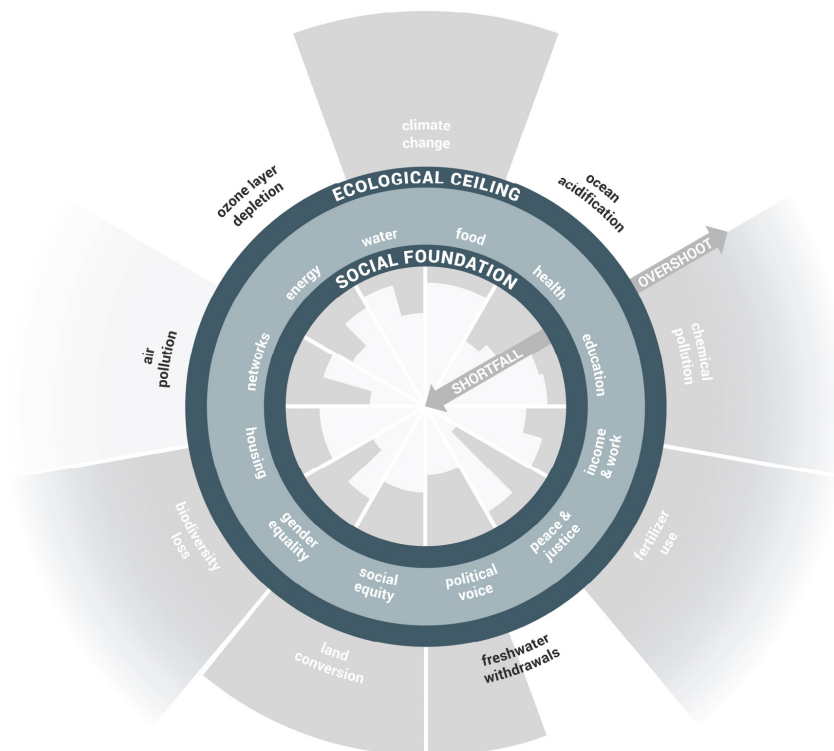


The Doughnut of Social and Planetary Boundaries



Understanding the Doughnut

Think of the Doughnut as a compass for human prosperity in the 21st century, with the aim of meeting the needs of all people within the means of the living planet. Today's global economy leaves billions of people falling short of life's essentials and exceeds multiple planetary boundaries. The Doughnut consists of two concentric rings: a social foundation to ensure that no one falls short on life's essentials (from food and housing to healthcare and political voice), and an ecological ceiling ensuring that collectively we do not overshoot our pressure on Earth's life-supporting systems, on which we fundamentally depend – such as a stable climate, fertile soils, healthy ecosystems, and a protective ozone layer.

The Risk of Overshooting Boundaries

The latest update reveals that six of the nine planetary boundaries have been breached, indicating that Earth is no longer within a safe operating space for humanity. We are now under the threat of losing Earth's collective ability to regulate global temperatures and risking catastrophic consequences, such as extreme weather events, species extinction, and resource scarcity. Respecting these limits ensures the long-term viability of human life on Earth and can be measured in absolute terms.

The Role of the Building Industry

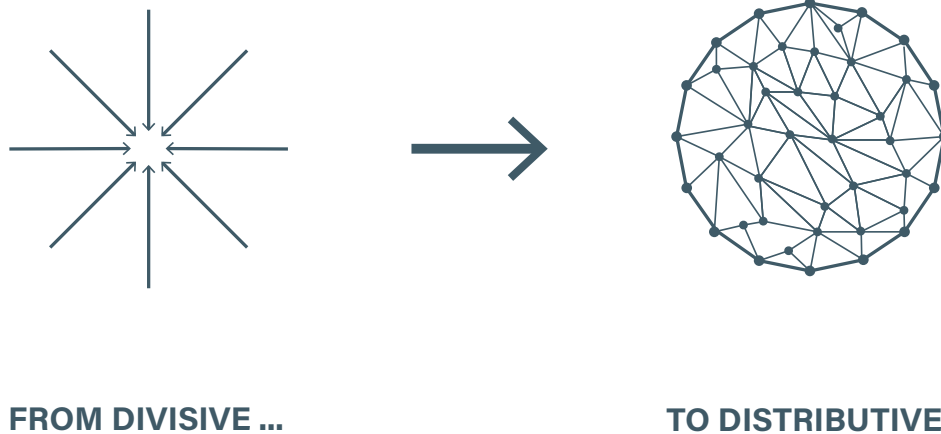
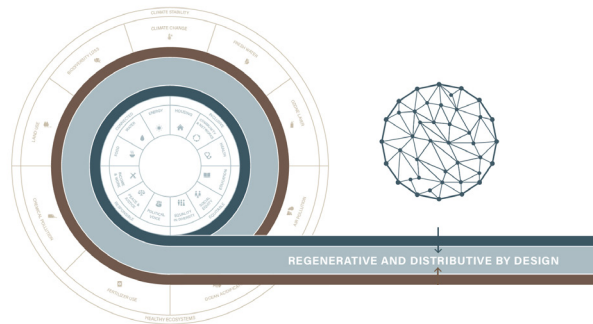
Urban development contributes to the transgression of these planetary boundaries. For example, in the EU, the construction sector accounts for 40% of all extracted materials, 40% of energy consumption, generates 40% of waste annually, and contributes to 33% of all greenhouse gas emissions. From a social perspective, the construction sector continues to witness poor working conditions, significant safety issues, and outright human rights abuses, including modern-day slavery.

The Challenge

The objective is to ensure that no one falls short of life's essentials without exceeding planetary boundaries. "The Doughnut" is an opportunity to delve into the crucial role of the building industry in addressing global challenges and discuss how social and planetary boundaries can shape our actions, the risks we face, and what the building industry can do to rise to the challenge.

How does you and your organization analyse the social and planetary impact of your building activities?

Distributive Design Principle



Embracing the Distributive Principle

The Doughnut model invites you to move away from a divisive system that concentrates wealth, opportunities, and resources in the hands of a few, and instead, embrace distributive systems where we ensure that everyone involved in a building project gets a fair share of the benefits and chances to contribute. It reminds us to be mindful of who has more control and to work towards giving everyone a fair share of influence, making things more equal for everyone involved.

The Role of the Building Industry

The building industry plays a central role in shaping our communities and cities, wielding significant influence over resource distribution. Our decisions can either intensify or reduce socio-economic inequalities among the neighborhoods we build in, the communities we create, and the workers throughout the supply chain we hire.

The Challenge - Redefining the system from a social perspective

To change the future, change the dynamics. Businesses must become more than just 'inclusive.' It is not enough to provide merely the minimum that people need for a decent life. The global scale of inequality and marginalization calls for businesses that are committed to sharing value and opportunity with all who co-create it along the global supply chain.

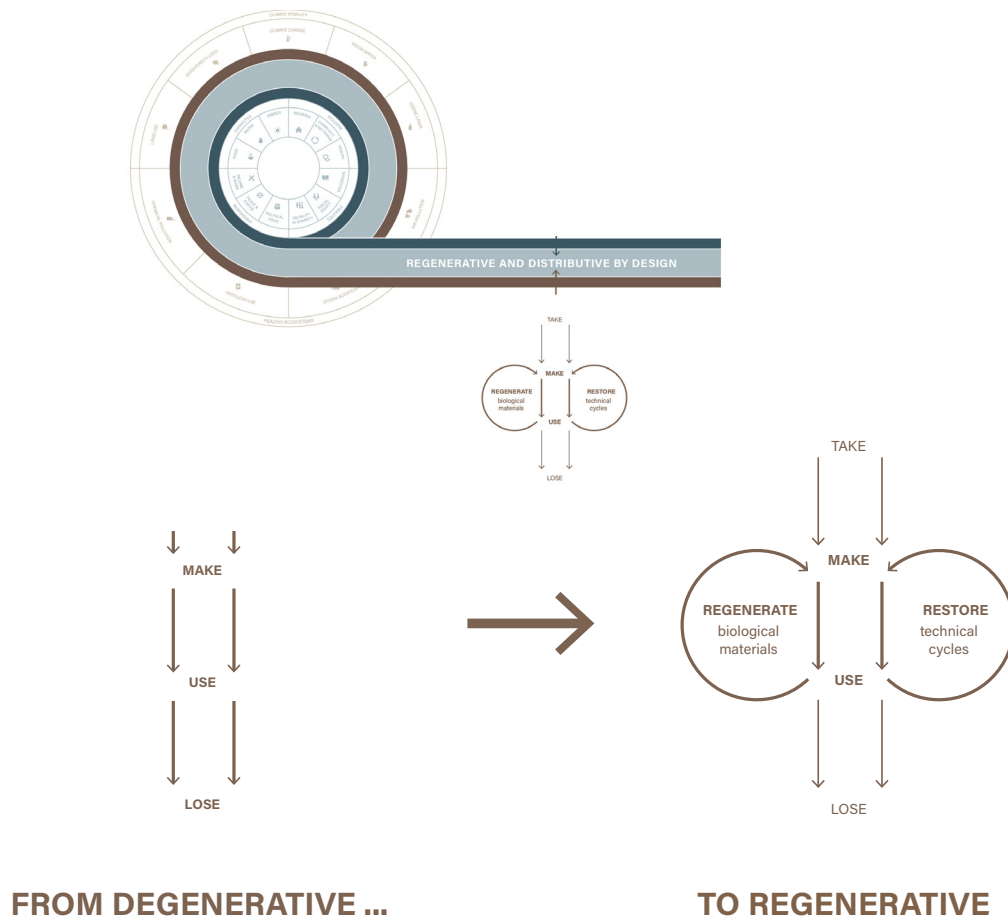
Examples

Strive to create affordable housing for all income groups (S13), Adopt fair and transparent contractual agreements (S10), Promote healthy and affordable built environments that support well-being and sustainability (S21), Prioritize inclusive design that caters to the diverse needs of communities (S33), prevent water pollution in extraction and production materials (S07), and share ideas open-sourced in both local communities and global networks (S19).

How can you make sure that everyone involved in a building project gets a fair share of the benefits and chances to contribute? *

*Get inspired by the Impact Areas Sheets and Social & Ecological Wheels.

Regenerative Design Principle



Embrace a Regenerative Mindset Respecting Our Earth's Limits

The conventional way of conducting business typically follows a linear path, which frequently results in negative and deteriorating outcomes (degenerative). Within the confines of a planet with finite resources, where we have already surpassed Earth's ecological thresholds, and the extent of harm to the natural world is nearing critical levels, it is imperative that we move beyond the concept of linear processes of "Take, make, use, lose", merely "minimizing impact or achieving net-zero impact." We must move towards circular, regenerative processes of slow resource use where living systems are regenerated and repaired.

The Role of the Building Industry

The Building Industry significantly contributes to global emissions, resource and energy consumption and the loss of biodiversity, due to its construction techniques and choices regarding materials and circularity. However, it also has the potential to either markedly exacerbate social and ecological harm or actively engage in restoration efforts.

The Challenge - Positivity as a Core Value

The challenge at hand is not just about reducing negative impacts but also making positivity a core value. The invitation is to build projects that contribute to regenerating the Earth's system, both locally and globally.

Examples

Climate Stability: Promote Circular and Low Carbon Constructions (E11). Source Materials with High Carbon Sequestering Qualities (E21). Implement Flexible Building Design to Reduce the Need for New Construction (E08). Adopt a Life Cycle Thinking Approach (E20).

How could you be regenerative in a building project? *

*Get inspired by the Impact Areas Sheets and Social & Ecological Wheels.

Local Aspirations and Global Responsibilities



Holistic and Interconnected Thinking - Balancing Local and Global

The Doughnut Unrolled Method of the “four lenses” invite us to look at the interplay between local aspirations and global responsibilities – both socially and ecologically – to identify possible focus points for transformative action in the buildings we develop and live in. The choices made by individuals and organizations in a specific area can have various effects, both positive and negative, on people around the world. When planning urban development projects, the focus is often on the immediate local impact, while overlooking broader consequences and supply chain effects.

The Role of the Building Industry

To address this, it's important to view urban development through both a local lens (on-site) and a global lens (off-site), requiring developers to broaden the scope of project considerations and acknowledge the social and ecological impacts of building construction off-site, on distant places.

The Challenge - Catalyst for Change

The challenge is to move beyond isolated positive outcomes of the project on-site and consider the entire lifespan of buildings, from material extraction to end-of-life and beyond.

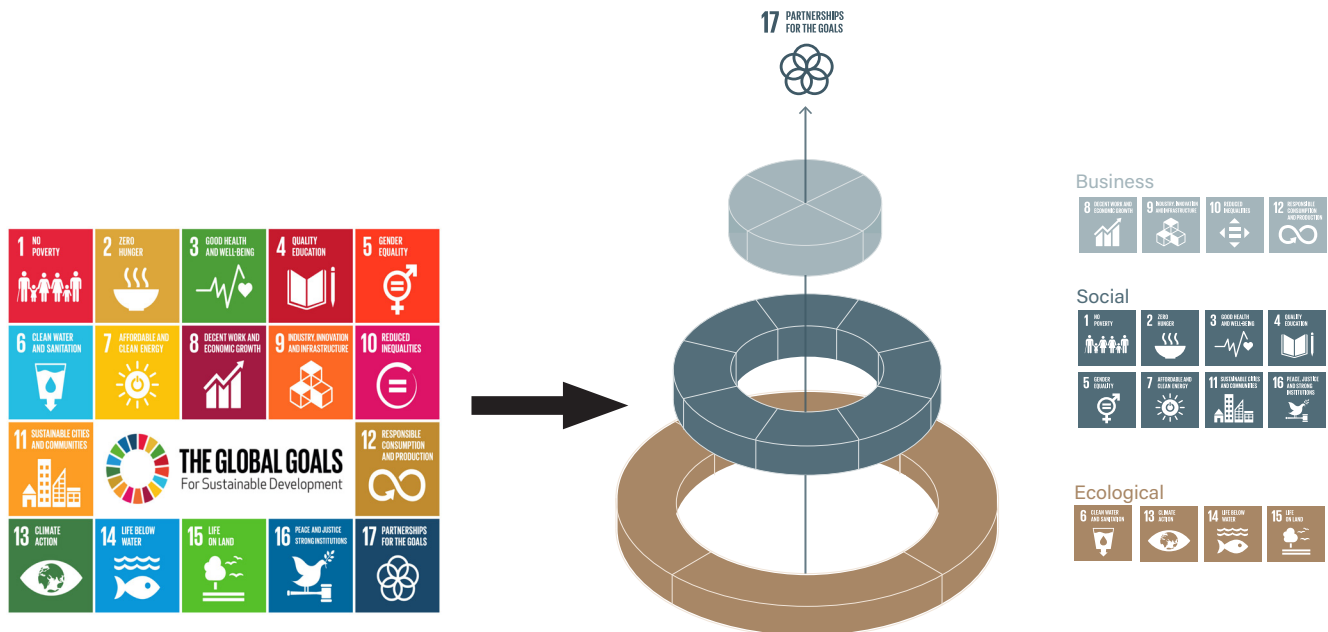
Examples

- **Ecological - Local:** Habitat Preservation (E32), Carbon Sequestering (E21), Water Cycle Support (E30), Renewable Energy (E04), Purify the Air (E35), Support Biodiverse soil (E33)
- **Ecological- Global:** Carbon Budget (E13), Responsible Sourcing (E22), Minimise Transportation (E23), Set Biodiversity Target (E37), Restore Natural Resources (E47), Ecosystem Protection (E42)
- **Social - Local:** Affordable Homes (S13), Efficient Sanitation (S06), Affordable Energy (S09)

What are the primary challenges you face when assessing the off-site/global impact of your projects? *

*Get inspired by the Impact Areas Sheets and Social & Ecological Wheels.

Hierarchy of the Earth's Systems



From today's two dimensional perspective....

..to a three dimensional and interdependent one

Sustainable Development Goals (SDGs) based on planetary boundaries

Today, communication about the Sustainable Development Goals (SDGs) often presents a two-dimensional view, which can lead organizations to selectively choose sustainability objectives and overlook the fundamental connection between planetary health (Ecological), human well-being (Social) and economies (Business). The Doughnut for Urban Development introduces the concept of the 'SDG Wedding Cake,' emphasizing a clear hierarchy: our socio-economic objectives cannot be achieved without first ensuring climate stability and the functionality of ecosystems (ecological). This model underscores the idea that economies and societies are integral components of the biosphere, highlighting their interdependence. The Doughnut Model defines this approach as the pursuit of meeting basic human needs while respecting planetary boundaries."

The Role of the Building Industry

The building industry is urged to undergo a transformation in goal setting by shifting its logic from growth-oriented to planetary-oriented. This means giving top priority to the limits and boundaries of Earth's ecosystems and natural resources, and focusing on setting absolute targets at both the organizational and urban development levels. This shift empowers us to move beyond the current paradigm of simply minimizing harm to actively promoting positive change.

The Challenge - Shifting the Way of Thinking

Challenge yourself to break free from the notion of infinite growth on our finite planet. Instead, set a new goal: make planetary and social well-being the cornerstone for your objectives in building within these boundaries.

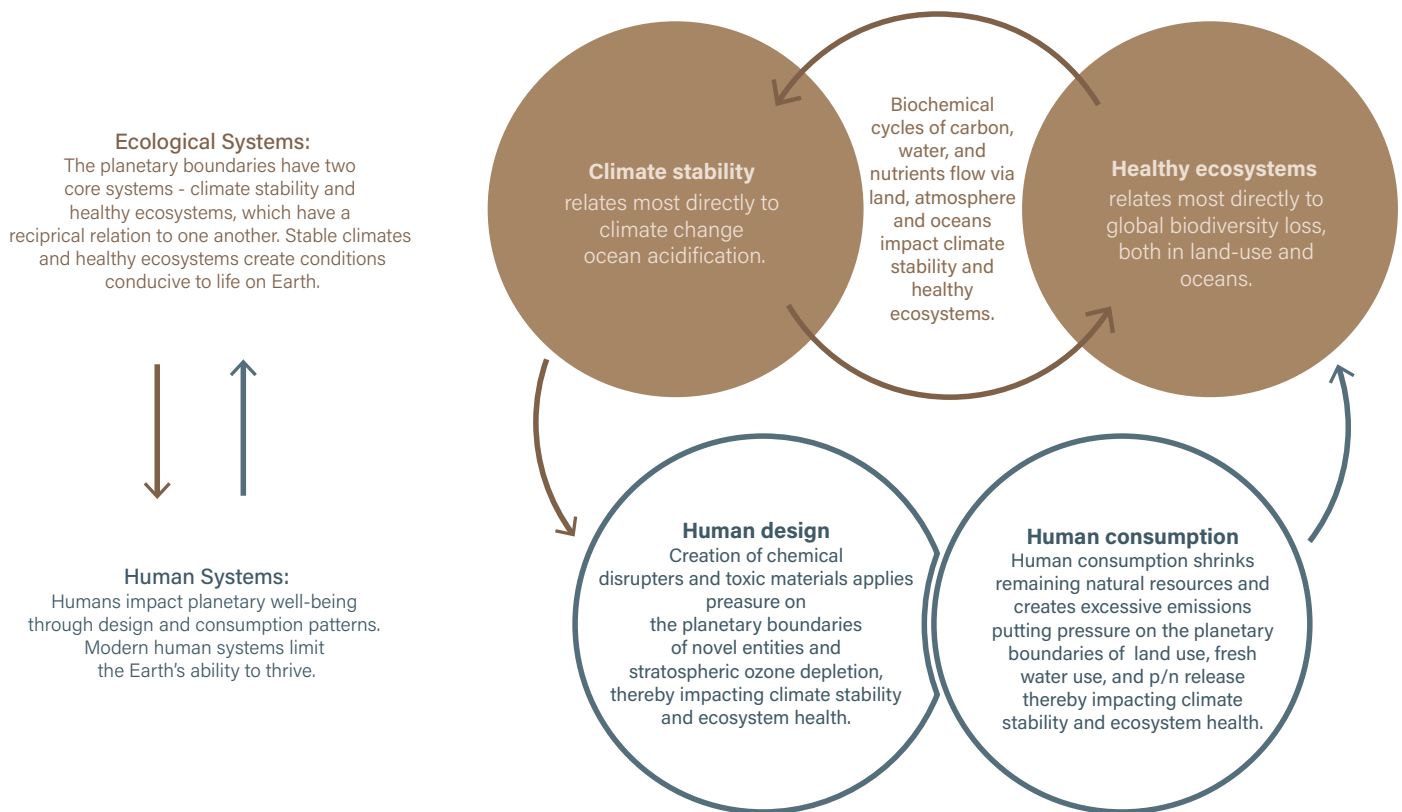
Examples

A sustainable urban development project begins by setting absolute targets for the ecological ceiling from both local and global perspectives, with climate stability (carbon budget E13) and healthy ecosystems (biodiversity targets E37) as top priorities. Next, it prioritizes the social impact on-site and off-site before pursuing economic goals.

Without planetary well-being there is no economic well-being. How do you redefine business for planetary well-being? *

*Get inspired by the Impact Areas Sheets and Social & Ecological Wheels.

Urban Development within Planetary Boundaries



Ecological Ceiling and the Two Core Boundaries

Starting from the ecological ceiling, which represents our planetary boundaries, scientists highlight that there are two critical boundaries. When significantly crossed, each of these boundaries has the potential to push the Earth's system into a new and unpredictable state. These two core boundaries are climate stability and healthy ecosystems, and they are closely interdependent. Climate stability pertains to climate change, while healthy ecosystems relate to biodiversity preservation. It's important to emphasize that social-human systems can also constrain Earth's capacity to thrive and affect planetary well-being through their design and consumption patterns. Recognizing and adhering to these boundaries is paramount for ensuring a sustainable future. Today, it is feasible to establish measurable, evidence-based targets for expanding urban development while remaining within the boundaries of our planet, with the goal of achieving regenerative outcomes.

Setting Targets: Shifting from Relative to Absolute Targets

We often operate with a mindset centered on relative targets, where emission reductions are compared to past projects without considering planetary limits. However, as mentioned, it is possible to set absolute targets that can evaluate ecological performance, both on-site and off-site. To ensure climate stability, carbon budgets can be established, and to promote healthy ecosystems, biodiversity targets can be set, utilizing methods like life cycle assessment (LCA) and 'Biodiversity Net Gain.' These absolute targets are essential for identifying our current position, our destination, and the pace at which we must reduce carbon emissions and preserve biodiversity to stay within Earth's safe operating space.

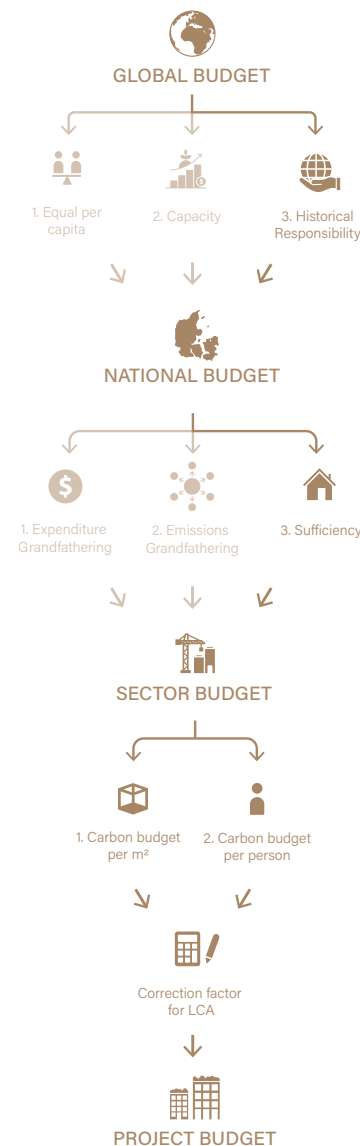
The Challenge and Role of the Building Industry

We invite the building industry to take action and work within these physical limits, by setting measurable absolute targets based on finite resources.

How can your organization move from relative to absolute sustainability targets and what are the implications? *

* Dive deeper on chapter 4 of the book.

Climate Stability - Setting an absolute Carbon Budget



It is possible to define Earth's Physical Limits and Carbon Budgets

To ensure sustainability within Earth's capacity, we start by defining and measuring it. Earth's physical limits, including climate stability, are crucial for maintaining a safe operational environment for our planet. We can set specific and absolute targets based on the remaining greenhouse gas emissions allowed in the atmosphere, which are known as carbon budgets. The process of distributing these boundaries begins at the global level and goes down to the national, sectoral, and finally, project-specific levels.

From Global to sector-specific and project-level allocation

On a global scale, we define the safe operator space as the maximum allowable greenhouse gas emissions. For instance, Denmark currently emits 47.9 billion tonnes of carbon annually and would need to achieve a 96% reduction to fit within this safe operating planetary space. To go to a national level, we propose applying the sufficiency principle (book pag. 116) to ensure that human needs are met. In Denmark, this means allocating 15.1% of the national climate budget to housing. When it comes to sector-specific and project-level allocation, we adjust budgets based on existing Danish buildings, utilizing a metric of kg CO₂ eq/m²/year. This approach is practical for industry professionals managing absolute carbon budgets.

The Role of the Building Industry

The urban development sector significantly contributes to carbon emissions (40% of global CO₂ emissions) throughout every stage of a building's lifecycle. To address this, there is a pressing need for a substantial shift toward absolute sustainability targets in construction projects. Utilizing tools such as Life Cycle Assessment (LCA) can help identify major carbon contributors and prioritize reduction efforts.

The Challenge

The challenge ahead lies in the adoption of absolute targets (carbon budgets) within your projects, whether at an organizational or urban development level.

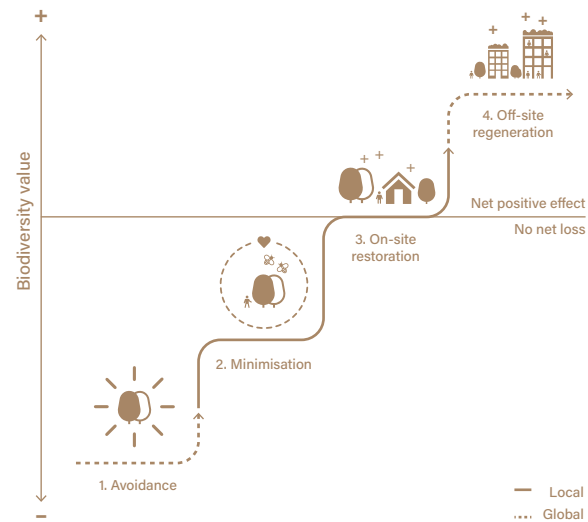
Examples

Reduction Roadmap 2.0 is an example of allocation that can be adopted by the building industry in Denmark. It indicates that new construction must emit less than 5.8 kg CO₂ equivalent/m²/year in 2025 in order to comply with the Paris Agreement. Setting carbon budgets (Climate Stability - E13, E14, E15), selecting low-carbon materials (E17), addressing carbon emissions throughout the materials' processing, construction, usage, and eventual decommissioning phases, all of which offer opportunities for carbon reduction through sustainable practices and Life Cycle thinking (E20), among other strategies.

How can you begin to use absolute carbon measures in your strategy and projects? *

*Get inspired by the Impact Areas Sheets and Social & Ecological Wheels.

Healthy Ecosystem - Setting a Biodiversity Target



Biodiversity Net Gain



Life Cycle Assessment (LCA) BIO

Biodiversity is a core boundary

Acknowledging the Earth's physical constraints and the crucial role of maintaining healthy ecosystems to ensure a safe operating environment, we can establish concrete objectives to biodiversity grounded in finite resources. Our built environment is "consuming nature" since more than 35% of global biodiversity loss and water stress can be traced back to our relentless material extraction. Europe, in particular, bears the brunt, contributing over 40% of material extraction and waste. It is possible to measure biodiversity on-site (locally) with the 'Biodiversity Net Gain' method, and assessing biodiversity impact off-site (globally) can be done using the 'LCA Bio' which uses Life Cycle Assessment (LCA) to assess ecosystem impacts both on-site and off-site. It is also important to include local surveys and plans made by experts ecologists.

On-site and Off-site Biodiversity

We can no longer view urban developments in Europe for example, as separate from degradation in other places. The impacts of urban development on healthy ecosystems can be divided into local impacts occurring on and around the development site, and remote impacts occurring throughout the global supply chain, linked, for instance, to the production of construction materials.

The Role of the Building Industry

You have the choice to invert this situation, moving away from destroying, degrading, polluting, and fragmenting natural habitats and biodiversity, and instead, choosing to design for clean outdoor air, regenerate ecosystems, and ambitious nature-based solutions and targets on site and off-site.

The Challenge

In business-as-usual scenarios, biodiversity is considered an on-site (local) issue, but we invite you to apply a life-cycle perspective that includes the quantification of off-site (global) biodiversity impacts that occur across the supply chain.

Examples

Set biodiversity targets to ensure your building project's impact is within planetary limits (E37). Preserve and support the existing natural habitats (E32). Engage with qualified local expert ecologists for impact assessment (E38). Be transparent in documentation and reporting (E39). Refer to the annex "Toolbox", which contains the Biodiversity tools developed by the Doughnut for Urban Development team.

How can you effectively minimize negative effects on ecosystems and promote biodiversity, both locally and globally?*

*Get inspired by the Impact Areas Sheets and Social & Ecological Wheels.

Social Foundation- Impact Assessment



Holistic Social Impact Assessment in Urban Development: The importance of holistic thinking, considering global interconnections, is highlighted in the context of urban development, as existing frameworks often focus on local impacts and fail to address significant off-site social impact risks and opportunities in the global supply chain and surrounding community, resulting in poor working conditions and human rights abuses.

Context Awareness: Maintaining awareness of context is crucial because the definition of specific social impacts depends on the unique character and history of each community, making it impossible to have a one-size-fits-all solution; therefore, while the Doughnut for Urban Development provides a solid starting point for identifying social impact areas within its 12 dimensions, it's essential for users to adapt and consider additional impact areas based on their specific contexts.

Four Essential Categories for Urban Development: The original social foundation of the Doughnut with 12 social dimensions was grouped into 4 main categories that are useful to consider in an urban development context, namely: Connected, Inclusive, Equitable and Responsible.

Social Impact and Measurement: Social impact is complex, extending beyond measurable metrics to include factors like well-being and culture. The lack of quantitative social impact management hampers urban development assessments. The manual recommends using the EU Taxonomy's three-tier impact hierarchy: Minimum Safeguards (ethical and legal standards), Do No Significant Harm (eliminating adverse impacts), and Substantial Contribution (enhancing outcomes). To achieve a "Substantial Contribution," activities must actively improve social outcomes, not just reduce negative impacts.

The Role and Challenge of the Building Industry

Urban development should extend beyond isolated positive project outcomes on-site and incorporate the broader view of the off-site context, a step that is frequently overlooked in development strategies. The main challenge is to customize your social impact according to your projects, always keeping in mind ways of minimizing negative impacts and maximizing positive impacts both locally and globally. It is essential to create a budget to conduct impact assessment within the project, a Code of Conduct and a Due Diligence Process.

Examples

The Doughnut for Urban Development is introduced as a comprehensive framework aiming to address these interconnected challenges and impacts, including aspects like mental health, safety at construction sites, and supply chain workers, which are often overlooked by existing frameworks.

How can all people in this development thrive?

How can this development respect the well-being of all people?*

*Get inspired by the Impact Areas Sheets and Social & Ecological Wheels.