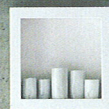
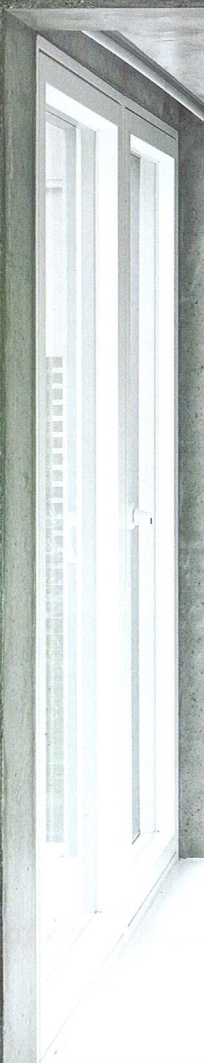


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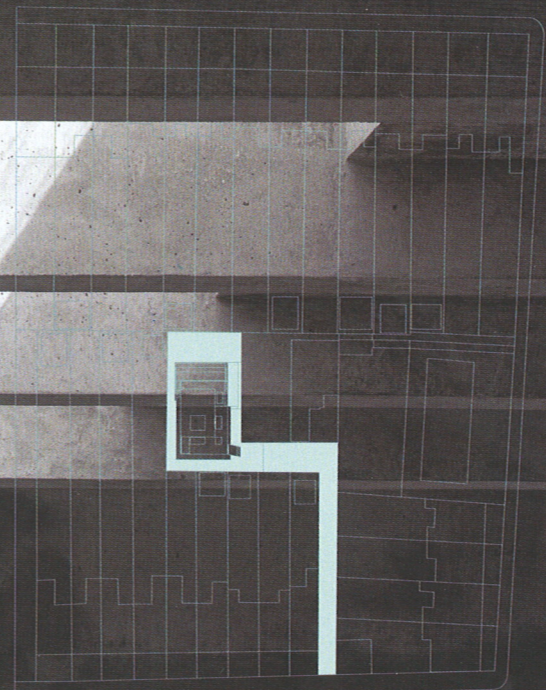


3 HOUSES

1.7 IBP MAGAZINE OF THE YEAR
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BUILDING STUDY COVERT HOUSE DSDHA



The brief

Deborah Saunt and David Hills of DSDHA set out to design their home as a testbed for their ideas on sustainability. Their experiments – carried out under restrictive Conservation Area planning conditions – resulted in an unorthodox, semi-underground house that challenges what it means to design a contemporary domestic space.

The two-storey house is a box-like form of two colliding white cubes, entirely shielded from street view, set behind a terrace-lined residential block in Clapham, south London. Planning constraints limited the house to a single-storey height, so DSDHA decided to partially lower the structure within its garden plot. The pavilion-like exterior belies a spacious interior, resulting from generous ceiling heights and an open-plan ground floor that distributes the kitchen as well as the dining and living room areas. A lower floor is accessed via a white concrete stair and is divided into smaller private bedroom and bathroom spaces, which can all be entered off an informal living area.

The project began in 2007 with the purchase of an old house with a large overgrown garden. Two applications and an appeal later, DSDHA finally won permission to build in 2010.

Covert House is indeed a case study on the potential for unlocking backland sites and creating architectural opportunities that subtly densify our residential areas. It responds to the urban necessity of building more houses close to the city centre without encroaching on the amenity of existing private gardens. Allowing for more well-designed houses to be built in existing private backland sites may be one way for people to develop the assets they own while also releasing some of their equity.

DSDHA

Data

Gross internal area 128m²
Start on site 2012
Form of contract Bespoke
Construction cost Undisclosed
Client Deborah Saunt and David Hills
Architect DSDHA
Project team Deborah Saunt, David Hills, Matt Lambert, Emma Canning
Structure engineer Price & Myers
Contractor White Rock Engineering
Services/sustainability engineer Max Fordham
Enabling architect (construction) Knox Bhavan
Planning consultant Bennett Urban Planning
Metalwork Creative Metalwork
Joinery Big Egg Designs

APPRAISAL

By Ellis Woodman
Photography by H el ene Binet and
Christoffer Rudquist

Quite what Deborah Saunt and David Hills' neighbours make of the name the DSDHA directors have bestowed on their family home we can but wonder. Invisible from the street and extending only a single storey above ground, the Covert House may very well be the model of discretion that its architects claim, but not many in the surrounding south London conservation area would seem to agree. Saunt and Hills only secured permission for their three-bedroom home on appeal after multiple objections led to their initial application's refusal on the grounds of overdevelopment.

That process added four years to what was already a protracted programme. The architects first embarked on the project in 2006 when they struck on an ingenious method of securing a site. Already living in the area with their two young children, they came across a nearby group of streets lined by large, early 19th-century properties. After consulting an Ordnance Survey map, they identified a number with gardens of a size that could support the construction of a standalone house. They wrote to five owners asking if they would consider selling them the necessary land and received one positive reply.

Their respondents were the elderly owners of an end-of-terrace house, a property that had originally been built for the occupation of the builder who was developing the rest of the street. As was common practice in the 19th century, it served first as a show home for the larger development and incorporated a substantial builders' yard to the rear. Accessed down a narrow alley extending down the side of the street-facing property, this 'flag lot' was occupied by a smaller, run-down building known as the Farmhouse and an adjoining garden which had been left unattended for 30 years. In partnership with another couple, Saunt and Hills bought the site with the intention of restoring the Farmhouse for their friends and building a standalone pavilion in the garden for themselves.

From the first, the planners imposed a set of highly exacting restrictions on the design. The new house would have to be finished in white render, set a minimum of 2m back from the fences that separate the plot from the neighbouring gardens and should rise no higher than 3.5m above the ground. This last stipulation effectively necessitated the



construction of the building's bedroom level below ground. Two sunken courtyards located to the north and south admit light and air to this floor while providing a direct means of escape from all rooms – a requirement stemming from the fact that the house lies beyond the reach of a fire engine's hose.

The potentially basement-like character of the lower storey is mitigated further by the location of the first-floor slab 600mm above the level of the garden. Each bedroom enjoys glazed doors that extend to the underside of the slab while the central TV area from which the bedrooms are accessed is lit by a clerestory. Thanks to the compact plan and the provision of multiple openings to all aspects, a strong connection to the wider world is maintained throughout. Views of the sky have even been enabled through the introduction of a series of windows ranged around the building's most figurative episode: a tightly winding stair which occupies a double-height void located against the north elevation.

The stair is constructed in white self-compacting concrete – in contrast to the standard concrete finish of the internal walls and soffits – and the same material has been employed where the slabs extend outside. The front door is reached across one such area – a small elevated platform, notched into the corner of the plan, where shoes are removed before entry. As with all principal openings, the door is set within deep, angled reveals faced in mirror-finished stainless steel, a treatment that at once amplifies the openings' scale and picks up the reflection of the surrounding greenery. A dozen trees have been planted around the building with the ambition that it effectively dissolves into the encircling foliage.

A reading of the house as being configured upside down is supported by the upper level's lower floor-to-ceiling height. The narrow width of the foyer that extends along the north elevation – ultimately leading to the stair – consolidates a sense of unassuming intimacy. However, the entrance arrangement's compact dimensions operate as a foil to the experience of passing into the generous open-plan living area.

Here, light filters down from skylights set within a soffit articulated by narrow downstand beams, but the principal orientation is towards the full-width wall of glazed doors which provides access to a terrace beyond. This area looks on to the void that illuminates the bedrooms, but the specification of its balustrade in frameless glass maintains a

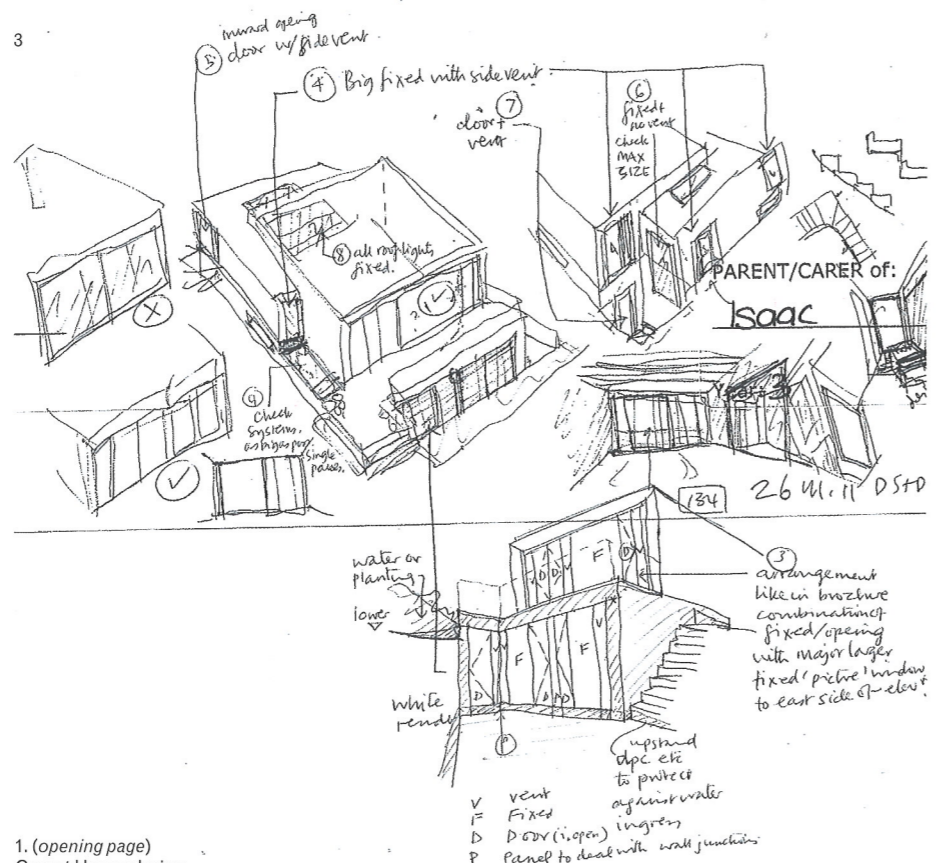
They have not only answered but transcended the restrictions placed on them

view out to the garden for those inside. This relationship lends the house a distinctly Californian atmosphere, an association that should be strengthened as the trees mature and obscure the (really very far distant) view of Saunt and Hills' aggravated neighbours.

There have been no shortage of instances of architects embarking on the design of their own home with the aim of securing a creative freedom they have failed to find designing for others. It is therefore not without a certain irony that the Covert House has proved as fraught and constrained a commission as any that its architects have undertaken. The results could hardly be claimed as any form of prototype or built manifesto, but neither

do they feel a compromise. Their success lies in the extent to which the architects have not only answered but transcended the restrictions placed on their imagination.

One letter objecting to the planning application concluded by asking: 'Does anybody really want to live in a bunker?' and in lesser architects' hands the project may indeed have taken on a distinctly troglodytic cast. However, nine years after they began searching for a site, Saunt and Hills have succeeded in building an exceptionally attractive family home – a tribute not just to their considerable talents as designers but to their frankly superhuman levels of determination.

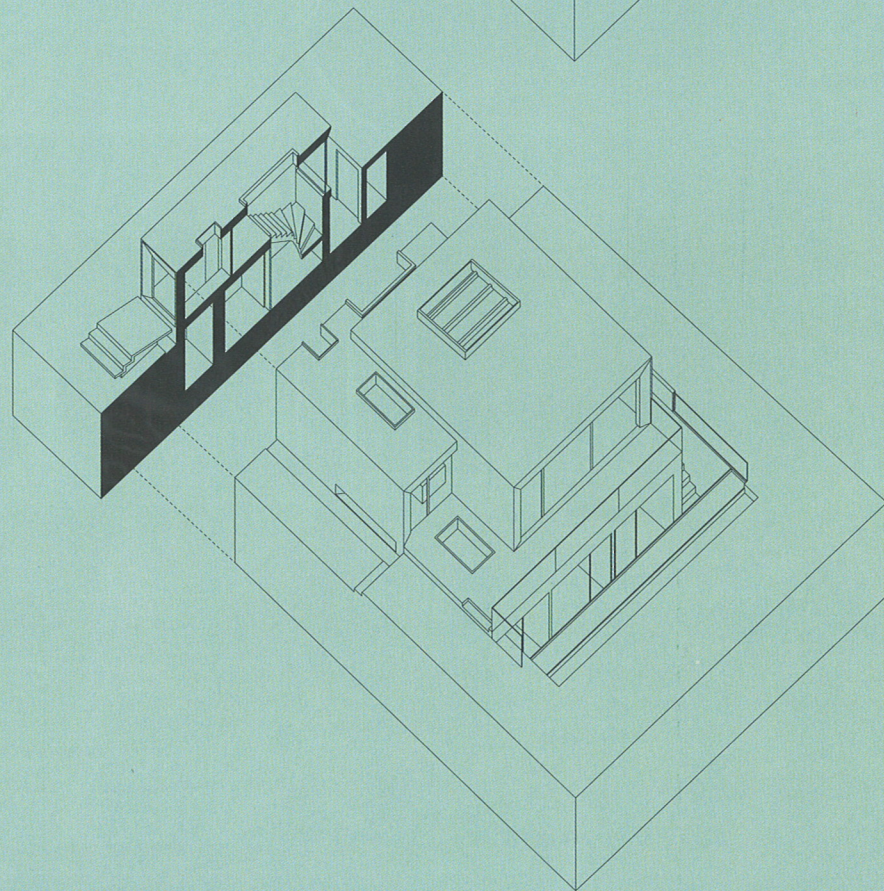
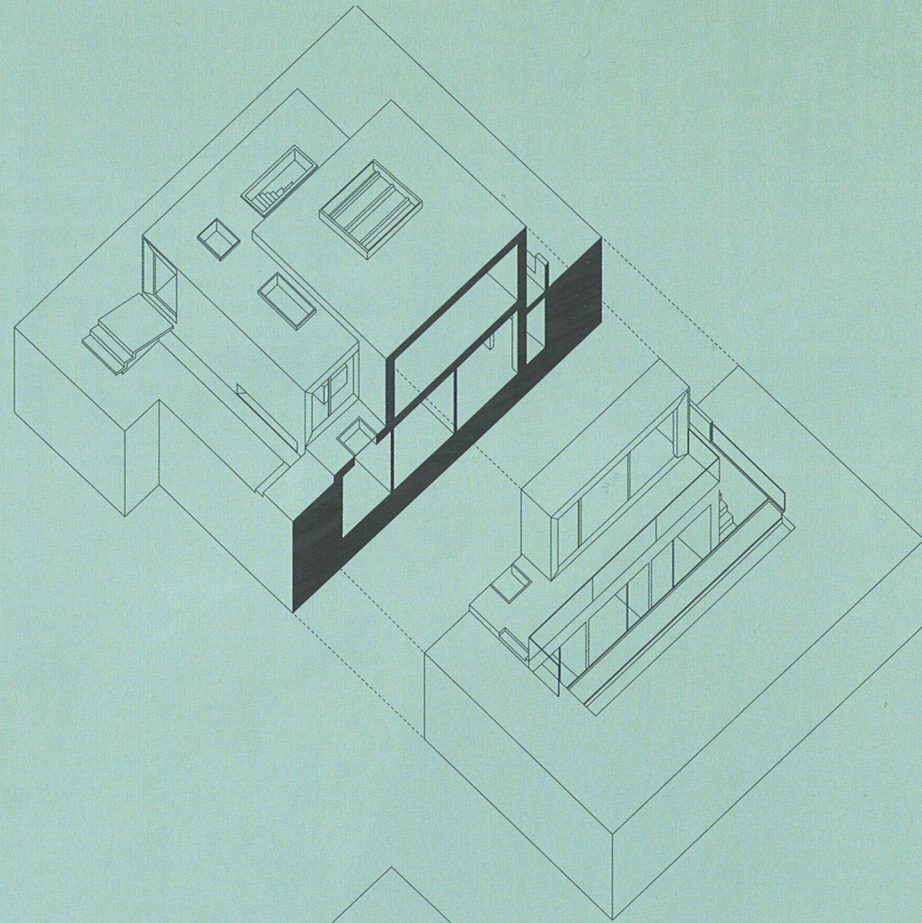


1. (opening page) Covert House during construction process
2. (previous page) The living space occupies the upper ground floor
3. Development sketch by Deborah Saunt
4. (opposite) A tightly wound stair is constructed in white concrete

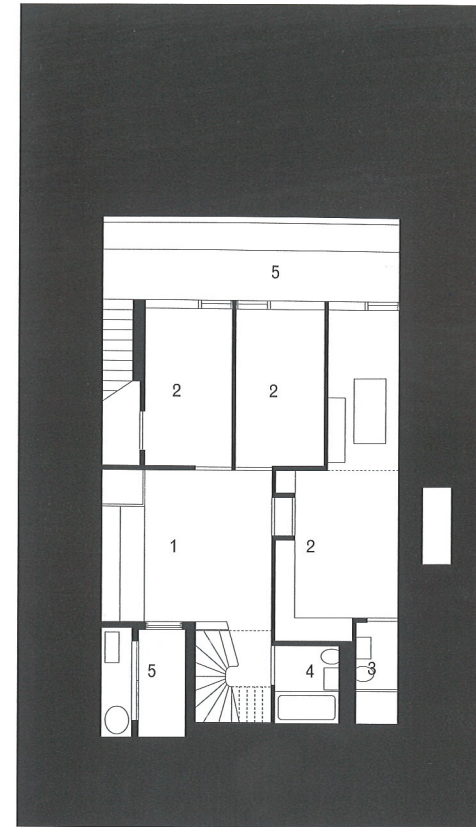
- ① lets test this with a variety of proportions using the same system throughout + darker frames
- ② lets test if darker render or white against all renders + frames

27.11.11 DS

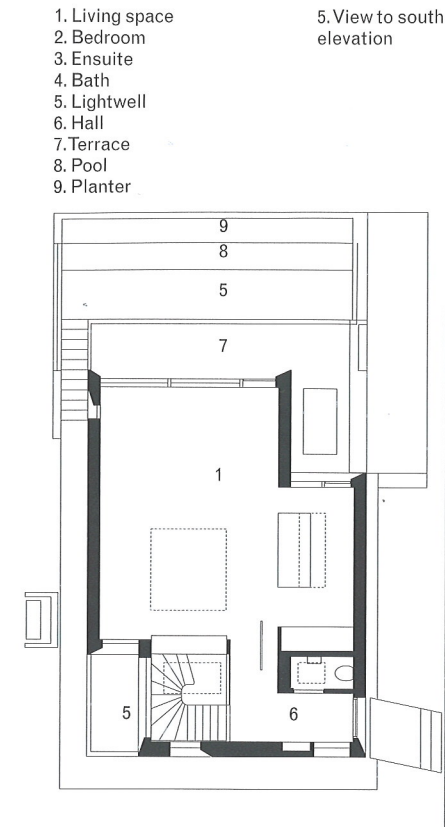




Axonometric sections



Lower ground floor



Upper ground floor



1. Living space
2. Bedroom
3. Ensuite
4. Bath
5. Lightwell
6. Hall
7. Terrace
8. Pool
9. Planter

5. View to south elevation

ARCHITECT'S VIEW

Deborah Saunt and David Hills, directors, DSDHA

This semi-underground home is unorthodox, challenging what it means to design a contemporary domestic space close to the city centre.

Located on a backland site behind rows of Victorian terraced houses, Covert House was subject to restrictive conservation-area planning conditions that limited it to a single-storey height. As a result DSDHA decided to partially lower the structure within its garden plot.

The exterior appears as a low-rise, lightweight architectural element clad in white render and with chamfered reveals to the openings, which camouflage the house with its verdant surrounding. By contrast, the interior presents itself as a solid volume whose exposed concrete surfaces are mostly left raw and unfinished.



5

ENGINEER'S VIEW

Anthony Thresh, specialist contractor, concrete expert, director of White Rock Engineering and Construction

Covert House lies behind a Victorian terrace in a backland site that can only be accessed via a narrow and relatively low passageway. The latter cuts through one of the houses on the main road and is shared with the adjacent Farmhouse. In these conditions one of the project's main challenges was gaining access to its site.

As we had to excavate 5m into the ground, we needed to use large digging equipment. We outsourced a particular brand of machines produced in Japan, the only one narrow enough to make it through the passageway – after its door handles had been removed.

Another problem was that the cellars of a neighbouring house extended beneath the passage. We couldn't pass over them with our heavy equipment and risk causing damage, so we had to build a temporary steel bridge structure to distribute the loads and get us safely from the street to the site.

To ease the removal of the large amount of soil we had to excavate, we decided to make a bespoke site skip and a storage unit for the construction material, which we strategically placed at the edge of the passageway, rather than off the public street. This saved us the trouble of having to load the spoil into a skip over the public highway where pedestrians would be walking.

Covert House's structure is entirely made of cast in-situ self-compacting GGBS concrete, with 30 per cent PFA (pulverised fuel ash) poured with only 2mm tolerance. The design of the shutter formwork was left to us, with the proviso that the walls must not show any horizontal board joints. For this reason we used bespoke oversized shuttering boards. The splayed windows constituted a major challenge. Their formwork was made in a joinery shop and incorporated with air vents to release the air excess while pouring.

As the dimensions of the site were tight, the architects aimed to maximise the living space by keeping the structure to a minimum. To this end we used a system of king piles

in order to excavate. We set up the timber formwork between them and placed the waterproofing membrane and insulation against this, making it act as a back shutter against which the concrete was cast. In this way we could avoid the use of huge tubular piles and a drained cavity below ground level.

Given the height restrictions, our aim was also to minimise the depth of the roof slab, so we decided to complement it with ribbed beams that incorporated 'draped' and standard fixed reinforcing. When pouring, we gave the beams a slight curvature so that, when the formwork was removed and the final loads applied, the soffit was completely levelled.

The self-compacting concrete we used presented a series of difficulties – particularly in the soffits, where we had to create several changes of levels. To obviate these inconveniences we used internal and external concrete vibrators, which helped us to consolidate the freshly poured concrete and ensured a satisfactory finish, but meant the idea of self-compaction was not really evident.

It is generally much easier to cast the concrete with a tower crane and in large volumes, but in this particular case we were required to produce extremely slender slabs, columns (75mm wide) and walls (100mm thick). This meant we could only pour a relatively low volume of concrete each time. As such this small job became highly complex, as each operation had to be carefully co-ordinated to prevent the concrete from hardening before it could be poured, a particular problem in hot weather.

Only a few transitional elements – the thresholds between interior and exterior and the staircase – are made of marble sand, white cement and a colour enhancer. The rest of the structure has been left unfinished throughout the house and for this reason the concrete's texture became an important element of the project.

After several tests, we agreed to let the material be, only filling the blowholes where they were wider than 10mm, and avoiding over-refining the locations of the tie rods on the shuttering. Now, when looking at the fair-faced concrete throughout the house – particularly where mottling and discolouration seem to have impressed the action of pouring the liquid substance – one can read the effort and craft involved in making the structure.

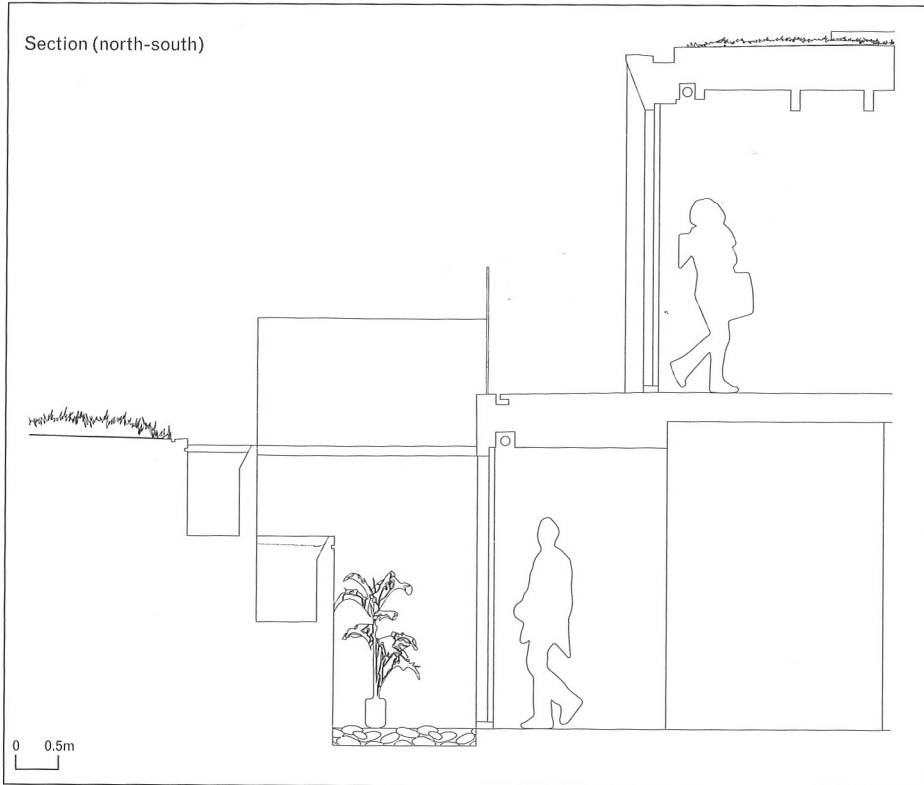


6. Timber-lined WC
7. Study on the lower ground floor

8. (opposite) The roof slab is supported by ribbed beams



Section (north-south)



ENVELOPE DETAIL

*Deborah Saunt and David Hills,
directors, DSDHA*

The careful design of the apertures proved crucial in order to create a strong connection with nature. The chamfered mirror reveals to the openings dissolve the bulk of the walls and camouflage the house.

One of the two courtyards is located next to a very large glass window where the main staircase descends. It links the two floors through a double-height hallway and visually projects them onto the garden.

A second courtyard grants every bedroom access to the outdoor space. Its stepped section allows the ground to gradually set back from the bedroom windows, bringing more light to the lower level and creating a series of protective layers which accommodate an inbuilt planter and a linear pool. The reflections created by the latter interact with the mirrored panels to generate a game of reflections that extend one's view beyond the actual dimension and geometry of the space, therefore neutralising the sense of enclosure one might feel while being partially underground.



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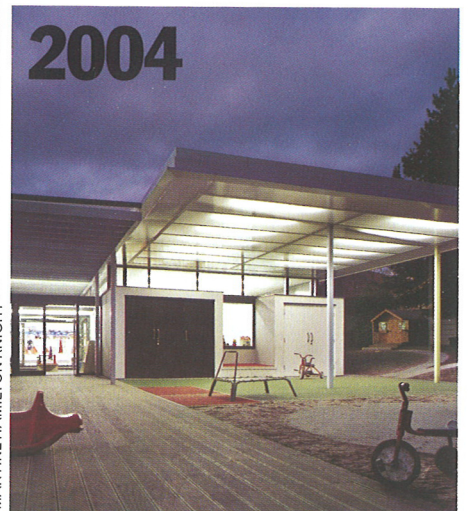
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