

**Love Shack, 2008-11**

## **DESIGN RESEARCH**

**10.10.2012**

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**Sutherland Hussey Architects**

## General Description

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### Project Details

Date	2008-11
Location	Love shack, Cumbria
Client	Adam Sutherland & Karen Guthrie
Consultants	Bleasdale Wand & Weir Matthews Watson
Contract value	£100,000

### The Site:

The site for this cottage is a steeply sloping wooded copse on the edge of Cunsey village on the shores of Lake Windermere. There was an existing shed on the site and therefore it was deemed possible, though challenging, to obtain planning permission for a modest dwelling.

### The Client:

Our clients were Adam Sutherland, director of Grizedale Arts, and Karen Guthrie, a video artist of some repute. They were living in the adjoining cottage to Grizedale Arts, located half a mile away and with work about to commence on their new headquarters for Grizedale Arts, they were looking to build themselves a bolt-hole as a retreat from their work and with view to intermittently renting it out as a weekend retreat.

### **The Project:**

Our Clients were interested in building a micro-house of no more than 40m<sup>2</sup> which contained all the necessary accommodation for a weekend retreat - a modest living, dining and kitchen space with bedroom and bathroom - all of which would take advantage of the wonderful views across the lake and into the forest.

The design proposal broadly consists of two rooms perched on the steep hill and accessed via a stepped ramp. The rooms are staggered with the main living space leading via a tiny hidden staircase to the bedroom above. The rooms enjoy wonderful views through the forest and across the lake.

### **The Planning Process**

The time and effort it took to gain planning approval was protracted and fraught.

Our clients took a gamble in buying the site on the basis that there was an existing hut on the site that had access to running water with a albeit vague history of use as a dwelling.

Armed with this information and an untold amount of patience, diplomacy and stubbornness, they commenced discussions with the planners. At first the planners did everything in their powers to reject any proposal for a new dwelling of any kind. However it became evident through studying the legal history of the site that it did indeed have designation as a residence and that this was in itself not satisfactory grounds for outright rejection.

There then followed months of protracted discussion about the risk of any new development to the existing trees. With the help of a tree specialist and judicious siting for the project, this hurdle was overcome.

The final obstacle was then a public hearing in which we made a convincing case for approving the designs, and the project was finally and reluctantly given the green light.

## **Design development**

The project went through a number of design iterations in response to the concerns raised by the planners. The original design proposed a building bedded into the ground with the bedroom located at the lower entrance level, and only two stories in overall height. However it became clear that the planners concern as to how the building would touch the ground was going to make this very difficult. The scheme evolved into essentially a three storey building - a lower level entrance and terrace, rising to a first floor living space and then ascending again to the bedroom, half depressed into the section to keep the overall height of the building to a minimum.

## **Circulation**

Circulation, both in the daily use of the building once completed, and for access during construction was extremely challenging. The precise location for the building was determined by a number of factors - where the best views and aspect were to be had, the location of the existing shed, the proximity to existing trees (so as to avoid undermining any existing root systems) and the most easily accessible siting in which to get to the building from the road below on this steeply inclined site.

Access for daily use is via a long stepped ramp that terminates in a lower terrace of timber decking. The front door is at this level. Immediately upon entering a stair ascends to the next level which contains the main living spaces - living room, kitchen, dining room and small shower room. Behind a secret door another stair winds up a further level to the bedroom, perched at the top of the building and amidst the surrounding tree canopy. All rooms are orientated to the lake and enjoy spectacular views through the forest canopy.

## **Construction**

The main structure uses SIPs - a relatively new technology in this country and more often associated with large developments. However the advantage here was that the super-structure could be essentially built in the factory and erected in a matter of a few days on site.

The materials proposed for the building are in sympathy with the surrounding woodland. The main body of the building is clad in vertical timber boarding. Natural larch panels and glazing are contained within this frame. A sedum roof is used both for environmental stability internally and to reduce the carbon footprint of the building.



## Research Questions

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1. Building in a National Park - how do we build contemporary buildings in a landscape of great sensitivity and beauty?
2. Compact design - the project is only 40m<sup>2</sup> in size - the project explores the idea of 'cosiness' with reference to our childhood experiences of inhabiting tree houses, dens etc
3. Using SIPs construction - relatively new technology in the UK which offers speed of erection through prefabrication

## Aims and Objectives

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### 1. ***Building in a National Park - how should we build contemporary buildings in a landscape of great sensitivity and beauty?***

The challenges presented with this project were similar but more extreme than our other projects in the Lake District (Lawson Park and Grizedale).

Once again we were dealing with a beautiful site located amidst an untouched forest and overlooking Lake Windermere. There is an existing cluster of dwellings along the road at the foot of the forest, all of which are of the local vernacular - slate roofs and stone construction.

Where we were looking to renovate existing buildings at Lawson Park and Grizedale, here we were constructing a new-build house, and furthermore, an unapologetically contemporary building using new construction techniques and far-removed from the surrounding traditional vernacular architecture. Where the surrounding buildings are based on solid stone and slate and sit nestled into the landscape, we were looking for a building that was light and delicate, and something that would almost disappear into the forest.

And it is the relationship to the forest that is key to understanding the language of the project. The entire building is constructed from timber - vertical T&G larch boarding fixed back to a timber (SIPs) structure. From the road it goes almost unnoticed as it sits back from the other houses, screened by trees and camouflaged with its timber skin.

This is very much a building set in its landscape which eschews the nearby man-made context of the vernacular dwellings. It must be viewed more in the tradition of the tree house or den - inextricably connected to the forest.

And perhaps our approach can offer up clues as to how to approach similar building typologies. The proliferation of 'swiss-style' chalets across the Scottish landscape for instance, could perhaps benefit from a re-think as to how one might contextualise them more appropriately.

**2.      *Compact design - the project explores the idea of 'cosiness' with reference to our childhood experiences of inhabiting tree houses, dens etc***

In spite of the fact that the overall area of the project is only 40m<sup>2</sup> the house provides the user with all the comforts afforded to contemporary living. Though the living and sleeping spaces are tiny, they do not feel claustrophobic or cramped. This is in part due to the wonderful views afforded from each space, that open the interior out to the landscape, and in part a function of careful consideration to how the spaces will be used.

The spaces also appeal to a much deeper psychological feeling inside us that reminds us of our childhood love of treehouses, dens, wendy houses - offering us a retreat and sanctuary from the elements.

This project probes the question of why some spaces might feel cramped and uncomfortable whilst other spaces of a similar size can feel cosy and snug, and perhaps concludes that it is the sensory and phenomenological that are at play.

We believe that a place is not so simple as the locality, but consists of concrete things which have material substance, shape, texture, and color, and together coalesce to form the environment's character, or atmosphere. It is this atmosphere which allows certain spaces, with similar or even identical functions, to embody very different properties.

**3. *Using SIPs construction - relatively new technology in the UK which offers speed of erection through prefabrication***

The choice of which construction method would be appropriate for this project, came about through a series of pragmatic decisions:

- The planners were concerned about how the foundations and ground slab might impact on the existing tree roots.
- The steep sloping site necessitated the use of simple manhandleable components that could be positioned on site without recourse to a crane
- The scale of the project and the difficulties of any sitework suggested pre-fabrication wherever possible would be advantageous.

The office had been exploring the use of SIPs (structural insulated panels) on a few other projects and this particular set of challenges seemed to lend itself very well to this type of construction.

SIPs are a composite building material. They consist of an insulating layer of rigid polymer foam sandwiched between two layers of structural board. The board can be sheet metal, plywood, cement or oriented strand board (OSB) and the foam either expanded polystyrene foam (EPS), extruded polystyrene foam (XPS) or polyurethane foam.

SIPs share the same structural properties as an I-beam or I-column. The rigid insulation core of the SIP acts as a web, while the OSB sheathing exhibits the same properties as the flanges. SIPs combine several components of conventional building, such as studs and joists, insulation, vapor barrier and air barrier. They can be used for many different applications, such as exterior wall, roof, floor and foundation systems.

SIPs has been an established part of the construction industry in America for many decades but it is only recently that the UK has looked at the potential benefits and started to use it. The benefits and drawbacks can be summarised as follows:

- The cost of SIPs are higher than the materials for a comparable framed building.
- A well-built home using SIPs will have a tighter building envelope and the walls will have higher insulating properties, which leads to fewer drafts and a decrease in operating costs.

- due to the standardized and all-in-one nature of SIPs, construction time can be less than for a frame home, as well as requiring fewer tradesmen.
- The panels can be used as floor, wall, and roof, with the use of the panels as floors being of particular benefit when used above an uninsulated space below.
- the total life-cycle cost of a SIP-constructed building will, in general, be lower than for a conventional framed one -- by as much as 40%.
- the total construction cost (materials and labor) is lower than for conventional framing appears to depend on the circumstances, including local labor conditions and the degree to which the building design is optimized for one or the other technology.
- An OSB skinned system structurally outperforms conventional stick framed construction in some cases; primarily in axial load strength. SIPs maintain similar versatility to stick framed houses when incorporating custom designs. Also, since SIPs work as framing, insulation, and exterior sheathing, and can come precut from the factory for the specific job, the exterior building envelope can be built quite quickly.
- With the exception of structural metals, such as steel, all structural materials creep over time. In the case of SIPs, the creep potential of OSB faced SIPs with EPS or polyurethane foam cores has been studied and creep design recommendations exist.

The main problem that arose was one of dimensional co-ordination. Because the site required screw piles and a steel frame to deal with the cantilever there was a requirement for the SIPs to be carefully co-ordinated with the main structure. However in this project the panels were prefabricated in Scotland and driven down to site, whilst a local contractor was engaged to construct the steel frame and supporting ground structure. Perhaps unsurprisingly, when the SIPs arrived on site the panels didn't quite fit. Fortunately another advantage of SIPs panels is that they can take a bit of on-site modification and they were duly cut to size and the whole superstructure erected in a matter of a few days. This then provided the main contractor with a water-tight environment in which to complete the construction.

## Context

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The context for this project is 'building in the landscape'. If one looks back to pre-twentieth century Britain there existed a very clear philosophical, social and cultural framework in which buildings were designed in the landscape - from 18th century neo-classicism through to late nineteenth century romanticism. The twentieth century saw a fracturing of this lineage and the late twentieth century a descent into neo-liberal laissez faire, where architecture is caught between the two polarities of either 'anything goes' or 'nothing happens'.

Our project, modest in scale and budget though it might be, is part of a number of projects across Britain, that attempts to offer up clues as to how we can create architecture that both recognises our contemporary situation, understands the genius loci of place and respond with delicacy and sensitivity.

As a practice we have been interested in the ideas first expounded by Ken Frampton in his book *'Towards a Critical Regionalism: Six points for an architecture of resistance'* where he recalls Paul Ricoeur's "how to become modern and to return to sources; how to revive an old, dormant civilization and take part in universal civilization". According to Frampton's proposal, critical regionalism should adopt modern architecture, critically, for its universal progressive qualities but at the same time value should be placed on the geographical context of the building. Emphasis, Frampton says, should be on topography, climate, light; on tectonic form rather than on scenography.

We hope that this modest project nestled in the hills of the Lake District National Park is in some small way a continuation of this tradition.

## Research Methods

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Site analysis was critical and entailed a detailed digital survey locating the precise position of all trees, the topography, the existing hut, all in relation to the access road below. There also followed a tree survey which defined the root structure for all trees on the site together with identifying the more significant species.

Beyond the merely factual information collecting, we spent some time on site to gain an understanding of the movement of the sun and the optimum views from the site as well as views back to the site from the road.

Armed with the site analysis and a client brief we returned to the office and started to develop an initial concept for both the siting but also a formal idea that might unlock how the house would be organised. This would be then interrogated thoroughly through meetings with the client, other consultants and later the planners. The design would then be adjusted to answer all concerns and another iteration completed.

A strength of the practice, proven in their built work, is to transpose the initial design concept to the finished product, through details, materiality and construction. This produces coherent buildings with a simple integrity. The computer model of the concept was then developed further and both structure and materials tested. Essentially an iterative process continues through to construction.

With a range of projects completed, we recognise the need for intensive client involvement in the process, from the early sketch to the final built detail. Monthly meetings took place at the site and at each meeting a new computer model had been developed which picked up issues raised at the previous meeting.

**Dissemination**

**6.0**

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**EXHIBITIONS**

The Royal Academy of Arts Summer Exhibition 2008, London- exhibiting the love-shack project'

**AWARDS**

- 2011 RIBA National Award
- 2011 Shortlisted for the RIBA Manser Medal

**PUBLICATIONS**

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|--------------|--|
| October 2011 | NEO2-Love shack  |
| 16.06.2011   | AJ – RIBA Awards 2011  |
| 19.05.2011   | BBC News – In pictures: RIBA awards 2011   |
| 19.05.2011   | Guardian.co.uk – RIBA awards 2011: the winners – in pictures by Jonathan Glancey |
| 19.05.2011   | RIBA – RIBA awards North West winners 2011                                       |
| 2007         | e-architect announces planning approval being granted                            |
| 21.08.2011   | The Sunday Times - Home:People Section “Modern treehouse branches out”           |



## Esteem Indicators

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The significance of this particular project is reflected in it being awarded an RIBA Award, one of only ninety projects across the UK to receive such an accolade. And the judges summarize as follows:

“This intriguingly named rural retreat is a delightful essay in doing much with very little. The two rooms are anchored around a deck that is reached via stepped ramp and which defines a courtyard and Lakeland and other views.

This is a highly skilled architectural piece that is also a demonstration of how a small domestic residence might touch the earth lightly: both literally as it floats on piles and practically as it is clad in timber boards from the hillside wood in which it is carefully placed between mature trees. This building works with its locale by preserving what is there, and exploiting for pleasure the local resource of timber, topography and views. What’s more, it’s available for rent.”

It went on to be shortlisted for the RIBA Manser Medal for the best new house in the UK. This is universally recognised as the UK’s pre-eminent housing design award.

*In 20011 Lynne Greenwood wrote in the Sunday Times:*

*“When someone names their home the Love Shack, it had better come with a romantic setting. And this striking modern retreat in the Lake District certainly does: it’s perched on a hillside, with views of Lake Windermere. But it could easily have been called the Treehouse.*

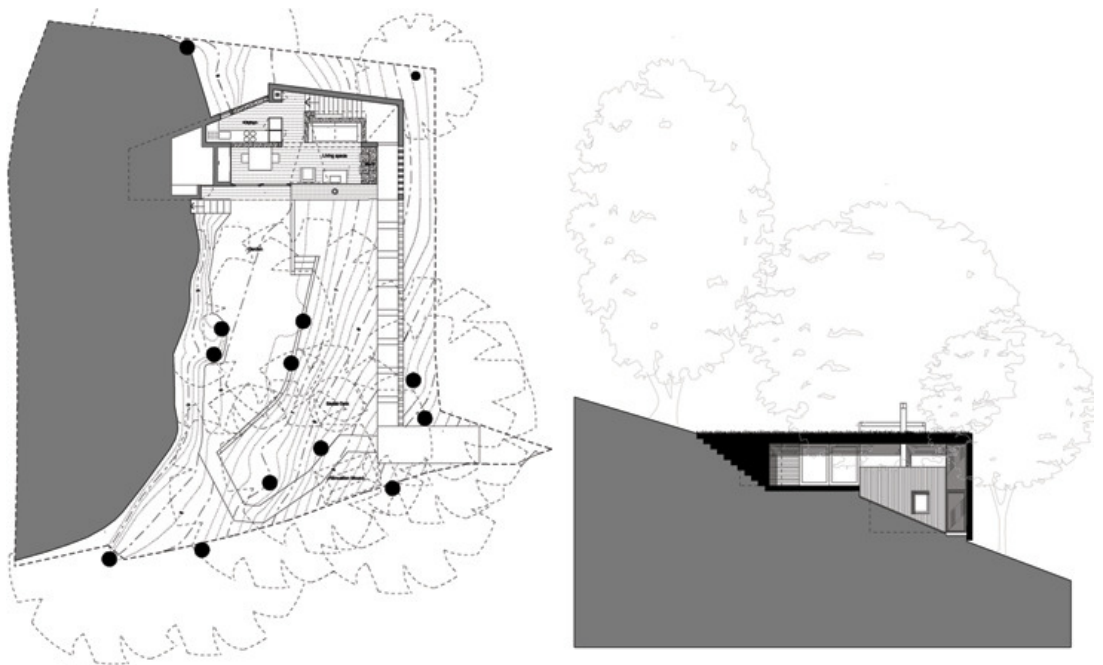
*Hidden in mature woodland, the timber-clad, two-room residence seems to float on the hill. It has a deck with a hammock, where you can watch red squirrels and listen to birdsong from the forest canopy. Inside, the rooms have reclaimed timber panelling and more leafy views.”*

In 2011 Jonathan Glancey wrote in the Guardian:

*“In 2003 Sutherland Hussey, an Edinburgh-based practice whose partners have worked for James Stirling, Renzo Piano and Hadid, came to national prominence with their low-cost design for a beautiful ferry shelter on the island of Tiree; it won the Royal Incorporation of Scottish Architects award that year for the “most popular building in Scotland”. Now, they have been allocated a RIBA award for Love Shack, a low-cost “eco-house” in the English Lake District with views over Lake Windermere. Happily you can rent this timber hideaway, and understand why the architects deserve the awards – and, perhaps, to be better known than they are.”*

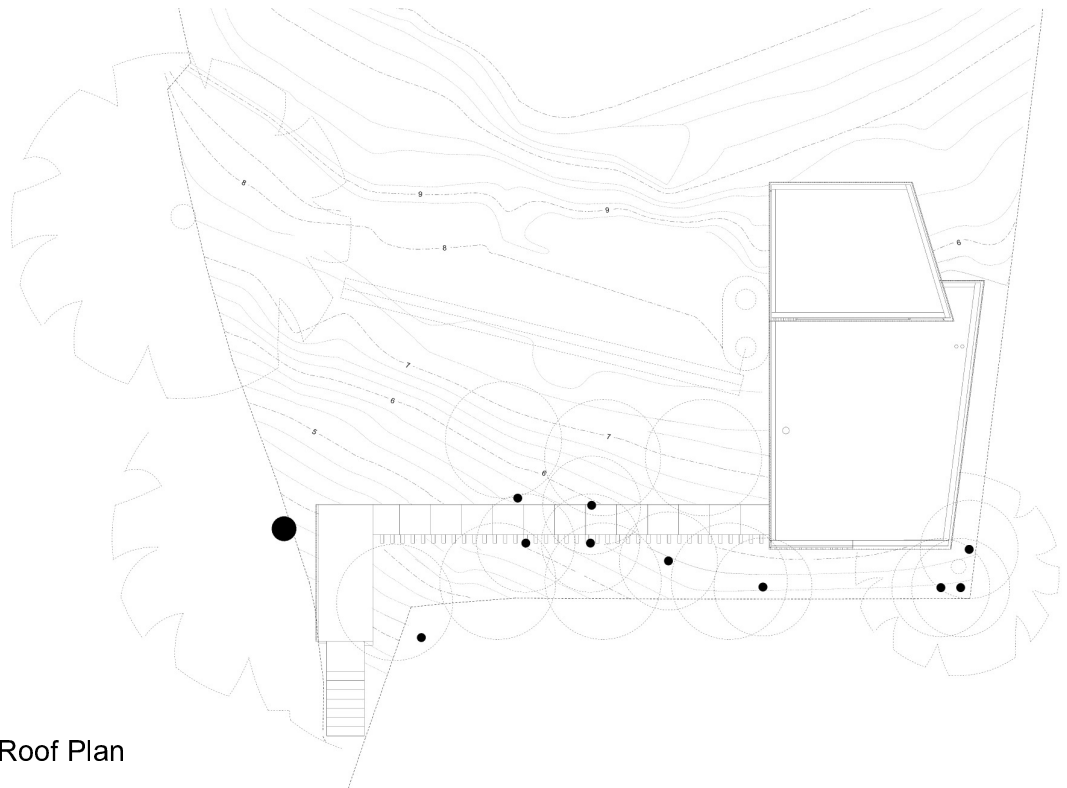
## Early Computer study and drawings

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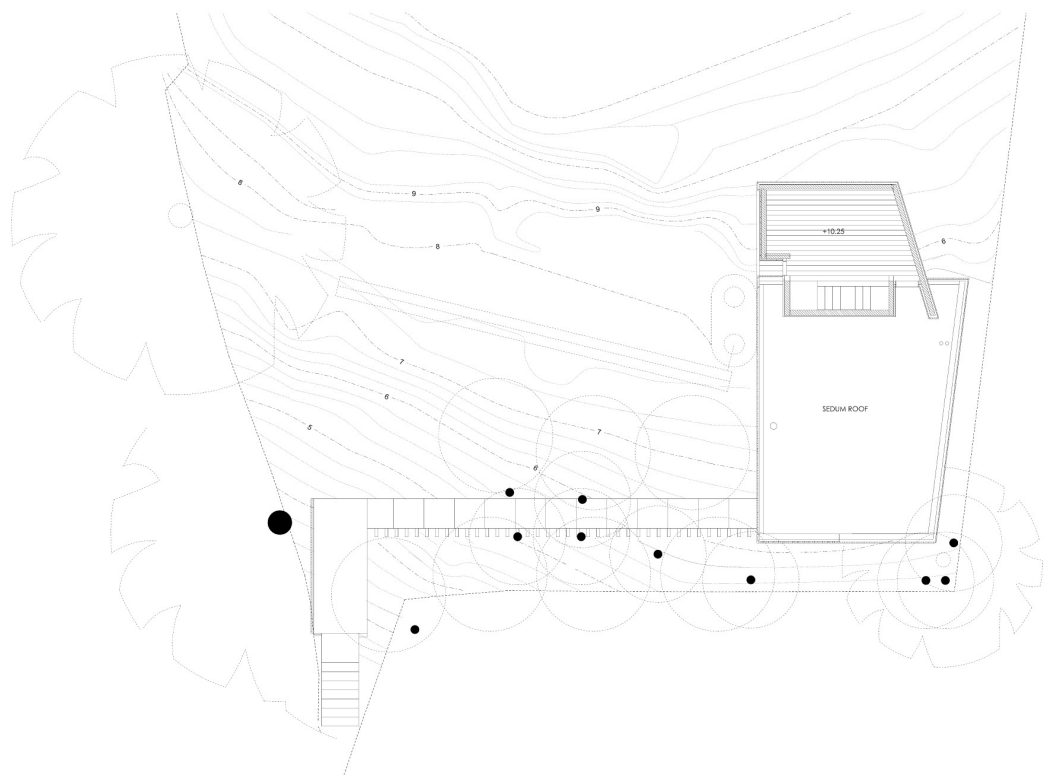


## Final Proposed Drawings

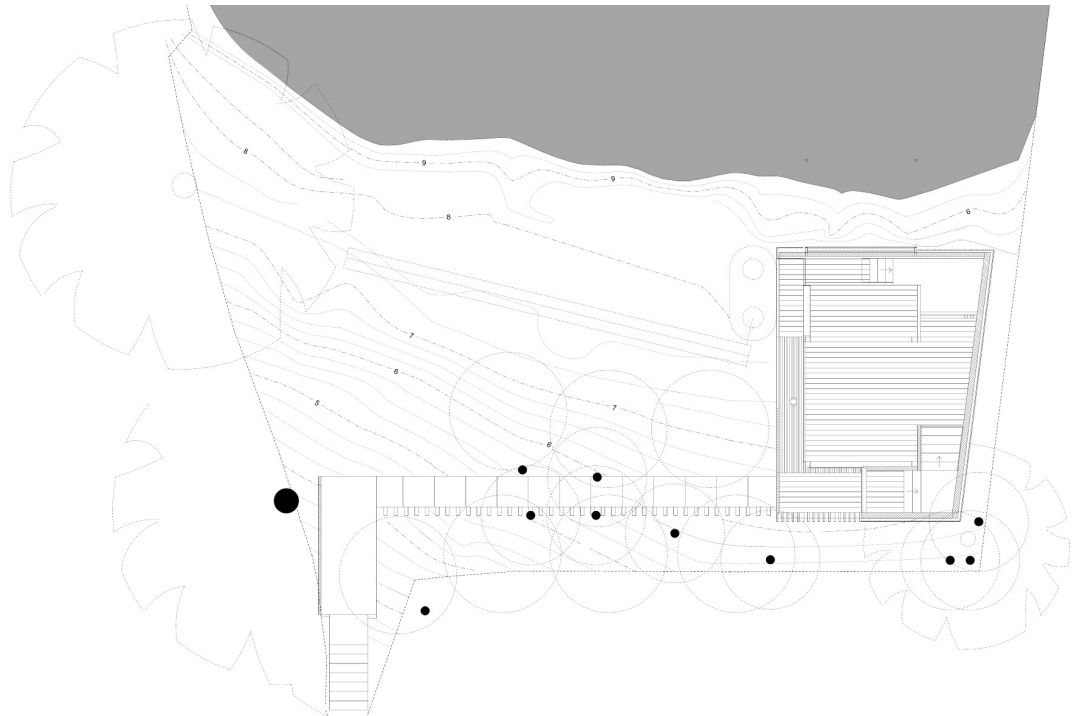
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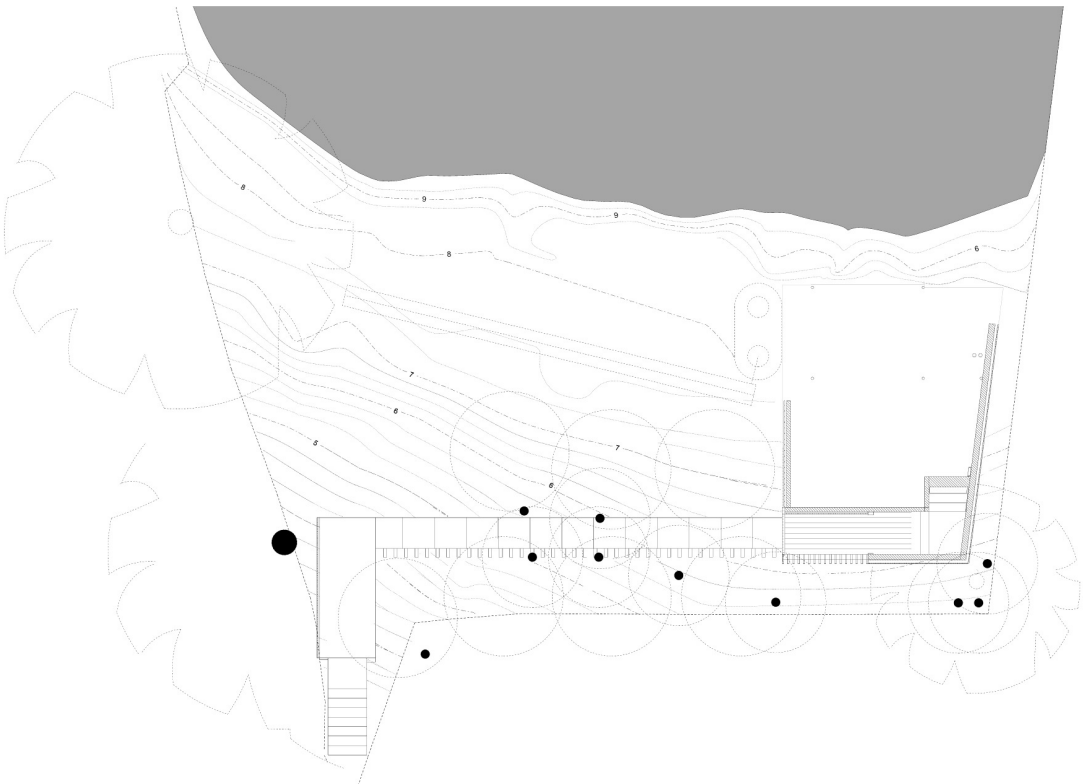
Roof Plan



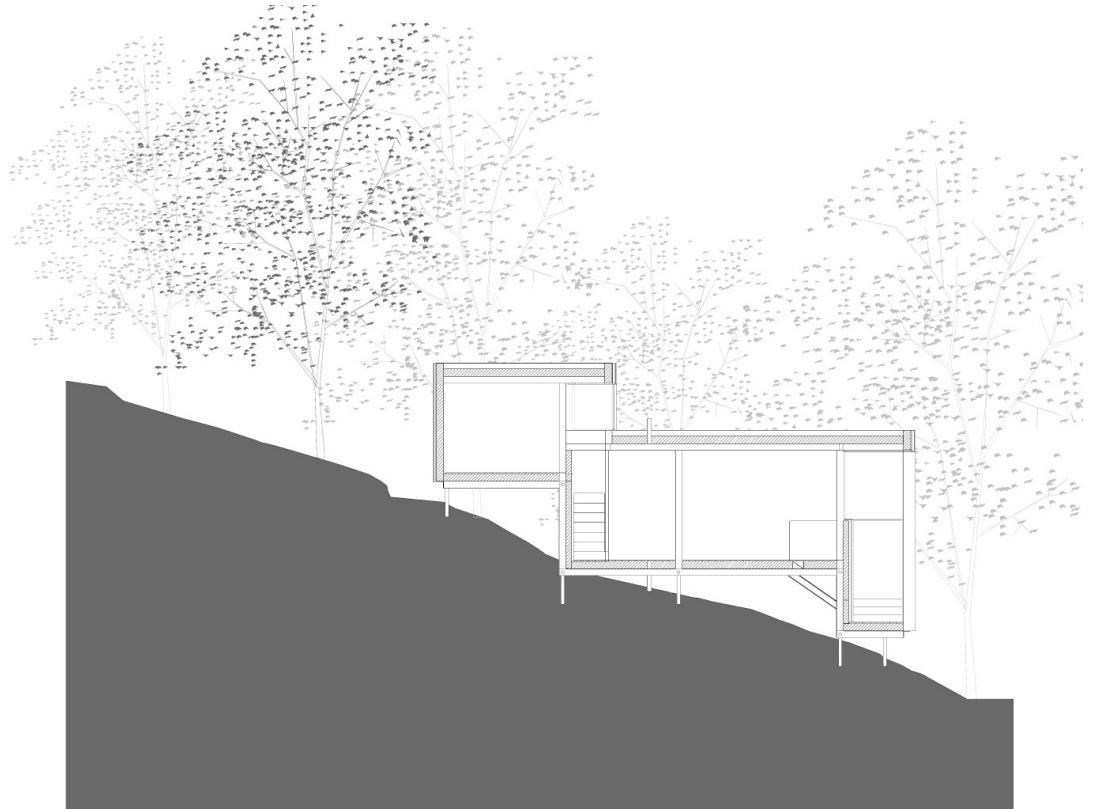
Bedroom Plan



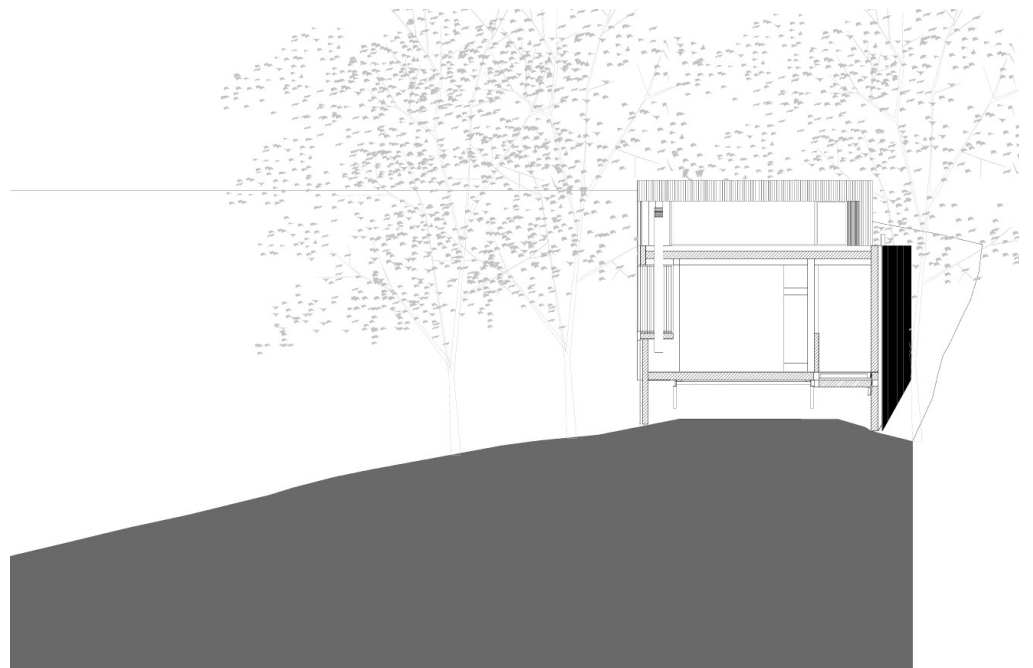
Living, dining and kitchen Floor Plan



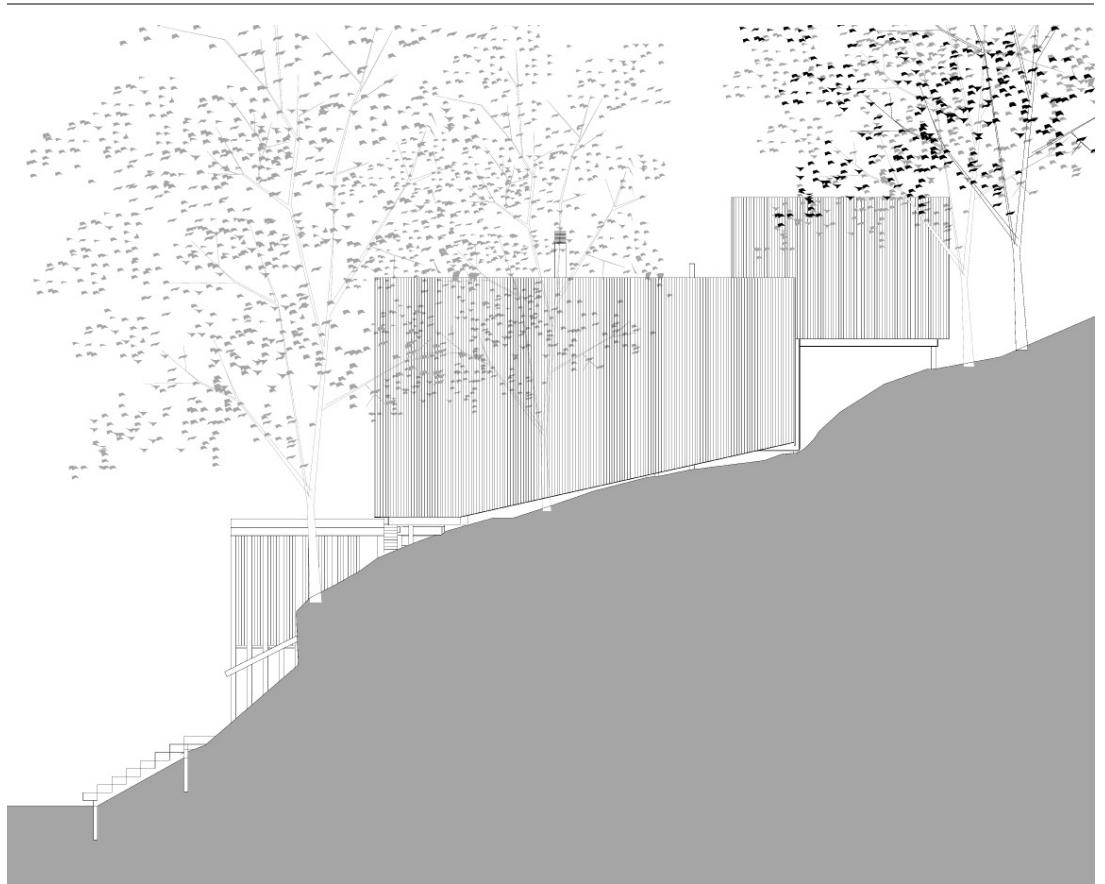
Entrance Level Plan



Long Section



Cross Section

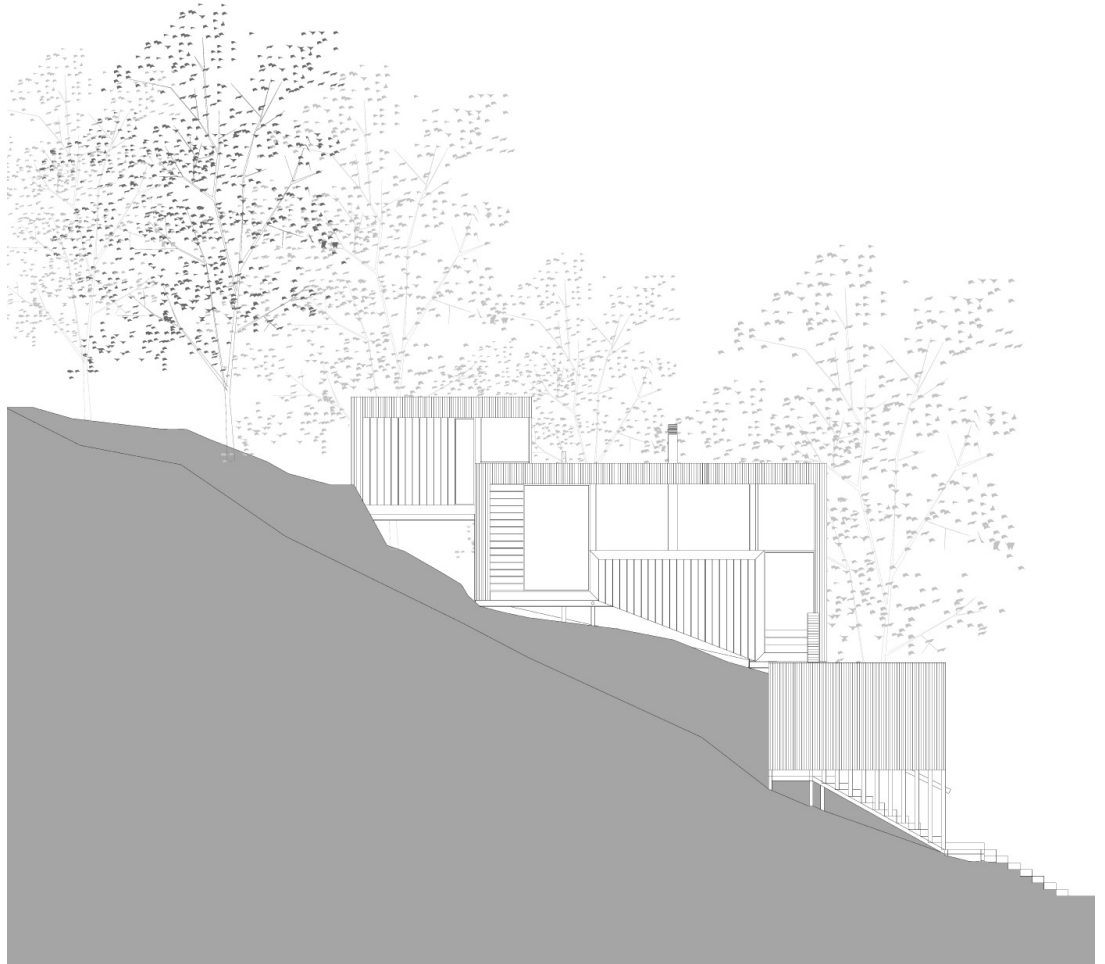


Long Elevation



Front Elevation



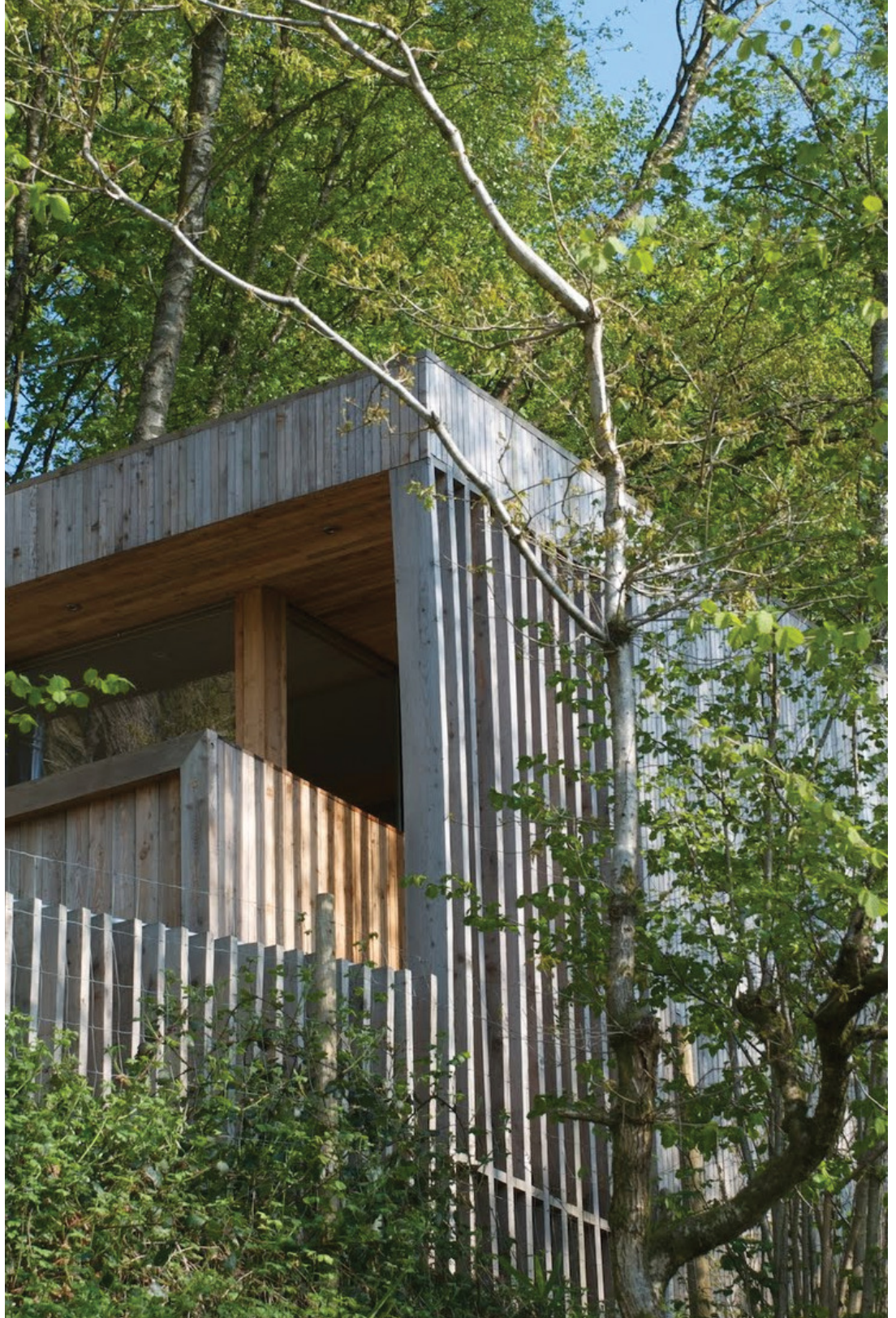


Long Elevation



Photographs of Final Project

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View from road

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**Photographs of completed project**

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Views from approach





Drawings, photographs

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View from above



View from terrace



Drawings, photographs

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View from Terrace

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**Drawings, photographs**

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Drawings, photographs

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Drawings, photographs

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View from kitchen

Drawings, photographs

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The living room



Drawings, photographs

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Living room



Living room