



Forest dweller

Perring Architecture & Design has proved that low-energy New Forest living is achievable through concrete innovation

Found in translation

The design of O'Donnell & Tuomey's cultural centre for the Irish language in Derry is inspired by Ireland's heritage

Going for gold

Fifty years on, Pier Luigi Nervi's three stadiums in Rome set the benchmark for safeguarding a successful Olympic legacy



Jolly green client

The new head office for Greenfields Community Housing in Essex demonstrates how sustainable performance can be integral to a building's design and use

The brief from Greenfields Community Housing was for a flexible head office in Braintree, Essex, that demonstrated and embodied the organisation's commitment to the environment.

Richards Partington Architects responded with a design approach that involved the complete integration of architecture, building systems and sustainability. Passive and active sustainable building systems were therefore fully incorporated into the building's design.

All of the cellular offices and meeting rooms are on the north elevation, between the build core and stairwell. Cross-ventilation is maintained by naturally ventilating the plenum above the cellular spaces with high-level windows on the north elevation and perforated panelling above the internal glazed partitions.

The building's in-situ concrete frame is an integral part of both its passive systems and office design. Exposed concrete soffits provide the thermal mass that radiates warmth in the winter and keeps the interior cool in the summer.

In periods of hot weather, the building's stored heat is purged using a night-time ventilation system in the raised floor. To reduce the embodied energy of the concrete, a 50% ground granulated blast furnace slag (GGBS) concrete mix was used.

Internal flexibility has been created by using a flat concrete slab within the 6m/7m x 6m structural grid. With no structural downloads, partitions can easily be installed on the soffit without obstructing the flow of air across the floor plate.

The introduction of a 25mm-deep, 1,200mm-diameter circular recess on the 1,500sq m planning grid provides a visual relief to the slab. The circular recesses were formed using plywood discs with chamfered edges fixed to the shuttering. The discs, and in particular their edges, were sealed to avoid damage and to protect the end grain from absorbing water as the concrete set in formwork.



Top
Passive and active sustainable systems were integral to the building's design.

Above
The recesses provide visual relief to the slab.

Left
Pendant lights hang from the circular recesses, which have a "fine smooth" finish.

Large circular pendant lights complement the relief by accentuating the subtle recesses.

A consistent "fine smooth" finish to the soffit was achieved by producing a series of trial panels and working closely with the concrete contractor.

In addition to the utilisation of the structure's thermal efficiency, the office has a large rainwater tank to store and recycle rainwater for flushing toilets and a ground-source heat pump that uses the earth's latent warmth to generate low-energy heating and cooling.

Greenfields Community Housing wanted a head office that made a sustainability statement, and Richards Partington has certainly delivered one, in which high sustainability credentials and an attractive working environment blend seamlessly.

PROJECT TEAM

Client: Greenfields Community Housing
Architect: Richards Partington Architects
Structural engineer: Integral Structural Design
Main contractor: ISG Jackson
Concrete contractor: S & M Contractors