

**Acknowledgement prize Europe**

**Medium rise timber office building in low-to-no carbon emissions district, Helsinki, Finland**

**Project data**

<b>Project group</b>	Building and civil engineering works
<b>Client</b>	Sitra
<b>Project background</b>	Public commission
<b>Estimated start of construction</b>	January 2012



**Main author**

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**Comment of the Holcim Awards jury Europe**

In terms of its construction and program, the office building is commended by the jury for achieving the aspired principles of transferability, transparency and inventiveness. All of the construction, even the cores and the prefab façade panels will be entirely in Finnish timber – globally an innovation for a 26m 6-storey office building. Beyond these measures, the project has a successful holistic approach towards its design, connecting social, ecological, aesthetic and economical demands on a high level and it is thus an outstanding example of how sustainable architecture can be achieved on a larger scale.

**Project description by author**

With its new headquarters, Sitra, the Finnish innovation fund, will anchor the new Low2No quarter in Helsinki. Part of the redevelopment of the former Jätkäsaari docklands to a "low-to-no" carbon emissions district, Sitra explores the combined potential for the most energy efficient building technologies and behavioural change to drive a thriving, sustainable society. These principles are founded on an architecture of transferability, transparency and inventiveness.

Structurally the new building will be entirely in Finnish timber. At six overground storeys, and with even the cores in timber, it will be the tallest and most complex in the world of its type. The façade will be built of prefab highly insulated timber sandwich elements. Timber construction is presently seldom used above a domestic scale, but as one of the most sustainable methods available (in Finland particularly) there is much to be gained from developing systems for larger structures. With some local knowledge and a developed industry already in place, the *Sitra Headquarters* seeks to provide a replicable example of how industrialised all-timber construction can serve sustainable architecture on a larger scale. The propagation of this systematic and political change is already underway, with the design process tracking the ongoing redefinition of Finnish regulations on timber building. Sitra is to be the proof of its viability for future schemes.

This didactic and empirical spirit is also supported in the programme: civic amenities, including an auditorium, library and café, bring public circulation throughout, thereby obviating the insularity often seen in office architecture. The higher floors also include "incubators": affordable high-profile office space for start-up businesses and Sitra-funded programmes, further driving the economic well-being of the area. A terraced volumetry and a central atrium bring daylight and natural ventilation to each of the 100 workplaces. Planting across all stepped levels associates the Sitra building with prominent green areas throughout Low2No and the large public park beyond. The timber structure is visible within the office spaces, contributing to the architectural and atmospheric quality. The intricacies of a large timber structure, particularly fireproofing, stability and vibration have been resolved into replicable and versatile systems.

The *Sitra Headquarters at Low2No* represents a step forward for the union of advanced sustainability technologies and conscientious architecture to achieve the lowest environmental impact without compromising spatial quality and beauty.

**Relevance to target issues by author**

**Innovation and transferability – Progress**

The *Sitra Headquarters at Low2No* is significantly contributing to the current knowledge in the field of tall timber architecture: at six overground storeys, with even the cores in timber, it will be the tallest and most complex in the world of its type. It is designed in accordance with the EU Energy Performance of Buildings Directive that will be enacted in 2020. Success is hoped to foster a widespread adoption of all-timber construction for sustainable, high quality architecture on an industrial scale.

**Ethical standards and social equity – People**

Sitra's function as a government body, as well as the empirical and didactic ethos of this project, has made transparency and inclusiveness key themes. Organisationally the plan is non-hierarchical and extroverted: a tightly integrated public programme including an auditorium and a library allows open access throughout the building. Finland's advanced timber industry makes it a very equitable choice for larger projects. Local skills and sources render it among the safest, healthiest and most economical available. The design also supports Sitra in a change process: they see their current space (many floors, individual offices) as an obstacle to change and want a new design (open grid) to support their evolution.

**Environmental quality and resource efficiency – Planet**

The new building's energy concept reduces the weighted energy use to 45kWh/m<sup>2</sup>/yr, less than half the Finnish requirement for heating and cooling. Mixed-mode, water based heating and cooling, including air handling units powered by a ground source heat pump are complemented by a rooftop PV array, configured for maximum efficiency and aesthetically integrated into the building's design. All 100 workplaces receive daylight and natural ventilation. Local sources and the inherent efficiency of skilled offsite manufacturing lead to a very low embodied energy for timber architecture in Finland. For this reason the design team was determined to drive the technology and also the legislation to achieve Sitra's unprecedented structure. At a local level, the resultant extra usable space increases density and thus contributes to a thriving urban setting, while the prefabricated modular structure means flexibility for future expansion.

**Economic performance and compatibility – Prosperity**

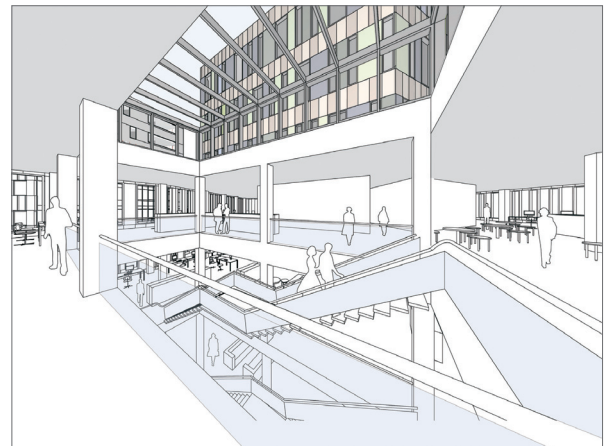
"Incubators" are a key feature of the Sitra building: affordable, high profile office spaces for Sitra-funded business programmes and start-ups. They facilitate the entrepreneurship which promotes the continued vitality of the area. A vibrant, diverse mix of uses consolidate a shared identity linked to sustainable living, and thereby an increased sense of ownership and attachment. This personal investment in turn fosters a self-sustaining community.

**Contextual and aesthetic impact – Proficiency**

Reconciling the best possible efficiency with the highest spatial quality is one of the *Sitra Headquarters*' defining features. The programme is arranged on a typical grid, allowing maximum adaptability and a non-hierarchical organization. A large central atrium for the public and the building's terraced volumetry with planting embed Sitra in the surrounding parks. Polychromatic façades will reflect the heterogenous context and give a strong aesthetic identity to the whole block.



Principal elevation.



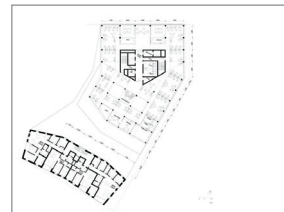
Central atrium.



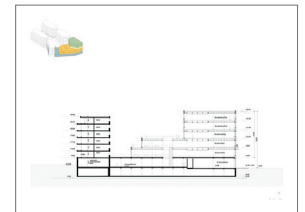
Site plan.



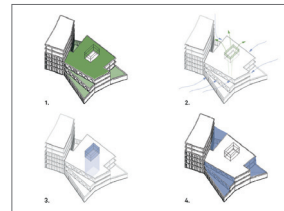
Podium (entrance) level plan.



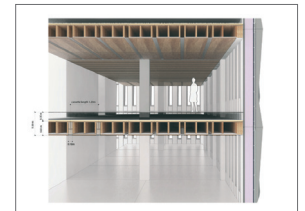
Third floor plan.



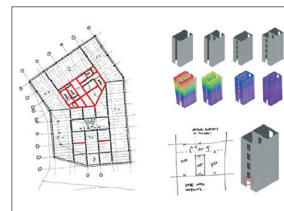
Programme distribution.



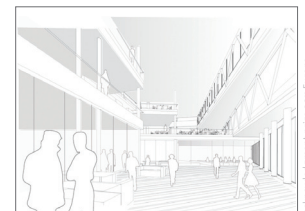
Advantages of volumetry.



Timber structural section.



All-timber core stability.



Foyer.