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'Vexations' is a two line composition by Erik Satie, allegedly found behind his piano after he died in 1925, with instructions that for its performance it was to be repeated 840 times. Unsurprisingly, since this takes about 18 hours, performances are rare, but Stephen Chance, of Chance de Silva architects, heard it played at the Barbican, and thought it could provide the theme for a possible house on a small site in Stoke Newington in North London. Chance de Silva have made a reputation for inventive live-work buildings on sites too small and awkward to interest developers or housing associations. Vex, three storeys, $115m^2$, is the most ambitious, and most fully resolved of these so far. With themselves as clients, they were able to tolerate the long drawn out and unquestionably vexatious nature of the project - much aggravated by some deliberate choices of their own.

On their other projects, Chance de Silva have a record of collaborating with visual artists, craftsmen and performers. For Vex, they chose to collaborate with a sound artist, Scanner (Robin Rimbaud). Collaborations between composers and architects are rare — in fact I can think of none since Le Corbusier's Philips Pavilion in

1958. The architects and the musician each took
'Vexations' as their starting point, and set out to see
what each independently would come up with. Scanner's
contribution is a three part sound track for the house,
composed out of sounds sampled from the construction
process: as he says, the composition was born out of the
building, rather than as is more usually the case, an
installation for an already existing space. When I
visited the house, the sound track, whose sounds belong
to the house, was playing just audibly in the background.

Vex is three eccentric corrugated concrete drums, misaligned vertically; the drums repeat, but they vary - they are like each other, but not alike. Together, they suggest remains of some colossal, never completed, antique monument, since hollowed out to make a habitation. The partially submerged ground level drum is the workspace. The second drum contains two bedrooms and bathroom; and the top, piano nobile drum is the kitchen and living room, with an enclosed roof terrace, screened with strips of larch, above. The staircase loops around the back of the drums, so that you never know what is coming next, and because the entry point to each level is in a different position, every level is unlike the previous one. For 115m², Vex is surprisingly roomy, an effect enhanced by the lack of orthogonals in plan,

giving you nothing to orientate yourself by apart from the views from the windows.

The choice of in-situ concrete for an exterior where nothing quite repeats was undoubtedly the most vexatious of Chance de Silva's decisions. Attracted by the opportunities for invention and resourcefulness that concrete offers, they seem to have relished the demands it placed upon them. Francis Onderdonk, who wrote the first English-language book on the aesthetics of concrete back in 1928, observed that 'No other architecture exposes the architect's ability as fully as re-inforced concrete does'. If this was true then, it is even more so today. Concrete throws the architect back on their own resources in a way that no industrially-made product, with its guarantees and manufacturer's specifications, ever does; with concrete, the architect is responsible for everything from the start, and is more intimately drawn into the realities of the building process than is the case with other substances. For good reason, concrete is held amongst architects to be a virtuous material.

The ribbed surface of the drums, resonant of the repetition of Satie's 'Vexations', was achieved with corrugated steel sheets, held rigid by a system of wooden coffers invented by the architects. Because it was essential that the corrugations ran evenly round the

drums, and joined seamlessly, it was necessary to build the entire formwork for each drum before it was poured rather than, as would be more normal, to cast the wall in sections. And since the drums are not circular, but follow an irregular curve, every part of the formwork had to be fabricated by hand - a credit to the two site carpenters. Nine months work to create the formwork for a single drum, two hours to pour it. And as each drum is a different shape, almost none of the formwork could be directly re-used for the other levels.

The window openings follow a rhythm of their own, independent of the rhythm of the corrugations, so some window jambs are at the peak of a corrugation, others in the trough, and others in between. The result is sometimes a clean edge, sometimes a ragged one. The haphazardness, reminiscent of a World War II pillbox, is deliberate, and if the results are not perfect, so be it: the architects are aware that concrete is not a perfect medium and that attempts to make it so generally fail.

Vex has its imperfections - but these, which would be intolerable if it was built of industrially-produced materials, are part of its charm. Concrete has been used knowingly, with an awareness of its tendency to 'double', to be two things at once: here 'industrial' - in the sleek regularity of the corrugated surface, but also

atavistic - in the rawness of the jambs, and in the cyclopean nature of the whole.

Every in-situ concrete building is a record of its making, most usually in the imprint of the formwork, here corrugated steel for the exterior, ply for the interior.

Normally all that is left is negative traces, but in Vex, pieces of formwork are re-instated to become a positive: corrugated steel partially lines the studio, the beautiful timber coffers become storage in the kitchen, reminding the occupants of the building's production, just as Scanner's composition reworks the sounds of construction.

Vex contains a lot for such a modest house. If some of the complications the architects created for themselves might seem madness, it was a madness that enabled them to show just how rigorous they could be in their solution.

As the engineer Jane Wernick once remarked, 'With concrete you come closest to total architecture'.