

Fact sheet | Circle House

CIRCLE HOUSE TO PAVE THE WAY FOR CIRCULAR CONSTRUCTION

The Circle House project, with Lejerbo as the developer, is building the world's first public housing to be built according to circular principles. This entails that the building can be disassembled and the elements reused, almost without losing value.

Background

The Circle House project consists of 60 public housing units in Lisbjerg, near Aarhus, and is expected to be completed in 2020. In addition to serving as residences, Circle House will be a scalable demonstration project which aims to give the construction industry new knowledge about experiences with circular construction.

The project is receiving funding from the Danish Environmental Protection Agency's Environmental Technology Development and Demonstration Programme (MUDP) and Realdania's programme for Innovation in Construction.

The building is being designed by *Fællestegnestuen* (the joint studio), a partnership between 3XN Architects, Lendager Group and Vandkunsten. The project is expected to be tendered in 2018, commence construction in 2019, and be completed in 2020.

Framework conditions and business

As part of the transition to circular construction, the materials must be produced in a way that allows them to be dismantled. This is not a purely technical challenge. Some links are currently missing from the construction value chain which are necessary to allow the materials to be recycled. Few producers accept their used products back, so they can be resold. Leasing, a model used widely in relation to vehicles, has not yet been developed for the construction industry.

There is therefore a need to renew the traditional business models and ensure that legislation supports recycling if circular construction is to gain momentum. For example, it is unclear at the moment who is responsible for the quality and the used materials.

The Circle House project aims to find answers to these challenges. The project is therefore analysing value chains, business models, business cases and framework conditions. All results and conclusions will be shared with the entire industry through a broad discussion on circular construction. Realdania has provided funding for this part of the work.

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Find out more about the project at lejerbo.dk, byggerietssamfundsansvar.dk, or buildingacircularfuture.com

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WHO IS BEHIND THE INITIATIVE?

The Circle House project aims to develop and disseminate knowledge about circular construction throughout the entire industry, across silos. This is why the project has drawn together over 30 different companies, spanning the entire construction value chain. The goal is a scalable circular demonstration building, tendered and constructed under market conditions.

Steering committee

Lejerbo (developer), GXN Innovation, the Danish Association for Responsible Construction (FBSA), MT Højgaard and the Danish Building Research Institute (SBI).

Municipality

The Municipality of Aarhus is providing the site for construction.

Joint studio

3XN Architects, Lendager Group and Vandkunsten.

Industrial partners

Orbicon, Dansk Beton, Spæncom, Peikko, Kalk, Dovista, Velfac, Komproment, Rockwool, Caverion, Gyproc, Tarkett, NCC Construction, Kingo Karlsen, Tscherning, RGS Nordic and Troldekt.

Consultants:

Responsible Assets, Horten Advokatpartnerselskab, Lauritzen Advising and Hildebrandt & Brandt

The project is receiving funding from:

Realdania and the Danish Environmental Protection Agency's Development and Demonstration Programme (MUDP).

Circle house in numbers:

- Circle House will be 60 public housing units, built in line with circular economy principles.
- The aim is for 90 per cent of the materials in the units to be re-usable without losing significant value.
- The project will run for over 3 years, starting in spring 2017.
- Construction is expected to be tendered out under market conditions in late 2018.
- Building is expected to commence in 2019 and be completed in 2020.
- The project involves more than 30 companies from the Danish construction industry, across the value chain.
- Circle House has received a grant of DKK 6.9 million from the Danish Environmental Protection Agency and DKK 3 million from Realdania.