC). **IBGE: Informalidade no setor da construção é maior nas regiões Norte e Nordeste**. 2022. Available at: <https://cbic.org.br/ibge-informalidade-no-setor-da-construcao-e-maior-nas-regioes-norte-e-nordeste/>. Accessed: 12 sep. 2025.

CONSELHO DE ARQUITETURA E URBANISMO DO BRASIL (CAU). Como o brasileiro constrói. **Pesquisa CAU/BR DATAFOLHA**. 2015. Available at: <https://caubr.gov.br/pesquisa2015/como-o-brasileiro-constroj>. Accessed: 12 sep. 2025.

ELLEN MACARTHUR FOUNDATION. **Responsabilidade Estendida do Produtor**. 2021. Available at: <https://www.ellenmacarthurfoundation.org/pt/responsabilidade-estendida-do-produtor/visao-geral>. Accessed: 12 sep. 2025.

EMPRESA DE PESQUISA ENERGÉTICA (EPE). **Plano Nacional de Energia 2050**. 2020. Available at: <https://www.epe.gov.br/sites-pt/publicacoes-dados-abertos/publicacoes/PublicacoesArquivos/publicacao-227/topico-563/Relatorio%20Final%20do%20PNE%202050.pdf>. Accessed: 12 sep. 2025.

_____. **Balanco Energético Nacional 2023**. 2023. Available at: <https://www.epe.gov.br/sites-pt/publicacoes-dados-abertos/publicacoes/PublicacoesArquivos/publicacao-748/topico-687/BEN2023.pdf>. Accessed: 12 sep. 2025.

ESTRATÉGIA NACIONAL DA BICICLETA (ENABICI). **Estratégia Nacional de Promoção da Mobilidade por Bicicleta: Memorial Descritivo**. 2023. Available at: <https://www.gov.br/cidades/pt-br/acao-a-informacao/acoes-e-programas/mobilidade-urbana/programa-bicicleta-brasil/habilitadas/arquivos/5314762.pdf>. Accessed: 12 sep. 2025.

EUROPEAN PARLIAMENT. **Circular economy: definition, importance and benefits**. 2023. Available at: <https://www.europarl.europa.eu/topics/en/article/20151201STO05603/circular-economy-definition-importance-and-benefits>. Accessed on: 12 sep. 2025.

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA (IBGE). **Pesquisa Anual da Indústria da Construção 2022**. 2024. Available at: https://biblioteca.ibge.gov.br/visualizacao/periodicos/54/paic_2022_v32_informativo.pdf. Accessed: 12 sep. 2025.

INSTITUTO CHICO MENDES DE CONSERVAÇÃO DA BIODIVERSIDADE (ICMBio). **Sistema de Avaliação do Risco de Extinção da Biodiversidade – SALVE**. 2025. Available at: <https://salve.icmbio.gov.br>. Accessed: 12 sep. 2025.

INSTITUTO NACIONAL DE METROLOGIA, QUALIDADE E TECNOLOGIA (INMETRO). **PORTARIA Nº 309, DE 6 DE SETEMBRO DE 2022**. Aprova as Instruções Normativas e os Requisitos de Avaliação da Conformidade para a Eficiência Energética das Edificações Comerciais, de Serviços e Públicas e Residenciais. 2022. Available at: <http://sistema-sil.inmetro.gov.br/rtac/RTAC002989.pdf>. Accessed: 12 sep. 2025.

INVIDIATA, A.; GHISI, E. Impact of climate change on heating and cooling energy demand in houses in Brazil. **Energy and Buildings**, v. 130, p. 20–32. 2016. Available at: <http://dx.doi.org/10.1016/j.enbuild.2016.07.067>. Accessed: 12 sep. 2025.

MAIOR, M. M. S.; CÂNDIDO, G. A. Avaliação das metodologias brasileiras de vulnerabilidade socioambiental como decorrência da problemática urbana no Brasil. **Cadernos Metrópole**, 16(31), p. 241–264. 2014. Available at: <https://doi.org/10.1590/2236-9996.2014-3111>. Accessed: 12 sep. 2025.

PROJETO MAPBIOMAS. **Áreas Urbanizadas no Brasil: 1985 e 2022 – Coleção 8**. 2022. Available at: https://brasil.mapbiomas.org/wp-content/uploads/sites/4/2023/10/FACT_Areas-Urbanas-no-Brasil_31.10_v2.pdf. Accessed: 12 sep. 2025.

SINDICATO NACIONAL DA INDÚSTRIA DO CIMENTO (SNIC). **Relatório Anual da indústria do cimento**. 2021. Available at: https://snic.org.br/assets/pdf/relatorio_anual/rel_anual_2021.pdf. Accessed: 12 sep. 2025.

_____. **Relatório anual da indústria do cimento**. 2023. Available at: http://snic.org.br/assets/pdf/relatorio_anual/1732731328.pdf. Accessed: 12 sep. 2025.