IMPACT THESIS

011h

“Our burning of fossil fuels, our destruction of nature, our approach to industry, construction and learning, are releasing carbon into the atmosphere at an unprecedented pace and scale.”

“We now understand this problem. We know how to stop the number rising and put it in reverse. We must recapture billions of tonnes of carbon from the air.”

“If working apart, we are a force powerful enough to destabilize our planet, surely, working together, we are powerful enough to save it.”

David Attenborough
(COP26 Glasgow)

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1

THE REASONS FOR THE OʻIʻIh IMPACT THESIS

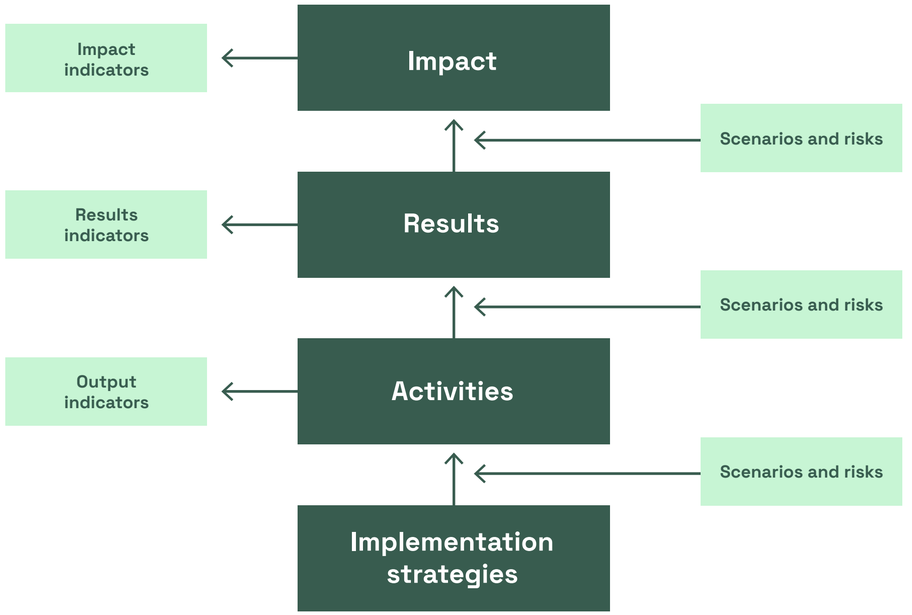
The mission of 011h is to accelerate the transition to sustainable construction

We are part of the solution to reduce CO2 emissions in the whole of the construction process of buildings

Our contribution seeks to **mitigate** serious environmental problems such as **climate change**, and at the same time scale a reliable and more efficient production capacity. We aim to provide **access to more affordable and sustainable housing.**

011h contributes to environmental, social and economic sustainability. This contribution is more than just a statement of intentions; it is the essence of our goal. In this 011h Impact Thesis, we set out our contribution by presenting **our strategy and business model.**

It lists our strategic decisions, our activities and the results and impacts we seek. It also determines what and how we measure and its relationship with the implementation of the strategy.



1.1

CLIMATE CHANGE AWARENESS

At current rates of CO2 emissions, average global temperatures could rise by 3 degrees by the end of the century

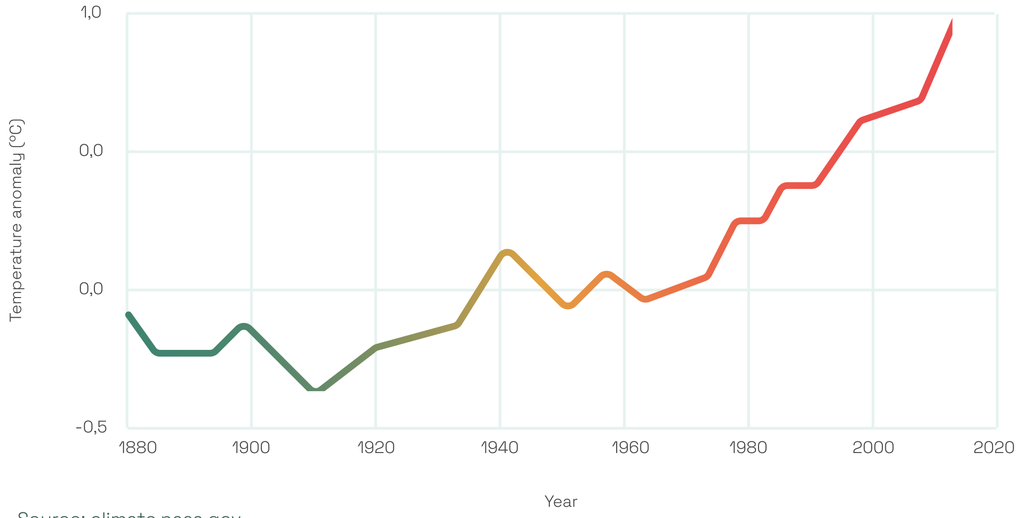
The use and exploitation of natural resources and energy from fossil fuels in sectors such as **transport, agriculture and livestock farming, industry and construction is creating a serious environmental imbalance in the planet.**

As a result, the melting of icecaps and glaciers, rising sea levels, desertification and the extinction of species are serious consequences that we are normalising societally.

The planet's average surface temperature has increased by 1ºC since the end of the 19th century.

Warming has increased, especially over the last 40 years, with the last 7 being the hottest.

Global temperature increase



Source: climate.nasa.gov


If the Earth’s average global temperature increases by more than 1.5 degrees, it will cause irreversible damage affecting our survival.
Intergovernmental Panel on Climate Change (IPCC)

1.2

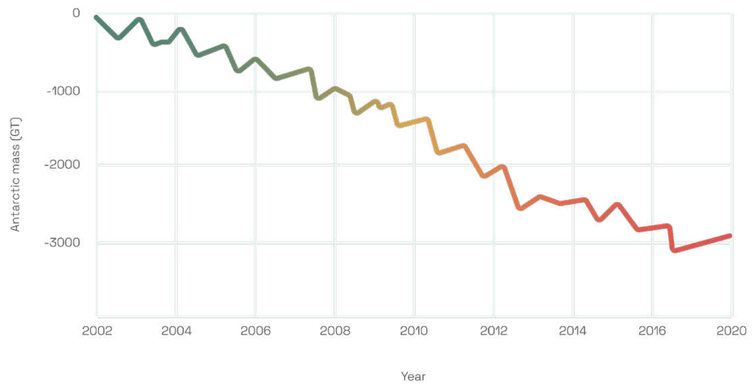
WHY WE NEED TO ACT THE CONSEQUENCES OF CLIMATE CHANGE

In the increasing greenhouse gas emissions, carbon dioxide is the principal cause of the increase in global temperatures

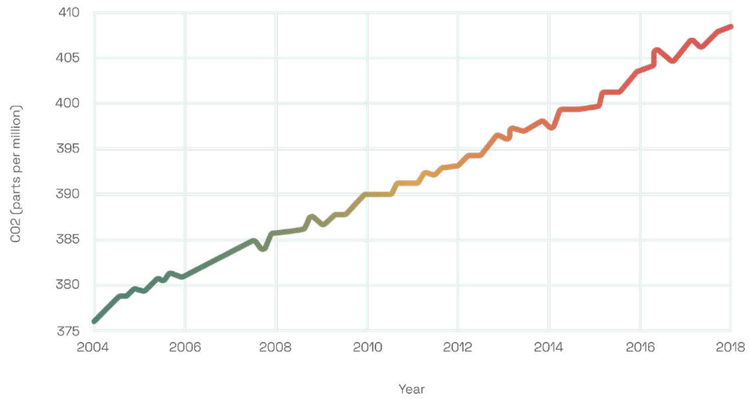
Soil erosion threatens crops and homes.

In many regions, the population will be **forcibly displaced** (climate refugees). **Loss of flora and fauna** is one consequence of the smaller ice caps and rising sea levels.

Land ice area of Greenland



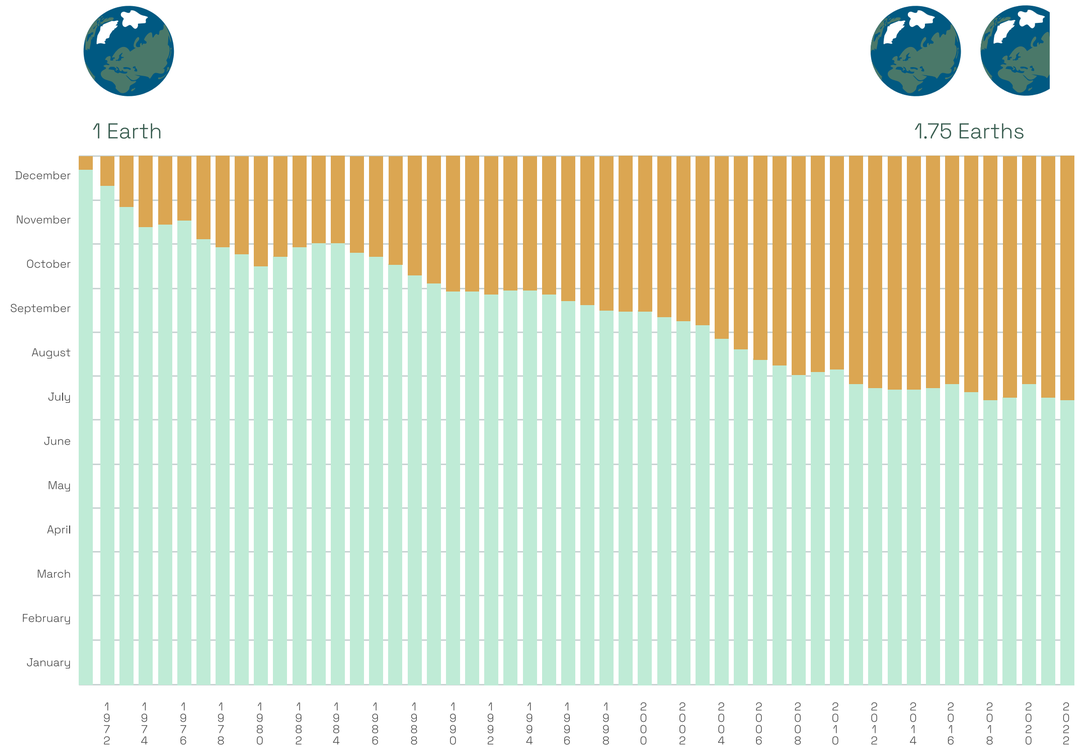
Concentration of carbon dioxide in the atmosphere



Source: climate.nasa.gov

Earth overshoot day, or how we prevent the regeneration of the planet

"Earth Overshoot day" is the date **when humankind has consumed all of the resources that the planet can renew in one year".**



Source: overshootday.org

1.3

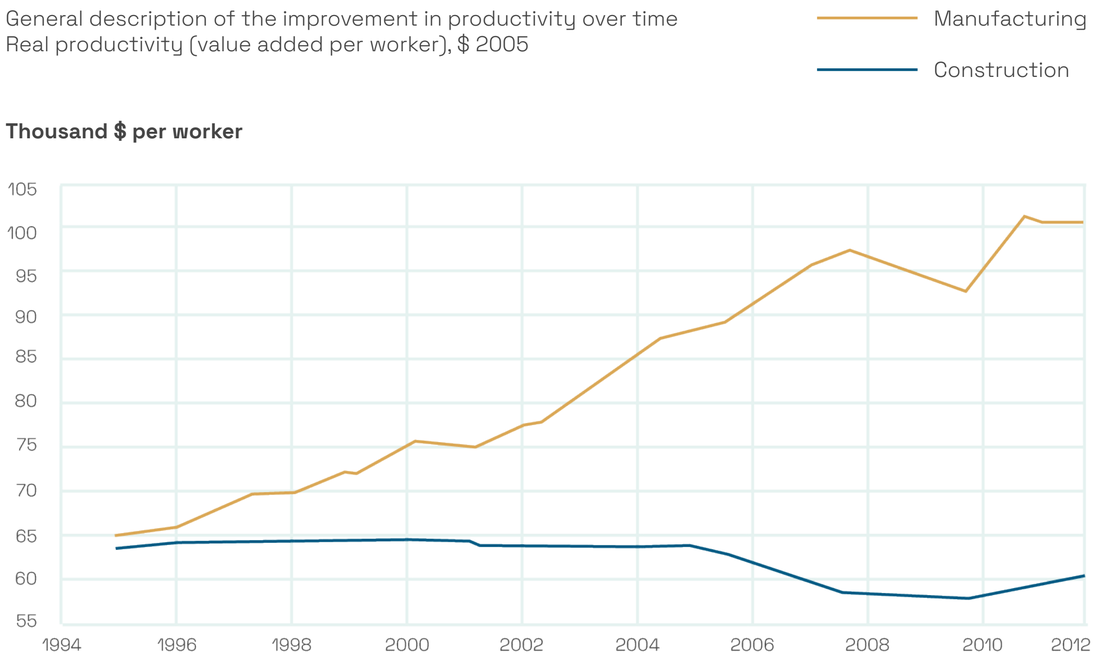
THE CONSTRUCTION INDUSTRY HAS NOT EVOLVED

Productivity in manufacturing has almost doubled, while in construction it has remained the same

Conventional construction has not evolved at the same pace as other industries, commerce or transport. As a result, the **development of productivity** is much lower than in other economic activities.

Projects in conventional construction are unique and unrepeatable; they are **complex, slow, low quality and high maintenance.** As a result they are inefficient and have major financial and timescale deviations. Furthermore, they do not take important questions about environmental impact into account.

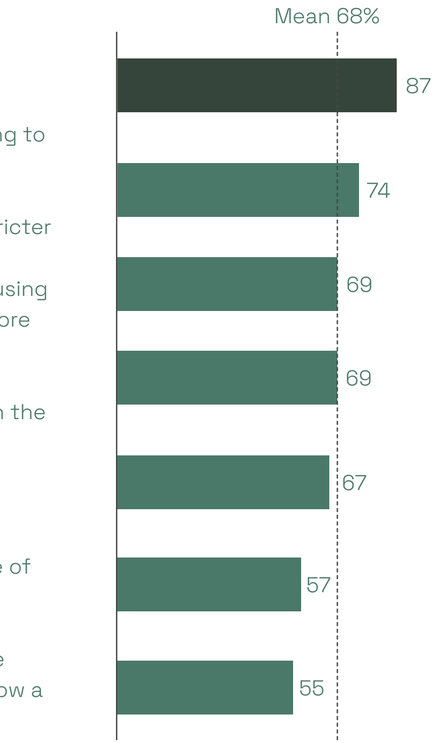
General description of the improvement in productivity over time
Real productivity (value added per worker), $ 2005



Source: Interviews with experts; IHS Global Insight (Belgium, France, Germany, Italy, Spain, United Kingdom, United States); Input-Output Database

The industry believes that the characteristics of the market will change in scale

A report published by the company McKinsey in June 2020 entitled “The Next Normal in Construction” posed the question **“which of these changes do you think will have the biggest impact on the construction industry?”** to a highly qualified and high-impact group of people involved in the sector. The major concerns of developers can be seen, both regarding lack of specialised labour, their engagement with scalability, and in relation to adaptation to new sustainability regulations, as well ensuring the necessary production capacity for the business development.



2

GLOBAL CHALLENGES AND SOLUTIONS

2.1 THE DECARBONIZATION PROCESS

The transition to a more sustainable world

In recent decades, the global objective has been to limit and reduce greenhouse gas (GHG) emissions to “a level that would prevent dangerous anthropogenic (human induced) interference with the climate system”.

Many countries have already committed to **achieving zero emissions by 2050** and keeping the increase in the Earth’s temperature below 1.5 degrees. **One priority objective is to reduce the use of fossil fuels (coal, gas and oil) and promote renewable energy (solar, wind and hydraulic).**

These commitments started with the **United Nations Framework Convention on Climate Change** (1994), the **Kyoto Protocol** and the **Paris Accord** of 2015.

On 28 November 2019, the European Parliament declared a climate emergency, and committed to reduce its CO2 emissions by 55% by 2030 and to achieve neutrality of all of its greenhouse gas emissions by 2050 within the **European Green Deal.**

011h collaborates in achieving these objectives by constructing zero-emissions buildings

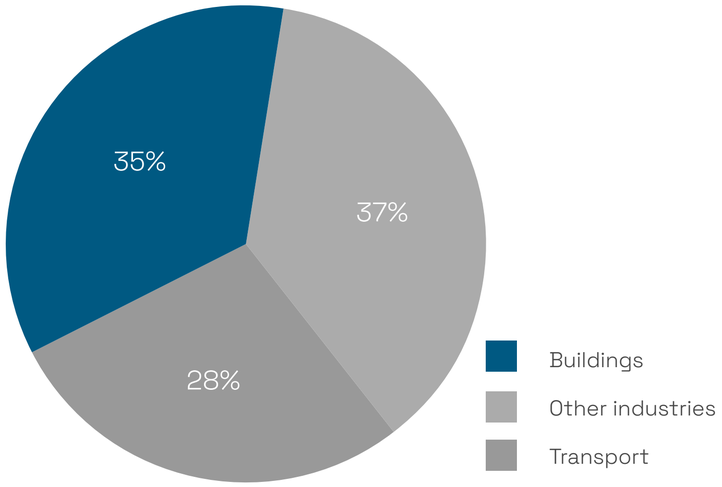
We minimise the generation of operational carbon embedded carbon in the construction process.

Modernising the construction industry and reducing global CO2 generation is fundamental as it causes 38% of these emissions and 35% of energy consumption.

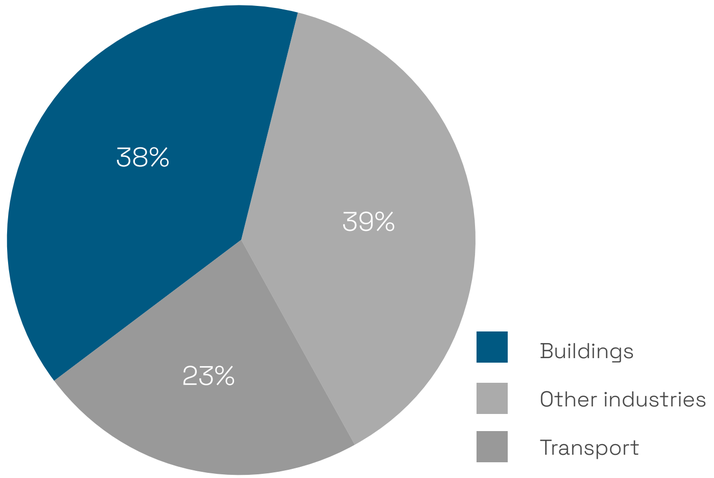
(Global Alliance for Buildings and Construction)

The European Commission is promoting the decarbonisation of the construction sector, with the objective that by 2030 **ALL** new buildings **will generate zero emissions in their life cycles**, and for this to be the case for other existing buildings by 2050.

ENERGY



CO_2 EMISSIONS



According to the European Union, based on the whole life cycle of buildings, the construction industry is responsible for:

1/2 of all materials extracted

1/3 of water consumption

1/3 of creation of waste

“Our buildings generate 38% of our emissions. They need to become less wasteful, less expensive and more sustainable.

And we know that the construction sector can even be turned from a carbon source into a carbon sink, if organic building materials like wood and smart technologies like AI are applied.”

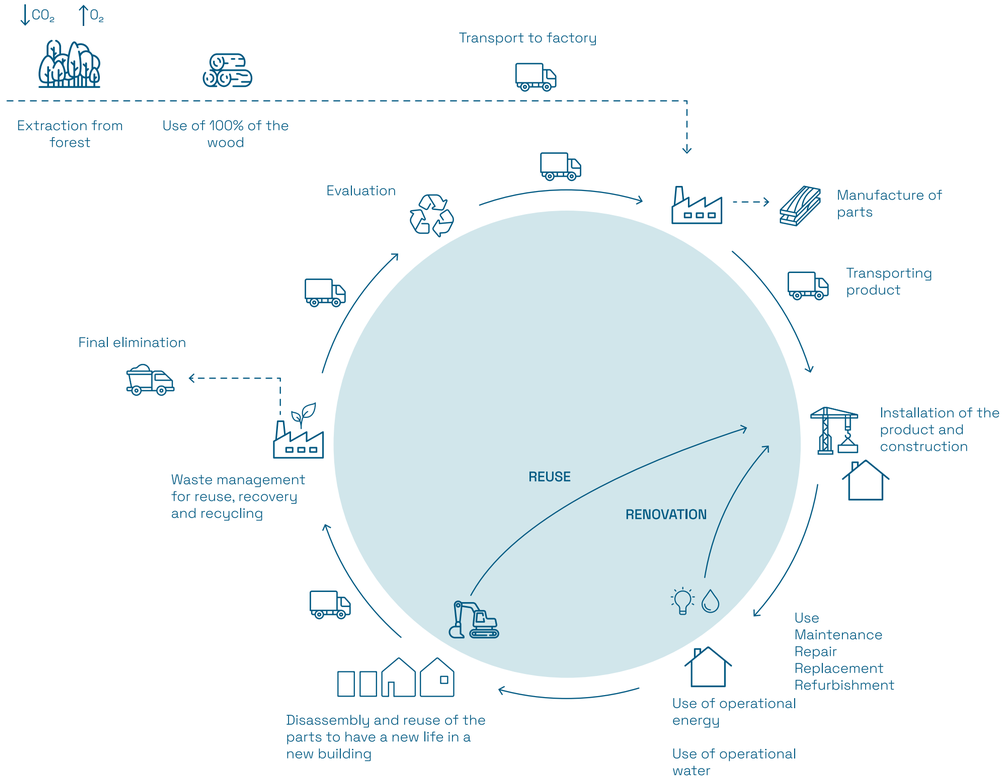
Ursula von der Leyen, President of the European Commission. Speech on the State of Union to the European Parliament, September 2020

2.2 LIFE-CYCLE ANALYSIS

How do we measure CO_2 emissions and other environmental impacts of building?

Life-cycle analysis is a method that **studies the environmental impact of a building** in all of the stages of its life including the extraction of the raw materials and the reuse and/or recycling of the building’s materials to give them a new purpose.

1. **Production:** Impact generated from extracting raw materials through to obtaining manufactured products.
2. **Construction:** Environmental impact created by transport and the building process.
3. **Use of the building:** Once the building has been constructed, the impact of its maintenance, energy consumption, water consumption and so on is analysed.
4. **End of life:** Impact created in the demolition of the building, or the transport and dumping of material.
5. **New life:** The processes of Recovery, Reuse and/or Recycling of the materials are observed and evaluated.



In all phases of the life cycle, CO2 emissions of two basic types are generated: **operational carbon** and **embedded carbon.**
The sum of emissions from each phase represents the total CO2 emissions of a building throughout its whole life cycle and its **global warming footprint.**

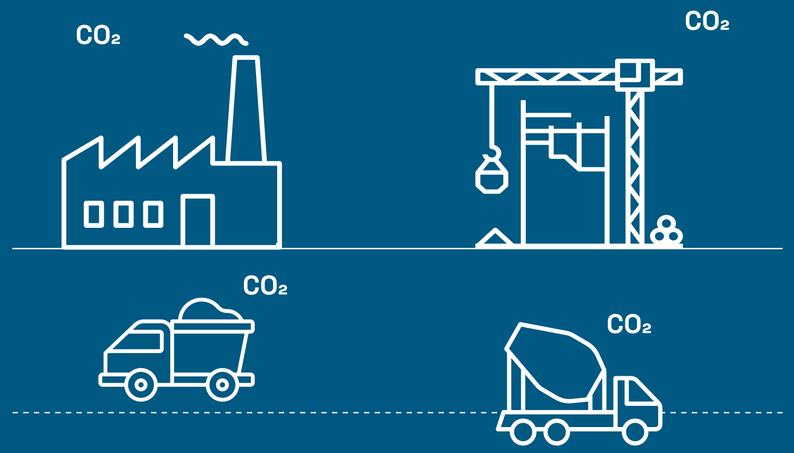
2.3 EMBEDDED CARBON vs OPERATIONAL CARBON

What are embedded carbon emissions?

These emissions are **generated in the phases of production, transport, construction, maintenance, renovation and end of life or new life of the building.**

Embedded carbon emissions represent around **25%** of emissions created by the construction sector.

The monitoring of the creation of embedded carbon is not currently governed by European or national regulations.



What are operational carbon emissions?

Operational carbon emissions are associated with the **energy consumed during the building's use phase.** They derive from consumption for heating, cooling, heating water, artificial lighting and consumption by domestic appliances.

Operational carbon emissions are responsible for **75%** of the emissions **generated** by the construction sector.

This figure appears on the label of the energy certificate, which is obligatory to be able to rent or sell a property.

The label classifies the amount of operational emissions generated by a building from G to A.

Since late 2019, regulations have made it compulsory to plan and construct new **buildings with virtually no energy consumption** and with very low operational CO_2 emissions.

3

THEORY OF CHANGE

At 011h, environmental, social and economic sustainability are strategic objectives

According to the impact metrics of the Impact Management Project, we see ourselves as a company that **Contributes to Solutions** for environmental problems like **climate change** and social problems like the shortage of **affordable and sustainable housing.**

Beyond its declaration of intentions, 011h presents this **Impact Thesis** aligned with the United Nations **Sustainable Development Goals (SDGs)**, and with the European Union's systems for measuring and classifying sustainability: **Level(s) and Taxonomy.**

Action to avoid harm

"I want to reduce the energy consumption of buildings"

"I want to reduce the waste material generated in the construction of buildings"

Benefiting affected parties

"I want a world where the construction of buildings is *passivhaus*"

"I want to have a positive effect in the world to reduce CO_2 emissions"

WHAT WE DO AT 011h

Contributing to solutions

"We want to contribute to mitigating climate change"

"We want to contribute to accessibility of sustainable housing"

Sustainable Development Goals (SDGs)

The 17 **global sustainable development goals** were set in 2015 by the General Assembly of the United Nations with specific goals that must be achieved by 2030. These objectives include ending **poverty, protecting the planet** and ensuring **prosperity for all people.**

Sustainable construction is directly related to 13 SDGs, but 6 are especially relevant.

- Good health and well-being (SDG 3)
- Clean water and sanitation (SDG 6)
- Affordable and clean energy (SDG 7)
- Sustainable cities and communities (SDG 11)
- Responsible production and consumption (SDG 12)
- Climate action (SDG 13)

sdgs.un.org/goals

European Taxonomy

This EU **system of classification** establishes which **economic activities** can be considered **environmentally sustainable.**

It provides businesses, investors and political decision makers with suitable definitions to establish this classification. It helps the EU increase sustainable investment and implement the European Green Deal.

For an activity related to building to be classed as sustainable, it must contribute substantially to one of the 6 proposed objectives

1. Climate change mitigation
2. Climate change adaptation
3. Water Resources
4. Circular Economy
5. Pollution
6. Ecosystems

Furthermore, it should do no significant harm to any of them, it should provide minimum social guarantees for workers and the building should not be intended for the extraction, storage, production or transport of fossil fuels.

ec.europa.eu

Level(s)

Level(s) is a **European framework** that provides **a shared language for evaluating and reporting** on the sustainability performance of buildings.

It also offers a system of 6 extensively tested vectors to measure and foster improvements from the design to the end of the useful life of the buildings.

- Greenhouse gas emissions along a building's life cycle
- Life cycles of materials that are efficient in resources and are circular
- Efficient use of hybrid resources
- Healthy and comfortable spaces
- Adaptation and resilience to climate change
- Optimised cost and value of the life cycle

environment.ec.europa.eu

Environmental certifications

011h also complies with the requirements and objectives of different environmental certifications for residential buildings:

VERDE: developed by the Green Building Council of Spain

DGNB: developed by the German Sustainable Building Council.

BREEAM: developed by BRE Global in the United Kingdom (Building Research Establishment Environmental Assessment Methodology).

Sustainable development involves

“Meeting the needs of the present without compromising the ability of future generations to meet their own needs”

United Nations
un.org

3.2

OUR TWO IMPACTS

The building industry is at the root of two of the most important challenges facing humankind

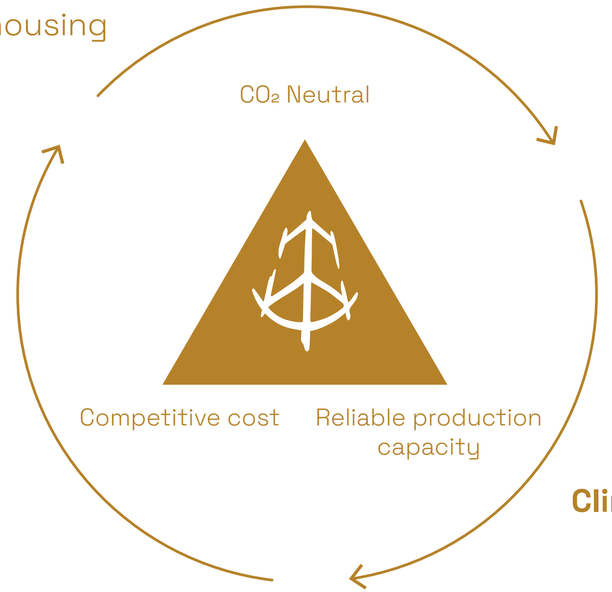
In this situation:

- 011h contributes by **climate change mitigation**
- 011h contributes to the **access to sustainable housing**

By achieving our objectives, we provide solutions in **three key aspects:**

- **Zero CO2 emissions buildings:** zero emissions from embedded and operational carbon.
- **Cost-competitive buildings:** affordable for the majority of the population.
- **Capacity for scaling:** the objective is to be able to satisfy the market's demand at any time and place reliably.

Lack of **affordable** and sustainable housing



Climate change mitigation

3.2.A

OUR IMPACT IN CLIMATE CHANGE MITIGATION

At 011h we design and construct carbon neutral buildings, zero-emission buildings, to fight climate change

In our buildings' structural envelope and partitions, we use certified wood plastic composite.

Certified wood relates to the guarantee of traceability from the forest to the completed building, through the whole of the process of transformation and distribution. We ensure that each phase in the process complies with environmental, social and economic sustainability standards. FSC and PEFC are the principal global certification schemes.

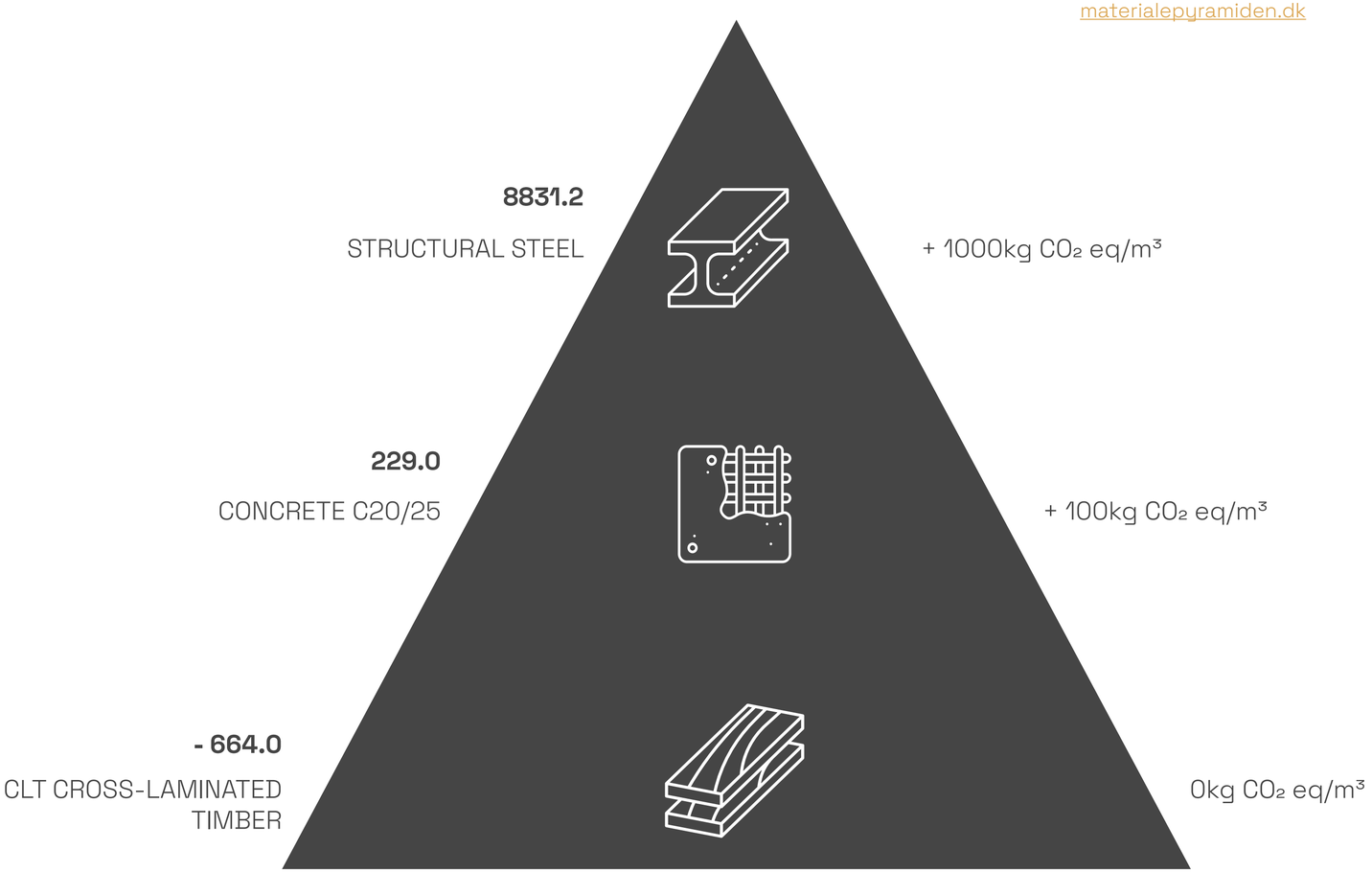
BUILDINGS AS CO_2 SINKS

Trees absorb CO_2 throughout their lives and convert it into oxygen through photosynthesis, capturing the carbon inside them.

By using certified wood-plastic composite, **we ensure that carbon is stored in the building and is not released back into the atmosphere.**

In addition, the process of manufacturing and constructing buildings in wood has very low CO_2 emissions. This contrasts with the high emissions caused when building with, for example, concrete and/or steel.

materialepyramiden.dk



BUILDINGS AS MATERIALS BANKS FOR FUTURE BUILDINGS

At 011h we incorporate circularity principles in the design and manufacture of components and of buildings themselves

These **can be dismantled and reused to have a new life in a new building or for another purpose. Reusing wood avoids releasing the captured carbon and reduces costs and additional emissions.**

In these conditions, our buildings are **Carbon Zero** (zero emissions) and even **Carbon Positive**, in other words, our wood stores or captures more carbon than it emits.

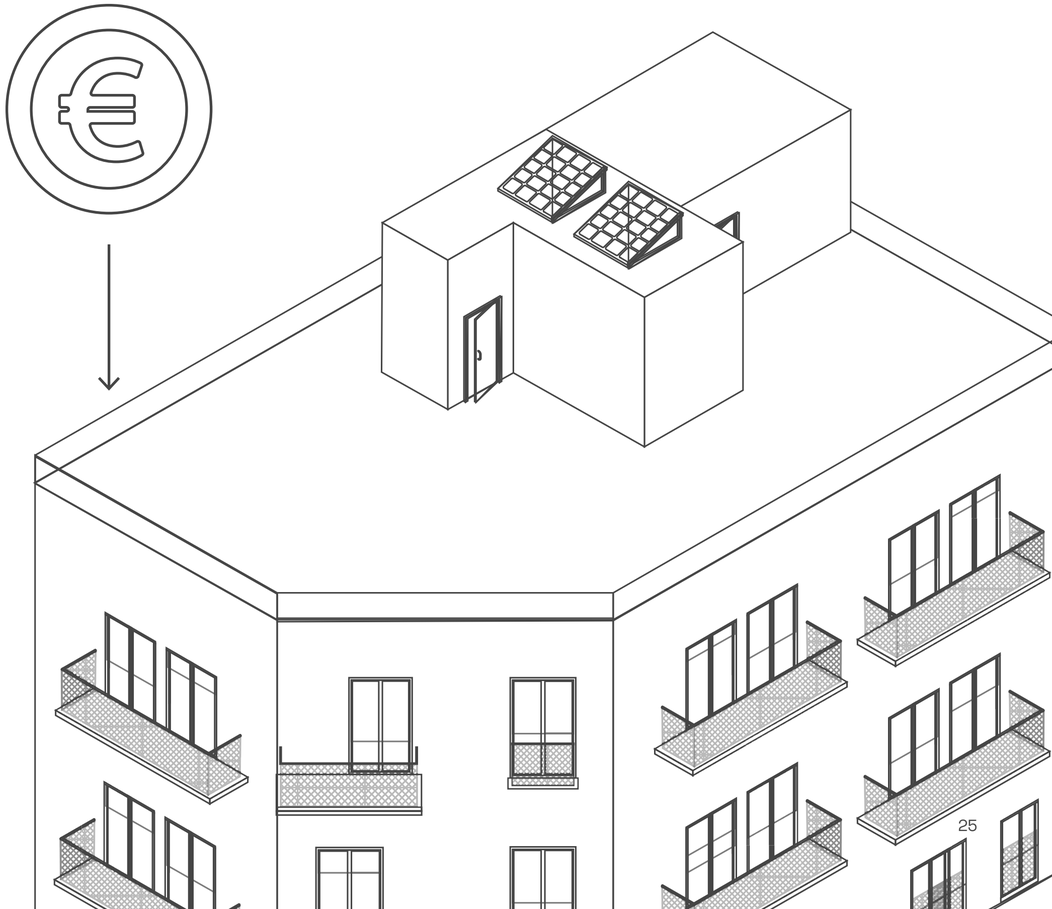
3.2.B

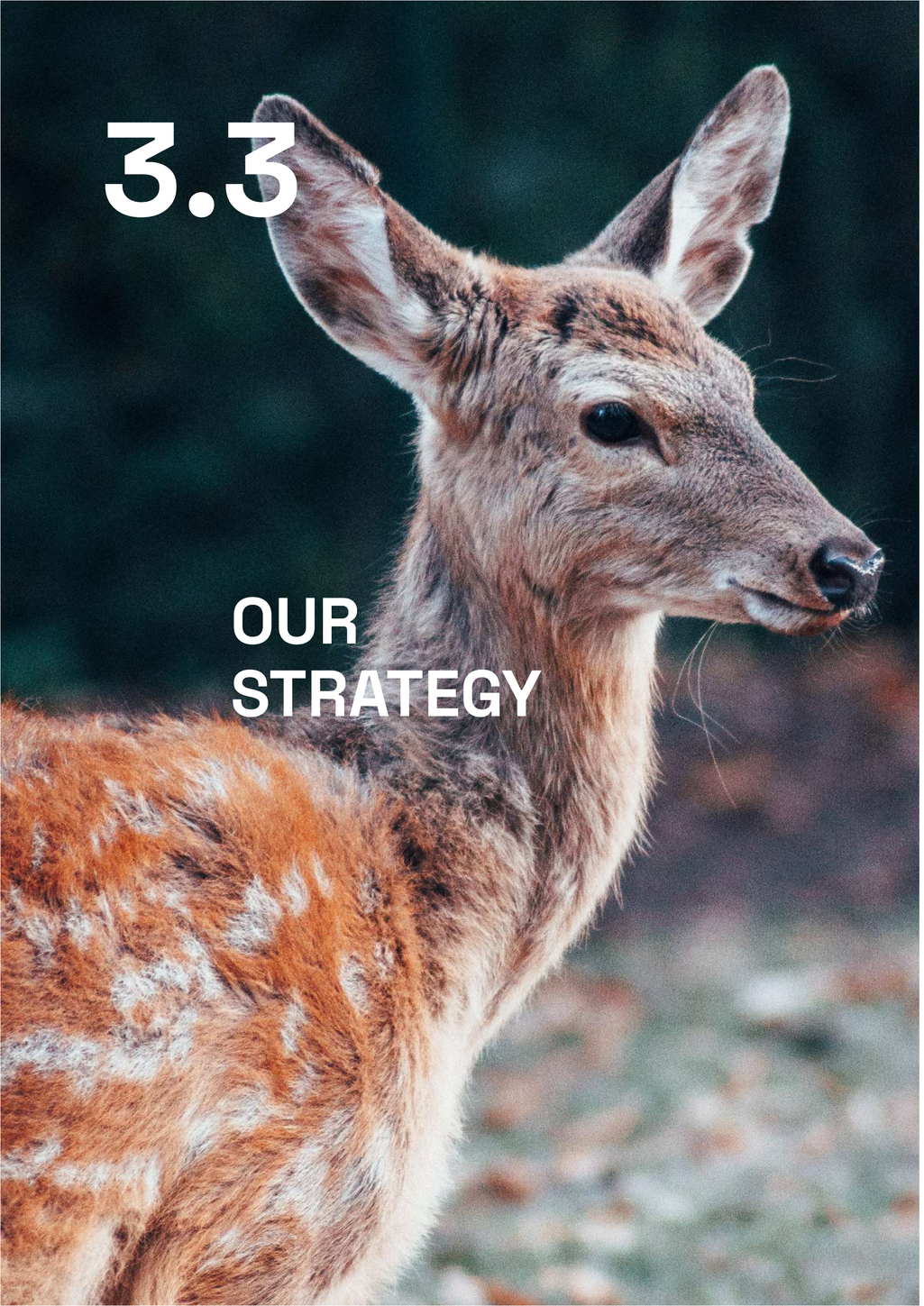
OUR IMPACT ON THE SHORTAGE OF AFFORDABLE AND SUSTAINABLE HOUSING

Health and sustainability must be affordable for all of society

Thanks to a more productive and efficient business model, at 011h we design and construct buildings at a competitive cost (which will eventually be lower than the cost of conventional construction). In addition, we build with a production capacity that is reliable and scalable and so is **affordable for many more people**, even ones with lower incomes.

Our municipal housing projects confirm these objectives.



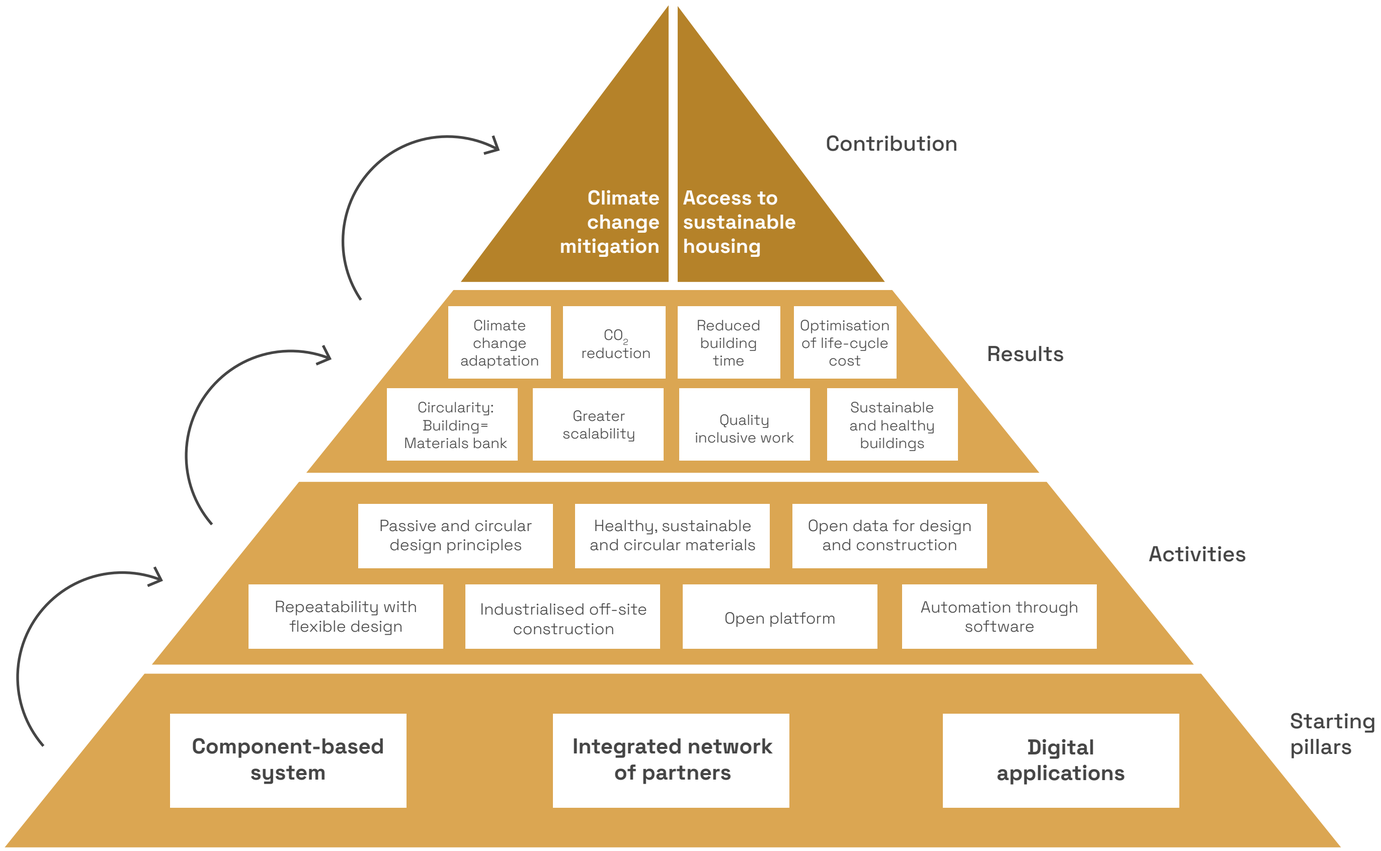


3.3 OUR STRATEGY

At 011h we want to transform the construction sector and solve these problems

Our response, our business model, is the development of an **Open Building Platform (011h Platform)** with **3 starting pillars.**

These pillars make it possible to carry out different activities and create different **results** (outputs) to **contribute** to protecting the environment and social equity (contribution).



011h Platform

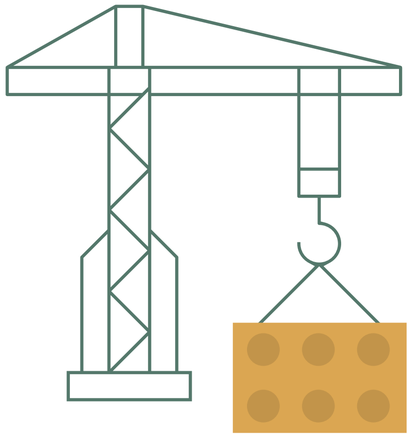
3.3.A

THE THREE STARTING PILLARS

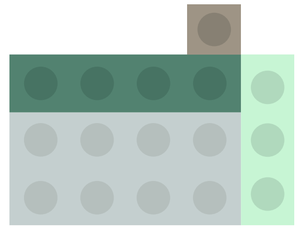
The three starting pillars, or Pillars of the 011h Platform, are: **a component-based system; a network of integrated partners; and digital applications.**

Component-based system

Our **pre-designed and adjustable components** allow flexible construction options to adapt to plots, regulations and the requirements of developers. At the same time, they standardise the construction, operation and deconstruction process, optimising the use of materials and labour throughout the process.



At 011h we treat buildings as **configurable products that evolve and improve over time.**



We do not use unique designs planned from scratch every time. We see buildings as a set of prefabricated **“LEGO parts”** that we assemble for each building, and we incorporate sustainable and circular materials and principles in their design.

We easily assemble the components at the building site with pinpoint accuracy. In this way, we avoid a high percentage of errors and waste in comparison with conventional construction.

Network of Integrated Partners

Our Partners include nationally and internationally recognised suppliers of materials, manufacturers of components and workers.

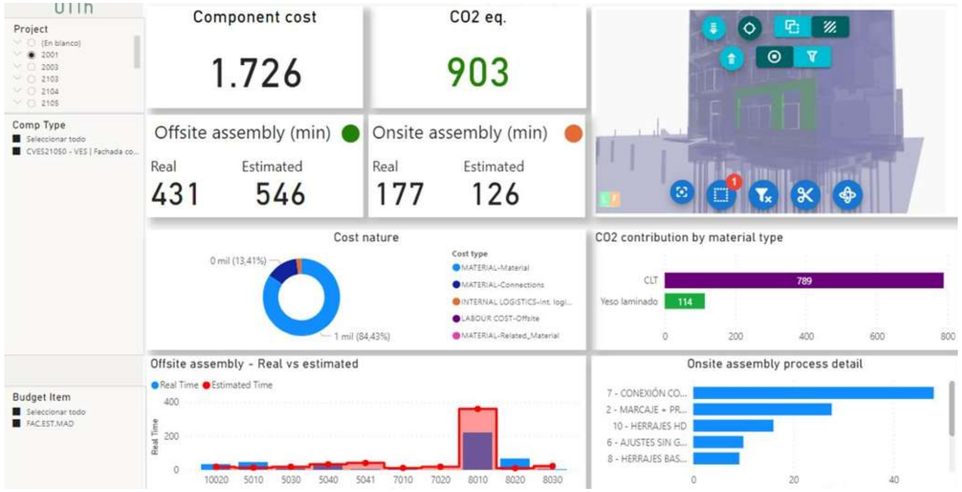
In a collaborative contractual framework, **we co-design** the components with our Partners. They fabricate them, assemble them and construct the building. They are integrated into our digital platform and have the capacity to offer these services.

Our vision is to work with partners who are **committed to sustainability.** As well as providing service during the life of the building, they take joint responsibility for the cyclability of the materials and components. In this way, their future source of raw materials are ensured and they save on new transformation costs.

Digital Applications

The 011h digital platform contains the environmental data of the building materials. It makes it possible to monitor and measure the impact of the different phases of the construction and operation processes, both in CO2 emissions and in other variables relevant to sustainability.

At **011h we are digital.** On the one hand (I) to enable a more **productive, efficient, fluid and collaborative** construction process. On the other (II) to construct smart buildings with the technology needed to make life more comfortable for their occupiers, owners and operators.



We combine the development of our own software with the integration of standard apps on the market. This enables us to automate as many tasks as possible and **implement BIM** (Building Information Modelling) methods in all of our projects.

This gives us a digital 3D model of the building with all of the data of the planning of the manufacture and construction, the details of its cost or features and, once constructed, a **digital twin** that facilitates its operation and maintenance.

3.3.B

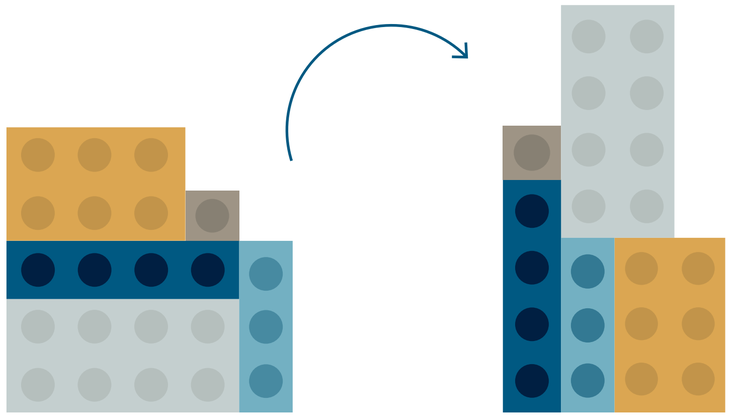
ACTIVITIES TO OPTIMISE THE 011h STRATEGY

The 3 starting pillars of the 011h Platform enable us to carry out **7 activities** that encompass the principal concepts of sustainable design and construction: from industrialised construction and its supply chain to automation of tasks and access to data through digital technology.

Repeatability with flexibility of design

Our component-based system enables us to standardise the building process. It is repeatable and scalable and so improves productivity and reduces costs

The components have parametric geometry, making it possible to design a great variety of spaces, meeting over **90% of the market's demand** for residential buildings. This way, we can repeat what is not visible and personalise what is visible.



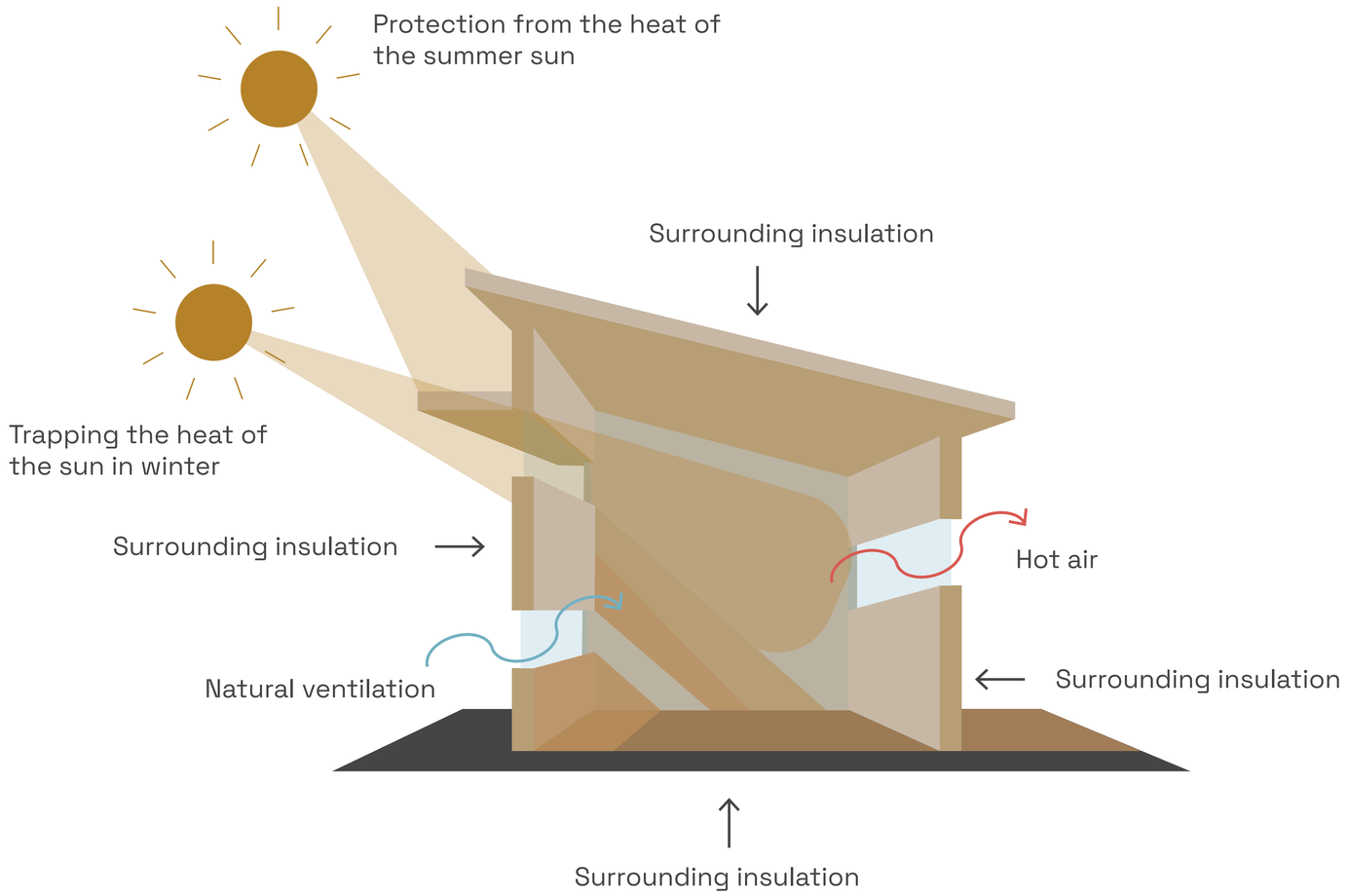
Passive design principles

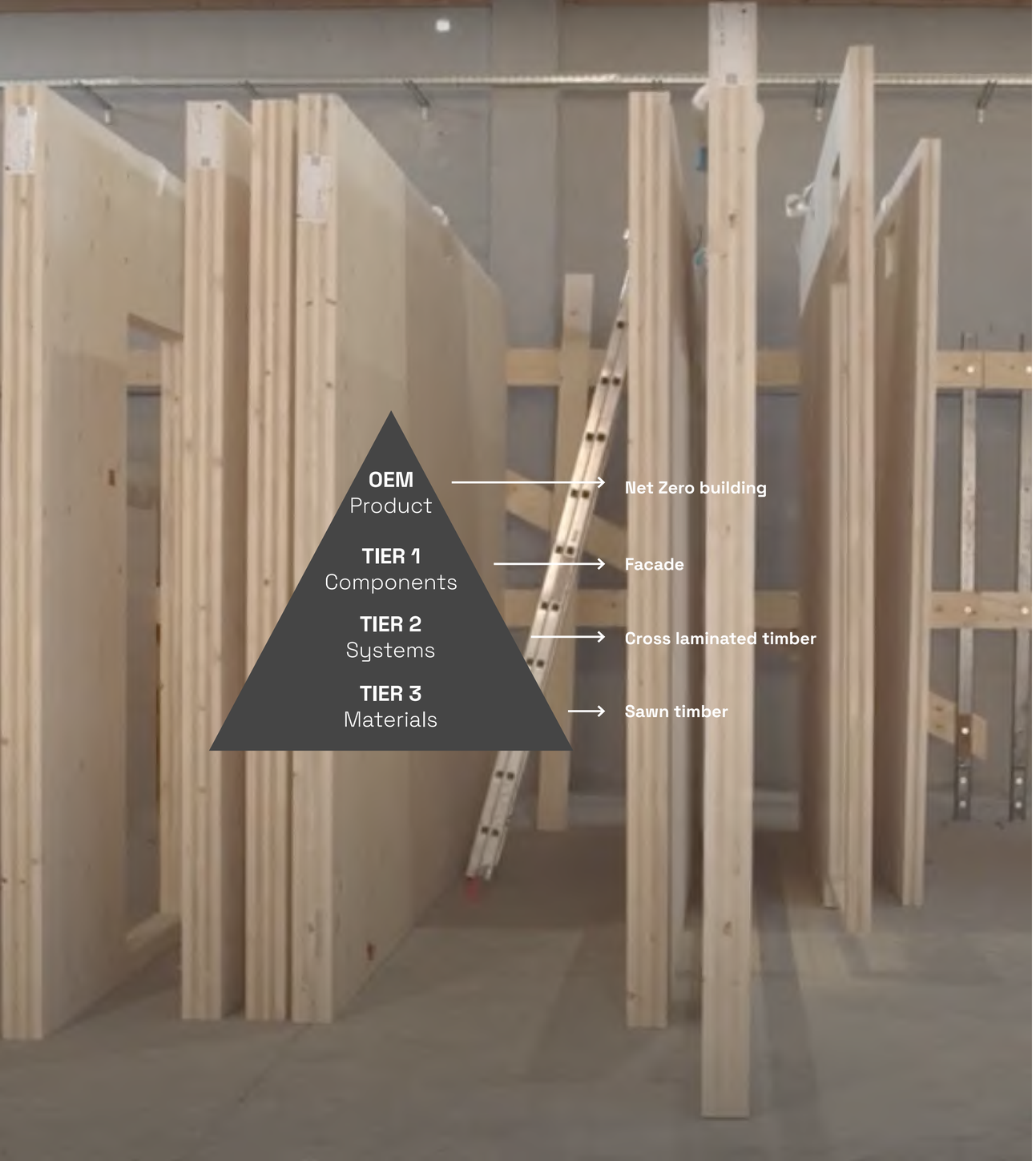
At 011h we apply passive design criteria in the development of our Component-Based System

We adapt the configuration of the building to its location and the **local weather conditions.** This way, we reduce energy consumption, achieve optimal thermal comfort and improve internal air quality with no cost.

What passive design features do we apply at 011h?

- An appropriate **orientation** takes advantage of solar radiation in winter to heat properties without cost. Sun protection systems prevent overheating in summer.
- Optimal **natural ventilation** of the rooms guarantees interior air quality.
- Optimal interior **natural lighting** avoids the need for artificial lighting.
- Optimal **insulation** of the surface envelope in contact with the exterior and carpentry with higher thermal performance protect from hot and cold.
- High-quality **sealing** of the building, that is to say, controlling and minimising air leaks, minimises energy losses.





Industrialised “off-site” construction

At 011h we construct the building in factories and assemble it on the building site

The network of industrial partners enables a pyramidal, capillary supply chain. An experience already applied in industries such as automotive and aeronautic that offers significant advantages.

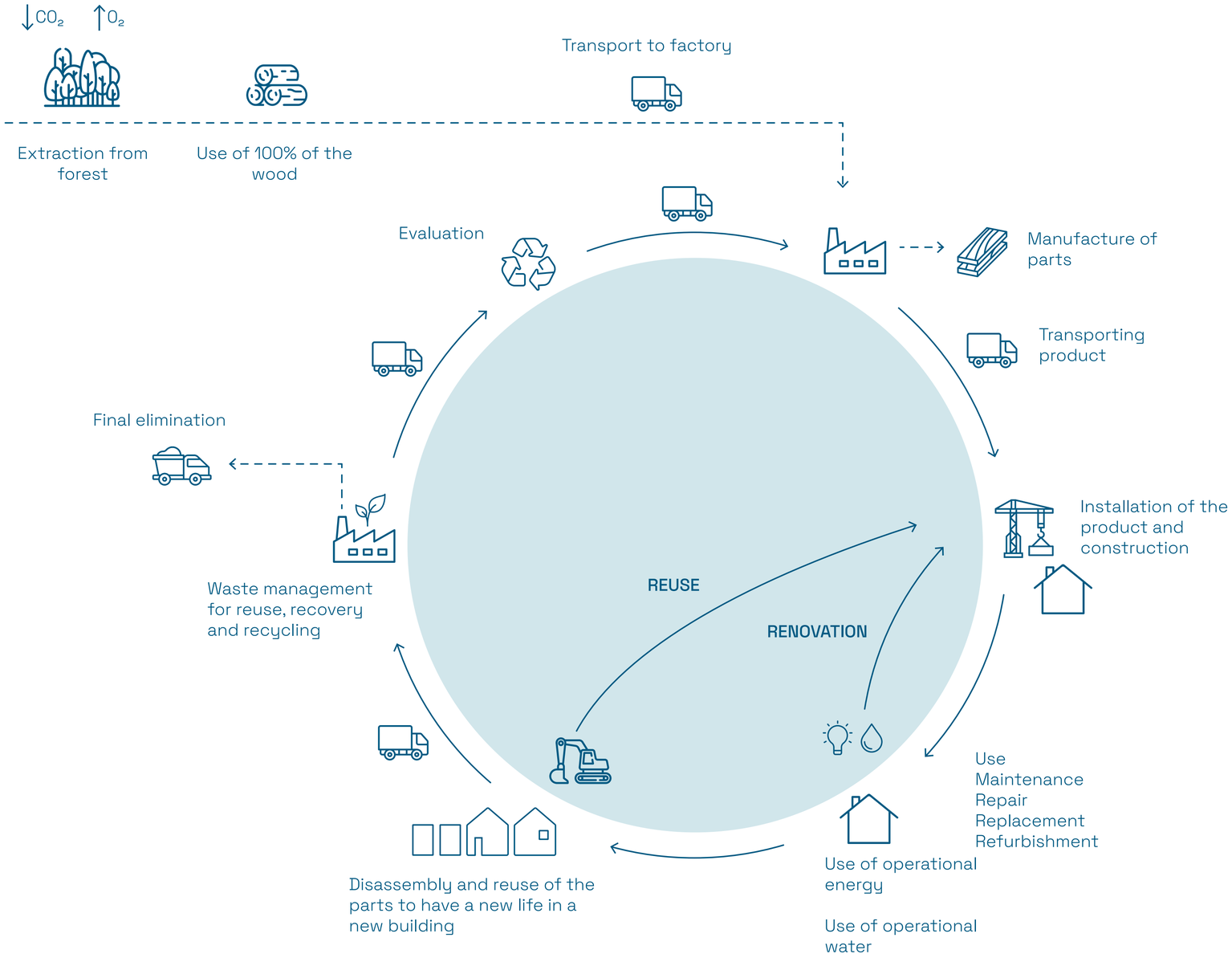
- **Speed and predictability.** The process is always the same. Repeatability reduces construction time and makes it more predictable, ensuring completion in the planned time period.
- **Safety and Quality.** The setting is more stable and safer, for example, without climate issues. In addition, the technology used in the factory helps to reduce errors and increase the end quality of the construction.
- **Sustainability.** It requires less heavy machinery, less energy and fewer vehicles to transport the product. It also reduces waste production.
- **Production capacity.** Off-site construction reduces dependence on specialist labour that is located on the building plot. Every person learns their role on the production line in a simpler way and a shorter time. Most of the jobs can be done by a wide variety of people during the execution of the project. This makes gender and potential disabilities irrelevant.
- **Comfort and convenience for neighbours.** Factory construction and on-site assembly reduce noise, dust and construction time. As a result, disruption in the neighbourhood is also reduced during the building work.

Circular and sustainable principles and materials

At 011h we use certified wood-plastic composite as our primary structural building material for all of our buildings

We also take care when choosing other materials in the design of our components to **maximise their sustainability impact** without compromising their features.

011h design includes prioritising **disassembly, recycling and reuse** of materials, fulfilling the principles of the circular economy in construction. We work with our Network of Partners to involve and commit the whole of the supply chain in this **circular strategy.** We also use our digital platform to store and keep up to date information about the materials and components of the building (materials “passport”) and so facilitate their future cyclability.



Availability of data for design and construction

If we want to change the industry, we need to measure what we do and quantify the impact of changes

In this way, we can demonstrate the viability of our brand promise and the validity of our strategy and business model.

We integrate data through **the whole of the value chain:** from data relating to the site and the client, design, materials and their supply, logistics, the manufacture of components, their assembly… to potential monitoring of the real behaviour of the building and its future maintenance.

This information allows us to **understand the reality of the project at every moment** (“as built”), share it with all of our partners and collaborators and with the client, and to take the best decisions. It enables us to plan, increase the value of the building and reduce its costs and risks.

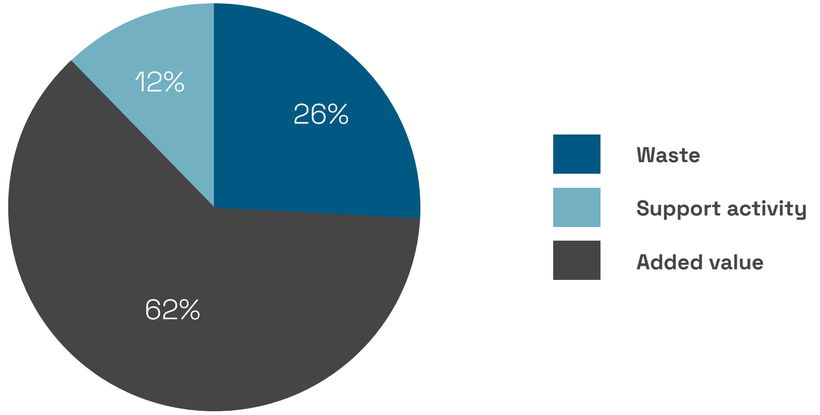
Automation through software

011h focusses its efforts on automating the human interventions that currently cause the most errors

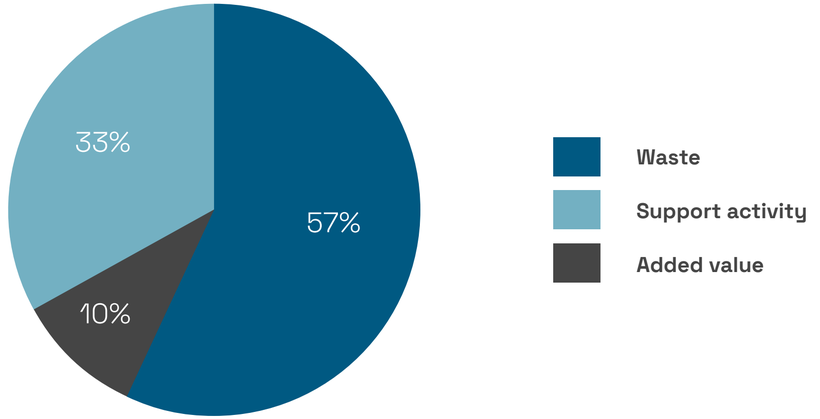
Compared with the normal manual management of the construction process, digitisation and software enable **automation of tasks** during the design, manufacture, assembly or finishing processes and afterwards in the operation and maintenance of the property.

We automate the tasks that are repeated the most, the most unproductive ones or the ones that create the most quality problems. This way, we become more competitive, reduce waste materials and provide value to the client.

Manufacturing



Construction



Open and collaborative system

Our open platform enables architectural professionals to design buildings using a **digital library** with our **component-based system.** They can design buildings knowing that a network of partners that will be able to fabricate them and construct them alongside them, in better conditions than using conventional methods. They can even design their own components and enrich the library, making them available to the rest of the industry and receiving a reward for it.

This way, 011h's impact can be scaled and the **transition towards sustainable development** can be accelerated.

3.3.C

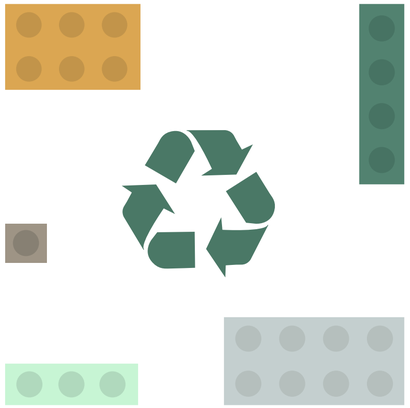
RESULTS

The activities that comprise the 011h Impact Thesis permit us to obtain results that enable our contribution to climate change mitigation and solving the lack of affordable and sustainable housing.

Circularity: the building as a materials bank

The circular economy is the basis of a new global economy. Sustainability involves **reducing extraction of materials and minimising generation of waste.**

At the end of the life of the building, instead of demolishing it and sending the waste material to landfill, it can be disassembled and **the materials and/or components can be reused** in future buildings or for other high value-added uses.



At 011h we visualise a future where our **buildings are banks or mines of materials.**

Adapting to climate change

At 011h we make buildings for the present, but also for the future

By analysing future climate databases and using energy calculation software, we can adapt the design of our system of components and how it is used in projects to climate change, **ensuring that they can handle predicted future scenarios.**

journals.plos.org

	Current temperature	Temperature in 2050	Its climate will be like...
Barcelona	16,3	18,8	**Cape Town**
Madrid	14,7	16,8	**Marrakesh**

Reducing CO_2 emissions

At 011h we minimise and reduce our buildings' CO_2 emissions as much as possible to comply with the objectives set for 2030 and 2050

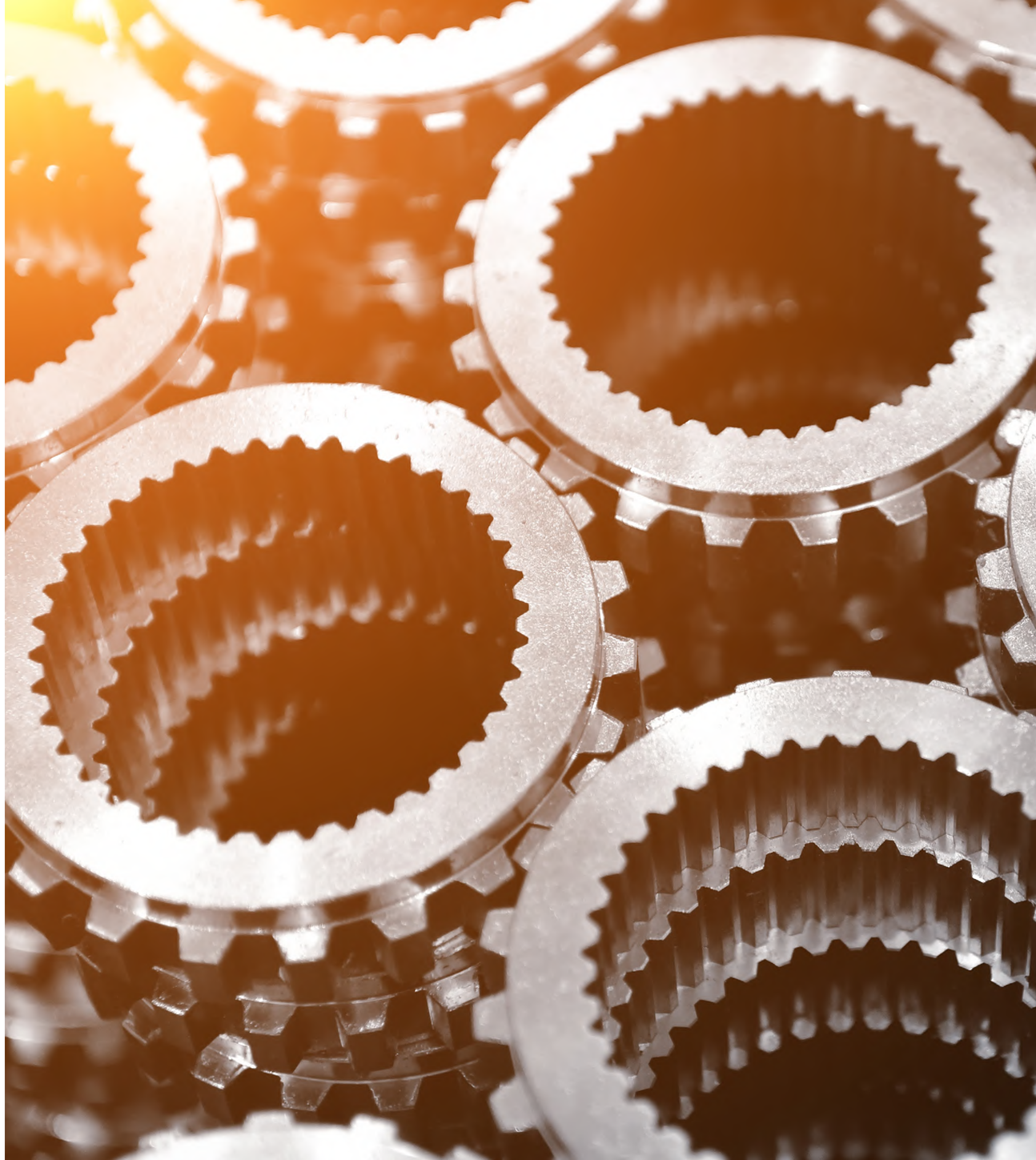
011h reduces CO_2 emissions through the different strategies mentioned above:

- **Passive design**
- Use of materials such as wood, with a very low **embedded carbon** impact
- **Circular-economy** principles in the design criteria of the system of components
- **Automation** of the calculation of CO2 emissions from very early stages to maximise efficacy in decision making in the project
- The **energy efficiency** of the installations
- Use of primary energy from **renewable** sources

Increased scalability

The concept of 011h as an open platform, expands the scalability of the model beyond 011h's own projects

The 011h system adapts to different types of building. We can react to the needs of the market in any moment and situation. A **standardised and repeatable** construction process, based on an off-site construction model combined with a supply chain comprising industrial partners with a high level of **operational integration**, gives the 011h model much greater scalability than conventional construction.



Shorter construction time

At 011h we want to reduce construction periods to half of the usual time. Shorter periods mean lower consumption of resources and energy and so fewer emissions are generated and costs are reduced

Off-site construction **parallels** the foundations (below ground level) with the manufacture of components that will make up the construction system of the building (above ground level) such as the structure, the facade and roof, the walls, the bathrooms, etc.

Once manufactured, assembling them on site is much faster than conventional construction activities.

Higher quality avoids unnecessary work, it avoids coordination problems and involve additional time savings.

Optimisation of the Life-Cycle Cost

Most of the activities 011h carries out, already presented in this Impact Thesis, result in a **lower financial cost** throughout the whole life cycle of the building.

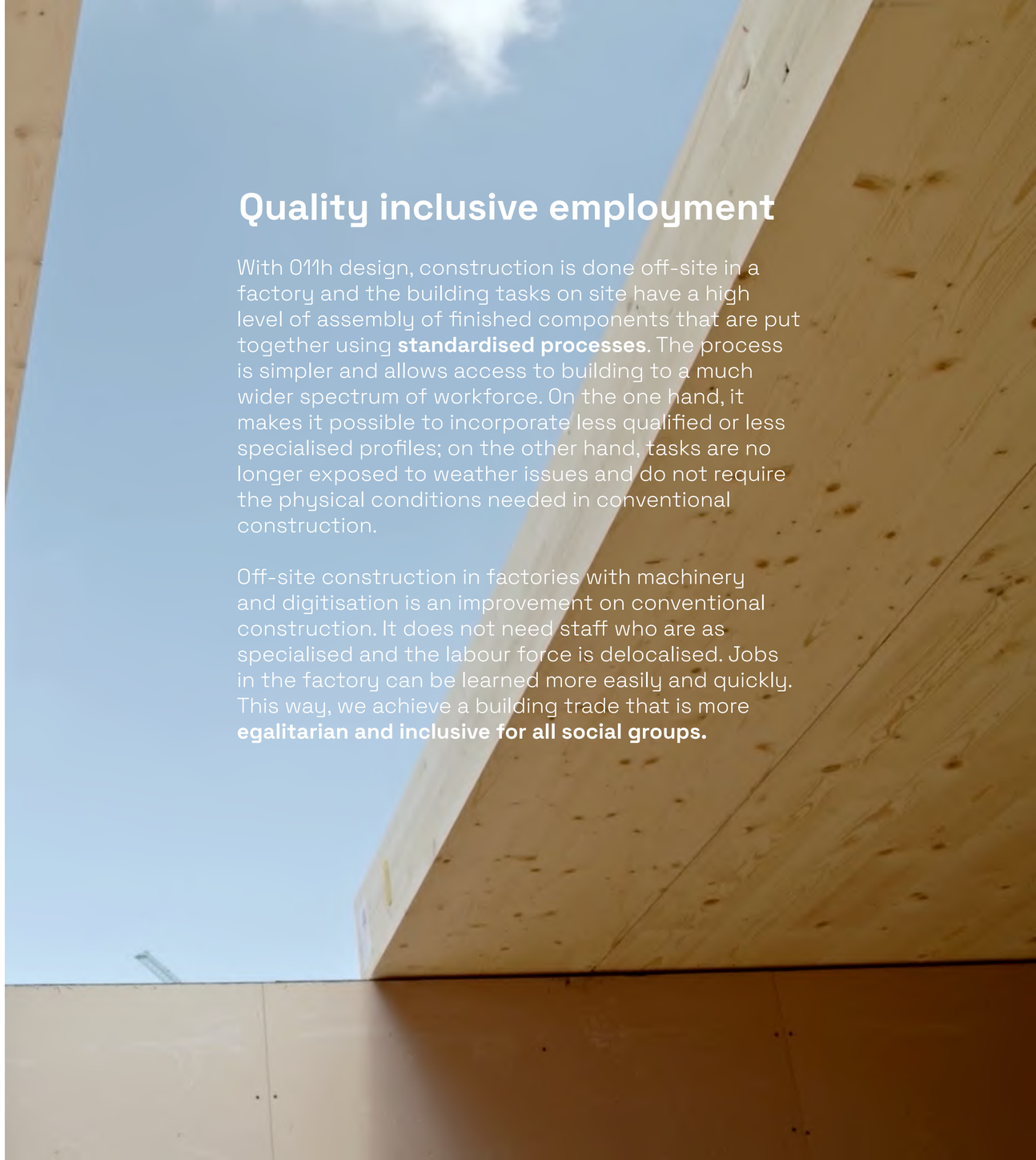
The repeatability of the construction process along with a high degree of digitised off-site manufacture **increases productivity, reduces waste** and, ultimately, saves costs.

Furthermore, digitised management contributes to better energy efficiency of the building and a reduction in operation costs.

Finally, circularity creates a higher residual value for the materials, the components and the building itself at the end of the cycle (buildings...)

Analysis of the life cycle of a structure from this perspective, **has shown that sustainable and healthy buildings are more economical than conventional ones.**

011h's ability to assess life-cycle cost in advance (in the preliminary project phase) is key to guaranteeing the financial viability of projects and reducing the economic-financial risk of the decision to proceed with them.



Quality inclusive employment

With 011h design, construction is done off-site in a factory and the building tasks on site have a high level of assembly of finished components that are put together using **standardised processes**. The process is simpler and allows access to building to a much wider spectrum of workforce. On the one hand, it makes it possible to incorporate less qualified or less specialised profiles; on the other hand, tasks are no longer exposed to weather issues and do not require the physical conditions needed in conventional construction.

Off-site construction in factories with machinery and digitisation is an improvement on conventional construction. It does not need staff who are as specialised and the labour force is delocalised. Jobs in the factory can be learned more easily and quickly. This way, we achieve a building trade that is more **egalitarian and inclusive for all social groups.**

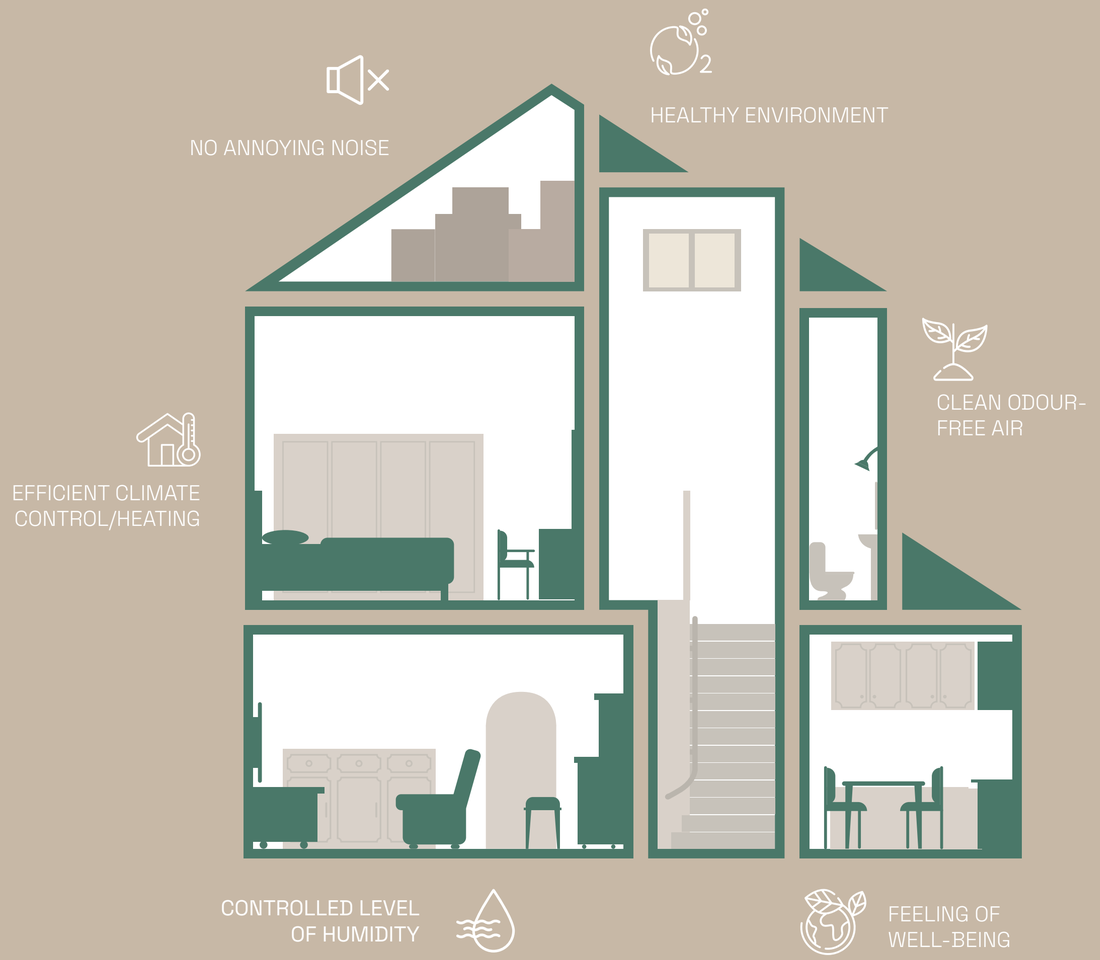
Sustainable buildings

How do we construct buildings that are better for the environment?

We replace cement or steel, for example, with materials that have a lower carbon footprint and are more sustainable (such as certified wood-plastic composite); we extend the **life cycle** of the materials and components used; and we **reduce energy consumption** during their use.

We spend more than half of our life indoors and at 011h we take an interest in the **health of the people** who live in the buildings. Therefore, air quality and comfort are also (i) selection criteria for materials, and (ii) design criteria for ventilation and climate installations, thermal and acoustic insulation, and light sources.

We think it is essential to achieve the highest **quality of internal air, and the thermal, light and acoustic comfort** necessary to achieve optimal health levels.



3.4

MEASURING IMPACTS

Not everything is suitable for measuring and demonstrating sustainability

To be able to demonstrate what are saying, and to be able to say with certainty that our buildings are sustainable and healthy, at 011h we have principally relied on the objectives and metrics proposed by the Level(s) voluntary European framework in pursuit of climate change mitigation and doing no significant harm to the other objectives of the European Taxonomy. Our buildings also, in all cases, guarantee a minimum classification in the VERDE certification of the Green Building Council of Spain (GBCe).

GHG emissions
- Embedded Carbon
- Primary and final energy
- Potential global warming

CO_2 Neutral

- Resources and life cycle of the materials
- Efficient use of water resources
- Comfortable and healthy spaces
- Resilience and adaptation to climate change
- Decent, non-specialist, delocalised employment (% onsite value / total value)

SUSTAINABLE BUILDINGS

Competitive cost

Optimisation and Value of the Cost of the Life Cycle
- Total cost/m2
- Cost relative to available income
- Internal Rate of Return (IRR)

Reliable production capacity

- Industrialised value
- Productivity
- Production capacity

3.5

IMPACT, BUT NOT AT ANY PRICE (“DO NO SIGNIFICANT HARM”)

Combating climate change and making housing more affordable cannot be done at the cost of environmental or social harm. At 011h, in constant cooperation with our partners, **we work to preserve the biodiversity of natural habitats** and prevent the depletion of natural resources or exposure to toxicity.

Against toxicity

011h guarantees the use of materials that do not affect health by complying with the international standards that regulate them and their official accreditations (EN ISO 16000, EN 13986:2006, CEN/TS 16516 and ISO 14024)

We monitor the glue and adhesives used for joining wood and we make sure that they do not affect **people's health** or the environment.

The wood used in our buildings complies with the appropriate regulations and accreditations.

Our buildings fulfil the principal sustainable criteria for forest management and control of biodiversity

011h guarantees these sustainability criteria through specific international certifications and by complying with the EU regulations relating to this aspect

In defence of biodiversity and against resource depletion

As well as capturing CO_2, forests are habitats that are very rich in species. Good **forest management** guarantees that use of wood and its derived products will contribute to maintaining **biodiversity and the ecological and natural processes of the forests.** Furthermore, it must help local populations and society as a whole to enjoy the long-term benefits of woodland.

In all of the wood that it uses, 011h guarantees the traceability of the **Chain of Custody** (CoC) and Sustainable Forest Management that does not cause deforestation or affect biodiversity through internationally recognised accreditations (FSC or PEFC).

3.6

OUR ROUTE MAP

At 011h we learn and develop day by day, and we have a "secret plan" to scale our impact globally

"Our end vision is to be more than just a construction company. Designing and constructing building projects form part of the short- and medium-term strategy ("Go-to-Market Strategy") for two reasons: (I) the best way to develop the 011h Platform is by doing projects; and (II) we want to show the market that anyone can design and build better using the 011h Platform than with conventional means (Proof of Concept).

We will start by focussing on constructing zero-emissions residential buildings in Spain. Afterwards, we will use what we have learnt and the resources obtained to construct the same type of buildings in other markets in Europe, demonstrating the geographical scalability of the platform. We will then repeat our model in other segments such as office buildings, commercial buildings, etc.

And we will gradually **open our platform** so that anyone in the industry can design and construct carbon-neutral buildings anywhere in the world and so scale the impact.

Our dream is for construction of one sustainable building to start every day thanks to our platform, and so become an international reference company. **011h has the courage and the will to transform the building sector, making sustainability the new normality".**

“I can’t imagine another vocation that is more meaningful and has more impact, and at the same time is more challenging and fascinating than putting myself at the service of transforming this industry, which is so necessary and transversal, to make it productive and, above all, sustainable.”

Lucas Carné
Co-Founder of 011h

Toni Escudé
Director of Sustainability and Health at 011h

“After more than 30 years as an architect and more than 10 as a sustainability specialist, I have not come across a project with a bigger present and future impact and ability to provide answers to the great problem created by the building sector in the last decades. It is time to act with urgency and provide real responses”.