

Research confirms, 36% lower carbon emissions in Stockholm residential project with more climate-smart construction methods

The Hestur apartment project in Stockholm has been built with a 36 percent lower carbon footprint than comparable projects*, according to research from the Mistra Carbon Exit program. Low carbon precast concrete elements and Green Spine Line® from Consolis Strängbetong have played a central role in achieving this reduction, in addition to optimizing design and conscious product choices.

“The results demonstrate that our climate-optimized precast concrete elements and Green Spine Line®, with a reduced proportion of cement, have played a significant role in reducing the project's total carbon footprint. We are pleased to have collaborated with our customer ByggVesta to meet increased environmental requirements using available solutions. By working together with our customers, we can make a significant impact and contribute to more sustainable construction both now and in the future” says Mikael Stöhr, CEO Consolis.

PhD student Ida Karlsson, from Chalmers University of Technology, and researcher of the Mistra Carbon Exit program, has calculated the differences between the completed Hestur apartment project and the project built using traditional construction methods.

“The Hestur project shows that it is possible to build with a lower carbon footprint already today. The project group set common goals early on and the focus on resource efficiency has led to big gains in both carbon footprint and cost-effectiveness” says Ida Karlsson.

The project involved the construction of 220 rental apartments and student housing in Kista, Stockholm. It was carried out in collaboration with the developer ByggVesta, and the contractor AF-Gruppen, all with the common ambition to develop more sustainable construction techniques.

Results

Hestur's climate footprint is calculated at 207 kg CO₂e/m² Gross floor area (GFA). This is a reduction of 36 percent compared to comparable building projects where precast concrete has been used.

Additionally, the research included a cost analysis showing that the climate optimization measures reduced the material cost of the frame by 5%.

New techniques lead to climate wins

As part of the construction project, several methods were employed to minimize the carbon footprint of the building. These methods included the use of precast concrete elements made up of climate-optimized concrete and products from the Consolis Green Spine Line®, where the cement content has been reduced and replaced with binders with lower carbon emissions. Additionally, thinner precast inner walls were used in the apartments located higher up in the building, which require less material and do not compromise the load-bearing capacity or sound rating of the building.

“It is very encouraging that the study confirms the hypothesis that climate and cost efficiency go hand in hand. The development that we drive in the industry gives us the conditions to achieve a better and truly sustainable housing product with net-zero emissions within 25 years. There is great potential ahead” says Marcus Svensson, CEO of ByggVesta Development.

*Comparison project from a compilation made by the Swedish Royal Institute of Technology: KTH: Referensvärden för klimatpåverkan vid uppförande av byggnader. Version 3, 2023. Tillgänglig: www.diva-portal.org/smash/get/diva2:1812831/FULLTEXT01.pdf Prefabref: 323kg CO₂/m²BTA

About Consolis

Consolis is a European leader in precast concrete solutions that offers highly developed and sustainable solutions for the construction and infrastructure sector. We believe in responsible leadership and are committed to leading the way in the sustainable transformation of our industry. Together with our clients, we create beautiful buildings and infrastructure with the qualities to serve local communities for centuries to come. Well-built for well-being is our motto. Consolis employs more than 8,000 people in 17 countries around the world. The group generated sales of 1.0 bn EUR (1044 MEUR) in 2023.

*For further information, please contact
Helen Spalding, Group Communications Director, Consolis, +46725197782,
helen.spalding@consolis.com*