



PRECAST STARS IN PROMINENT RESIDENTIAL BUILD

Iain MacIntyre

PRECAST CONCRETE IS PLAYING A PROMINENT ROLE IN A UNIQUE COSGROVE GOODWIN ARCHITECTS-DESIGNED HOME BUILT RECENTLY IN KAIWHARAWHARA (WELLINGTON) BY HOMESTEAD CONSTRUCTION.

Providing a stunning 180-degree view of Wellington Harbour, the Satchell Way newbuild has been enriched with an array of architectural features, including an overall precast look complemented by stained plywood.



CHALLENGING BUILD

Delighted with the outcome, Homestead Construction project manager Darcy Currie describes the 14-month project as “definitely one of the most challenging residential builds we’ve been involved with.”

“It is very architecturally focused. There are so many bespoke elements involved in the build; a huge amount is going on,” says Darcy.

“The smart systems in the home are impressive. You can pretty much control the entire house from Canada if you needed to!”

Among the project challenges was operating on a completely undeveloped site, which drops away from the roadside.

“Access proved difficult. Getting the precast panels in place was problematic with the site being so steep. However, these challenges were overcome as Homestead is well equipped to deal with these constraints.”

“We needed to cut into the hillside. It was all covered in scrub, gorse and blackberries – you would have hardly known a section was there before we started. In fact, it was one of the last houses to be built in that subdivision.”

Consisting of two concrete floors and a lower service area, the home’s 140 square metre ground floor is a combination of slab-on-grade and a suspended concrete tray floor system, with the 80 square metre top floor being entirely suspended.

“One of the key benefits of using concrete is we have the hydronic underfloor heating in both levels (hot water piped through the slab). The top floor is also polished concrete.”

Another notable design feature is a unique ‘linear crank’, meaning the whole house is on a 13-degree twist that runs through the centre of the dwelling, “so there were some interesting angles to work with.”

“We had to construct the precast panels with integrated electrical componentry, such as the wall lights up the stairs, which needed to be set out perfectly.



“The internal stairs are also precast concrete and are polished. They look fantastic and seem to almost float.”

In addition to the steep fall of the section, Darcy says the street itself slopes in another direction.

“The garage door is not even a square and the garage floor is actually sloping, which is the first of those I have encountered.”

While Darcy notes that speed of construction is often a key driver in the decision to use precast concrete construction, in this case it also delivered on the client’s vision of a ‘natural’ and ‘honest’ look, particularly for the main entrance way.

“It has some rain wash stain, and general character, making it perfect for the type of finish the client was after. I am really impressed with the way it has turned out.”

DESIGN INSPIRATION

Paul McCardle of Cosgrove Goodwin Architects says the design was informed by a number of considerations, including the desire to create

functional yet artistic architecture, and by the constraints of the South-East facing site.

“The concept was to create two contrasting forms – a solid core structure, anchored to the hill, that is sheltered by a floating protective shell” says Paul.

“The result was a southeast-facing precast concrete building, inspired by the early 1940s bunkers in the Wellington hills, that is enveloped by a modern angular metal roof.

Both protect the warm interior spaces, provide sculptural yet practical spaces, and frame the stunning views of Wellington Harbour.

“The roof and the concrete are the main elements of the building’s exterior form,” adds Paul.

“The concrete is also a main feature of the interior, with polished concrete floors and walls in the lower service level, and a concrete floor and balustrade to the top floor.

The other focal point of the interior is the angled timber ceiling, which works together with the concrete to create a cosy environment.”

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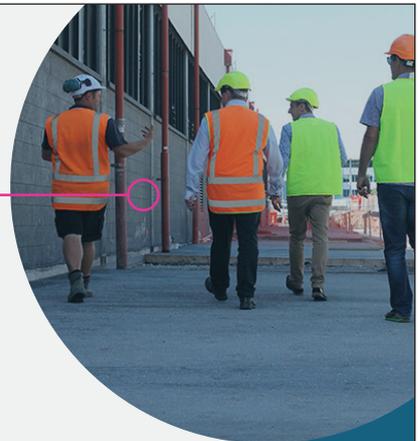
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Paul emphasises that concrete was a calculated choice for the build.

“Concrete speaks of permeance and reflects the concept of contrast (solid vs. open and fixed vs. floating), as well as fitting within the Wellington context of a concrete fort in the hills.”

“Like most homes in New Zealand, the early thinking on the project was to go with a timber-framed house with a plaster finish to give a solid look.”

“When the house was put out for preliminary pricing we looked into both options - precast concrete vs. timber framed.”

“At the end of this process the decision was made to move forward with precast concrete due to its honesty, structure and cladding durability, acoustic performance and alignment with the design concept.”

PRECAST BENEFITS

While precast residential concrete construction has carved out a niche over the past two decades, Darcy notes that there are many who are still unaware of its benefits.

“As this project demonstrates, it is ideal for discrete homes, but it is also perfect for multi-unit residential developments as it offers excellent quality control off-site, repeatability of design, rapid construction, not to mention inter-tenancy fire separation and acoustic insulation.”

“Awareness of what precast concrete construction has to offer is definitely growing amongst developers and their clients, as evidenced by Homestead Construction’s involvement in a 56-unit development at Paetutu in Petone and an 80-unit development at Erskine in Island Bay.”

“Precast concrete also offers a great range of architectural options in terms of surface finish, whether it’s wood grain or other treatment, the possibilities are limitless.”



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