# 2009 Serpentine Pavilion

ARCHITECT: Kazuyo Sejima and Ryue Nishizawa
LOCATION: Kensington Gardens, London, UK

# Overview

The Serpentine Pavilion of 2009, designed by architects Sejima and Nishizawa for the 2009 exhibition in Kensington Gardens, London ,UK, was a unique experiment of redefining spatial quality and boundaries.

The pavilion is floating aluminum, drifting freely between the trees like smoke. the reflective canopy undulates across the site, expanding the park and sky. Its appearance changes according to the weather, allowing it to melt into the surroundings. It works as a field of activity with no walls, allowing uninterrupted views across the park and encouraging access from all sides. It is a sheltered extension of the park where people can read, relax and enjoy lovely summer days (Designboom, 2009).

# Design.

The Serpentine Gallery is an Art Exhibition held in Hyde Park, London, that, every year since 2000, has commissioned a temporary summer pavilion by a leading architect (Wikipedia, 2020). In 2009, the architectural firm SANAA from Japan, comprised of architects Kazuyo Sejima and Ryue Nishizawa, created a structure to house the gallery that in its unique minimalism and implementation, pinpoints the very meaning of the pavilion.

There are two major elements to this design;

- The flowing sheet of aluminum that provides the protective form and style of the pavilion,

- The system of vertical posts that support the roof and create a virtual boundary plane instead of conventional walls

'An overhead plane defines a field of space between itself and the ground plane. Since the edges of this overhead plane establish the boundaries of the field, its shape, size, and height above the ground plane determine the formal qualities of the space.' (Ching, 2015 p126)



Figure 1. *SANAA, 2009*

As a free-standing shelter, hovering between the trees like wisps of smoke, the weightlessness of the design must come across immediately and, working together with slender supports, elevate the heavy roof plane in such a way as to look like it is simply a form suspended in space. 'An overhead plane has the ability to define a discrete volume of space virtually by itself. If vertical linear elements such as columns or posts are used to support the overhead plane, they will aid in visually establishing the limits of the defined space without disrupting the flow of space through the field. (Ching, 2015 p126)

This form determines the formal qualities of the space beneath it  by its shape, size and height above ground, (Ching, 2015 p126).

The size, scale and shape work together to create a pathway throughout the pavilion that is a comfortable size for standing and observing the surroundings or the multiple displays The layout can accommodate seating for approximately 150 people, or usually about 300 people standing (SANAA, AREA 2014). This is where the linearity of the shape comes into play, encouraging a path of movement through each of the 'limbs' that reach out into trees.

'The concept of the pavilion design is that the park and Pavilion are one (SANAA, AREA 2014). This is implemented by ensuring that the entire area under the roof is open and accessible from the outside. Glancey (2009) described the building as 'more umbrella than building'.
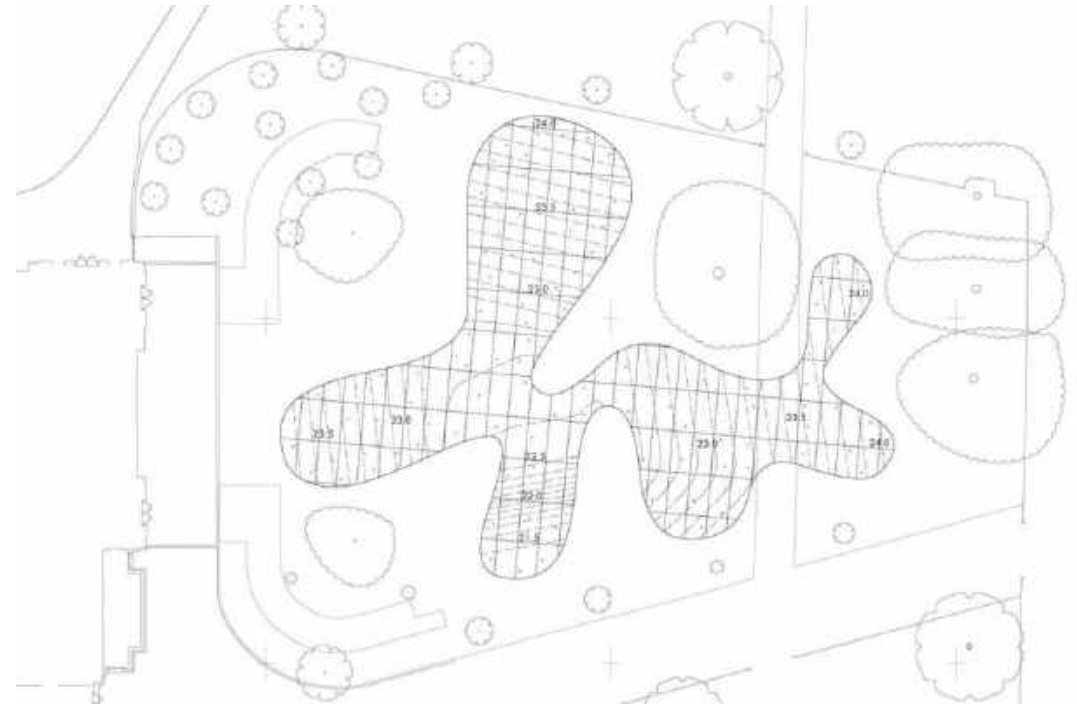


Figure 2. *Wikipedia, ND*

# Impact.

As a visitor to this pavilion, the way one perceives the structure is as a floating lightweight form that pervades its context softly and fluidly. This fluidity is emphasized partly by shape, but also partly by surface design, since the entire roof form is made of 18mm plywood, enclosed between two mirror-finished aluminium plates. Not completely flat, the roof plane undulates in height above ground, causing it to both fall towards the earth and rise towards the heavens, reflecting objects and 'amplifying the way they look' (Ryue Nishizawa).

As well as playing visual tricks, the swooping roofs, rising up from the ground to the canopies of trees and back down again, also amplify incidental sound: birdsong, the clip-clopping of horses, the thrum of passing traffic (Glancey, 2009).

Figure 3. (Above): (SANAA, 2009) Polished aluminium panels reflect the surroundings.
Figure 4. (Left): (SANAA, 2009).

# B2 House

ARCHITECT: Han Tümertekin
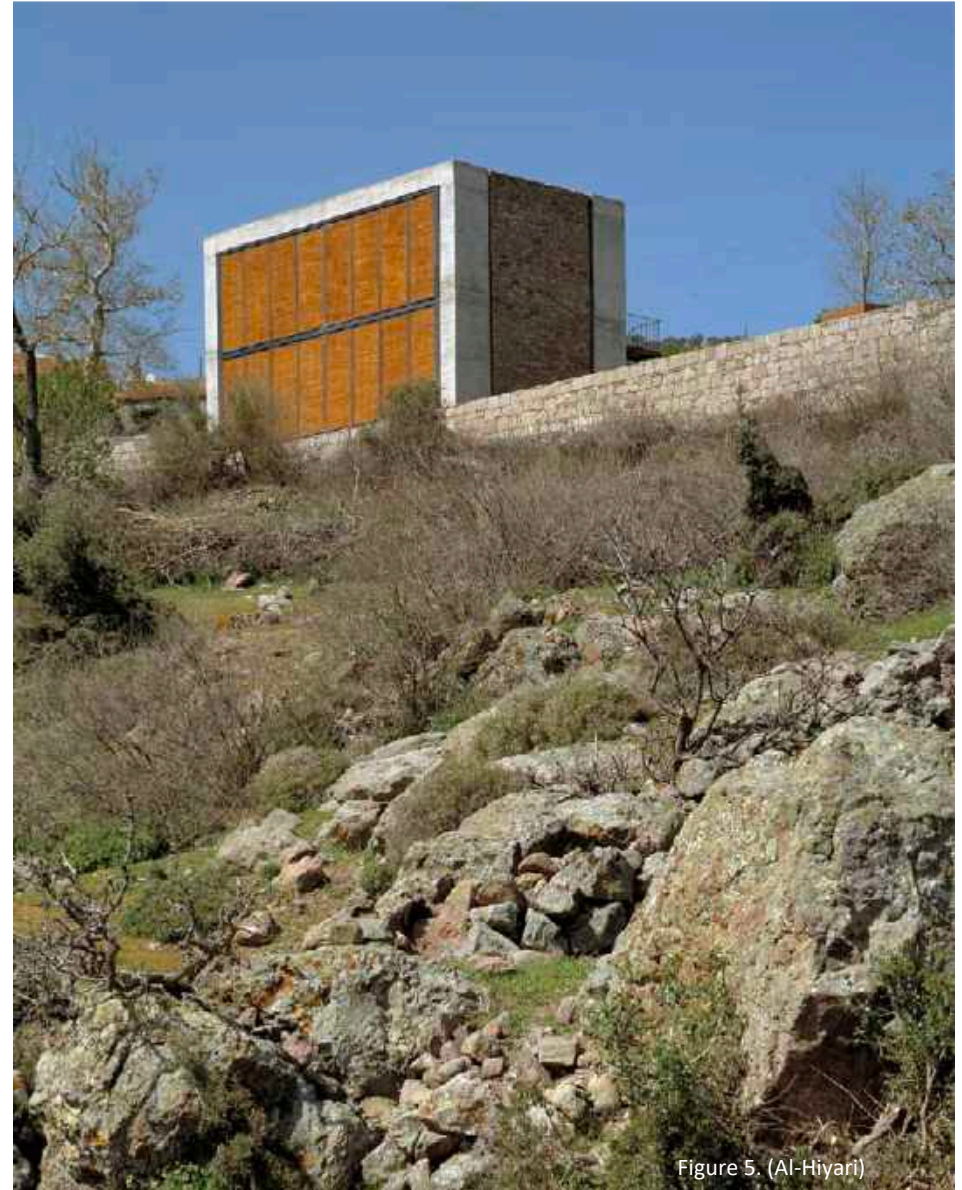LOCATION: AAyvacık, Turkey



Figure 5. (Al-Hiyari)

# Overview

This project was built as a temporary residence for two brothers, Selman and Suha Bilall, who commissioned the architect Han Tümertekin to create a retreat set deep in the countryside of Turkey. The architecture of this building reflects 'fluctuation between association and disassociation, presence and absence, public and private' (Al-Hiyari, 2004).



Figure 6 (Al-Hiyari, 2004)

# Design.



Figure 7.  *(Above): (Al-Hiyari, 2004) B2 house location*

- There were two physical constraints to the development of this residence: the triangular site and the sloping angle of the topography. For solutions, the architects borrowed ideas from the local village and the culture's traditional techniques. The traditional houses in the locality were built using interlocking layers of stone, with flat roofs of soil, their windows facing away from the north-easterly wind and towards the views of the sea; with staircases on the outside of the house leading to the second-storey or the roof. All of these characteristics were in some way implemented in this project – stone/concrete construction, flat roof, orientation, and the exterior stairs.

- The site was divided into two levels, 1.3 metres apart, placing the house at the  western edge of the site, with a small garden directly behind. 'The house opens to the south and is almost closed to the rest of the site, which cannot be seen from the internal spaces of the house. Consequently, the house reads as a pure rectangular form carved out from the site and claimed by the surrounding landscape (Al-Hiyari, 2004).

- By elevating the building on this terrace, it seems to be on a pedestal. This causes a gradual change from the site to the building: first rough unorganised terrain, then organised, rectangular terrain, then rectangular man-made design.
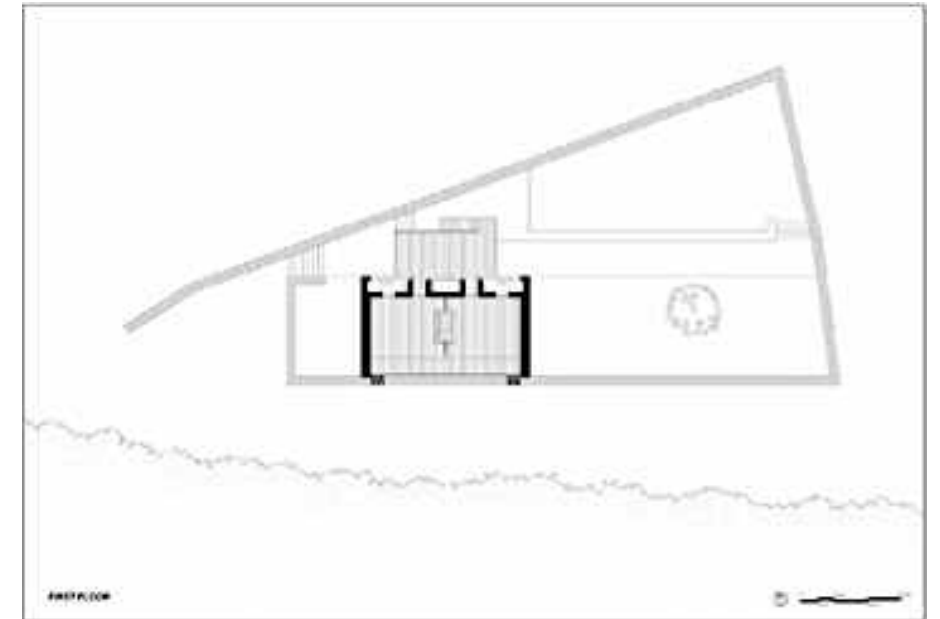


Figure 8. *(Above): (Al-Hiyari, 2004) B2 house 1st floor plan.*

The fundamental procedure in creating this house was to first establish a rectangular area within the triangular plot, where the form of the building could be located. The B2 house has a rectangular section and footprint, has rectangular elements such as windows, doors, and shades, boundary walls of the terraces (Figure 9), and its outside spaces are created to be as rectangular as possible given the terrain. By using the same shape, it adds to visual continuity between the spaces (Ching, 2015, p198). By dividing the land into distinct outlined terraces, the house seems to be elevated on a pedestal (Al-Hiyari, 2004)

A major design theme that the architects integrated into this building is the framing of natural materials with artificial or man-made borders; for example seen in Figure 9, where local stone is framed by poured concrete, and the local reed shutters are housed in aluminium frames within those same concrete borders.

Despite the way the building sits in contrast to its surroundings, the architects used local stone and landscaping to make the house look as if it is carved out of the mountain. Local reeds are woven into the shutters that make up the façade of the building when closed, and direct the view of the inhabitants when open.
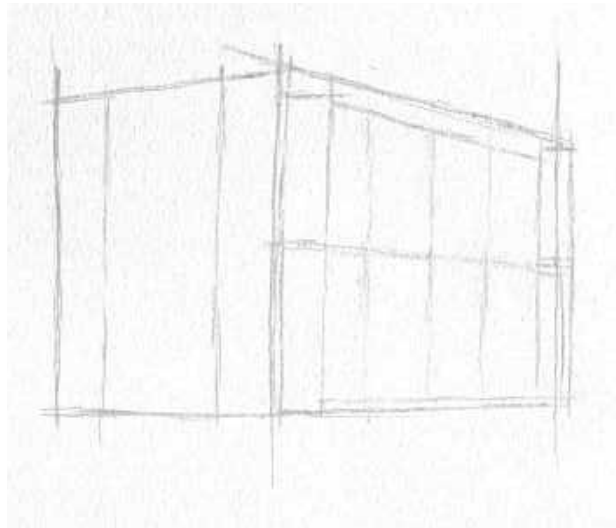




Figure 9 (Above): *(Al-Hiyari, 2004) The rectangular form is most defined when the panels of the front, south façade are closed (Al-Hiyari, 2004).*
Figure 10 *(Bottom Left): (Image by Author). The entire structural design is composed of straight lines and perpendicular planes.*

Figure 11. (*Below): (Al-Hiyari, 2004) The clearstory windows seem to frame the landscape, continuing the tendency throughout the building of framing the natural with manmade.*

Figure 12. *(Right): (Al-Hiyari, 2004) The second floor is comprised only of two adjacent bedrooms, which can be connected to form one room.*

The interior design is also based on simple, rectangular spaces created by the rectangular spaces of the structure. The layout has been carefully arranged to preserve this form, as simply as possible. The clearstory windows leave the south side of the rooms open, and the shutters continue the plane of the walls on either side (Figure 11), drawing one out.

# Relation to surroundings

Purity of the space inside the building was of key importance, but this meant that some functional elements, such as the staircase, had to be relocated outside. This gave an opportunity to create yet another type of experience, on the small balcony created at the head of the stairs, in the smaller garden/terrace alongside, and in the approach to the building. By arranging the landscape within the site into defined terraces, the fundamental base can be established, upon which the house's rectangular form is established.

Materiality also plays a large role in relating the form to its context. Poured concrete, together with natural stone facing makes the B2 House look as if it is carved out of the mountainside. A unique feature of this building is that this structure of concrete and stone, side by side, is visible on the inside in the same way as outside, and so the thickness and solidity of the walls is apparent.

The local reed window coverings, although most obvious on the south side of the house, are actually used on the north face too, in place of conventional doors at the entrances of both levels. The texture and colour of these shades once again links the building to the earth, and also the traditional construction of the region.



Figure 13. (Above): (Al-Hiyari, 2004) The 1.2-metre thick northern wall 'acts as a threshold between the various spaces of the house and contains the functions that domestic architecture usually seeks to conceal' (Al-Hiyari, 2004). By making the utility rooms so thin, one can see straight through the building on approach, and thus the interior and exterior boundaries blur.

It was important for the owners to contain the scale of the house in order to maintain construction costs within a certain margin while achieving a simple, practical structure that would not demand much maintenance. The programme is therefore basic: anything outside the realm of necessity was omitted. The functional requirements consisted of the following: a main living space shared by the owners, one shared bathroom, a kitchenette, two separate bedrooms with private bathrooms, and laundry and storage spaces. The requirements also included the provision of outdoor seating areas within a maintenance-free garden. The programme's adherence to the purely essential is consistent with the manner in which the village houses are conceived. However, the similarity stops there and the house's appearance sets it apart (Al-Hiyari, 2004).
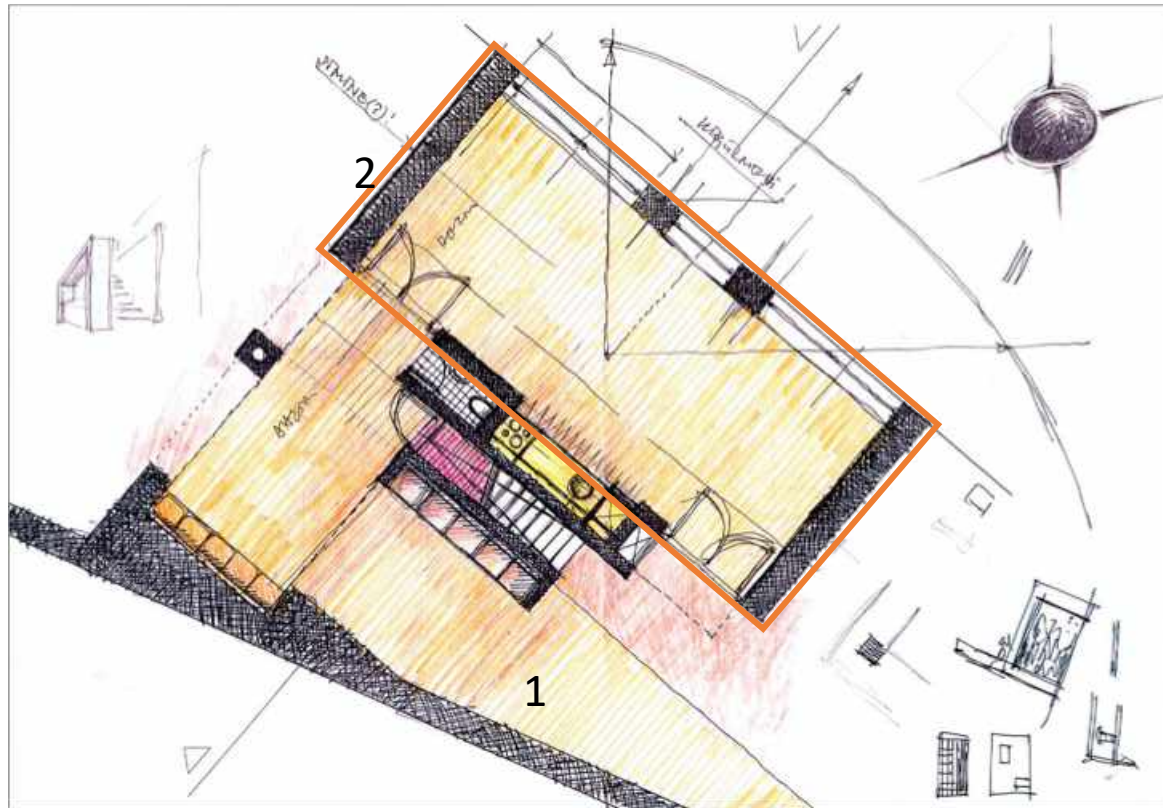




Figure 14. *(Above): (Al-Hiyari, 2004). The lower level of the house comprises one main living space shared by the two brothers; a kitchenette and a fire place are also located in the space (Al-Hiyari, 2004). This design of integrating the domestic functions of the home into a thicker wall is more effective than conventional rooms at preserving the purity of the space.*

Figure 15. *(Left):  (Al-Hiyari, 2004). Sketch by the architects of the plan of B2 House. The upper terrace is included in the sketch, (1) and the house's structure is outlined in orange (2).*

# Comparison



B2 House
Ayvacık, Turkey



2009 Serpentine Pavilion,
Kensington Gardens, UK

Figure 16 (Above): *(SANAA, 2009)*
Figure 17 (Left) : *(Al-Hiyari, 2004)*

These two buildings at first seem so different in purpose, location and design, but the strong contrast between them opens opportunities for exploration, particularly how the principles of form and spatial quality apply to both yet turn out so differently.

I will first outline the differences:

- Location: The B2 House is situated on a rocky mountainside, dominating the locality, where the closest settlement is only a small traditional village. The Serpentine Pavilion is placed in the centre of the lush gardens of Hyde Park, in central London, where its presence is only lightly felt.

- Purpose: The Serpentine Pavilion must accommodate up to 300 people as they walk through and examine the displays. But it only needs to provide a shelter, and a organising layout of the path. The B2 House must fully accommodate 2 people temporarily, focusing on a simple lifestyle and placing them in nature.

- Design: In essence the Serpentine Pavilion is only a sheet of aluminium, elevated to form a shelter between the trees. It has no walls, no systems, no dividing structures, only the one plane. The B2 House has multiple design themes running throughout the same building, integrating many types of materials to create relationships with the locale and affect the experience of the user.

These main areas of contrast will be examined in this comparison, and the various features of each house will be analysed more in depth.



Figure 18 (*Above*): (*Al-Hiyari, 2004*) *Site for B2 house*
Figure 19 (*Left*): (*Image by Author*) *Serpentine Pavilion*
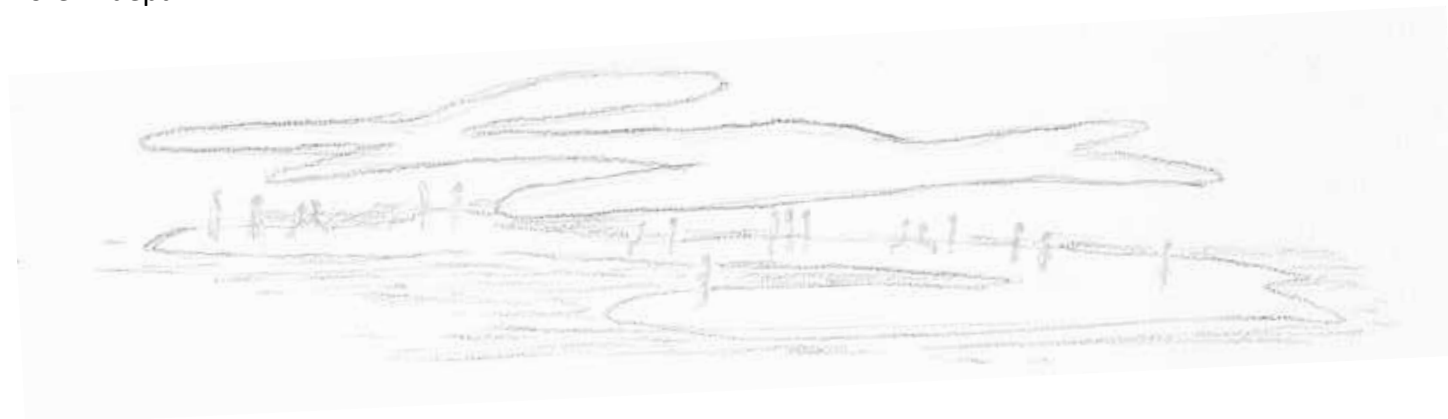
# Location

The site of a building, its surroundings, neighbouring buildings, and the terrain it is situated in, all determine the character of the place, and have a vast influence on the design. According to Ching (2015, p254), the approach to a building is the first phase of the circulation system, during which we are prepared to see, experience, and use the spaces within a building.

The Serpentine Pavilions, since they are in Hyde Park, seem in a natural environment; the terrain is flat, and the nearest building is the Serpentine Gallery. The environment is much more forgiving, or conducive to human activity around the building, than the rocky and inclined surroundings of the B2 house. But the sites in both cases support the character of the buildings: calm and peaceful  for the site for the floating pavilion, while rugged and hard for the B2 House, a solid structure made of rock and concrete. In the midst of the organized park, the flowing 'puddle' of aluminium can be 'open and ephemeral in structure' (Arcspace, 2012); whereas in Turkey, amid rocks, sparce vegetation and scattered trees, there is need for an obvious ordering principle to dominate, such as is provided by the terracing and rectangularity of the B2 House.
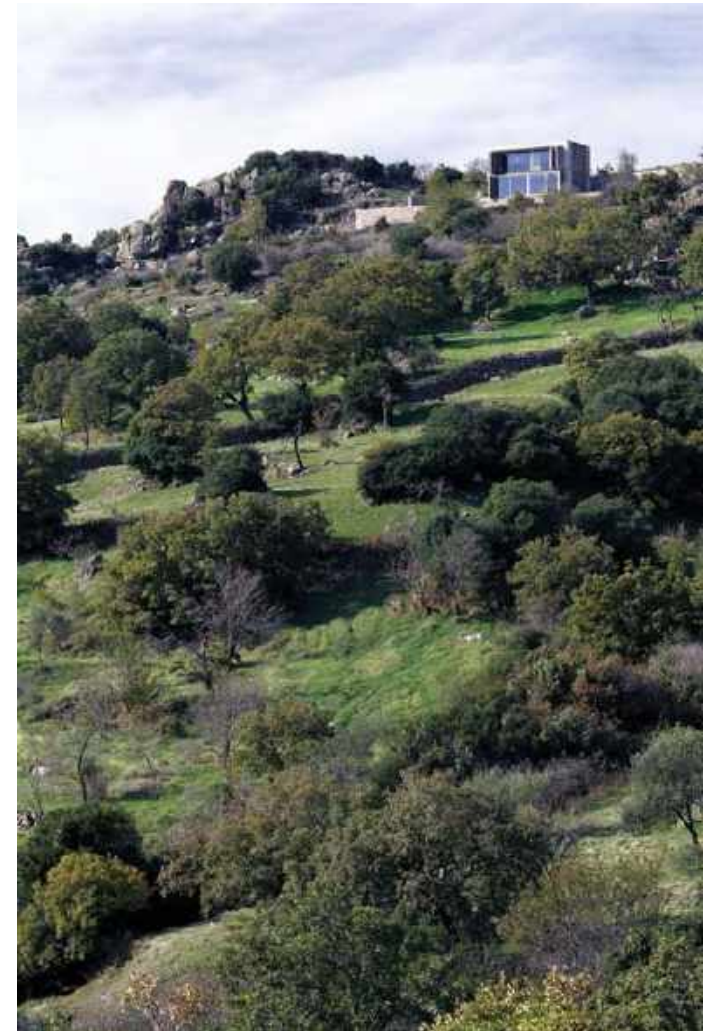




Figure 20 *(Above): (Al-Hiyari, 2004)*
Figure 21 *(Left): (Arcspace, 2012).*
*Serpentine galleries in 2009 plan.*

# Purpose

Form defines space, therefore for a different quality of space, one will require a different form. After the design process for the Serpentine Pavilion, the architects of SANAA created a structure that would simply meet the needs of the gallery, and make it instantly apparent to the observer that its purpose is simply as a shelter for the elements. Its beauty is in its minimalism, which kind of simplicity, according to Glenn Murcutt (1993), is 'the other face of complexity'. The architects, Kazuyo Sejima and Ryue Nishizawa, call it a 'sheltered extension of the park'.

A main difference that affects the design of the building is what people will be doing inside. In the B2 house, which is a residence, people are living, sleeping, eating, socializing, whereas in the Serpentine Pavilion, one is supposed to meander through the space, passing through the building and its experience rather than living in it.

The B2 house must provide complete shelter and insulation from the harsh environment around it. Its appearance and design match this aim; solid and unyielding thick walls of stone and concrete form an unbroken frame around the inhabitants, opening in a controlled manner towards the sea.



Figure 22. (*Above*): (*Glancey, 2009*) *Serpentine Pavilion's roof of polished aluminium*
Figure 23. (*Below*): (*Al-Hiyari, 2004*) *B2 House materiality*
Figure 24. (*Bottom Left*): (*SANAA, 2009*)

# Design

Compared to the Pavilion of 2009, which floats lightly and quietly through the trees on delicate supports, the B2 house conquers, dominates and controls, not just over its surroundings, but also over its occupants. It defines useable space, channels the view in one direction, and distinctly separates the levels of the house. Al-Hiyari (2004) calls it 'hard-edged and at times brutal'. By contrast the Serpentine Pavilion, by its thin overhead plane, and its slim supports seems to follow the occupant around as he makes his journey, offering protection but little distraction.

Both buildings relate people to their environments somehow in their materials and surfaces. The B2 House is made of two frames of poured concrete, with local stone in between (Figure 25). What is unusual about this design is that the concrete and stone continue all the way through the wall, so one can see the same materials inside the building as outside; which the architects term 'honesty' (Al-Hiyari, 2004). Use of these materials makes the building look as if it is carved out of the mountainside, a rearrangement of the original forms instead of an artificial piece placed on unfamiliar soil.
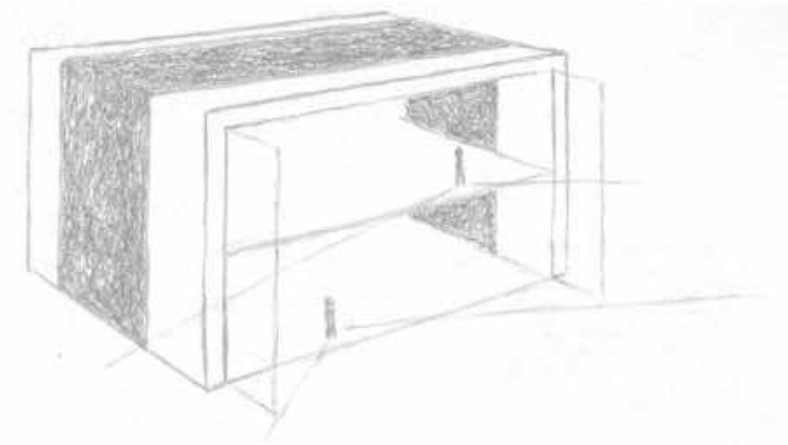


Figure 25. (*Above*): (*Image by Author*) *The materiality of the exterior continues on to the interior and forms an unbroken folded band.*
Figure 26. (*Left*): (*SANAA, 2009*) *The undulating surface of the pavilion flows throughout the park, determining types of space within it by the height of the roof plane.*

The quality of space within the Serpentine Pavilion is certainly ethereal, where the shimmering panels of aluminium create bizarre visual effects, constantly changing the perception of space, since one cannot clearly see the layout or the overall design from within (Figure 28). The trees and gardens are reflected and distorted, so the structure in a way underwrites the qualities of its surroundings; it changes the images of bystanders and other users, giving one a very vague and flexible idea of how many people there are, and where they are. So in all, the atmosphere is very vague, and fluid, conducive for one's own reflection within the building's reflection.

A similar impression can be created with the B2 House. As seen in Figure 27, when one wishes to shut out the open view and retire into solitude for a while, the reed shades provide a dappled effect wherever the light touches. The quantity of light is softer and the quality is more conducive towards rest, due to the lower intensity and richer colour. This experience, although perhaps less 'lush' than the Serpentine Pavilion which after all is a garden pavilion, is still related to its own culture and the warm colours are more natural for a residence.



Figure 27 (*Right*): (*Al-Hiyari, 2004*) The second floor bedrooms with the natural window shades closed.

Figure 28 (*Left*): (*SANAA, 2009*) Serpentine Pavilion
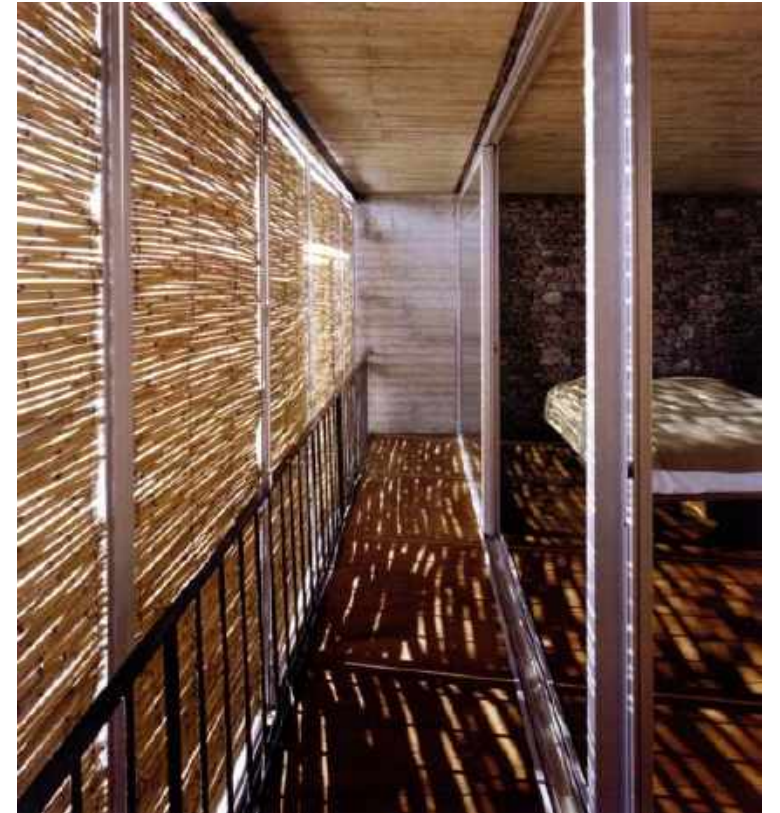
The design of the serpentine pavilion could be called simple or minimalistic, but in reality it is complex in the many spatial relationships and the ways in which it can channel movement and light through itself. Instead, it is keeping to the bare essential of architecture. Of all the Serpentine pavilions, Sanaa's ranks as one of the best not just because it is rather beautiful, but because it attempts to be no more and no less than a canopy set between trees, albeit one made of aluminium. Some past pavilions have been, perhaps, a little too substantial (Glancey, 2009).

With a reduced architectural language employing rudimentary forms, remarkable spatial conditions are achieved in B2 House. The architect has managed to draw uncommon energies from common forms by virtue of siting, organization and thematic consistency. Ultimately, the architect's attention was geared towards redefining the spatial norms of domesticity and the composition is subservient to this goal (Al-Hiyari, 2004).

It can be concluded, therefore, that both compositions strike the heart of architectural practices, and outline them so that even an unfamiliar observer is made aware of the purpose and character of these structures.



Figure 29. *(Above): (SANAA, 2009) Serpentine Pavilion*



Figure 30. *(Above): (Al-Hiyari, 2004) B2 House Southern Side*

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