

DYSON STUDENT VILLAGE

The Dyson Institute of Engineering and Technology student village was designed by WilkinsonEyre and manufactured and assembled by Carbon Dynamic.

Edinburgh Napier University's Centre for Offsite Construction and Innovative Structures (COCIS) participated in the project and carried out structural design and testing.

The student village is constituted by 78 volumetric CLT units, variously assembled to form 19 clusters up to 3-storey high.

The modules are 7.2m x 4.2m x 2.9m and can be assembled cantilevered to up to 3 meters.



A technical prototype was used to assess the structural properties of the modules and verify the assembly process, the connection to the ground and the accuracy of the system.

Due to the presence of cantilevered modules a new connection was designed for the Dyson Student Village.

In this respect, the construction of the technical prototype was particularly useful given that it allowed verification of the predictability and accuracy of the new connections.

The prototype was also used to carry out tests on the static load, vibration and acoustic properties of the structure.

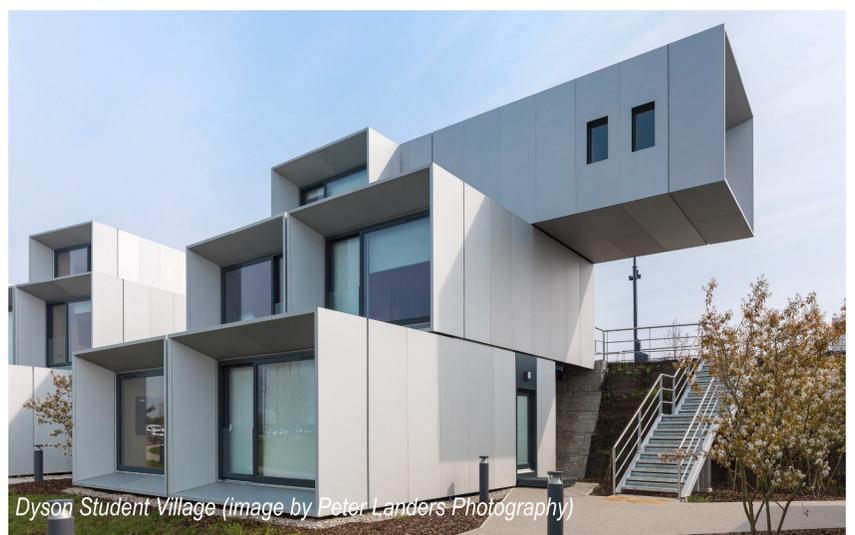
According to the calculations the total displacement of the modules under static load (based on 2 kPa floor loading) was expected to be 11.3 mm; the result given by the test was better than predicted, with only 8.3 mm displacement. When the loads were released, the system went back to its original state demonstrating both the robustness and the flexibility of the engineered volumetric system.

LOCATION Malmesbury, Wiltshire, England

YEAR 2018

PARTNERS WilkinsonEyre, Carbon Dynamic, Edinburgh Napier University (ENU), Design Engineering Workshop, Binder Holz, Stora Enso

The re-location and re-use potential of the modules contribute to the resilience of the project aligned with the principles of circular economy



To manage the variation between the modules, the engineer used a design interface matrix in which every cluster was classified according to its structural connections to control the balance between replicability and customisation

