Let´s take care of tomorrow

CIRECO
Circular Economy

Cireco Finland is a new kind of construction company. A pioneer in the circular economy in Finland, we specialise in implementing new knowledge in practice. With an integrated approach we drive Finland towards a circular society.

Join us and let’s take care of tomorrow together.

Challenge

“We are the first generation to feel the effect of climate change and the last generation who can do something about it.”

- Barack Obama

The average lifespan of a building in Europe today is just 42 years

The big building challenge

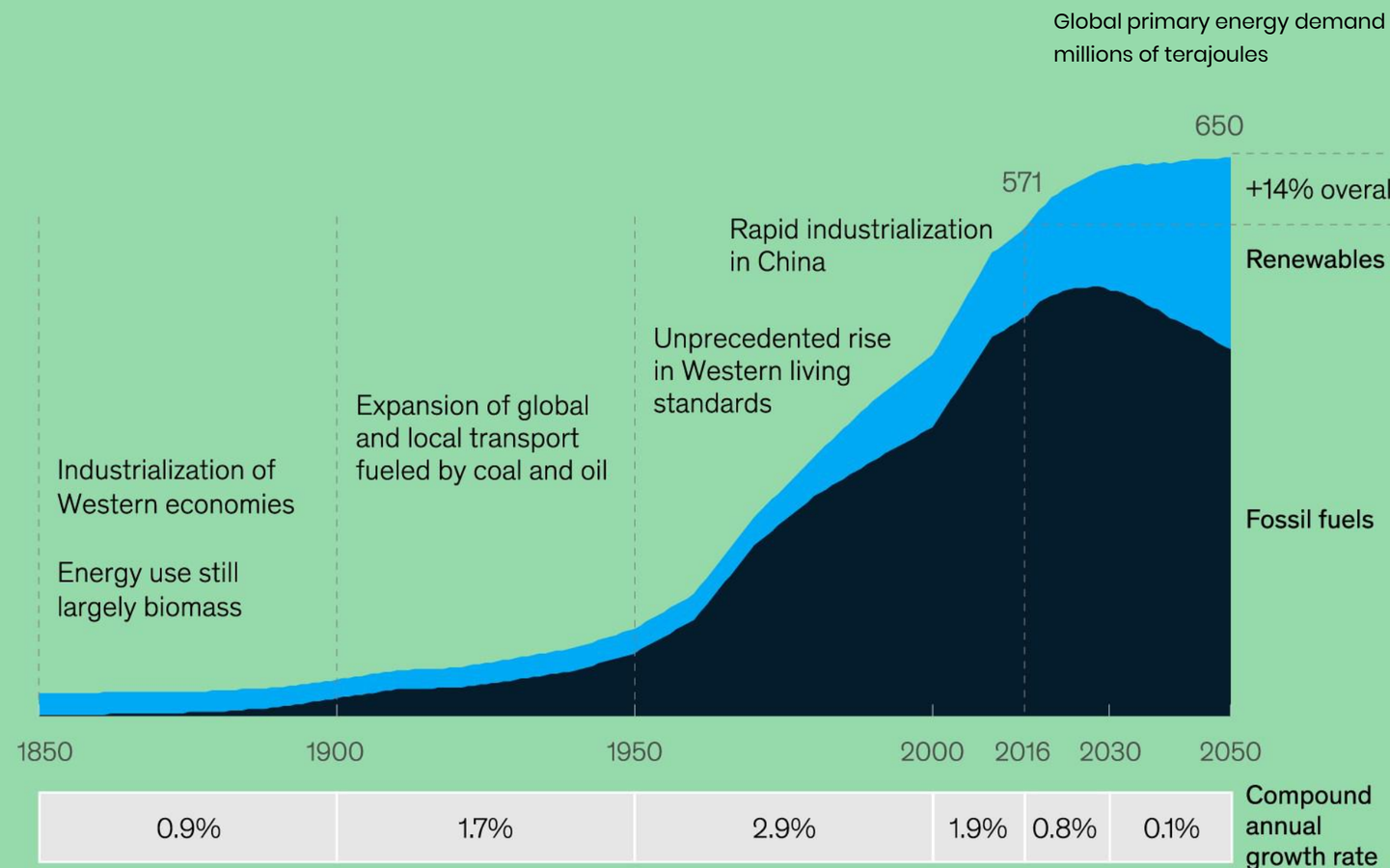
Construction is in a catch-22. We need more buildings to house a growing global population but the way we build is destroying the planet. We urgently need a new way of constructing, maintaining and reusing buildings that radically extends the life cycle of materials while at the same time reducing energy consumption.

Towards the middle of the century, as the world's population approaches 10 billion, the global building stock is expected to double in size.

Buildings are currently responsible for 39% of global energy related carbon emissions: 28% from operational emissions, from energy needed to heat, cool and power them, and the remaining 11% from materials and construction.

Decoupling energy demand from growth

In the past, growth has always equated to an increase in fossil fuel consumption. Nowadays, however, we have new technologies and methods for producing the essentials of life; from energy to food to water to building components.



Graph source: McKinsey Energy Insights' Global Perspective, January 2019

Statistics source: World Green Building Council

Refocusing on well-being

Our global obsession with growth has depleted our resources and left us stressed out. Cireco elevates the wellbeing of people and planet alike in all our projects. This way, we refocus on what's important.

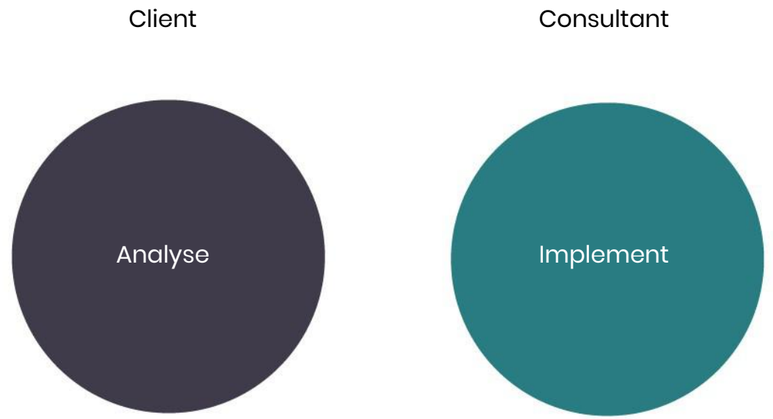
Image: Schoonschip, Amsterdam by Space&Matter Copyright: Space&Matter

Solution – Become the client!

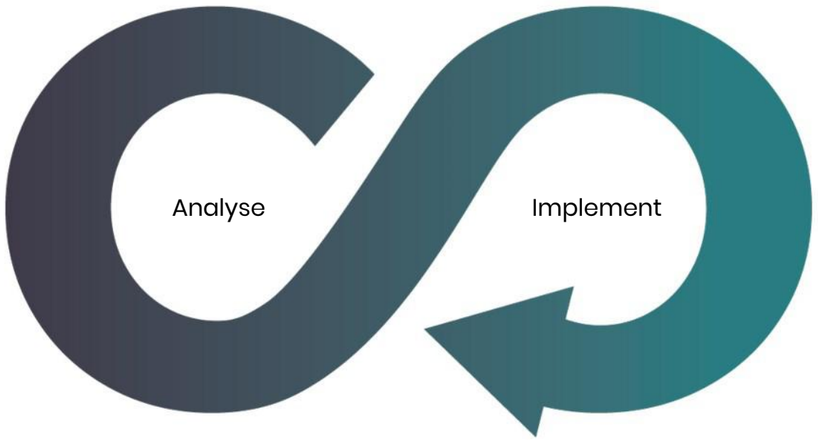
At Cireco we know that the early phases of a project are where the most impactful decisions are taken.* That's why we don't leave anything to chance. By working as both client and consultant on area developments, we ensure that sustainability targets are implemented and performance is maintained over time.

*90% of emissions and the majority of costs are decided at design stage. In addition, the strategic decisions to close material loops during operation phase must be taken at design phase, due to the importance of assignment maintenance contracts and providing material banks for the reuse of materials.

Traditional client - consultant relationship



Cireco's integrated approach



We are turning the home of Nokia Corporation into a circular innovation district

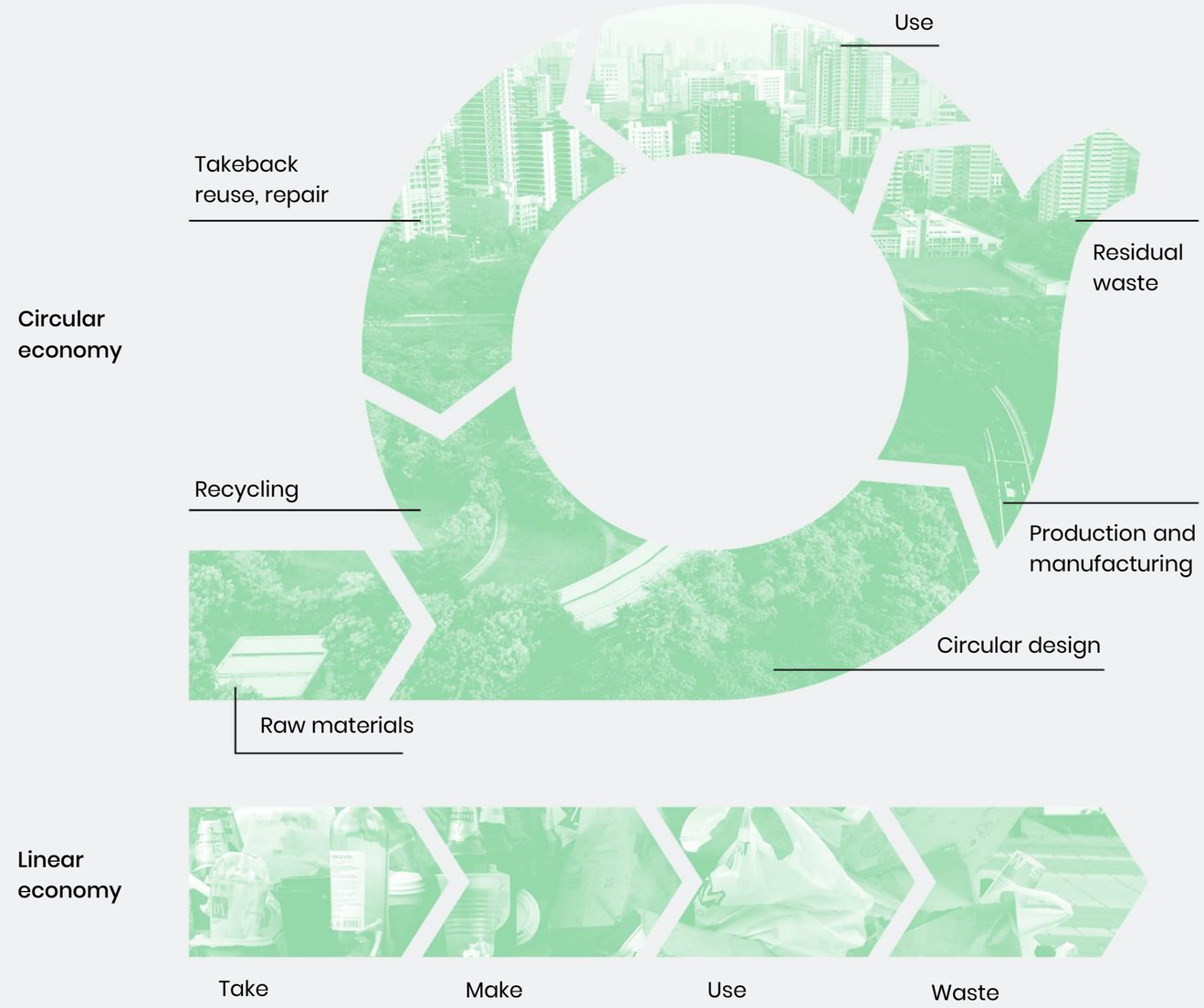
Opportunity

"If we could build an economy that would use things rather than use them up, we could build a future."

— Ellen MacArthur

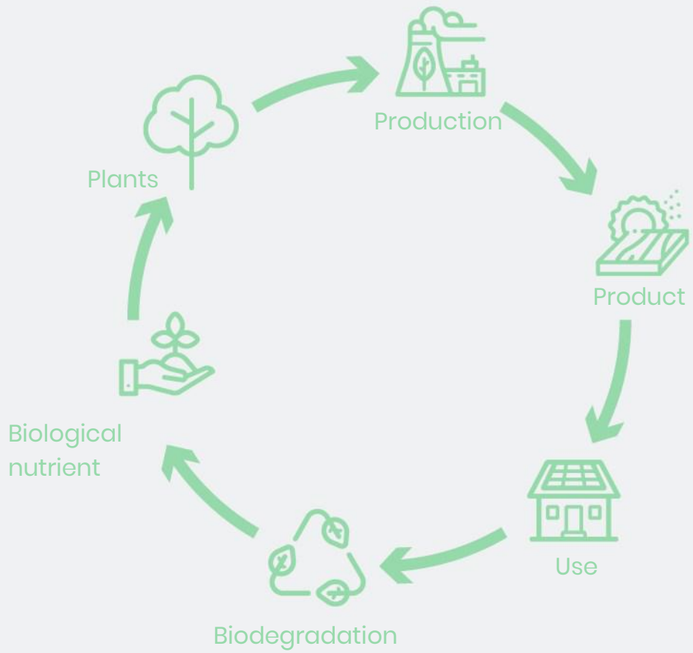
The circular economy

The circular economy is a systemic approach to economic development designed to benefit businesses, society, and the environment. In contrast to the ‘take-make-waste’ linear model, a circular economy is regenerative by design and aims to gradually decouple growth from the consumption of finite resources.

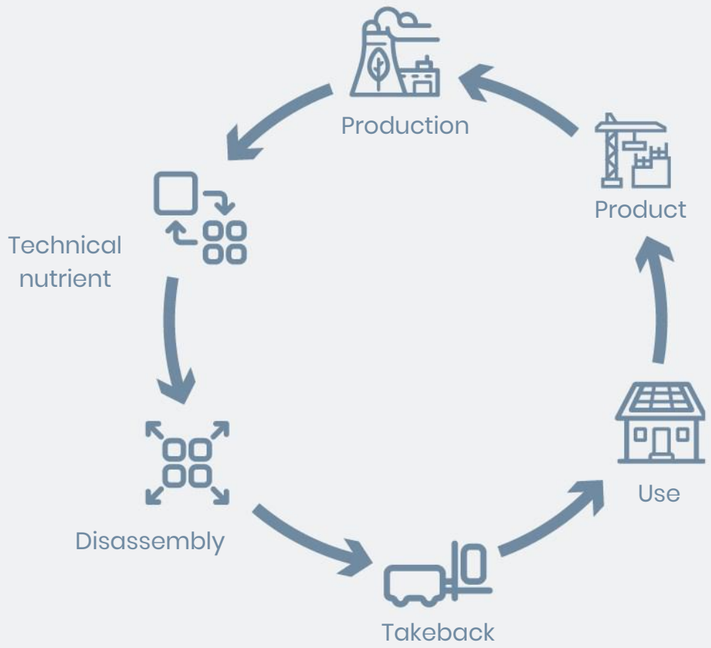


Built positive framework

Cireco Finland implements the Cradle to Cradle Products Innovation Institute's Built Positive framework, which guarantees circular economy and minimises waste generation by design. All our buildings are designed in a manner that maximises the technical and biological cycles of the components.

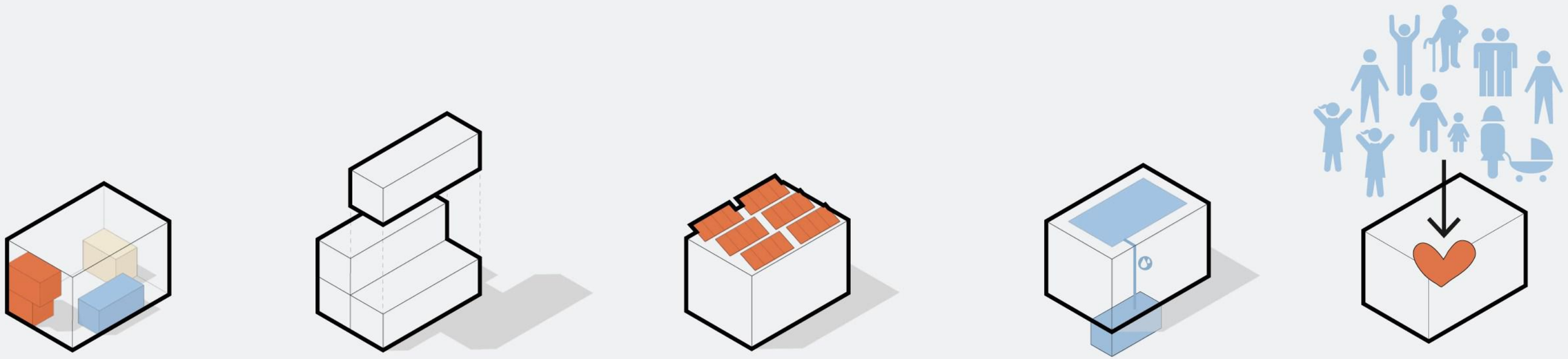


Biological Cycle



Technical Cycle

Cireco's approach



Flexibility

We aim to meet the needs of the present while being ready for future adaptation to different use. By designing a fixed structure and standardized modular interior elements, we can easily adapt to changing market demand. This means minimal investment into remodelling with maximal use of space.

Design for disassembly

The structural solutions enable elastic development of the block, and recycling of the building components. Design for disassembly-based thinking from the concept stage allows us to minimize demolition waste and keep the residual value of materials throughout the whole life cycle and beyond.

Energy

We analyse local conditions to provide the most sustainable energy solution available for the location, harness energy from renewable sources such as ground heat, sun, wind or water, use innovative solutions for sustainability and minimise the demand by implementing circularity.

Water

Implementing water saving technologies such as rainwater collecting with microfiltration, grey water reuse or vacuum drain allows for lowering fresh water consumption. Systems combined can save money on operations, while using local potential generates savings on water treatment facility and water transportation.

Community

By building networks and working with local partners we ensure places are designed with the interest of the future user in mind. Community involvement ensures places become thriving neighbourhoods for people that respect to the carrying capacity of the natural environment.

Value creation

Reducing construction costs

We can shorten construction time by using circular economy based strategies for design and construction, such as standardisation, modularisation or design for disassembly. Employing BIM software for design and construction, allows the material use to be optimized and decreased.

Reducing operational costs

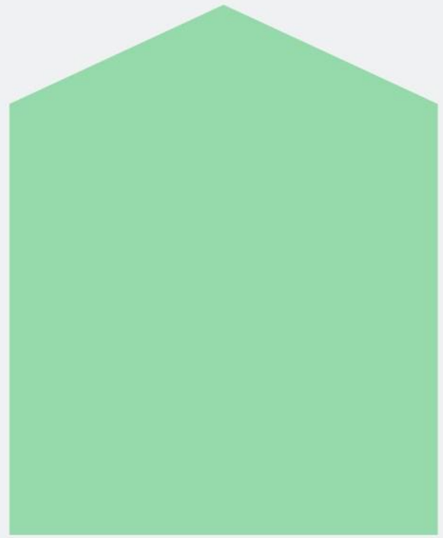
We create localised systems by using local renewable energy sources for electricity and heat production, leading to smaller losses on energy transportation. With energy efficient building technologies, we can also significantly lower building operational costs.

Reducing waste, emissions + environmental load

Flexible and diverse reuse of components enables a longer life cycle for the building parts, resulting in lower material consumption as well as a reduction in the carbon footprint of the construction.

Conservation of natural resources

Urban mining is the process of recovering and reusing a city's materials. By reusing and recycling, we retain value and reduce environmental impacts This leads to circulating material flows and less use of materials.



Creation of social + ecological value

Communal household premises and services enable better quality of life, low-threshold work, reduced living costs, and everyday encounters on the block. Sharing spaces and living closer to one another will contribute to the ecosocial well-being.

Business model

"The path to big, systemic change is collective action."

– Gloria Feldt

Consultancy

Cireco Finland is a new kind of construction company. We develop our own projects and then share the knowledge we gain through consultancy. This way, we aim to bring the benefits of the circular economy to all stages of our clients' construction projects.

Capacity building + leadership development

Do you feel surrounded by potential business partners, but you are unsure whom to contact and how? We can help you to develop your organisation's operations and to cultivate new collaborative relationships.

Project management

We provide project management services to municipalities and cities, along with private industry. Our strong process expertise gathered from regional development and infrastructure projects guarantees an efficient and target-focused process.

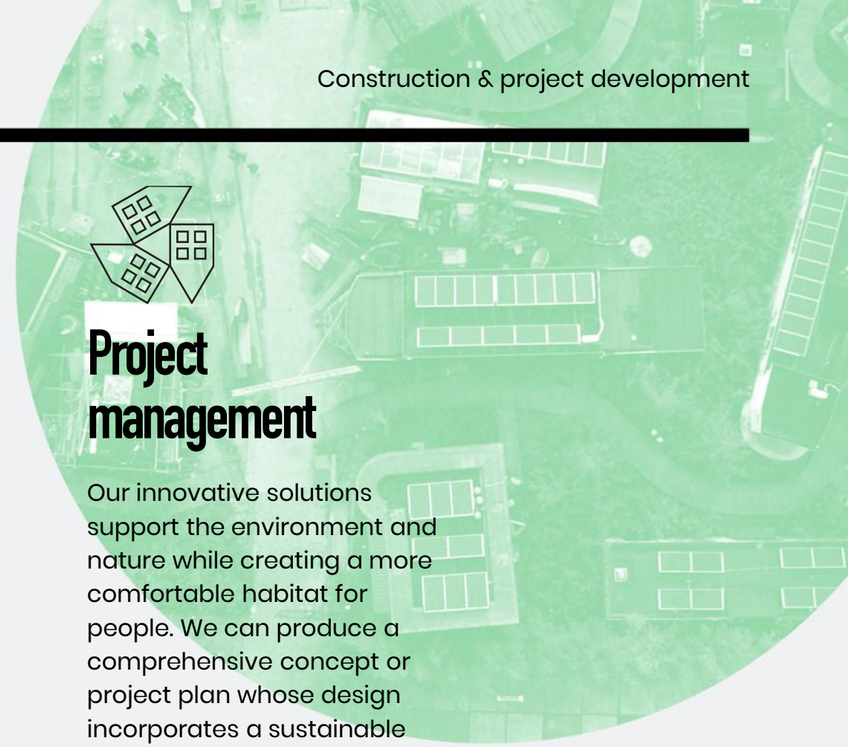
Circularity in area Development

We provide design and consultancy solutions for sustainable development in the construction sector – in new construction as well as in renovation. This include circular economy analysis for the integration of circular economy thinking into business strategies, action plans and partnerships.

Construction & project development

Groundwork

In foundation engineering projects we provide innovative, cost-efficient solutions. We bring broad solutions into our projects and pay attention to the characteristics of the building site, infrastructure functionality, green solutions, and area needs. The initial building site design is based upon regulations guiding us towards carbon neutral construction by 2030.



Project management

Our innovative solutions support the environment and nature while creating a more comfortable habitat for people. We can produce a comprehensive concept or project plan whose design incorporates a sustainable lifestyle in seamless cooperation with land use processes.

By taking on the role of area developer ourselves, we ensure that circular ambitions are delivered. We develop projects across scales - from Groundwork to Road construction to entire Area developments.

Road construction

In road construction projects, waste soil is utilised locally for structures and landscaping. We use reclaimed asphalt and soil recycled from nearby areas. We offer novel concepts for traffic control systems to minimise the environmental impact of our projects as much as possible.

Roadmap

	5 years Build community	10 years Implement & learn	20 years Scale up
Partnerships	Strengthen and expand our ecosystem of circular economy delivery partners	Cireco is the top thought leader in circular economy in Finland	Zero waste, zero carbon across all our projects makes Cireco the leading sustainable area developer in Finland
Tehdassaari	Establish a thriving community at Tehdassaari who are prototyping new approaches to resource production & reuse	The Living Lab at Tehdassaari is full of circular economy innovators, from business and academia alike	Tehdassaari is Finland's leading innovation district for circular economy
Northbank	Establish Northbank as a platform for bottom-up community projects	First buildings at Northbank transformed into residential	Northbank is the most popular residential district in Tampere, because people and nature live in balance

Team

Perttu Ketola

Chairman

Jari Tähtinen

R&D Manager

Harigovind Mukundaan

Circular Innovation Facilitator and Strategist

Ina Luukkala

Project manager

Tiia Permanto

Circular economy specialist

Fuad Ashraf

Environmental Technologies Design Engineer

Taras Protchenko

Circular Economy Facilitator

Nirupama Harigovind

Office Manager

Ecosystem

Key partnerships & collaborations

We believe collaboration is key in the transition to a circular economy and we have developed an ecosystem of expert partners across different domains. Join us and let's take care of tomorrow together!

Progress so far

"The future is not a destination - it is a direction."

– Ed Catmull

Tehdassaari Innovation District

Tehdassaari is where the circular economy of the future is taking shape. The original home of Nokia Finland, the site has a rich industrial heritage which we are bringing into the 21st century. Over the coming year we will transform the island into an innovation district for circularity, based on an adaptive urban plan which grows along with its inhabitants.

Manifesto

- From linear to circular
- From growth to wellbeing
- From closed factory to open neighbourhood
- From top-down to bottom-up
- From owning to sharing
- From consuming to producing
- From centralised to distributed
- From solution to experiment
- From theory to implementation

Features

- Living Lab for innovation in the circular economy
- Open Building system for adaptation to future uses
- Renewable energy and water production on-site
- Services & facilities for the sharing economy
- Powered by data on material flows

Northbank

Northbank is a circular building concept offering apartments, workspace and leisure. Designed with best practices in the circular economy, the project provides a platform for piloting sustainable innovations across domains: water, waste, energy, materials and biodiversity.

Features

- Modular system
- Designed for disassembly
- Renewable energy and water production
- Services & facilities for the sharing economy
- Powered by data on material flows
- Blends with existing architecture of the city

Design guided by

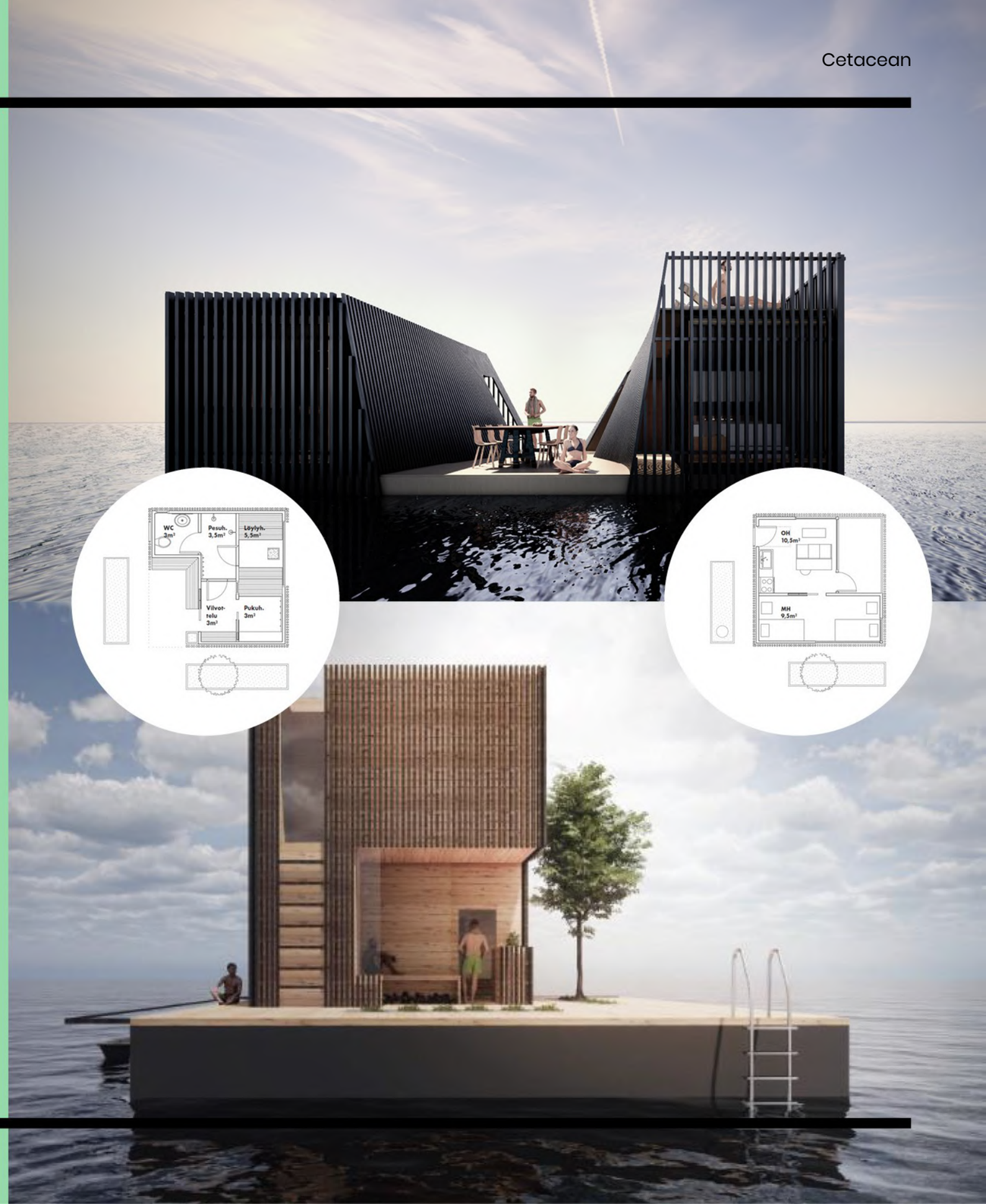
- Adhering to Built Positive framework
- Minimising emissions
- Renewable energy only
- Resource efficiency
- Bio-based materials
- Materials traceable with material passports
- Safeguarding biodiversity

Cetacean

70% of the world's surface is covered by water. Have you ever dreamed of living on it? Cetacean will be a carbon-negative circular house which serves as a prototype for a new, sustainable approach to construction. Designed to float at sea or in a harbour, the structure is made entirely from reused materials – shipping containers or timber, depending on the local context.

Features

- Constructed on a raft
- Can float in the harbour or on open water
- Produces its own energy
- Low carbon wood construction
- Materials harvested through urban mining



Awards & recognitions

Shortlisted

Most interesting companies in the circular economy in Finland

Member

Green Building Council Finland

Shortlisted

Kierto 100 list of Pirkanmaa companies implementing circular economy

Shortlisted

Three start-ups that could help corporations align with UN SDG Goal 11: Sustainable Cities and Communities

Winner

Green Good Design Award from the Chicago Athaenaeum Museum of Architecture and Design in 2020

Partner

3 years in a row

JOIN US ON OUR MISSION

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