

# Precast Housing Cherry Orchard - Dublin



Concast Precast Group

# Concast Precast Group - Precast Housing

Highly experienced precasters, 'The Concast Precast Group', have just completed the first phase of one of Ireland's most highly innovative precast housing developments. Located in Cherry Orchard, Dublin, the mixed development of apartments, duplexes and houses comprises a total of 374 dwellings. A key aspect of the development, 30% of which is earmarked as 'social housing', is the use of high quality, low cost, fast-track construction methods. Aimed at the 'affordable homes market', prices range from €125,000 to €190,000.

To meet both time and cost constraints, all the main building elements are precast concrete including, internal and external walls, floors and stairs. The precast elements are being produced locally in Concast's Dublin and Calow facilities. International analysis of the benefits of this form of construction indicate a reduction in the construction period of between 25% to 50%, compared to traditional methods of construction.

Selecting the optimal wall panel design was a key factor in the Cherry Orchard project. To benefit from international experience, production engineers from Concast visited Europe's top precast panelling plants. The solution which was eventually adopted involved the use of self-vibrating, tilting and battery steel moulding systems, which gives a high quality finish on both sides of the panel. These factory produced elements which are produced to high quality standards and very tight tolerances, are hoisted into position on-site and subsequently tied-in to each other using steel reinforcement to form a composite structure. On average, about 10 to 12 wall panels can be erected in one day. Precast cross-wall units and beams are dowelled into each other and grouted, while composite action between walls and floors is achieved by steel ties protruding from the precast cross-wall onto the flooring units, which are subsequently screeded. This 75mm structural screed also houses the electrical services.

The Cherry Orchard project is being developed in conjunction with Dublin City Council, by a Consortium comprising of Park Developments, Sisk Contractors and O' Mahony Pike architects. DBFL are acting as consulting engineers. The design approach to the current project is similar to the much



Precast Walls + Panels

acclaimed Mount Saint Annes apartment development in Milltown, Dublin.

In 'Cedar Brook' O' Mahony Pike have succeeded in producing a lively elevational

treatment, particularly to the four storey apartment block. Creating 'variety' was one of the project design challenges since the 'repeat use' of precast elements is required



Precast Apartments

# Cherry Orchard Social Housing Development

By Brian Ó Murchú



to maximise the benefit of precast construction and keep costs down. Although four storeys high, the elevation is designed to appear as two distinct elements, using form and colour to give the appearance of a two storey building, thus reducing the scale of the elevation to more 'domestic' proportions. Another design device was to raise the height of the end of

terrace units, introducing composite steel and timber elements, while variable concrete pigments and textures were used to highlight the cladding in selected locations.

Occupants of the first floor apartments have their own gardens which are accessible via a back stairs. These are located beyond the gardens of the ground floor apartments.

The 'Cedar Brook' development is an excellent example of the use of precast concrete to produce low cost, high quality, durable dwellings. Because of the inherent properties of concrete, the houses will also have excellent 'fire' and 'acoustic' properties, provided simple design principles are adhered to. The combination of these factors together with the excellent credentials of concrete as a 'sustainable' material are leading a number of leading design practices to the conclusion that precast concrete is by far the best option for high density apartment buildings.

Precast housing has been used virtually world wide since the 1950's and is popular in Europe, Japan, the USA, Australia and New Zealand. Surprisingly, the highest levels of precast housing are in Scandinavia, with precast representing 42% of all new homes.



A key aspect of the design is the extent to which spaces have been 'personalised'. Common areas, such as entrance lobbies and common stair wells, have been kept to a minimum to reduce maintenance costs and foster ownership of open spaces. The upper floor apartments have private front doors for direct access and either gardens or large balconies. These 'private doors' are accessed by semi-private external staircases.

Cherry Orchard Project Team:  
Dublin City Council  
Park Developments  
John Sisk & Son Ltd.  
O'Mahony Pike Architects  
DBFL Consulting Engineers  
Concast Precast Group