CONCRETE abstraction

This Killiney house, called the Sleeping Giant, defies expectations for a number of reasons, not least in the extensive use of its building material, concrete. Its construction seemingly made light work of a heavy load.

The Owners: Private family, returned to Ireland from London.
The Location: Coastal Killiney, Co Dublin.
The Type of House: Detached, multi-level, extensive use of concrete in an organic, origami-like shape.
The Size of House: 550 sq metres, 5,800 sq ft.
The Budget: Not disclosed.
The Brief: A contemporary, unique family home replacing an earlier dwelling, on a challenging sloping site, to reflect some of the site's layered characteristics.

The Biggest Challenge: The site, with four main levels, plus half levels, as well as making quite complex shapes work in a domestic project.
The Best Decision: Stick to the vision and the site's constraints.
The Build Route: Main contractor, Townlink Construction, with considerable experience of large-scale build projects.
The Method of Construction: Crunched and folded concrete shell roof poured on plywood forms, granite walls and hefty hardwood joinery, with the roof supported on steel columns, anchored by an in-situ chimney and with a variety of planes and levels, and hardly a right angle in sight.
The Build Time: 15 months.
The Build Cost: Well in excess of €2 million.
The Verdict: A fascinating, "alive" family house, as varied internally as the near and distant landscapes outside. It has already won several major awards, both from the Irish Concrete Federation, and from the British architect's body the RIBA, winning a European medal.
The design of this architecturally ambitious house is a bit like the simple game "Paper, Rock, Scissors." It came down to balancing an unlikely material with unlikely shapes. Think of the delicate Japanese art of paper folding, origami, to make extraordinary shapes, and that's more or less how this extraordinarily shaped house came about. That, lots of scaled-up studies, sketches, reflective water colour paintings and more aides, all designed to imagine and convey a way to respond to a site that most people would either have walked away from or pigeonholed fit with a slick-look, and then started with a clean sheet of not-origami paper.

It is called The Sleeping Giant, because its plan when first sketched out loosely resembled a sprawled, undulating figure, not unlike the sort of TV cop-show shot of a victim's outline chalked on the ground at a crime scene.

It is an intuitive and architectural response to that seemingly simple outline, with this house sited into part of an existing elevated hillside site of rocky granite outcrops and gardens, and where an original house was demolished. Incredibly, it was one which quite literally had ignored the Dublin Bay views and the more distant Sugarloaf Mountain views, with not a single window placed to get the views. Off with its head! In with the Giant! Apart from the evident simplicity, and not on the completed evidence seen here (and already recognized in major Irish and international design and construction awards) delivered with elan, aplomb and fine detailing, an initial surprise is the amalgam of materials with the main building material chosen: concrete, the C02-guzzling hoggy-yawn of the green movement.

Shades of green

Architects were O'Donnell + Tuomey, a practice headed by Sheila O'Donnell and John Tuomey, renowned in architecture awards and with green credentials cornered via projects like the low-energy, wood and stone-faced Glendalough Art Gallery in University College Cork.

What gives? 'The Sleeping Giant very has eco-credibility and credentials too, the architects point out. According to John Tuomey, it is important to do this research, take a broad view and then be guided and act accordingly. Interestingly, the local planners allowed the visions to be realized, too.

Among the several "green" saving graces in this build were the use of GGBS concrete, known here as Ecopon, a carbon-neutral concrete already manufactured in Ireland from blast furnace slag, which is a byproduct of steel-making. More environmentally friendly than ordinary Portland cement (OPC), it is practically a cost-neutral alternative to ordinary cement, and given a fine, less blunted finish and a whiter/grey look. Ecopon makes up about 70% of the concrete used here.

Given that the house is first glimpsed from above (it is 20' below road level the quality of the roof - the evocative horseshoe - was vital here, the concrete has been finished with a hand-applied still-soft trowel including ground granite, then sandblasted so that the mica in the stone glitters in the sunlight.

Other eco-cool touches at this 5,606 sq ft family home include deep low euthermal heating, some breathable lime-based render in the upper walls, extremely high insulation values, utiliz
The cladding materials used were high-performance types, as well as being the most cost-effective, and the chosen outline shapes and layouts were carefully planned to enhance the overall aesthetic appeal of the house. The use of leached concrete, which was poured by the general builders who undertook the cladding, was also incorporated into the design.

The interior build was never going to be easy, and seeing the client build into it was a key part of the Townlink Conceptus process. The clients had a firm understanding of their own needs and were committed to the outcome. There were, of course, some teething troubles that Townlink has to overcome in the initial stages of the project, but the clients were very much involved and were happy with the outcomes.

Smooth masonry:

Sharing the concept: the clients were involved from the early stages of the build, and the ideas and concepts that were discussed were incorporated into the design. The clients were very happy with the outcomes.

A large number of scale models were created to give a sense of vision and confidence in the build. The clients were also involved in the process, and the concepts were developed in collaboration with the clients.

The structure was in reinforced concrete, with the masonry walls and a folded concrete roof. The structural design was based on a 3D model, which was used to ensure that the structural integrity of the building was maintained.

The overall quality of the finished building was remarkable, and it was clear that the attention to detail was evident. The clients were very happy with the outcome, and the quality of the finishes was excellent.

The clients were very happy with the outcome, and the finish was judged to be the best they had seen. The attention to detail was evident, and the clients were very satisfied with the final result.

The kitchen/dining area has a glazed wall, with thick timber frames, and a southerly and easterly aspect, ensuring that the kitchen is well-lit and airy. The outdoor dining area, surrounded by the solid natural timber frame, is a great place to relax and enjoy the views.
Useful Contacts

- **Architects**
  O'Donnell Tuomey
  20 A Camden Row, Dublin 8.
  Tel: 01 475 2500.
  www.odonnell-tuomey.ie

- **Structural Engineers**
  Downes Associates
  Castle Business Centre,
  Castle Road, Dublin 12.
  Tel: 01 490 1611.

- **Mechanical and Electrical**
  Davis & Associates
  Unit 1, White Swan Business Centre,
  Greenvale Avenue, Dublin 8.
  Tel: 01 415 2620.

- **Quantity Surveyors**
  Brandon Merry & Partners,
  IPC House, 35-39 Shelbourne Road,
  Ballsbridge, Dublin 4.
  Tel: 01 278 2480.

- **Main Contractor**
  Townlink Construction Ltd
  10 Greenhills Business Park,
  Dublin 24.
  Tel: 01 462 7131.

- **External and Internal Joinery**
  Cem Construction, Unit 2 Block 4B,
  Blanchardstown Corporate Park,
  Dublin 15.
  Tel: 01 885 0432.

- **External and Internal Stone**
  (Solid Granite)
  Monarch Ltd.
  Athioura Road, Longford.
  Tel: 043 41122.

---

Level 4

1. Bathroom
2. Bedroom

Level 5

1. Bedroom
2. Bathroom
3. Bedroom
4. Bedroom
5. Bathroom

Level 6

1. Kitchen