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# PLACE, SKETCH AND ARCHITECTURE.

An in-situ approach to contemporary design.

DOCTORAL THESIS

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# PART III

# PROJECT, PLACE AND SKETCH

The previous section showed how travel or in-situ sketching and design sketching are part of the same process, and that carefully combining them can be of great advantage for designing place. So far, the discussion has focused mainly on the drawings of other architects. This chapter intends to evaluate these ideas about using in-situ sketching to analyse architecture and place through applying the same procedure to different and varied examples of place specific architecture. Apart from deepening the investigation into how sketching in-situ may be used to understand the architectural design of place, this section provides an original graphic analysis of a selection of significant case studies, based on detailed first hand, current observation of each project. This analysis re-frames the processes described so far in the context of modern architecture and in a variety of different types of place.

The first part demonstrates the point of view behind my own

sketches, I compare a set of my own sketches of the Acropolis to the benchmark of Le Corbusier's sketches discussed in detail above. This exercise is significant for several reasons. By drawing the same subject matter from similar viewpoints, both sets of sketches are reacting to the same set of stimuli. Although certain parts of the Acropolis have changed since Le Corbusier's visit, due to reconstruction and restoration, the subject matter of the majority of the sketches is largely unchanged. By drawing from the same, or similar viewpoints, both sets of sketches share the same intention to analyse the same subject from the same perspective. This not only allows a deeper level of understanding beyond secondary analysis of Le Corbusier's sketches alone, but the differences between my sketches and his also illustrate my own point of view in relation to the detail analysis in the previous chapters. The two sets of sketches are compared using the same method of graphic analysis as before.

Having determined my own point of view in relation to that of Le Corbusier, the second stage of this section applies the same approach of analysis through travel drawing to other projects. The reason for this is to see what changes occur when in-situ sketching is used to analyse a far more recent building without the monumental aura of the Acropolis, applied instead to totally different types of project and places, and to see what difficulties or benefits arise. The second chapter applies this form of analysis through travel sketching to Can Lis, a house built by Jorn Utzon in Mallorca in 1971. Despite the leap between the Acropolis and Utzon's house, this case study leads on from the previous case through a number of factors which it shares in common. Similar themes of ground-plane and movement are again found to be significant. The most important differences concern the quality of place – the cliff top site is effectively a pristine natural setting, the building therefore relates most clearly to place through its approach to nature, geography and climate. The small scale of the project compares to the house in Formentor making the project manageable enough to enter into significant detail. Like the Acropolis, it is significant that Can Lis has very little original information. The majority of sources are secondary, and often descriptive or anecdotal. This makes it an interesting project to analyse purely through drawing, as the many unknown qualities of the design are left to the analysis to uncover. To a large degree this leaves a blank canvas, relatively free from canonical knowledge, to interpret freely through sketching.

The third stage of the argument applies the same analysis through in-situ sketching to the Santa Caterina Market in Barcelona by Enric Miralles, Benedetta Tagliabue architects. Continuing from the previous case, this represents a much larger, more complicated mixed-use project in a far more complex place. Nevertheless, the thread of the argument links this to Can Lis and the Acropolis through the same themes of movement and multiple relationship with the ground plane. However, this project introduces time as a new ingredient in the design of place. Given the subtle relationship between sketching and time, this provides an interesting means to analyse how the project incorporates different ideas of time to connect to place and the people who use it.

Following these detailed cases, the argument is broadened with an overview of sketches of a wide spectrum of architectures which relate to place in a great variety of ways.

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### **Sketching as a “method”**

The previous chapters have attempted to present the true complexity of the visual, mental and physical process that occurs whilst sketching in-situ. Although an unpredictable process, the fact that it develops in stages across time, that it leads from a intuition to the statement of a conclusion observed, at least in part, from reality, and most importantly of all, that it may be deliberately used in order to generate and develop new conceptions of the surrounding environment, suggest that it is worth considering whether or not sketching may be considered as a “method” in its own right.

### **Differences between the drawings of the architect and the artist**

Sketching has long been fundamental to architectural design, but tends to be discussed subjectively, descriptively, anecdotally. If anything, the term sketch and its derivatives usually refer to anything but a rigorous methodical process. Oechslin claims that since the time of the Beaux Arts, sketches have been treated as a non-serious form of architectural representation, for artists not architectural problem solvers in search of perfection through applying drawing conventions (Oechslin 1982a). However, given its continual use in design ever since the Renaissance it seems clear from empirical evidence that in some ways, sketching must

have some useful methodological purpose, even if extremely liberal. To put this into perspective, it is worth considering how it has been of use in other disciplines, both artistic and scientific and how these compare to its use in architecture.

The distinction between the drawings of an architect and those of an artist was discussed by Alberti in the 15th century, who considered that the architect is after an accurate representation of space as opposed to the more atmospheric concerns of painters at the time (Sainz, 2005). Whilst he appears to be referring to architectural drawing in the form of measurable plans as opposed to sketches, this points to the importance that drawing has held for architects since the Renaissance as a rigorous and precise working method, and brings to light the notion that there is a difference of intention between the drawings of the architect and those of the artist. Alberti's mention of the distinction between the two suggests that the architect uses drawing as an approach which is capable of combining artistic intuition with the more scientific intention to understand and quantify.

Due to their complexity, architectural drawings require special means to convey concepts. As a result architectural drawing communicates complex specific ideas through using predefined rules and conventions. This monosemic approach to communication relies on the fact that both the person drawing and the observer share the same set of conventions. The meaning of the image is contained purely on the page with no effect from the observer's subjective point of view - freedom of interpretation is kept under control.

In contrast, sketching is a polysemic form of communication, based on a system of signs rather than predetermined rules. The observer has to deduce the meaning of the signs formed by the elements of the sketch. This is inevitably a matter of personal and debatable opinion, a question of subjective interpretation. As a result, the observer must consider the entire sketch and the relationship of all its many signs, as focusing on any one detail alone may radically alter its meaning.

According to Sainz (2005), a major difference between polysemic artistic and monosemic architectural drawings is that artistic drawings have far greater value for the expressive force of their form than for their content. The fact that architectural sketching relies less on predetermined rules and conventions allows it the expressive force which characterises more artistic drawing ena-

bling the sketcher to manipulate the emotive effect of the image and thereby modify the communication with the observer. As a result, drawing can convey abstract attributes such as spatial quality not just quantifiable objective characteristics.

### **Sketching used in science**

For centuries, science has made great use of drawing, both to record things visually but also for the method of observation, questioning and understanding that drawing involves. (FIG above Leonardo anatomy). An architect's drawings differ from scientific representations but also share much in common with them. Whilst by no means a scientific method of investigation, drawing can form an extremely useful part of a rigorous and methodical process of research. It is worth considering how sketching, apart from merely illustrating results and ideas, can actively participate in the discovery of information and ways of understanding the surrounding environment. Therefore it is interesting to relate sketching not just to architecture's artistic side, but to consider how it may function as a serious and rigorous method for academic investigation into the questions which architecture involves.

The Oxford English Dictionary defines a scientific method as “a method or procedure that has characterized natural science since the 17th century, consisting in systematic observation, measurement, and experiment, and the formulation, testing, and modification of hypotheses.”<sup>41</sup> A similar definition could equally be applied to sketching used as a method.

In other disciplines, (archeology, palaeontology, botany, and equivalent sciences) this has often formed part of a rigorous method of research, part of a scientific approach to observing and recording data. Whilst this was usually field research undertaken before alternative means of recording of sufficient quality became practically available, it also served other purposes beyond just capturing and fixing information. In the 19th century, Ramon y Cajal insisted on the importance of drawing for his students of natural sciences as he believed drawing was key to the art of observation, which is fundamental to empirical work in the natural sciences. His drawings of nervous systems show his application of his scientific knowledge through what is more

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41 OED 2010, p 1593. From the Oxford English Dictionary definition for “scientific method”.

often now considered to be a purely artistic medium.

Apart from just training the powers of observation, the propositional and exploratory nature of sketching discussed in Part I may also provide a significant link between drawing and scientific method. Perhaps for reasons relating to this uncertain iterative process of discovery, not dissimilar to the design process itself, the structure of DNA was also worked out partly with the aid of sketches, a visual conjecture as to how genes might be structured together (Fig. 206).<sup>42</sup>

### The scientific nature of sketching

The sketches referred to in this thesis fall within two main categories, in-situ sketching which is considered as an approach, and graphic analysis which is a method for understanding the underlying ideas behind a particular sketch. The in-situ sketching of the architect is certainly not a scientific method. It is neither repeatable nor has any intention to be based on the most objective observation possible. Nevertheless it can still provide a rigorous and productive process for developing an architect's ideas. One which is critical, comparative and iterative, leading from intuitions to reasoned conclusions. The significance of subjectivity discussed above provides an opportunity but does not necessarily mean that any idea is of equal validity just because it has been developed through a personal and individual method. Analysis of place and architecture is also empirical, based on external observation provides a means of analysing their surrounding environment, but it differs in several important aspects. In contrast to the botanist drawing flora and fauna in minute detail, the architect intends to interpret the scene beyond just recording its visual appearance. The intention of a scientific method to be reproducible, objective, following logical, repeatable steps along a *predetermined* route of investigation, is far removed from the one-off individuality of an in-situ sketch. Each person draws differently, and each drawing made by the same person will also be different. According to Gauch, the scientific method is in fact no more a matter of following a simple and automated sequence of steps than is the process of design sketching or travel sketching. He describes it instead as a highly variable and creative process. The drawings discussed in this thesis do not follow a fixed sequence of analytical steps, but each form a project to design a particular interpretation of the selected environment.

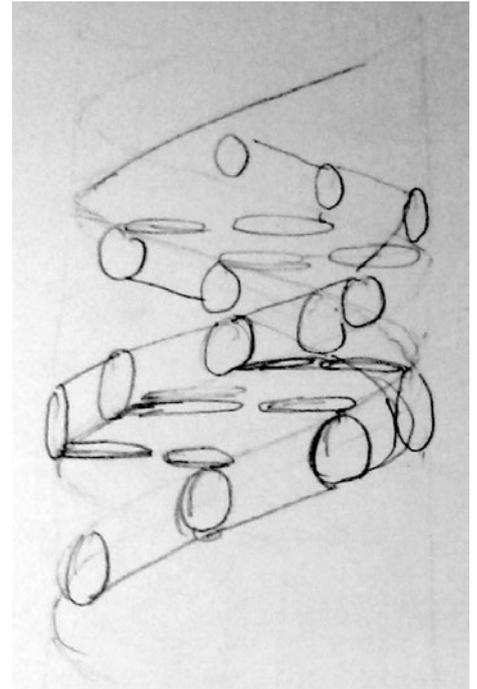


Fig. 206: First sketch of DNA structure (Adam Crick).

42 Crick & Watson, 1953

### **Sketching as an alternative to scientific methods for analysing place**

This is the nature of the process but also, for architects amongst others, its greatest benefit, in that it allows the sketcher to actively pursue their own interpretation of that in front of them, fusing direct observation with external ideas, prior knowledge, memory and imaginative future possibilities. The architect's in-situ sketch to some degree designs rather than captures the view in front. Therefore, although it shares certain points in common with parts of a scientific method, architectural sketching is better understood as an iterative process with a particular approach of observing, interpreting and reacting to a surrounding environment. Sketching is personal, subjective and contextual, all of which make it extremely useful as a means for an architect to both analyse and interpret their surroundings. Drawings may go through many variations, evaluating and improving on the previous stages. But even this process of gradual refinement is not necessarily linear, taking instead the unpredictable route of the design process. It does however provide a means of evaluating and responding creatively to ones surroundings. This may be rigorous in terms of the depth of observation and the refinement of the ideas. The process is open-ended, each step may lead off in any unforeseeable direction at any moment.

### **In situ sketching as an “approach” to analysing place**

Sketching in-situ helps to evaluate what are the principal ideas of greatest significance to the place and to judge their importance against the holistic impression of all factors together. It also helps to understand how these factors interrelate and how they achieve their impact on the experience of the observer. The in-situ sketch shows an understanding of architecture from a particular point of view. It is precisely this conception of architecture, rather than the actual architecture itself, that matters. Although this conception is individual, the sketch can convey this particular way of seeing and understanding to others. This can enable others to understand a given architecture in a new and richer way than before.

Sketching in-situ is a means of constructing a particular attitude to a place. The process of drawing in place constructs a particular relationship between one's thoughts (memory, imagination) and the actual experience of being in a specific place (Sennett,

2008). The relationship between actual perceptible experience on one's surroundings and the mental conception that the architect has of it. The sketch serves as a means to evaluate, manipulate and deepen this mental image or understanding. Through combining these two dimensions together, over time sketching gradually builds up an increasingly sophisticated relationship between them.

Consequently when looking at an architect's travel sketches, it is unhelpful to think of them as the results of a particular method – predetermined, repeatable, objective etc. It is clear for example when looking at Le Corbusier's travel sketches that he did not follow a rigorous method, but drew as and when he chose in order to develop certain thoughts on paper, an approach determined as much by the site-specific circumstances at the time as by a preestablished stipulated method. Nevertheless, in looking back at his travel sketches, his drawing habits often followed certain patterns. He chose for example to visit places in a particular order. Instead of drawing the most impressive, stereotypical and obvious views first, his sketches trace a route from the distance to the entrance of the Acropolis before retracing his steps to draw the main facade (Corbusier 2002, *Carnet 3*, p.123). His sketches follow and lead his thoughts during his time visiting the Acropolis developing (or designing) a particular conception based on a combination of many different ideas. These opened his mind to new ways of understanding and imagining architecture. Therefore an important reason for analysing Le Corbusier's sketches of the Acropolis is to show that this process, when used skilfully, can lead to results which would not have been possible otherwise. And when carefully reflected upon, can open the way to new ideas and potentially the chance to design better projects.

With in-situ sketching, each individual sketch is always determined by so many contextual factors and limitations that it cannot possibly follow a predetermined method in the manner of a scientific experiment. Nevertheless, the overall visions which the sketch helps to construct may be improved and amplified both by these unforeseeable circumstances and by the sketcher's reaction to them. The advantage of this kind of place analysis for the architect is that it has been developed through the same means as the design process itself. Being created through the same medium helps either the conclusions drawn from it to fuse directly into a project designed to stand on the location of the site sketches, or else to remain latent at a less immediate level and gradually seep into designs far later on.

## CHAPTER 7

# COMPARING POINTS OF VIEW

A graphic comparison of Le Corbusier's sketches of the Acropolis with recent sketches by the author.

A practical and highly effective way to learn about something is to take it apart and put it back together. Richard Sennett describes this kind of practical, often manual way of coming to understand and investigate things, be they objects or ideas (Sennett, 2008). In a similar way, one may learn about a sketch by redrawing it, copying the marks and considering what reasons might lie behind their disposition. Enric Miralles claimed to have redrawn the entire *Obra Completa* of Le Corbusier (Muro, 2015). Helio Piñon was deliberately in favour of learning through copying first (Llinás, 2011), and Sennett explains the importance of this method of apprenticeship in craft workshops from the middle ages to recent times. However, while straightforward copying, or more careful analysis through graphically deconstructing a sketch, will help to explain the ideas which underlie it, the sub-

jective point of view in a sketch can be only partly explained by such methods. Comparison between sketches may further characterise what distinguishes one point of view from another, but no investigation will be as profound as that of remaking from the same stimuli and seeing how the point of view transforms the same objects into different representations.

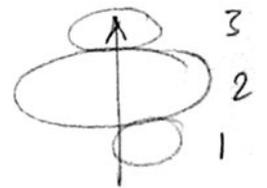
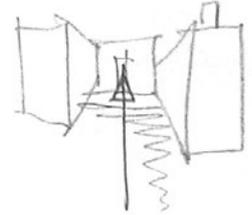
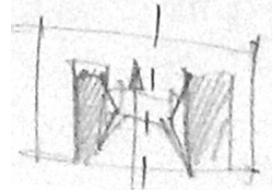
The Athenian Acropolis provides a particularly interesting opportunity for redrawing and comparing to the sketches by so many architects all of whom shared a similar aim of studying the buildings through sketching them in-situ. All intended to learn as they drew. The conditions have of course varied, the temples have been greatly reconstructed and cleaned, the quantity of visitors has eradicated nearly all trace of the romantic descriptions of Ernst Renan (1865) which inspired so many travellers of the past, and access to many of Le Corbusier's viewpoints is no longer feasible. Nevertheless, the Acropolis and its temples have been drawn by a great number of the most significant architects of the last century, Aalto, Kahn, Jacobsen to name but a few, who all followed in the footsteps of Le Corbusier and so many others. The fundamental intention to investigate through drawing in-situ was common to all.

The aim of the following chapter is to establish my own point of view in relation to that of Le Corbusier. This will demonstrate part of the subjective approach behind my own drawings and allow a more critical appreciation of my sketched analysis of the modern buildings which follow. This is approached through comparing travel sketches of my own directly with those by Le Corbusier discussed earlier. The method of graphic analysis used above is extended further by remaking drawings from the same conditions and stimuli (or as close to them as possible) as in the original drawings. Rather than compare sketches against a concurrent photographic record, comparing in-situ sketch with equivalent in-situ sketch serves both to observe the same objects and to maintain the same investigative intentions behind the drawings. The similar technique, medium, speed and register, allows both sets of sketches to be compared on a more equivalent wavelength. I have consciously chosen to draw as close to the same views as possible with the same medium, and a similar, although slightly larger sketchbook. However my intention has not been to copy what I believe Le Corbusier saw and imagined, but rather to find whatever it may have been that struck me of interest about the place. I believe that although there is a large degree of intended overlap between my sketches and Le Corbus-

ier's, and despite the inevitable influence of his own sketches, the approach to the construction of my drawings still remains substantially independent from those of Le Corbusier. As a method for learning, it compares one process of making directly against another; differences in the results and the process they follow should come down largely to differences in point of view and not to differences in the objects portrayed or the intention with which they have been drawn.

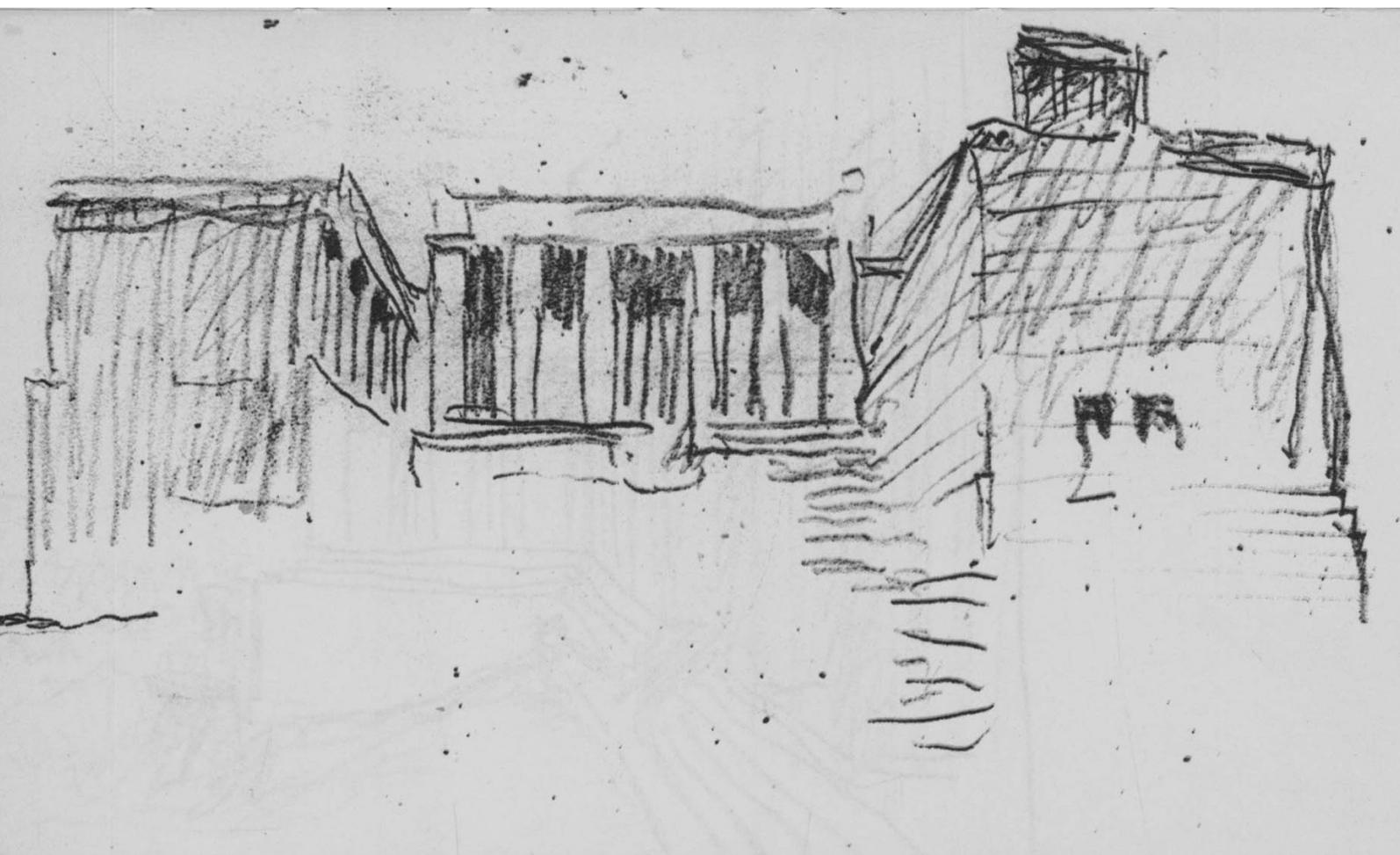
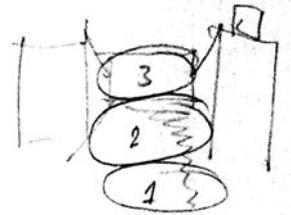
Secondly the exercise of comparing equivalent sketches provides a bridge between travel sketches from the last century as an essential strategy for analysis behind much of the architecture of the Modern Movement, and the current use of in-situ sketching to analyse contemporary architecture today. It aims to justify the basis of the following arguments and discussions by starting from the same point as Le Corbusier (“toute a commencé là...”) (Lucan 1987). It forms a link between the graphic analysis of some of the great travel sketches of the past century and the Modern Movement with the argument for using in-situ sketching to analyse and design architecture and place today.

**Fig. 207:** Comparative diagrams referring to Le Corbusier's sketch (left column) and the Author's sketch (right column). From top to bottom: Choice of viewpoint; composition on page; visible direction of movement along pathway; depths of field (SH).



**Fig. 208:** LEFT: The Propylaea, p.107. (LC, Voyage d'Orient, Carnet 3).

**Fig. 209:** RIGHT: The Propylaea, 2014 (SH).

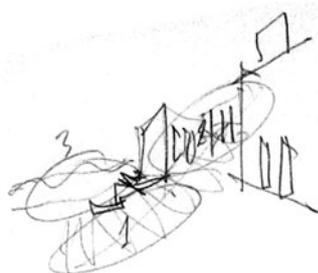
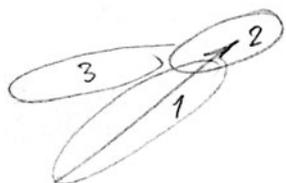
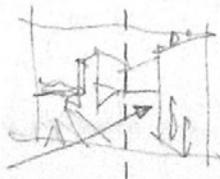


### 1. Comparison between Le Corbusier's Acropolis sketches from 1911, and those of the author from 2014.

Comparison of the two sketches shows an equivalently selective use of shading to emphasise mass and openings.

Frontal as opposed to diagonal views produce a more direct path but more static composition. Note the linear succession of planes of depth up through the image on the left.

Similarities include the selective use of outlines and shading to highlight volume without being naturalistic. The two views show the same space but from slightly different viewpoints, the second showing an oblique view of the entrance approach set against the distant landscape and extending down into the foreground of the image. Consequently the composition appears more dynamic but less monumental than the frontal sketch, leading the eye along the entrance route. This monumental nature of the entrance is emphasised by the constructed balance and near symmetry of the earlier sketch, which is further accentuated by not drawing the tower standing in front. This gives an intentionally ceremonial impression to the entrance route. The second sketch shows a more dynamic set of spaces leading on from one to another out of sight to the right but embedded within the landscape context.





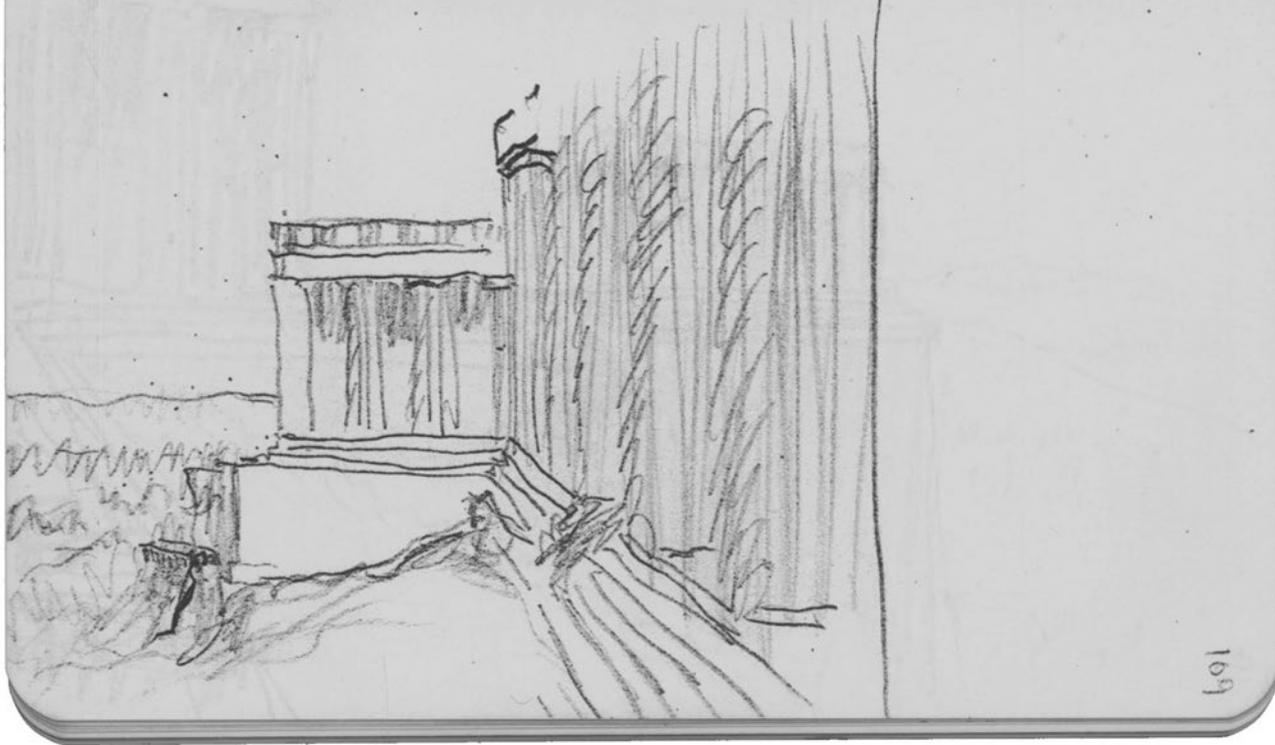
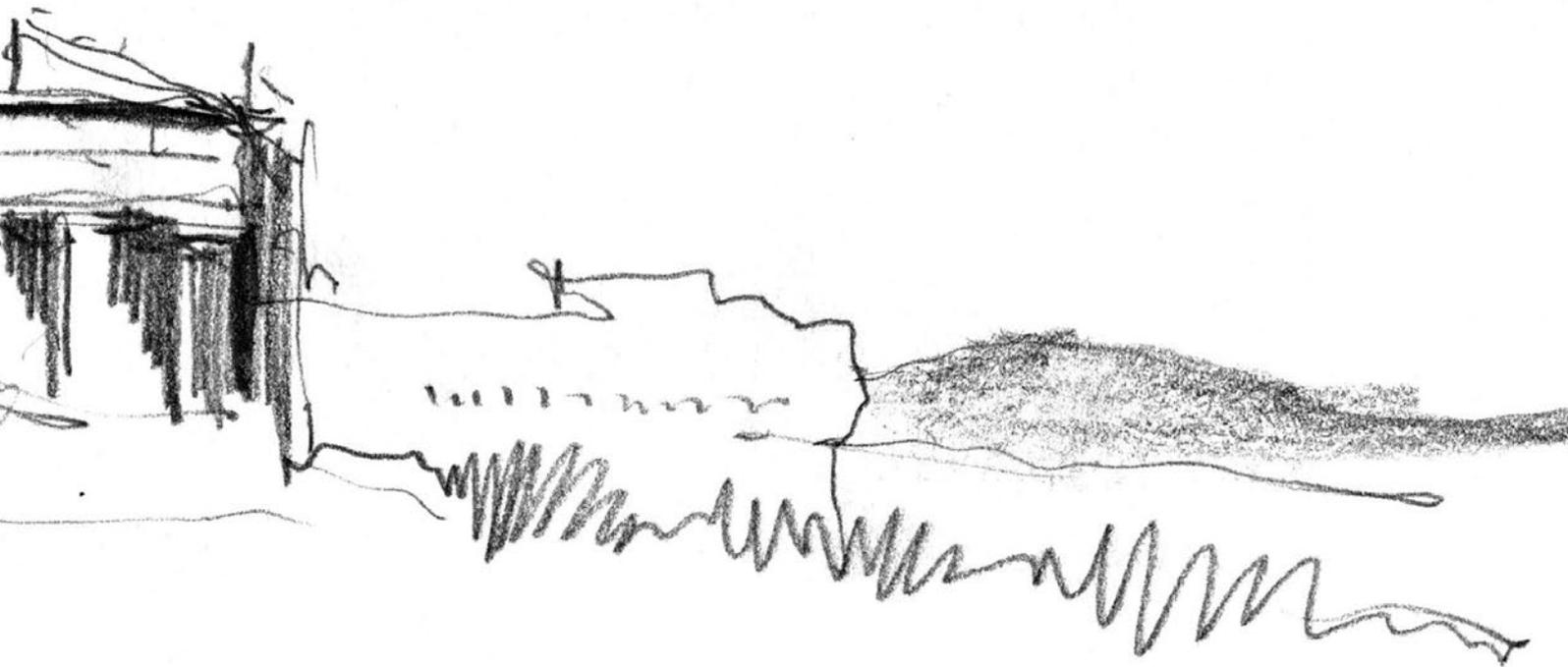
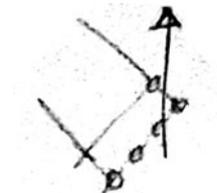
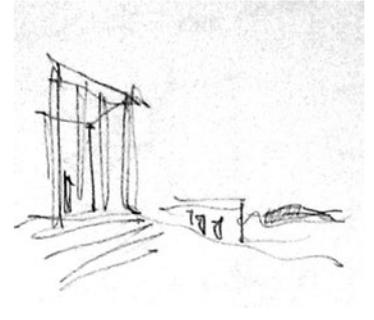
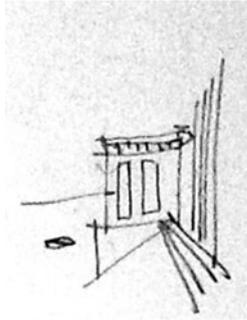


Fig. 210: TOP: The Propylaea, p.109. (LC, Voyage d'Orient, Carnet 3).

Fig. 211: LEFT: The Propylaea eastern facade seen from the Erechtheion (far left), 2014 (SH).



**Fig. 212:** Comparative diagrams referring to Le Corbusier's sketch (left column) and the Author's sketch (right column). From top to bottom: Choice of viewpoint; Angle of vision relative to the foreground portico (SH).



Le Corbusier's sketches 109-113 draw porticoes parallel or perpendicular to the picture plane. The heavy fluting lines blur the distinction between overlapping columns, turning the latter into effectively opaque screens. Frontal views of the porticos show an immediate space but the transparency of the colonnade is blocked off by the solid wall behind. The portico is shown to delimit a block of space open to the wind but as definitively delimited as the solid base it stands upon.

The diagonal view through the portico in the second sketch portrays the colonnade as an open structure covering an external space combining with the other temples and landscape rather than standing in contrast to it as on the left. This is further emphasised by the longer more delicate proportions of the ionic columns on the left as opposed to the Doric porticoes of the Propylaea.

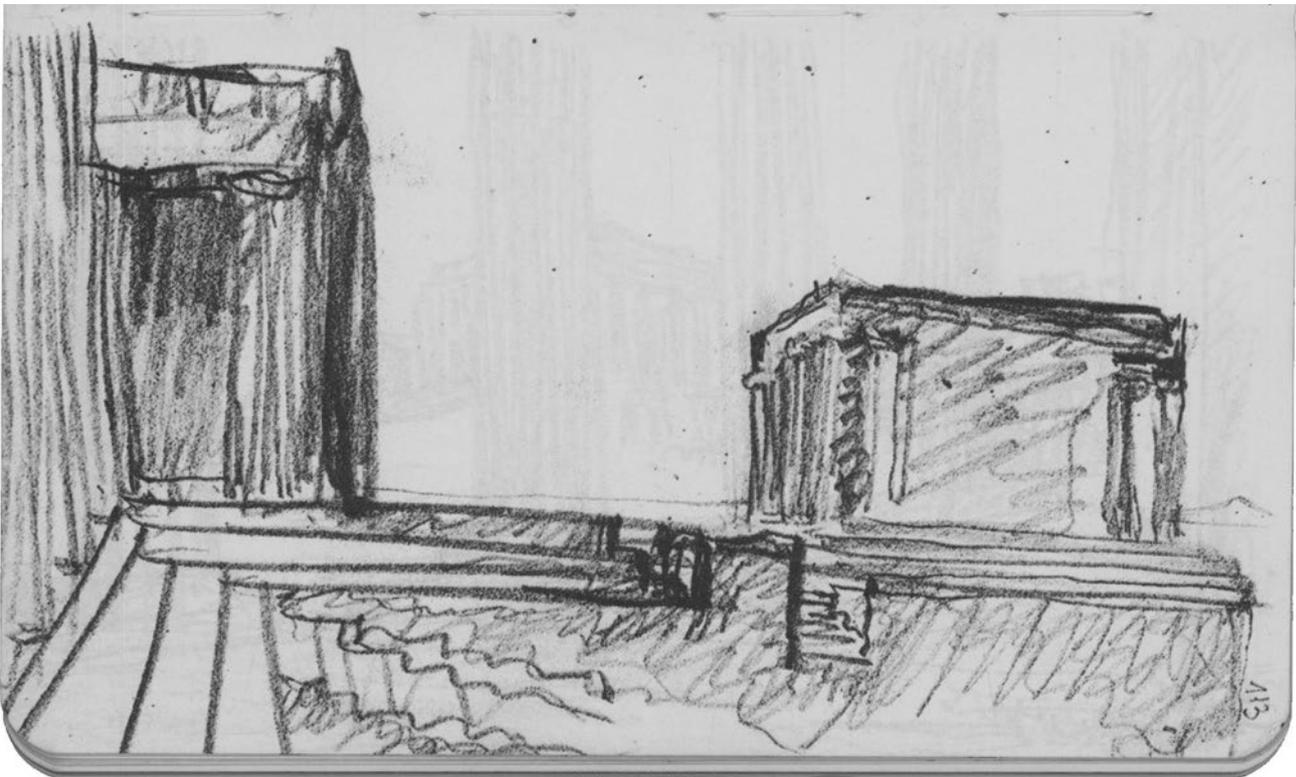
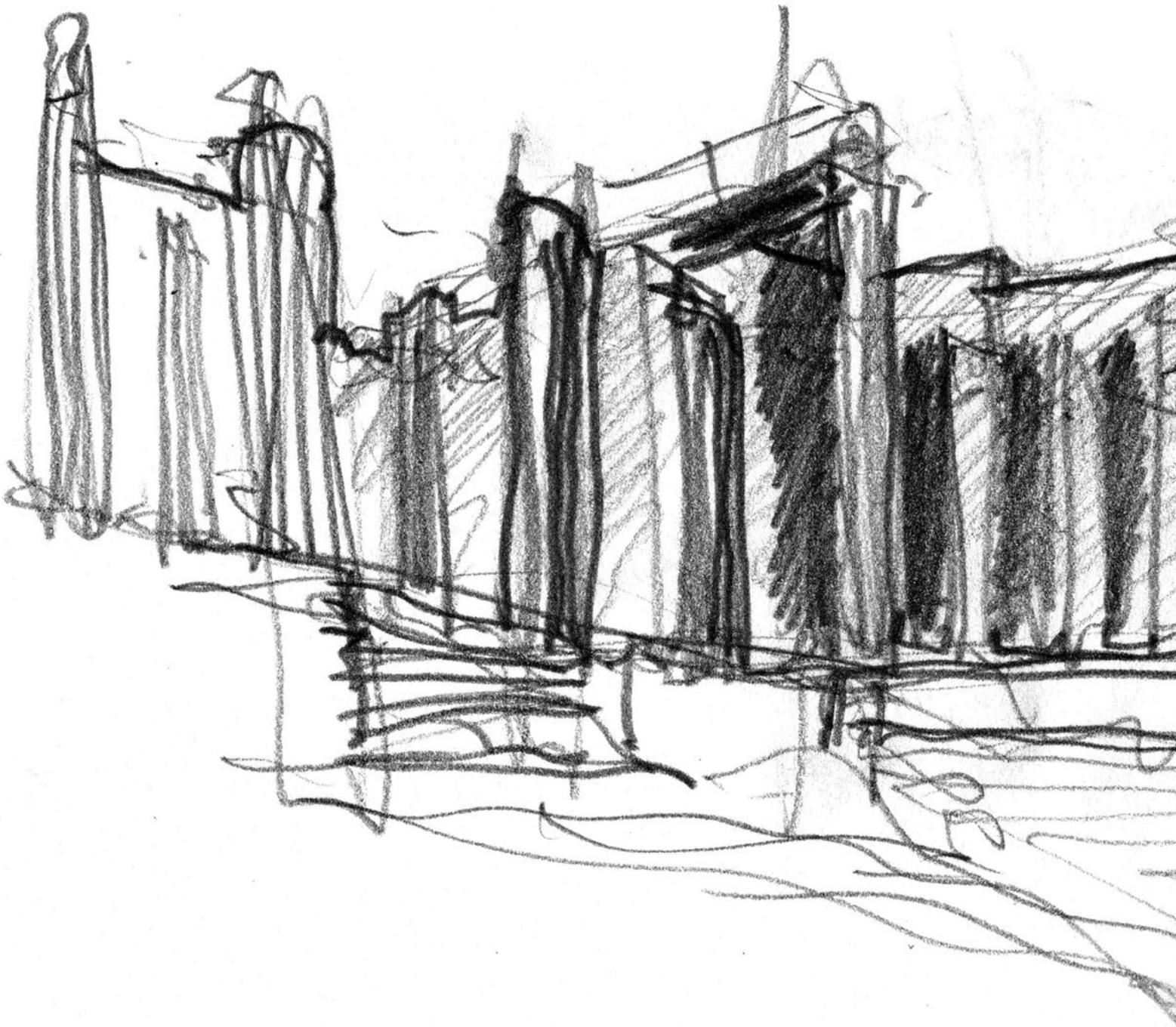


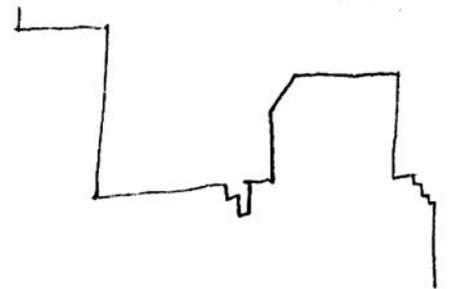
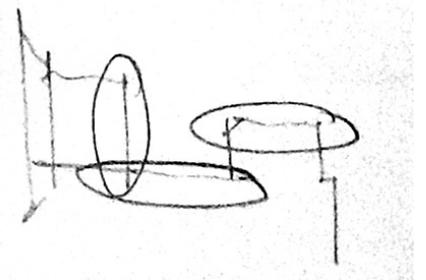
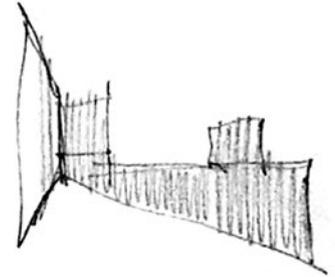


Fig. 213: TOP: The Propylaea and temple of Athene Nike facing south east, 2014 (SH).

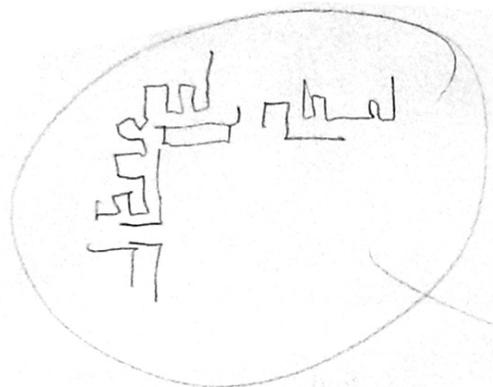
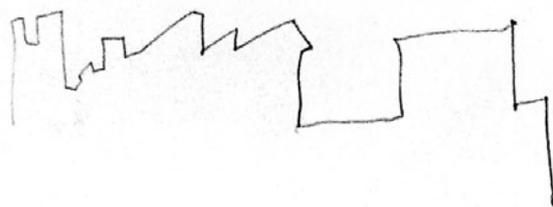
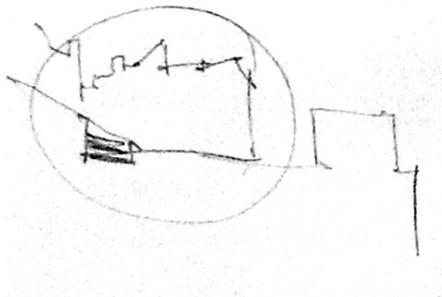
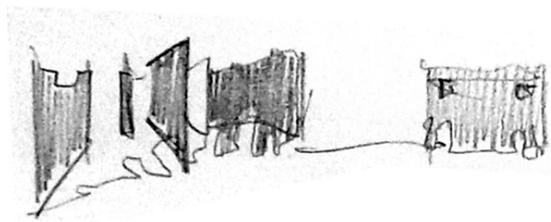
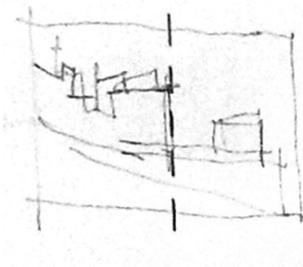
Fig. 214: LEFT: The Propylaea and temple of Athene Nike, p.113. (LC, Voyage d'Orient, Carnet 3).

The central focus in Le Corbusier's sketch is on the horizon in the centre of the composition framed by the two building masses. Tone is used to suggest the solidity of the built volume in contrast to the open spaces of sky and horizon. Particular emphasis is given to the horizontal parts framing the silhouette of the skyline.

The second drawing focuses on the entrance between the columns on the left. The irregular heights of the columns and the depths of the visible spaces create an impression of an open space linking on to others towards the left. The irregular massing of the left half of the comparison is contrasted with the comparatively geometric form of the temple of Athene Nike on the right.



**Fig. 215:** Comparative diagrams referring to Le Corbusier's sketch 113 (left column) and the Author's sketch (right column). From top to bottom: Composition on page, solid, void and horizon; tonal diagram; principal outlines; skyine; conceptual plan diagram of the spaces portrayed according to the information in the sketch alone (SH).



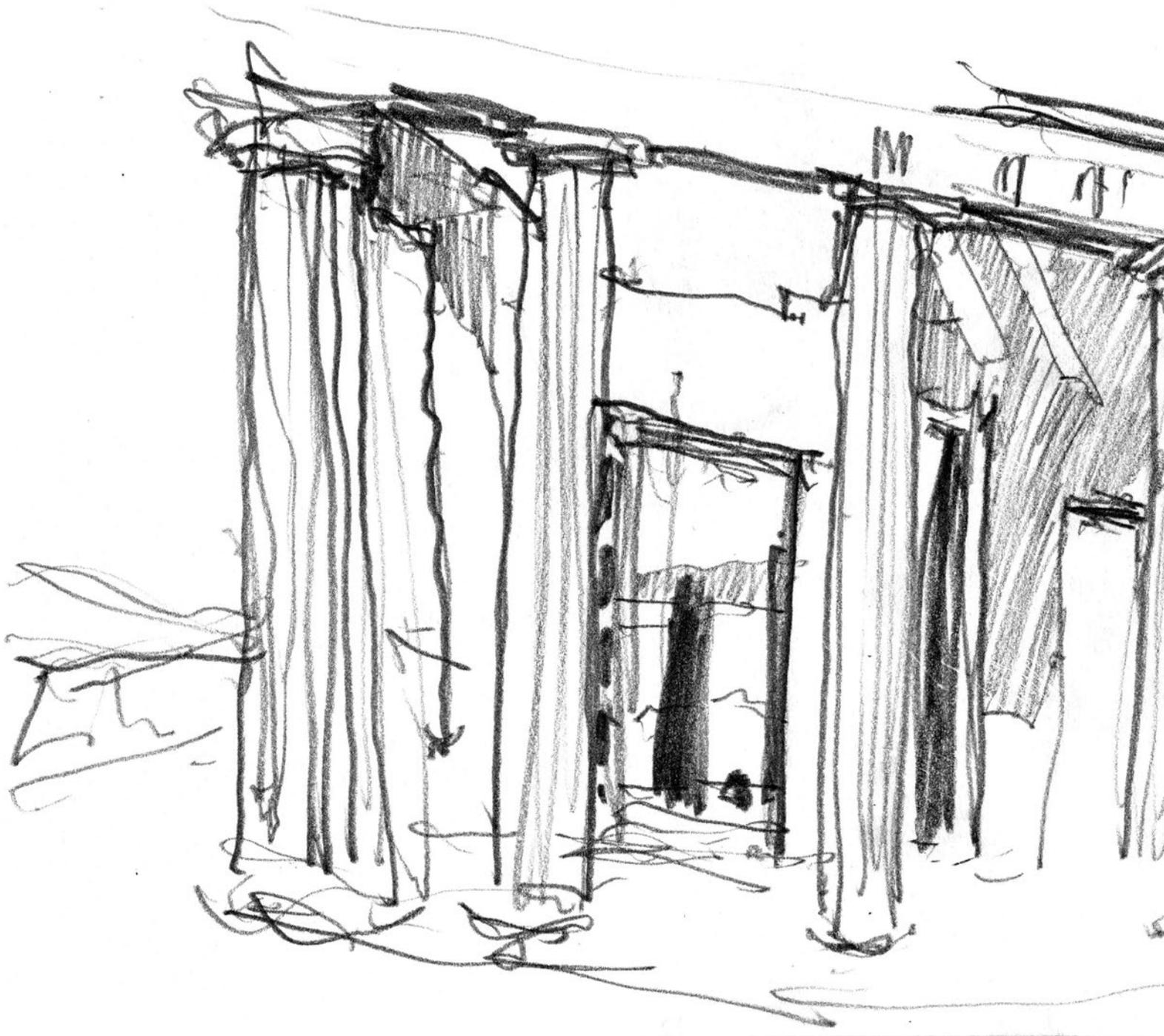


Fig. 216: TOP: The Propylaea north east facade, 2014 (SH).

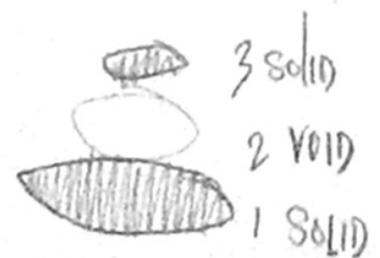
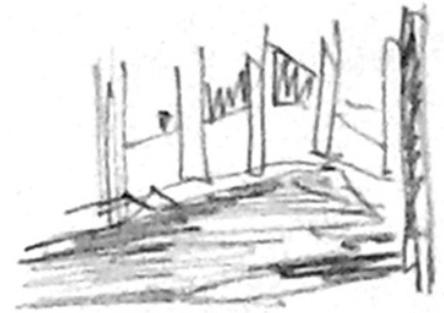
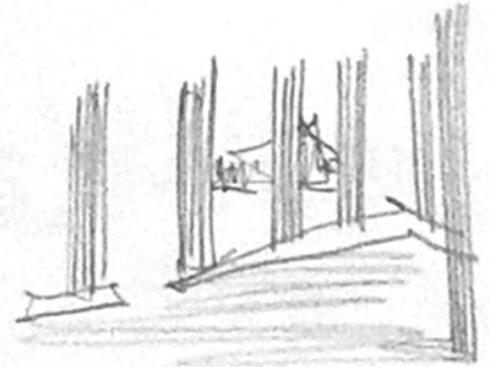
Fig. 217: LEFT: Facing north east towards the Parthenon from the portico of the Propylaea p.115. (LC, Voyage d'Orient, Carnet 3).



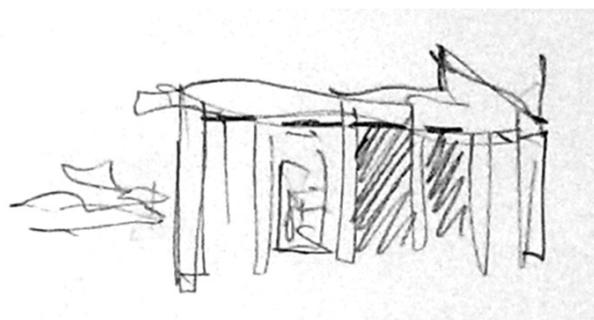
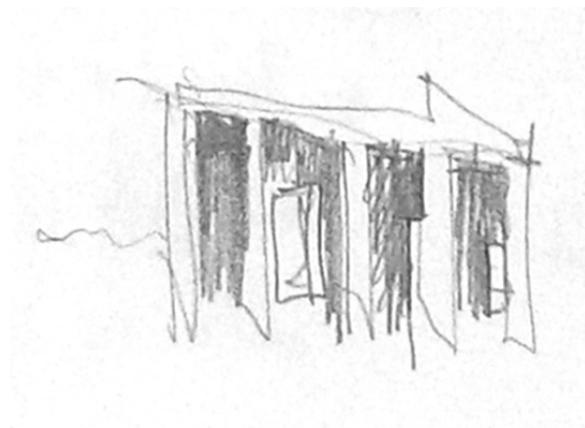
Le Corbusier's sketch shows built, open, built spaces in foreground, middle ground and background. This makes the space framed by the two buildings a critical part of the drawing. This is emphasised further by the tonal contrast.

The second drawing takes a view from the inner facade of the Propylaea and concentrates on the space now framed within the interior of the building. The foreground and distant background are less important than the permeable space between the columns. The irregularity of this space is emphasised using shadows and heavy outlines of current stonework creating a complex interior in contrast to the simplicity of the spaces shown in Le Corbusier's sketch. This contrast is also heightened by one focusing on the skyline, its incomplete, damaged state and contrast of stone against sky whilst the other focuses on the continuity of the ground plane and the conserved construction of the columns meeting the pavement.

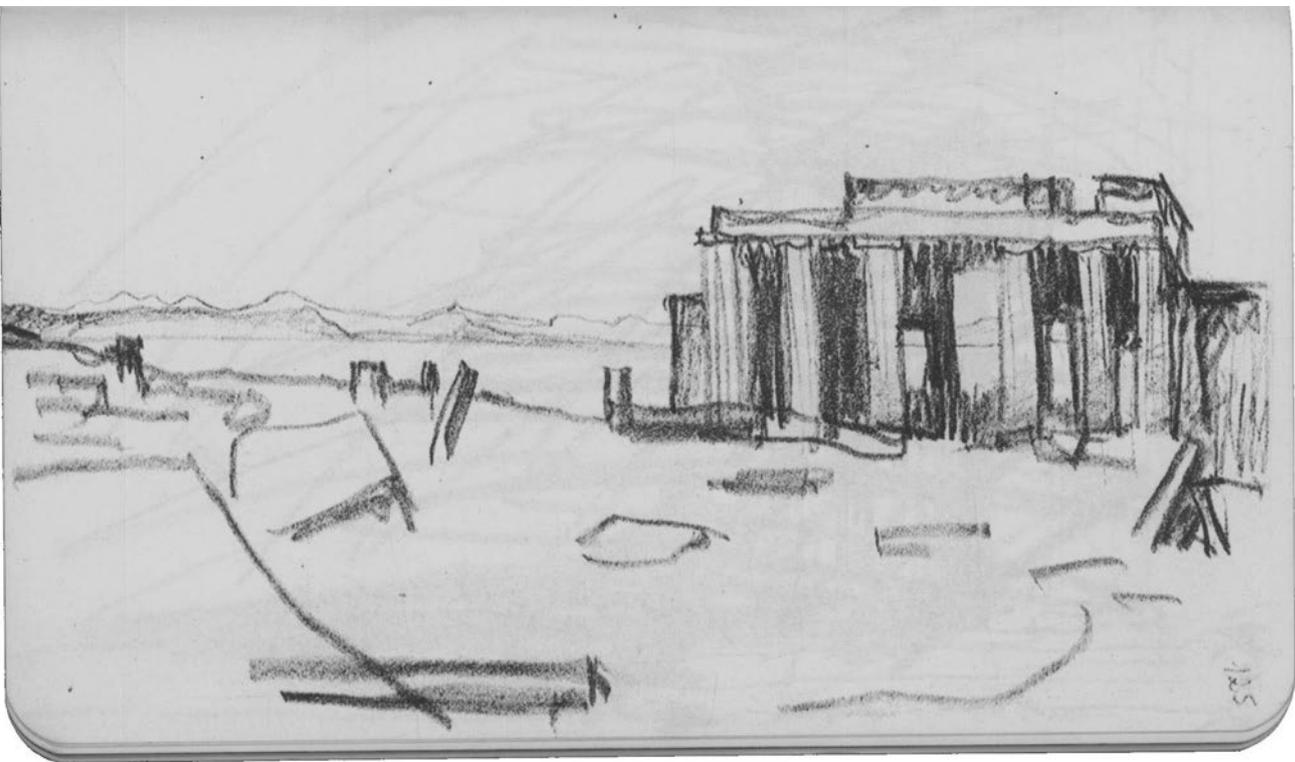
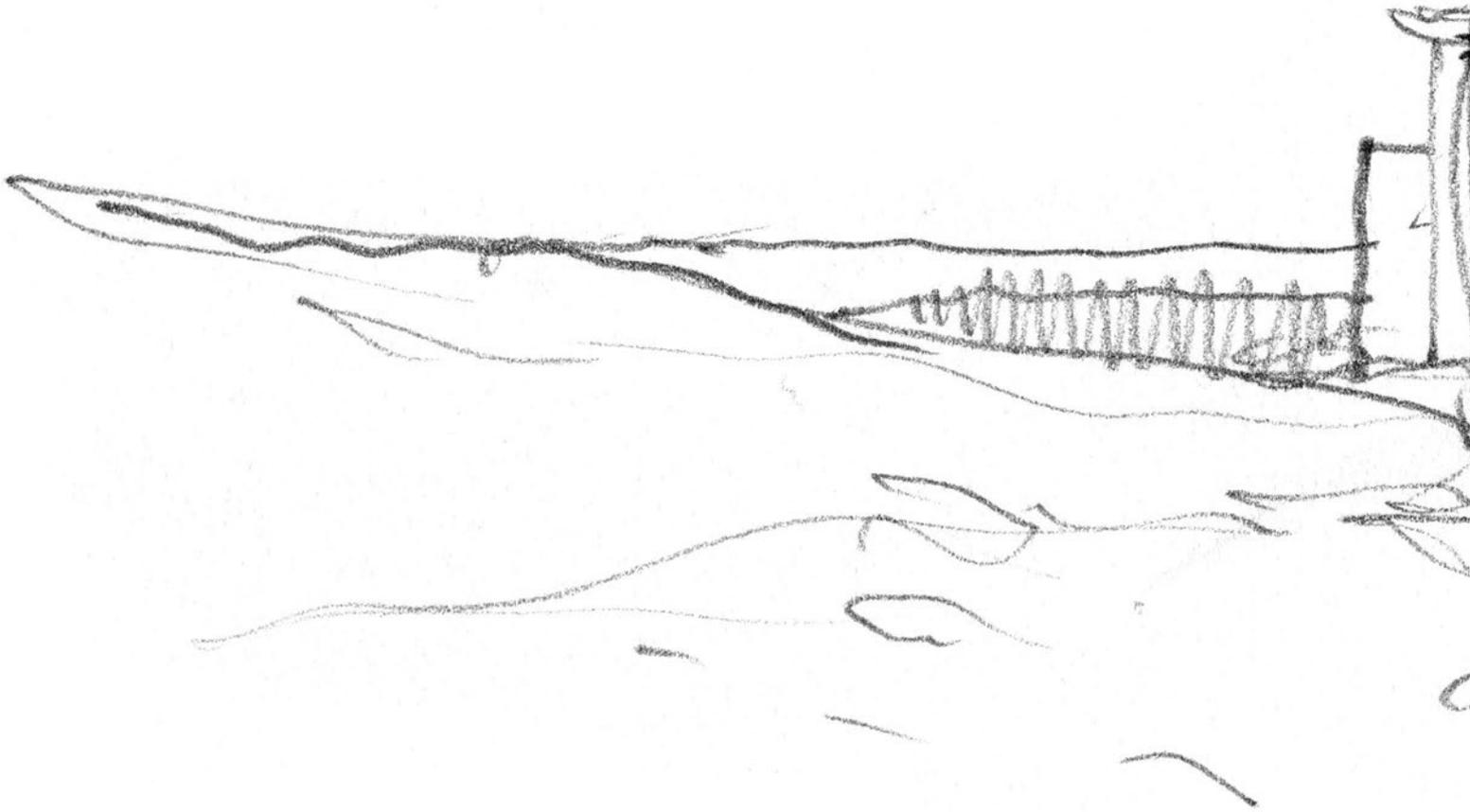
The first sketch portrays the Propylaea as a permeable object in an incomplete and irregular state. The other concentrates on the open space framed between minimal columned spaces.



**Fig. 218:** Comparative diagrams referring to Le Corbusier's sketch 115 (left column) and the Author's sketch (right column). From top to bottom: Composition; foreground and skyline; depths of field (SH).



3 VOID  
2 SOLID  
1 VOID



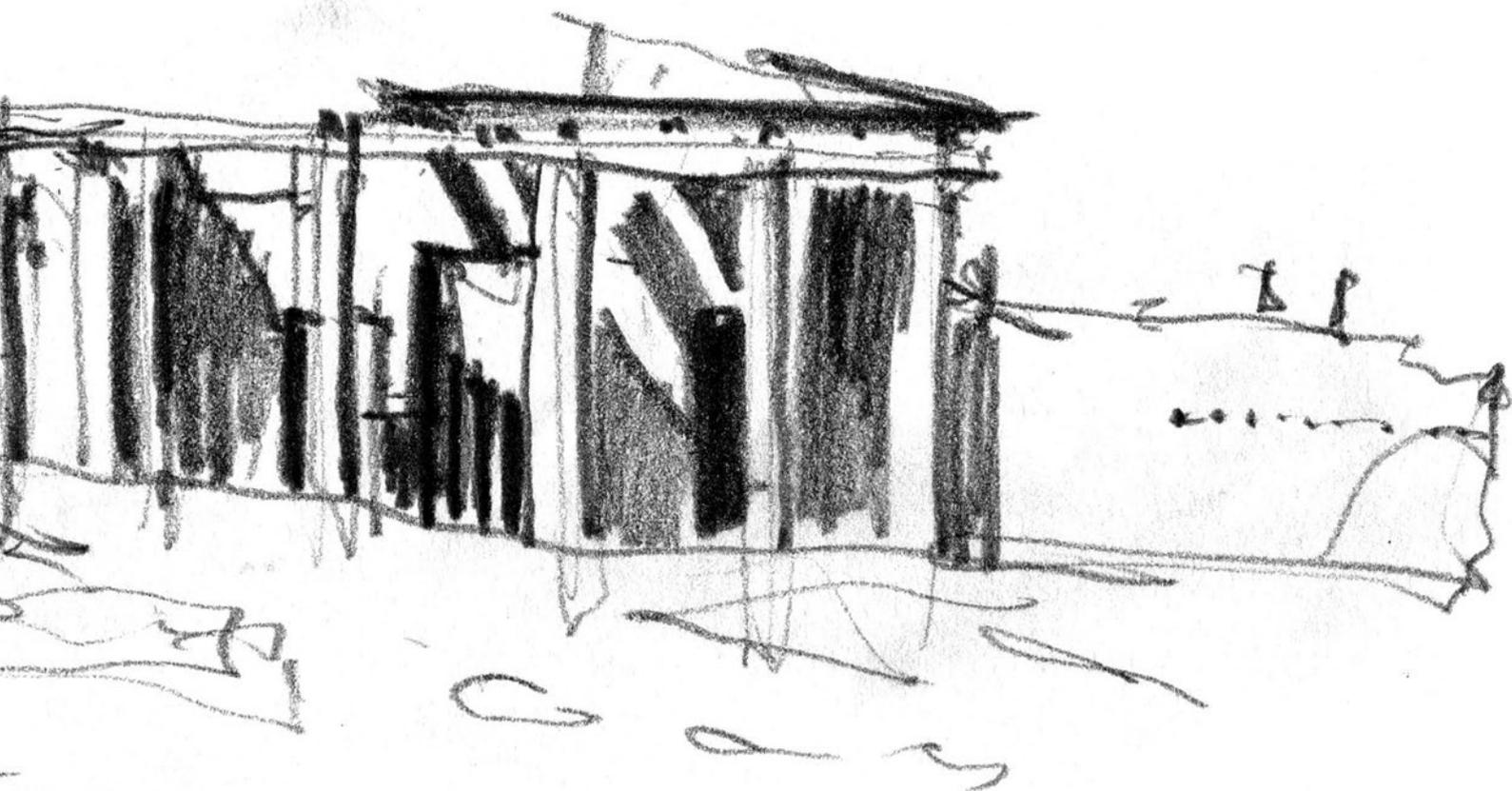
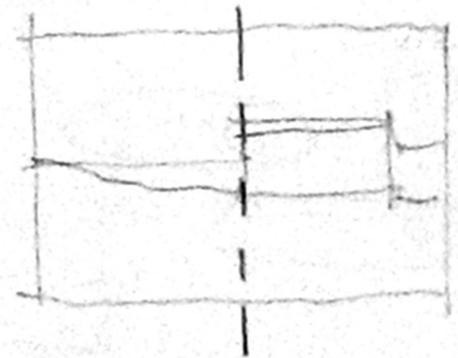
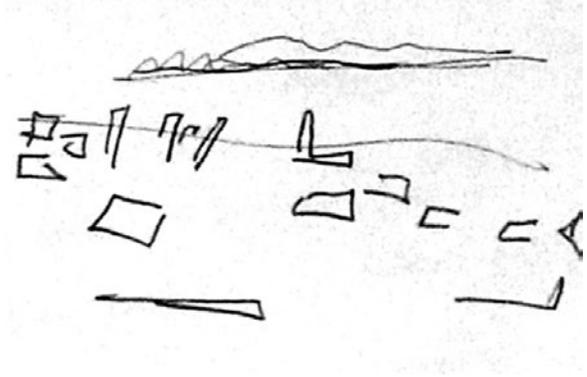


Fig. 219: TOP: The Propylaea facing south, 2014 (SH).

Fig. 220: LEFT: The Propylaea facing south, p.125. (LC, Voyage d'Orient, Carnet 3).

The two sketches show a different emphasis on foreground and distance. The later sketch concentrating on the complexity of the interior and includes the city behind. Le Corbusier's sketch carefully balances the composition to achieve the contrasting solid/void halves to the image. Elements such as the distant mountains and foreground rocks are drawn in more detail, whilst the cityscape is not drawn and the vision of the distant coastline through the Propylaea is to some degree assisted. Le Corbusier's sketch shows an intentional composition carefully adjusted to emphasise the contrasting balance of the image and the interrelation of foreground, architecture and distant horizon. The later sketch concentrates on the Propylaea as an open building left in a complex form due to its current state of conservation/reconstruction. Le Corbusier concentrates on explaining a timeless architectural concept, the later sketch focuses on an object in its current temporal condition.



**Fig. 221:** Comparative diagrams referring to Le Corbusier's sketch 125 (left) and the Author's sketch (right). From top to bottom: inclusion/exclusion of foreground, middle ground and background; tonal analysis; conceptual diagram of the space portrayed according to the sketch alone; composition of solid, void and horizon (SH).

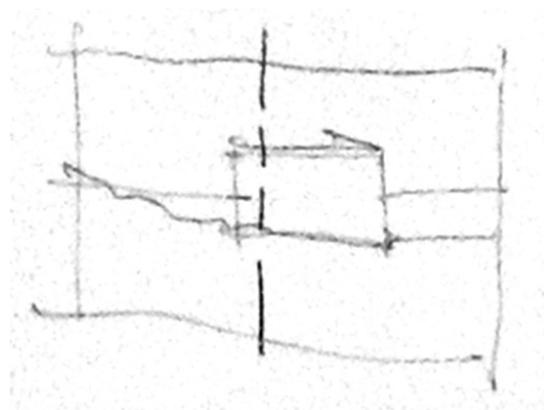
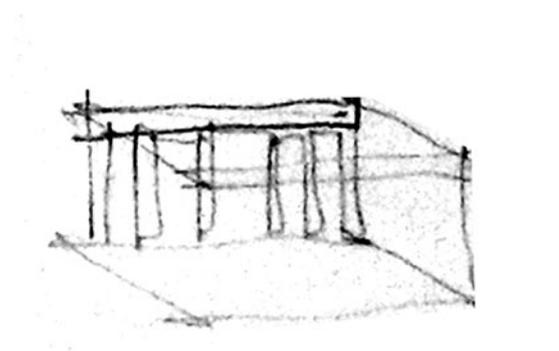
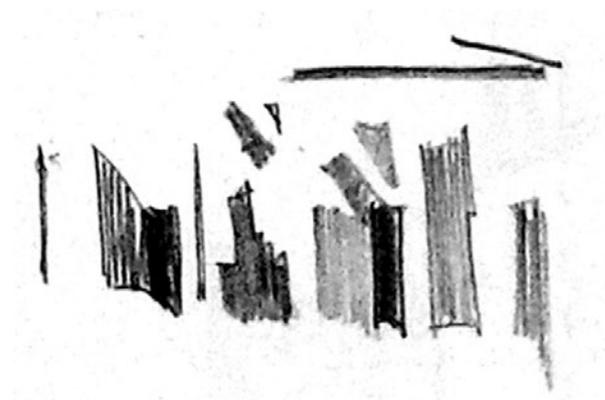
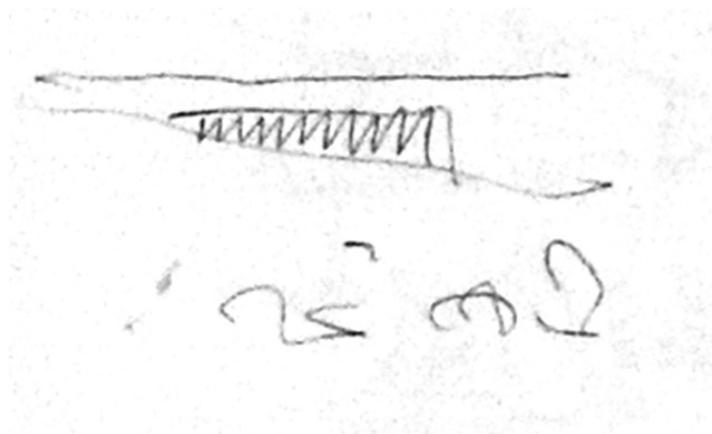




Fig. 223: RIGHT: The Erechtheion (right) and Parthenon (left) facing south east, 2004 (SH).

Fig. 222: LEFT: The Propylaea and temple of Athene Nike, facing north, 1957 (Arne Jacobsen).

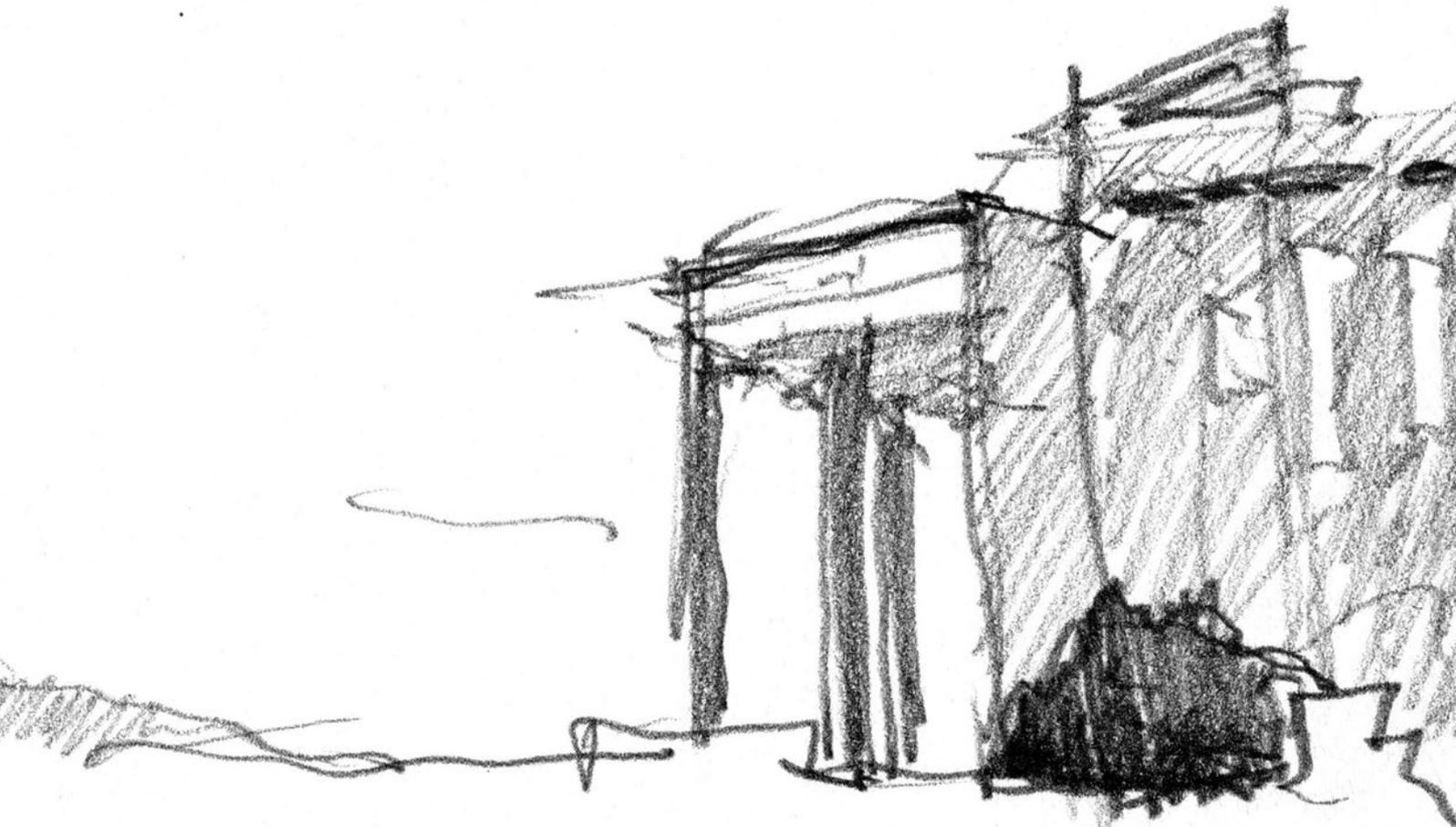






Fig. 224: LEFT: The Propylaea and temple of Athene Nike facing north, 1957 (Arne Jacobsen).

Fig. 225: BELOW: The Erechtheion facing north, 2014 (SH).



## 2. Comparison of the author's sketches with those of other architects, Arne Jacobsen and Louis Kahn.

The entrance buildings appear as a palimpsest of separate buildings carefully drawn and shaded to show an accumulation of different arrangements of solid walls and open porticoes. All elements are simplified into their two variants and portrayed as if a set of standard elements mounted at different heights perpendicular to one another.

The main buildings are seen from below and on the distance of the picture space hatched in order to read as a mid-tone between the dramatic frame of white sky, solid black vegetation and white foreground rock.

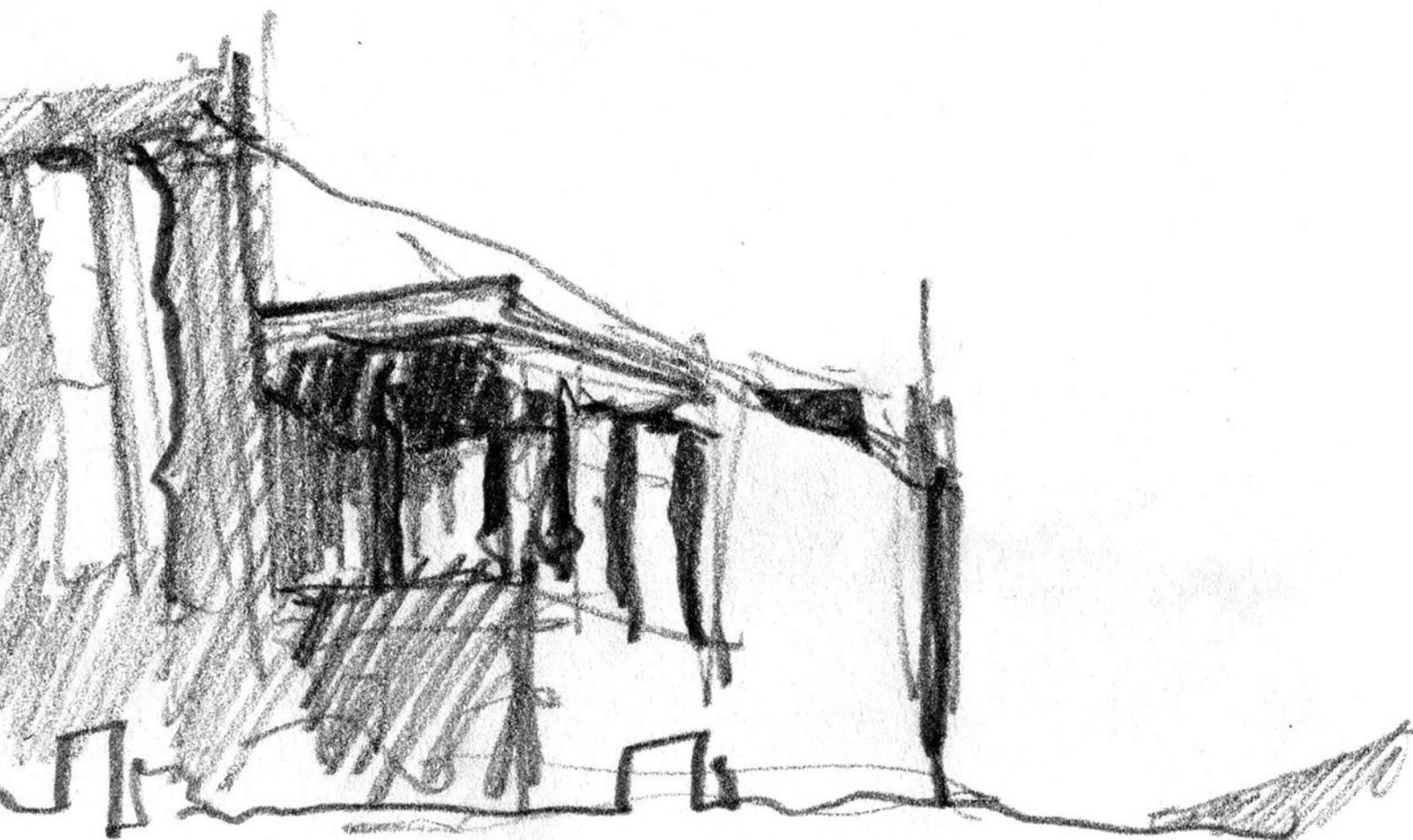
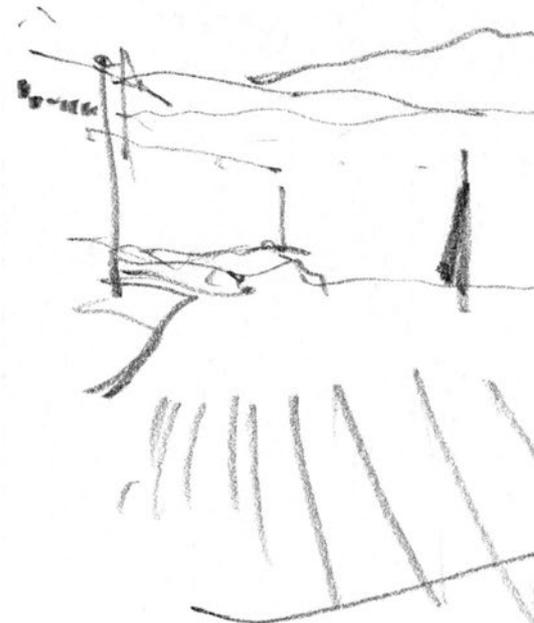




Fig. 226: LEFT: The Propylaea and temple of Athene Nike, facing north, 1957 (Arne Jacobsen).

Fig. 227: RIGHT: The Propylaea facing north, 2014 (SH).

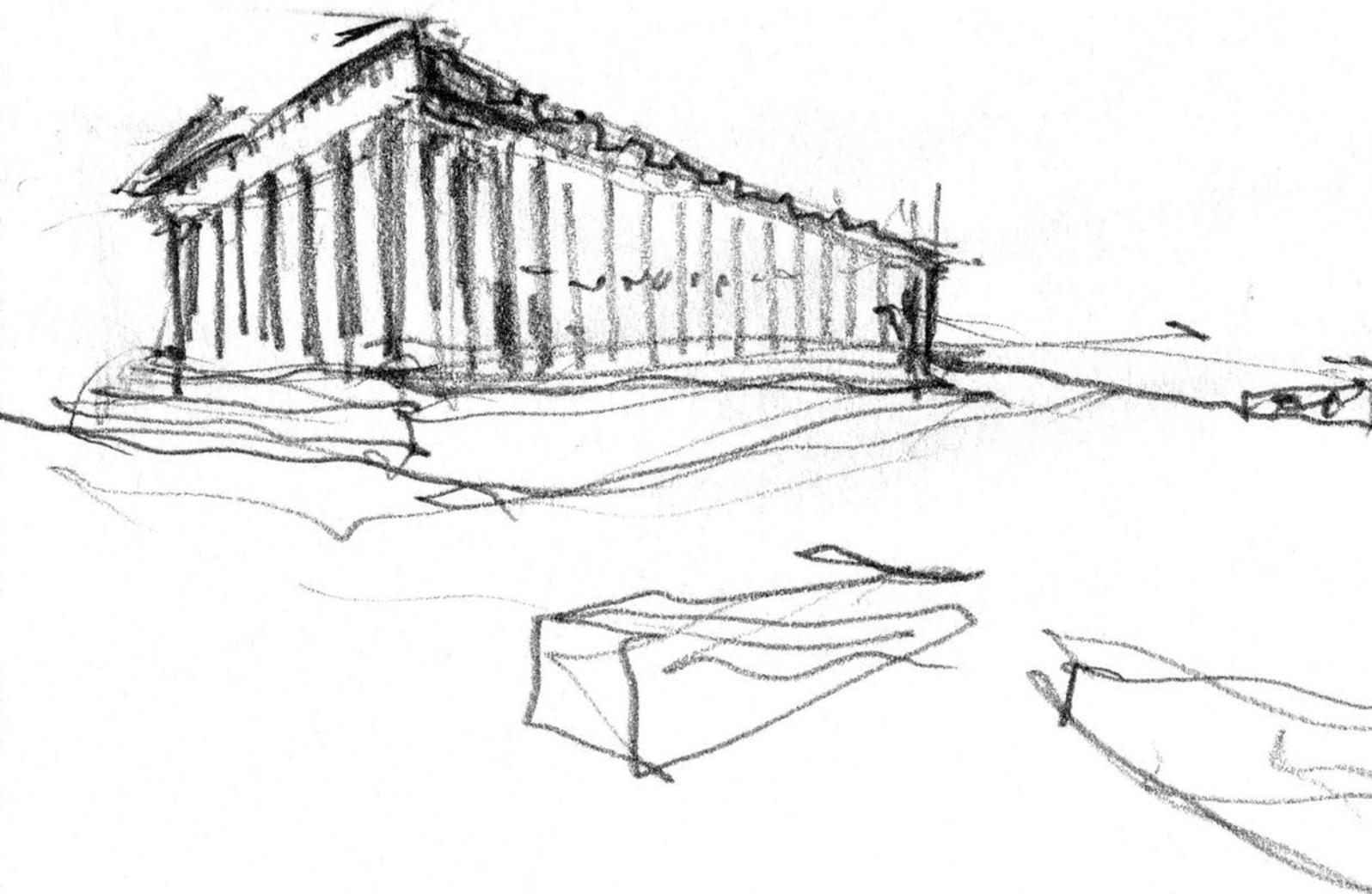




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Fig. 228: RIGHT: The Erechtheion and Parthenon facing north east, 1951 (Louis Kahn).

Fig. 229: BELOW: The Parthenon, Propylaea and Erechtheion facing south west, 2014 (SH)



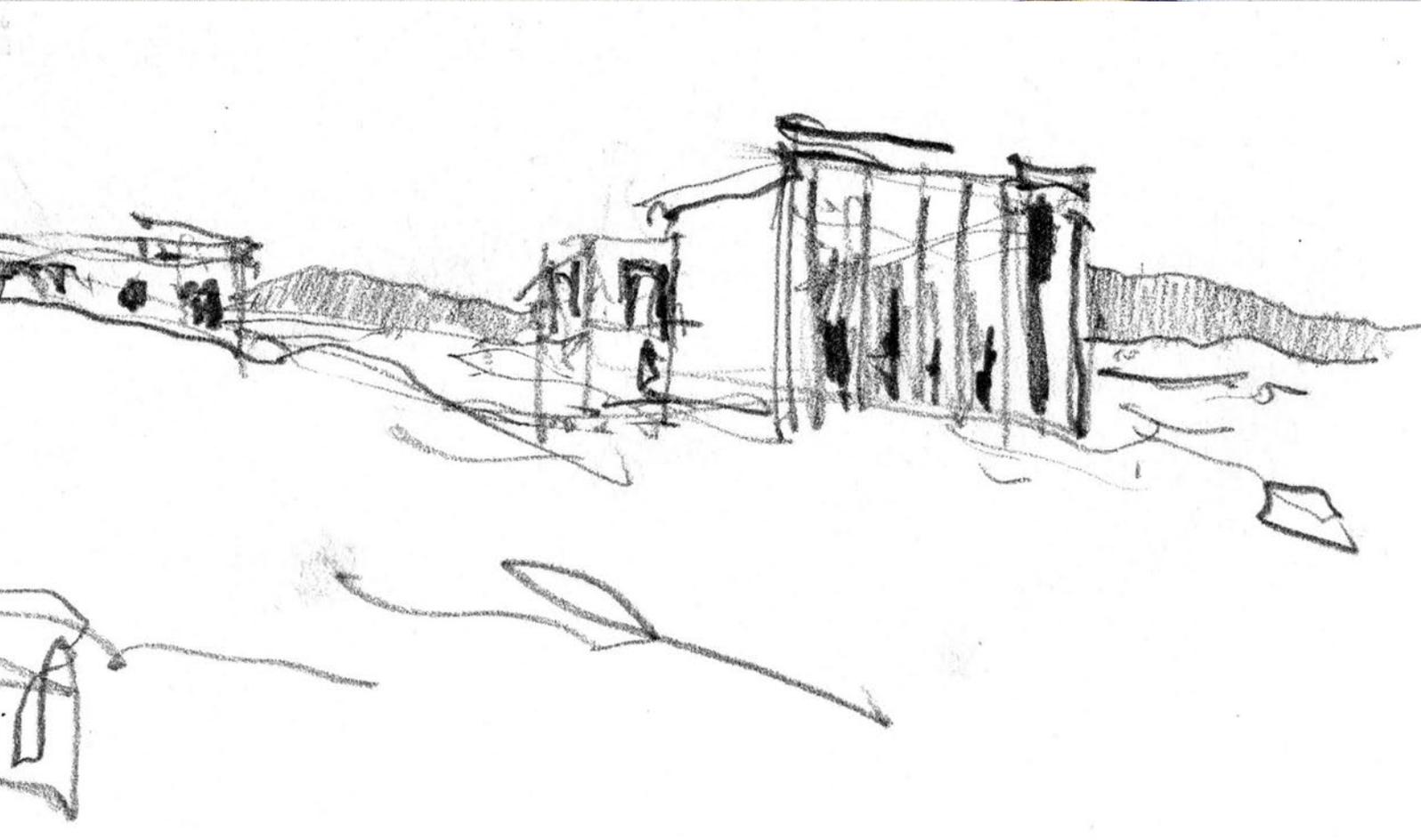
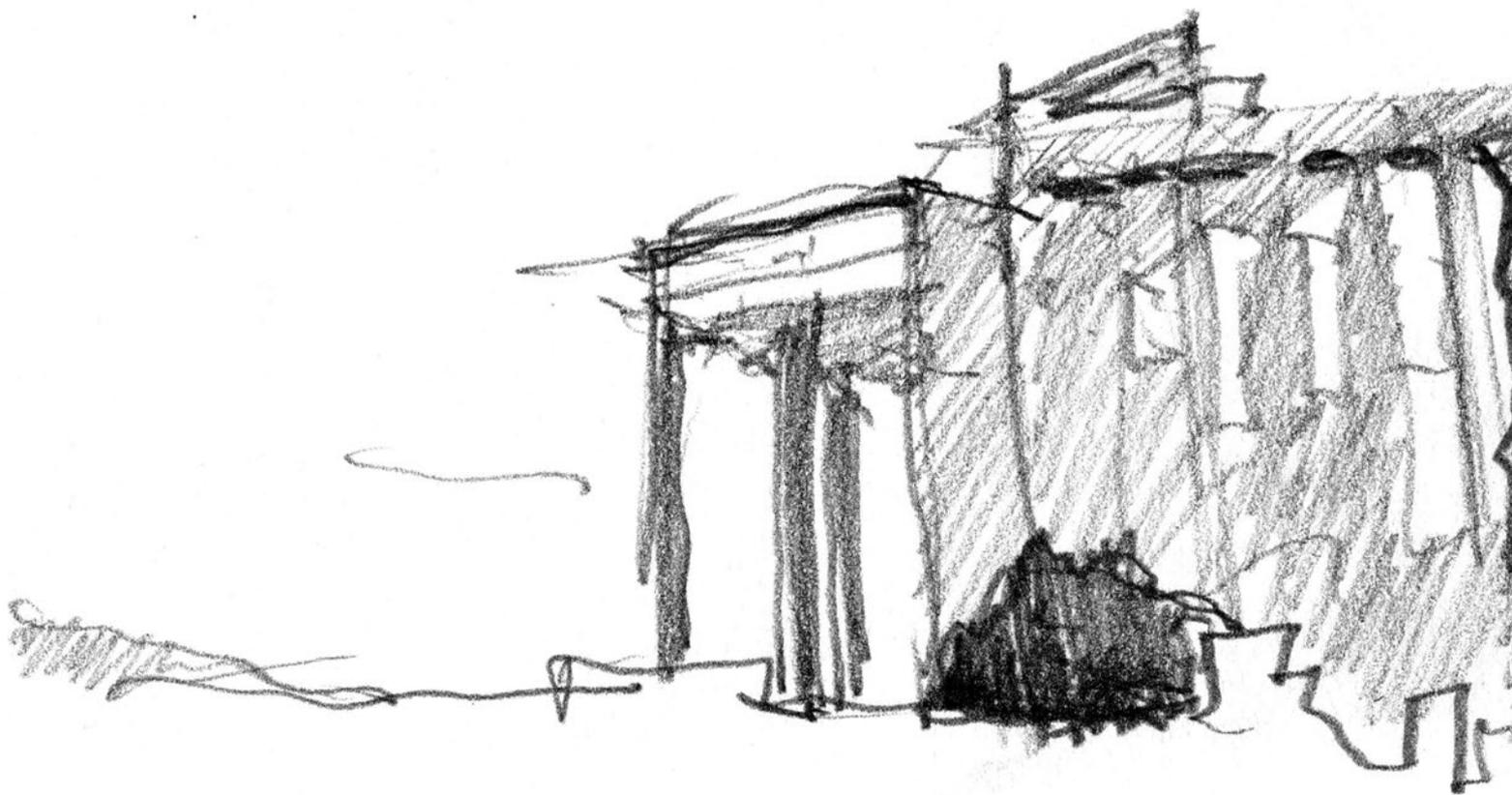


Fig. 230: RIGHT: The Erechtheion and Parthenon facing north east, 1951 (Louis Kahn).

Fig. 231: BELOW: The Erechtheion facing North, 2014 (SH)



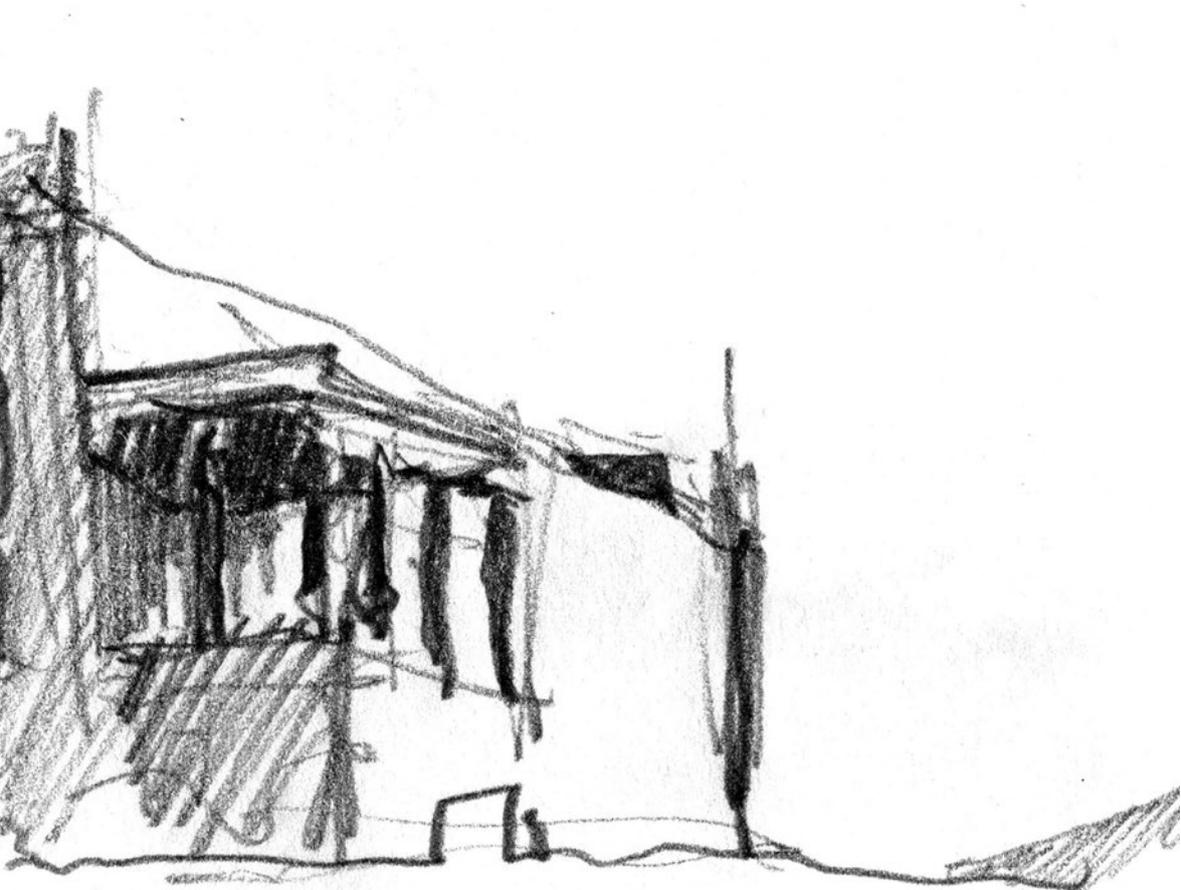
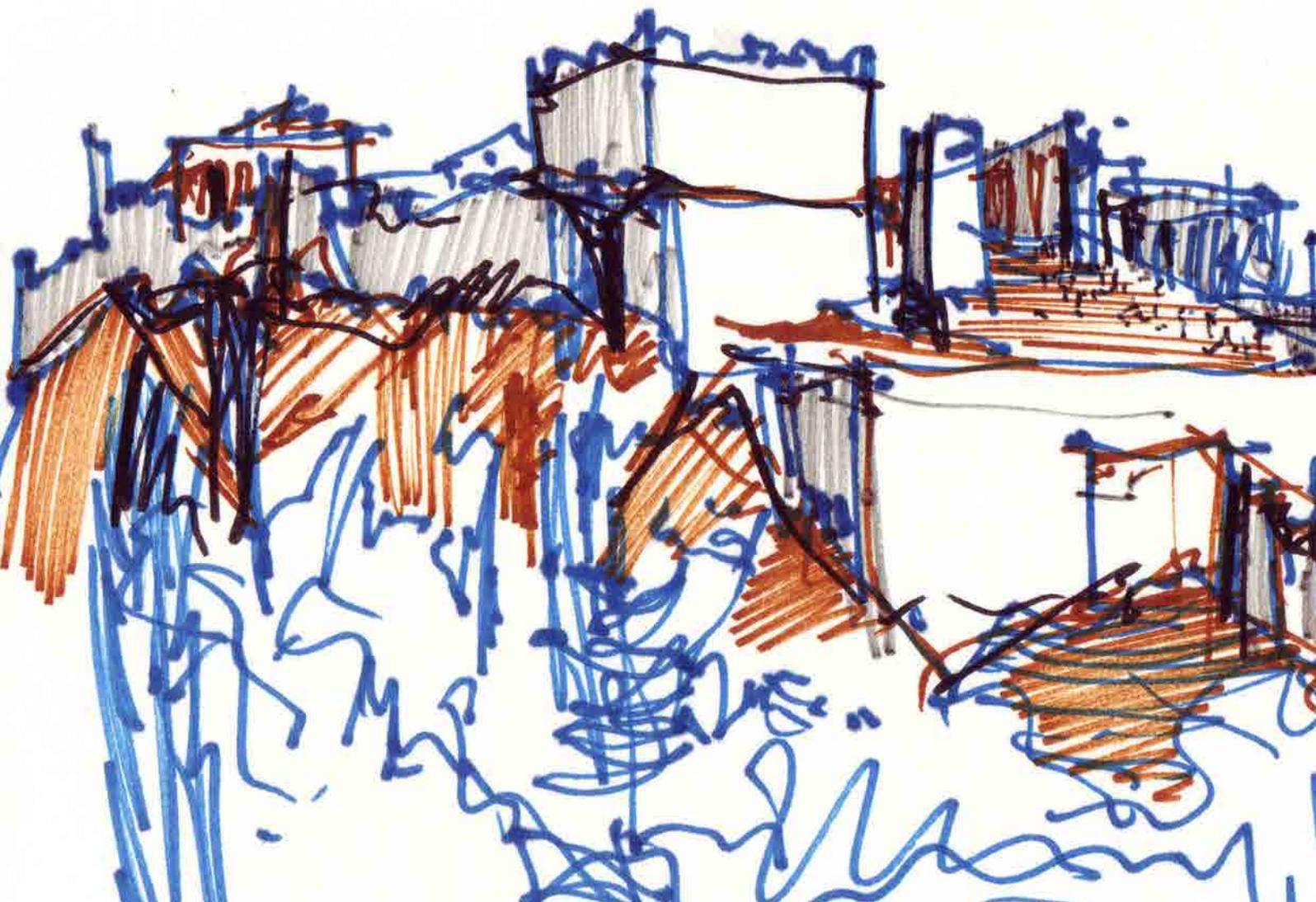
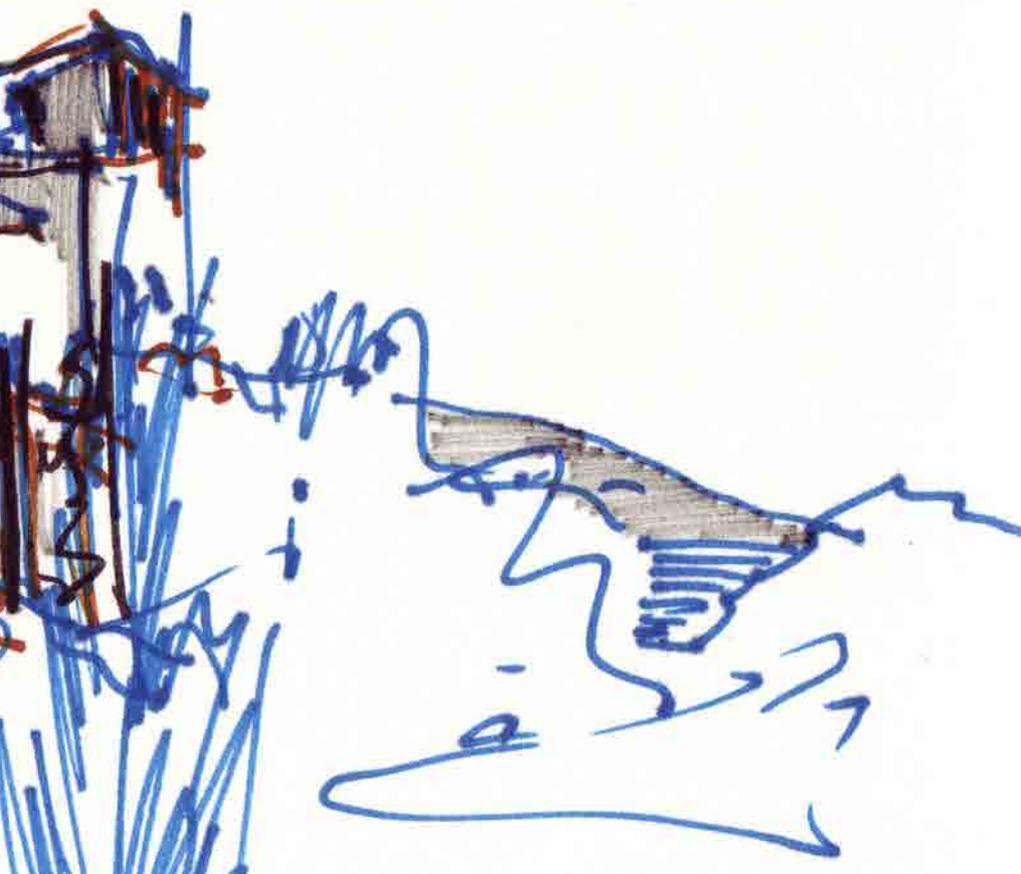
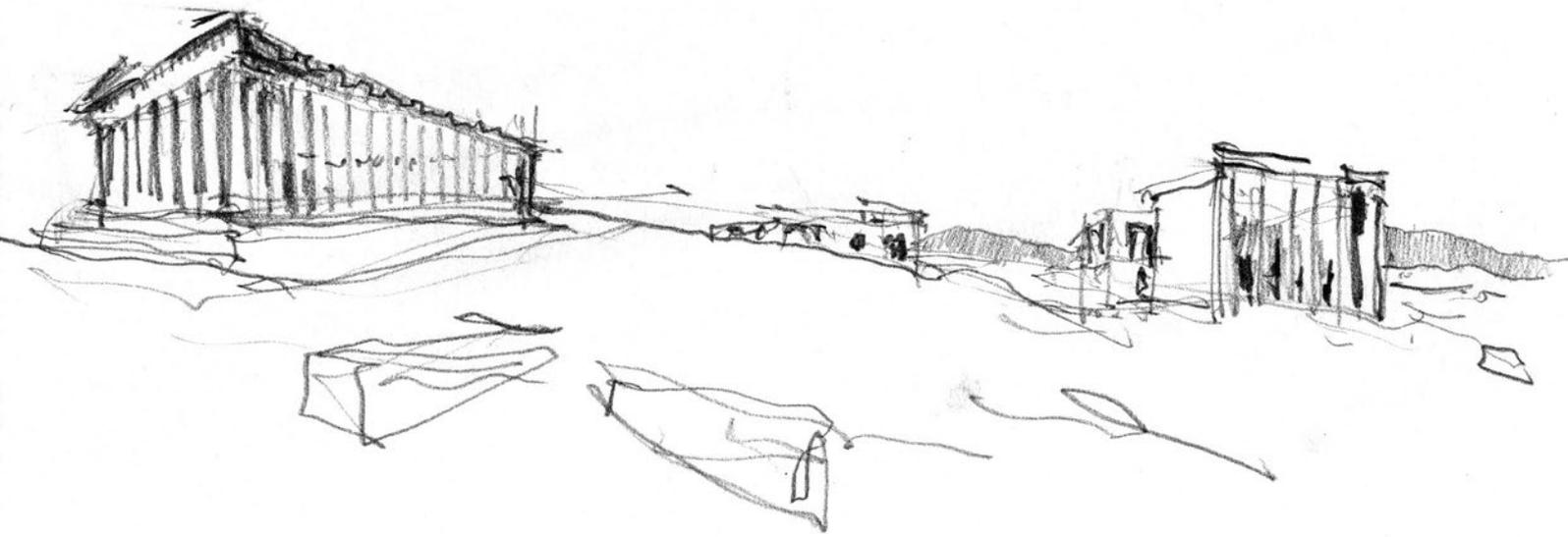


Fig. 232: RIGHT: The Acropolis, seen from the West, 1951 (Louis Kahn).

Fig. 233: LEFT: The Acropolis, seen from the West, 2014. (SH).







### 3. Comparison the author's sketches over 10 years.

The first sketch (right) concentrates on the form of the individual buildings, the masses, portraying the outlines of columns, stones ruins and shadows in the same way. The outlines of the tangible things, either broken stones or intense shadows. The line drawing traces around the visually solid parts of the view.

The second sketch (above) from a similar viewpoint, treats the individual buildings as volumes, with little attention to their details but more interest in the spacing between them on the levels of the plateau, the orientation of their facades and the openness to the distance.

The first concentrates on outlining objects, the second on using the built volume to define the qualities of an open space and its relationship to the distance.

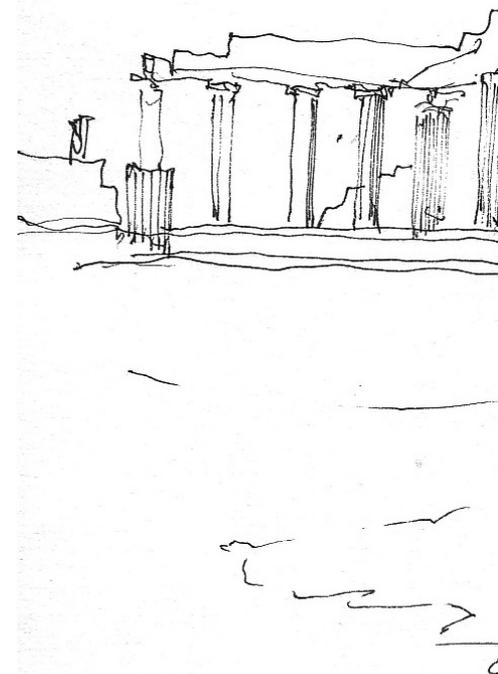


Fig. 234: LEFT: The Parthenon, Propylaea and Erechtheion facing south west, 2014 (SH)

Fig. 235: BELOW: The Erechtheion (right) and Parthenon (left) facing south east, 2004 (SH).



## Summary

This chapter has aimed to illustrate and as far as possible explain my point of view when sketching architecture in place. This has built upon the conclusions of previous chapters by explaining my subjective understanding in relation to that of Le Corbusier. This point of view is not constant, but will provide a basic connecting thread through the analysis of the following projects.

The method of comparing in-situ sketches has both advantages and limitations. First, the method has also maintained the same motivation for drawing which is the basic intention to learn through the act of sketching whilst immersed in the qualities of place. Comparing photographs would allow a more detailed analysis of how Le Corbusier selected what to draw and what modifications he made to the views. However even this would be inexact as the photographer has also a subjective control over both the camera and developing the image. Likewise different atmospheric effects may be to a large extent beyond the photographer's control. Differences in location of view point, as well as the endless variety of other unknown factors which have influenced both sets of drawings mean that the objects drawn can never be exactly the same. Nevertheless, despite contemporary difficulties of access and overcrowding, let alone the substantial reconstruction of some buildings, the views drawn are similar enough to allow a reasonable comparison between the concepts behind both sets of drawings. Accepting that the objects observed are approximately the same, the differences which exist between travel sketches by different authors illustrate the different subjective criteria of the two sketchers. This comparative method positions one point of view relative to the other.

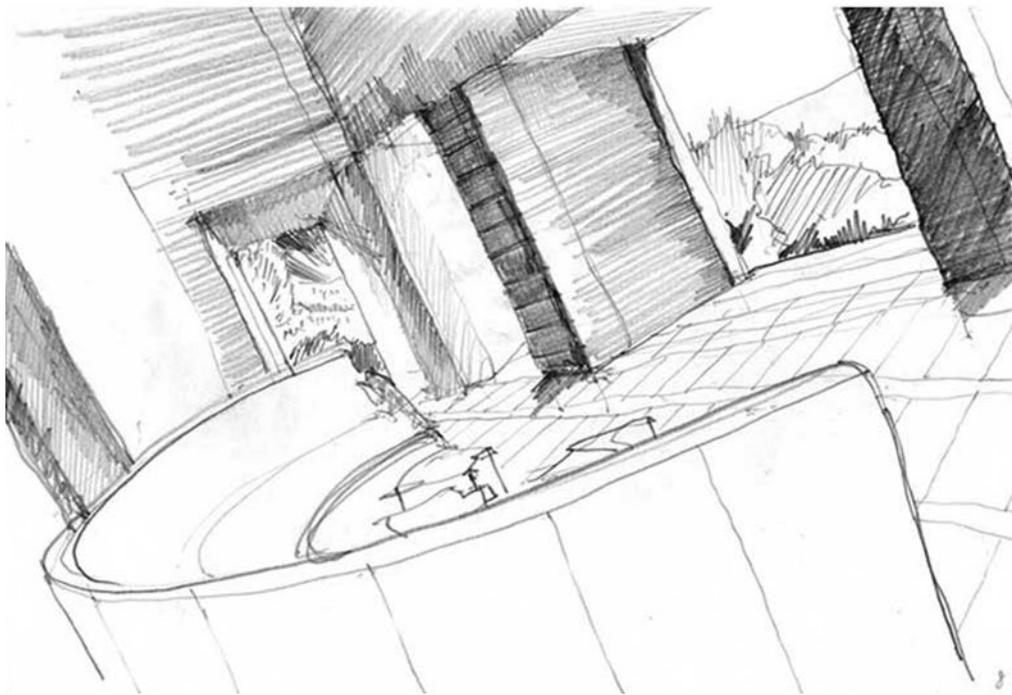
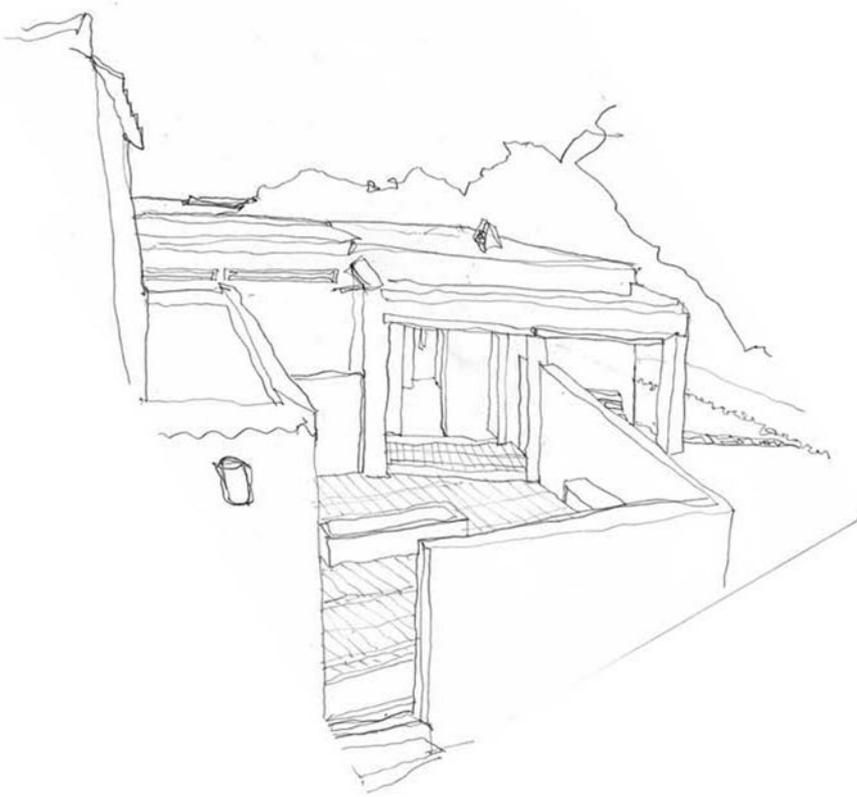
Differences in these two subjective responses have been analysed in detail revealing various characteristic points in the new sketches: A greater focus on architectural objects and the spaces they contain within them and the connection between neighbouring spaces, than in the wider spaces between buildings. Compositions based less on symmetry and carefully proportioned regulating lines and axes than in Le Corbusier's sketches. Greater emphasis on the irregular, free form nature of the ruined spaces. Greater emphasis on the skyline than on the connection of buildings to the ground-plane.

This method has formed a common link between the investigations from a past era, from a dramatically different context and a

contemporary investigation. Establishing a connection between the ways of understanding classical precedent from the perspective of form and how it provokes movement and establishes relationships with some of the specific and basically unchanging characteristics of place.

In conclusion, all of these drawings present an individual interpretation of the Acropolis. Each architect romanticises the view to accentuate his own particular interest. Le Corbusier focuses on the monumental and processional character of the buildings, Kahn emphasises the massive earthen monumental scale of the complex, Jacobsen portrays an assemblage of almost standard parts set back into the distance as an idealised vision still out of reach. My own sketches focus more on the interstitial spaces linking external spaces through porticos, level changes and shadows.

With the subjective nature of my point of view now to some extent illustrated, this will allow a clearer and more objective understanding of the following chapters which use equivalent in-situ sketches to investigate other more recent buildings.



## CHAPTER 8

# CAN LIS

An in-situ sketch analysis of Jorn Utzon's house, Can Lis, Mallorca. 1971

**Fig. 236:** View of the entrance and salon patio facing South (SH in-situ).

The travel sketches discussed so far have been mainly of the Acropolis. The particular nature of this subject matter should be considered before continuing to other sources. The buildings of the Acropolis as ruins reveal some of their original characteristics more clearly than others. Colour has disappeared over the years leaving a striking continuity of material across floors walls, columns, lintels and roofs. Although individual buildings have clear architectural functions such as the entrance threshold of the Propylaea, the specific use of the various parts of the complex have changed so many times with subsequent modifications to the building fabric that the original uses of the different spaces and structures are no longer clear from the remains alone. The value of the architecture may be appreciated irrespective of how it was intended to be used, at most simplified to a ceremonial

**Fig. 237:** View of the salon patio facing East (SH in-situ).

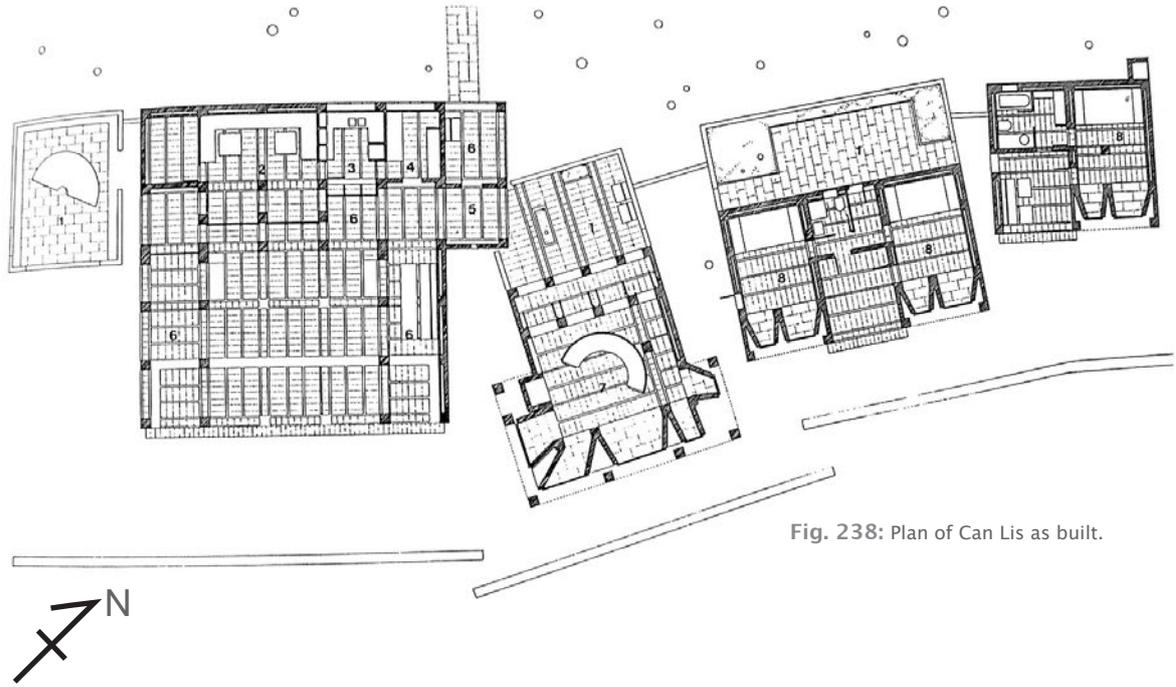
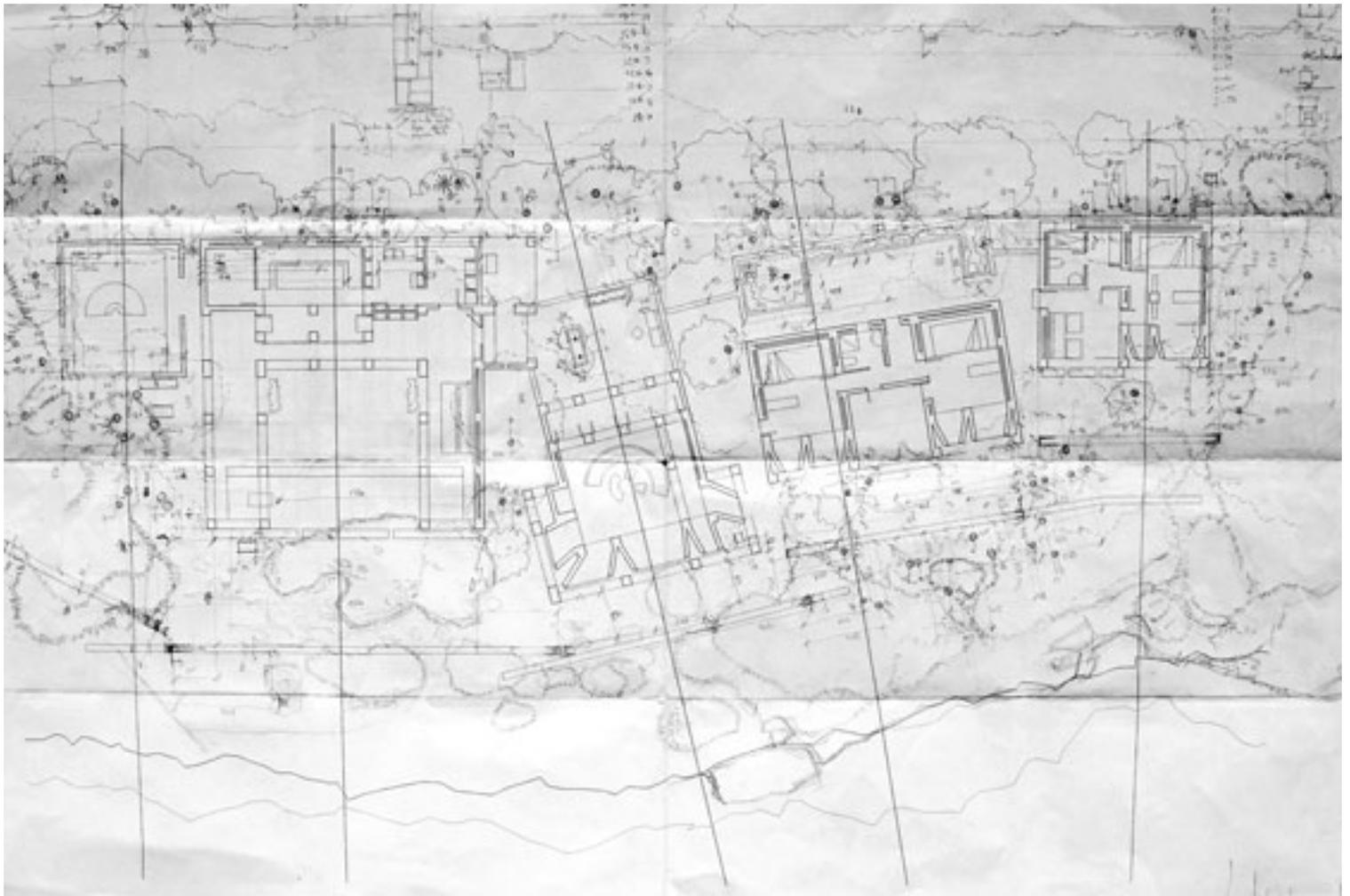
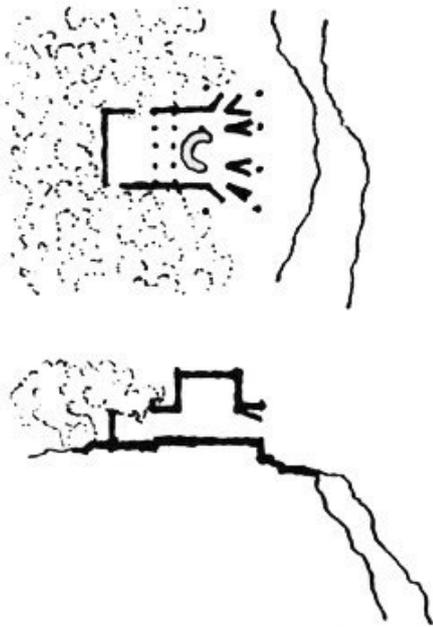


Fig. 238: Plan of Can Lis as built.

Fig. 239: BELOW: Site Plan of Can Lis with vegetation in 2012 (Tomas Montis).





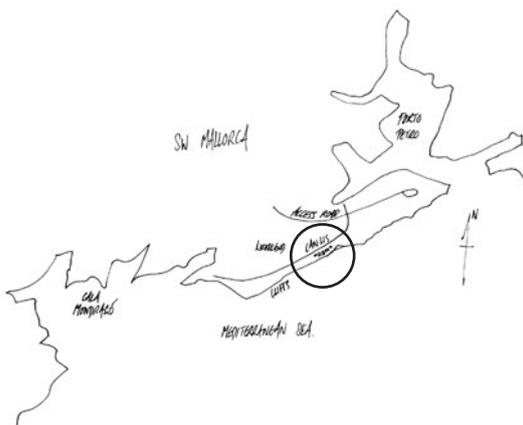
**Fig. 240:** Concept sketches of Can Lis. These are apparently drawn for publication some years after the project was completed. (Utzon).

route between the basic functions of entrance temple etc. Sense of place is determined above all by major geographical factors, but is distinctly isolated from the complexities of the surrounding urban environment. From the perspective of travel sketching, this is interesting as it gives much freer reign to the imagination than when drawing a building in a more complete condition. Le Corbusier's sketch of the temple at Delphi shows his imagination reconstructing the temple from the ruins that he actually saw before him (Daza, 2015b). In some respects the freedom which ruins offer the creative sketcher, benefit this kind of imaginative but almost excessively subjective kind of drawing.

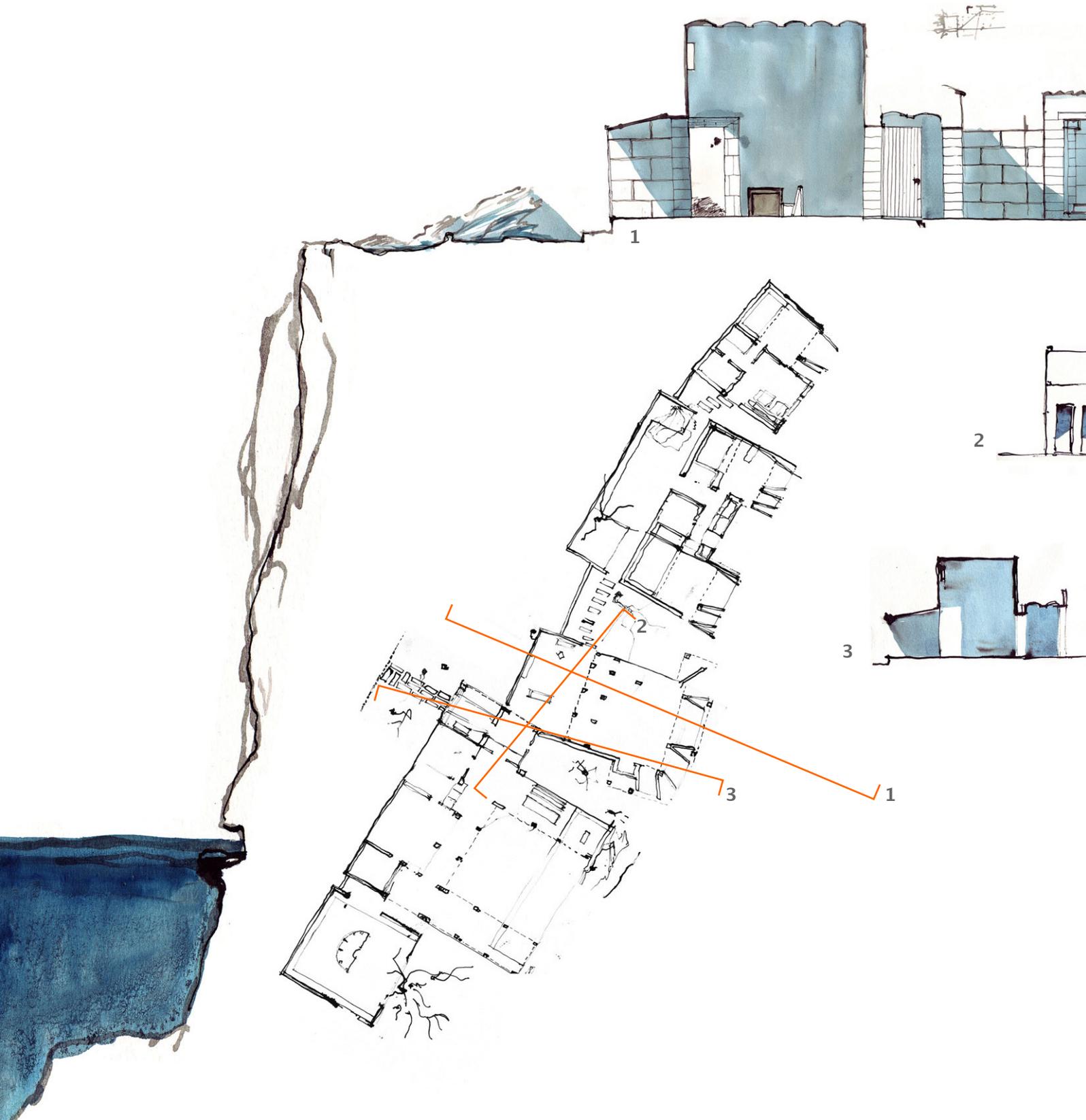
Another significant point is that nearly all that is known about the Acropolis and its buildings is the result of the analysis of scholars in relatively modern times. There is very little original information as to the original intentions behind the design. However this lack of original sources is engulfed by the vast amount of later scholarship which now spans several centuries of theory and research. The travel sketch drawn today may not be inhibited by the stated intention of the building's maker, but the vast agglomeration of secondary sources, including so many sketches from other architects, is bound to colour the outcome of any travel sketch to some degree.

Bearing in mind these considerations about the nature of the Acropolis as a subject for investigation through sketching in-situ, the discussion of how architectural projects reveal place now focuses on a modern building, and applies the same form of in-situ sketch analysis to Can Lis, a house built by Jorn Utzon in Mallorca in 1971 (Weston, 2002; Ferrer Forés, 2006; Moller et al., 2004; Keiding et al., 2004). The design of the building appears to have been deeply concerned with the relationship between the project and place – in this case place is essentially a natural setting within a dramatic topographic and climatic situation, and an important material culture - a pristine natural site on a cliff top on the south eastern coast of Mallorca. The building therefore relates clearly to place through the attitude it presents to nature, geography and climate. The small scale of the project compares to the house in Formentor, discussed above, making the project manageable enough to enter into considerable detail.

**Fig. 241:** BELOW: Sketch location plan of Can Lis (SH).



In common with the Acropolis, there is very little original information regarding the design of Can Lis. It lacks the design sketches and site studies which might have explained the design process behind the project. The most famous drawings by Utzon



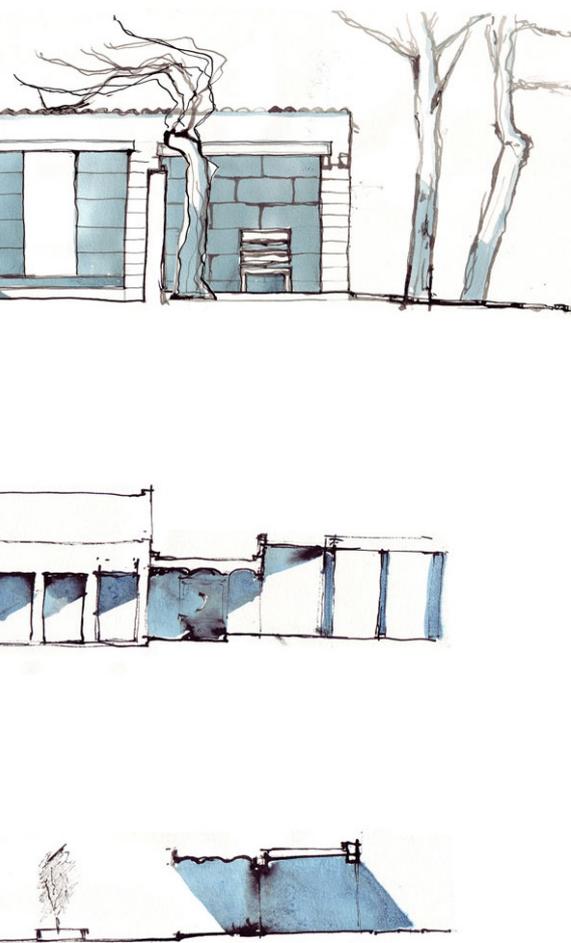


Fig. 242: In situ sketch sections and plans of Can Lis (SH).

of the house are retrospective, but they serve to explain an idea, a concept in his mind's eye. The majority of sources are secondary, and often descriptive or anecdotal. This makes it an interesting project to analyse purely through drawing in-situ, as the many unknown qualities of the design are left to be uncovered by the sketches.

Despite the great leap from the Acropolis to Can Lis, Utzon's house does in fact share an important range of structuring principles with those of the Acropolis according to LC's interpretation. Some of these are immediately evident, such as the cliff top setting, the distinctly antique, temple like quality of space and mass in various parts of the house, the simplicity of the material and its continuity throughout the project (Weston, 2004). The underlying design strategies may be seen to also coincided in various ways with those Le Corbusier studied on the Acropolis. Similar themes are found to be significant again. The artificial ground plane and the various relationships this creates with the rock base recall the ideas which interested Le Corbusier on the Acropolis. Equally, the importance of the sequence of spaces and the highly considered thresholds between one area and the next are also common to both. It is a building from a recent era, which although old enough to have grown into its site and matured its sense of place, still relates to a modern way of thinking about and designing architecture and place. Together with the strong connection of architecture to place and few sources regarding original intentions, this makes the house especially appropriate to investigate through drawing in-situ.

The chapter analyses Can Lis by Utzon using a set of approximately fifty of my in-situ sketches, all drawn during a two-week period spent at the house during July 2012. The sketches have been redrawn in order to concentrate their meaning and redrawn again in diagrammatic form in order to explain their major ideas. These have then been grouped according to various principle themes which have arisen out of the sketches, explaining various relationships across different parts of the house and site. A selection of the site sketches and final diagrams explain these ideas below.

The analysis is organised into various focal points which the in-situ sketches have come to focus on concerning how the house responds to its natural setting. These relate to the movement of a viewer from landscape through space, depth created through architectural composition of frames and landscape, relationship

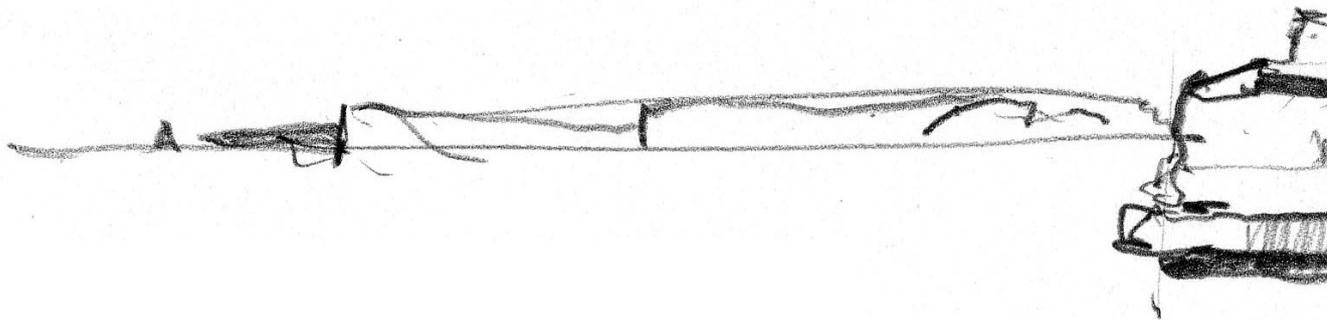




Fig. 243: View of the site facing South west (SH in-situ).

Fig. 244: View of the dining area and kitchen courtyard patio facing south west at dusk. (SH in-situ).

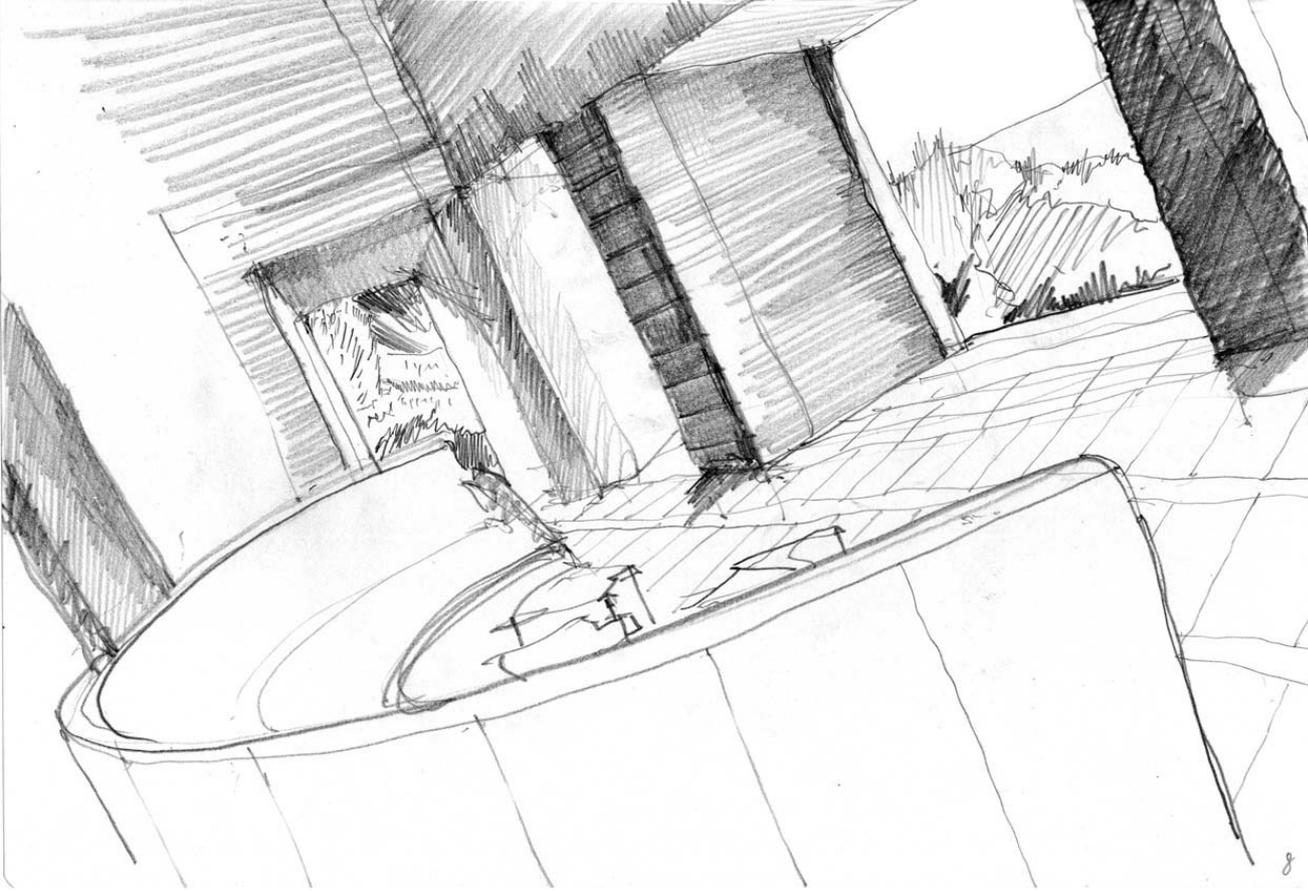


Fig. 245: View of the salon facing East (SH in-situ).

Fig. 246: View of the sea cave below the house facing South(SH in-situ).





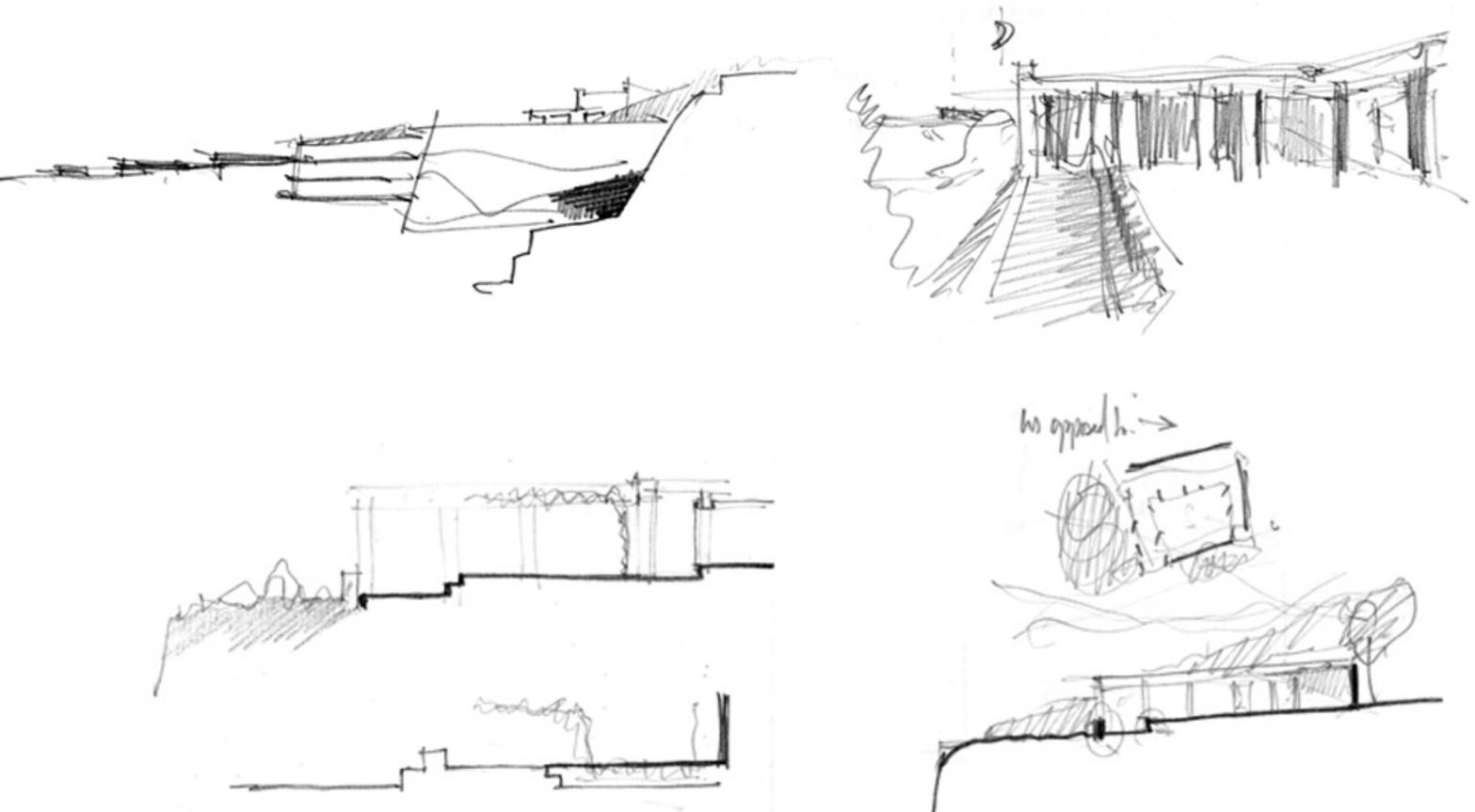
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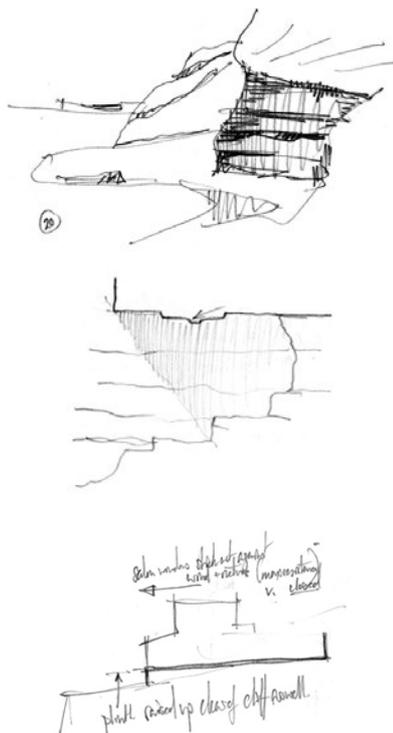
of the house to the cliff top composition of facades contrasting built and natural elevations, growth and evolution of the form of the components of the house. These are by no means exhaustive, but simply those concepts which have arisen directly as a result of the experience of drawing the house.

**Fig. 247:** BELOW: Diagrams and sketch sections through the dining courtyard (after Utzon's own few remaining design sketches) showing the platform which the house is built upon (SH).

**Fig. 248:** RIGHT, top to bottom: Diagrams redrawn from the author's site sketches showing the geological strata of the cliff beneath the house, the cave, and the platform of the house (SH).

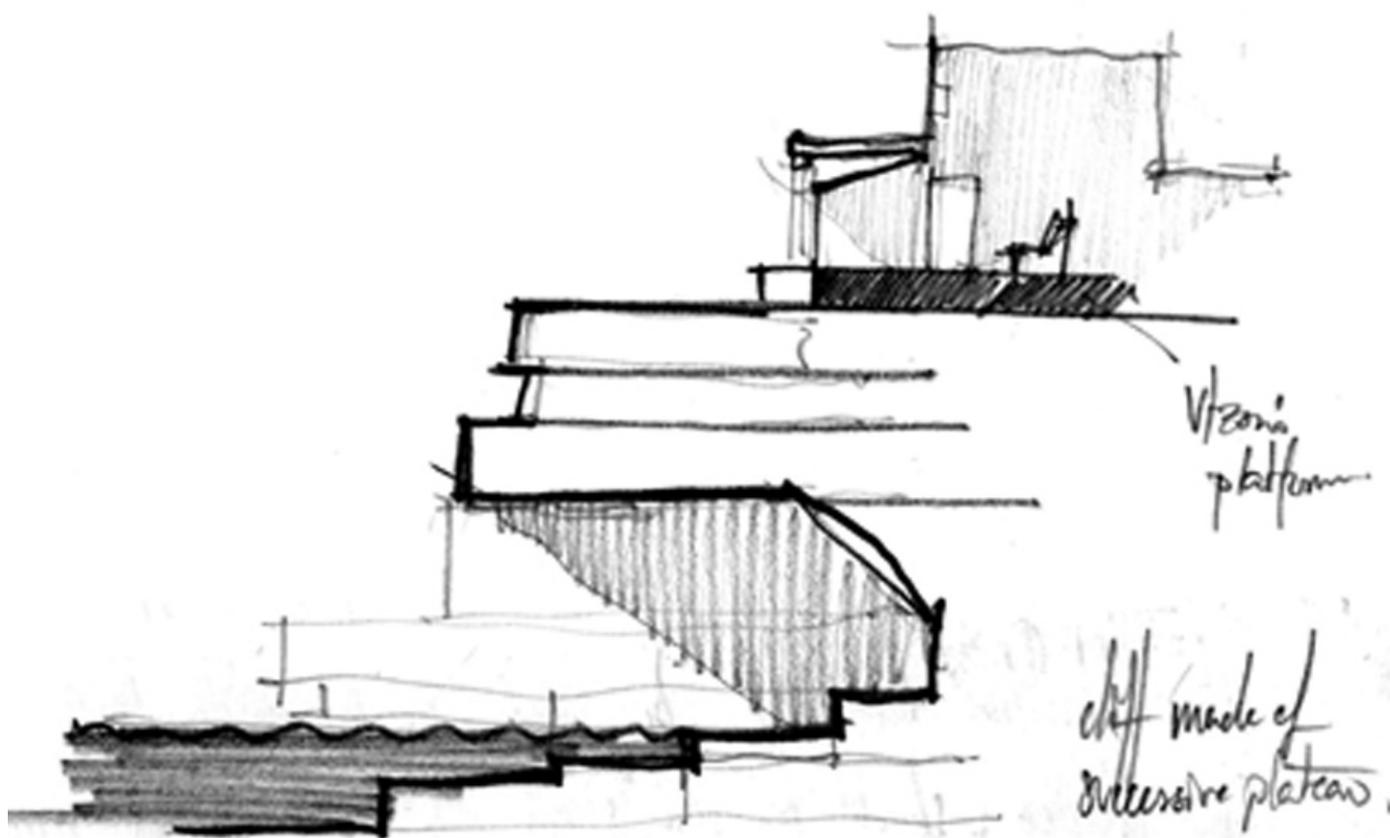
**Fig. 249:** RIGHT, bottom: Diagrams redrawn from the author's site sketches showing the platform of the house and the overall sequence of horizontal layers (SH).





### Place, space and material

The geological context is reflected in various aspects of the building. The distinct strata of the cliff faces is capped by a smooth layer of Santanyi stone (a hard local sandstone) which forms a stepped platform defining the dramatic areas of the house. Although level changes are small. The position of steps and the effect this has on view heights, or delimitation of one area from another had a crucial impact on the relationship of the observer with the surrounding natural setting. The design of the “platform” was important to Utzon as can be seen from many of his section sketches during the design. The theme of platforms had been central to Utzon’s work for years, but the treatment of such a fine capping layer framing a smooth surface on top of a whole series of previous sedimentary layers was new at Can Lis.



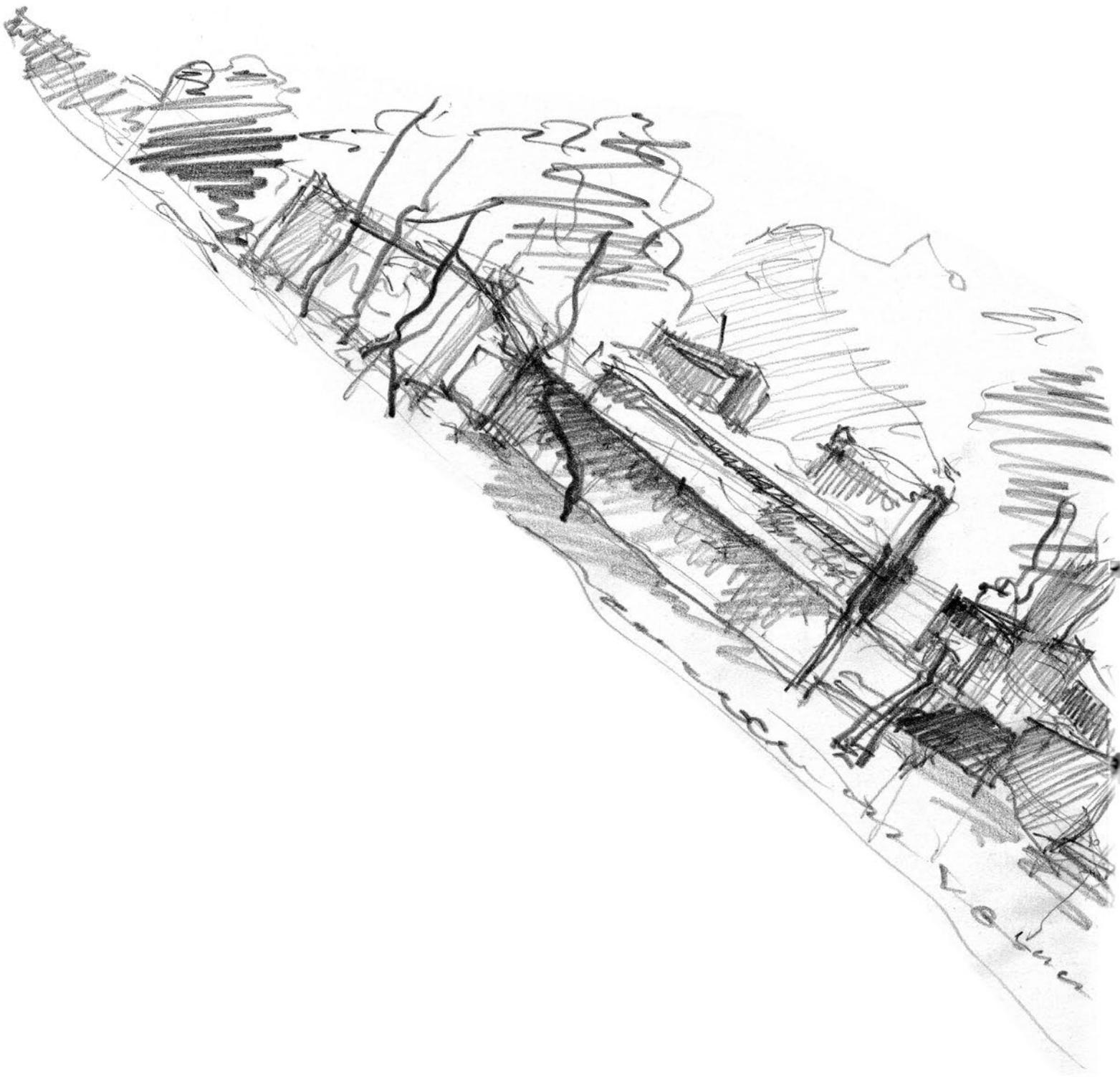


Fig. 250: View of the north eastern facade showing the entrance from the road (SH in-situ).

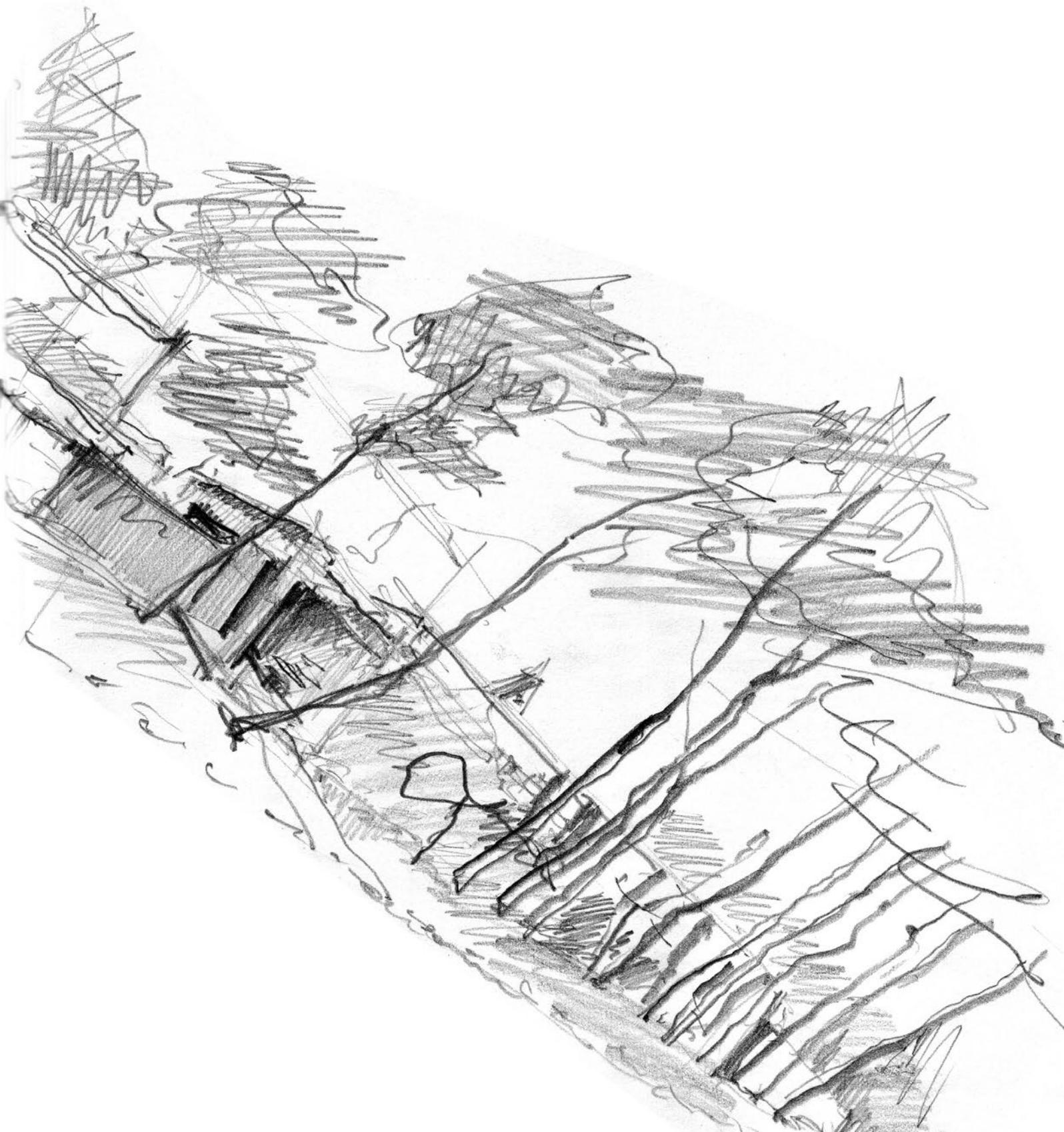
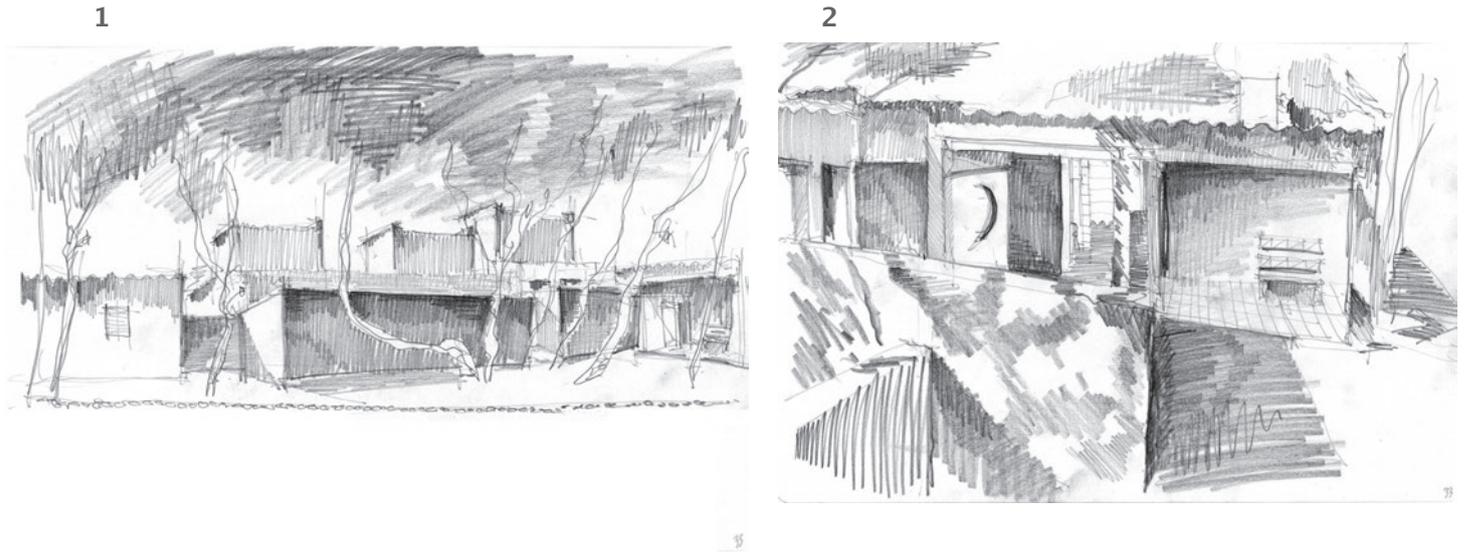
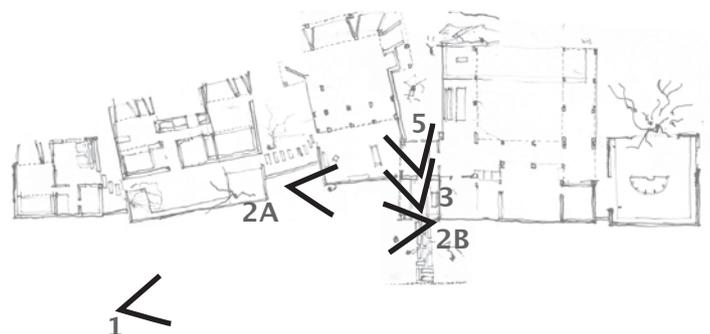


Fig. 251: LEFT to RIGHT: Sequential views of the approach from the road and entrance to the house (SH in-situ).

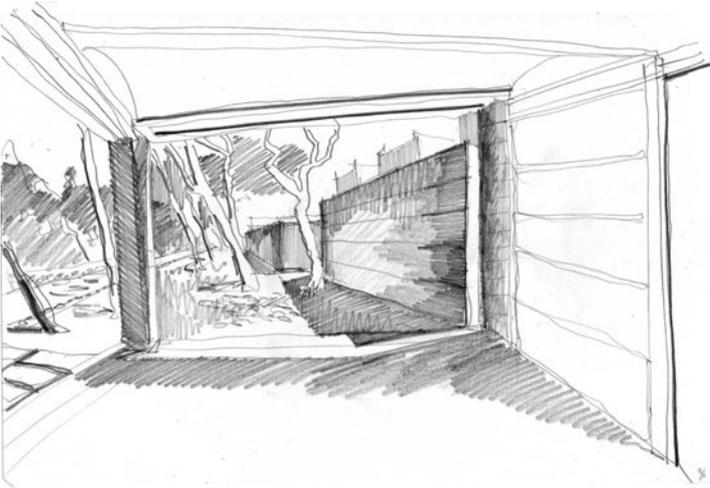


The salon has a continuous material across floor and walls giving a particular monolithic and geological feel to the space. The sea cave directly below, where Utzon often went, shares the same monolithic material quality. The depth of the window reveals in the salon gives the impression of massive wall thickness more equivalent to the geological scale of the cliff than to normal domestic construction. Both spaces also focus their views towards the sea and horizon. In both examples, Utzon was aware of, and particularly sensitive to these aspects, platforms, material and seawards orientation. How intentionally the house was designed to reflect these natural attributes and to what degree the intention behind them was independent is difficult to determine. However the fact that they have become major aspects of the project helps to establish strong connections with the form, materials and orientation of the place.

Fig. 252: RIGHT: Entrance porch (SH in-situ).



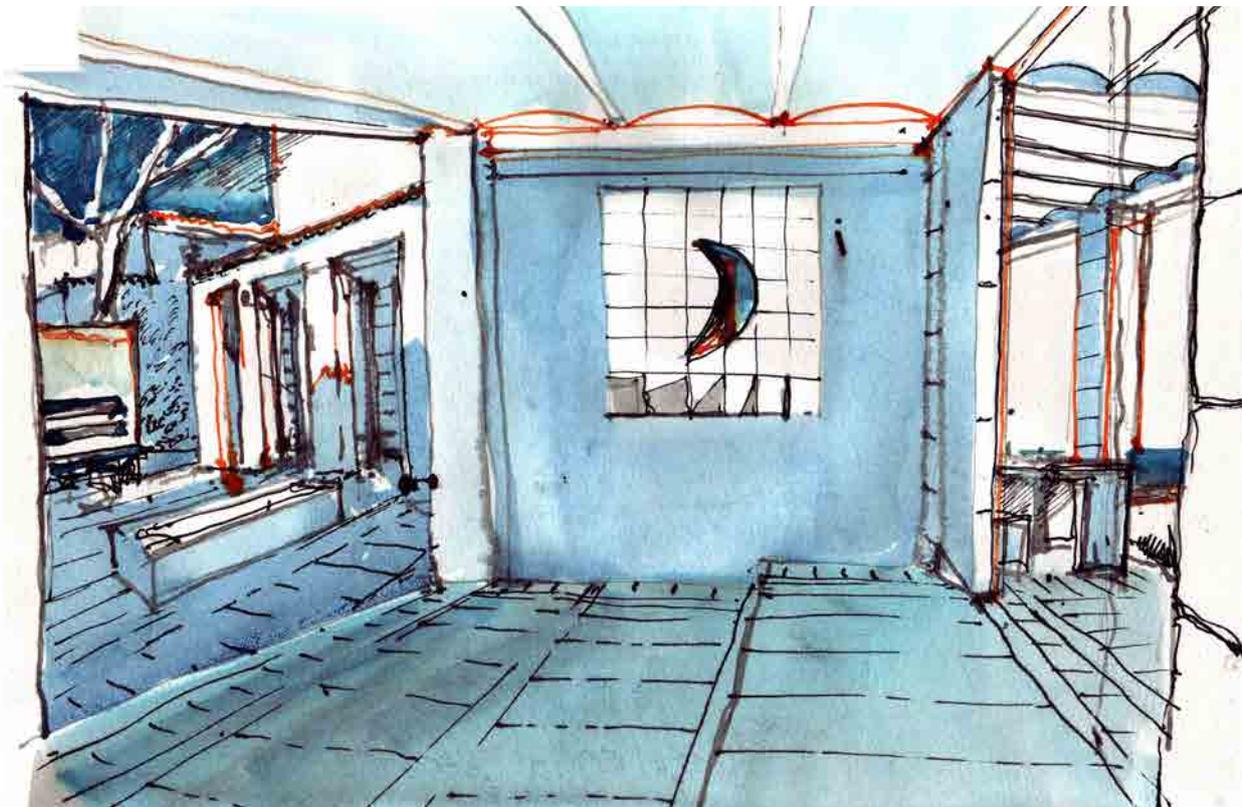
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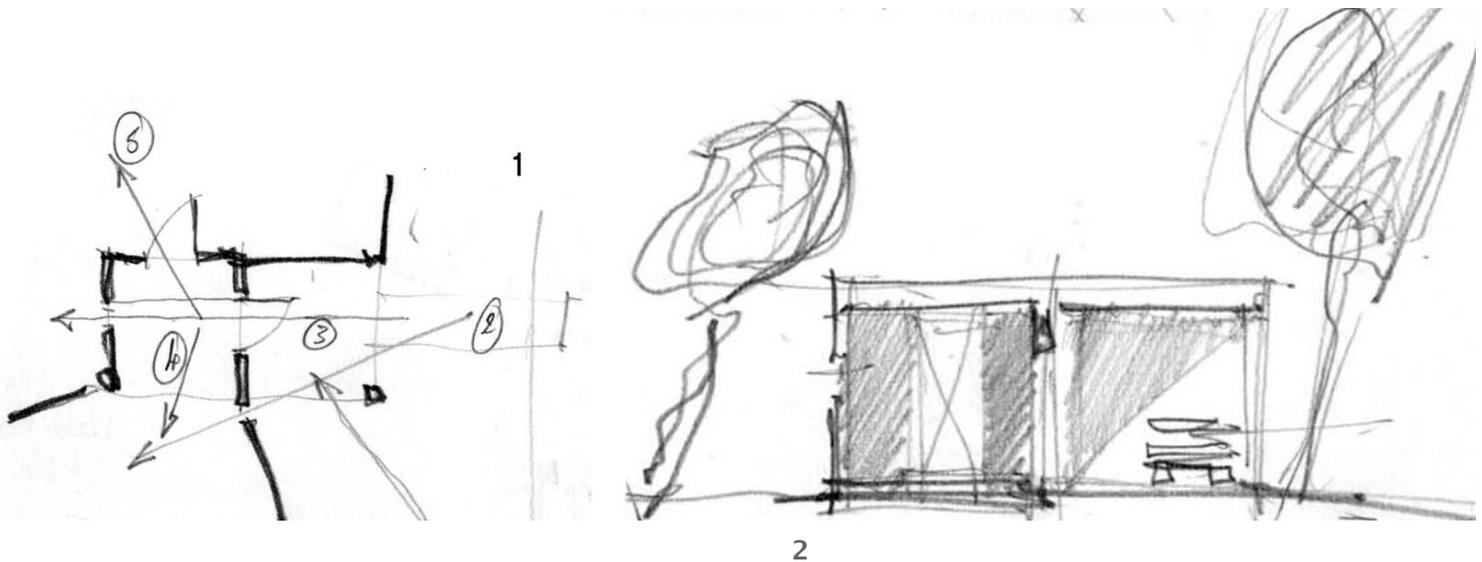




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Fig. 253: Sketch plan diagram of the entrance (SH).

Fig. 254: Sketch diagrams of the entrance sequence. (SH).

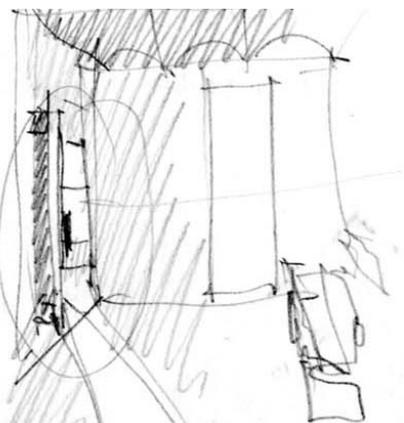


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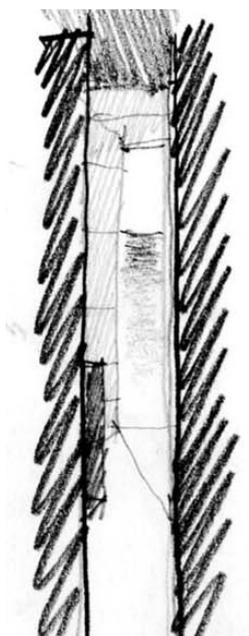
### Approach and entrance

The house is approached along a road leading from the village and port to the north. The building breaks up the approach into a series of sequential views, each seen in order and becoming more detailed the closer the observer get to the point of entry.

Initially the blank wall on to the road curls back, widening the planted space between road and wall and revealing a frontal elevation of a porch (1). Next, one becomes aware of the door and a bench beside it, both elements of the entrance furniture reducing the scale of the building to the human scale of the visitor (2). Turning off the road towards the porch and the front door, a slit through the wall (3) reveals, at close quarters, a glimpse through to the interior of the patio, salon, sea and horizon beyond (4). Passing through the door one enters a small, low covered vestibule opening to either side (5).



3



4

Fig. 255: View of the salon patio and entrance porch facing south west (SH in-situ).





Fig. 256: View of the salon patio and entrance porch (SH in-situ).



1



2

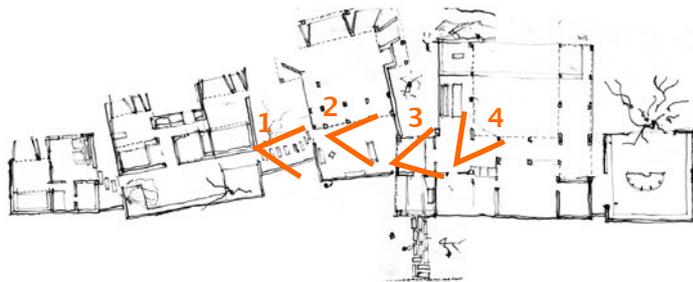
Fig. 257: LEFT to RIGHT: Sequential views heading south west from the salon patio, through the entrance vestibule, into the dining courtyard (SH in-situ).



3



4



## Thresholds

The sequence of spaces is accessed along the landward edge. A path connects them, but is broken up into distinct regions through visual interruption and or spatial compressions and lockable doors. These separating elements accentuate contrasting conditions from one space to the next, thereby emphasising certain specific qualities of place in new and unexpected ways.

The sequence from the enclosed, walled salon patio to the entrance vestibule and into the dining-kitchen courtyard creates a spatial compression with a lowered ceiling, raised floor, close walls, and narrow doorway opening up to a taller colonnade open to the sea and the south.

The sequence of light changes from the dappled shade beneath the pine branches to the deep shade of the vestibule to bright reflected light in the colonnade and finally the brilliant sunshine of the cliff top.

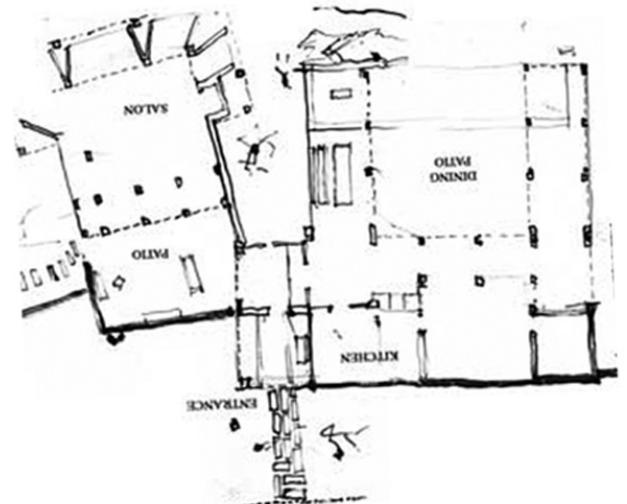
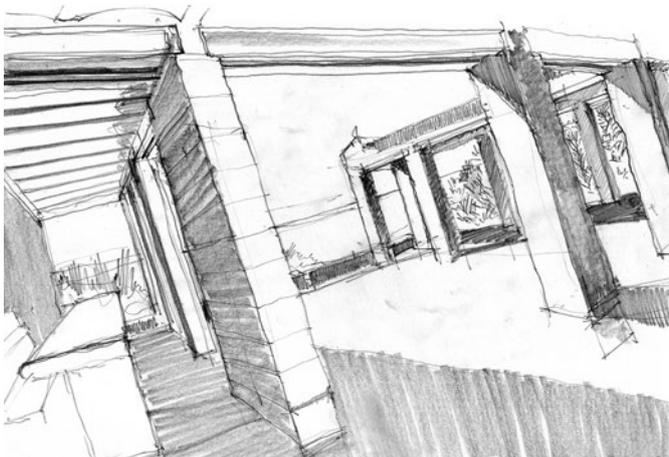


Fig. 258: Anticlockwise from left: View of the salon patio; dining courtyard; in-situ sketch plan of the transition threshold between these two open spaces (SH in-situ).

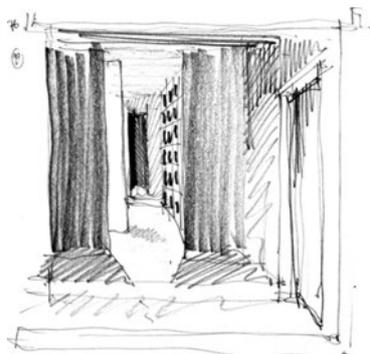
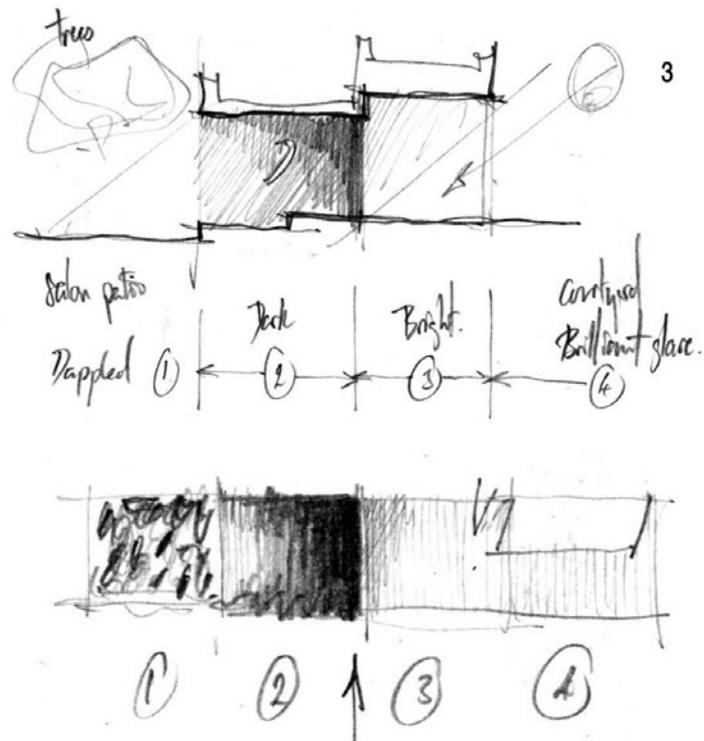
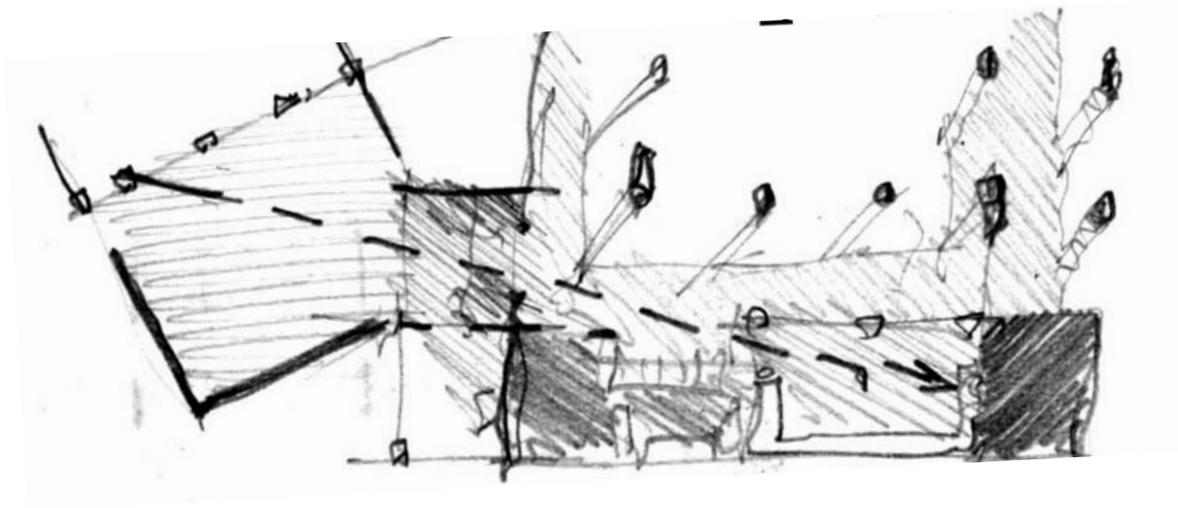
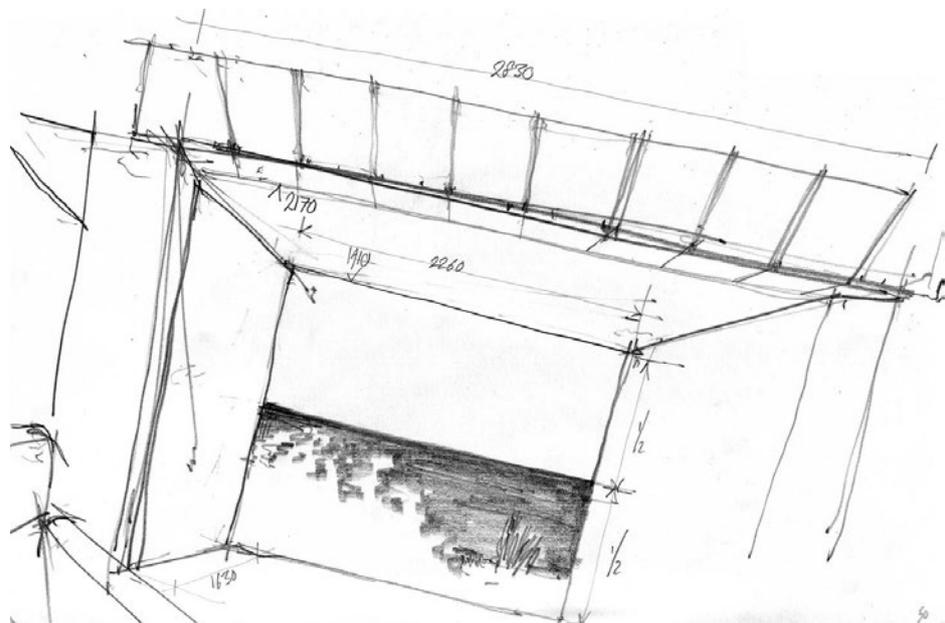
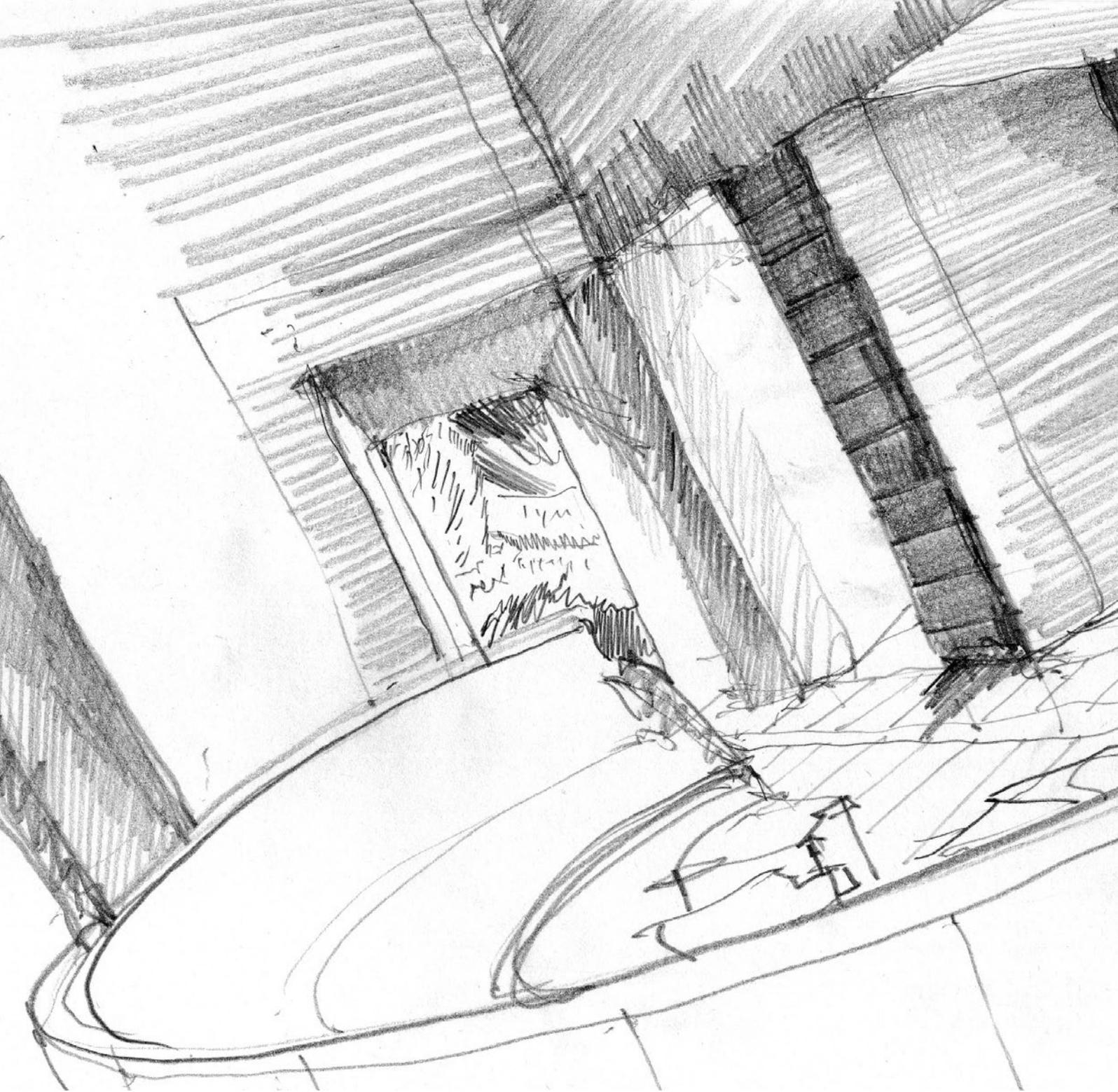


Fig. 259: Top to Bottom: Plan diagram of threshold with shadows; section diagram; Diagram of different light environments across the threshold; sketch view facing through the threshold towards the dining courtyard (SH).



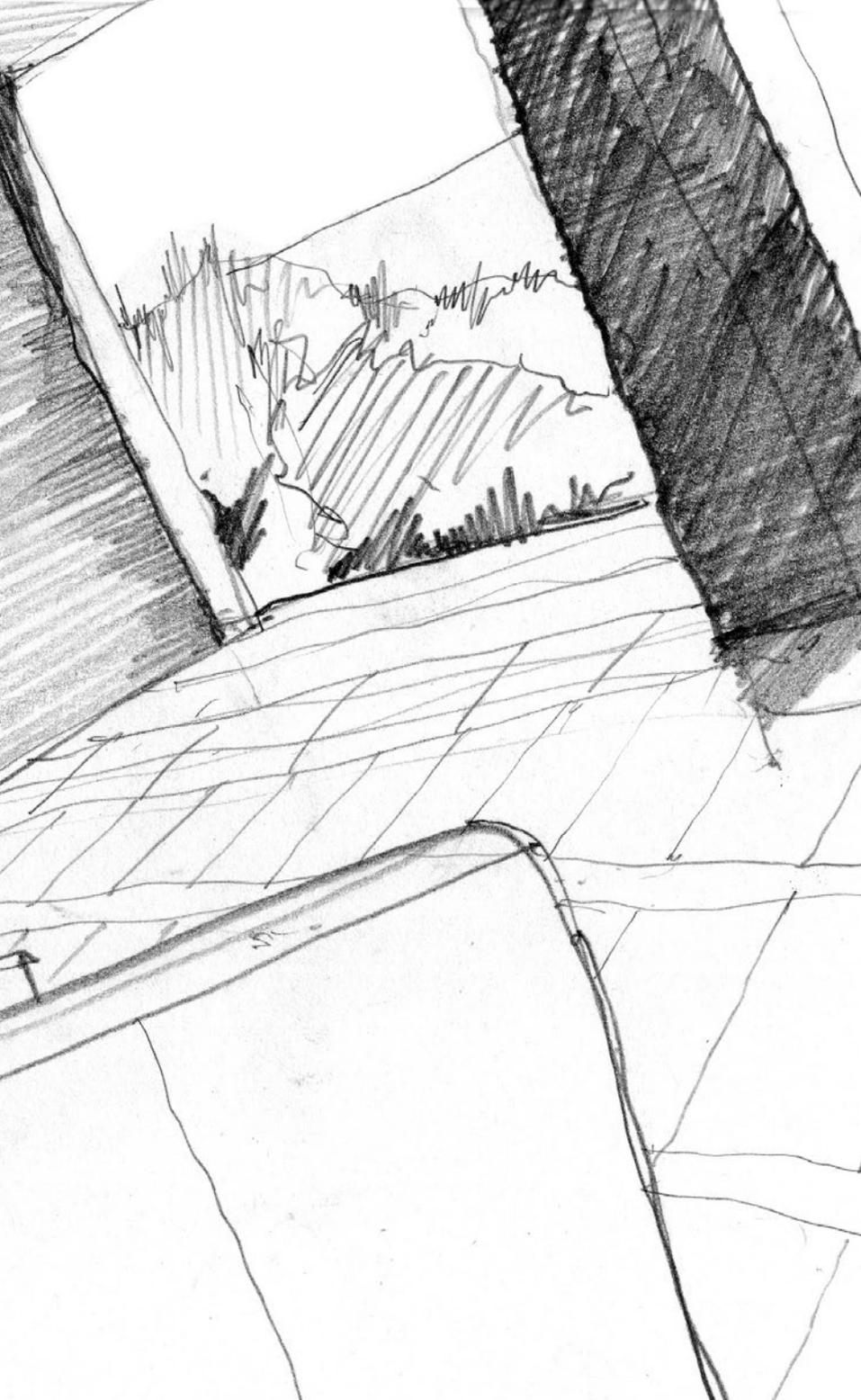


Fig. 260: Salon with built in bench (SH in-situ).

Fig. 261: Sketch view of main central window in salon (SH in-situ).

### Framing

The site is extremely narrow, with a road to one side and an 18m cliff to the other. Given that the various spaces all face out towards the sea, the major axes run across this shortest section. The opportunity for long views along the site is deliberately avoided through visually interrupting the sequence of patios with walls and doorways. Consequently, the transverse views are made to appear deeper and more “substantial” through successive framing devices. Considering the salon, the openings to the cliff top

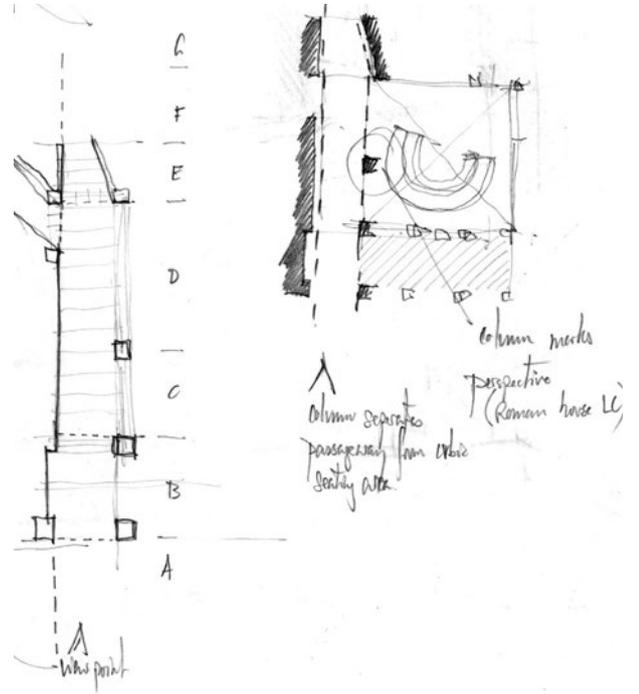
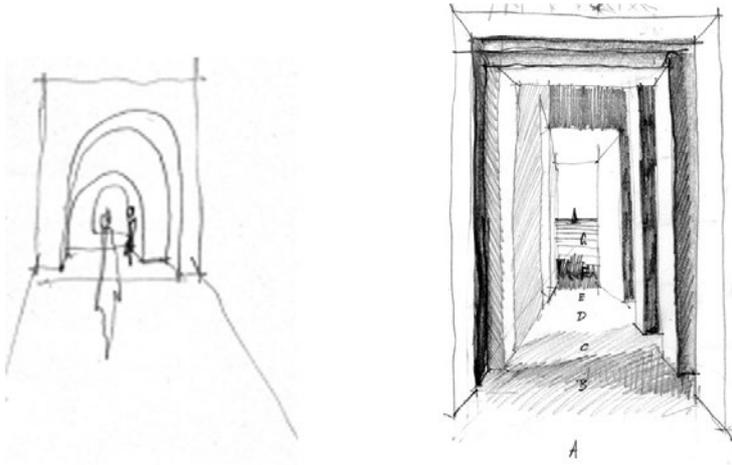
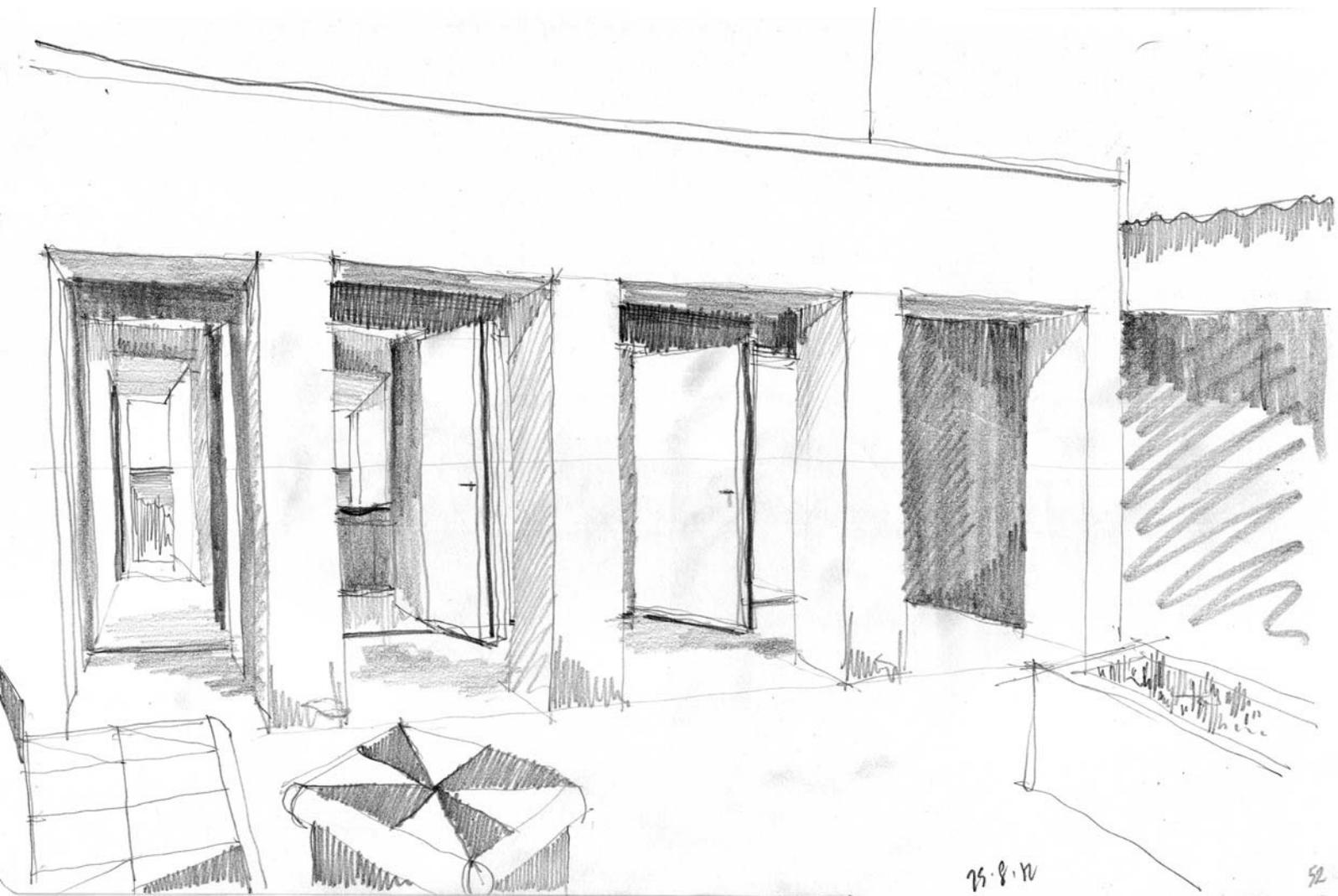


Fig. 262: LEFT to RIGHT: Redrawn from one of Utzon's design sketches for the house; perspective and plan diagrams showing the columns and openings of the north-eastern bay of the salon framing the view of the horizon (SH).

Fig. 263: Salon and patio facing South (SH in-situ).



are glazed but deep, extending the depth of the window space to form in effect, a small intermediate chamber.

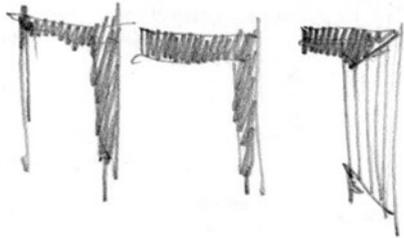
The easternmost bay of the salon extends this further, right to the rear patio. From the bench positioned there, the horizon is visible beyond a sequence of seven distinct spatial regions, each defined by distinct qualities of light and sand framed by frames of similar proportion. This visual sequence of spaces is extended by the

Fig. 264: Detail of north-eastern bay of salon facing south east (SH in-situ).

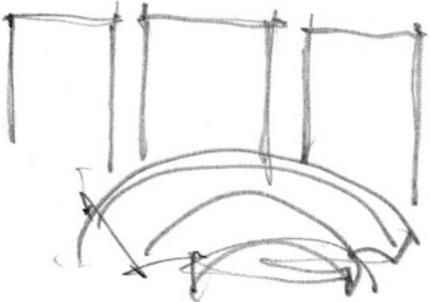




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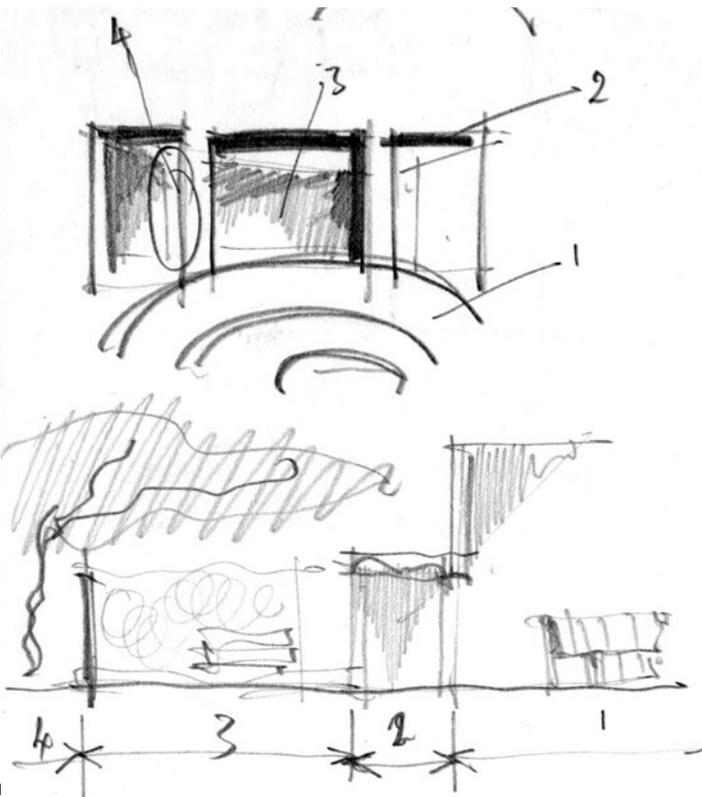


2



1

Fig. 265: TOP to BOTTOM: Diagrams separating out the four depths in the sketch on the right (SH).



salon column which forms a further frame and by the end reveal of the far window retaining the same line of the NE wall, thereby maintaining the same proportions as the other frames.

This idea of structuring depth and scale through sequences of frames, one inside the other can be seen in Utzon's initial sketches as well.

From the front of the salon facing the other way inland towards the patio, the different qualities of light, as well as their different speed of change articulates the view into a series of distinct spaces, from bright reflected light of the salon (1) (which changes over the course of the day, the sun illuminating each bay window after the last), to the deeper and more constant shadow of the entrance porch (2), to the dappled light of the patio, with fleeting shadows constantly moving with the gusts of wind through the branches (3). Glimpses of the woodland beyond are seen through the slit in the wall and over the top of the rear wall to the tree canopy behind (4).

**Fig. 266:** Salon and patio facing north west (SH in-situ).

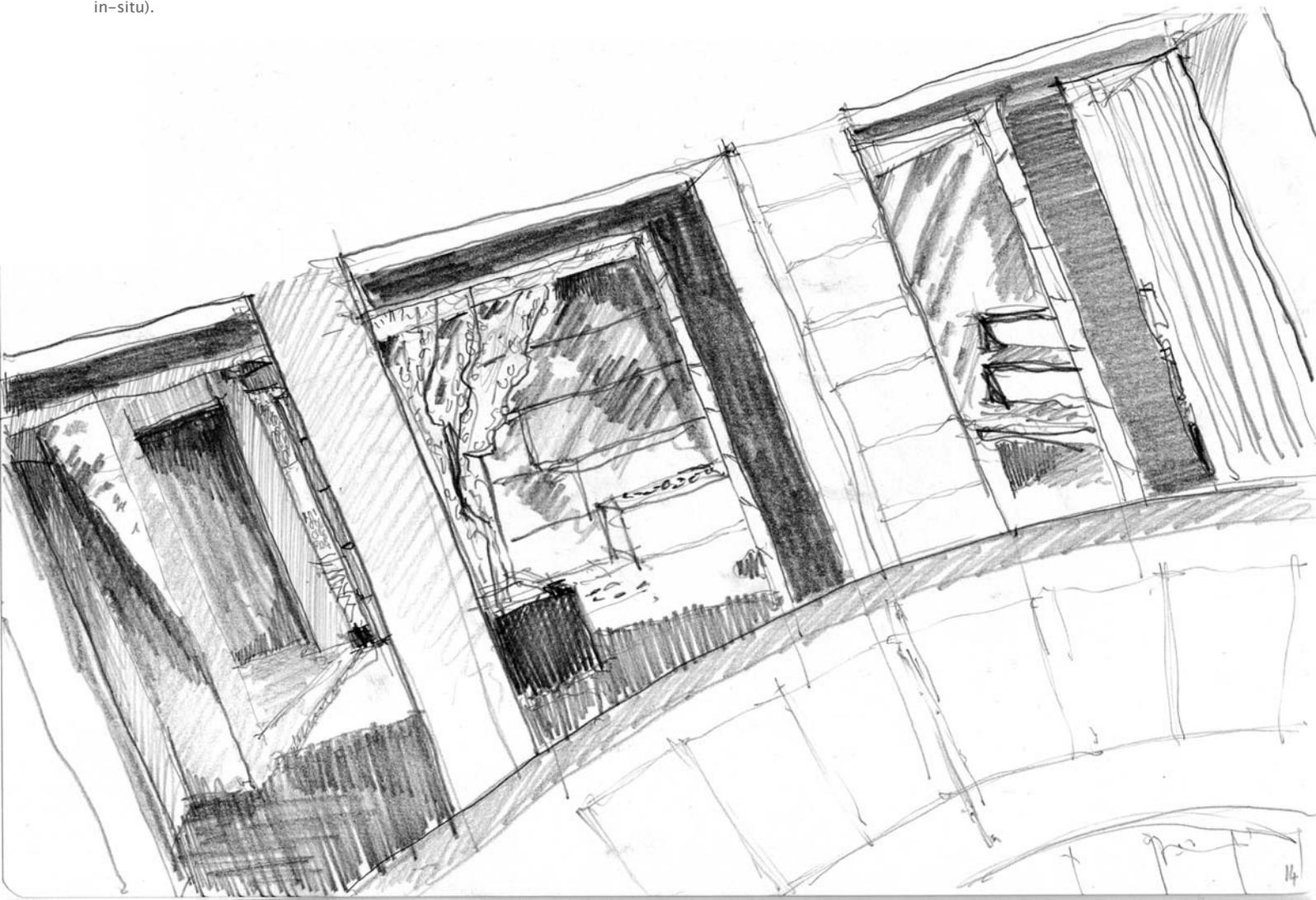
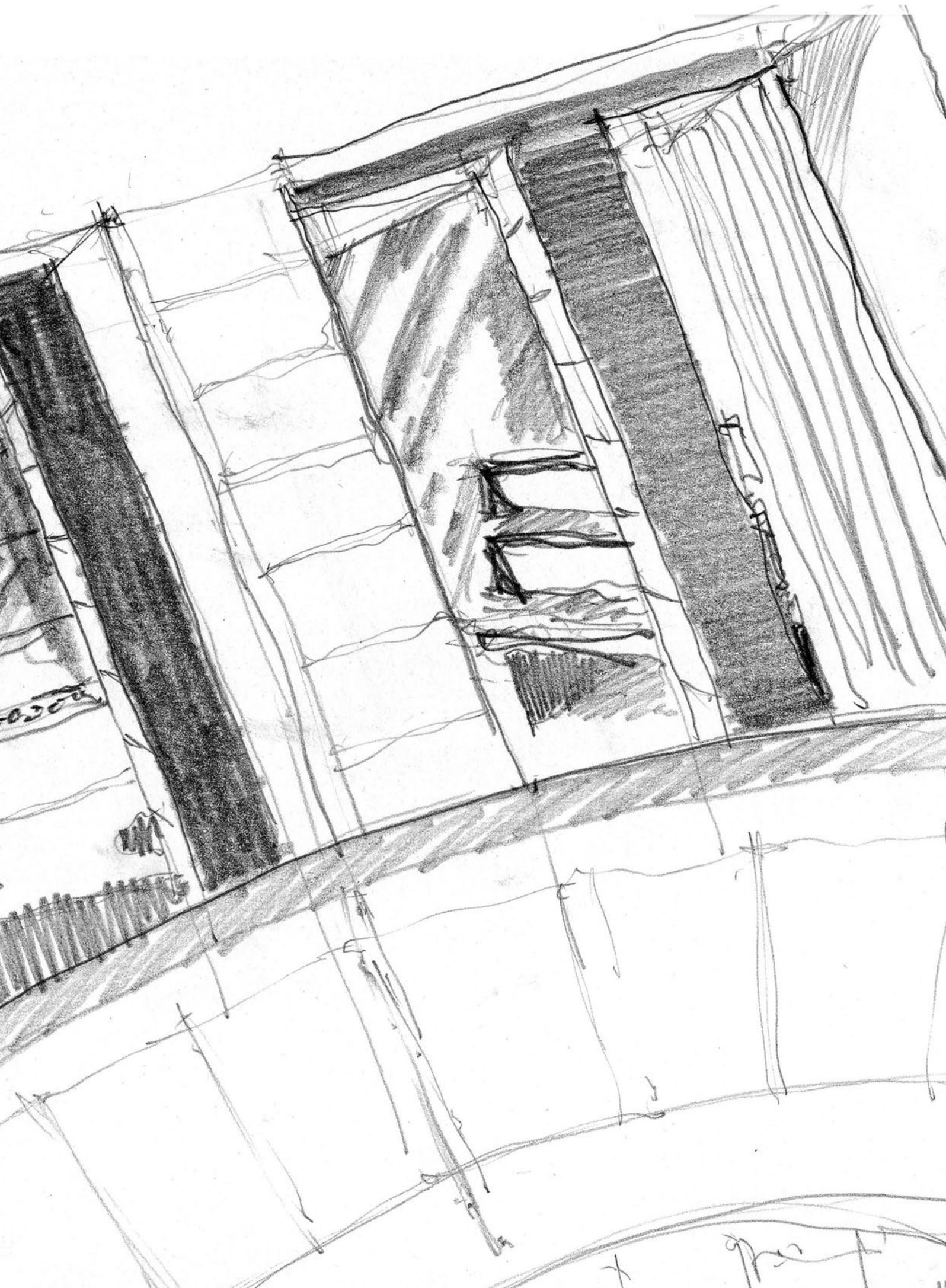


Fig. 267: Salon and patio facing north west (SH in-situ).





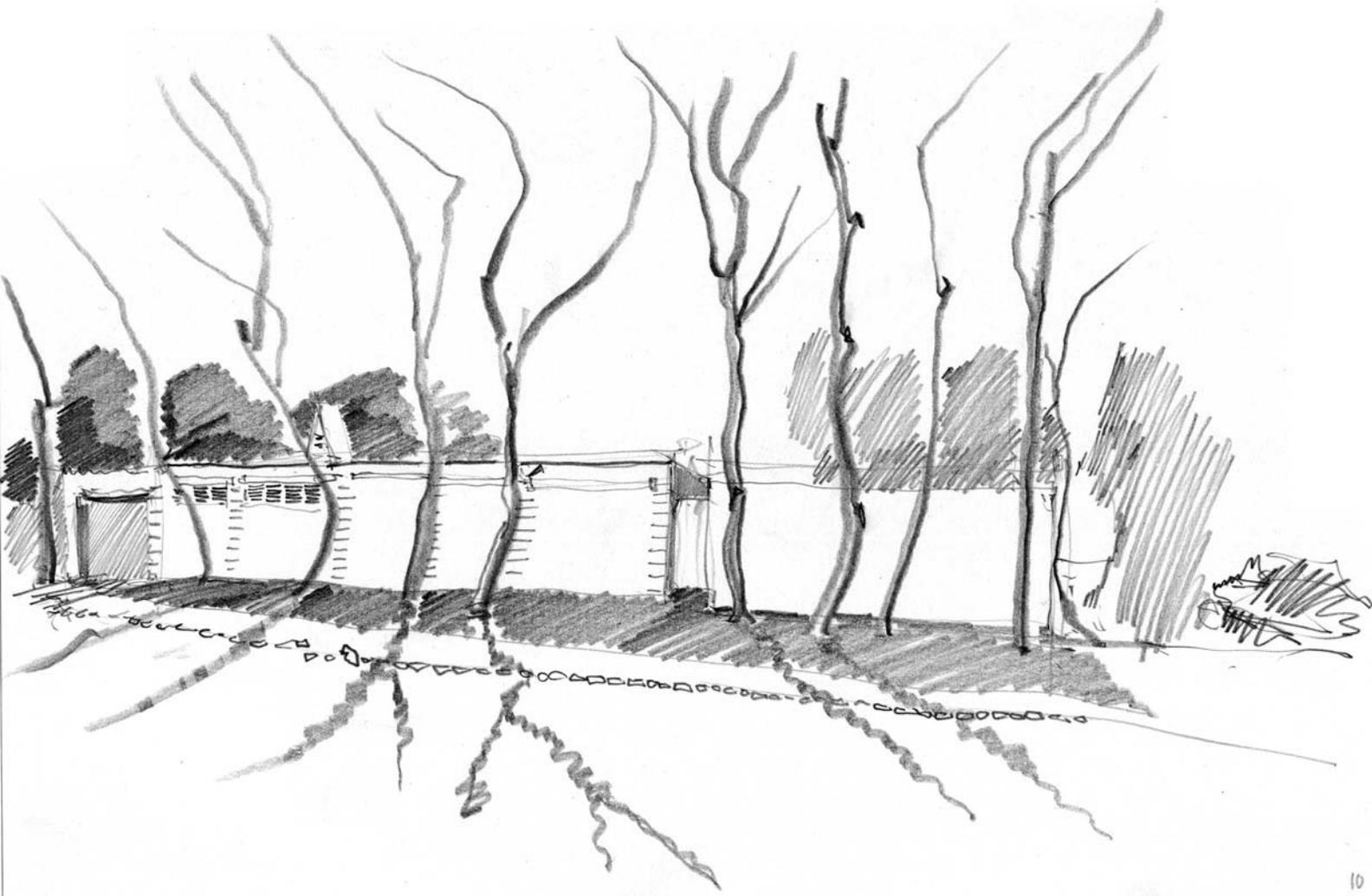
## Facades

Each of the main elevations responds to its natural setting contrasting nature with the constructed facades. Both seaward and landward facades are different. The irregular tree trunks are effectively framed by a blank wall behind. The seaward facade is made up of an undulating and interrupted portico of columns along the entire SE side of the building. This creates an irregular interstitial depth between columns and facade line equivalent to that between trees and wall on the road side of the house.

Fig. 268: RIGHT: north west blank facade onto the road (SH in-situ).

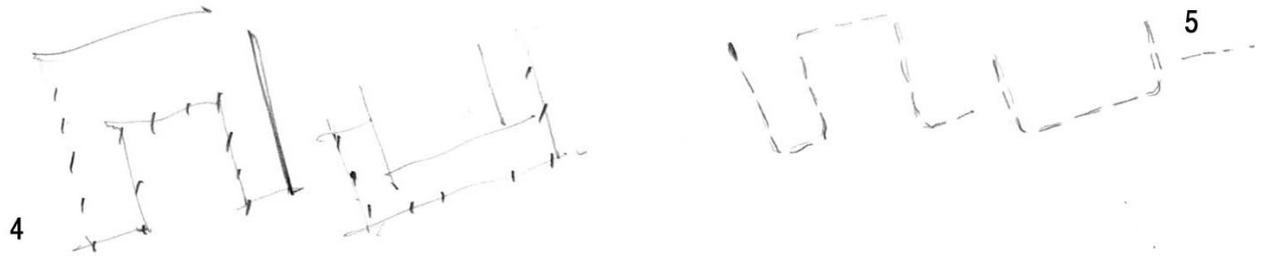
Fig. 269: LEFT: South eastern facade facing the sea (SH in-situ).



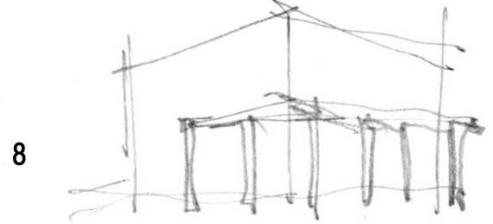
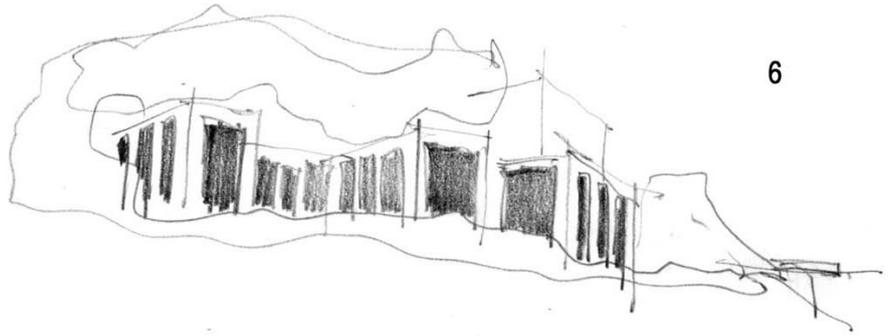


The seaward single-storey, discontinuous colonnade is also intended to be seen from a distance, from the sea, serving to break up the solid masses of the buildings. This perforated layer reads against the jagged horizontal strata of the solid cliff-face below.

Each facade is designed to create interstitial space and to contrast with natural elements highlight them.



Viewpoint



Sea facade

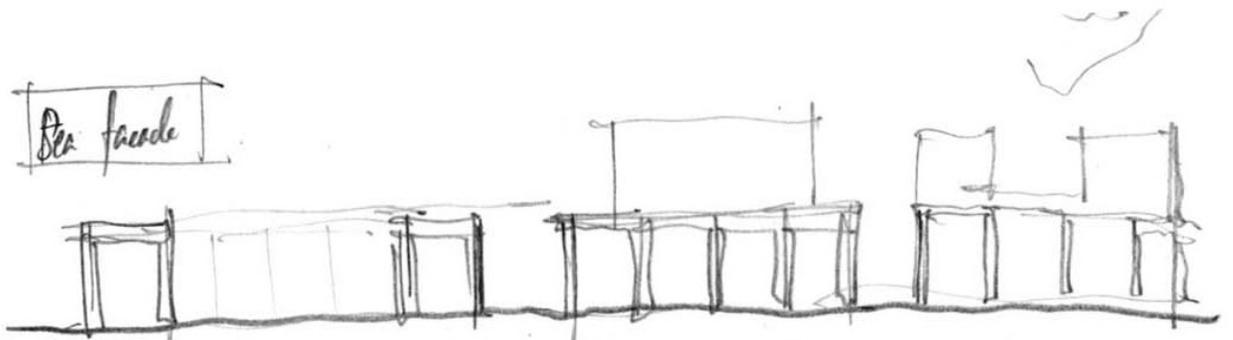


Fig. 270: LEFT: Sketch diagrams concerning the colonaded and staggered south eastern facade (SH).

Fig. 271: BELOW: Sketch diagrams of the blank facade and pine tree trunks along the north west elevation (SH).

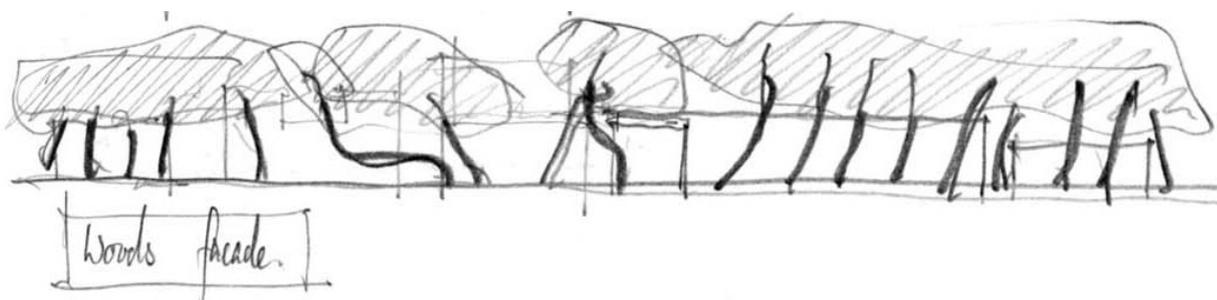
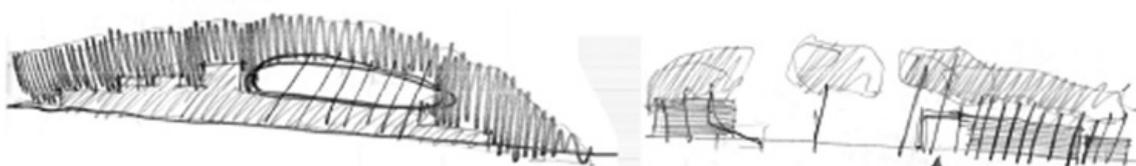




Fig. 272: ABOVE: North west facade from the road (6/11 in situ)

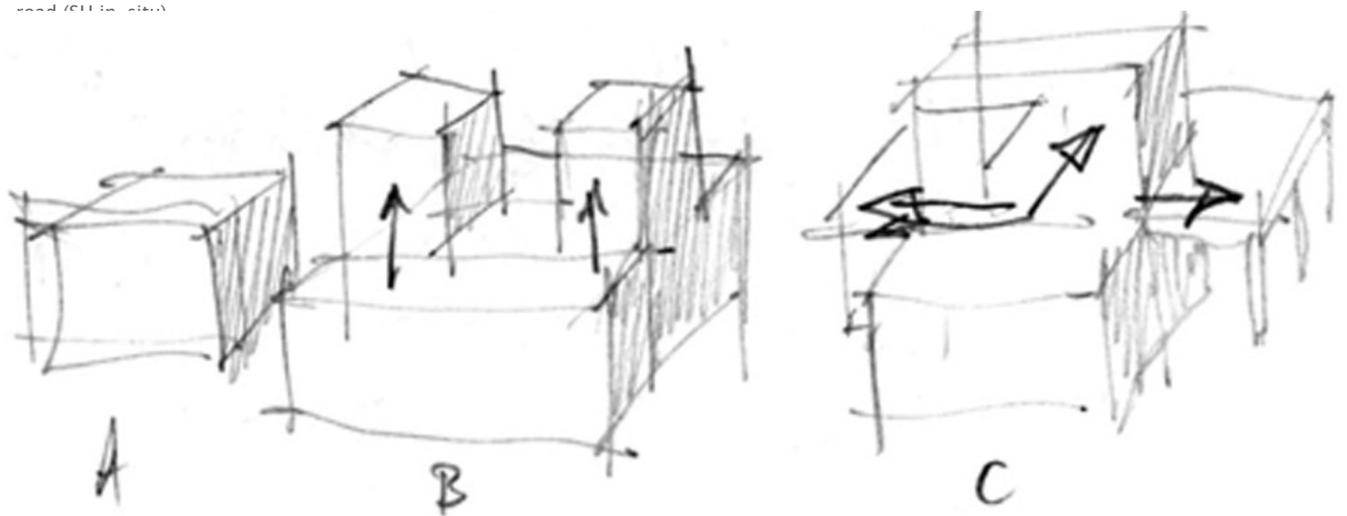




Fig. 273: BELOW: Formal evolution from the individual bedroom module (left) to the partially enclosed void of the external dining area (right) (SH).

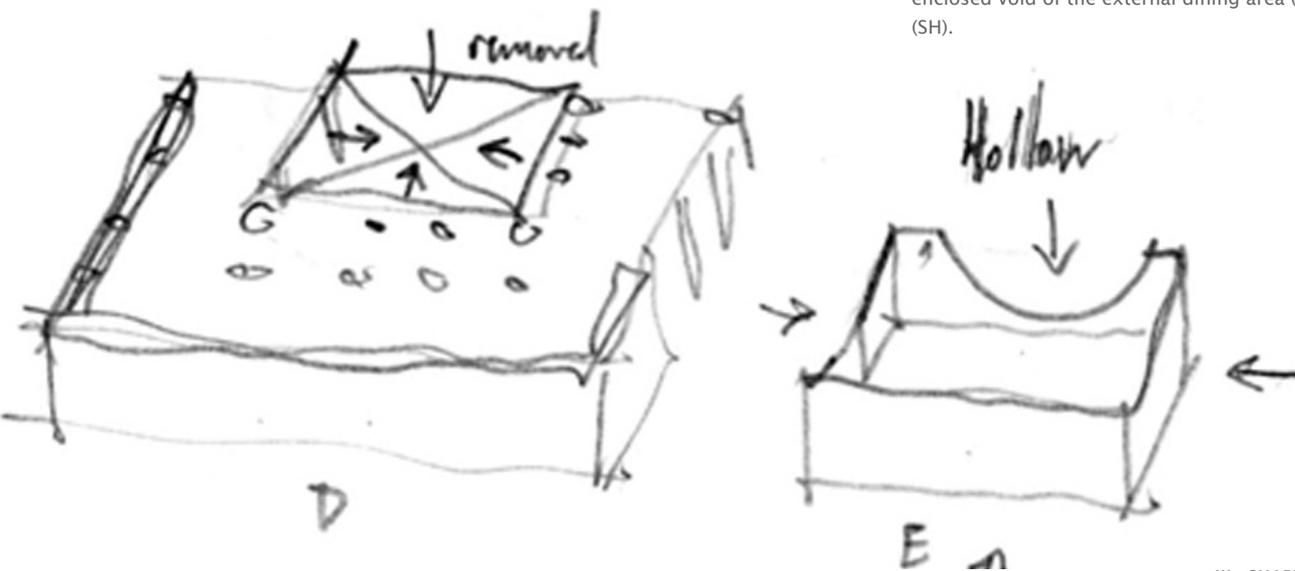
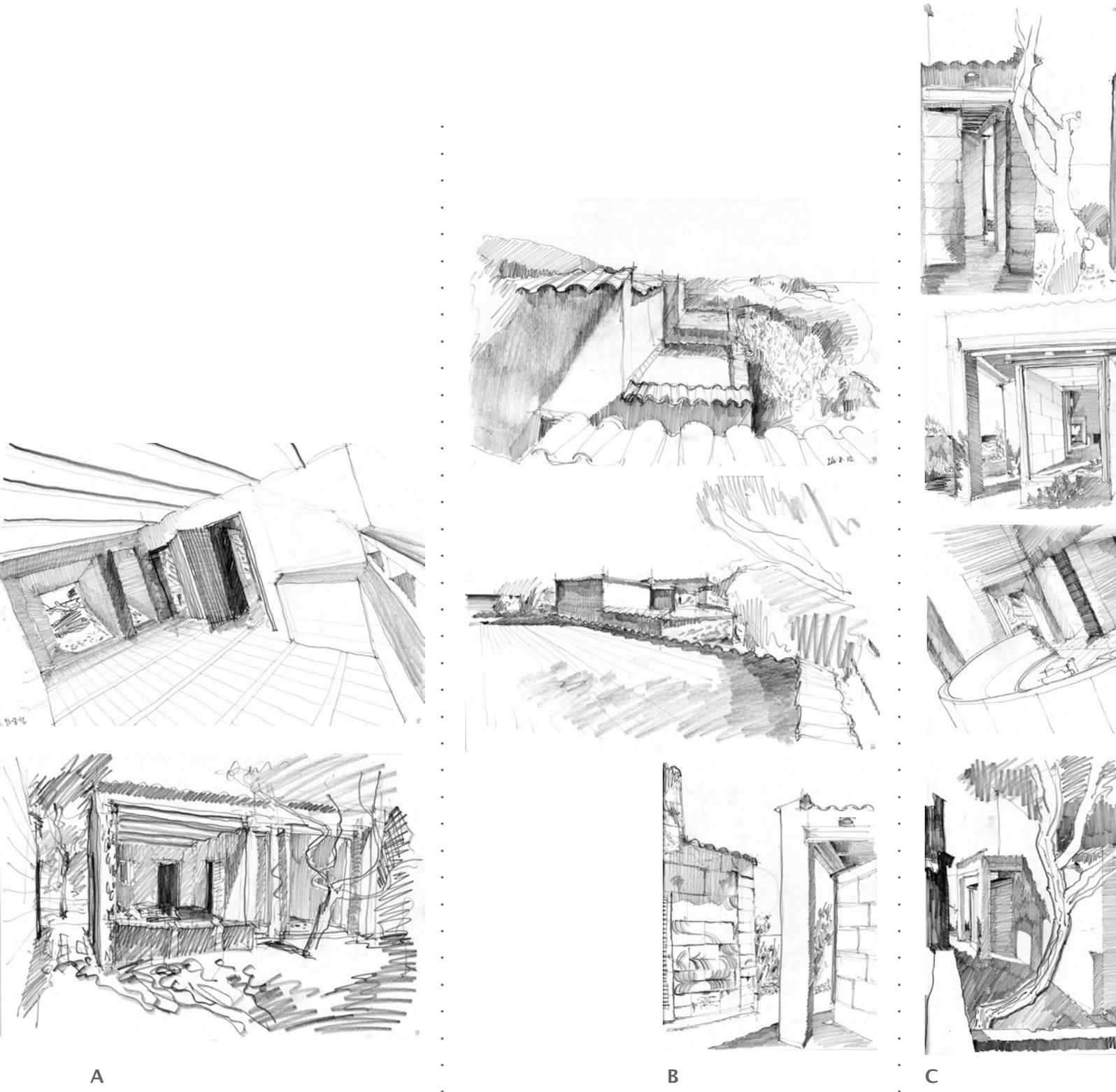
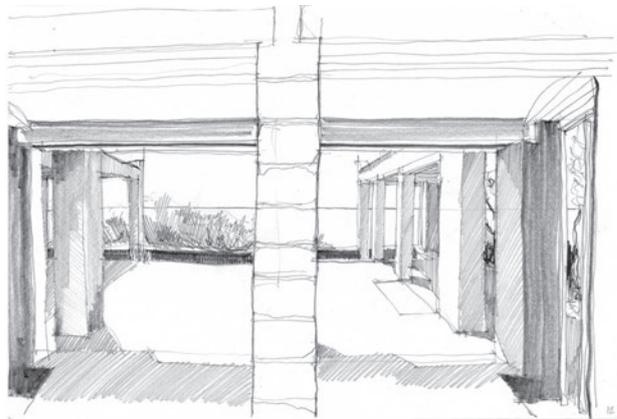
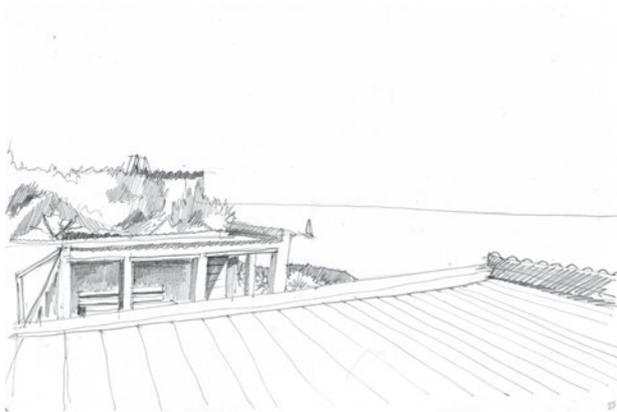
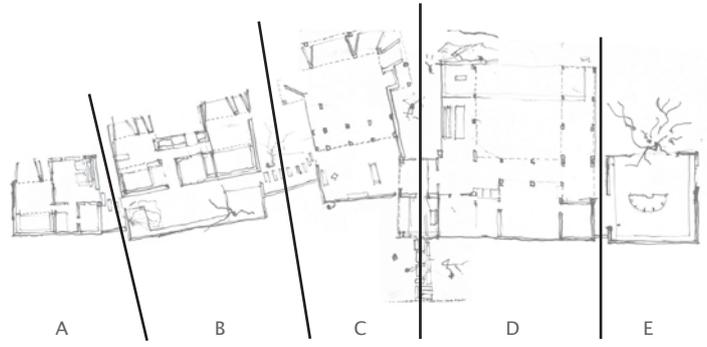
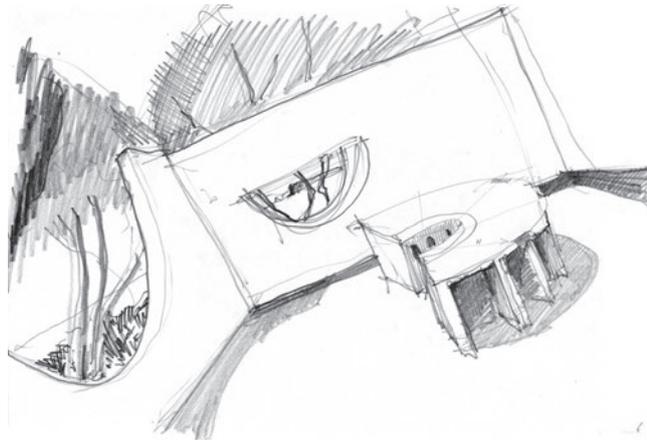
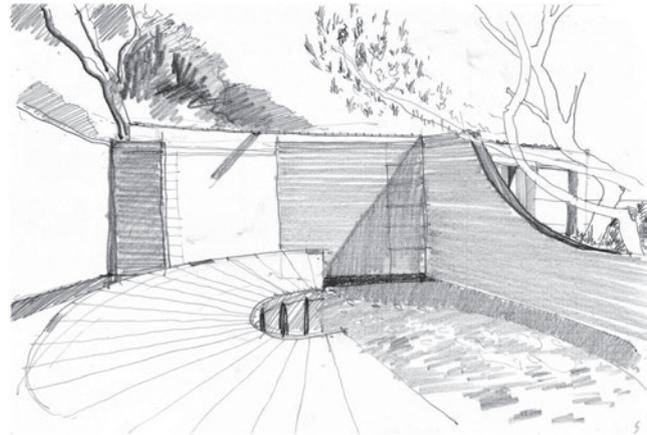


Fig. 274: Internal and external views of the five areas of the house, Left to Right: individual bedroom (A), two bedroom block (B), salon (C), dining courtyard (D), exterior dining area (E) (SH in-situ).





D



E

Fig. 275: Internal and external views of the five areas of the house, Left to Right: individual bedroom, two bedroom block, salon, dining courtyard, exterior dining area (SH in-situ).

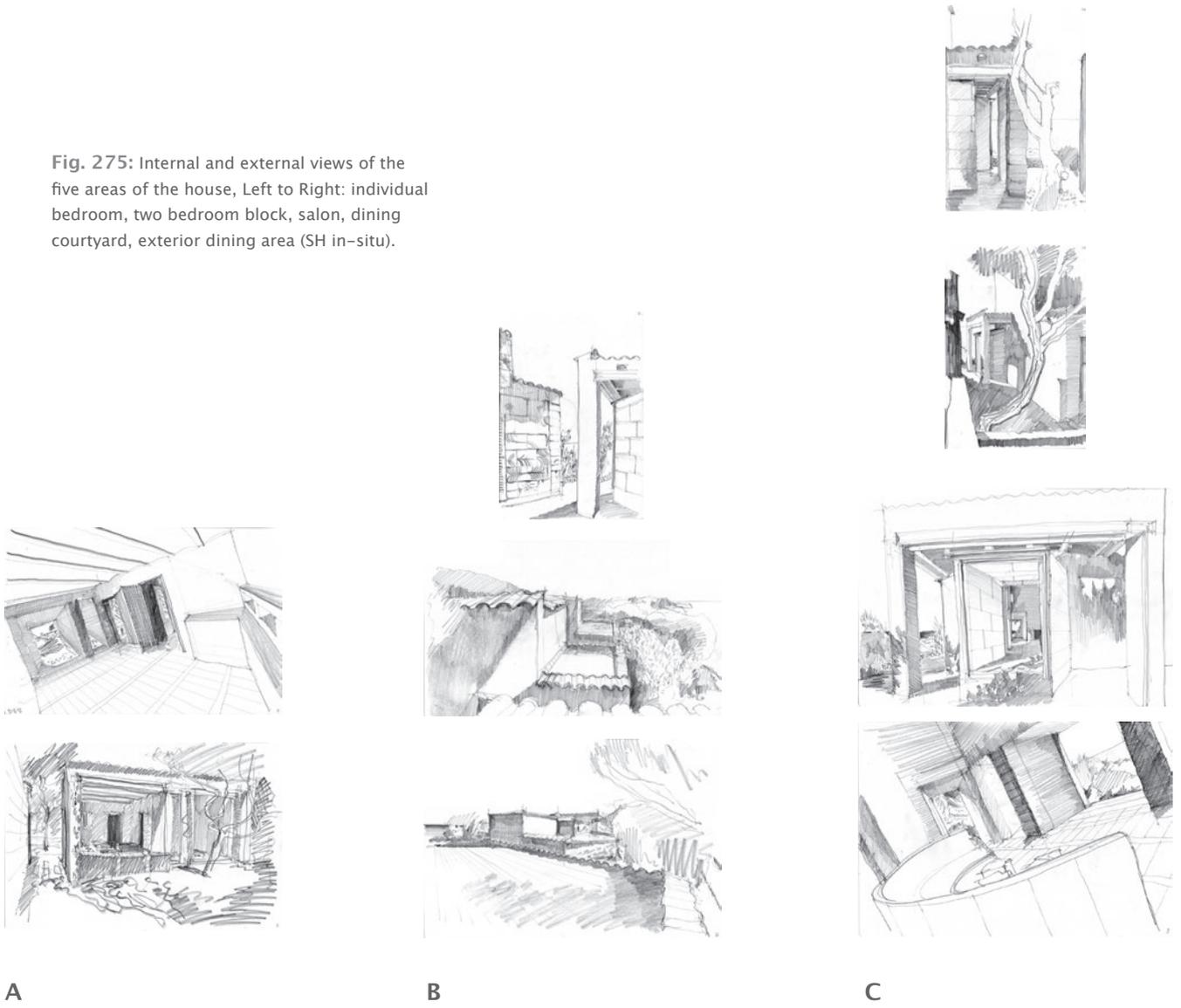
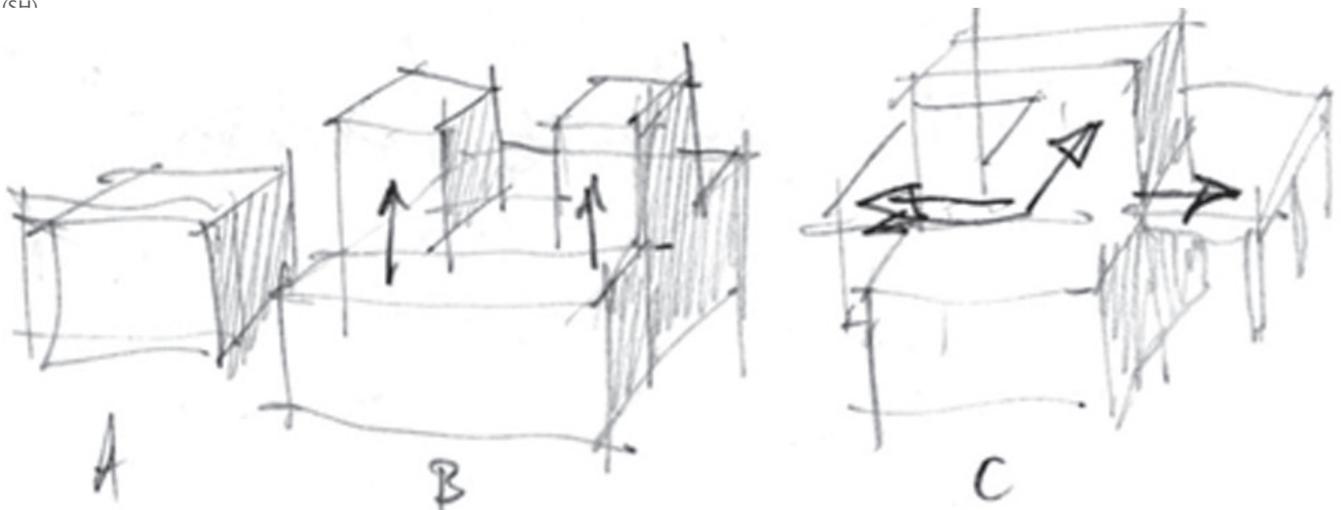
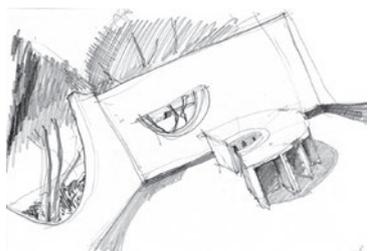
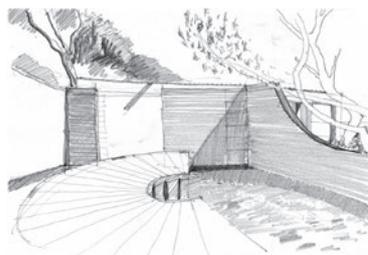
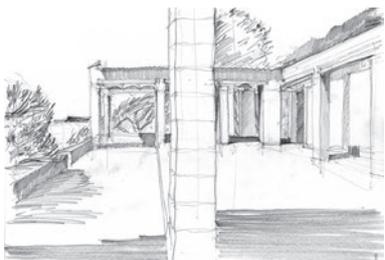


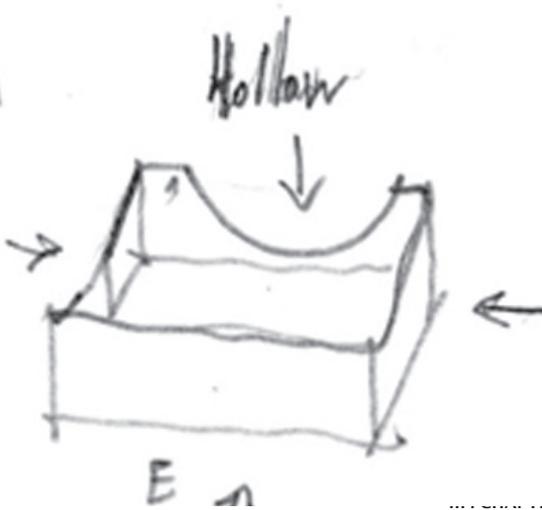
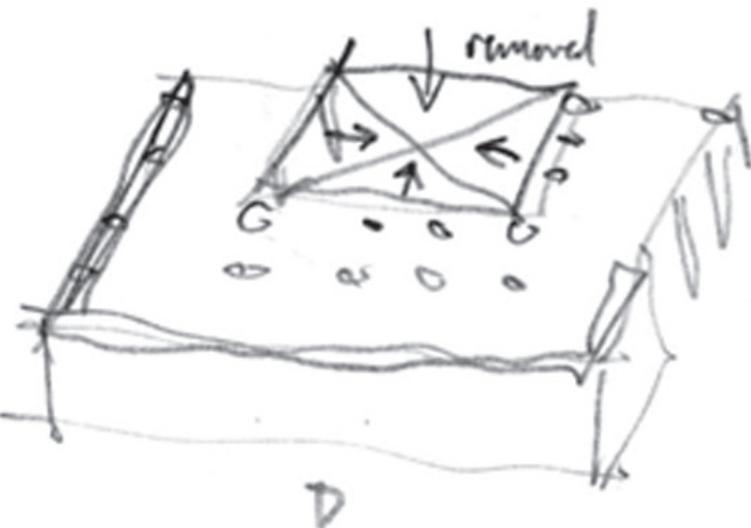
Fig. 276: BELOW: Formal evolution from the individual bedroom module (left) to the partially enclosed void of the external dining area (right)





D

E



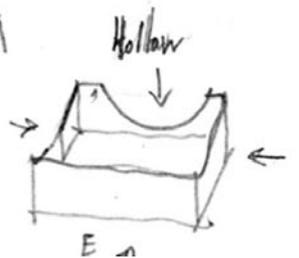
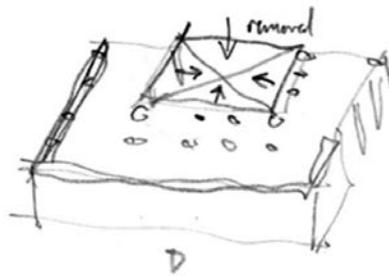
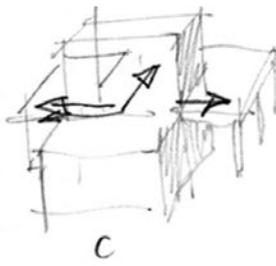
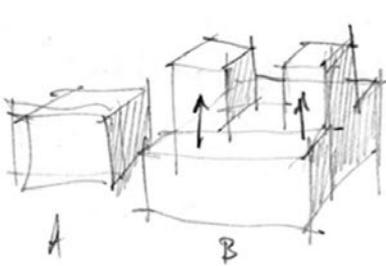
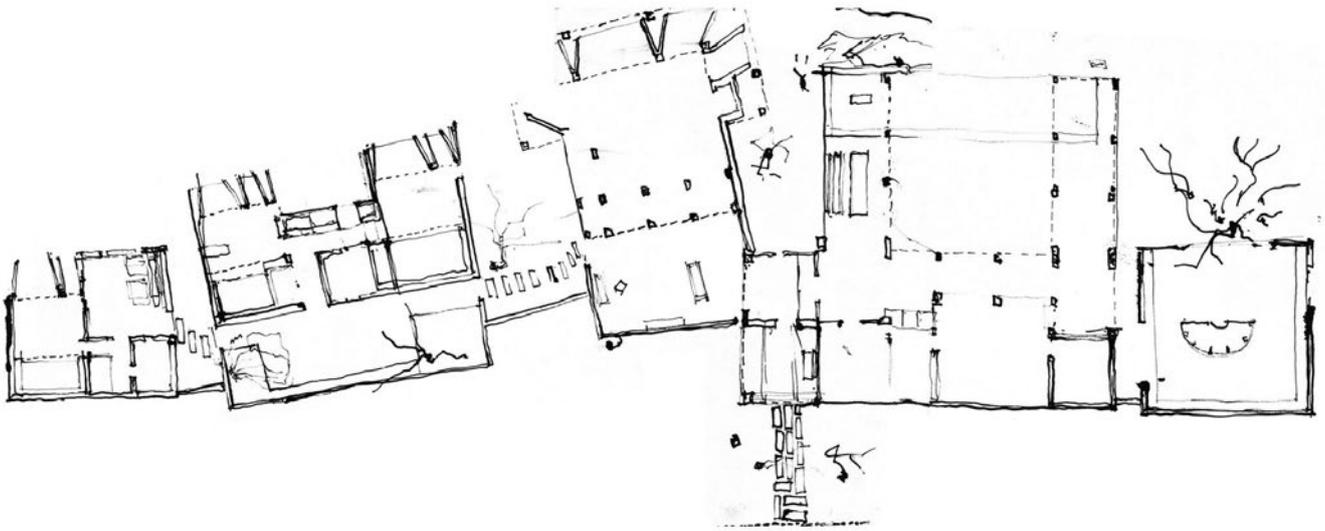
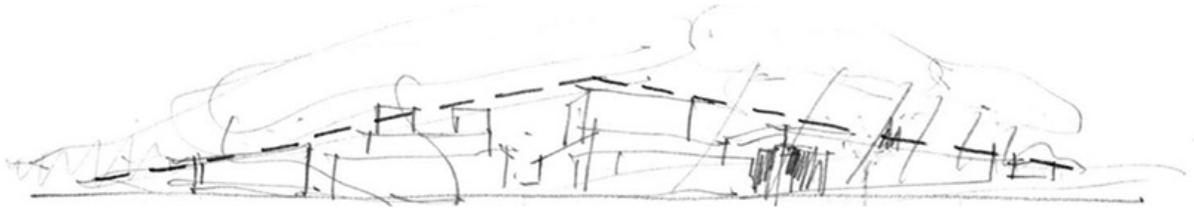


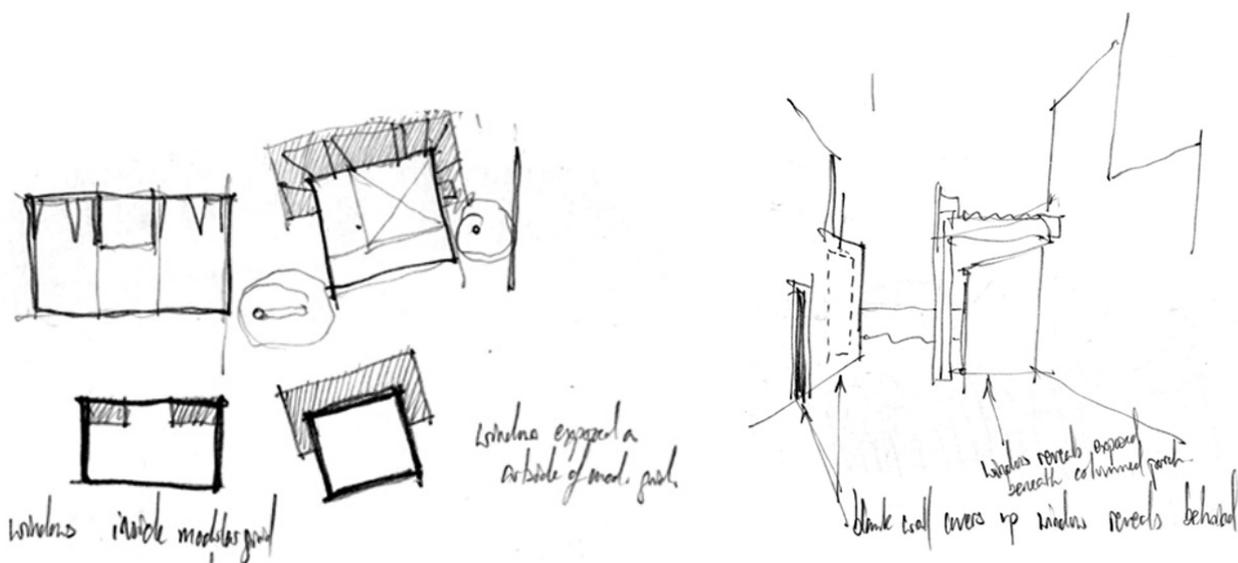
Fig. 277: LEFT, top to bottom: Massing of the building volumes; Formal composition of building heights; In-situ sketch plan; Formal evolution from the individual bedroom module (left) to the partially enclosed void of the external dining area (right) (SH).

### Growth and form

The form of the volumes of the house develop through the five pavilions starting with a basic bedroom module to the north east and finishing with an open dining room the south west. In each successive phase, the previous module expands outwards in various directions. In the salon, the bay windows are positioned outside the perimeter of the main volume. In the dining courtyard, the edge zone of the bay windows transforms into a portico, whilst the central volume opens out to become open space. In other words the internal, covered spaces are moved to the perimeter whilst the centre opens out to the sky. In the final pavilion, the porticos disappear altogether leaving an enclosing wall and a separate floor platform, equivalent in scale to the initial bedroom unit.

The five pavilions of the house follow a clear formal structure, transforming from one to the next along the length of the house completing a formal cycle. This process of formal transformation is reminiscent to Utzon's ideas of building as a process of adding modules.

Fig. 278: BELOW: Diagrams showing the different positions of the columns and windows relative to the main building module between B and C (SH).



## Conclusion

The analysis has attempted to use in-situ sketching to find insightful and original ways of understanding the multiple relationships between the architecture of Can Lis and its setting. The result have shown that in-situ sketching can provide original and human-centred results in a modern domestic building as well as in ancient monuments.

The results obtained from sketching in-situ show a number of variations on the way place is presented by the architecture of the house. The same materials and formal elements are reused in different combinations in different areas to create dramatically different relationships between the interior rooms and patios and the adjacent woodland, cliff top and distant horizon. The subtle differences of these relationships means that although intense when experienced in person, the differences are easily missed by analysis based on remote study of plans and photographs. The patient and repetitive observation required for drawing in situ coupled with the need to critically question the organising principles behind the architecture have helped to first notice and then reveal the subtle structural variations along the length of the house. The plan form of the house is organised in five principle parts, each presents a different, and changing variation on the sense of place. Each individual section however may be perceived as a single whole made up of a number of smaller parts which made be perceived simultaneously. The sketches suggest that each of these five areas has been designed to emphasise certain perceptions of place and limit others. These areas have then been “composed” together making a sequence of different environments and different presentations of place, each of which is perceived in relation to the rest – the contrasts between them emphasising the different sensory impression of each one. The contrasting treatments of place and the relationships set up between these five areas build up a complex and multiple impression of place, enhancing the impact of the whole building. The architecture transforms the landscape into a highly composed set of experiences.

As a result, sketching in-situ has helped to reveal a number of original interpretations of the house and its subtly varied relationships with place. The themes presented here have been developed exclusively by means of the in-situ sketches and include several new interpretations of the design principles behind the project. This demonstrates the efficiency of in-situ sketching as

a means to analyse relationships between small scale modern architecture and natural places. It also contributes to the study of the house through providing a detailed graphic investigation strictly focused on the actual human perception of the house itself, thereby avoiding the influence of secondary sources.

The following chapter expands on this demonstration through applying an equivalent in-situ sketch analysis to a more recent building in a dramatically more complex place.



2  
2  
13

For windows use

For door

# SANTA CATERINA MARKET

A graphic analysis of EMBT's renovation of Santa Caterina market in Barcelona.

Considering the drawings of both the Acropolis and Can Lis, it might appear that sketching in-situ helps to understand buildings which retain a mysterious quality, those which lack definitive original primary information and which give liberty of expression to the researcher's imagination. If the imaginative basis of the sketch can build upon intuitions perceived through embodied in-situ experience, it is easy to imagine how the argument might be left to take its own course and develop an interpretation based loosely on observation but rather more on the subjective design instincts of the sketcher. It seems the ambiguous combination of the objective and subjective in the process of sketching is simply left to find its own balance, uninhibited by scientific observation or received knowledge.

**Fig. 279:** Central patio of the market facing east towards the new Plaça Joan Capri (SH in-situ).

# L'esponjament

ENRIC MIRALLES  
Esponjós és un qualificatiu que ens porta el record d'una massa sortida del forn, d'un menjar delicat... La millor pastisseria: el diumenge. És difícil traslladar aquesta paraula a la ciutat. Què vol dir aquest terme? No crec que tingui res a veure amb l'origen marítim de l'esponja. És una paraula estranya: les ciutats no absorbeixen l'aigua, ni augmenten o disminueixen de volum de manera elàstica.

Ni tampoc crec que es pugui trobar una relació a través de l'origen marítim d'aquest objecte i la proximitat al mar d'aquest tros de ciutat... Si amb aquest terme es refereixen a la multitud de cel·les interiors, als forats... també podríem parlar de *gruyertització* o *d'emmentalització*, encara que l'olor i la tradicional atracció que vers aquests formatges senten els ratolins hagin aconsellat de no usar aquesta imatge per provar d'aclarir el concepte que el pla vol explicar.

Les paraules, com els plans d'ordenació, canvien les coses. A través d'ells es fa difícil veure la realitat, la complexa realitat que s'hi amaga al darrera.

En aquest barri de la ciutat no és possible cap generalització. Com tots els instruments que actuen sobre la realitat, el pla està molt lligat a uns anys i unes idees molt concretes. I després d'un lapse de temps breu, en veure els primers resultats ens adonem que el pla és una brutal simplificació respecte a la complexitat real.

No es pot parlar demagògicament de la bondat d'una política d'enderroc sense fer referència a la continuïtat històrica d'aquesta idea... quan s'ha canviat totalment la manera d'entendre la ciutat. Comuni-

cació a través del Cinturó del Litoral, major densitat de transport públic, densitat i diversitat d'activitats, renovat interès per descobrir un lloc on viure i treballar. Ens trobem el 1995 portant endavant els enderrocs que va engegar el Pla Cerdà a finals del vuit-cents o defensant les vagues idees higienistes dels anys trenta. Tot plegat barrejat amb una encara més confusa idea de quina és l'arquitectura que s'ha de construir al lloc de l'enderrocada.

Per això, en lloc de parlar dels problemes concrets es parla d'"esponjament", "regularitat", etcètera, tot presentat amb uns cartells que apareixen a la ciutat col·locats als mateixos llocs que els anuncis publicitaris. Sempre són visions perspectives a vol d'ocell, que representen aquest tros de ciutat sense acostar-se a terra.

Si ho féssim, si el punt de vista fos el del vianant, es veurien totes les plantes baixes preparades per ésser un possible *continuum* comercial que en el seu moment pot ser més gran que els mercats, com el de Santa Caterina.

I veuríem com sobre la ciutat pesa un absurd desig de separar els usos: ara sembla que per divertir-se no es pugui sinó anar al Maremàgnum, on trobem aquesta absurda densitat de bars, uns damunt dels altres.

Aquests pósters *informatius* (una altra paraula difícil i perillosa) són dibuixos de colors alegres, nets... Ens mostren

una ciutat semblant a uns dibuixos animats japonesos. Semblen fets perquè els ciutadans que "baixen" (també hauríem de parlar d'aquesta paraula) el diumenge per les Rambles cap al port puguin dir: "Veus, finalment tot això s'arregla".

Però els que viuen aquí només miren espantats, buscant si casa seva està en un d'aquests forats.

Tot sembla la plaça Reial... Només es distingeix la silueta de Santa Maria, o la de la catedral...

—“Com és possible?”, “tot això desapareix...”

—“Això és el parc de la Ciutadella”.

—“No ho sé, no s'entén res”.

Un cop més, tot se simplifica enganyosament.

—“Ens trobem el  
1995 portant  
endavant els  
enderroc que  
va engegar el  
Pla Cerdà a  
finals del vuit-  
cents”

I després es proposa una arquitectura que és una mímica ridícula dels estils històrics. Com si les proporcions d'unes finestres més el terror dels projectistes per l'irregular —el text del pla parla amb horror de tot el que no és recte— poguessin amagar uns tipus edificatoris que provenen del pitjor estil comercial dels models especulatiu que han construït la perifèria.

Aquests *pijitos* que no entenen la lògica complexa de la superposició dels diferents moments històrics i la superposició de les diferents maneres de viure... Que no entenen que viure en aquest barri és el plaer de descobrir el que ja ha estat usat... És com un abrís de se-

gona mà que a poc a poc s'amotlla al nou usuari.

Són vergonyoses aquestes cases que ni tan sols resolten bé les cuines. Ciutat Vella (d'aquest terme sí que en parlarem) no podrà mai ser rendible sota aquests estàndards.

Aquest tros de ciutat és un lloc d'una realitat complexa on la transformació real no prové d'un mercat immobiliari sinó d'una complexa trama d'iniciatives personals a petita escala. Ciutadans que han descobert que aquest és un magnífic lloc per viure i treballar. Aquestes iniciatives particulars haurien de ser àgilment ajudades. A la ciutat, al pla, li queda la responsabilitat de no enderrocar, de no fer desaparèixer res que no se senti capaç de substituir amb una riquesa equivalent.

Aquesta suburbialització que ara comença només ha estat possible gràcies a aquest seguit d'intervencions.

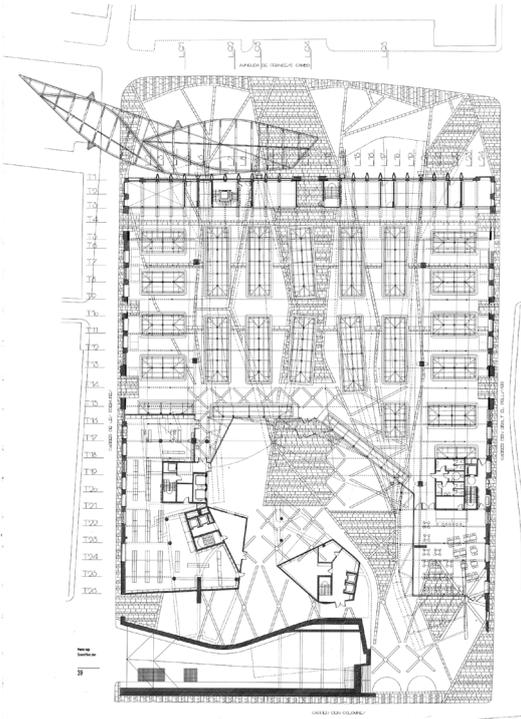
Viure i treballar en aquest carrer ens ha fet entendre que no hi ha diferència entre vell i nou. A obrir els ulls, més enllà de la pobresa que s'amaga en alguns racons, per entendre el significat més literal de l'aplicació de l'esponja a la ciutat. Amb una mica de sabó, l'esponja, o millor l'escombra, és una magnífica eina de neteja. Netejar, descobrir tot allò que existeix sota aquestes superfícies oblidades, en aquest lloc que no sé per què anomenen vell: Ciutat Vella. En altres llocs per referir-se al cor de la ciutat es diu centre monumental, ciutat històrica...

—“D'acord, vella pot ser un terme més humà, més familiar... però compte amb les paraules i els plans”.

Aquest tros de ciutat ni és vell ni necessita esponjaments.



↑ Article by Enric Miralles in the daily EL PAÍS. 9-11-1995. Translation on p. 247 Article d'Enric Miralles al diari EL PAÍS. 9-11-1995  
Cerdà's plan / Historical photo / Burning of convents. Barcelona 1858 Pla Cerdà / Foto històrica / La crema de convents. Barcelona 1858



**Fig. 280:** Ground floor plan of market renovation. Original project, before 2000. (EMBT – Source: Croquis, Nº 101).

**Fig. 281:** “Esponjament” article published in *El País* by Enric Miralles about the strategy of urban regeneration through “sponging” common in central areas of Barcelona around the time of the Olympic games in the early 1990s (EMBT – Source: Tagliabue B., 2006 “EMBT Work in Progress” COAC, Barcelona).

To counter this impression that anything goes in the architect’s travel sketch, a more complex case may demonstrate the more critical side of sketching in-situ, one set to investigate subtle relationships such as the perception of time which manifest themselves only faintly in the visual environment. When many historical buildings are rebuilt, or new buildings dressed up as if they were old, questions of authenticity become important. Whilst in-situ it may be plainly evident that a reconstructed building is new but following the form of old construction, but from a photograph, without a significant level of detail, the visual impression alone of the rebuilt building can be extremely difficult to distinguish from the authentic building. Can sketching in-situ help to convey an idea of time and somehow uncover and distinguish old from new? To investigate these matters, the following questions are considered in this chapter. Can in-situ sketching be shown to provide an original and convincing interpretation of the more invisible yet crucial aspects of place?

Is in-situ sketching helpful for analysing complex multiple inter-relationships between project and place?

Can in-situ sketching be shown to provide an original and convincing interpretation of the more invisible yet crucial aspects of place?

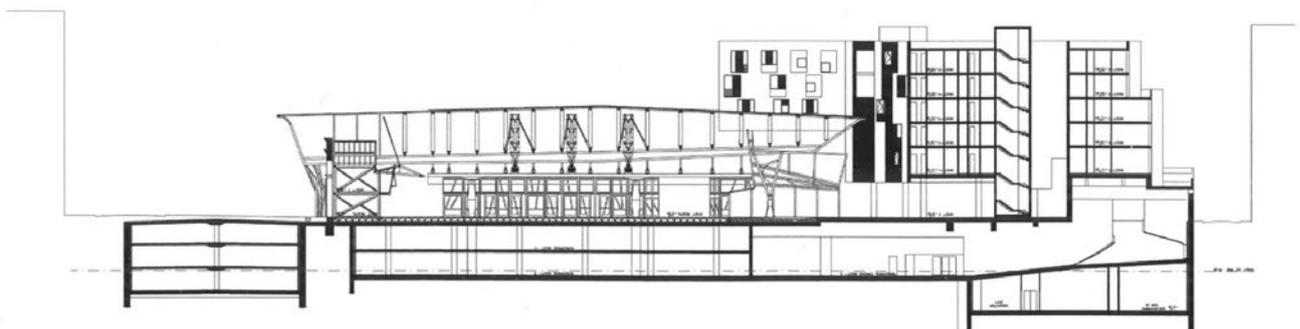
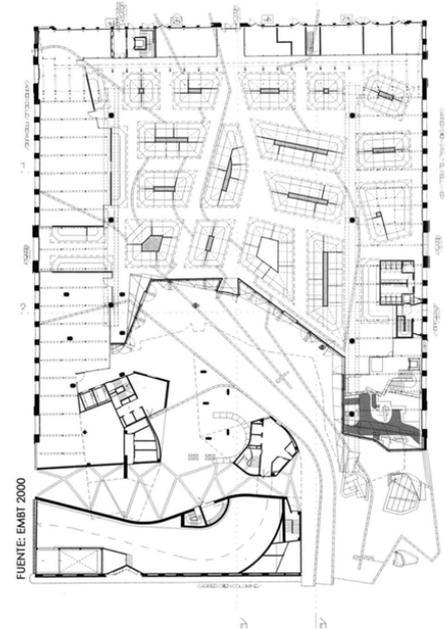
Does this require changes in approach depending on the scale and complexity of the project?

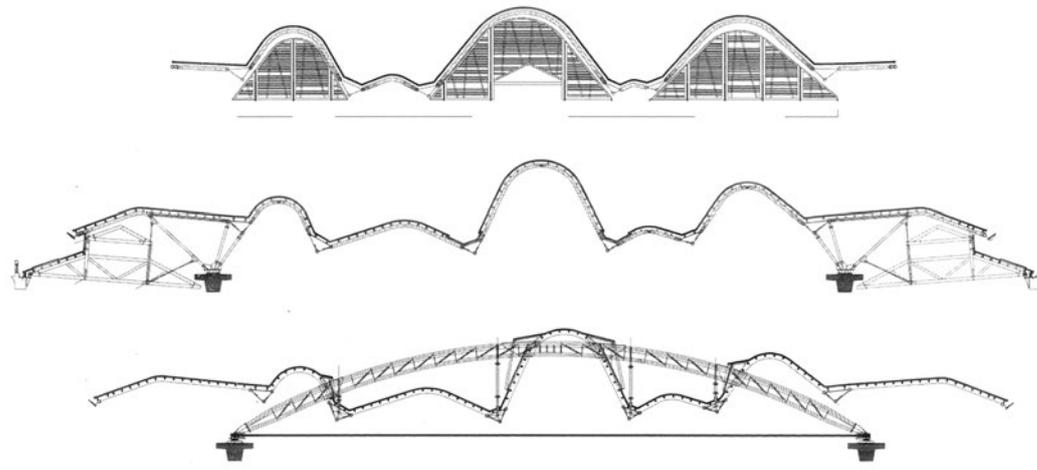
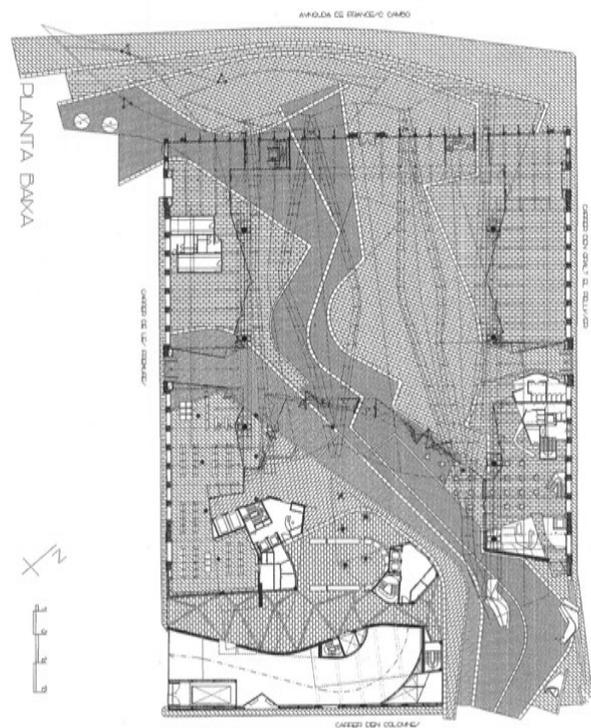
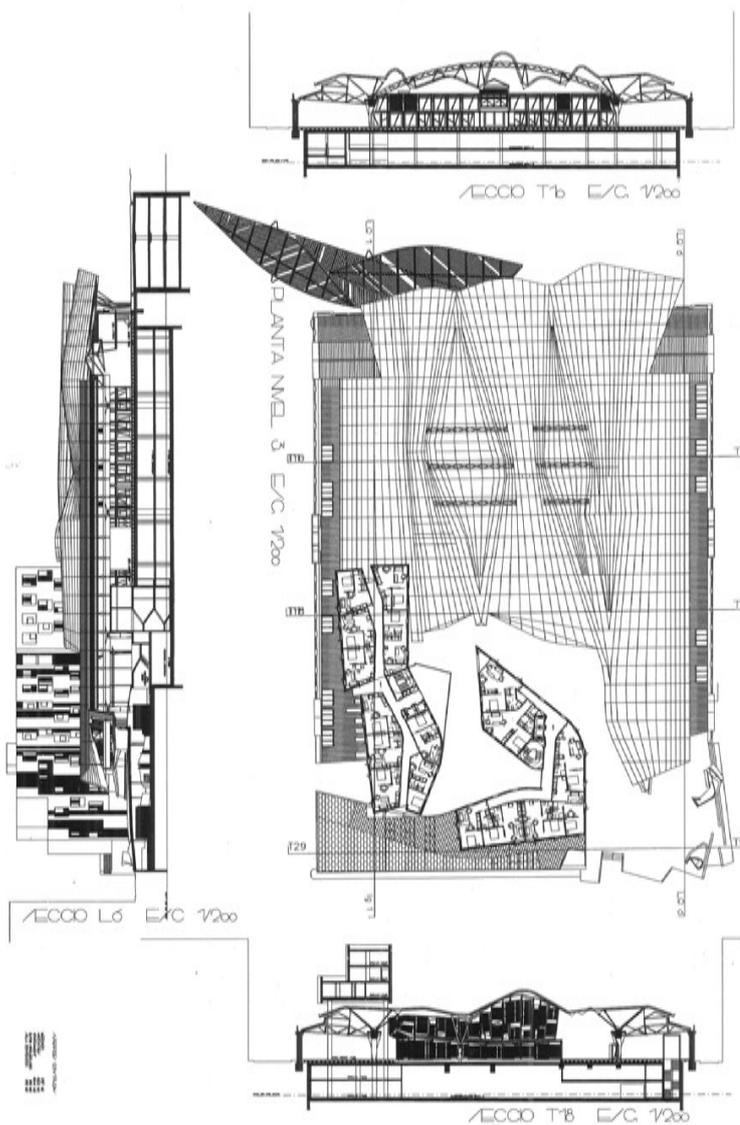
How does the graphic analysis through site sketching compare with the architects original drawings for the project?

In order to answer these more challenging questions, the process of analysing place through in-situ drawing is repeated in a substantially more complex setting which demands far broader investigation and cross-referencing against other research material. The vague and ambiguous romance of a long-past and unrecorded process of creation is replaced by a recent project completed within the last ten years, whose intentions and process are thoroughly documented. The project is relatively large and combines a variety of uses, it has developed through several phases and serves extremely varied groups of inhabitants and users. Place is altogether more complex than in the previous case, overlaying many different and contrasting layers of historical time onto a dense urban environment.

In contrast to Can Lis, Santa Caterina is a project where drawing played a major role in its development, especially regarding to the project’s influence on the urban grain around it. The place

**Fig. 282:** Revised plans of the market renovation fafter the archeological excavations. 2004. (EMBT).





is an extremely dense central city environment requiring large scale urban transformations as well as specific local interventions. The city fabric is also extremely old, formed mainly according to Medieval urban logic and adapted sporadically since then to meet more modern requirements. The project relates to the past urban context as a continuous evolution and rejects the alternative idea of abruptly breaking with the past as in the nearby urban interventions of the previous century. The site of Santa Caterina market is extremely complex, with a very rich and varied history, selections of which are recalled in the building. Place is also determined by the often frenetic activity of widely varied groups, including tourists, marketeers, neighbours and elderly inhabitants amongst others. The project also intended to influence a wider area beyond the bounds of its own site, becoming a catalyst to re-invigorate an entire part of the surrounding city. The project's approach to place in particular is therefore crucial to the improvement of a far greater scale of intervention. The design of the project was developed alongside a larger urban masterplan often through drawings of different types, from small conceptual diagrams to sketch plans to elaborately and carefully drawn historical urban overlay plans. Drawing has therefore played an essential role at all stages of its design. Also it is a project where place has been analysed and the design generated through the process of drawing, allowing the original intentions and parts of the process to be seen through analysing original drawings.

The Santa Caterina Market therefore provides a counterpoint to the analysis of Can Lis in the previous chapter. The differences between these projects and places add a new layer of complexity to the argument so far. These include the age and complexity of place, the multiple sides of the brief, the project's connection to other nearby precedents and the treatment of preexisting architecture from different times.

However, the drawings also establish various connections with the previous buildings on the site forming a connecting thread between the relationships of architecture and place. The case investigates similar themes to those in the previous example including movement, context, ground and the effect of time on place. These issues common to each case study demonstrate how sketching may provide extremely different interpretations of related ideas in different contexts.

In contrast to the Acropolis and Can Lis, this project was also

conceptually developed mainly through sketching, drawing and model-making. Various kinds of graphic representation were key to its inception and development at all stages of the design. Although these were not site-sketches in the form of in-situ perspectives, the documentation of the project records a graphic process which deeply analysed place and its gradual transformation over time and managed to transform this into a project which functions simultaneously at various urban scales. As may be seen when comparing the design drawings, the project has been formed through a process of drawing and overlaying, its graphic representation crucial to its development and its eventual transformation of place. How then does the in-situ sketch analysis compare with the architects' original drawings for the project?

The example develops the approaches used in previous chapters, combining in-situ sketching used to analyse existing buildings (such as the Acropolis) with analysis of the design process through comparing original drawings at different stages of the project, similar to the previous analysis of Siza's design sketches. This interpretation of the building and place has been observed and considered through sketching in-situ. The ideas which have arisen from the sketches are then cross-referenced against original archival material in order to evaluate to what degree these contextual and empirical observations correspond to the original intentions of the architects.

Three themes are considered in this chapter which extend the ideas discussed in the previous sections: Sequence and movement; the relationship between architecture and the ground; and how the architecture connects to place through its presentation of time. The first theme concerns sequence and movement. This considers first how the project sews together two contrasting pieces of townscape to encourage the flow of people from one to the other and dissolving the previously distinct boundary limit between them, and second, how the project establishes architectural connections with a number of other nearby monuments forming a route which connects the sequence of related landmarks together. The second theme considers how the building relates to the ground plane, connecting the activity above ground to the evidence of the remains below. The third considers different ways in which the project approaches time, relating to the past, present and future states of place, and creating multiple opportunities for users to develop their own personal understanding of place through an open interpretation of the passage of time.

The following discussion focuses both on the built project for Santa Caterina and also on the role which my site sketches have played in its analysis. Each theme is presented in the actual order of research, starting with initial intuitions discovered through sketching in-situ, developing these initial ideas into broader arguments with further sketches and diagrams, and concluding with the site sketches which are most representative of the specific ideas. These are compared to the initial design drawings for the project by the architects.

**Theme 1a: Sequence and movement – Stitching townscape to encourage the flow of people.**

The initial sketches of the areas adjacent to the market to the north and south show a major contrast in the townscape on either side of the market. The dramatic change in scale, illumination and openness has created a distinct boundary between the major avenue and the small streets to the south. The comparison of Fig.



283 and Fig. 284 with Fig. 257 and Fig. 286 reveals the site's role as the interface between these two areas.

The sketches of the interiors and external spaces of the market building show how the project helps to resolve this boundary between contrasting areas. The drawings show a transition area capable of stitching the two zones together, and of changing the direction of movement from the main axis of Avenida Cambo towards the small alleyways to the SE. The project achieves this through various means, through leading the eye onwards with visual cues, through reorientating the space of the market





Fig. 283: ABOVE: [Sketch 1] Santa Caterina market seen from Plaça Nova in front of the Cathedral (SH in-situ).

through the alignment of the roof vaults and paths between shops perpendicular to the avenue, and through reducing the scale of the spaces to reduce the contrast of dimension between Cambo and the alleyways. The sequence of spatial compressions and expansions is repeated various times across the building to soften the transition between the scales of the different streets.

The sequence of sketches explain how the transition works in terms of the sequence of visual cues, the order of spaces and directions of movement. The sequence is broken up into a variety of spaces, forming a more gradual and interesting cross over between the two environments. The eye is continually lead forward towards glimpses of the next partially hidden space along the pathway, while the contrast between scales, dimensions and density of occupation varies gradually from one area to the next. The result of the visual and spatial sequence encourages movement from one area to the other, generating a flow of people through the building and into the surrounding streets. This has the effect of stimulating not only the use of the building, but spreading its influence along the neighbouring streets, acting as a catalyst to gradually improve the livelihood and conditions of the neighbourhood. Comparing these ideas to the original design sketches

Fig. 284: LEFT: [Sketch 2] At the entrance to the market facing south west towards the Cathedral and Av. Cambó (SH in-situ).

Fig. 285: LEFT: [Sketch 6] From the southern side of the market facing C/de Sant Jacint (SH in-situ).

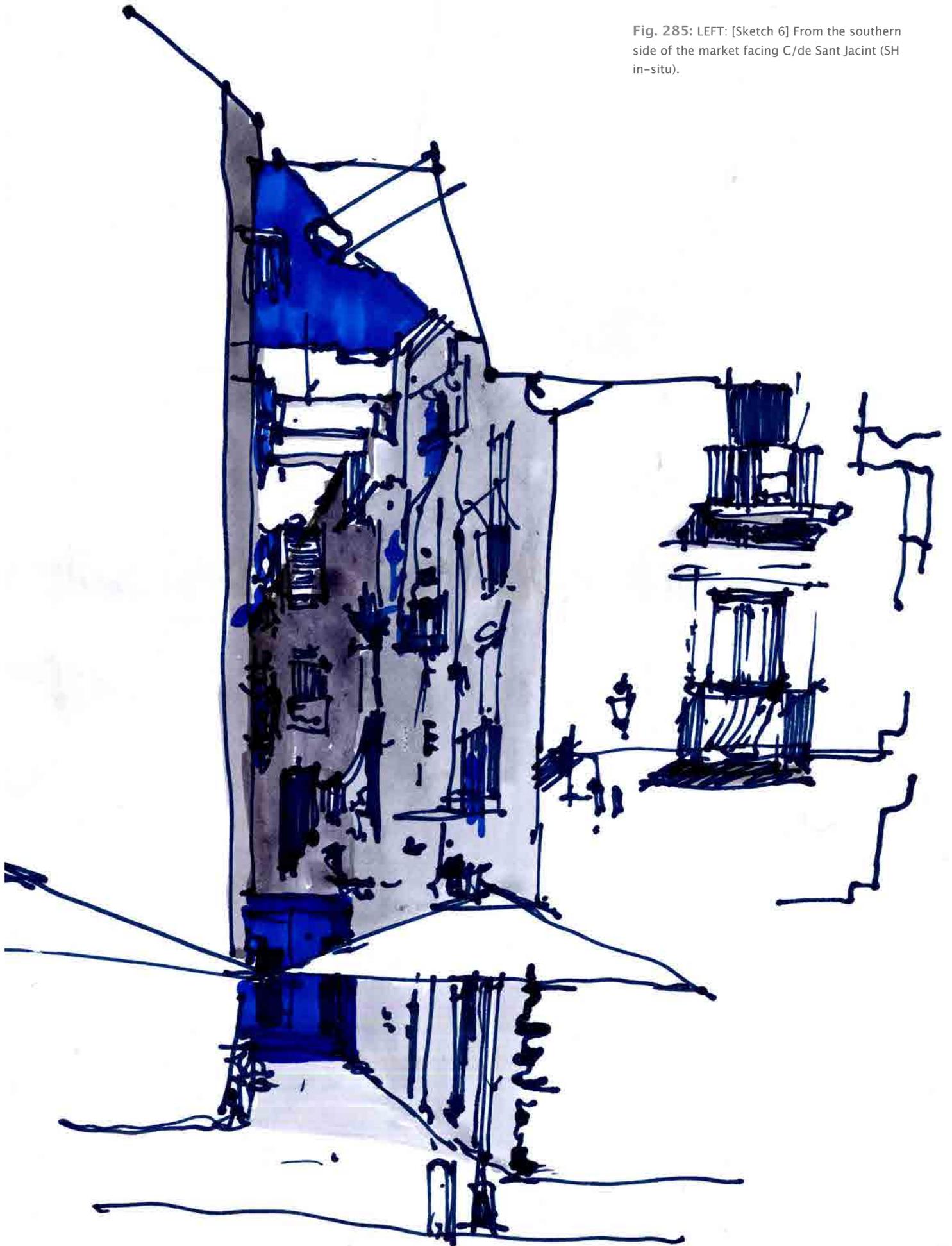




Fig. 286: RIGHT: [Sketch 9] C/ de Sant Jacint facing north to the market (SH in-situ).



by Miralles, the importance of the flow of people and visual cues was a clear intention from the outset. The arrangement of the open space to the south of the market acting as a small scale open public space to receive the flow of people from the small alleyways and acting as an antechamber to the large scale Avenida Cambo is also clear. The initial proposal for a set of pergolas extending along the Avenida would have further blurred the overlap of the two scales. However, the change in orientation of the roof from the initial designs parallel to Cambó to the built design perpendicular to it has helped to emphasis the change of direction, connecting the market more to the extension of the north-south alleyways rather than purely aligned to the main street front. Despite the fact that the pergolas were never built across Avenida Cambo, the eye-catching visual cue from the Cathedral square and Via Laietana has been provided by the design of the overhanging roof, and its dramatic colours contrasting from afar with its surrounding context.

Fig. 287: Sequential views LEFT to RIGHT: north west facade on Av. Cambó [Sketch 3]; Inside the main entrance from Av. Cambó [Sketch 4]; market interior [Sketch 5]; inner patio of the market [Sketch 6]. (SH in-situ).

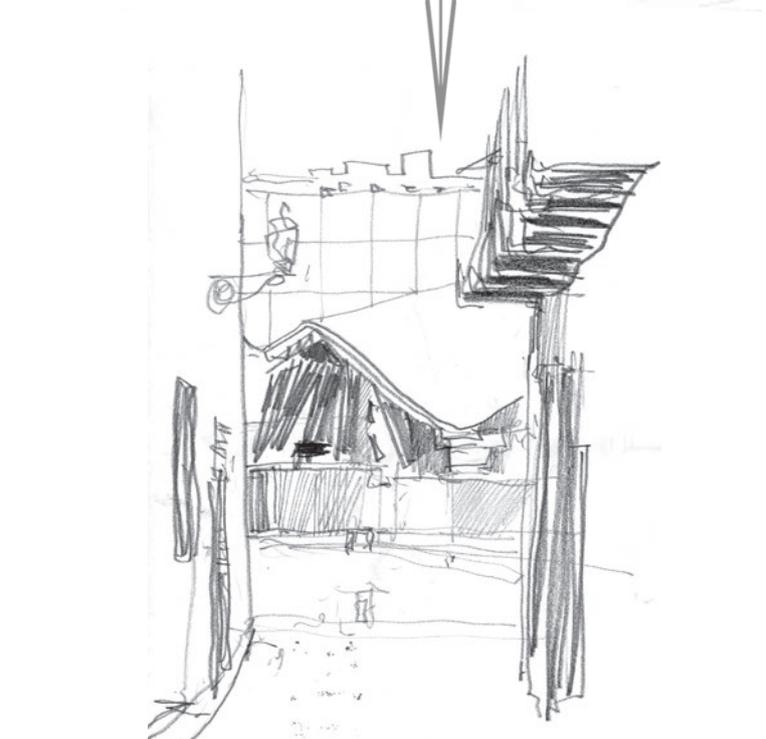
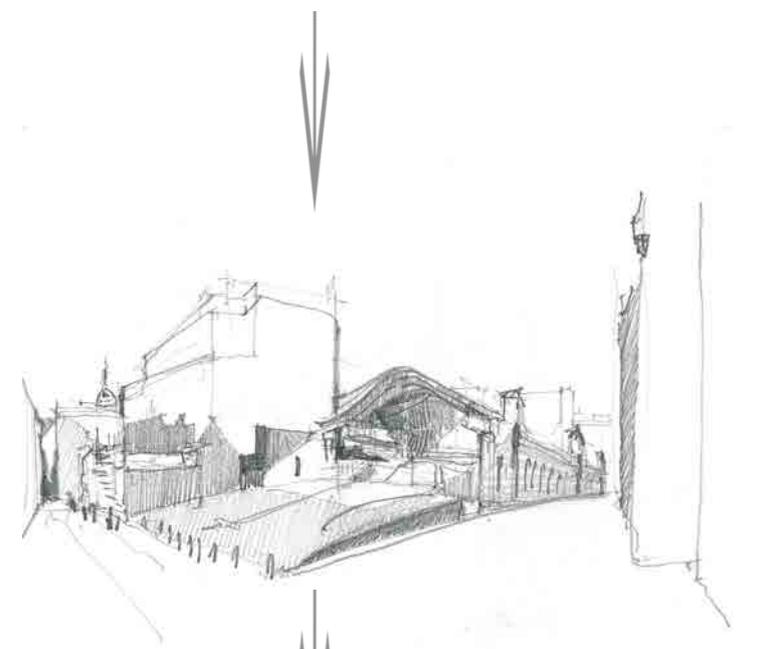
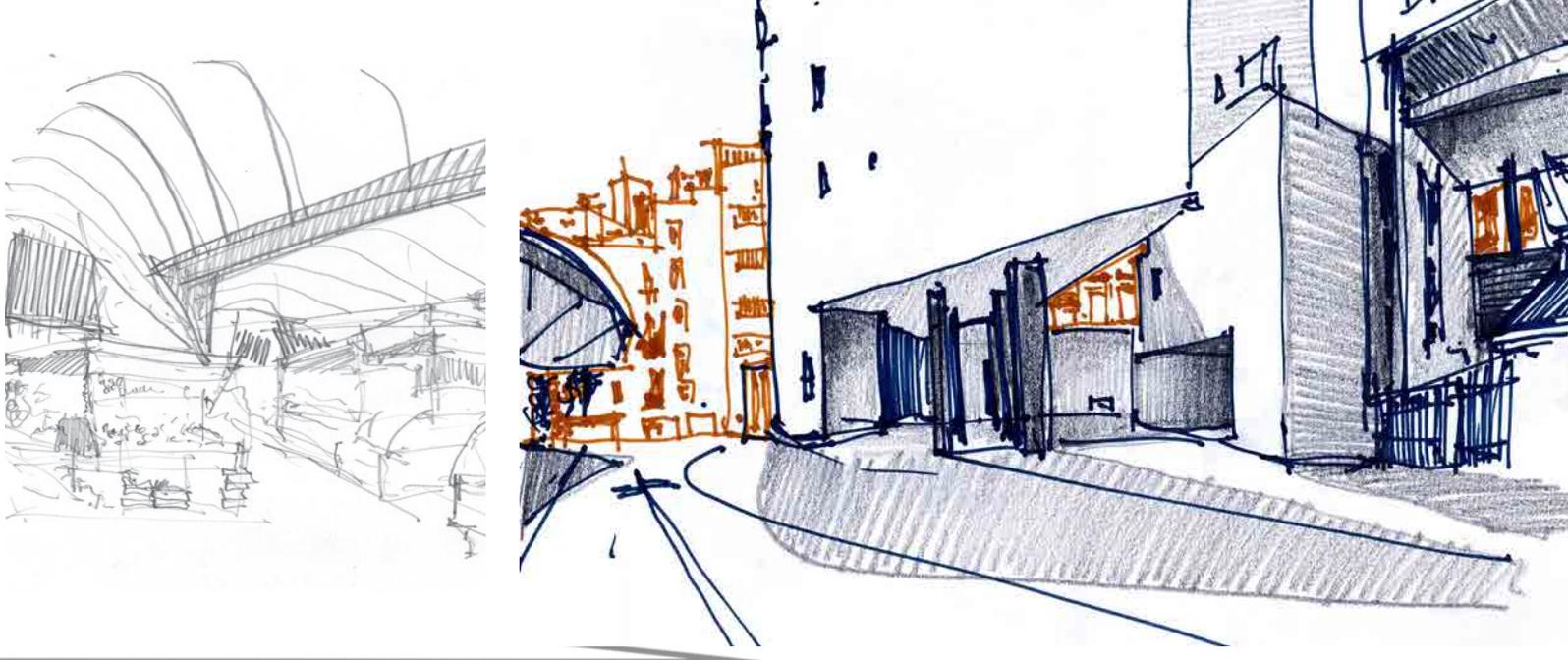


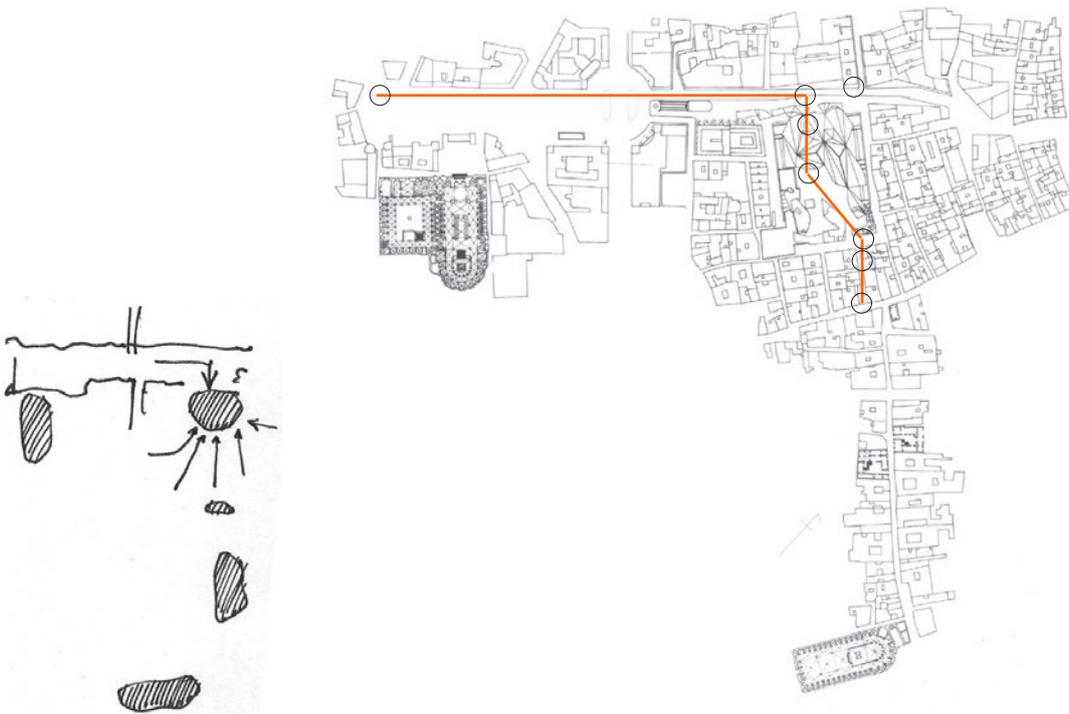
Fig. 288: ABOVE CENTER: Pl. Joan Capri facing north [Sketch 7]; BOTTOM: C/de Sant Jacint [Sketch 8] (SH in-situ).

Fig. 289: ABOVE CENTER: Pl. Joan Capri facing east [Sketch 10]; BOTTOM: C/d'en Giralt el Pellicer [Sketch 11] (SH in-situ).



**Fig. 290:** Sequential views ABOVE LEFT to RIGHT: starting at Av. de la Catedral, passing through the market and ending at C/ de Sant Jacint (SH in-situ).

**Fig. 291:** BELOW: Site plan for the reformation of the market (EMBT) with viewpoints and route indicated in orange (SH).



**Fig. 292:** FAR LEFT: Diagram showing major Gothic monuments and the principal approaches to the market (SH).

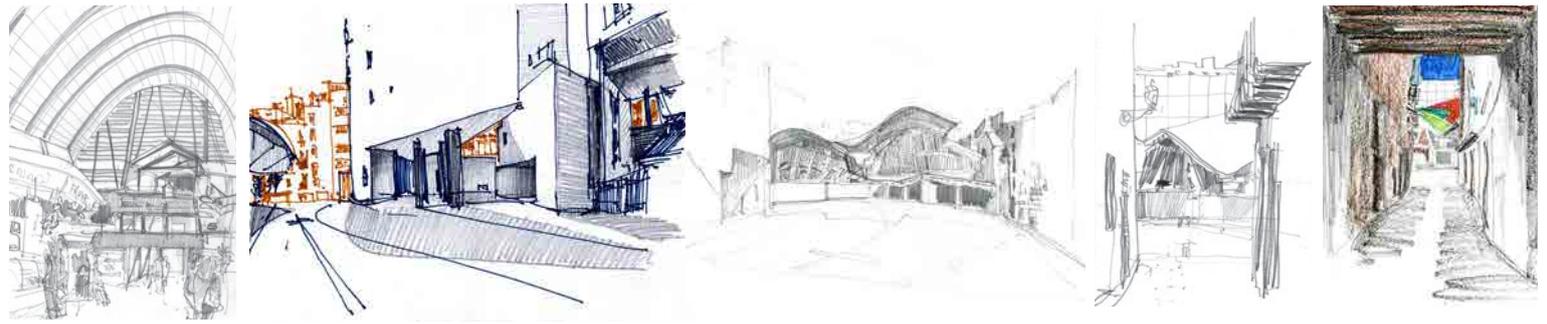
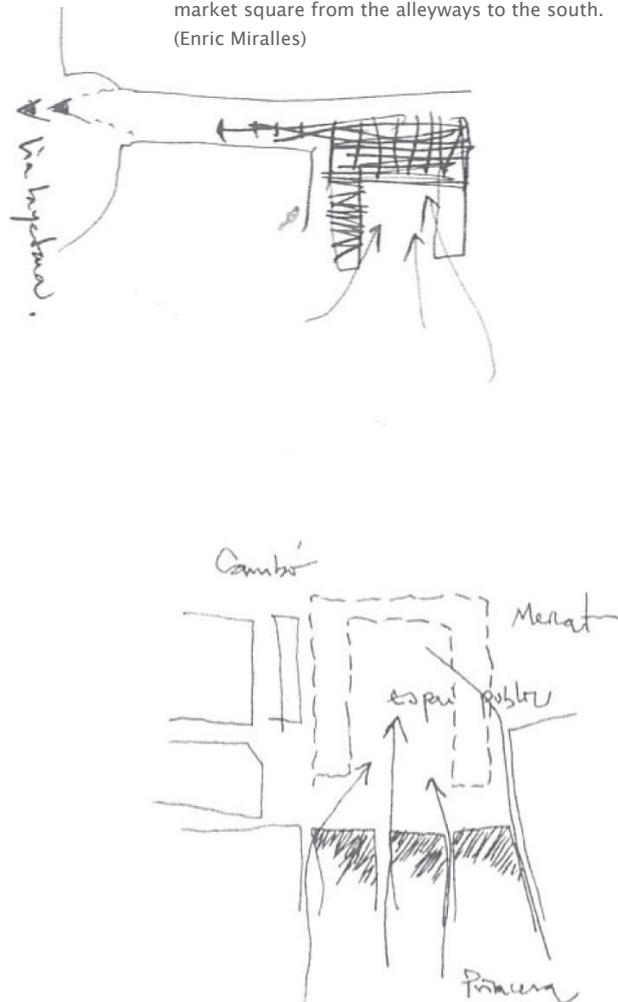


Fig. 293: BELOW: Detail of the Site plan for the reformation of the market (EMBT) showing an early version of the roof design.

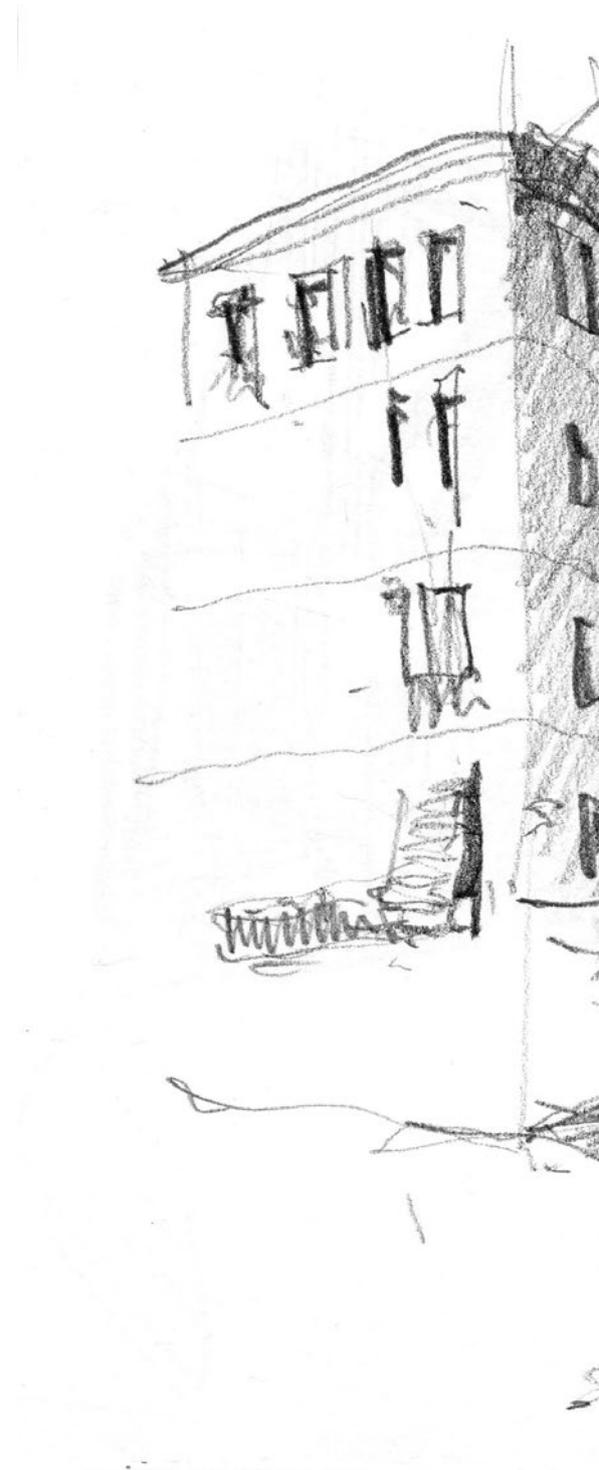
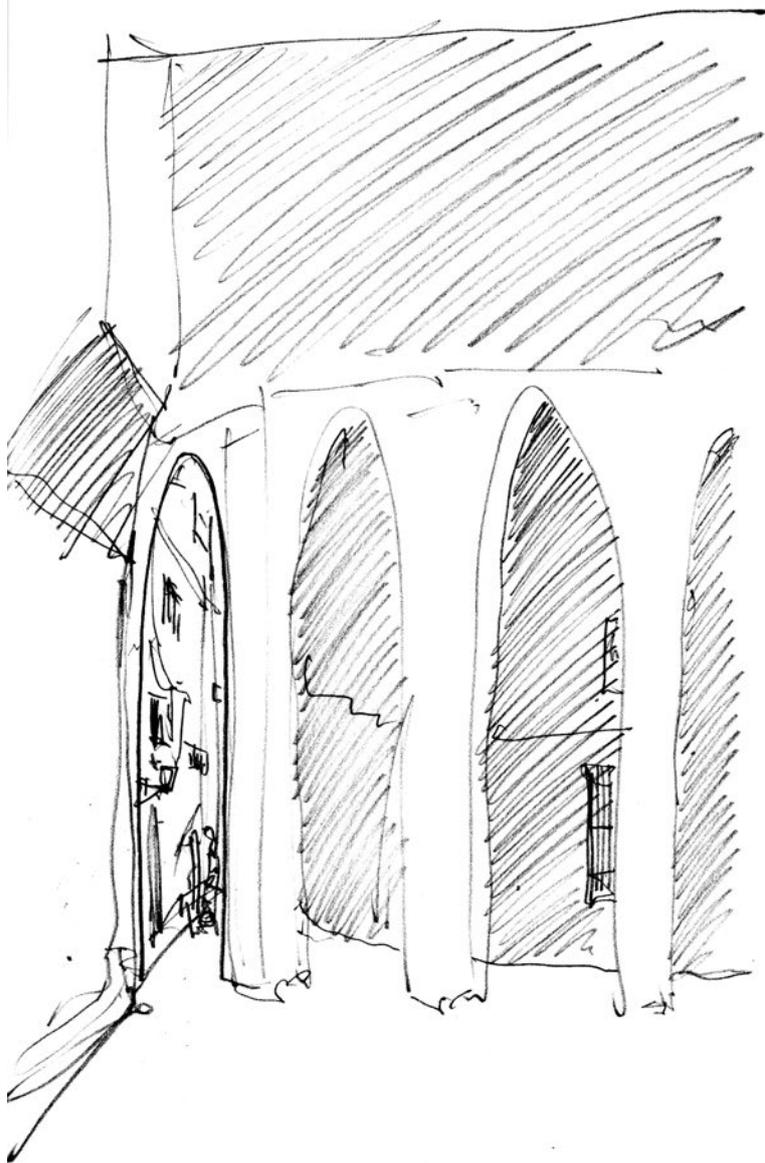


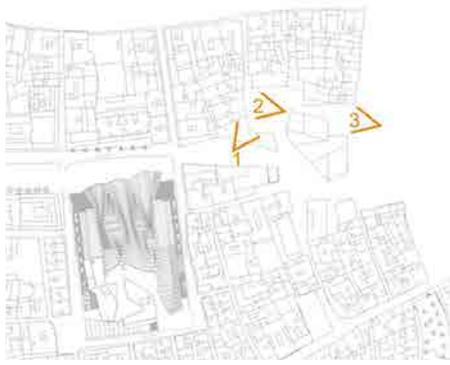
Fig. 294: BELOW: design diagrams by Enric Miralles showing the entrances into the central market square from the alleyways to the south. (Enric Miralles)



Since the completion of the project this same strategy of opening up small scale spaces set back from the main avenue has also spread across to the north of Avenida Cambo.

**Fig. 295:** LEFT: C/dels Mestres Casals i Martorell: Prior to opening the new public space [Sketch 1] 2009; CENTRE: During demolition [Sketch 2] 2014; RIGHT: The completed public space seen from C/ Jaume Giralt 2014 [Sketch 3] (SH in-situ).





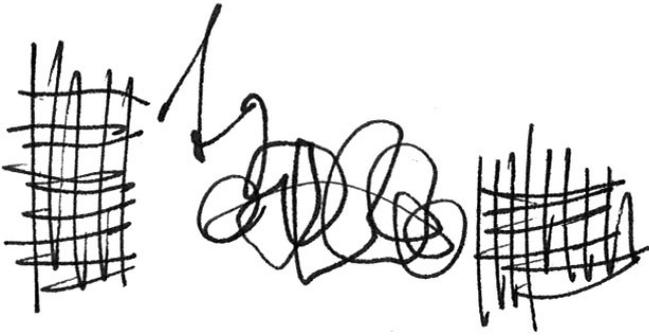


Fig. 297: ABOVE: Diagram of contrast between the Old town and its immediate surroundings (SH).

Fig. 296: RIGHT: Roman walls of the Old Town and Cathedral facade from Av. Cambó (SH in-situ).

***Theme 1b: Sequence and movement –  
A narrative of Architectural  
connections.***

**Relationship to the surrounding city.**

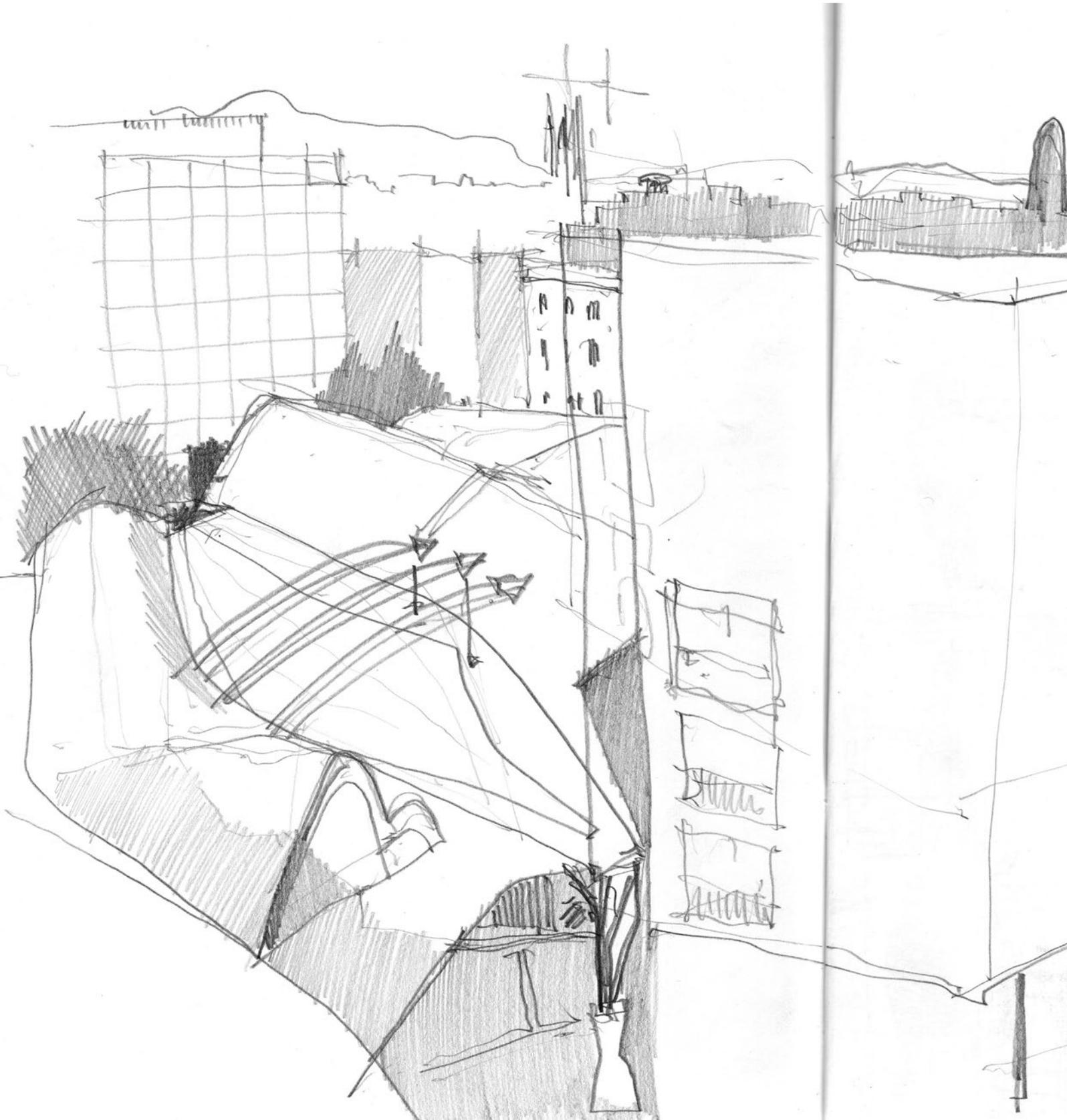
The sketches of the Cathedral from the square in front, and the rooftop view of Santa Caterina, both share in common the sense of organic forms being compressed by the surrounding orthogonal townscape. This equivalence between the drawings suggests that they are both points which the city has grown around pressing in on them over time. Despite the difference in age between the buildings, the sense of urban focus and townscape gravity or emphasis forms a strong link between both.





The project establishes an equivalent relationship between selected medieval monuments (of which the earlier Convent of Santa Caterina would have formed part). The relationship between the old city, cathedral and walls and the surrounding buildings built up against it is echoed by the apparent pressure of the new market pushing outwards against the encroaching city scape (a tension which led to the burning and eventual demolition of the

Fig. 298: Roof of the Santa Caterina Market, drawn from the roof terrace of one of the housing towers, facing north (SH in-situ).

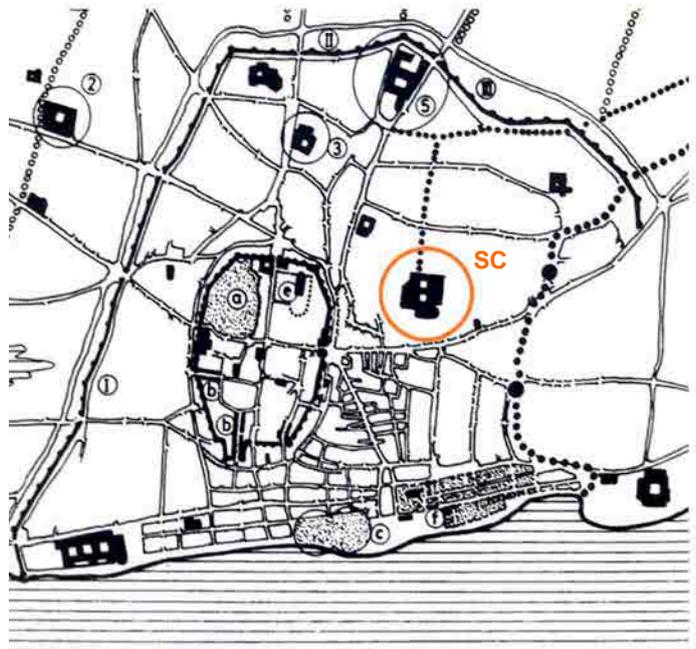


convent). The contrasts of colour, material and geometry in both sketches distinguish both buildings as landmarks immersed in their surrounding built environment, and show the visual expression of this urban and long-term pressure.

Fig. 299: Diagram of contrast between the market roof and its immediate surroundings (SH).



Fig. 300: Site plan of Barcelona and the Convent of Santa Caterina in 1300AD [marked SC].



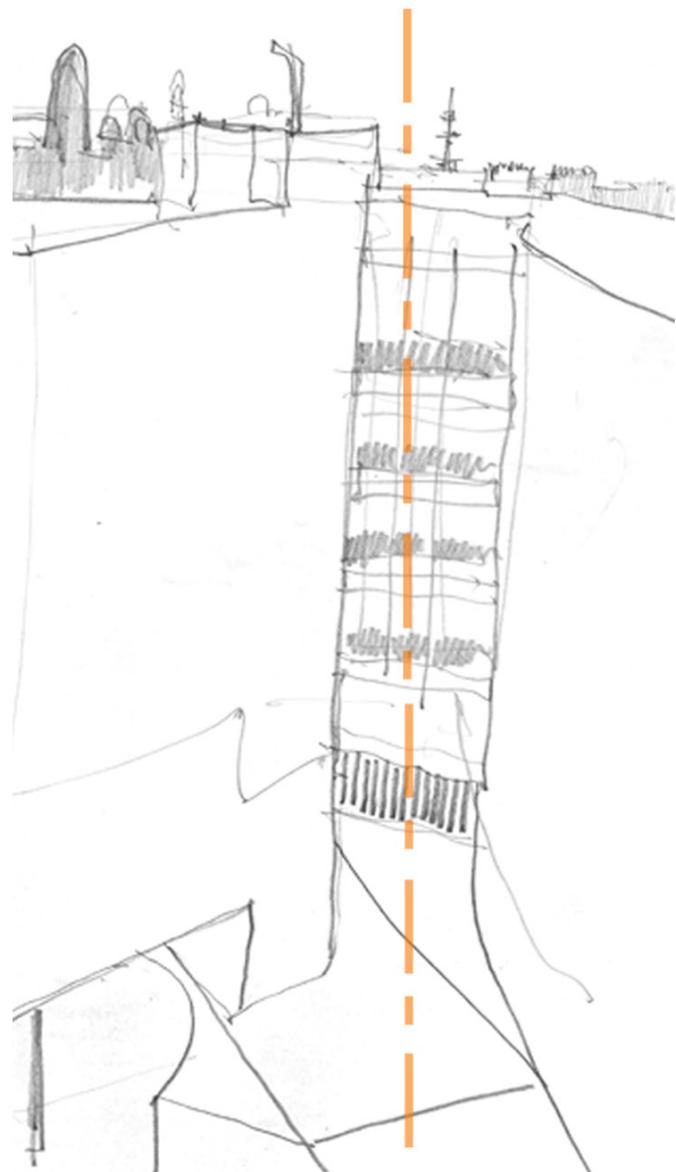
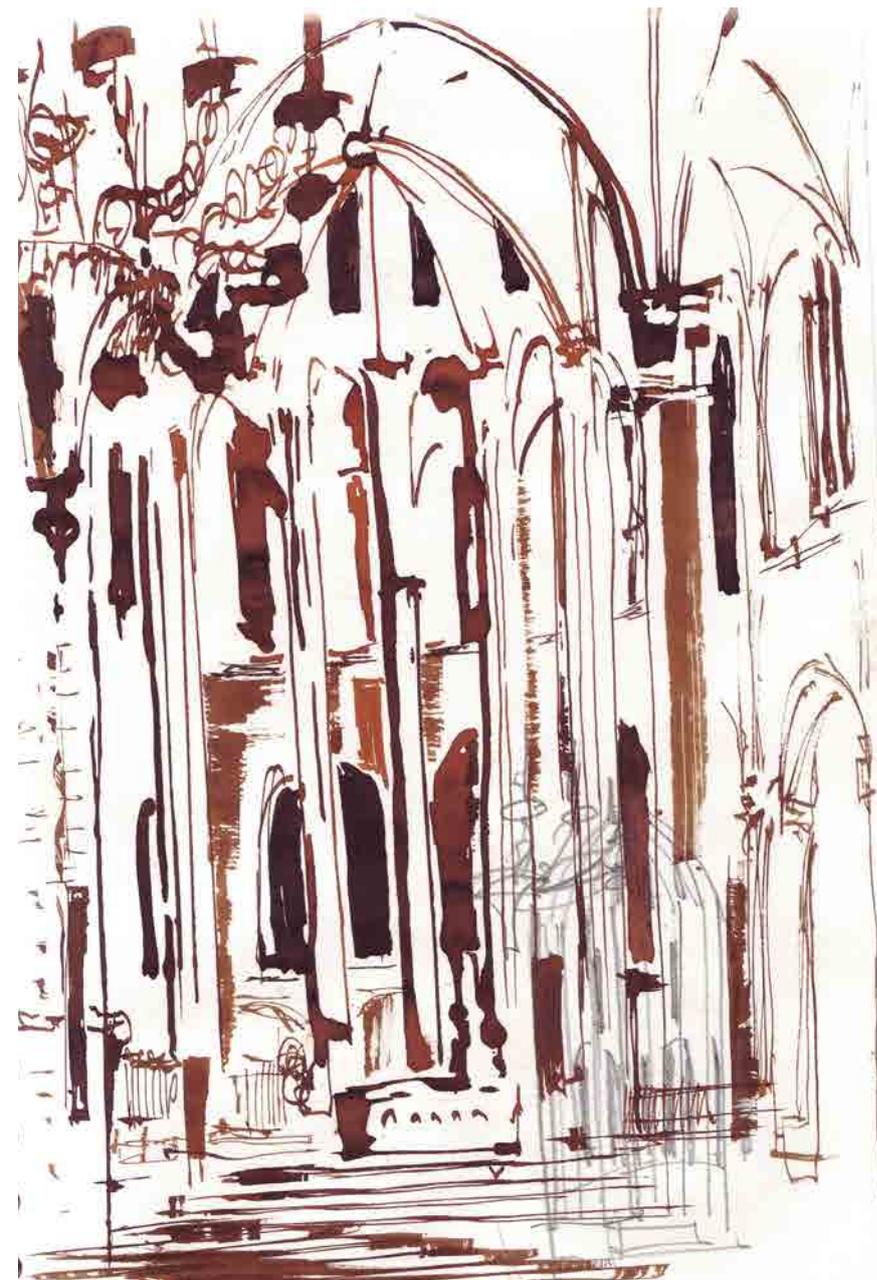
### Scale and volume

The new project also incorporates new uses on the site, housing for the elderly is located towards the southern most corner in the form of two residential towers. These refer back to the earlier church through their location, access from the street, their central axis along the line of the original church nave. They also recall the overall massing of the monastic complex - the relative scale of the towers in relation to the rest of the project is equivalent to the height of the church compared to its surrounding monastic buildings. The following pairs of sketches show equivalent treatments in both the new buildings and the surrounding Gothic monuments.

Fig. 301: LEFT: Santa Maria del Mar 2003 (SH in-situ).

Fig. 302: CENTRE: Santa Caterina housing towers with centre-line of the nave of the pre-existing church (SH in-situ).

Fig. 303: RIGHT: Santa Maria del Mar 2015 (SH in-situ).



The equivalence of scale and height and central axes in Santa Maria del Mar and the Market can be seen in sketches Fig. 301 and Fig. 302. Specific building components also make reference to other Gothic buildings such as roof vaults, supporting columns and spatial hierarchies.



Fig. 304: RIGHT: Central patio of the new market (SH in-situ).

Fig. 305: BELOW: C/ de Gombau side-street leading to the market (SH in-situ).





### Streetscape and spatial transition from public to private.

Carrer Montcada was a principal street in the Medieval city with the palaces of a number of major merchant families. The new project helps to extend this street and connect it to the main thoroughfare towards the cathedral at its northern end. These sketches show a relationship between public spaces and the neighbouring streetscape which is particularly characteristic of Carrer Montcada. The arrangement semi-public courtyards forming a transition between public domain of the street and domestic area, is repeated in a number of the Gothic palaces along the street between Santa Maria del Mar and the market such as those now occupied by the Picasso Museum. The narrowness of the public street is offset by comparatively generous, open courtyards set back from the street behind controllable doorways. These provide a transition from the tall narrow and enclosed and often busy environment of the street to a more relaxed, open and comparatively tranquil open space before entering the building itself.

Fig. 306: ABOVE: Picasso Museum courtyard (SH in-situ).

Fig. 307: BOTTOM LEFT: C/Montcada, entrance to the Picasso Museum (SH in-situ).

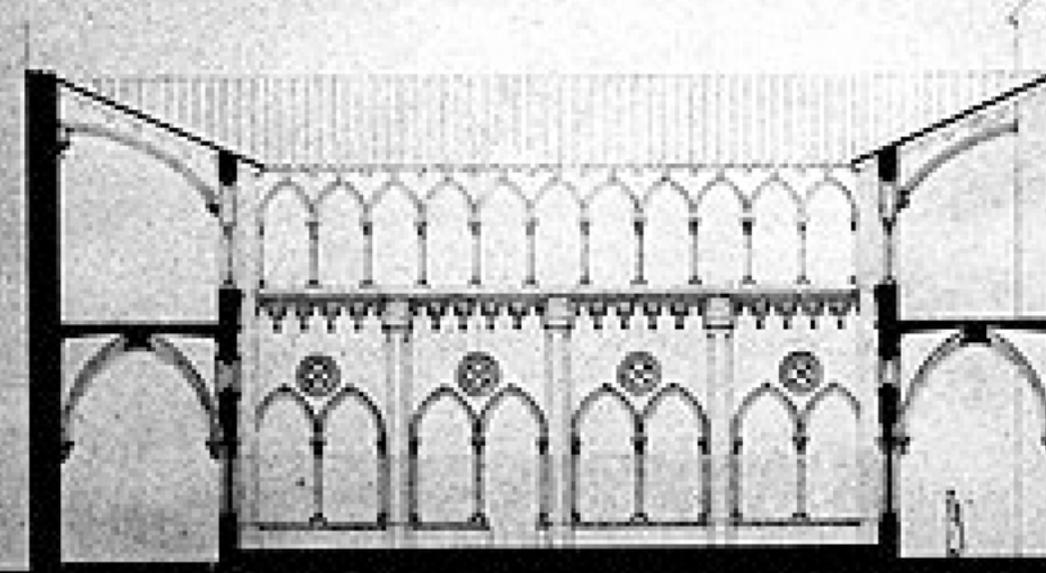
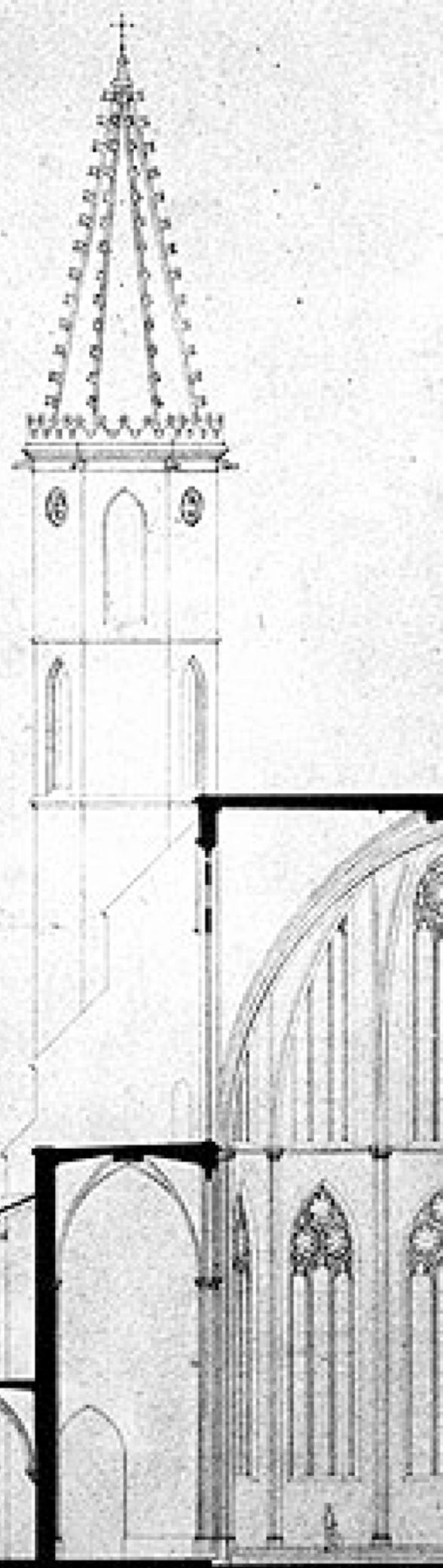
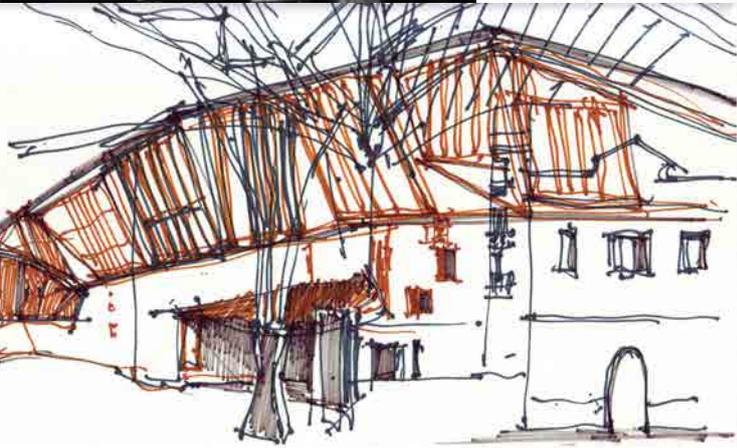




Fig. 308: LEFT: Cloister of the preexisting church.

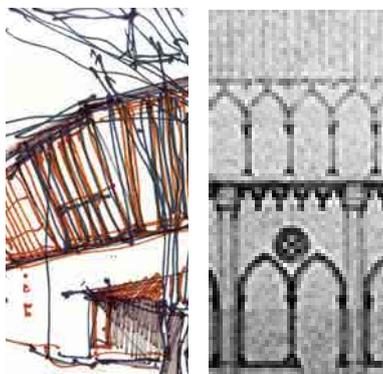
Fig. 309: CENTRE LEFT: Inside the market facing the central patio (SH in-situ).

Fig. 310: Section through the pre-existing cloister and church nave.



**Fig. 311:** TOP: The two levels of the cloister compared to the two levels of the market patio facade (SH).

**Fig. 312:** BOTTOM: Central market patio facing Plaça Joan Capri (SH in-situ).



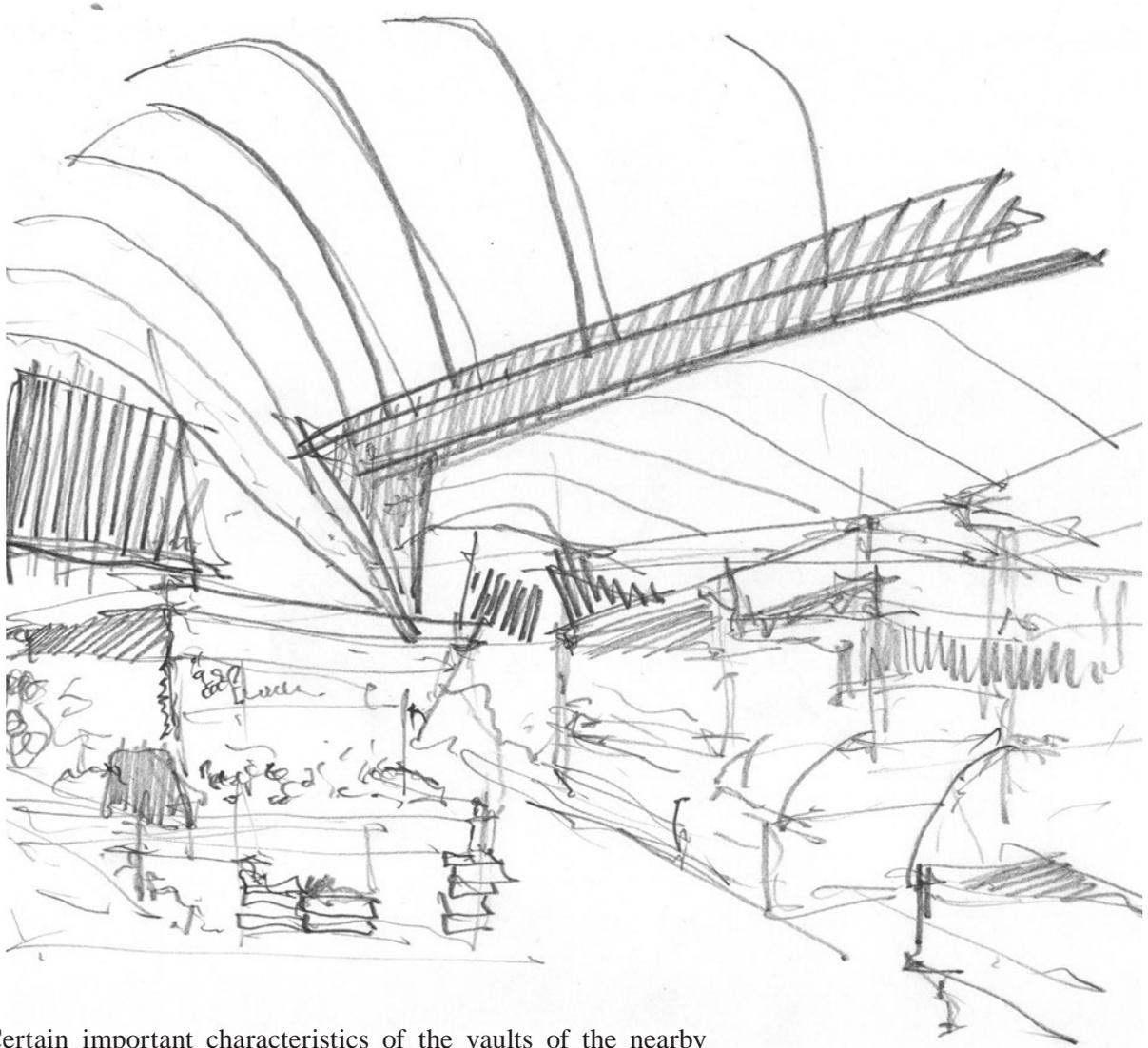
An equivalent relationship arises between the central patio of the market and the narrow southern approach alleyways.

### Formal organisation

Sketches of the market patio show similarities of formal organisation with the earlier cloister in the same position: the two levels of the new courtyard facade with large transparent areas below and more intricate timber screens above recall the two levels of the cloister, open at ground level, and more enclosed by tracery and narrower colonnades above.



Fig. 313: Central aisle in the new market (SH in-situ).



Certain important characteristics of the vaults of the nearby Gothic churches are also shared with the new market roof. The vaults of Santa Maria del Mar spring from the same height in both the central nave and side aisles. The basic roof organisation in section of a central higher vault flanked by two side vaults of almost equal height which all spring from the same height, and are flanked by a further two bands of lower ceilinged spaces, is effectively shared by both buildings.

The project establishes relationships with other selected architectural monuments in the surrounding city. When visited in sequence these suggest a number of similarities which help to transform a small and indirect route through this part of the city into an intentional path joining together a series of focal points along a route.

Fig. 314: Santa Maria del Mar (SH in-situ).



Fig. 315: RIGHT: Section diagrams comparing roof structure of the new market and Santa Maria del Mar (far right) (SH)

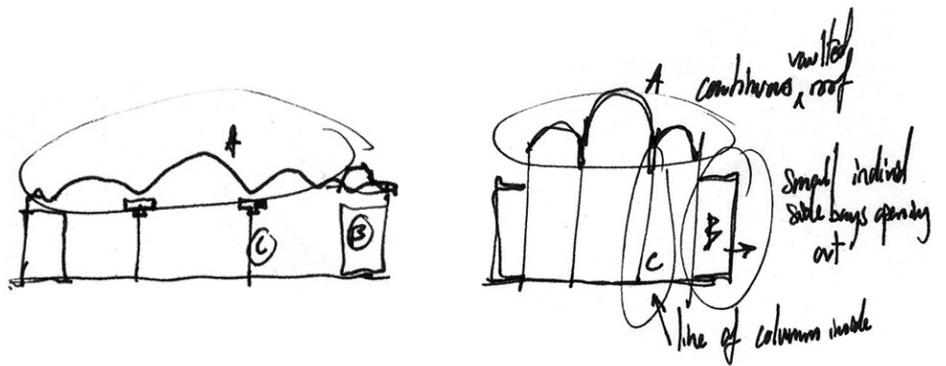




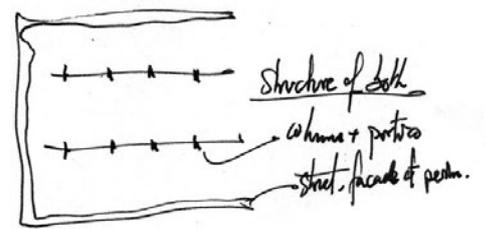
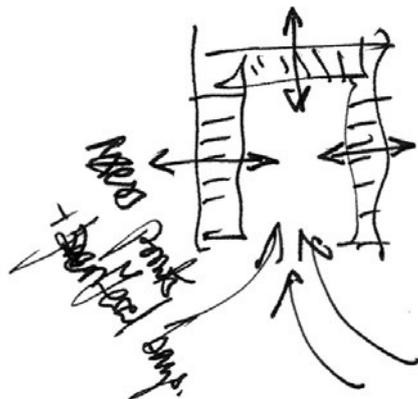
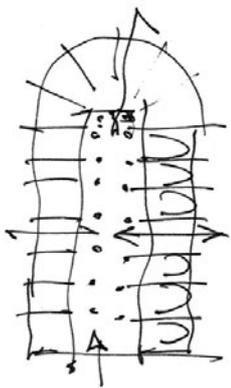
Fig. 316: ABOVE: Central aisle and main entrance in the new market (SH in-situ).

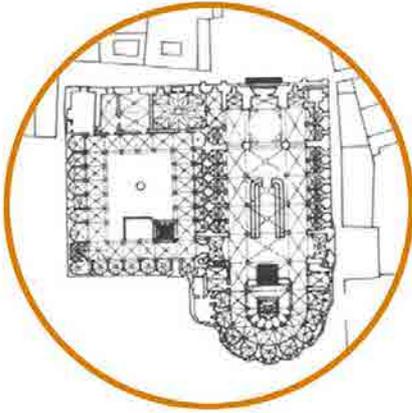
On the one hand, equivalences between the new project and its medieval precursors highlight the complex history of the site and its influence on the new design. At the same time, through making architectural references to these other landmarks, the new project establishes a series of formal and spatial arrangements which they share in common. These contribute to building a subtle but perceptible image shared in common between the various monuments along the route. This mental image relating the set of landmarks together which establishes the route as a significant path through the city.



Fig. 317: ABOVE: Santa Maria del Mar (SH in-situ).

Fig. 318: Plan diagrams showing the structural layout and entry points of Santa Maria del Mar (left) and the market (right) (SH)





### Comparison of drawings of the project and previous buildings on the site.

This set of connections may also be seen in the project site plan of the Market and part of urban proposal to the NE, which highlights the interiors of selected Gothic buildings. The original project drawings appear to confirm this same idea as a vital strategy to generate and promote the authentic image of the this particular ancient route through the old town as an urban channel of new importance capable of bringing different people through the heart of the neighbourhood and helping to open up and regenerate the surrounding area.

In particular, the original project drawings show a clear relationship between the early design of the market roof, with ribs meeting at nodal points, and the rib-vaulting drawn on the plans of the nearby Gothic churches.

A detail of the historical overlay plan shows the vaulting which had roofed much of the earlier buildings on the site. A comparison between a section through the central patio of the new project, and one through the previous church and cloister show the equivalence in terms of relative scale, massing, formal organisation of the patio facade, and the way the highest parts of the new scheme step back away from the street front.

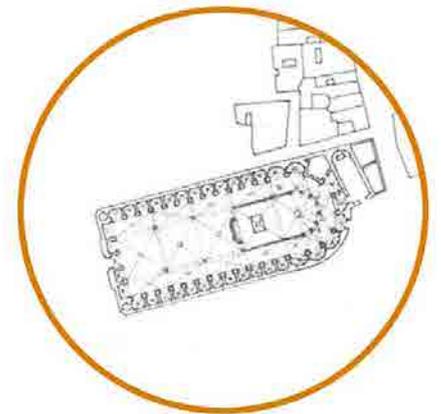


Fig. 319: Details of EMBT site plan showing Gothic monuments and internal vaulting (SH).

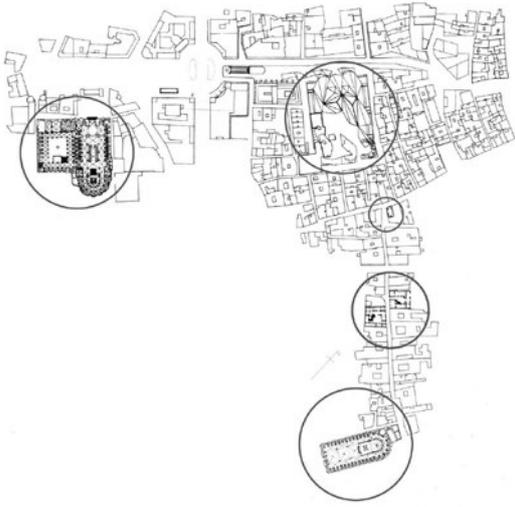


Fig. 320: Site plan diagram showing major Gothic monuments and the principal approaches to the market (EMBT + SH).

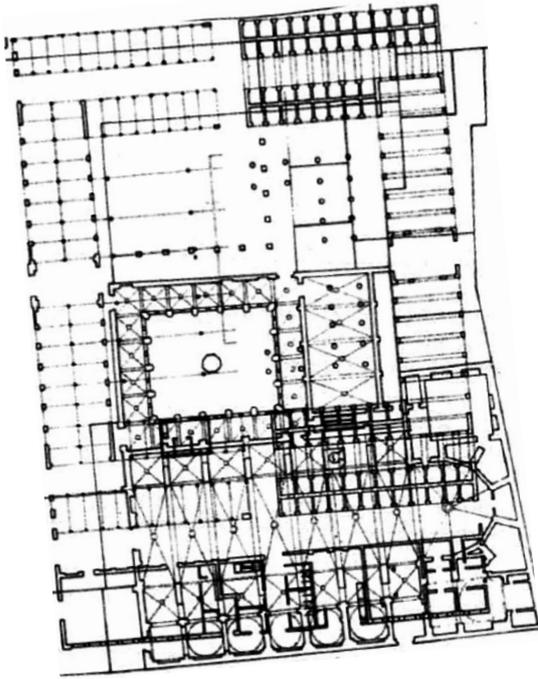
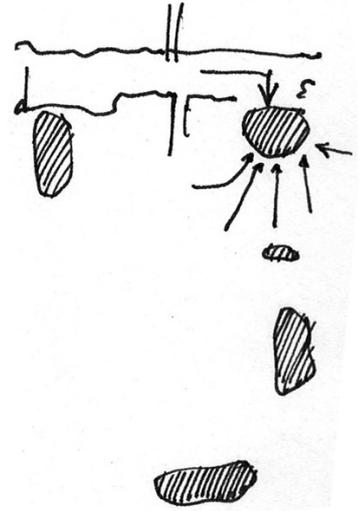


Fig. 321: LEFT: Detail of historical overlay plan of the preexisting convent and C.19 market building (EMBT).

Fig. 322: Comparison of sections to scale through the church and cloister (BELOW RIGHT), and through the market patio (BELOW LEFT) (EMBT).

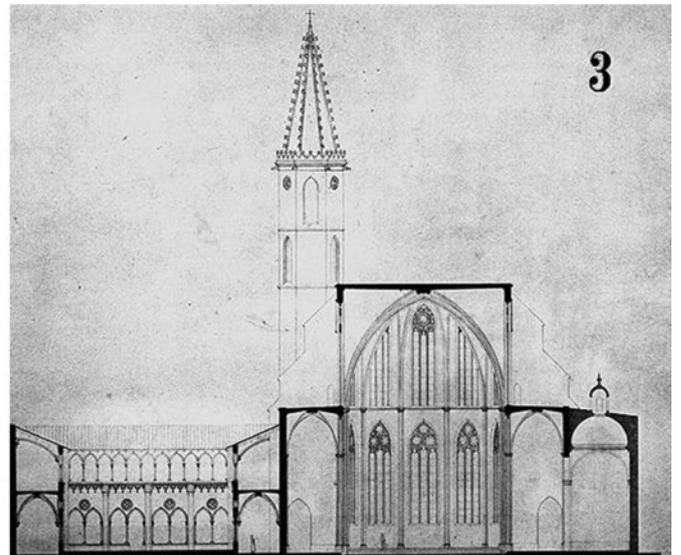




Fig. 323: Santa Caterina market from Plaça Joan Capri (SH in-situ).

### *Theme 2: Architecture and the ground*

The sketch below shows the importance of the level change at the square to the SE of the market. The ground slopes gradually up remaining a clear continuation of the street level on the south but abruptly changing level to the east. This is the most distinct change in ground level across the project. The plaza covers the archeological ruins of the previous church apses, and crypt. A relationship is made between above ground and the ruins beneath. The public space is adapted to form a roof high enough to cover the ruins with the intention of making an exhibition out of them. The areas of pavement in the middle of the square were originally intended as light wells allowing illumination and views down to the crypt from the public square.



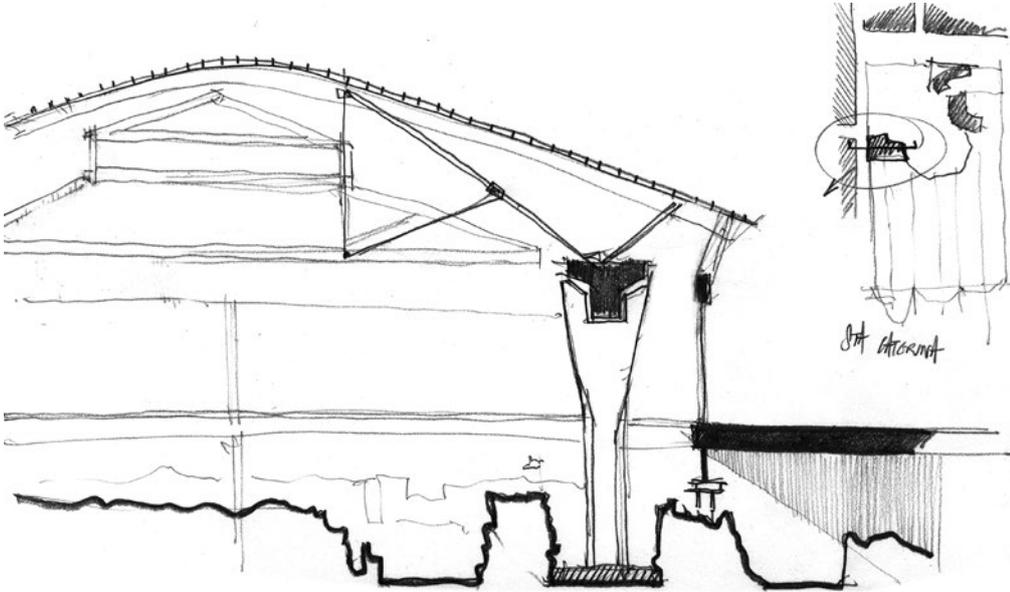


Fig. 324: ABOVE: Sketch section through the archeological exhibition space, Santa Caterina market (SH in-situ).

Fig. 325: BELOW: Archeological remains inside the market (SH in-situ).

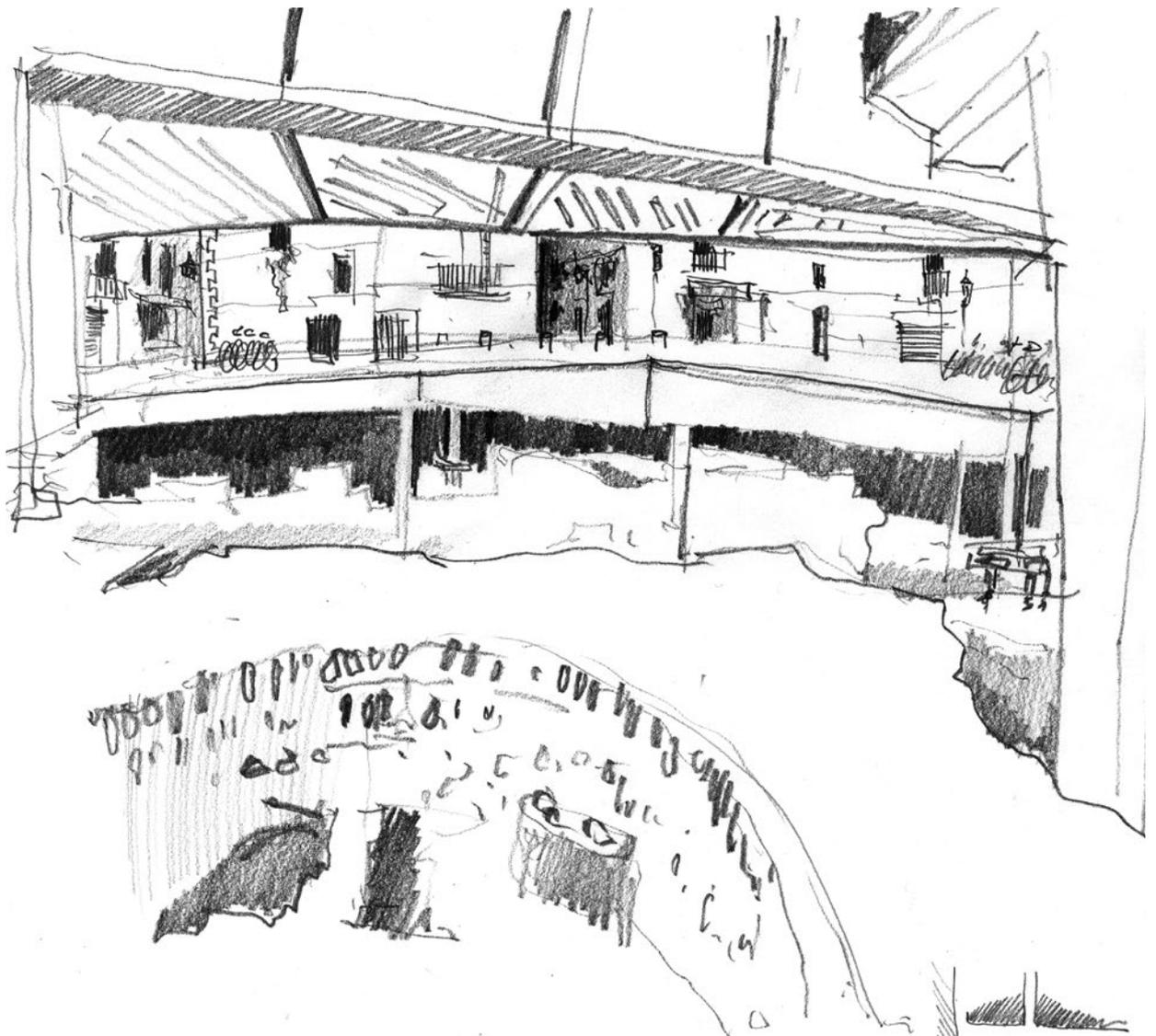


Fig. 326: Section through Praça Joan Capri showing the crypt of the convent preserved beneath the new square (EMBT).

The exhibition of the ruins was intended to be a significant part of the project with a direct connection made between ruins and the external public space. This shares much in common with the Benjamin Franklin house museum in Philadelphia by Venturi and Scott-Brown (1972) (Fig. 327).

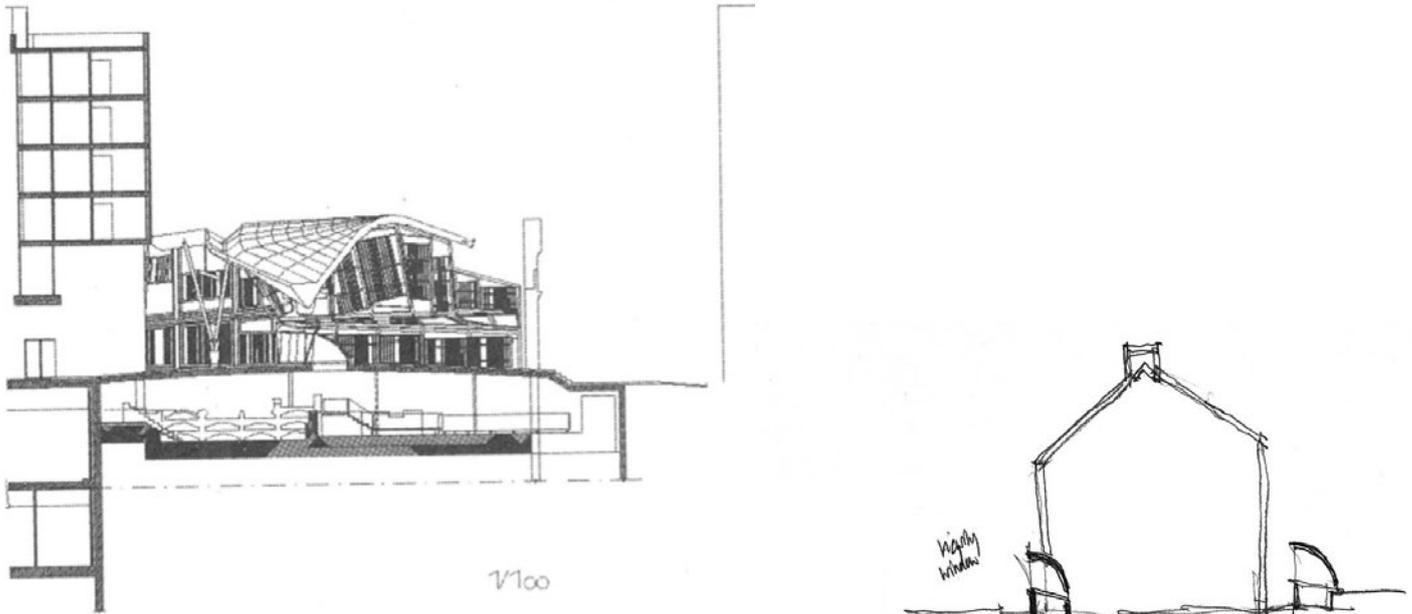


Fig. 327: RIGHT: View, section and detail of light well at the Benjamin Franklin house museum, Philadelphia. Project by Venturi Scott-Brown (SH in-situ).

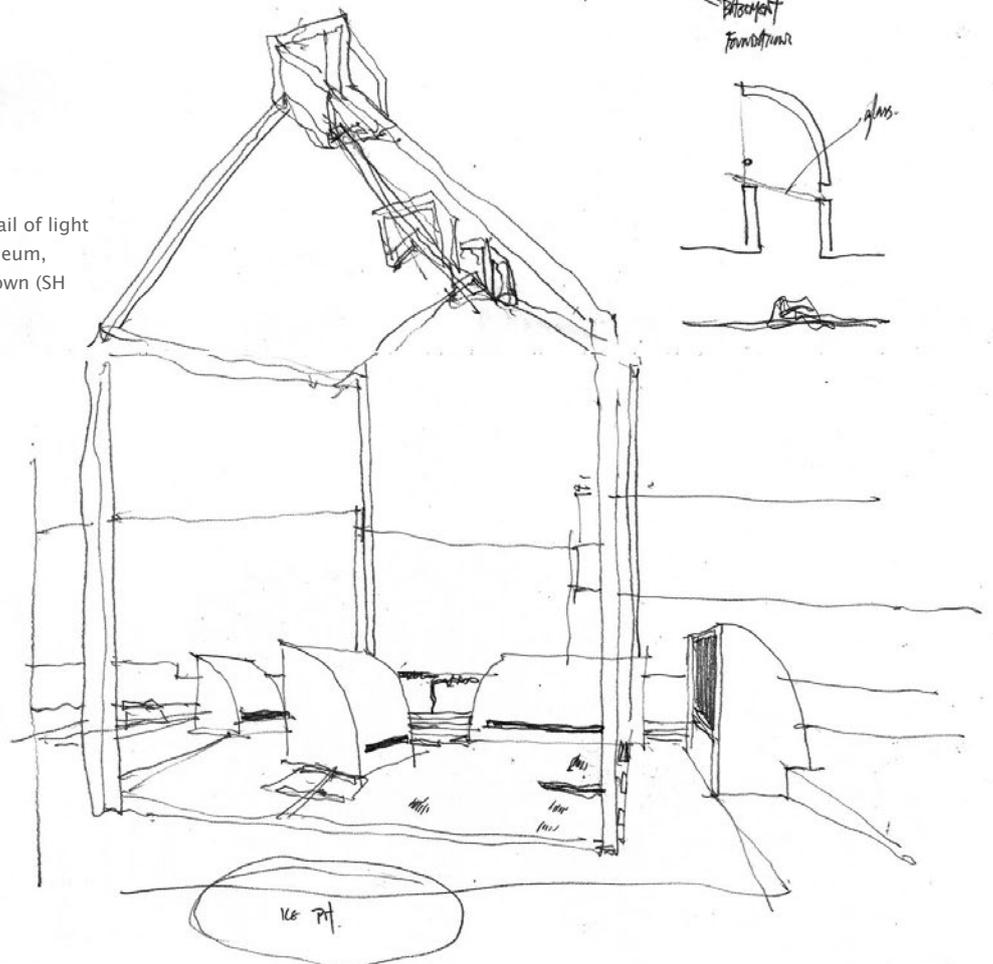




Fig. 328: LEFT: Santa Caterina Market from Av. Cambó (SH in-situ).

Fig. 329: BELOW: C/Giralt el Pellicer (SH in-situ).

### *Theme 3: Architecture, time, people and place.*

The sketches of the market facade and the market roof show dramatically contrasting approaches to the existing building and between new and old. The market facade, which has been maintained largely intact, contrast dramatically with the new roof, brightly coloured and forming an utterly new geometry and roof line to cover the market. This gives a clear intuition that the project combines different relationships between old and new. But these are not simply polarised into the old parts of the existing building which have been maintained and the new project with new geometries and brilliant colours. The sketch of the rear





Fig. 330: Font and new SE wall of Santa Caterina Market from C/ Colomines (SH in-situ).

southern wall of the market shows an ancient font (whose precedence from 1200 is noted in an inscription on the wall) which has been rebuilt out of marble counters from the previous fish stalls. The rest of the wall has been constructed out of other recycled materials from the demolition of the earlier building. These have been rearranged to maintain some of the original features of the wall, but to also form a new mural spelling out the name Santa Caterina.



### Preserving archeological remains.

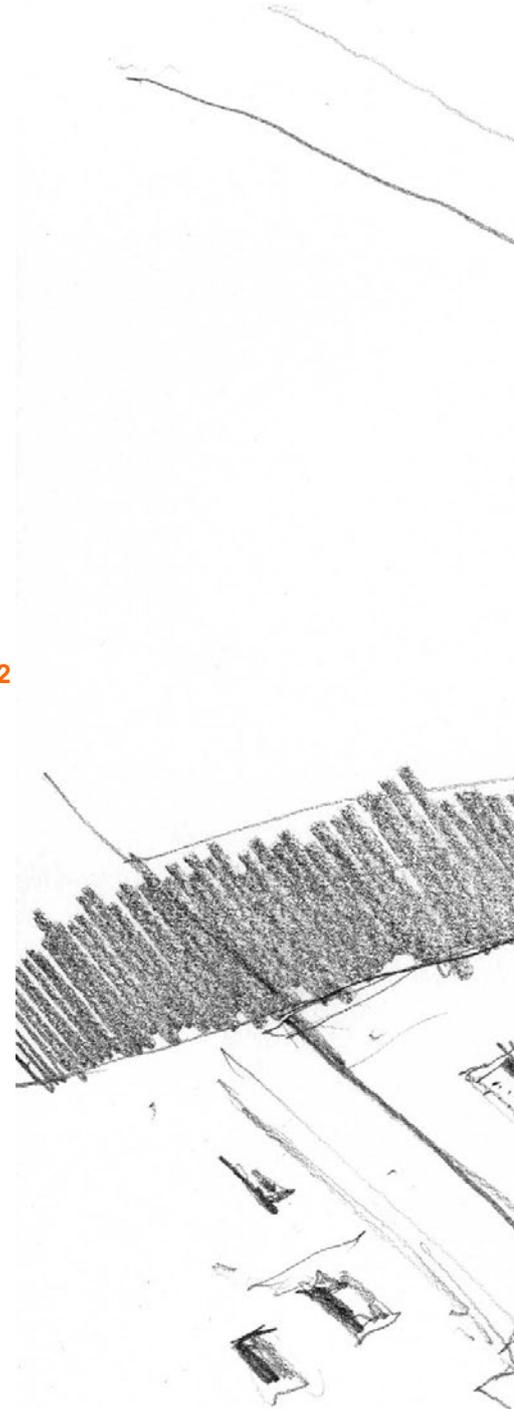
The ruins which have been preserved in the SE corner of the site are combined into the new project in the form of a public exhibition, visible from the public space but not accessible as foreseen in the project. The original remains of the various church foundations and the crypt are presented as a set of ancient ruins detached from the other uses of the building. They form an isolated exhibit which apart from a partial view from the public space and a brief written explanation play no further role in the project. The actual remains of the previous buildings, uncovered during the excavation process have been partly preserved in their current state as an exhibition. This was originally intended to extend beneath the new square, incorporating light wells as viewing points to see the crypt below.

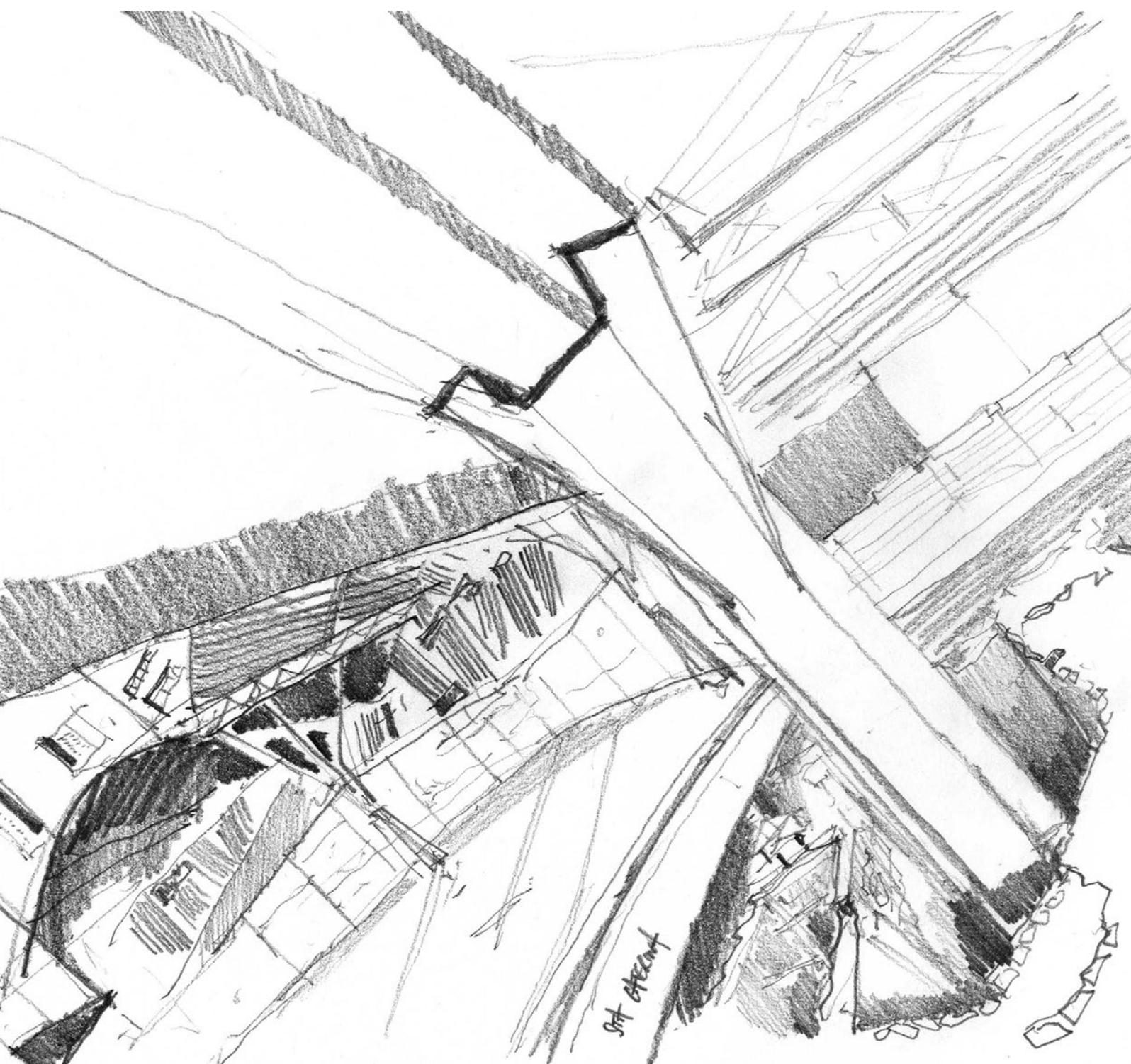
**Fig. 331:** LEFT: Plan of the new market and Archeological remains below the previous building. Coloured area shows the remains preserved in the new project (Archeological plan, Barcelona History Museum, overlay SH).

**Fig. 332:** RIGHT: Archeological remains conserved inside the new market (SH in-situ).



**Fig. 332**





**Maintaining the existing facades and reusing other components of the previous building.**

The project relates in a number of ways to different periods in the history of the site and its various constructions. First, the market retains a number of built elements from the previous buildings. These are generally adapted in one way or another to demonstrate that they have been altered or re-use. This is the case with the angled trusses, the facade balusters positioned upside down in places, and in the cutting back of the facade plaster to form a string course and expose the brickwork beneath. The rear wall of the market is made up of recycled materials salvaged from the previous building, arranged to form a mural.

Fig. 333: LEFT: C/ Freixures (SH in-situ).

Fig. 334: RIGHT: C/ Colomines (SH in-situ).

Fig. 335: BOTTOM RIGHT: Plan diagram of the preexisting elements and influences retained in the first design for the new market (SH).



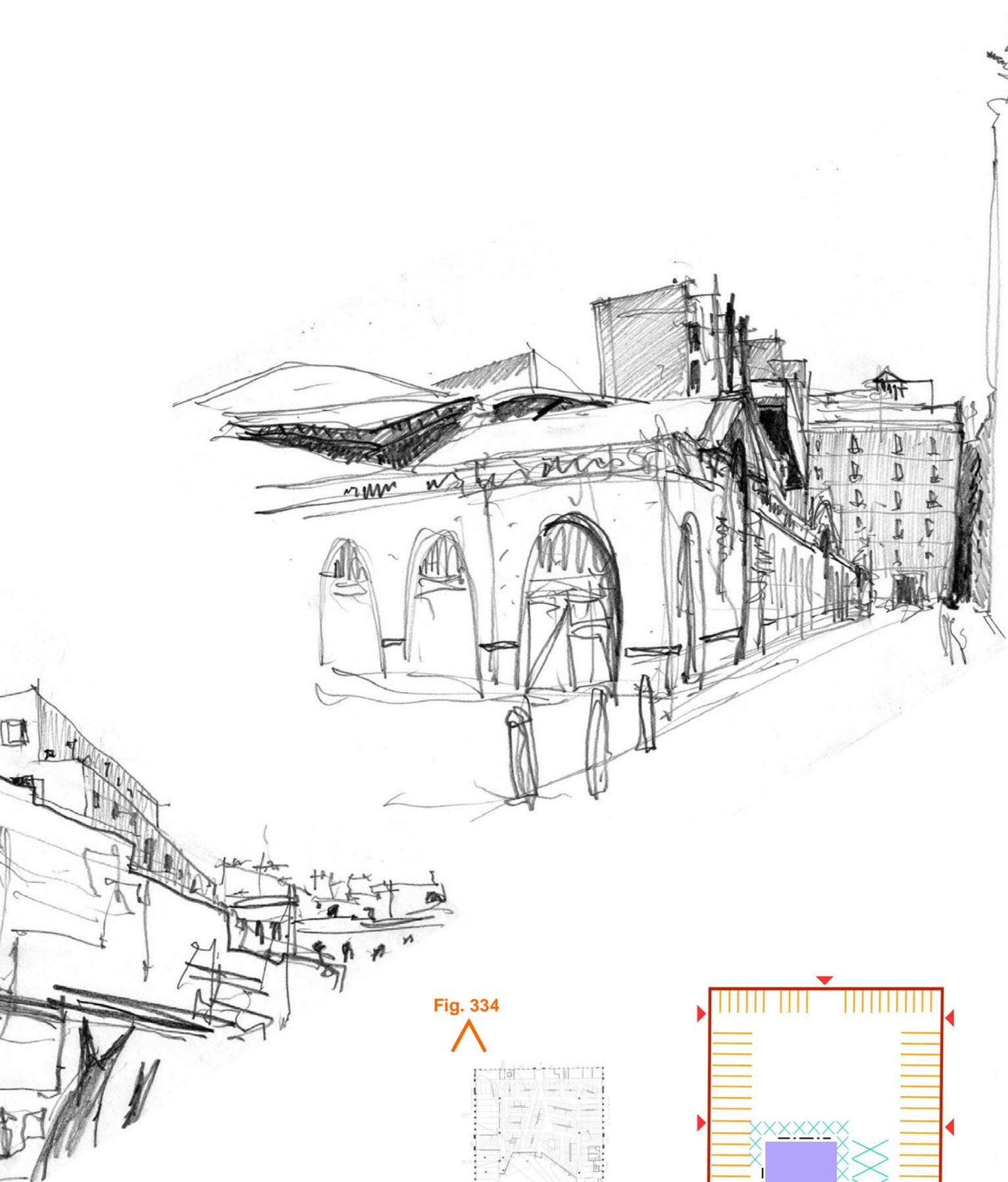
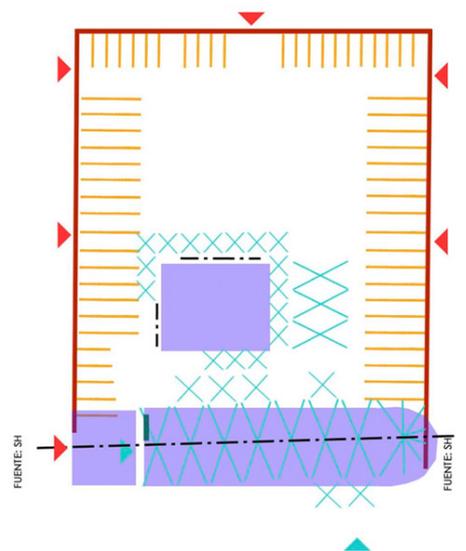


Fig. 334



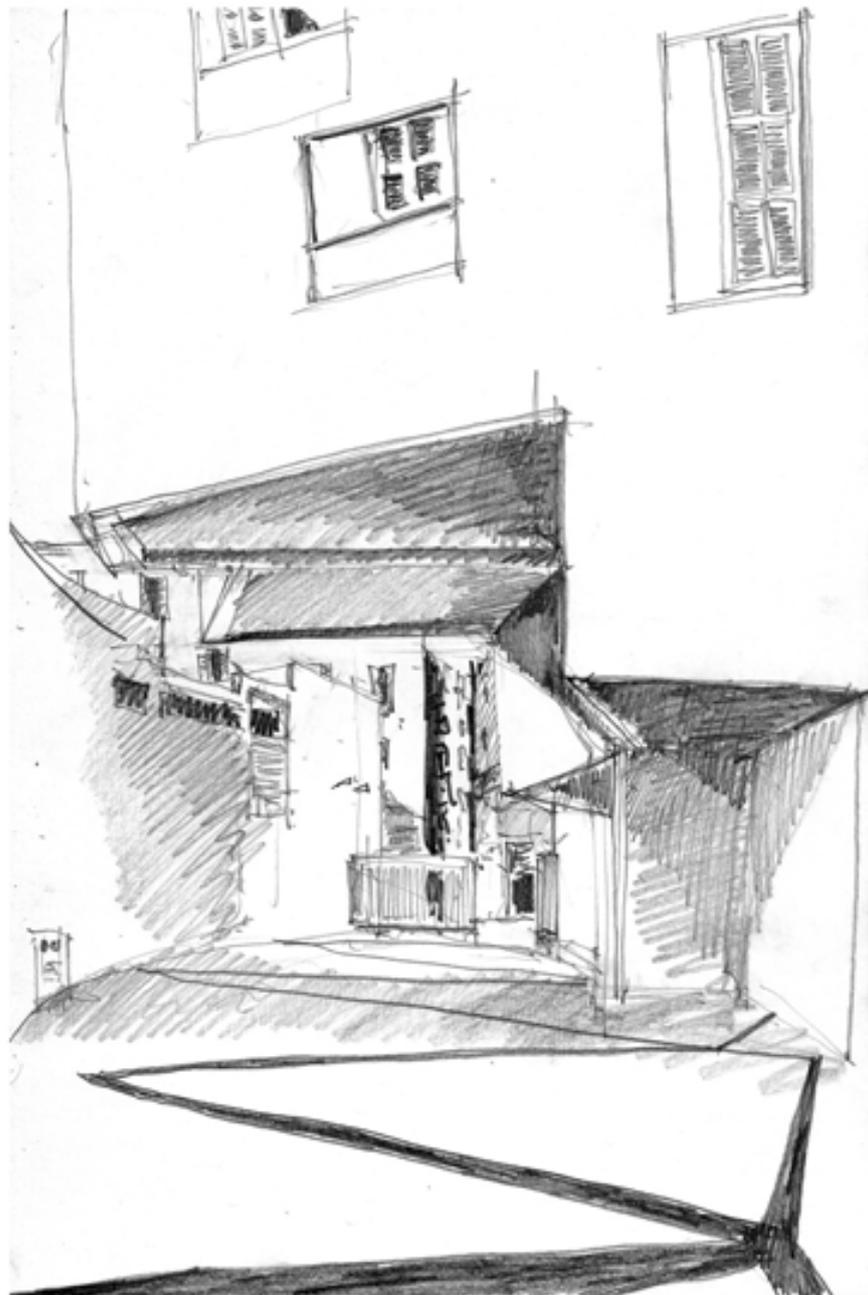
Fig. 332  
Fig. 333



**Tracing outlines from previous buildings in the new pavement.**

The pavement beneath the housing towers shows an outline loosely inspired by the vaulting pattern of the earlier churches, the semicircular apse of the original Romanesque chapel is also marked out. Crosses mark ancient entry point to the earlier buildings, whilst long curving lines reflect directions of movement through the new building.

Fig. 336: Housing tower facing the entrance from C/ Freixures along the axis of the nave of the preexisting church (SH in-situ)



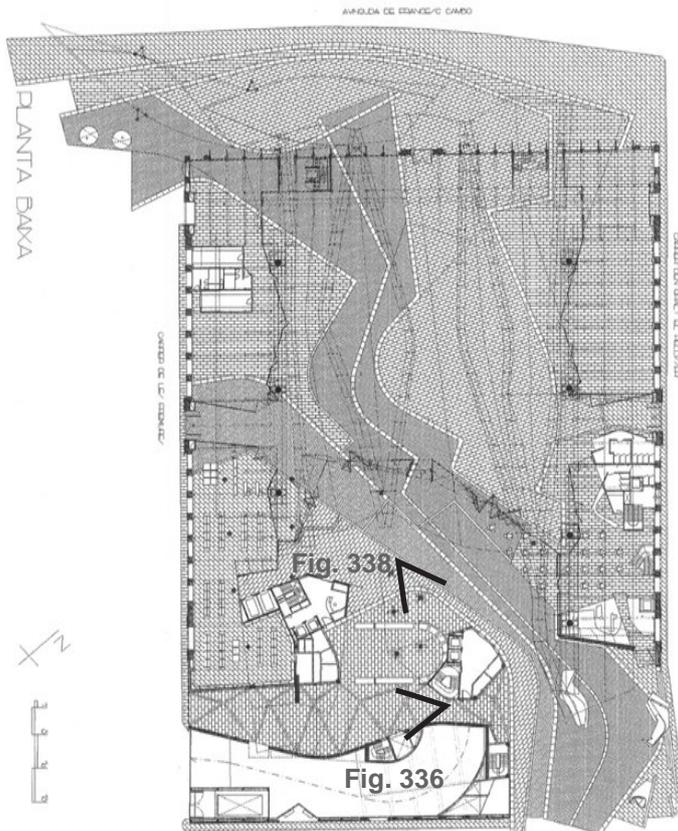
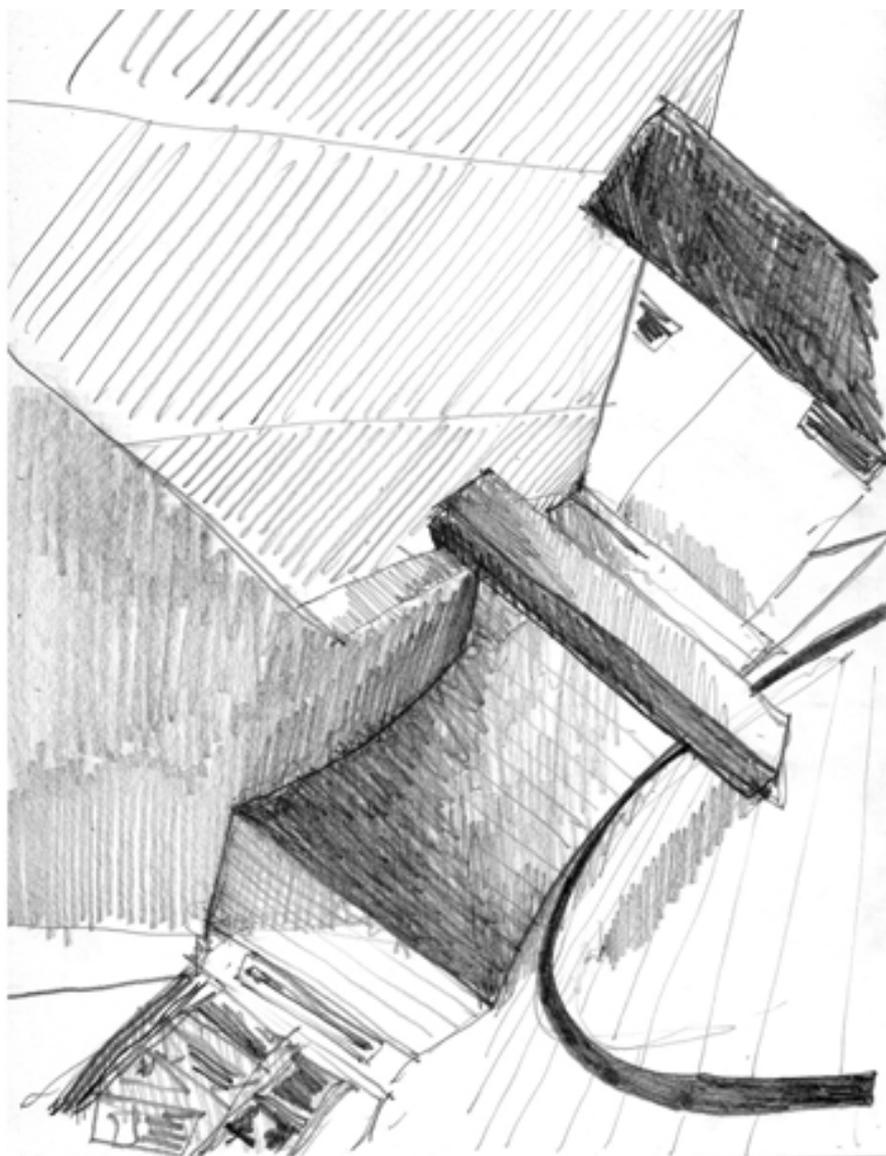


Fig. 337: RIGHT: Paving plan (EMBT).

Fig. 338: BELOW: Undercroft of the Eastern housing tower. Position of the Romanesque chapel apse marked in the pavement (SH).

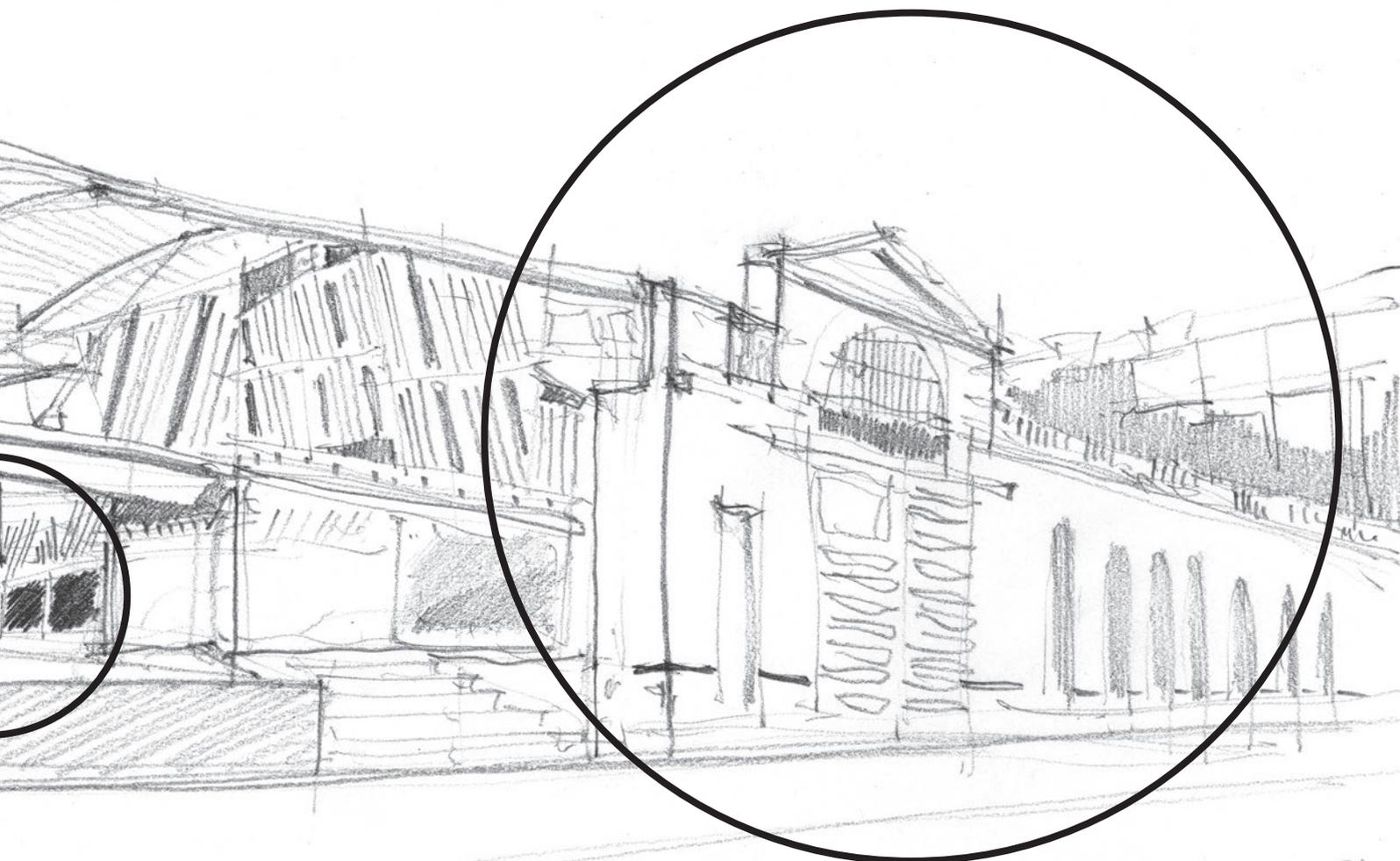


**Recalling the volumes, relative heights and alignments of previous buildings on the site.**

The built volumes across the site reflect the position and in some instances the heights of the earlier buildings, both the two storeys of the market and previous monastic buildings as well as the height of the church, its nave and aisles. Both setbacks from the street to the south as well as entry points and axes through the church have been reused in the new project. The layout of the stalls also reflects the alignment of the very earliest monastic buildings on the site, whilst the open space of the central courtyard reflects the position of the open cloister which remained there for almost a thousand years over the course of three successive churches.

**Fig. 339:** Santa Caterina market from Plaça Joan Capri (SH in-situ). Blue marks the elements influenced by or maintained from the previous buildings (SH)

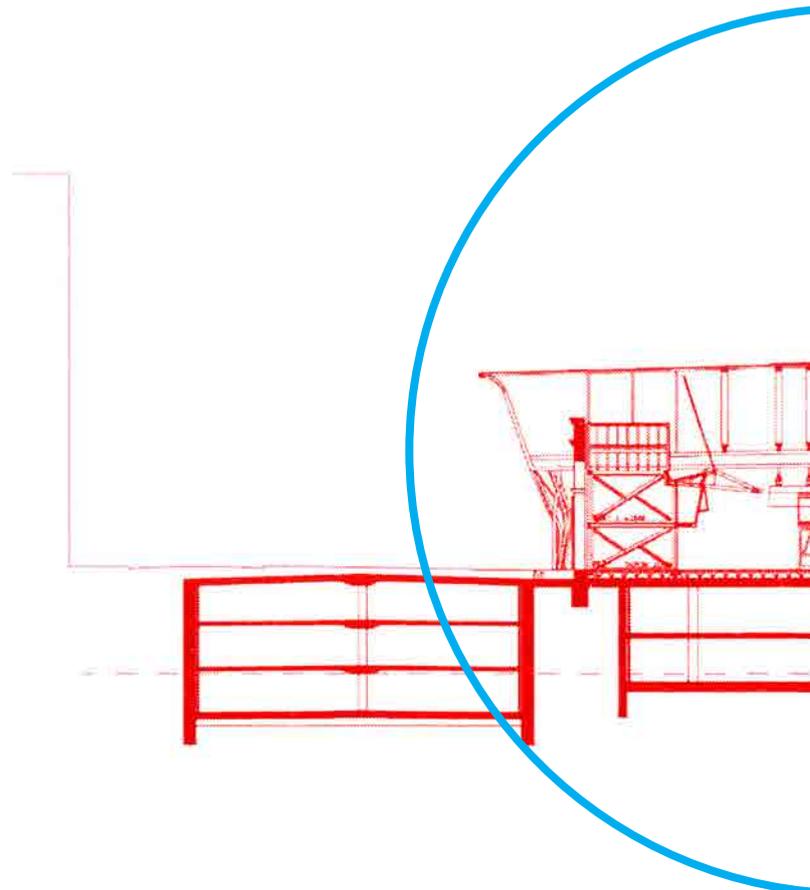


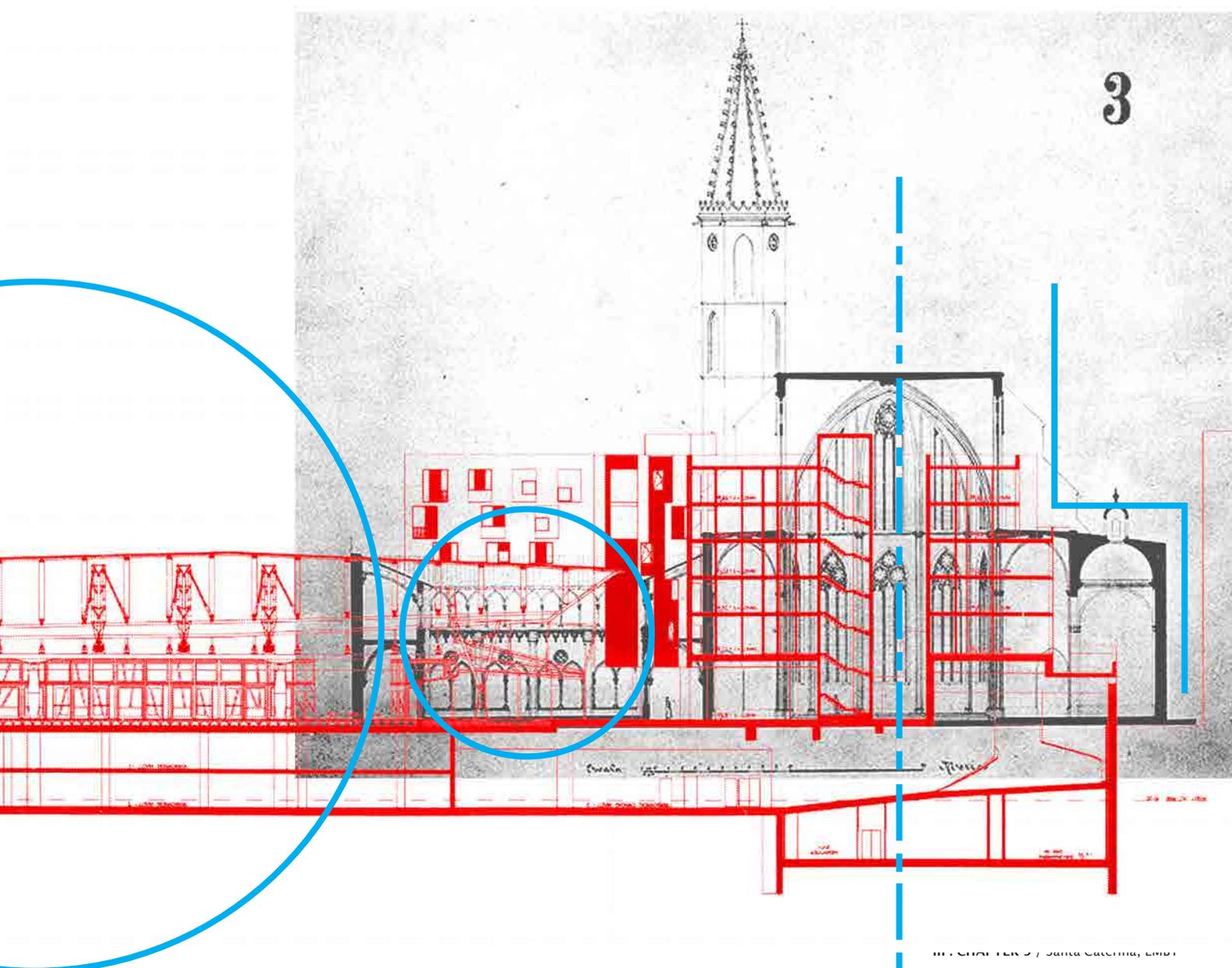


The project also makes use of the regulating lines, axes, volumes and heights of previous buildings in the massing and composition of the new project. Parts of the new housing towers reflect the axis of the Gothic church and its nave, another part refers to the original Romanesque chapel. Whilst the central market patio, keeps the position of all previous cloisters on the site. This strategy develops significantly from the start of the project to its final built state. The Franklin Museum is also relevant in the way that a modern frame is intended to suggest the original building whilst avoiding the kitsch reconstruction through leaving the materialization of the house to the viewer's imagination.

**Fig. 340:** LEFT: Paving marking out the position of the apse of the Romanesque chapel. (SH in-situ)

**Fig. 341:** RIGHT: Section through the old Convent and through the new market (EMBT). Blue marks the elements influenced by or maintained from the previous buildings (overlaid and highlighted by SH)





3

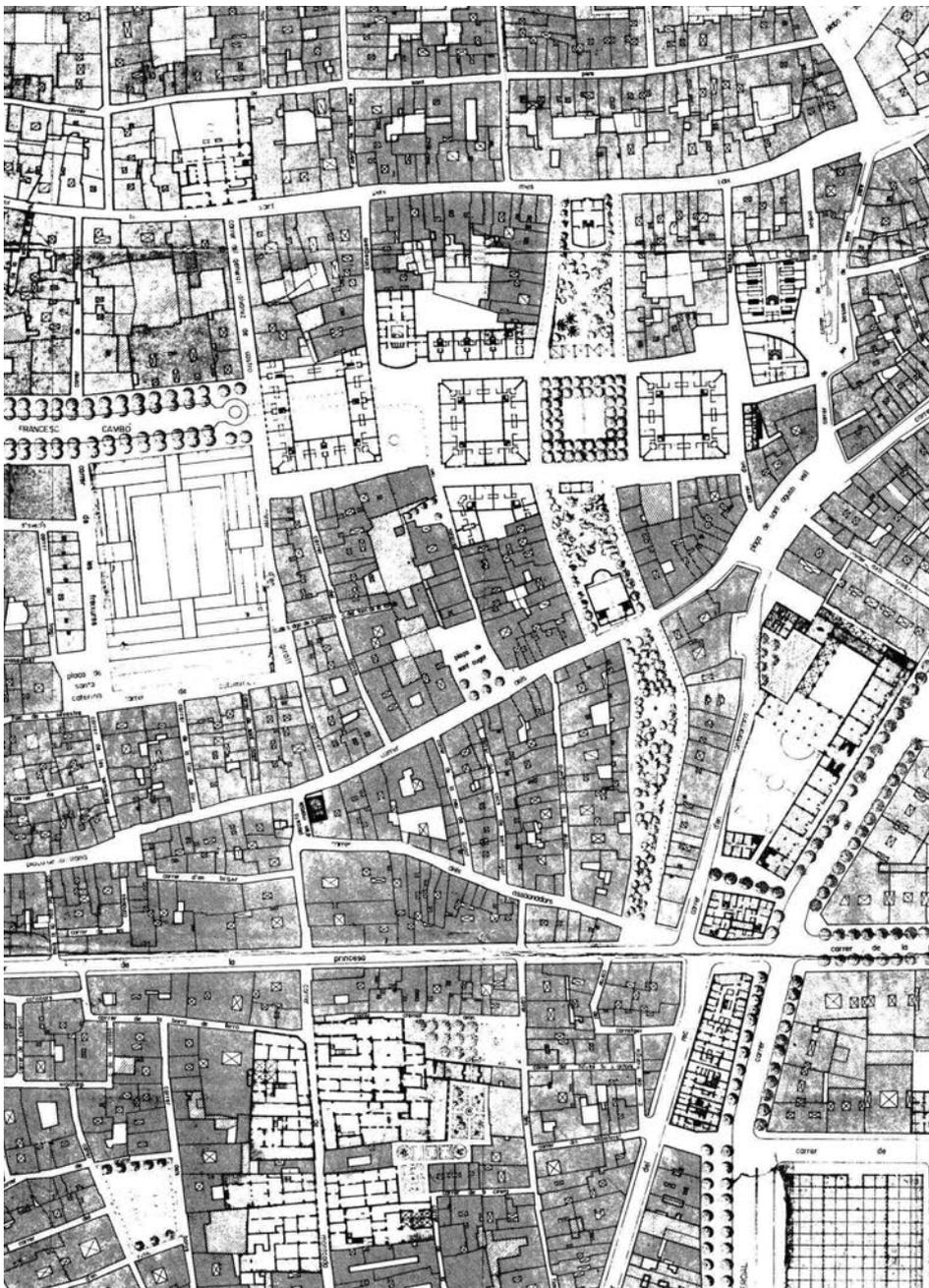
**The market project and urban plan in relation to the historical evolution of the city.**

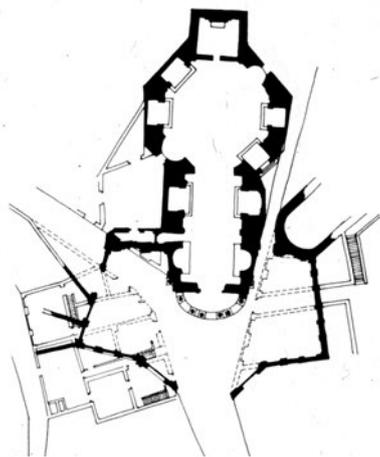
The historical overlay plan drawn by EMBT as part of the analysis for the urban masterplan and used for the design of the market itself shows how the project both at urban scale and project scale was concerned with the historical growth of this part of the city. The layers of previous constructions on the site explained the different types of urban logic which had determined the gradual growth of the medieval city around the focal point of the Convent of Santa Caterina as well as the dramatic 19th century incisions carved through it by the Via Laietana and Avenida Cambo. The

**Fig. 342:** BELOW LEFT: Municipal plan to the District of La Ribera.

**Fig. 343:** BELOW RIGHT: Historical overlay plan of the Ribera district (EMBT)

**Fig. 344:** TOP RIGHT: plan of urban remodelling for Santa Maria de la Pace, Rome by Da Cortona





sketch explaining an alternative strategy for urban regeneration to that proposed by the town hall, shows the careful adaption and rebuilding of selected elements of existing townscape maintaining a similar sense of scale and fragmentation to the existing townscape. The transparent overlays of the plans clearly show the intention to reuse certain aspects of previous buildings, such as the central open space of the cloister, a strategy which was then extended in three dimensions as well as across more and more distant periods of time as these were revealed by the archaeological survey.



The historical overlay plan represents the city at different stages of its development and serves to illustrate two important ideas: First, it shows the form and consequently the particular kind of urban logic behind the growth of the medieval city. Second, it demonstrates the drastic changes to the cityscape brought about by the more recent logic of modern city planning imposed onto, and in utter opposition to the reality of the existing urban fabric.

The comparison of this overlay plan with the municipal plan in force prior to Miralles' intervention shows the potential to eradicate an important part of the existing medieval city and its replacement by unconnected modern housing typologies utterly alien to the townscape and sense of place developed over millennia.

Continuing with the same technique, and that of da Cortona, overlaying Miralles' urban proposal on top of the historical overlay plan adds a further layer showing the city in a potential future state. This overlay to some degree illustrates Miralles' concern for working with the existing fabric of the medieval city, rather than struggling to overcome or eradicate and replace it in the manner of the municipal plan. The historical overlay plan had shown that the ancient way in which the Gothic city had arisen and developed had gone largely unchanged for centuries, gradually building up through the aggregation of piecemeal interventions, little by little densifying the urban grain, and focusing steadily around the convent itself.

The urban proposal and the project for the reformation of the market follow the same line of reasoning, one which is developed further in the market project. Both designs at both scales select and maintain certain elements whilst introducing new parts which maintain a similar degree of fragmentation, scale and irregularity as the medieval town. As in the example of Da Cortona, interventions are made through the minimal insertion of new elements within the existing, creating a new urban form and structure through minimal adjustment of the old.

**Fig. 345:** RIGHT: Sketch of the new urban proposal (Enric Miralles). [Superimposed onto Historical Overlay plan by SH]

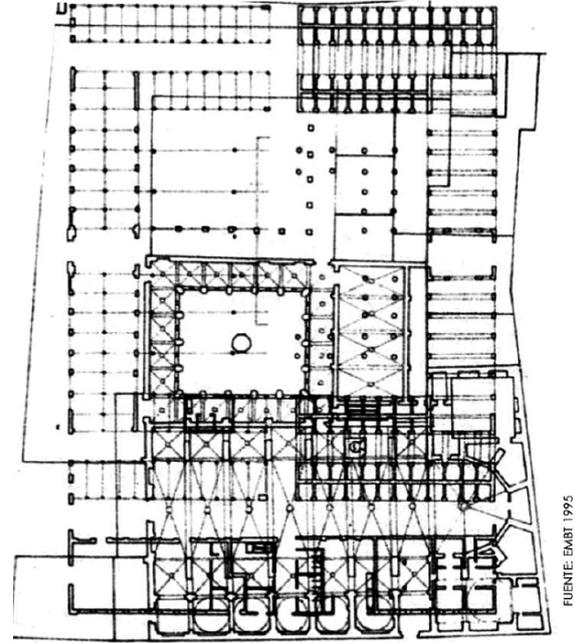
**Fig. 346:** RIGHT BELOW: Plan of the new market showing the new urban plan to the north east (EMBT).



The market uses the same strategy, but develops the interrelationship of the new with the old considerably further. This initial intention can be seen in the initial project approved for the market. These existing elements which are maintained, or quoted from the earlier buildings are clearly discernible from the plan.

The final versions of the project, following the archeological excavations, modifies the relationship between the project and preexisting buildings. The clear distinction between these layers evident in the initial proposals, became blurred making it difficult to appreciate the different origins of each aspect of the building. The change in approach to the influence of past architecture creates a far more ambiguous but flexible presentation of history. The viewer is left to decide to what degree parts of the building have been influenced by the past, and how much by the requirements the brief and the will of the architects. This ambiguity in how the building, its underlying history and relationship with the place around it should be read, or understood, requires the viewer to make his own interpretation, thereby actively, consciously, engaging with it to whatever degree they judge fit. In this respect, the approach to history resembles Duchamp's approach to de-objectivisation in Surrealist art.

Fig. 347: Historical overlay plan of the previous market and convent (EMBT).



FUENTE: EMBT 1995



Fig. 348: Archeological remains below the previous market. Coloured area shows the remains preserved in the new project (Archeological plan, Barcelona History Museum, overlay SH).

Fig. 349: Initial plan for the new market (EMBT).

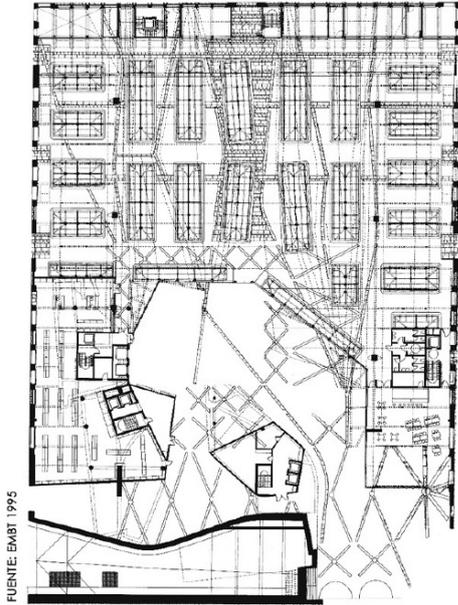


Fig. 350: Preexisting elements and influences maintained in the first project (SH).

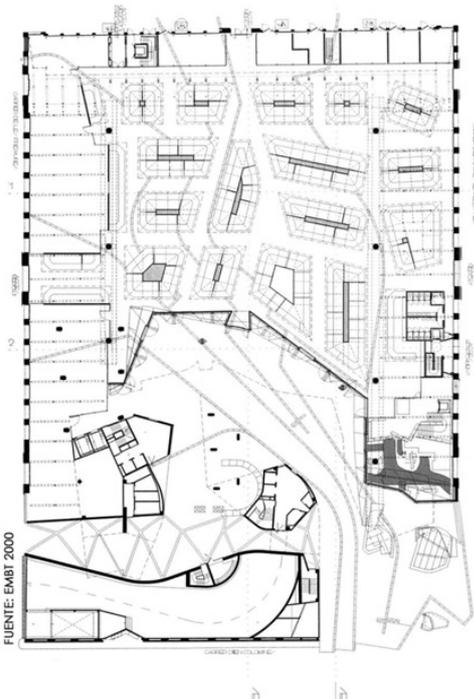
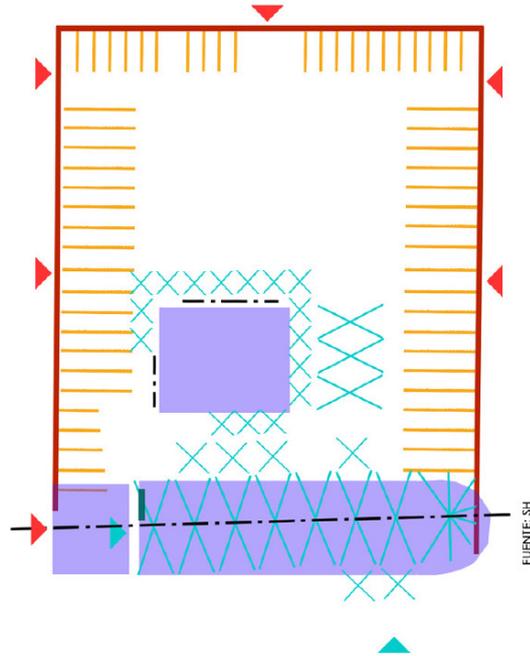


Fig. 351: Final plan for the new market (EMBT).

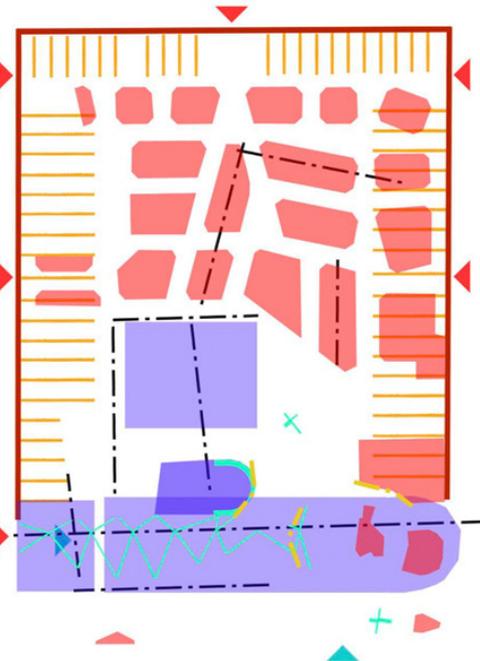
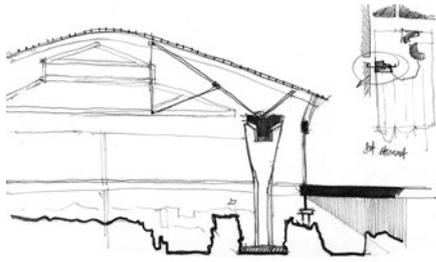


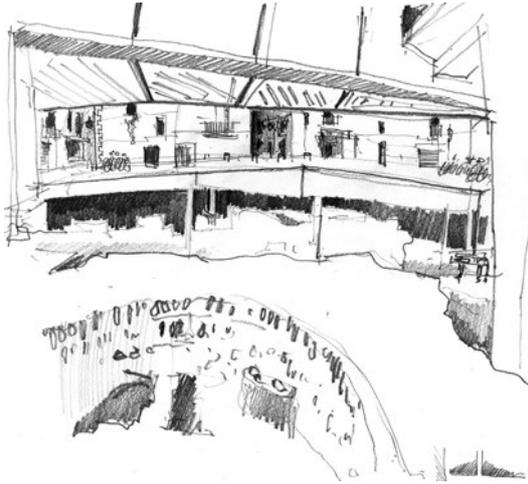
Fig. 352: Preexisting elements and influences maintained in the final project (SH).



**Fig. 353:** LEFT: Archeological remains incorporated into the new project (SH in-situ)

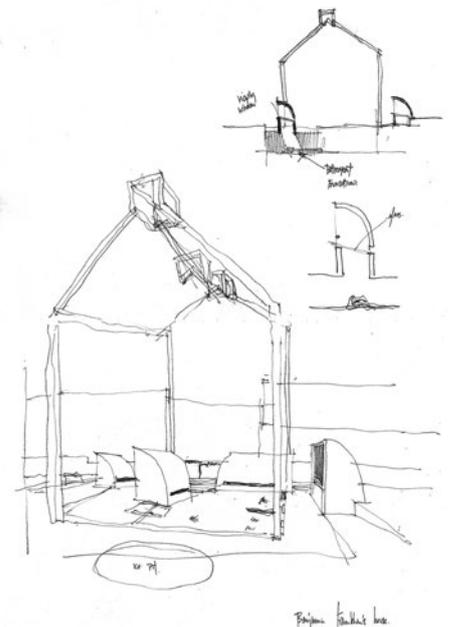
**Fig. 354:** BELOW: Existing facades maintained and adapted in the new project (SH in-situ)

**Fig. 355:** BOTTOM: Venturi Scott-Brown. Benjamin Franklin house museum, Philadelphia. (SH in-situ)



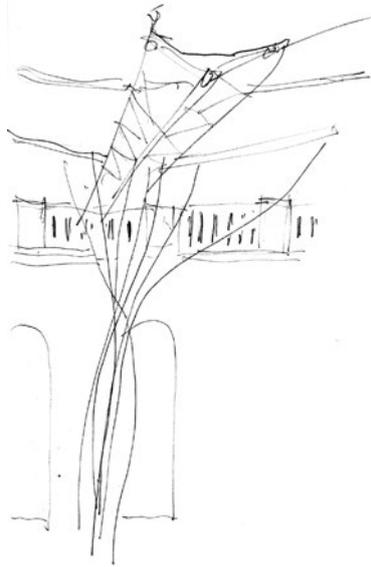
Time has been a recurring theme throughout the art of the twentieth century. Ricoeur considers that narrative is man's response to time, through projecting past experience onto the future (Capdevila). The story presents the listener with a sequence of actions and reactions which occur across a temporal structure (however this may be organised). The passage of time may be appreciated in many different ways other than that measured on a clock and throughout the twentieth century many attempts have been made to break up the common place notion of chronological time, making reference to other aspects of time. John Cage thought of his music in terms of musical happenings which occurred at moments in time but followed no sequential (or narrative) structure (Cage, 1961). Apart from questioning the continuous and standardised nature of time, Umberto Eco also describes the changing role of the observer in the meaning of an artwork. In contrast to the idea that a narrative is something autonomous and fixed, with a meaning independent of whoever listens to it, Eco uses the term the "opera aperta" to describe how listeners may also have to complete the story with their own thoughts (Eco, 1989).<sup>43</sup> In other fields, plastic works of art have also developed the active role of the observer.

<sup>43</sup> See also Paul Valery's use of the term the "ambiguous object", in *Eupalinos, ou l'Architecte*. Valery, 1923.



**Fig. 356:** LEFT: Previous buildings, such as the 10th century chapel quoted in the new design (SH in-situ);

**Fig. 357:** CENTRE: New components of totally new design such as columns and down pipes (SH in-situ).



**Fig. 358:** RIGHT: Marcel Duchamp. Bicycle wheel, 1916.



narrative in his work, instead the artwork becomes all about the observer's own experience and what they may bring to the art through their own interpretation. The meaning of the art shifts away from the artwork itself towards the interpretation brought by the observer.

Duchamp may provide an interesting way of understanding this complex mixture of strategies for overlapping influences from different moments in time in the design of the market. Introducing elements which are deliberately ambiguous in terms of their relationship to the past, involves the user in the perception of the project in a different way. In the case of Duchamp's bicycle wheel stool, the observer is obliged to participate in the artwork through bringing their own prior knowledge and mental associations to the work. This prior knowledge allows the viewer to understand the work in a way which uninformed observation alone would not. The dynamic nature and purpose of the wheel is set against the opposing static nature of the stool. This allows the observer to appreciate the intended surreal juxtaposition of components with contrasting meanings. Likewise in Santa Caterina, the interested user must actively imagine to what degree new and old interrelate, how far the project is influenced by the compo-

nents of place and how much this is the result of new design ideas which are foreign to the historical place. Sense of place becomes a matter of subjective interpretation rather than something inherent to the material nature of the built environment alone.

In contrast to this approach, the Franklin house museum in Philadelphia maintains an absolutely clear distinction between the new project's references to the original house and the real physical remains.

The in-situ sketches have highlighted a variety of ways in which the current building relates to different moments in time, from the literal preservation of archeological remains, to the adaptation and reuse of a variety of preexisting building components, to parts of the new building which have been clearly inspired by previous buildings on the site, to newly created elements springing directly from the imagination of the architects. The sketches show that these different states, although distinguishable when considered in detail, overlap to a large degree merging together in the everyday perception of the building. This causes a significant amount of ambiguity in understanding how the building relates to the past. Some parts are genuinely old but modified recently, others are new but follow the lines of the old, and other aspects are entirely new and in utter contrast with the past. One possible explanation for this would be the de-objectivisation which Duchamp intended. This encourages the user to actively engage in forming their own personal interpretation of the building and place through incorporating their own memories and imagination.

### *Summary*

In contrast to the previous case, in the area surrounding Santa Caterina market, place is dense, historic, and multifaceted. The project relates to these complex conditions of place at both the scale of the city and on the level of the individual observer.

At the scale of the city, the project also transforms place through inserting new uses and publics, connecting two routes across the city to form a new thoroughfare through the heart of the Ribera quarter. The scheme generates architectural connections across the city threading together a string of disparate medieval monuments into a sequential narrative of interconnected buildings. Through the careful incorporation of architectural references to selected parts of its medieval urban context, the new scheme transforms a succession of disparate public spaces into a coherent pedestrian route across this part of the city. The design of the new project serves to signal the route and to generate a sequential narrative experience through the old town. The route helps the observer to comprehend the streetscape of the medieval city as shown in the overlay plan through re-establishing various urban relationships between different parts of the city.

Different time-scales are embedded within the design, offering the user personal and subjective interpretations of the building's past, present and future. On an individual level, the project establishes connections with place across time, through recuperating and transforming aspects of past architectures from the site. The varied components of the buildings present its occupants with new combinations of past and present, overlaying influences from the fabric of the previous city interwoven with new references to the contemporary context, architectural, cultural, social and economic.

Rather than presenting its user's with a fixed statement of an idealised past, the project encourages creative and personal interpretations of place according to the free interpretation of each one of its inhabitants. Beyond its physical embodiment in the forms and materials of the project, the sense of place becomes a mental construct within the collective and individual imagination of the people who use the buildings. On an individual level, the project offers new and imaginative ways to comprehend the continuing evolution of the city and its real sense of place.

This chapter contributes to the literature on the market project through showing that drawing was used as a fundamental method for analysis and design throughout the project. Drawing and sketching have also formed an integral part of the design process as recognised by the architects themselves. The overlaying of different ideas and recollections of past architectures is a direct reflection of the method of representation used in the analysis and design process. This research also points out the detailed connection between project and historical antecedents. It thereby describes a particular approach to place through working with history whilst avoiding the literal duplication. It explains the positive connection to place through the project's careful handling of time. It also provides a contemporary graphic analysis of the project and its urban context through my own sketches.

The analysis in this chapter has offered the following reflections on sketching architecture and place.

First, that sketching in-situ can yield interesting and original findings about the interrelationship of project and place even in complex settings with complex projects. It achieves this primarily through discovering insights and helping to rationalise them. Using my in-situ drawings has certain advantages over other approaches to investigating the project. First, they have been made in-situ immersed in the atmosphere of the market and its surroundings at all different times of day and year. Given the lively conditions of a building of this type and in a dense and ancient part of the city, this influence from the human life and varied activity of the building's many uses is essential for a holistic understanding of the building relationship to place.

My sketches are contextual and contemporary, this bases the research in an empirical study of how the building is now, in its surrounding context, how it interacts with both the physical environment and how it affects the human activity and perception of place. This research has relied on in-situ sketching first as a means of investigating and exploring the building itself, and second through investigating its relationships with the surrounding context – both in terms of streetscape, and the monumental architecture which the new market relates to. The analysis of these sketches has suggested various paths of investigation to follow.

Second, sketching in-situ is capable of developing an original and convincing interpretation of the more invisible yet crucial aspects of place. Continued drawing from different angles, with different media, and at different times of day builds up a more comprehensive understanding of the project. Repeated redrawing gradually sifts out the strange but consistent themes evident in the design. Comparing sketches first to each other, and then to original material can help to reach new and nonvisual conclusions about the building's interaction with place.

The analysis has brought up significant questions about the interpretation of time in the project. Through focusing on various relationships between old and new, the sketches have shown a variety of different ways in which the new buildings responds to the remains of the past as well as its distant predecessors. The sketches have shown that these relationships are in some cases clear, but in others, highly ambiguous and subject to considerable creative interpretation. Comparisons of the sketches with other supplementary sources suggest that the project in its final built state deliberately intends to give its occupants the freedom to interpret the relationship with time and place freely, according to their own subjective understanding.

The particular process of sketching in-situ has brought to light a number of curious relationships which may have not appeared without the prolonged investigative work of observation and interpretation on site that this kind of research involves. The inquisitive mode of observation has revealed clues both in the architecture and in the way its occupants make use of it. The repeated cycle of proposals that sketching requires develops intuitive responses to these observations which on occasion result in new ways to understand how the project interacts with place. Continued drawing on site and redrawing off site has helped to develop richer interpretations behind the underlying logic of design decisions such as these.

It appears that these interpretations would not have evolved to this degree without the gradual process of repeated sketching under the direct experience of the place and its daily life. Despite reflecting intangible ideas of how people relate to past present and future through architecture and place, each of these interpretations has arisen out of sketching from real observation of the built environment, studying the physical and visual framework of place. Sketching is particularly sensitive to the subjective perception of place and time. It has revealed the fact that the build-

ing relates to time and place using multiple design strategies and not one single consistent approach. Furthermore, it has helped to reason out what the differences are between these strategies and what effect they have on the observer's perception of place. As a result, the in-situ sketch's capacity to interpret place through subjective experience has revealed how users can engage with place on a personal, imaginative and profound level through offering them the opportunity to create their own imaginative connections between architecture, time and place.

Third, the increase in complexity of the project has meant that the in-situ sketches have had to be complimented with supplementary material. The analysis developed has benefited from comparison to the architects' original drawings. It has also developed far further than would be possible from in-situ analysis alone through the careful comparison of plans and sections. Interestingly this has been most illuminating when overlaying drawings as transparent layers, the same technique which was used throughout the conception and development of the design of the project and urban plan.

Much of the logic of the building is appreciated most clearly through direct spatial experience, nevertheless other aspects are more clearly understood through analysing plans and other sources. Sketching in-situ has provided insights that certain aspects of the design have been considered in greater depth than may at first appear. The process of drawing and redrawing has then helped to distil this complexity down to its essential ideas. The analysis of intangible or to some degree abstract concepts such as time require both this initial uncovering, but may well need to be combined with supplementary forms of investigation to reach significant results. Nevertheless, analysis of other material, in this case initial analysis plans, design plans and historical surveys, needs to be combined with repeated drawing in-situ to ensure that the research remains firmly in touch with the actual human experience of the project and place.

Fourth, in contrast to architects' original design drawings, in-situ sketches show the results of a design rather than its intentions. Common themes do appear but these have been remoulded by ten years of evolution, therefore the sketch puts the discussion of the building into the current context and shows up changes in the project itself and provides criticism of its ideas from a real human perspective.

Through combining with more usual forms of architectural research, sketching in-situ has helped to develop more original interpretations of the original material. In this case, the ideas which in-situ sketching has revealed agree in outline with the intentions of the architects. However the analysis of the different phases of the design show that the ideas behind the project were never fixed but remained in constant evolution well into the period of construction. Given that the intentions were to a large degree fluid, this research anchors itself to the project in its final built state through drawing on site and bases its interpretation of the building at the current moment in time.



## PART III

# SUMMARY

The three cases discussed in this section have shown the value of analysing architecture through in-situ sketching in three different types of architecture and in three different places. As an approach to learning from precedent, discovering and understanding unobvious relationships between architecture and place, in-situ sketching has been shown capable of creating original and reasoned responses in both simple and complex settings. This has made use of all aspects of the sketching process. The immersive first-hand experience of observing, thinking and creating proposals on site, requires the all important, but in the end subjective choices of selection and omission of subject matter, viewpoint, medium and many others. But equally significant to the task of analysis from these sketches is the subsequent procedure of re-reading drawings, redrawing and editing them. This secondary stage may be developed further through returning to the site to verify ideas and interpretations in-situ.

One of the fundamental advantages of sketching in-situ over other less active forms of investigation, is that it remains essentially based upon the human-centred experience of place, which gives a realistic sense of proportion and relationship to the observations. In many cases, the combination of detailed observation and

concentrated interpretation develops ideas which may be quite independent from other available sources. However this may depend to some degree on the complexity of the case and the type of questions being investigated. As in the case of Santa Caterina, sketching may be seen to provide insights into significant aspects of the design and suggest how to approach complex questions of interpretation, but the overall research may be most effective when carried out in conjunction with other forms of architectural analysis. Sketching in-situ, despite its many advantages for design and research, is only partially independent – although it can suggest avenues of research, many will need to be investigated with the assistance of other methods and techniques.

Comparing my own sketches of the Acropolis to those of Le Corbusier has helped to reveal and explain the subjective point of view behind my own drawings. Once stated, this point of view has then been applied to the analysis of Can Lis through a set of site sketches. This has helped to develop a detailed interpretation of the house and its relationship to place which has been observed and considered from the embodied perspective of first-hand experience. Through applying the same analytical process to a project and place of far greater complexity, a number of the successes and limitations of in-situ sketches have been made clear. Sketching has proved a sensitive and original method for understanding how people may engage with place through the multiple interpretations of time that architecture can offer.

In each case, sketching on location has helped to discover and reason out interpretations of place through providing a controlled sensitivity to subjective perception. Being a human-centred type of analysis, it is inevitably subjective, but the process of sketching uses this to advantage by incorporating intuition and multisensory perception. Nevertheless, despite being an individual form of analysis, it presents a subjective interpretation in a way which can be clearly communicated and shared by others. The point of view behind a sketch may be understood through comparison with other equivalent sketches, and its ideas may be usefully taken up by others.

The multiple ways in which the sketching process builds up interpretations over time, both through the layered exposure in the making of the drawing, and its gradual enrichment through repeated interpretation over time, make it particularly sensitive to the different ways in which the buildings connect to place across different rhythms and scales of time.



# PART IV

# LOGBOOK / BITACORA

“Excursus: An abridged list of stimulants, a-temporal and necessarily transcultural, as possible objets trouvés in the urbanistic collage.”

Rowe & Koetter, 1979. Collage City, p.151

“One’s destination is never a place, but rather a new way of looking at things.”

Miller, H. (1957). Big Sur and the Oranges of Hieronymus Bosch, p.25

Like a travel sketchbook, this final part combines a series of reflections on place and how it is affected by architecture. This is referred to as a logbook (Bitacora in Spanish). A logbook is a diary across time and across different places. A ship’s logbook combines a sequential layering of personal thoughts over time, much like a diary, together with observations of changing locations. The odyssey is a epic tale about place. It is also a journey, but the journey serves to connect together a series of dramatic places. Its aim is to return to the place of origin, the hearth, Odysseus’ dwelling. The Odyssey might be thought of as an oral



logbook, given the form of a narrative to help remember the ideas of places which are passed through. The Odyssey is a journey from one place to another.

A sketchbook made whilst traveling is much more than a collection of isolated pictures. Each in some way or other relates to the one before and the one after. The book is in itself a structure which organises the ideas of each drawing into a larger scale of ideas. Like Foucault relating the meaning of an individual book to the context in which it is placed, that of the other books on the same shelf, and to the other books in the entire library and so forth. Here a similar structure is used. Sketches are combined into themes comparing and contrasting approaches to architecture and place from different times and places. This recalls Colin Rowe's *Excursus in Collage City*. Each theme leads on to the next creating a chain of reflections which together construct a graphic thesis of the ideas developed throughout the previous parts.

Logbooks may chart passage through a series of locations, but they may go beyond quantifiable observation, incorporating the qualities which distinguish places from the last and the next. Each island seems the antithesis of the last.

The logbook traces progress but also proposes directions, ways of proceeding, each of which is subsequently adapted to the conditions encountered. The traveller is thrown into a particular situation and must take positive action to make headway. The human condition is in part this capacity to adapt to circumstance, to adapt a location into a place by means of architecture.

The following sketches were all drawn in places which were extraordinary for many of the reasons already mentioned.

This logbook has drawn inspiration from: Calvino's *Invisible Cities* (1972); The volume of Miralles's own drawings in his thesis (1987); the moving images of *Koyaanisqatsi* with no dialogue (Reggio 1982); the image stream of Thom Mayne (2011).

Fig. 359: Siza 1988, in Frampton, K. et al. 1988. Alvaro Siza *Esquissos de Viagem/Travel Sketches*, Oporto, *Documentos de Arquitectura*. P.15

No drawings give me as much pleasure as these:  
travel sketches.  
Travelling is trial by fire, individually or collectively.  
Each of us leaves behind a bag full of stress, tedium,  
preoccupations, preconceptions.  
Simultaneously, we lose a world of small comforts and  
the perverse attraction of routine.  
Travellers, intimate or strangers, are divided into two  
types: admirable or insufferable.  
A good friend truly suffers as the world is vast. We  
may never again allow ourselves a repeat visit; he leaves  
nervous, strained, with his eyes popping out of their  
sockets.  
I myself like to sacrifice many things, to see only that  
which attracts me immediately, to pass by chance:  
without a map and with an absurd sensation of the  
discoverer.  
Is there anything grander than sitting in an esplanade,  
in Rome, at the end of the afternoon, experiencing  
anonymity and a drink of exquisite colour – monuments  
and monuments to see while laziness advances softly?  
Suddenly the pencil or Bic begins to fix images, faces in  
the foreground, faded profiles or luminous details, the  
hands which draw them. Lines, at first timid, rigid,  
lacking precision, later obstinately analytical, at moments  
vertiginously definitive, free until drunkenness; later  
tired and gradually irrelevant.  
In the space of an authentic journey, the eyes, and by  
means of them, the mind, gain unexpected capacities.  
We perceive in a non-mediated way. That which we  
learned reappears dissolved amongst the lines which we  
later draw.

Fig. 360: LEFT: Paestum, Italy. (SH)

### 1 – Odyssey, thresholds.

Javier Segui (2014) describes the authentic travel sketch as one of adventure, one which changes the author. Like other adventures, place starts at a threshold. A point of change from one place to another. The Sybil's cave at Cumae near Rome where Aeneas consulted the oracle (Virgil, Aeneid, Book VI); Jujol's entrance gate in Vallcarca, and staircase in Torre de la Creu, Barcelona.

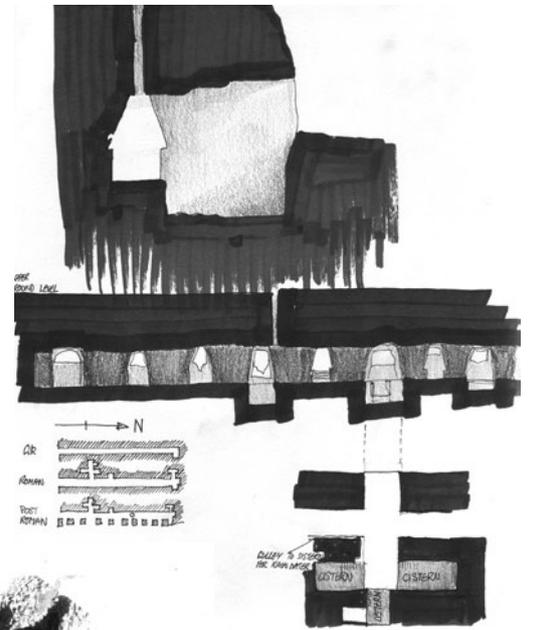


Fig. 361: Inside the Sibyll's Cave at Cumae, Italy, 8th century BC. Sections, plan and interior perspective (SH)

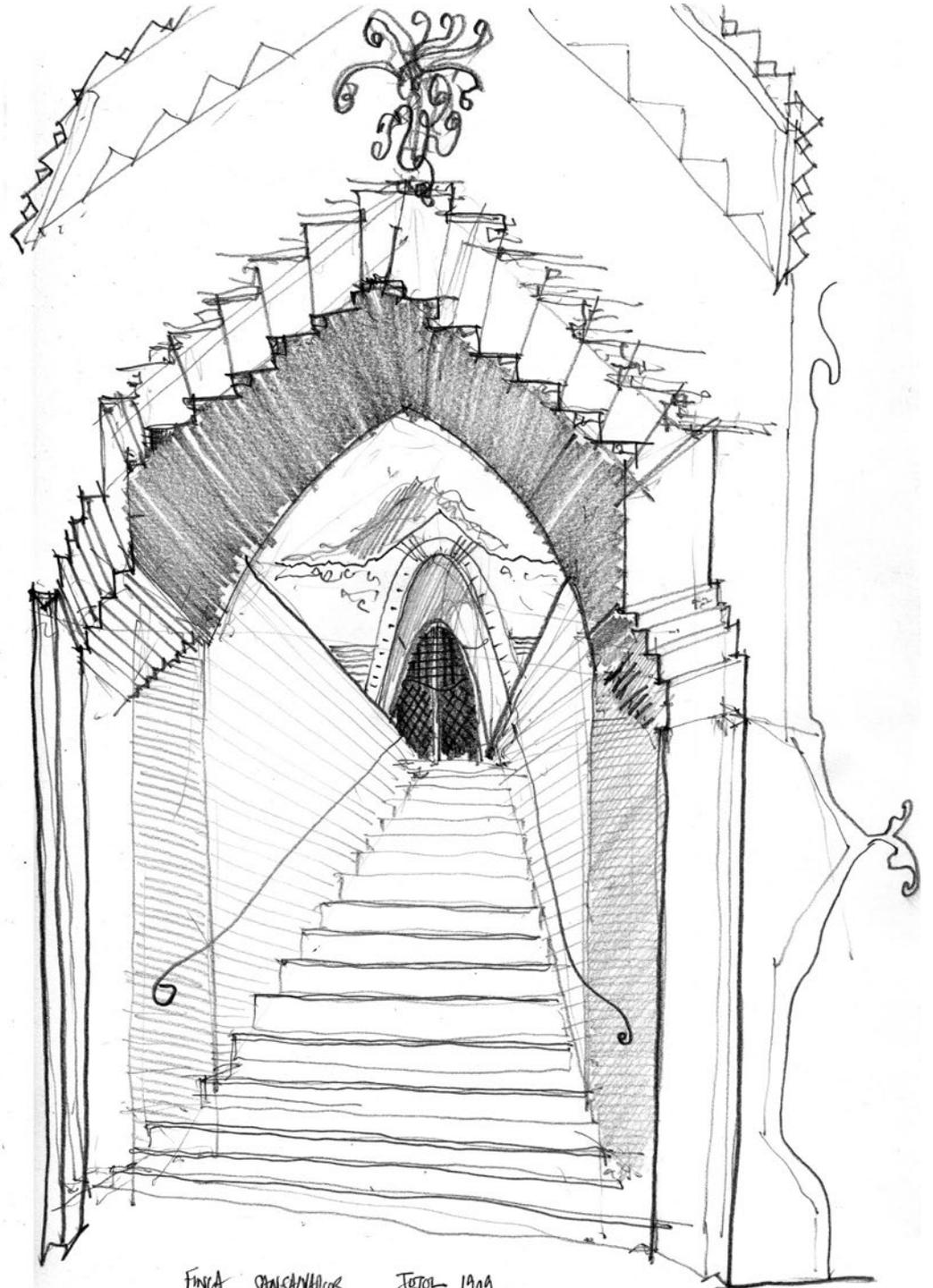
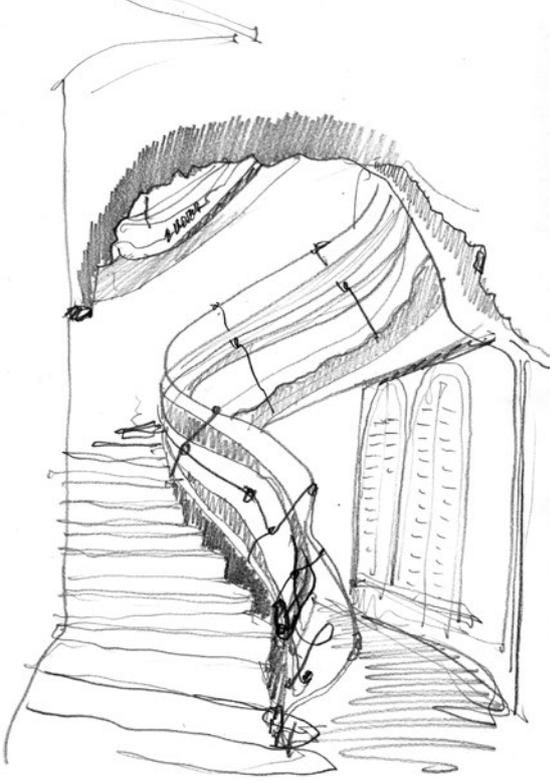
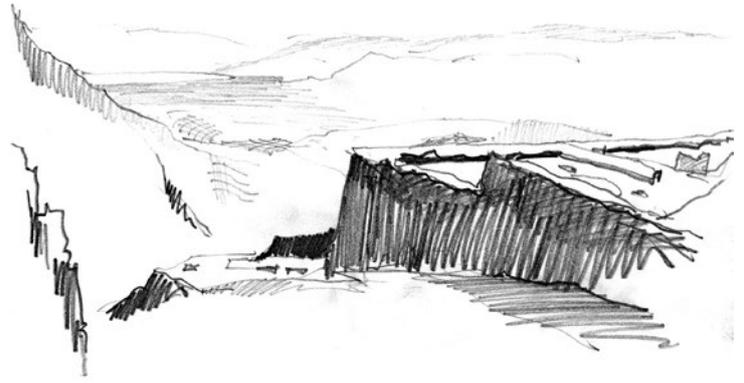


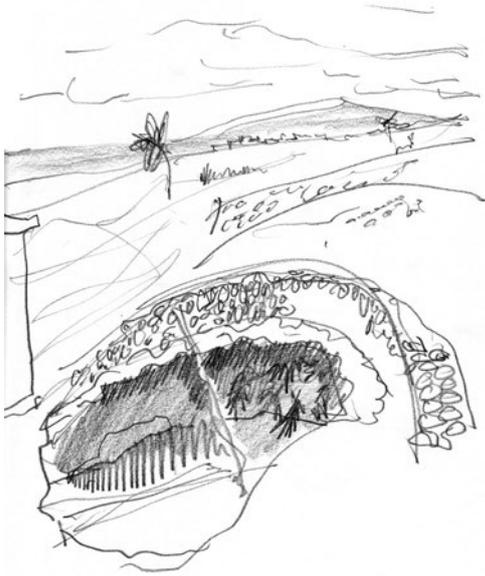
Fig. 362: Staircases by J.M. Jujol.  
 ABOVE: Torre de la Creu, Barcelona, 1916; Finca San Salvador, Vallcarca, Barcelona, 1909. (SH)

FINCA SAN SALVADOR, JUJOL 1909



CISTERN  
MYCENAE 12 JUN

Fig. 363: ABOVE: Throne room with hearth, Mycenae; Rockcut cistern, Mycenae. (SH)



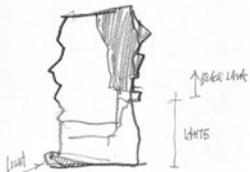
lava field + passage from LILLY  
Plan N



Final plan Manrique  
Passage to lava passage



Final plan Manrique



Final Manrique 2/15 palm tree in a lava passage

Place also involves dwelling, the hearth as the focus of the home, a place of safety. The hearth of the Palace at Mycenae and the entrance to its well, as vital to the citadel's function as its walls; The descent into the lava bubbles interconnected by Cesar Manrique's house in Lanzarote where architecture fits into the frame of the rock.

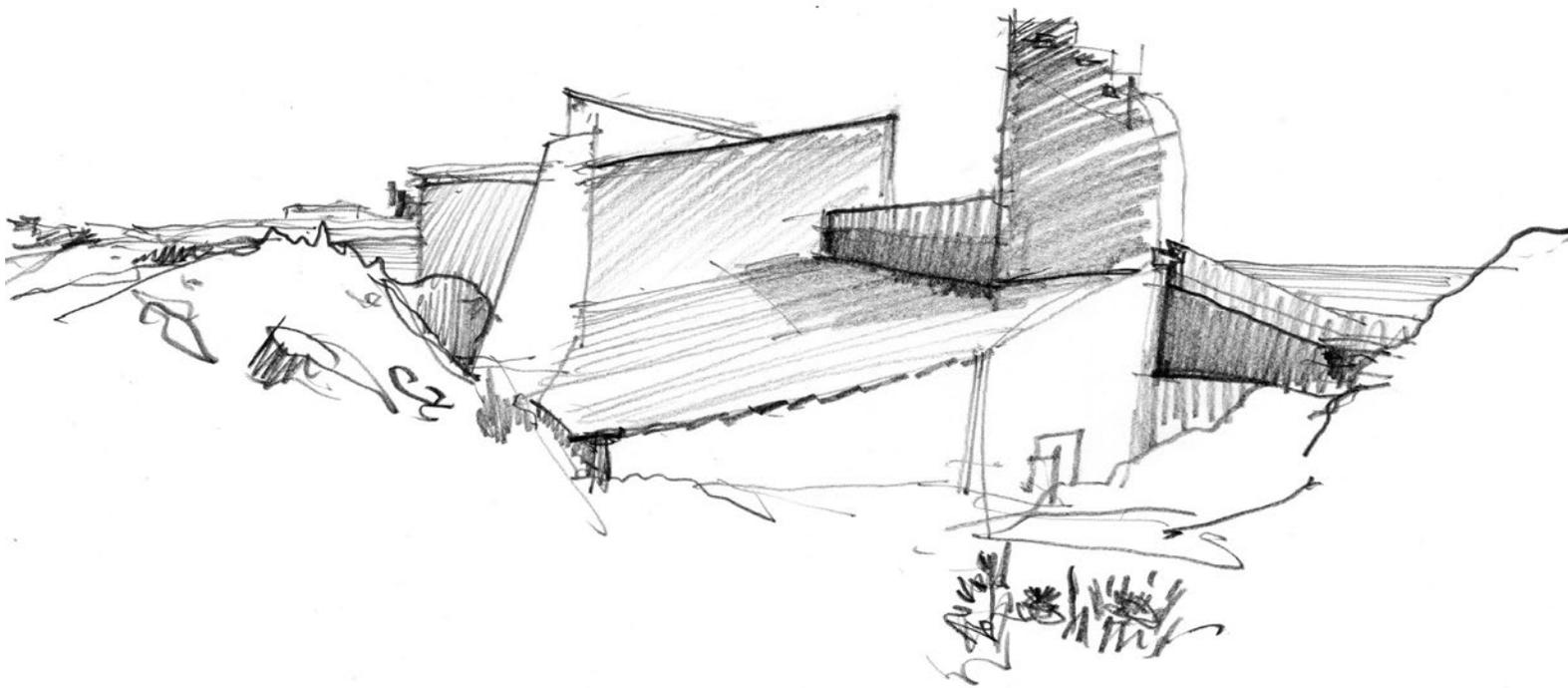
Fig. 364: Staircases by J.M. Jujol. LEFT: lava field, entrance to subterranean lava bubbles, passageways, living spaces in lava bubbles, with seating and palm tree. Cesar Manrique, Lanzarote. (SH)

**2 - Architecture which adapts to the form of its site.**

Reusing pre-existing landscapes.

Siza's tea-house near Porto fitting around the boulders and cliffs of the headland, whilst referring to the chapel alongside; The sea-water swimming pools nearby formed by the existing rocks and the tide.

**Fig. 365:** Boa Nova Tea house at Leça da Palmeira near Porto, by Alvaro Siza, 1963. (SH)

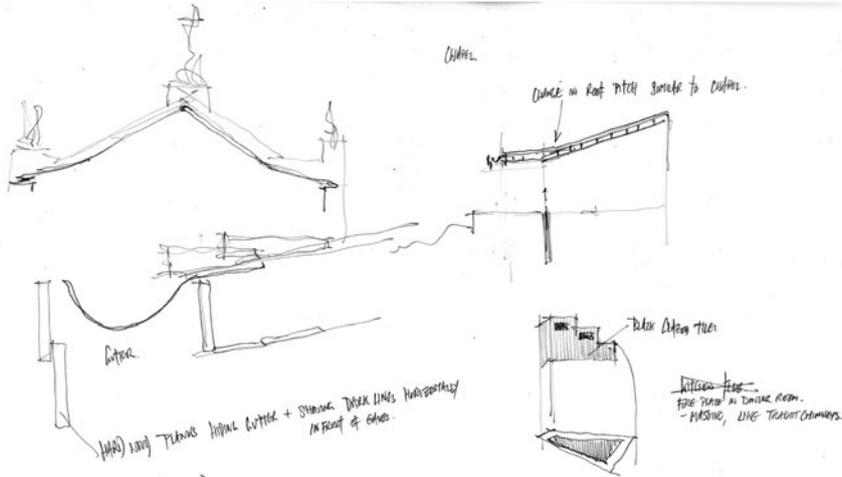
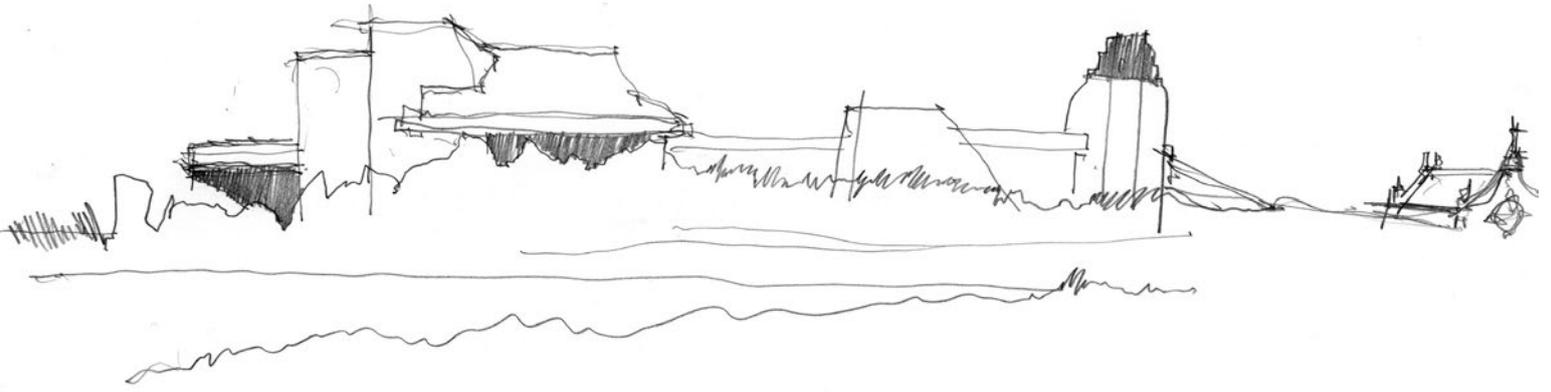


CASA DA CHA  
BOA NOVA

12/5/2013

PEREIRA + RAUSCHKEG.

ARTIGOS STORON.



Columns

Change in roof pitch breaks to columns.

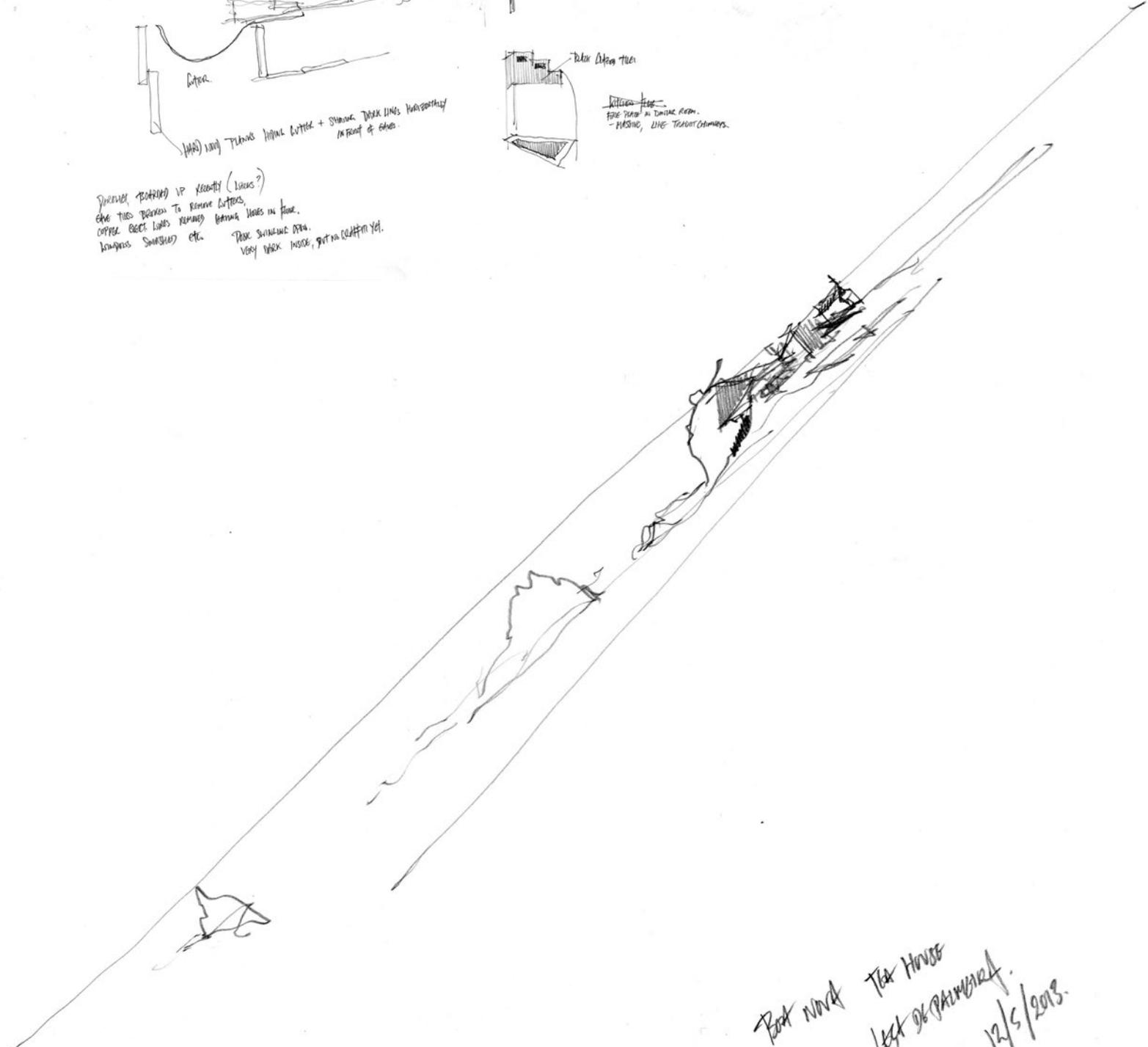
Columns

Walls along planes behind columns + showing dark lines underneath in front of eaves.

Dark Area here

Dark Area here  
Five years in dining room.  
- MISSING, LINE THROUGH CHAMBERS.

Shower, bathtub in kitchen (Is this?)  
One two broken to remove columns.  
Copper beer signs remain behind holes in floor.  
Lampshades, switches etc. Dark shiny like steel.  
Very dark inside, put in ceiling yet.



Back view of the house  
Left of photograph.  
12/5/2013.

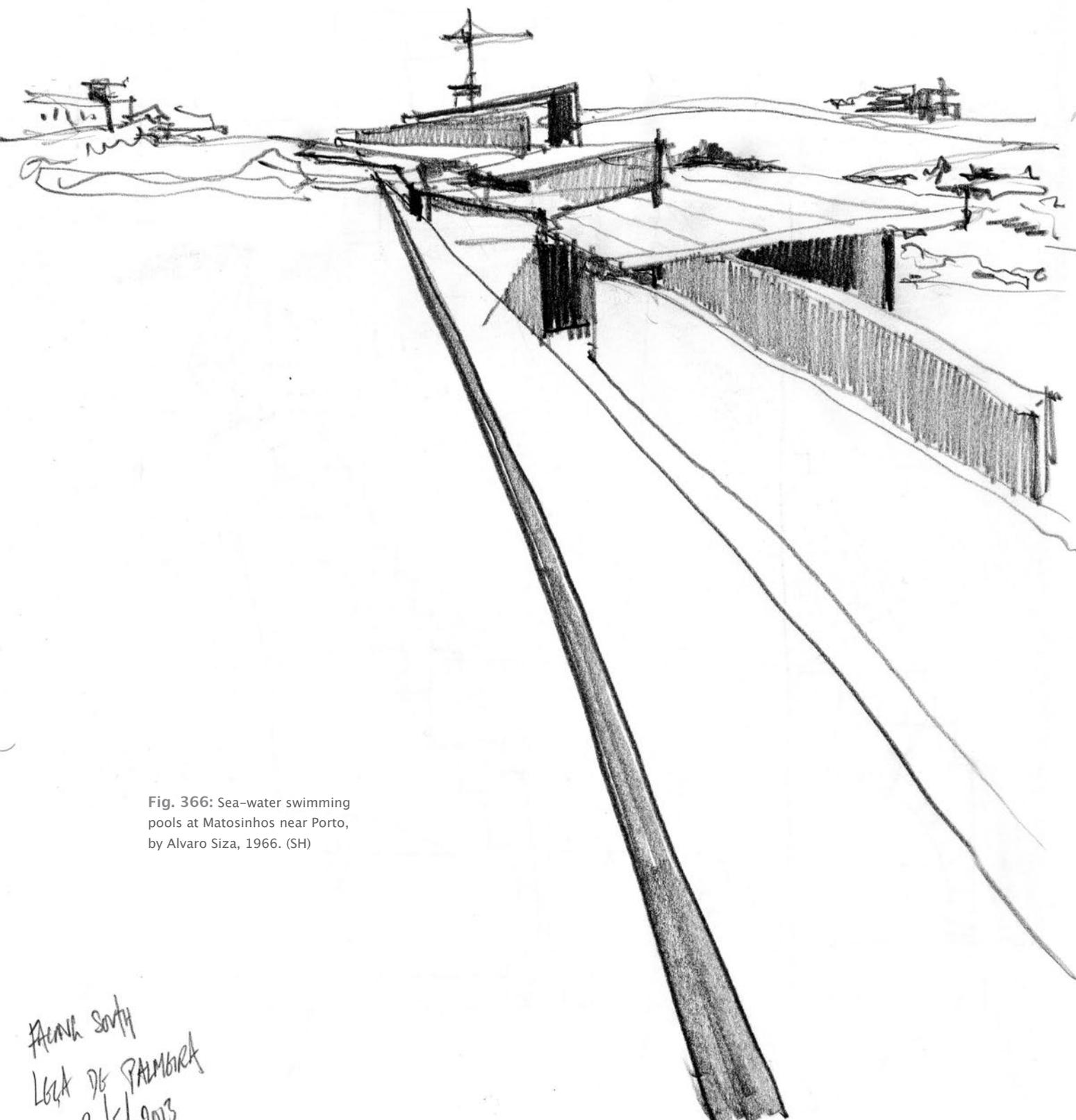
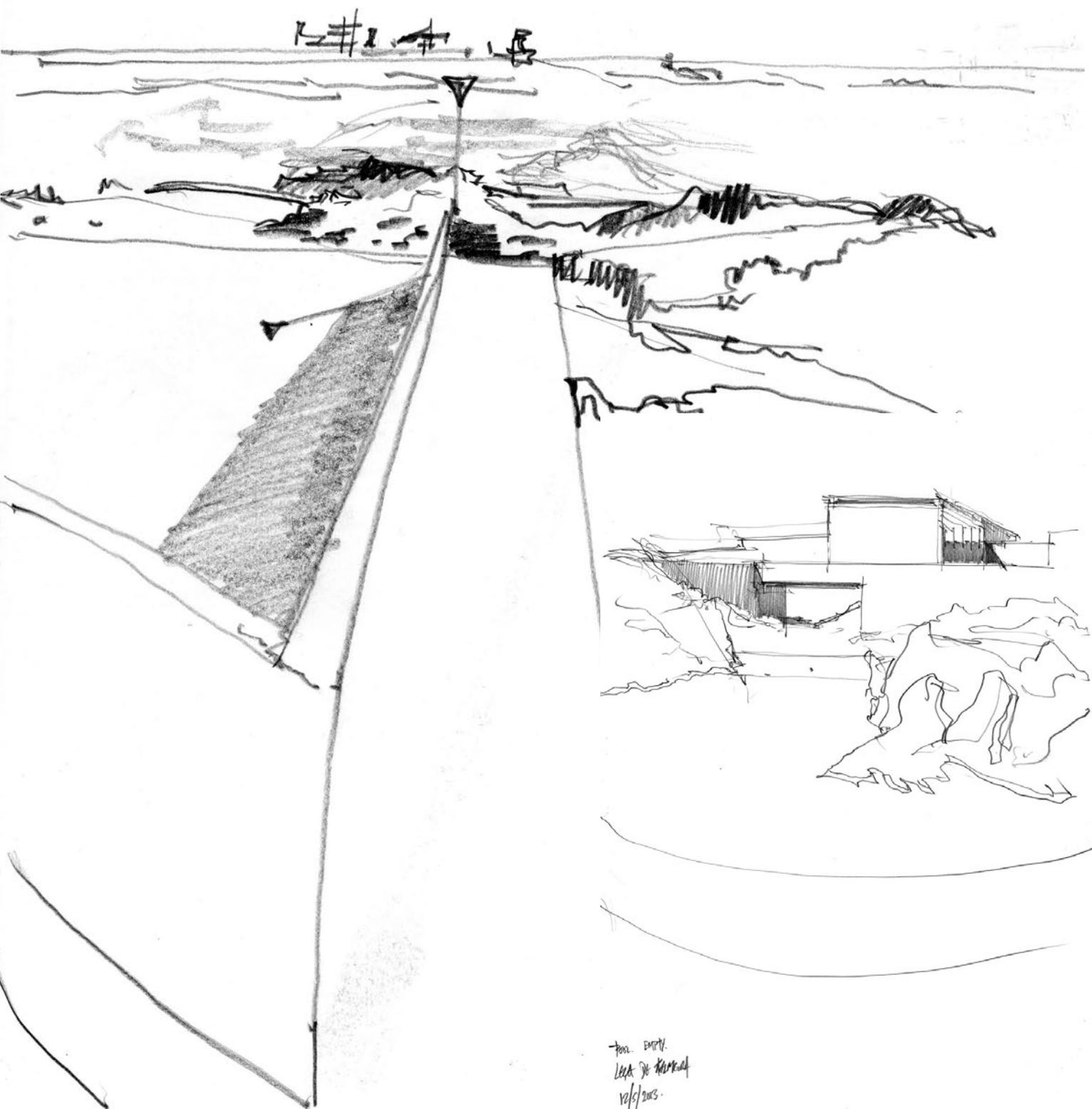


Fig. 366: Sea-water swimming pools at Matosinhos near Porto, by Alvaro Siza, 1966. (SH)

FRANK SOUTH  
L64 96 PALMBR  
12/5/2013



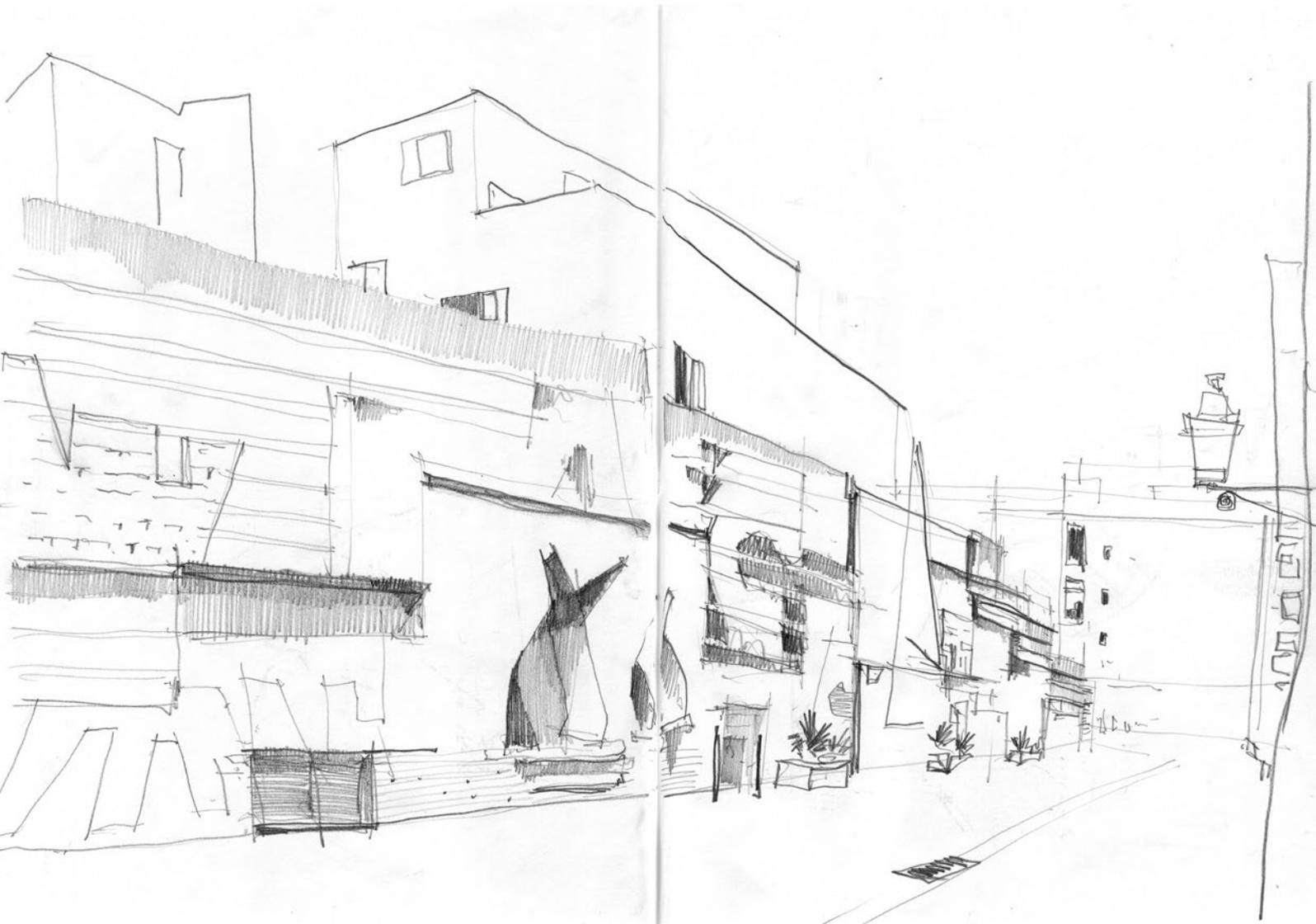
from empty  
level of ground  
10/1/2005

Past structures reused.

Buildings which adapt to existing architecture, reusing the fabric of earlier construction, extending the life of old urban and material components. Pati Llimona, by Ignasi Solá Morales; Mural behind Santa Caterina Market by EMBT, made of remnants from the previous market stalls.

Fig. 367: Pati Llimona Civic Centre, Roman Walls and Gothic palace renovated by Ignasi da Sola Morales, Barcelona, 1988; Santa Caterina Market, Barcelona by EMBT, 2005. (SH)





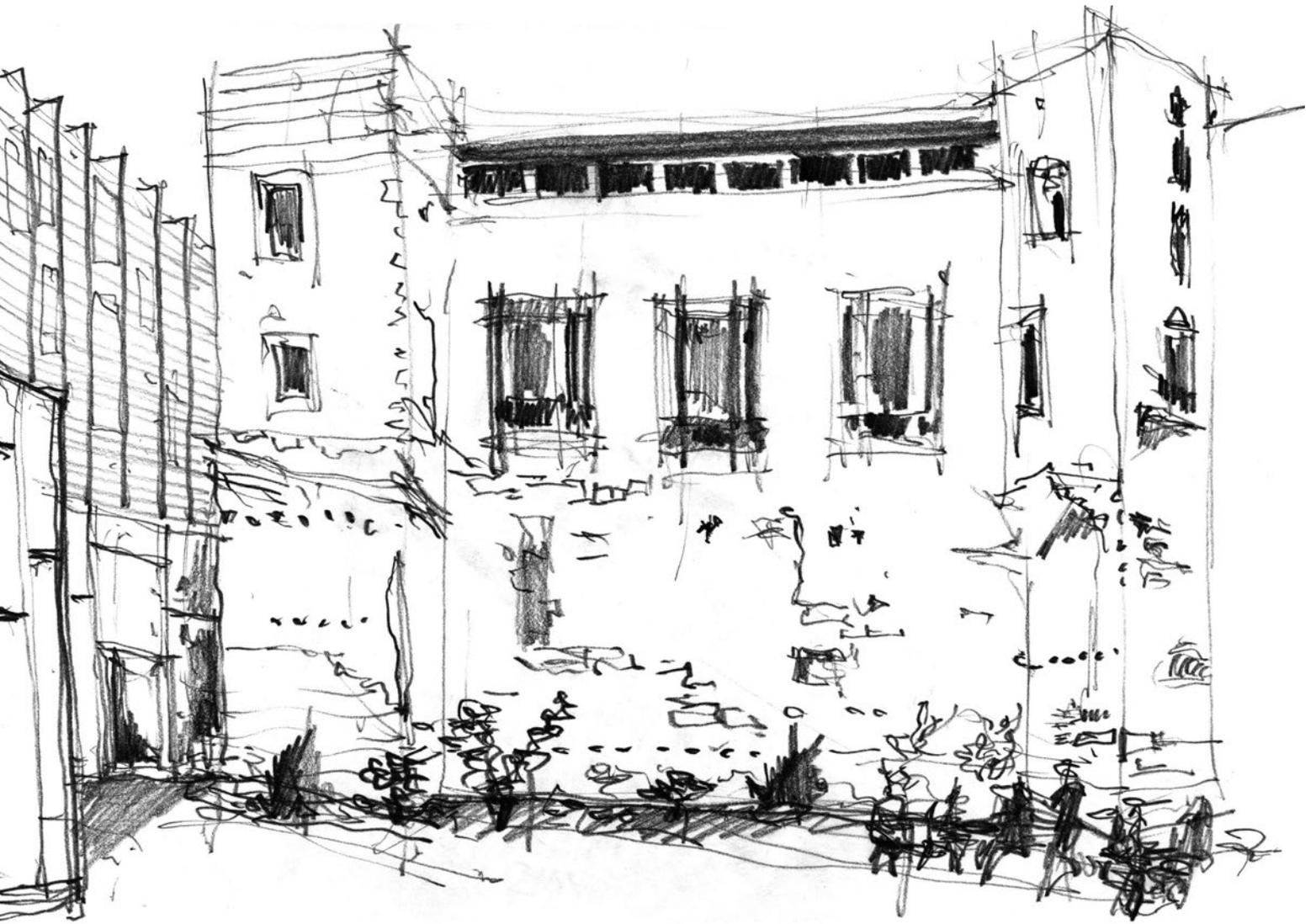
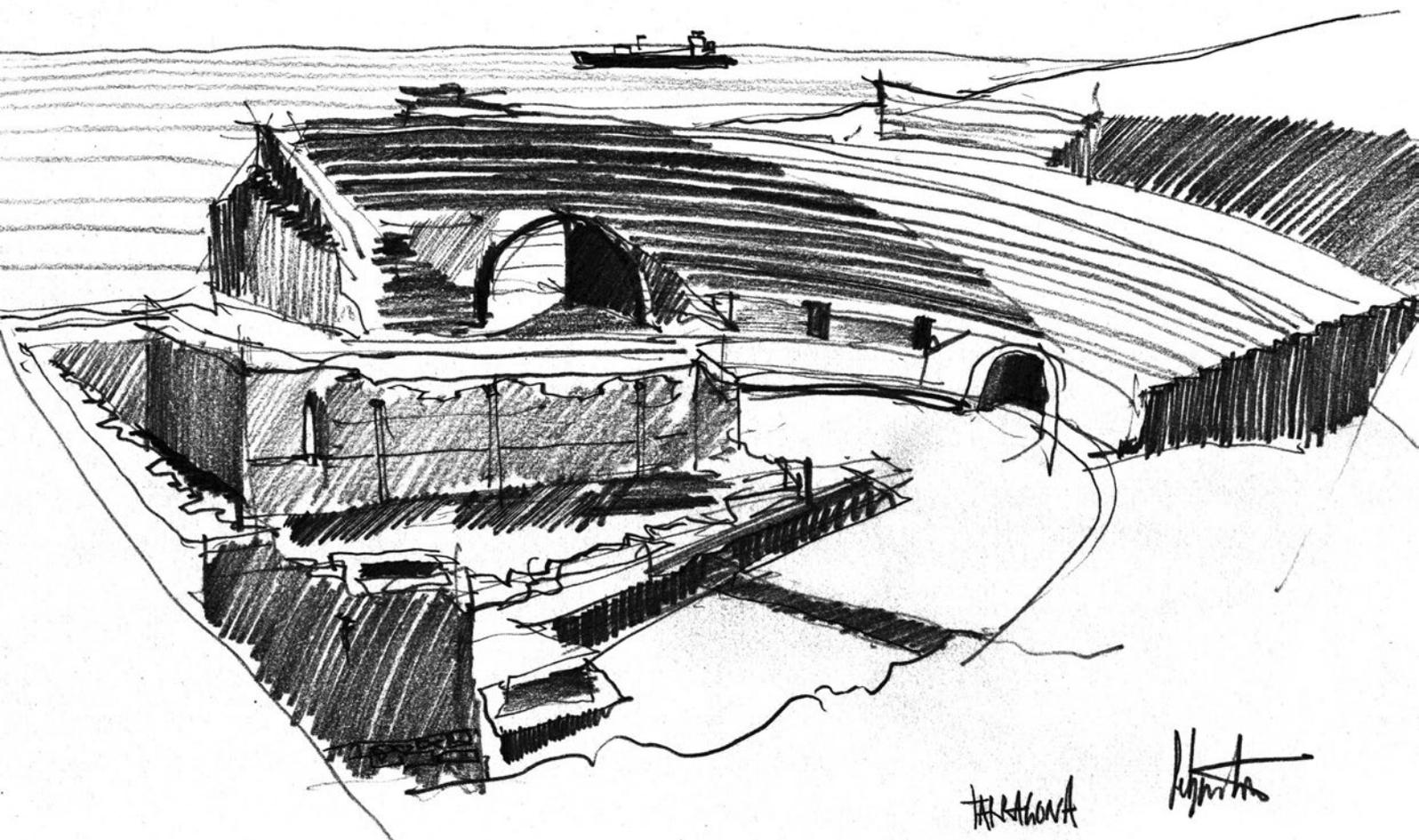


Fig. 368: Pati Llimona Civic Centre, Ignasi da Sola Morales, Barcelona, 1988; Roman amphitheatre and church, Tarragona. (SH)

Buildings which transform previous sense of place with new functions and ideologies. Pati Llimona, Roman fortification to Medieval palace, to contemporary civic centre; Tarragona's amphitheatre, maintained but transformed with a church in Christian times.





Handwritten notes in blue ink, including the word "plan" and other illegible scribbles.

Handwritten notes in black ink, including the word "section" and other illegible scribbles.

Fig. 369: San Lorenzo, Milan, 4th – 17th century; Roman circus, Tarragona. (SH)

The Basilica of San Lorenzo, Milan, whose plastered cupola was completed in 1619 on top of a previous collection of brick constructions some dating from the fourth century.

The Circus at Tarragona, now a central public space within the historic city, the surrounding buildings are built in and over the remains of the Roman seating terraces and their vaults.



### 3 – The influences of the past.

Place made by recalling the influences from the past, making reference to sense of place dissolved into collective memory, and which keeps recurring. The spaces and volumes of Santa Caterina market, recalling the previous convent; the Moll de la Fusta in the old port of Barcelona whose stone arched paseo elevated above the motorway, traces the path and recalls the proportions of the Medieval sea wall.





Fig. 370: Santa Caterina Market, Barcelona by EMBT, 2005; Moll de la Fuste, Manuel da Sola Morales, Barcelona, 1988. (SH)



TORRE

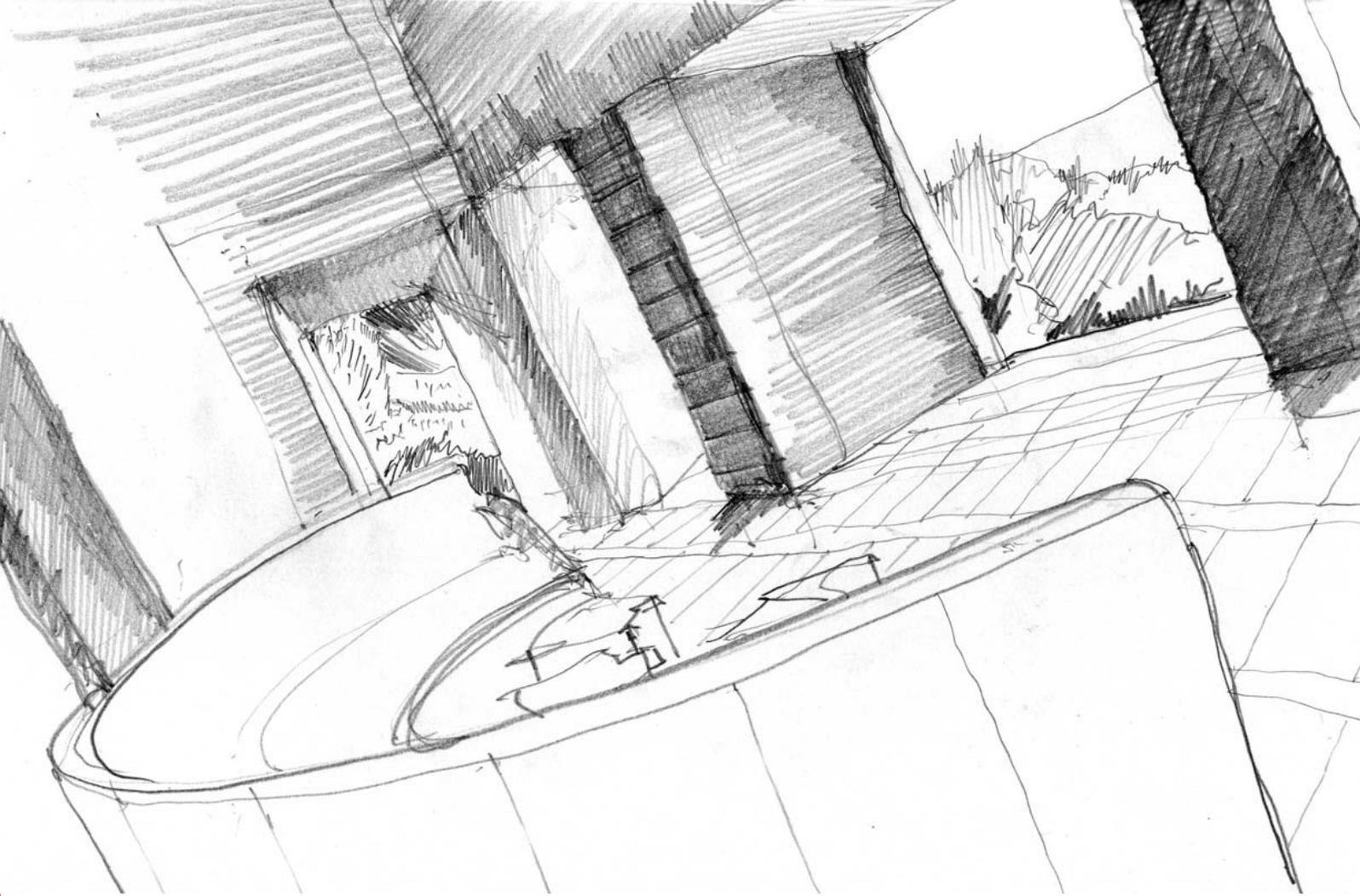


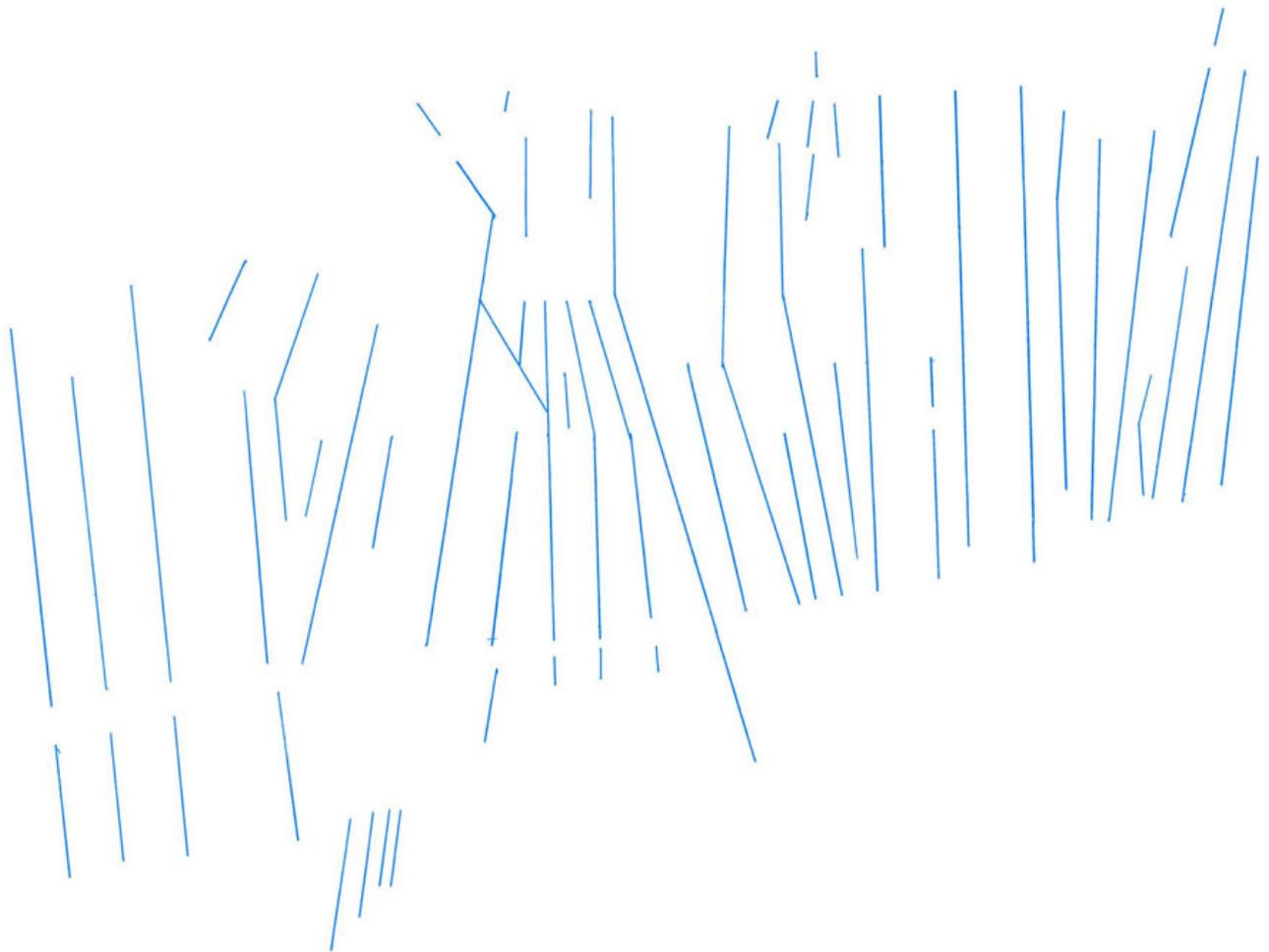
Fig. 371: House, Torre d'en Galmes, Menorca, 1400BC; Moll de la Fuste, Jorn Utzon, Mallorca, 1971. (SH)

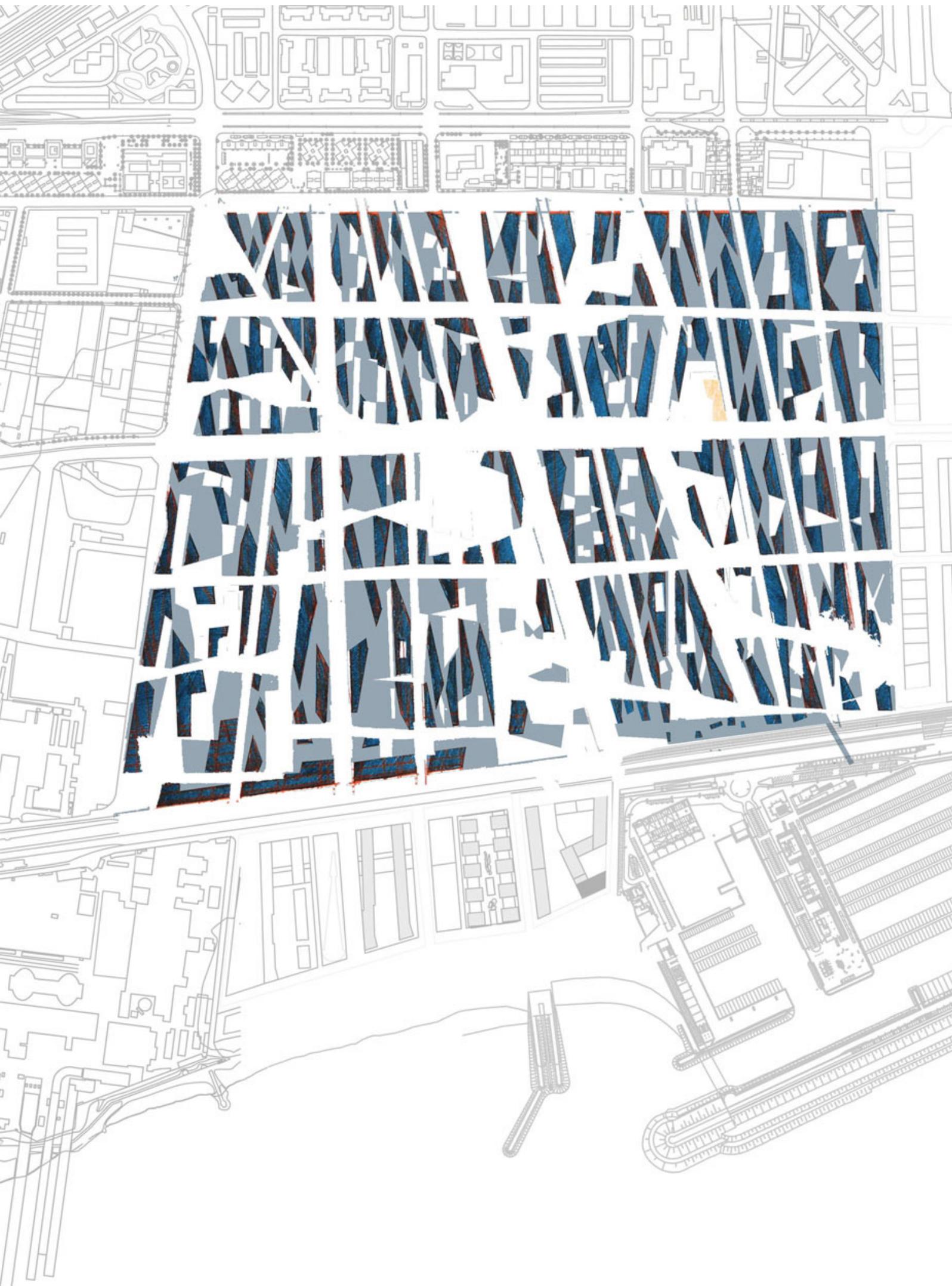
A stone house with central monolithic column (1400BC) at Torre d'en Galmés, Menorca. Utzon's sandstone living room of Can Lis, Mallorca, with off centre stone pier.

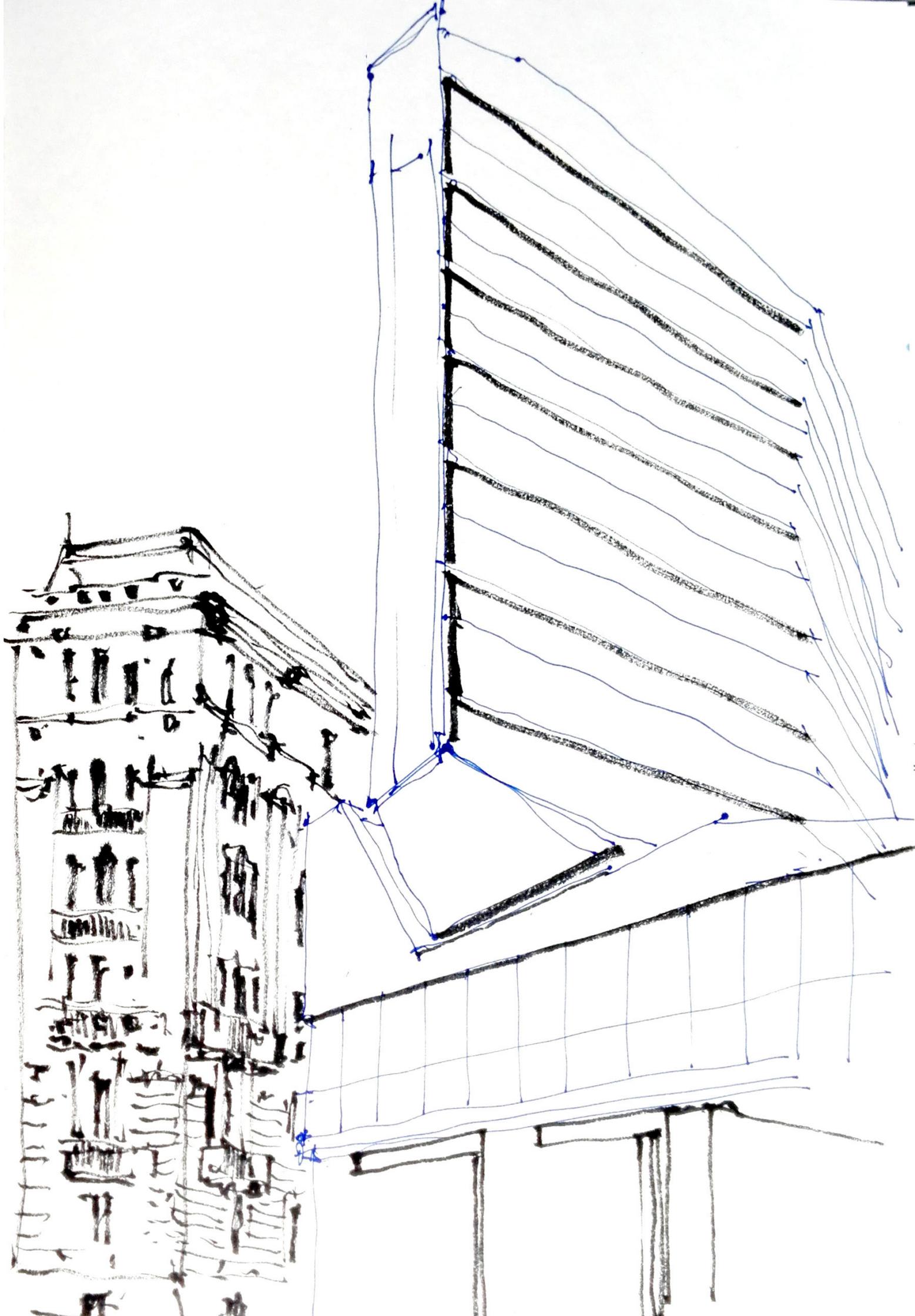


Fig. 372: Urban project for Badalona, Sebastian Harris, Urbanistica V, ETSAB-UPC, 2007. (SH)

The influence of a previous urban grain on a new urban proposal, Badalona. The irregular street pattern perpendicular to the coast generates the new street form and the independent towers set above the ground level plinth.







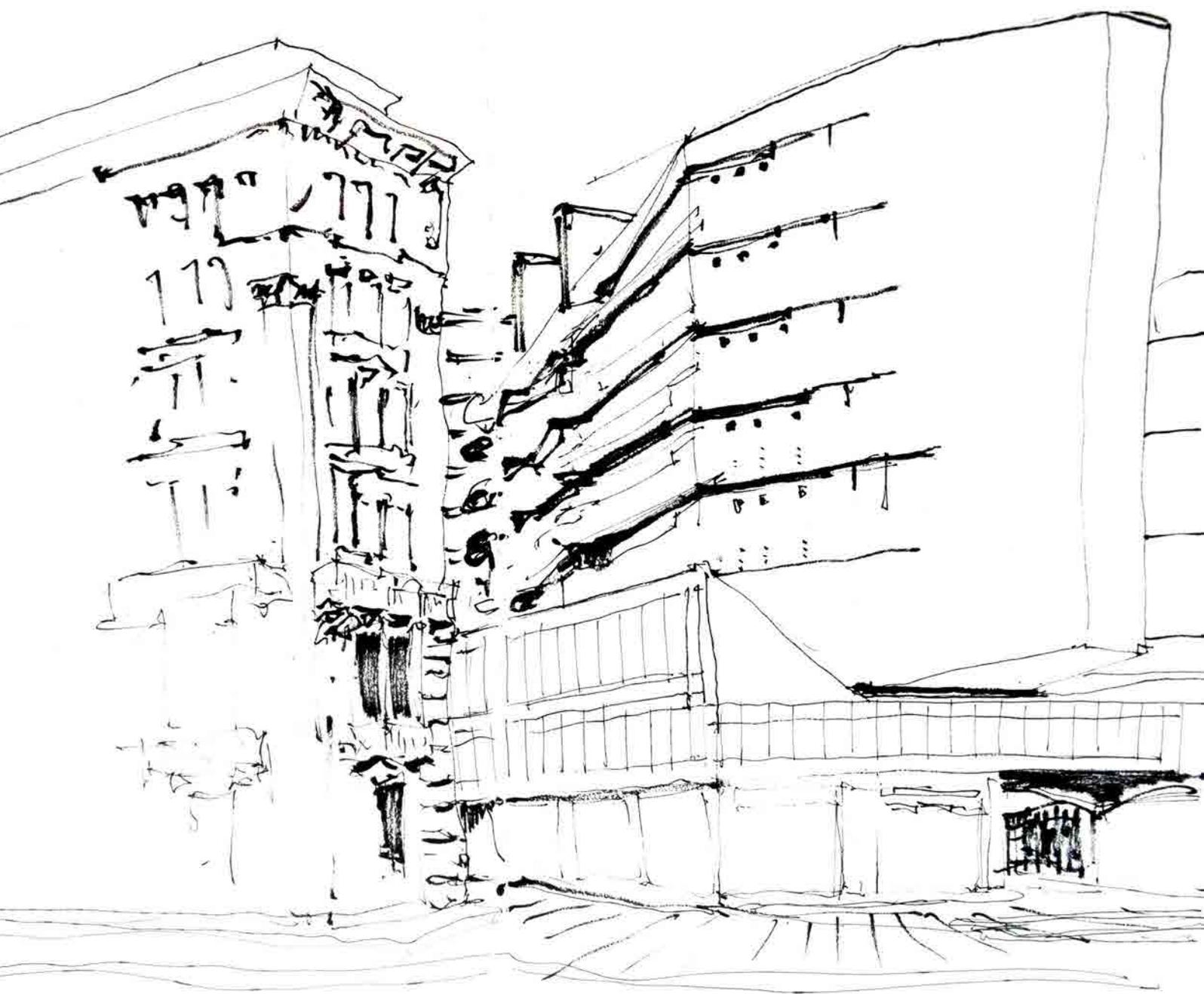


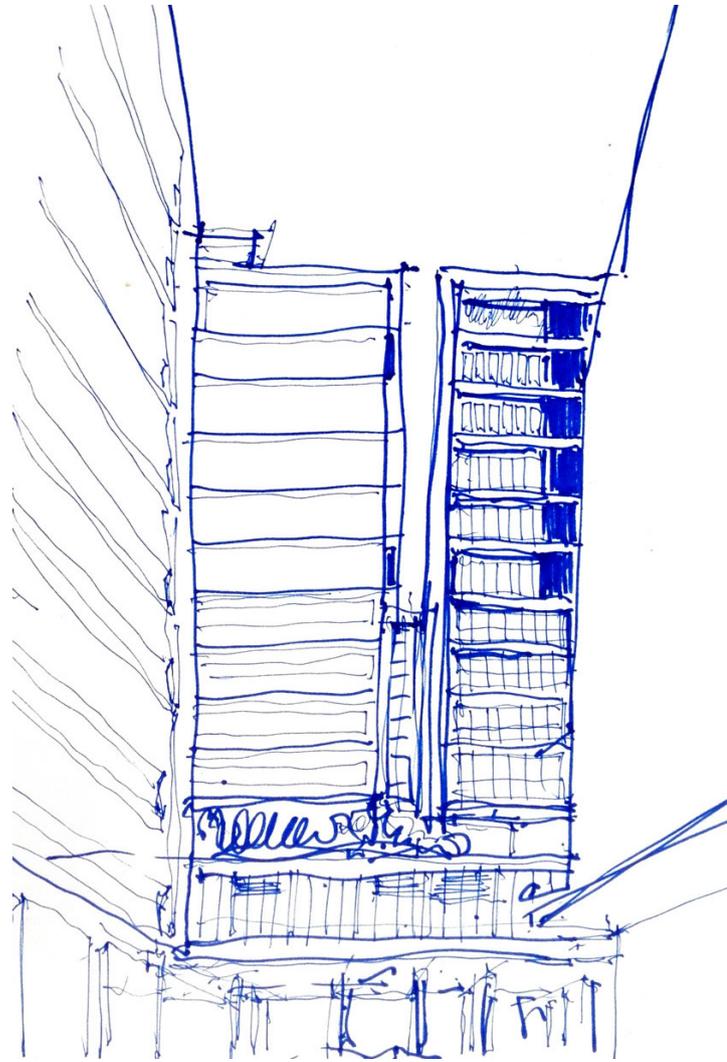
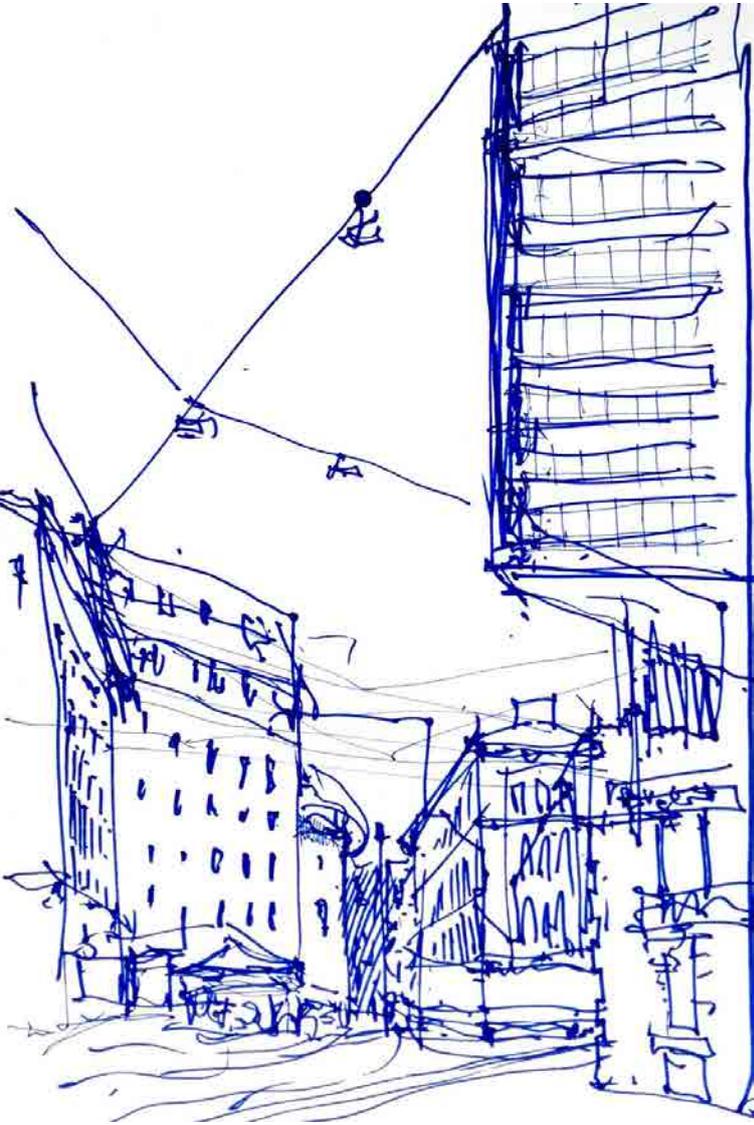
#### 4 - Interaction with the past

Opening new spaces and pathways through the existing city, relating form, proportion to the surrounding streetscape. Luigi Moretti, Corso Italia 13, Milan. Entrance from the road, through the central street and undercroft to the public garden behind.

And an equivalent relationship of old and new at San Lorenzo, 400m to the west.

Fig. 373: Apartments, shops and offices, Milan, Moretti, 1950s. ABOVE: San Lorenzo, Milan C4 BC - C17AD. (SH)







**Fig. 374:** Apartments, shops and offices, Milan, Moretti, 1950s. Sequence from Corso Italia through central access street and past undercroft to garden beyond. (SH)

## 5 – Common responses to factors shared across time.

The underlying structures of place may result from recurrent problems which lead to common architectural solutions connecting place across time. Columns repositioned by the sudden movement of an earthquake, Temple of Zeus, Olympia. Single story masonry church and iron bell tower in Levkas, Greece. All taller structures are made of lightweight construction as a response to recurrent seismic activity. The town is built of corrugated sheeting with classical vernacular detailing.

Timber frame construction permits movement and deformation as the timber pile foundations continue to gradually sink. The irregular forms of Amsterdam's houses are realigned by slow natural movement. Architectures characterised by particular characteristics of place, both geological and constructional.

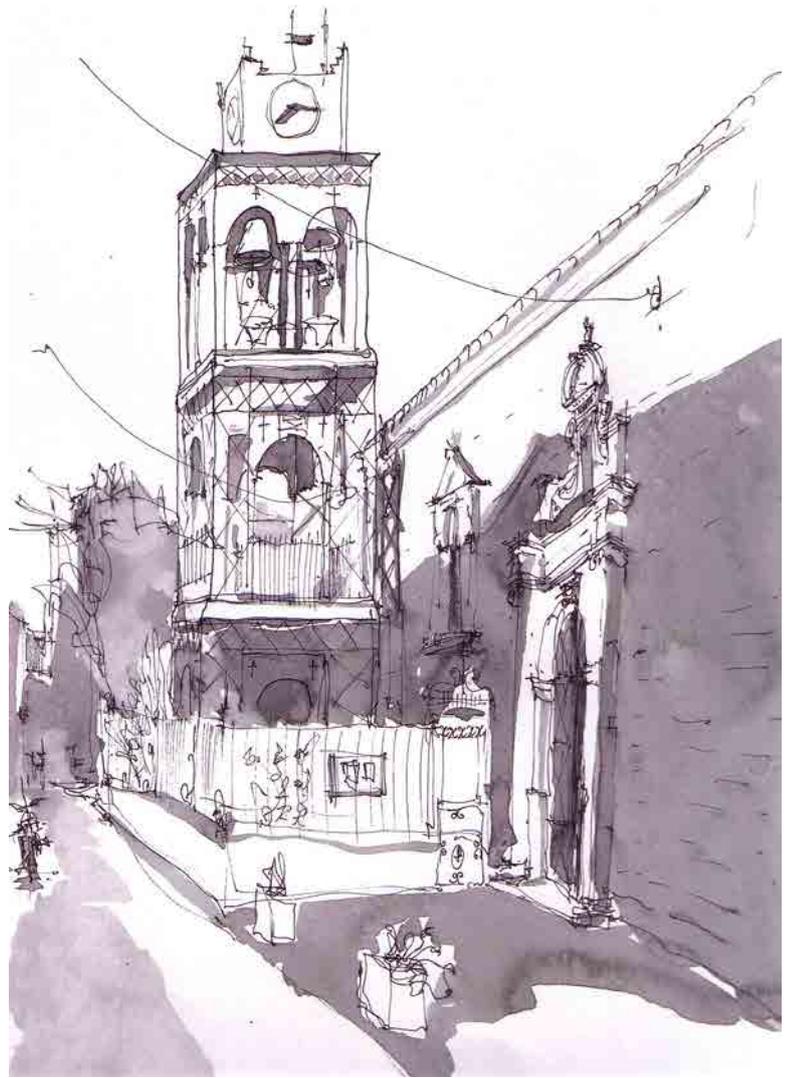


Fig. 375: RIGHT: Church in Levkas. (SH)  
BELOW: Temple of Zeus, Olympia (SH)  
RIGHT: Canal facades, Amsterdam, C18. (SH)





## 6 – Place characterised by the irregularities of the built environment.

Local differences which conform to an overall vernacular type. Townscape and the picturesque, balance without repetition. Golden Hill, Shaftesbury England; Villefranche, Southern France; Vicenza; Elba; Procida; Porto Venere, Liguria.



Fig. 376: LEFT: Golden Hill, Shaftesbury, UK. RIGHT: Villefranche, Southern France. (SH)

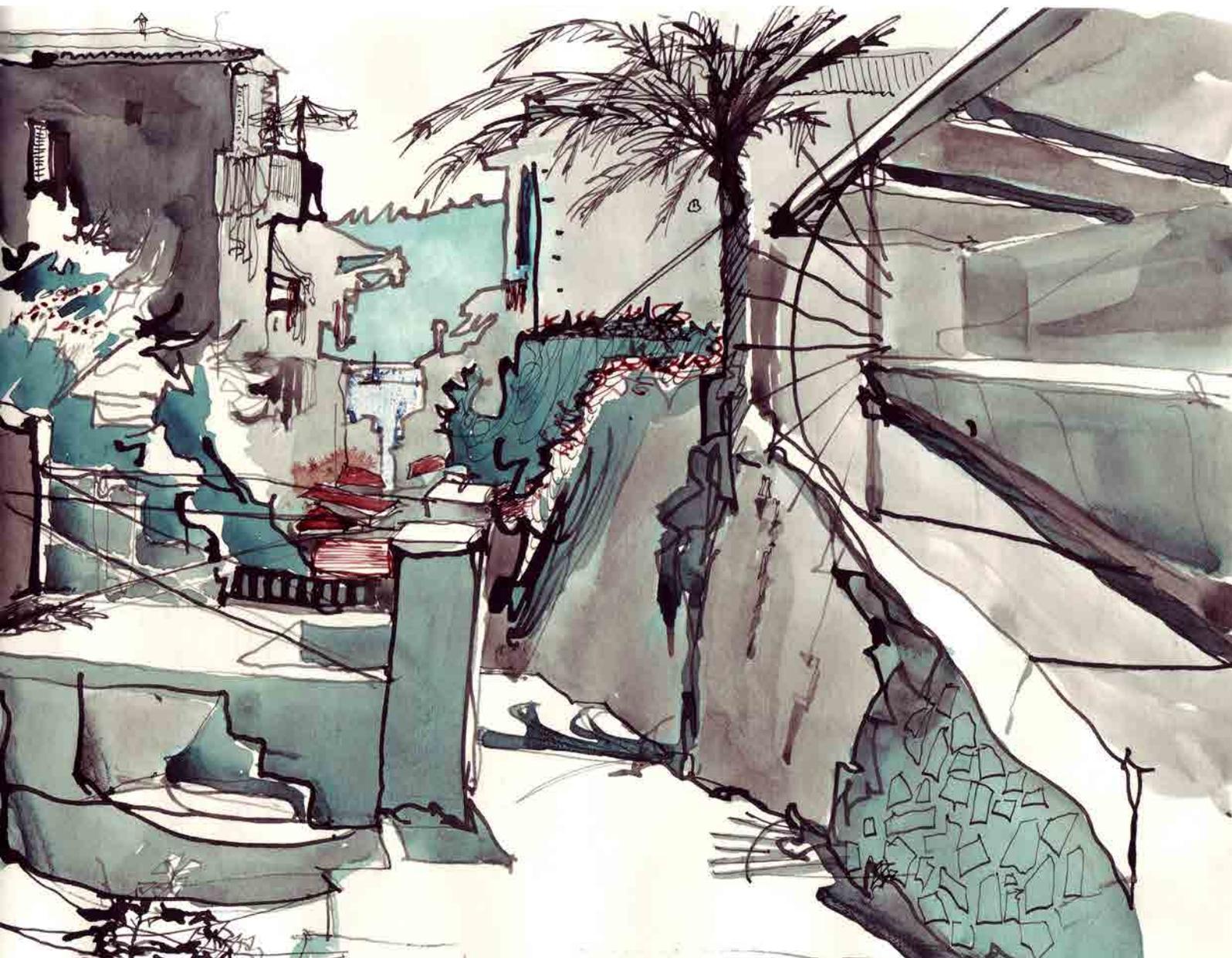
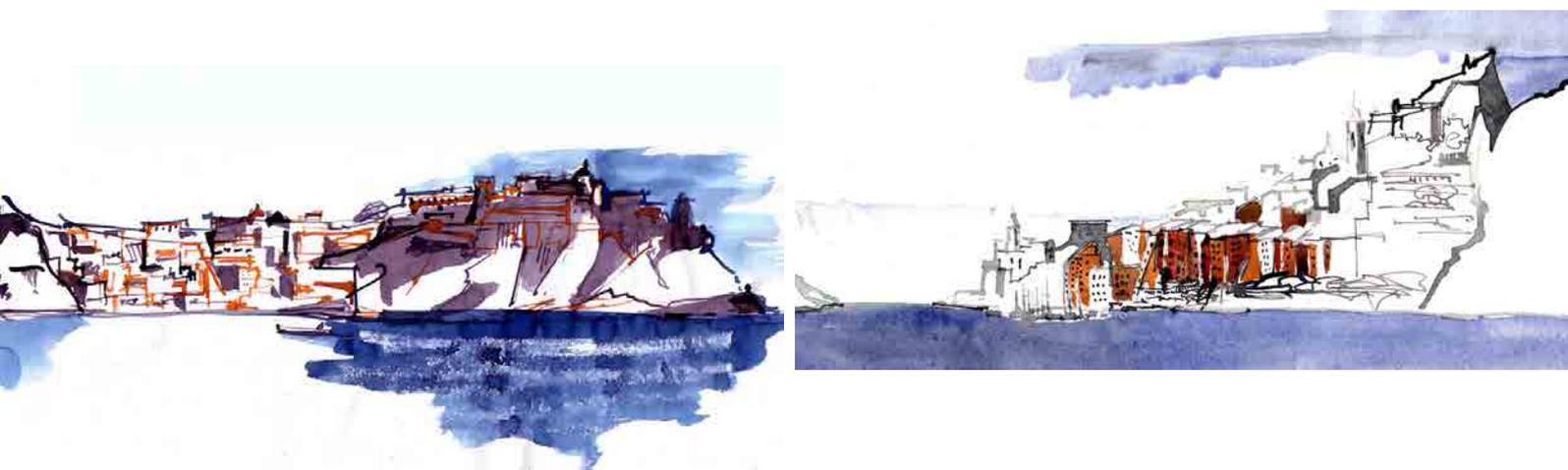






Fig. 377: LEFT: Vicenza; ABOVE: Portoferraio, Elba; BELOW: Procida, Italy and Porto Venere, Liguria. (SH)

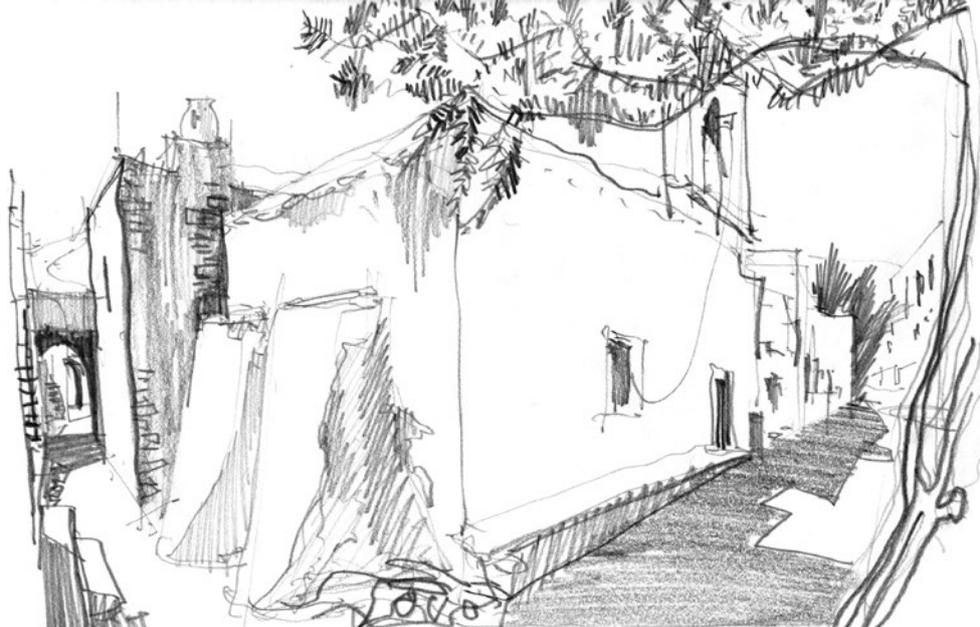


**7 – Gradual construction of place through accretion: Palimpsests and additive construction.**

Vernacular architectures of the Aegean islands. Chora, Folegandros.

Fig. 378: Views of the Kastro in the centre of the Chora, Folegandros, Greece. (SH)





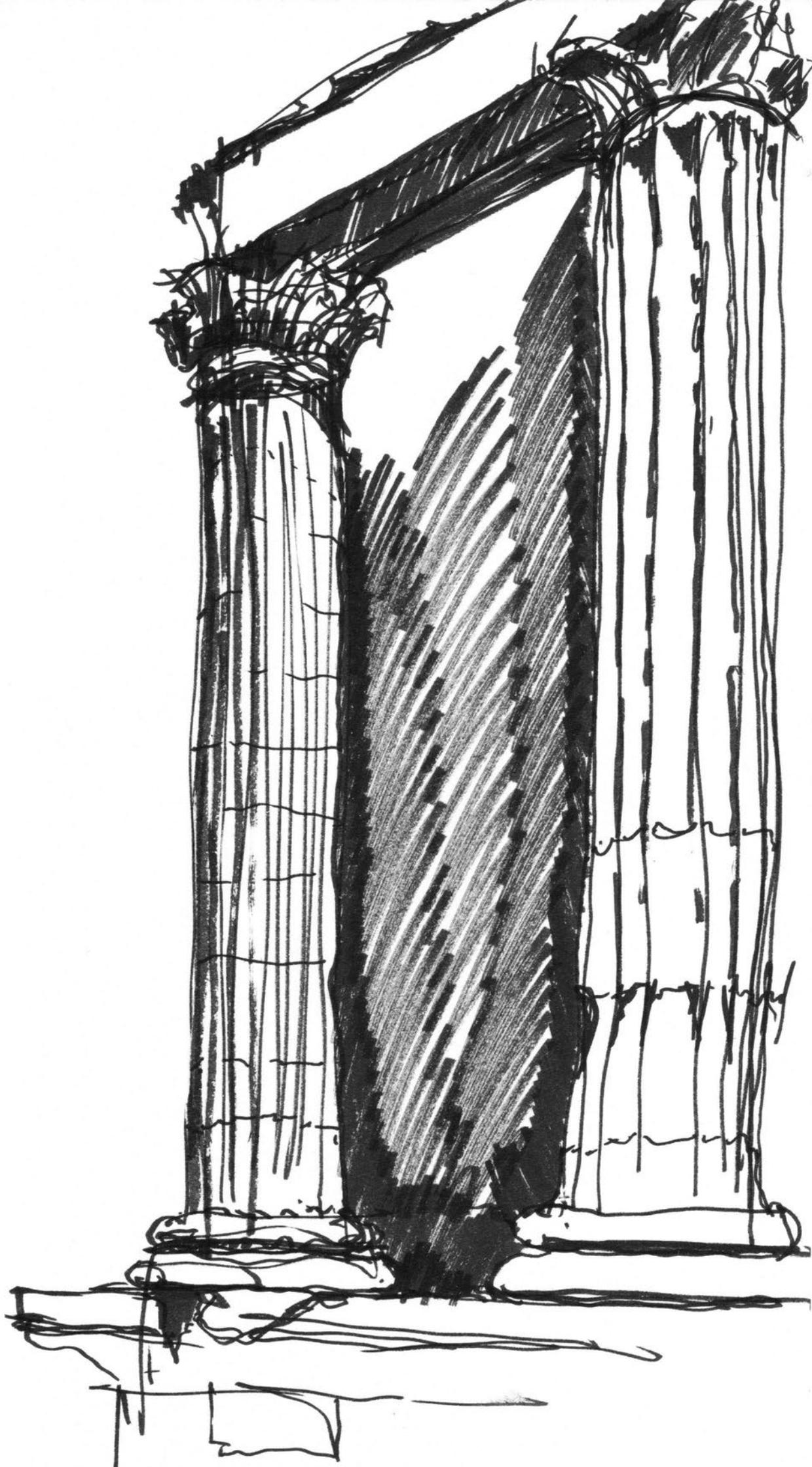
## 8 – Revealing place by cutting back through layers

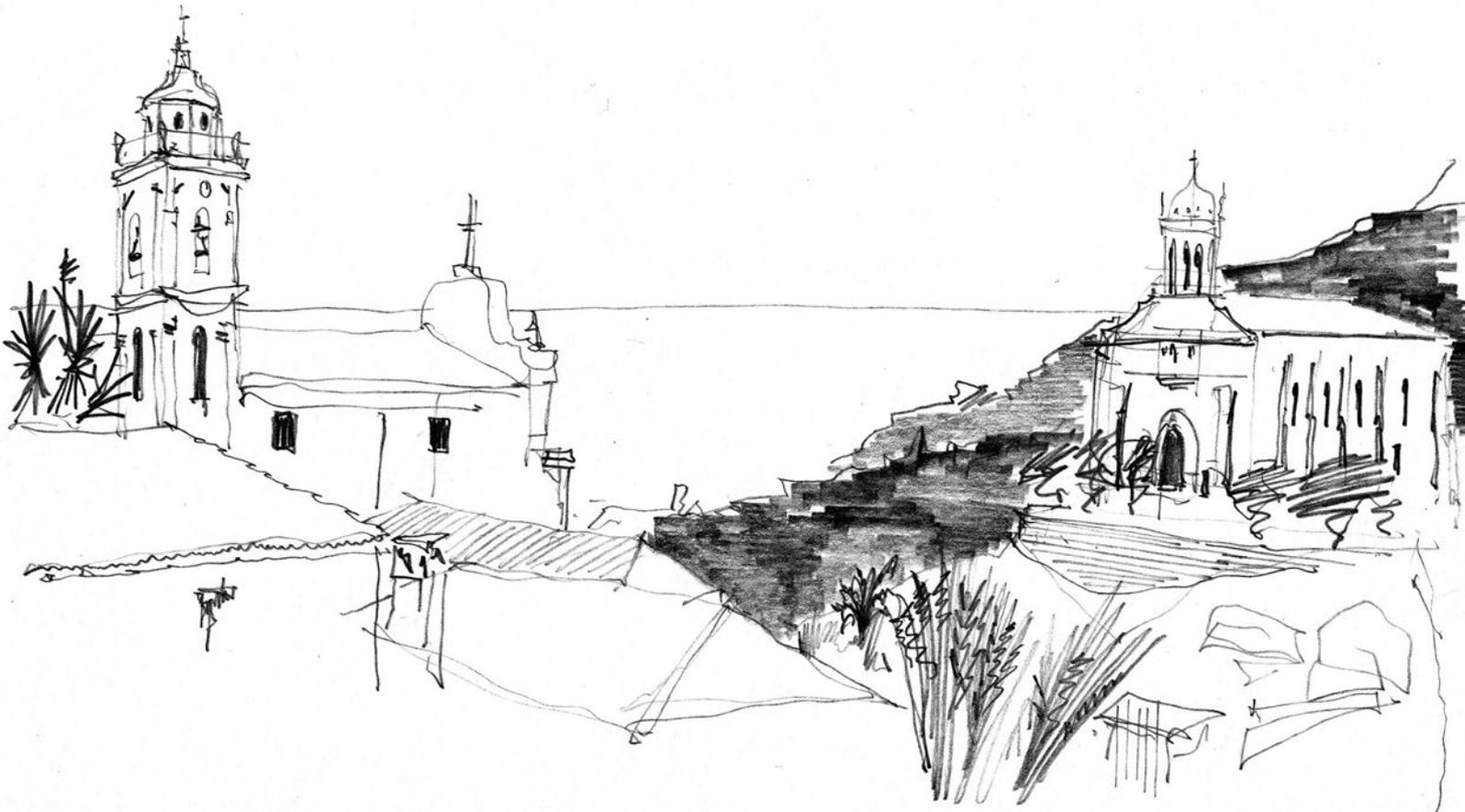
Place can also be revealed through cutting back additions to unveil what remains of what was there before, giving new, transformed life to the predecessor. The temple of Augustus, Barcelona now disengaged from the medieval constructions which had gradually enveloped it; The vineyards of Lanzarote, where vines grow in hollows carved out of the upper volcanic layer to provide shelter from the wind and to grow in the fertile soil beneath, revealing and re-using the landscape prior to the last volcanic eruptions.

Fig. 379: BELOW: Vineyards at La Geria, Lanzarote. RIGHT: Temple of Augustus, Barcelona. (SH)



LA GERIA 25/5/14



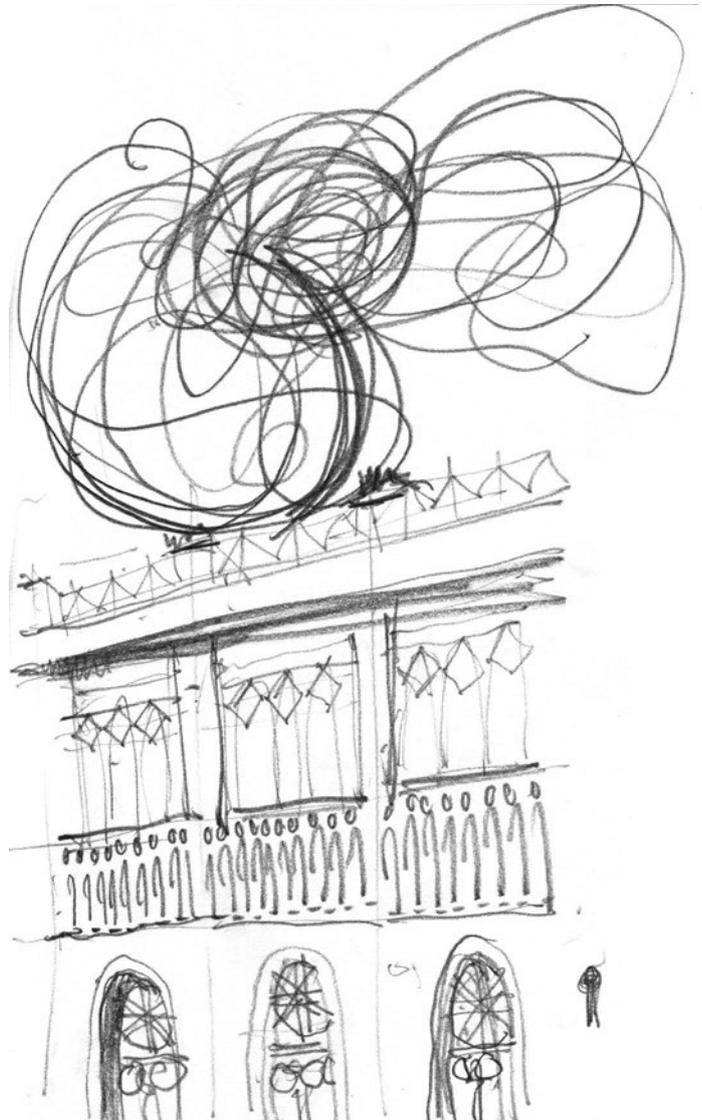


4 IX CARLOS. THE CORSICAN'S CHURCH

THE MIRACLES CHURCH



CCCB



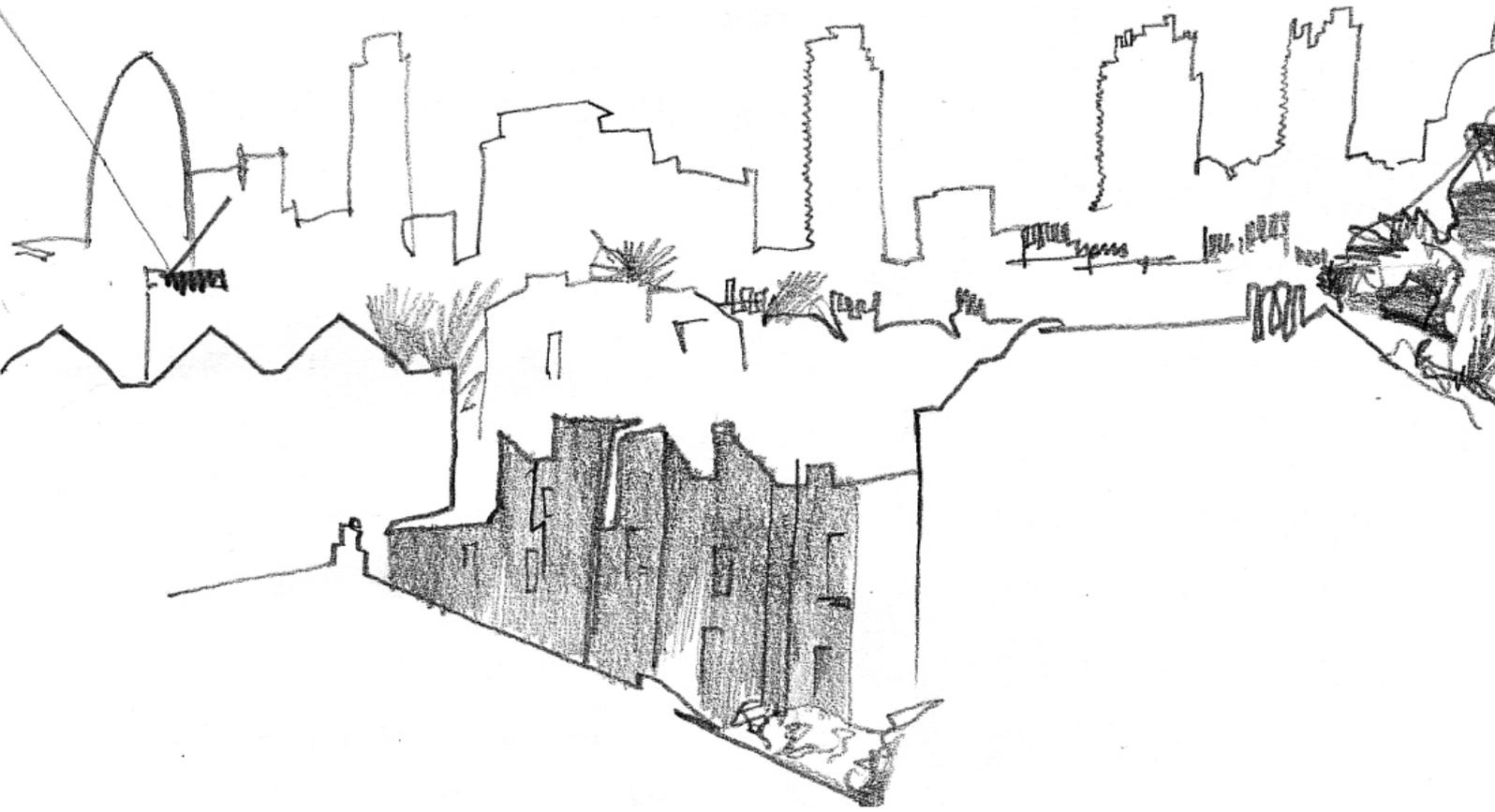


## 8 – Revealing the underlying nature of place through adding new relationships rather than rediscovering old ones.

The orthodox church of the new (displaced) community of Maniot Greeks creates a symmetrical dialogue with the original Catholic church across the valley at Cargese, Corsica.

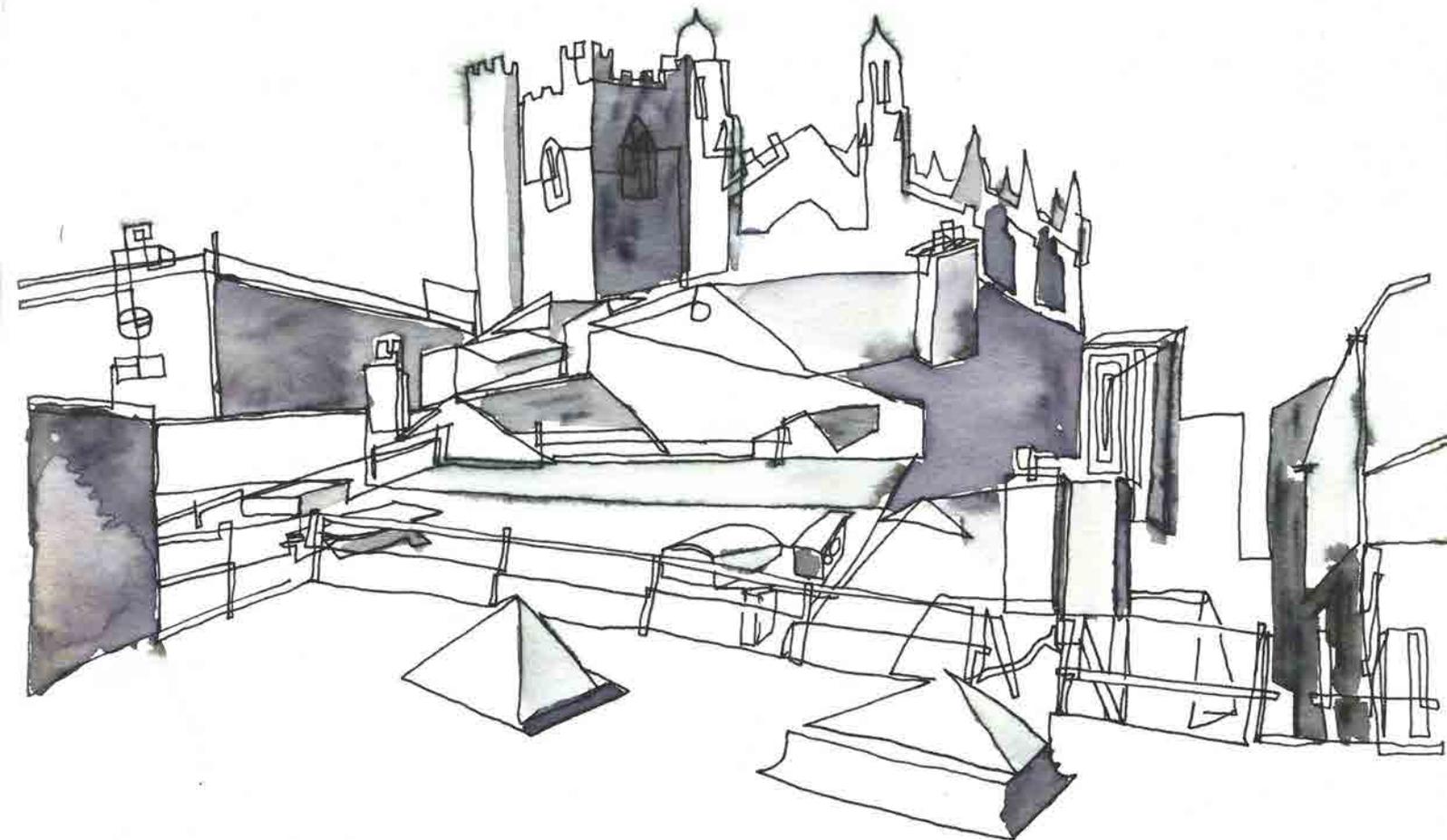
Alternative new relationships through contrasting forms and materials, Tapies Foundation Barcelona; or a glass facade reflecting the original facades at the CCCB, Barcelona. The contrast taken to extremes between modern speculative development and the traditional quarter of Hangzhou, China. In each case, the character of one accentuates the contrasting character of the other.

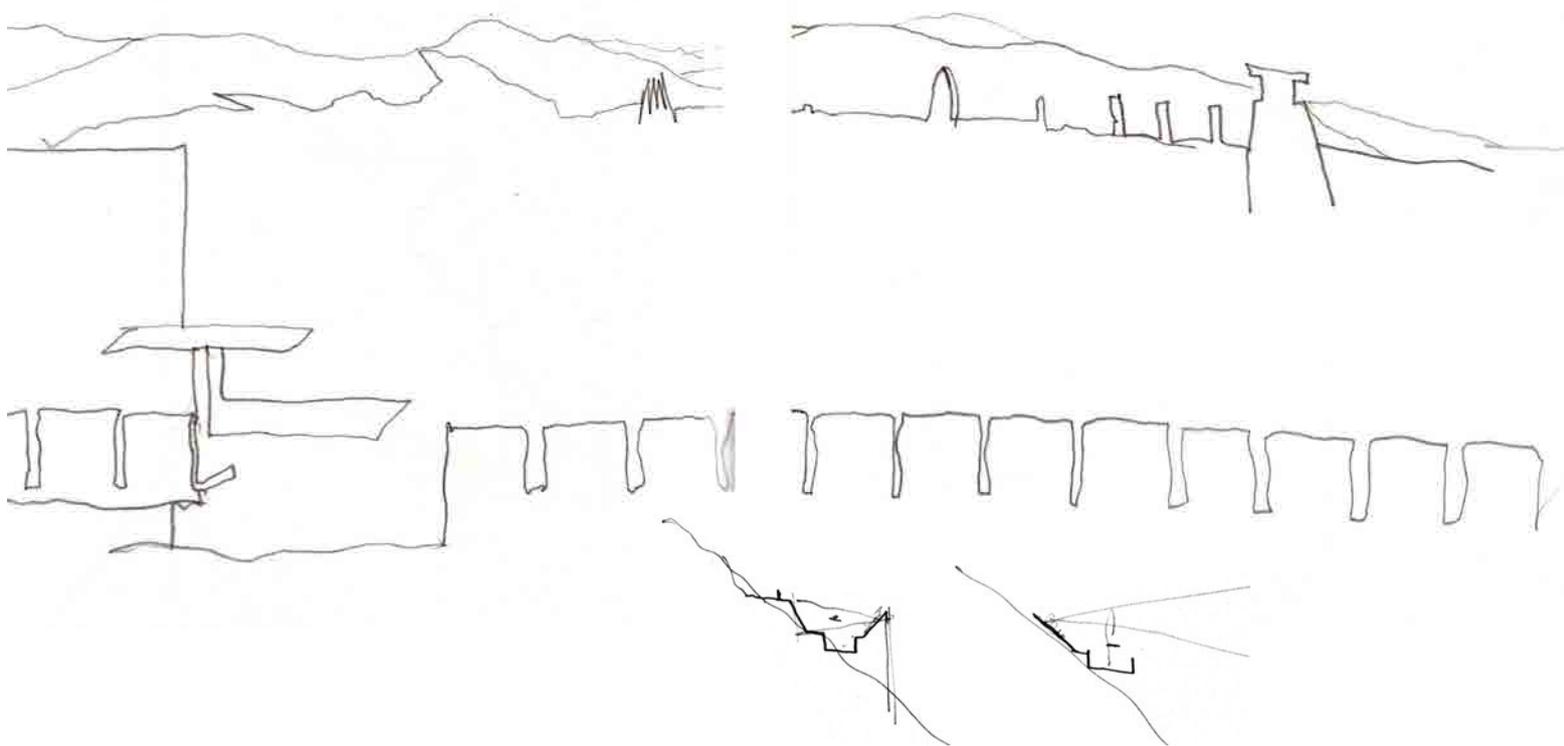
**Fig. 380:** TOP LEFT: Cargese, Western Corsica. LEFT: CCCB Barcelona Viaplana Piñon; Tapies Foundation, Barcelona. RIGHT: Hangzhou, China (SH)



Or between two contrasting view points. When considered from the interior: inward looking London mews in or the outward facing towers of the Barbican. Or when seen from the exterior: the ornate skyline of King's college chapel, Cambridge seen against its surrounding roof tops.

Fig. 381: ABOVE: Foreground, Angel, Background, City of London, Barbican towers, Chamberlin, Powell and Bon, 1970. BELOW: King's Chapel and rooftops, Cambridge. (SH)

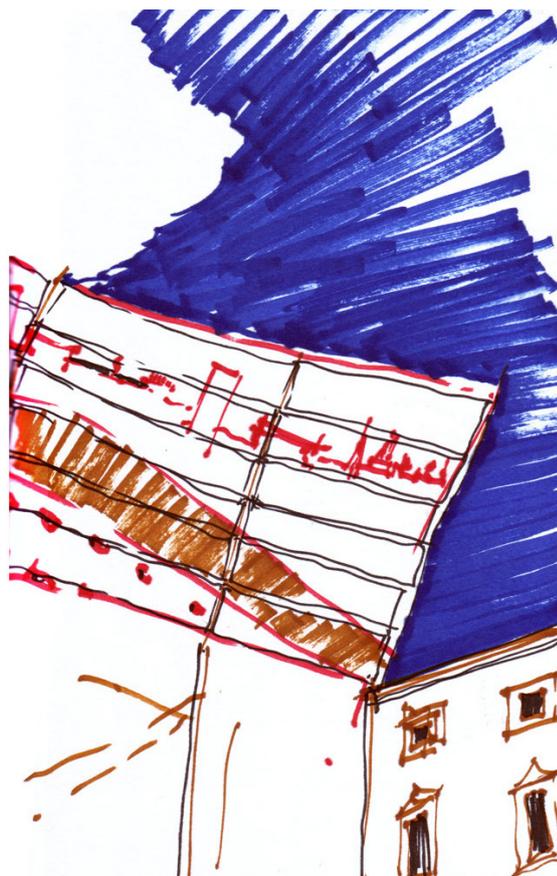




**Fig. 382:** ABOVE: Olympic Diving pool, Montjuic Barcelona. Moragas, 1992. BELOW: CCCB Barcelona Viaplana Piñon 1994; Tapies Foundation, Barcelona. (SH)

Or overlapping foreground action with distant backdrop, Seating at Barcelona's Olympic diving pool facing over the city.

Or offering a new vision of a broader context seen from an enclosed space at a different scale: the Barcelona skyline reflected by the inclined glazed facade into the enclosed courtyard of the CCCB.



### 9 – Place is accentuated by referring to its antithesis.

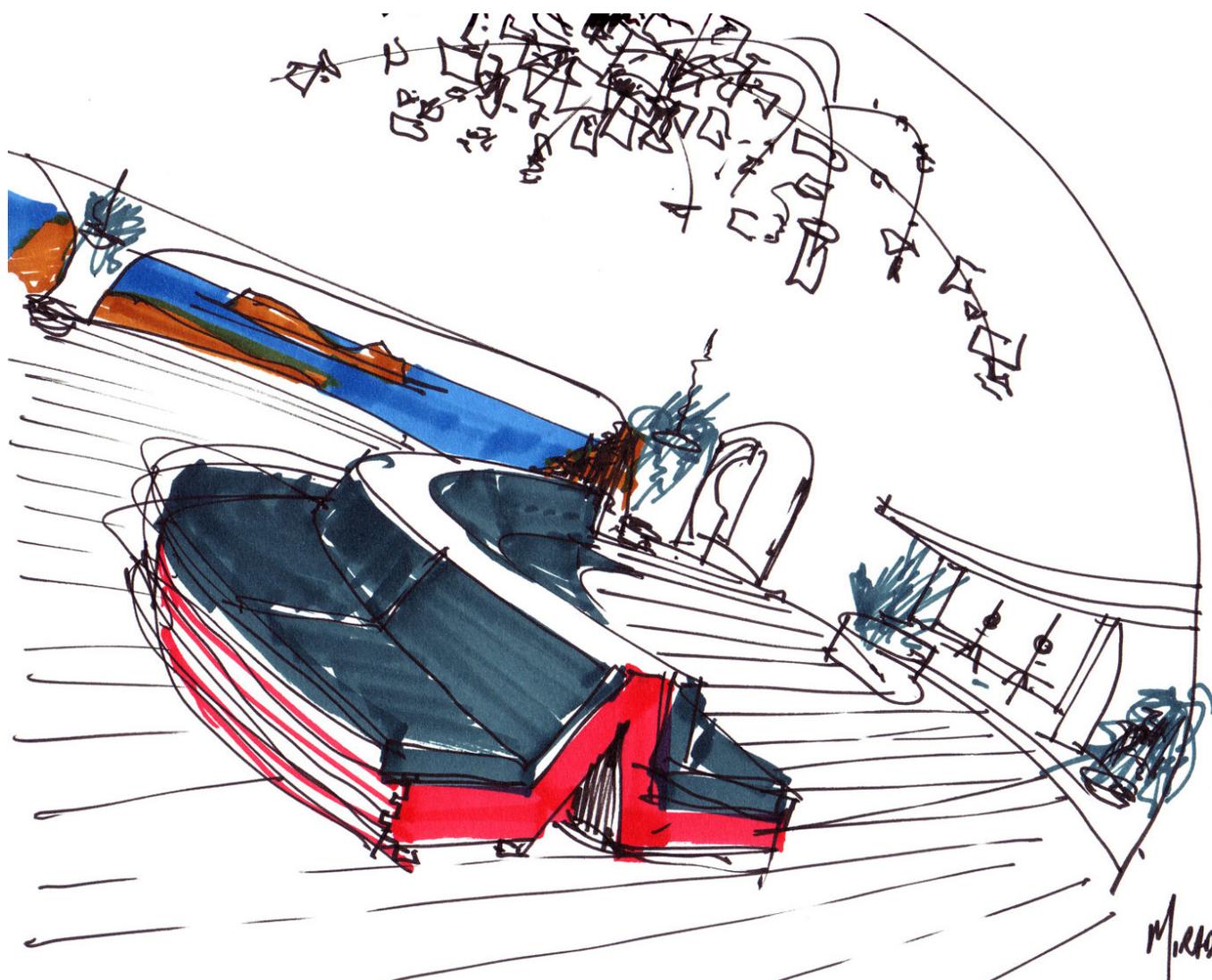
Architectures built along the dividing line separating two contrasting places. Dividing lines: Bonifaccio, Corsica; Thira, Greece on the brink of the volcanic island's sea filled crater; Cesar Manrique's Mirador del Rio, Lanzarote located in a gun emplacement tunnelled out of the cliff face.

**Fig. 383:** LEFT: Bonifaccio, Corsica. RIGHT: Thira and the submerged crater, Greece BELOW RIGHT: Mirador del Rio, Manrique, Lanzarote 1973. (SH)





Version 30.8.16

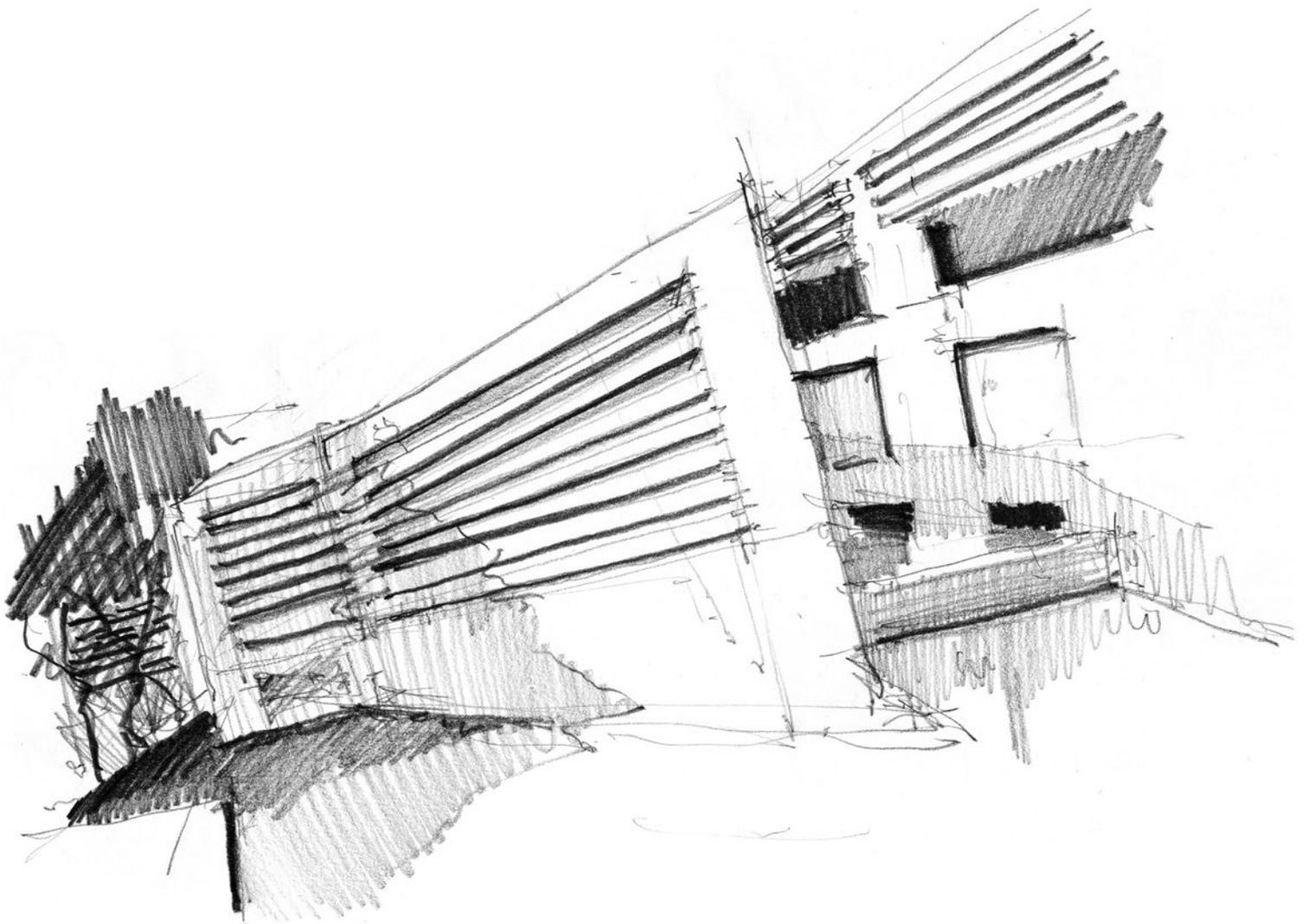


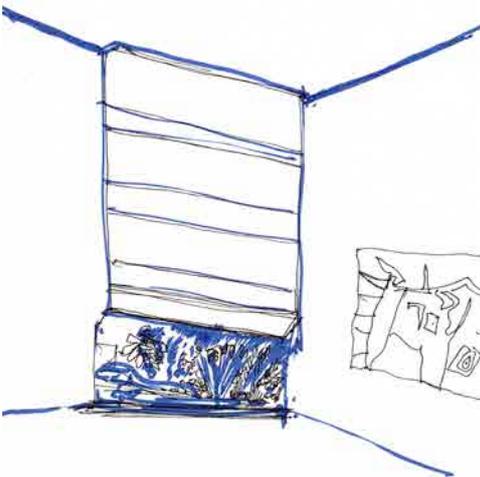
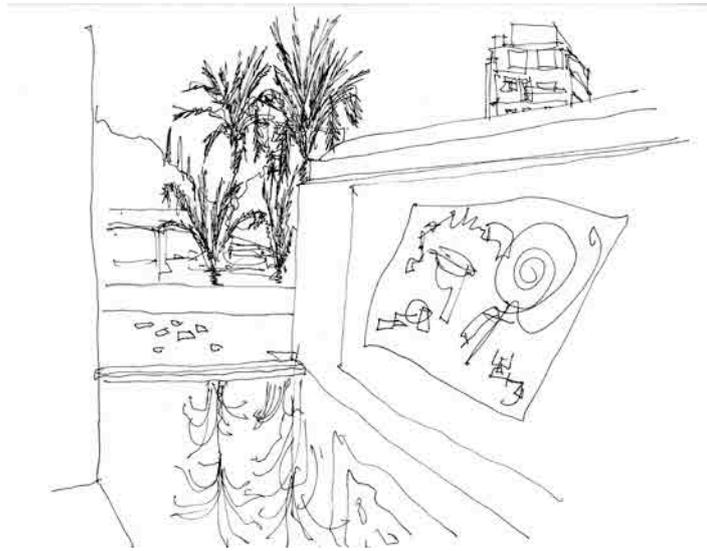
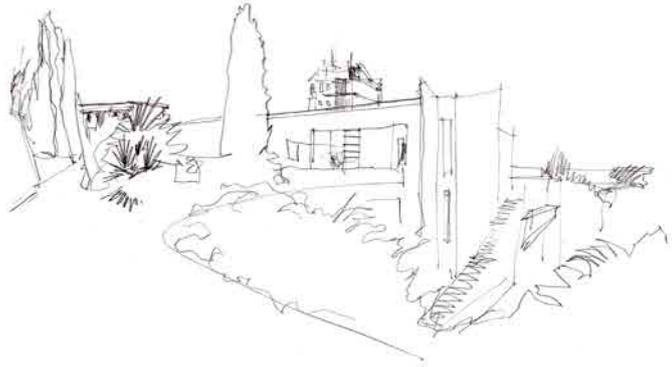
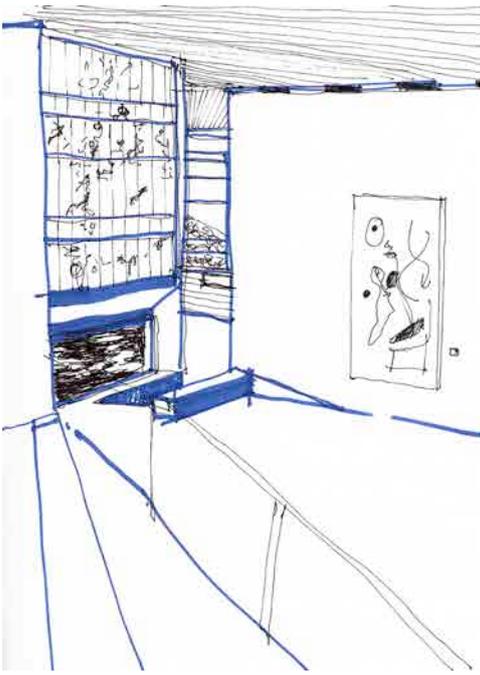
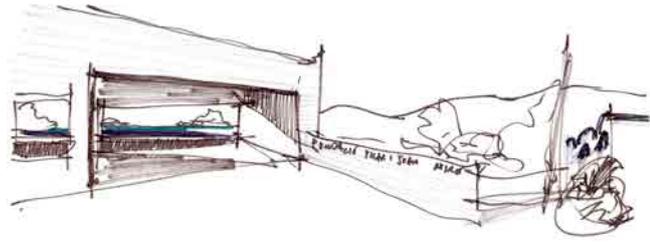
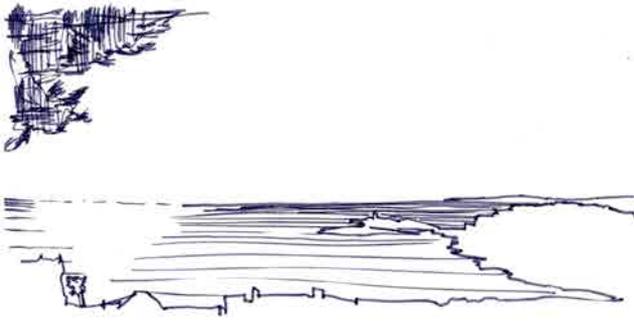
M. RAOOR

## 11 – Buildings that react against hostile places.

Rafael Moneo's Miro foundation in Palma focusing its views away from surrounding speculative development onto the original characteristics of place: terraced gardens, fish ponds and coastal views.

**Fig. 384:** Fundació Pilar i Joan Miró, Palm de Mallorca, Moneo, 1992. FAR RIGHT BOTTOM: Miro's studio designed by Luis Sert, 1956 (SH)

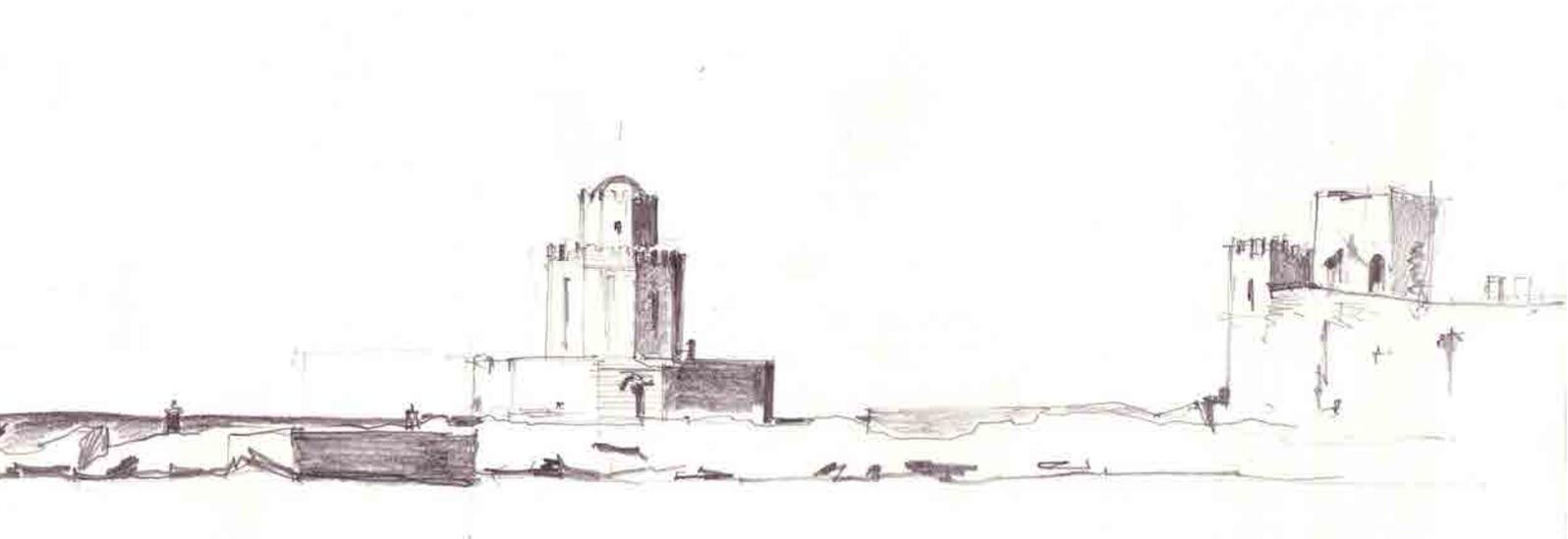






François X. 2011





## 12 – Autonomous castles and defensive places designed to close off from their surroundings when required.

Fig. 385: FAR LEFT: Kastro within the Chora, Folegandros, Greece. LEFT: Leros castle with market stall, Greece. BOTTOM LEFT: Astipalia with the Chora and Kastro in the distance TOP RIGHT: Venetian fort at Methoni, Greece. BOTTOM RIGHT: inside the Kastro at Astipalia, Greece. (SH)

Venetian castle at Methoni, Peloponese.

Alternative urban strategies for defence, integrated into their surroundings. A castle camouflaged within the labyrinthine centre of the Chora at Folegandros.

Architecture which separates itself from its surroundings but in so doing forms landmarks which come to symbolise place across a wider scale. The Chora and site of the ancient Acropolis at Astipalia, where the walls are formed from houses.





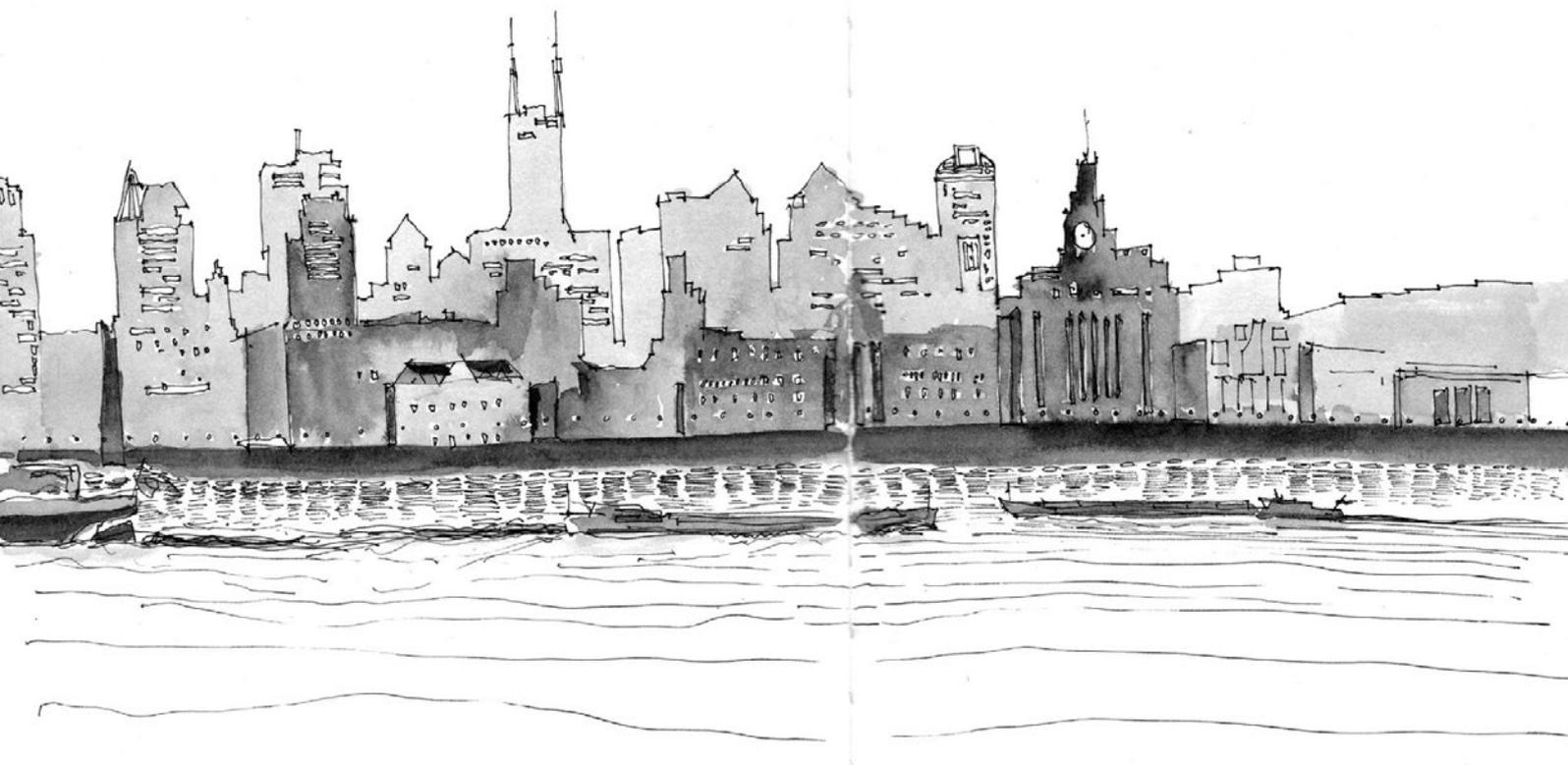


Fig. 386: LEFT: Punta de la Dogana, Venice. TOP RIGHT: The Bund seen from Pudong, Shanghai. BOTTOM MIDDLE: Pudong seen from the Bund, Shanghai. BOTTOM RIGHT: Pudong skywalk, Shanghai. (SH)

### 13 – Symbolic monuments and urban facades which form iconic images of place.

The Grand Canal in Venice; Two facing river fronts in Shanghai, the Bund (19 and early 20th centuries), and Pudong Skyscrapers built from scratch in 15 years. And the harbour at Valetta, Malta.

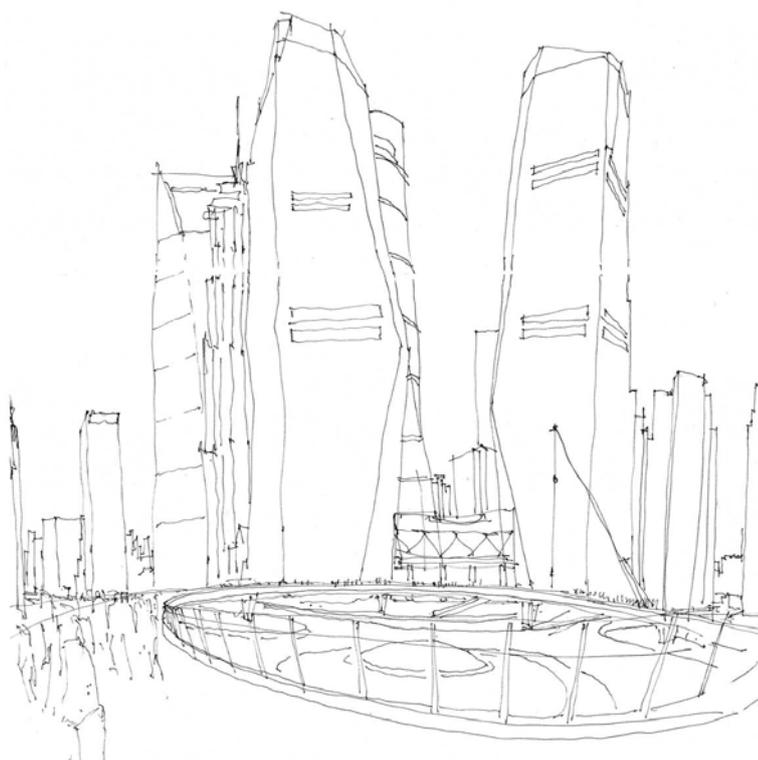




Fig. 387: Valeria, Maria Totti





AGUADA, AGUADA'S TEMPLE AUG. 9



PRINCE of St. MICHAEL DE IRANDMONT.

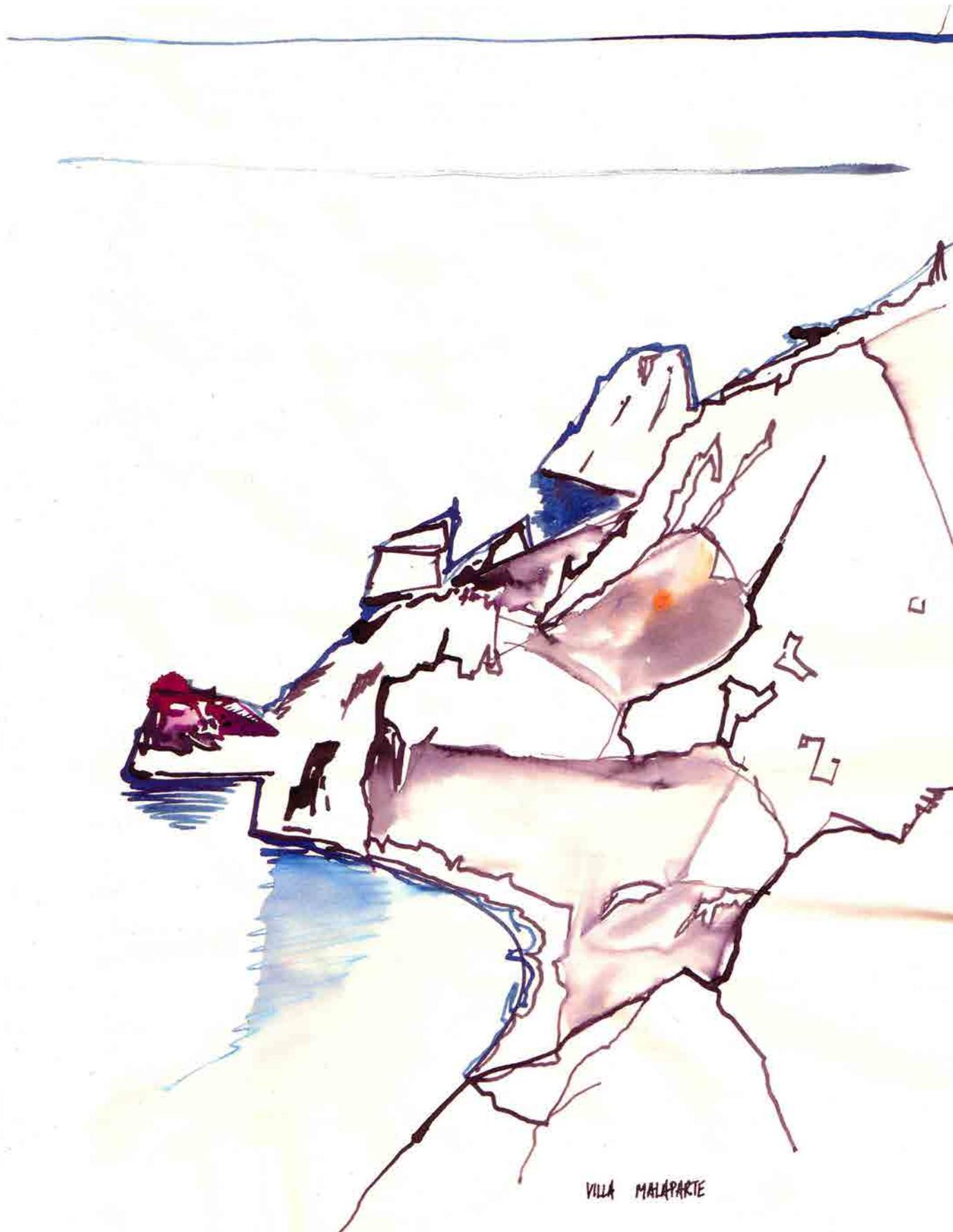
COSTA RICA TOMBEN

98-9-11

Symbolic place generating structures, with varying degrees of autonomy from their sites.

**Fig. 388:** TOP LEFT: Temple of Aphaia, Aegina, Greece. BOTTOM LEFT: Côte Rouge Dolmen, Languedoc, France. BELOW: Villa Malaparte, Capri, Italy, Adalberto Libera, 1937. (SH)

The Doric temple of Aphaia at Aegina and Paestum; Dolmen, Côte Rouge, Languedoc Rousillon, France; Villa Malaparte, Capri; Oriental Pearl tower, Shanghai; Hotel Arts, Villa Olimpica, Barcelona; Casa da Música, Porto; The Guggenheim in Bilbao; The Sagrada Família, Barcelona; Walden 7, Barcelona.



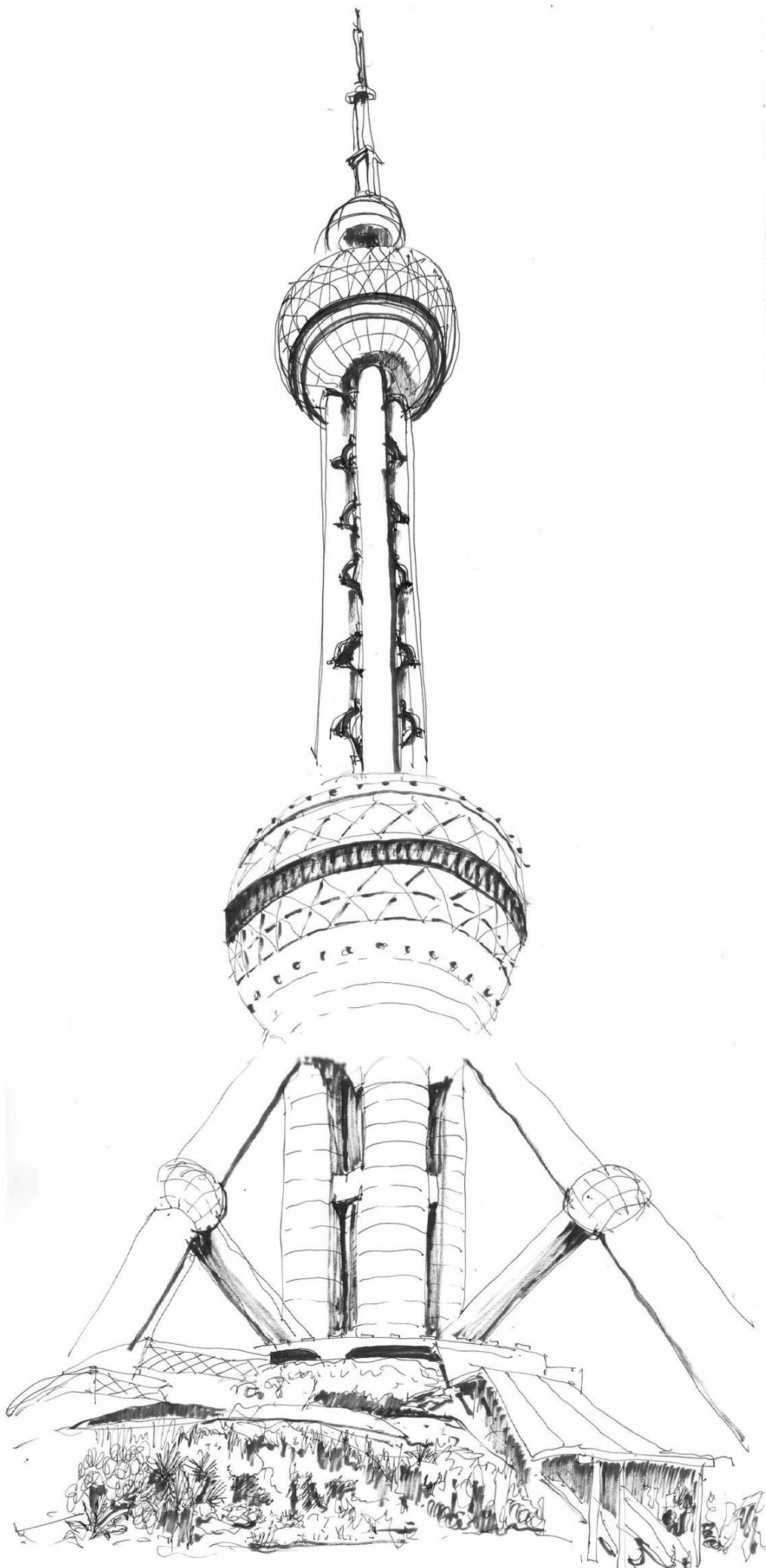


Fig. 389: LEFT: Pearl Tower, Pudong, Shanghai  
1994. RIGHT: Arts Hotel, Barcelona, SOM, 1992.  
(SH)

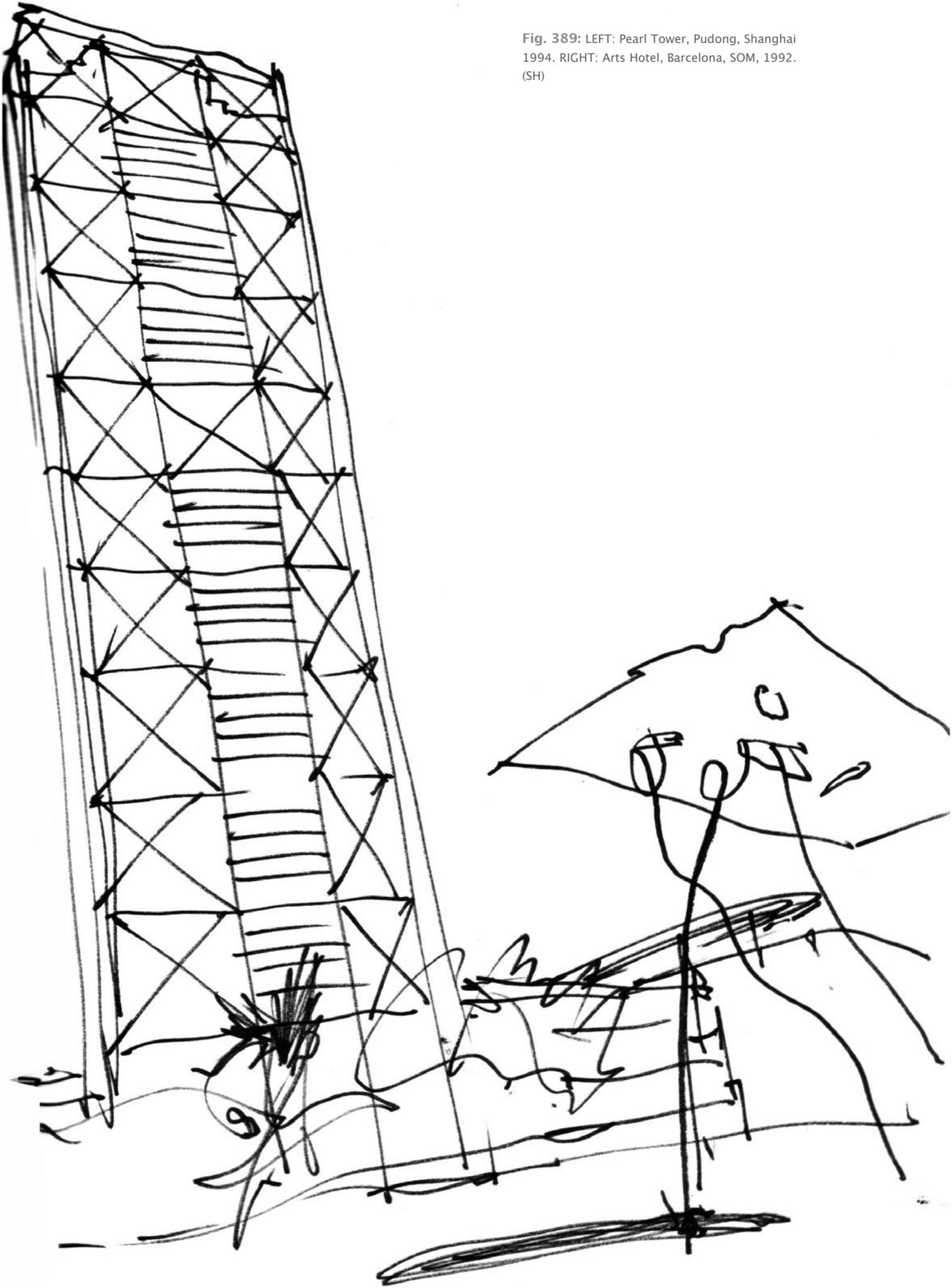
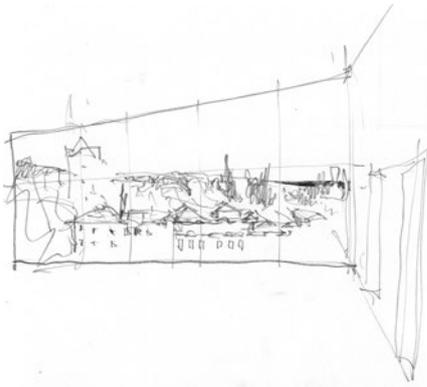
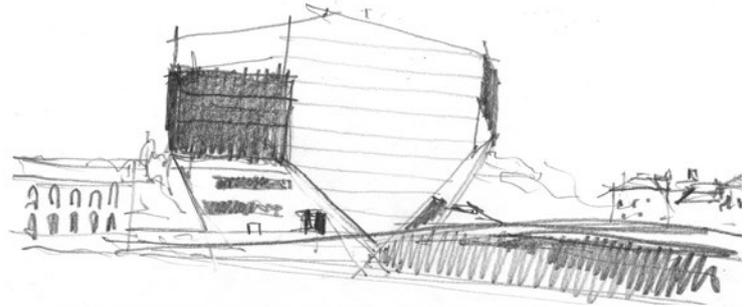


Fig. 390: Casa da Musica, Porto, OMA 2005.  
(SH)



Diret - a esquerda  
Top view.  
Zona do volume  
116 - 100  
Vista para o lado da  
escadaria para o teatro

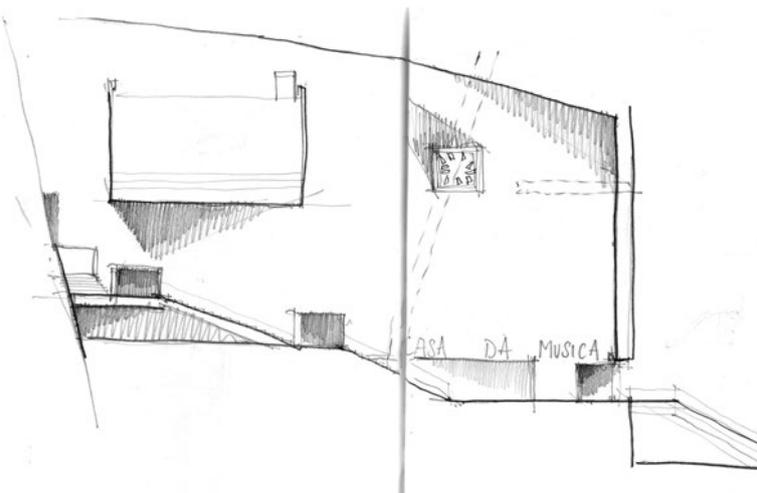
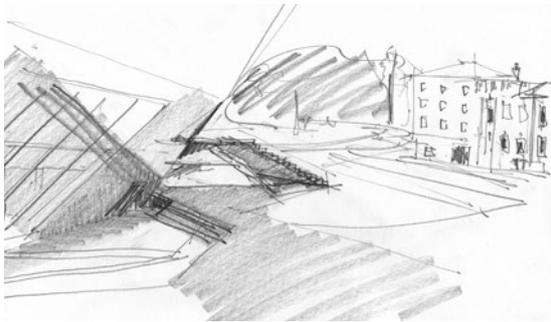
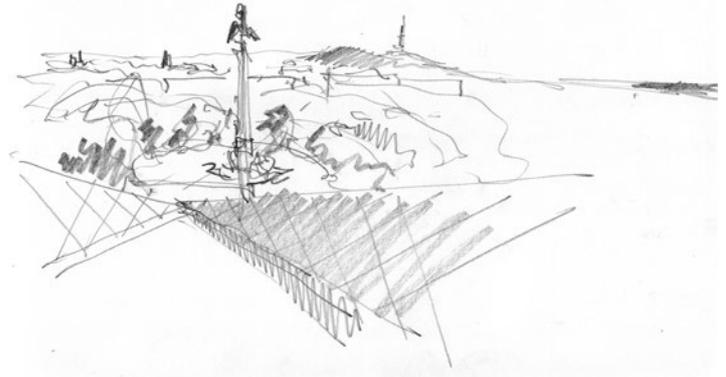
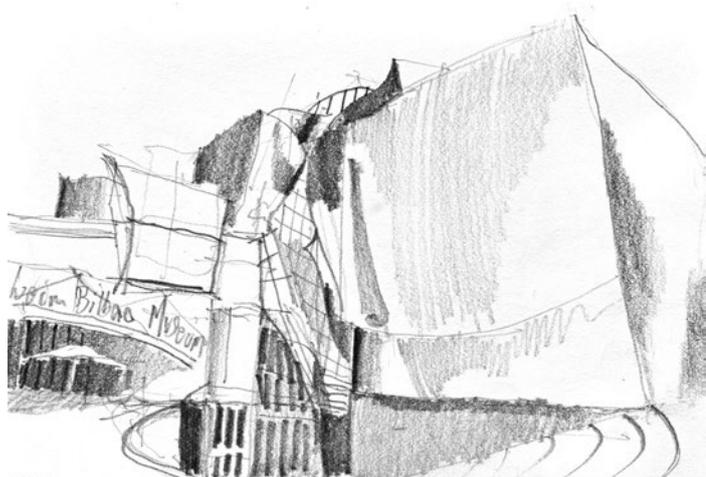


Fig. 391: Guggenheim Museum, Bilbao, Gehry, 1997. (SH)





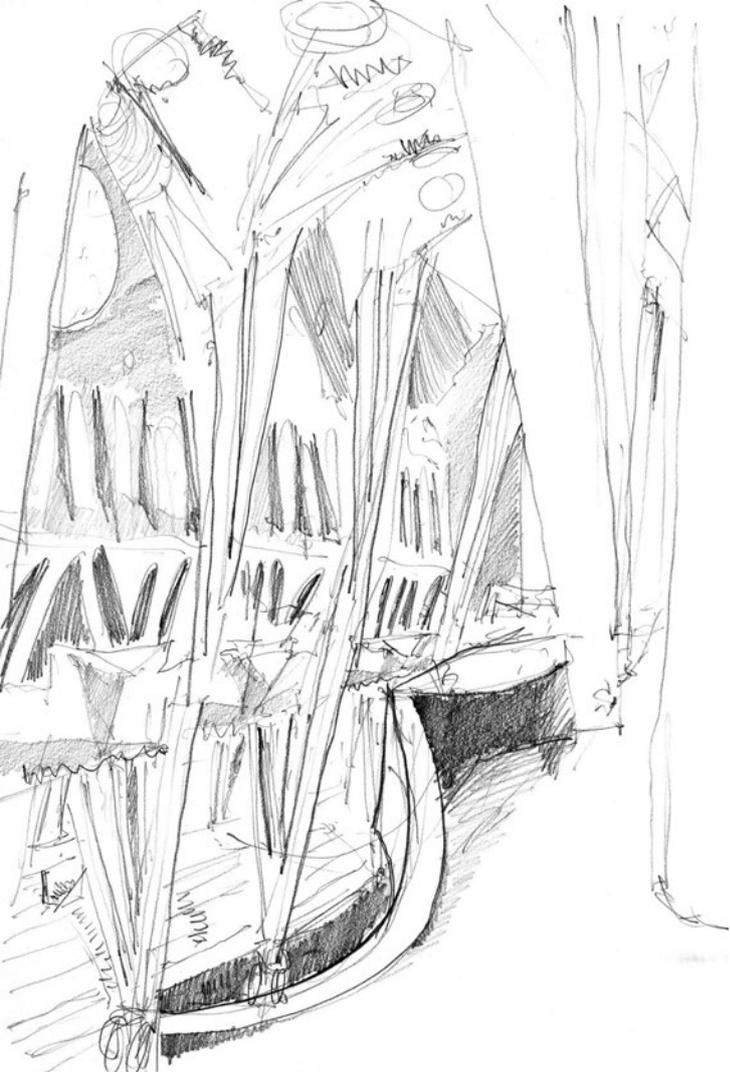
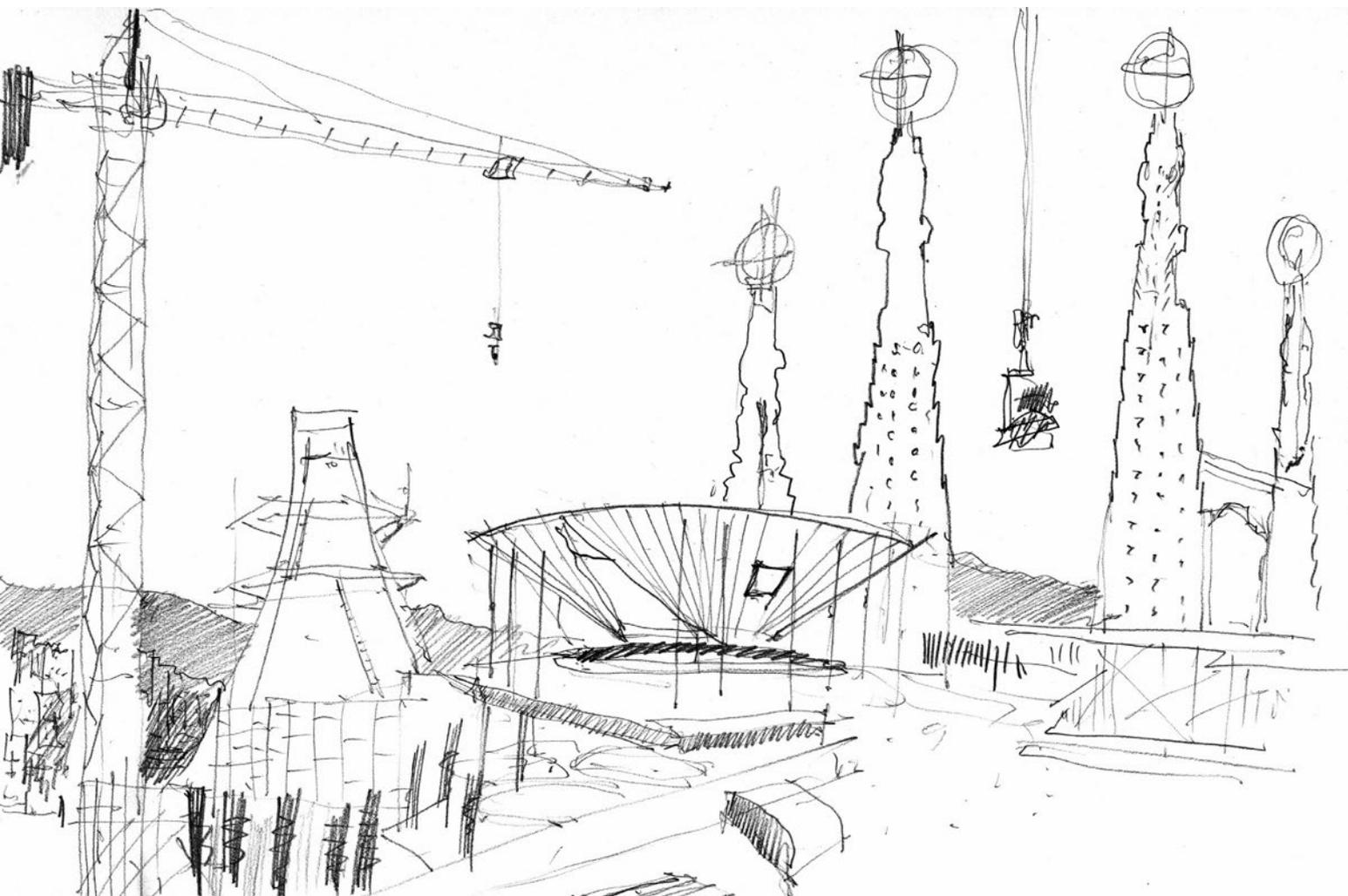
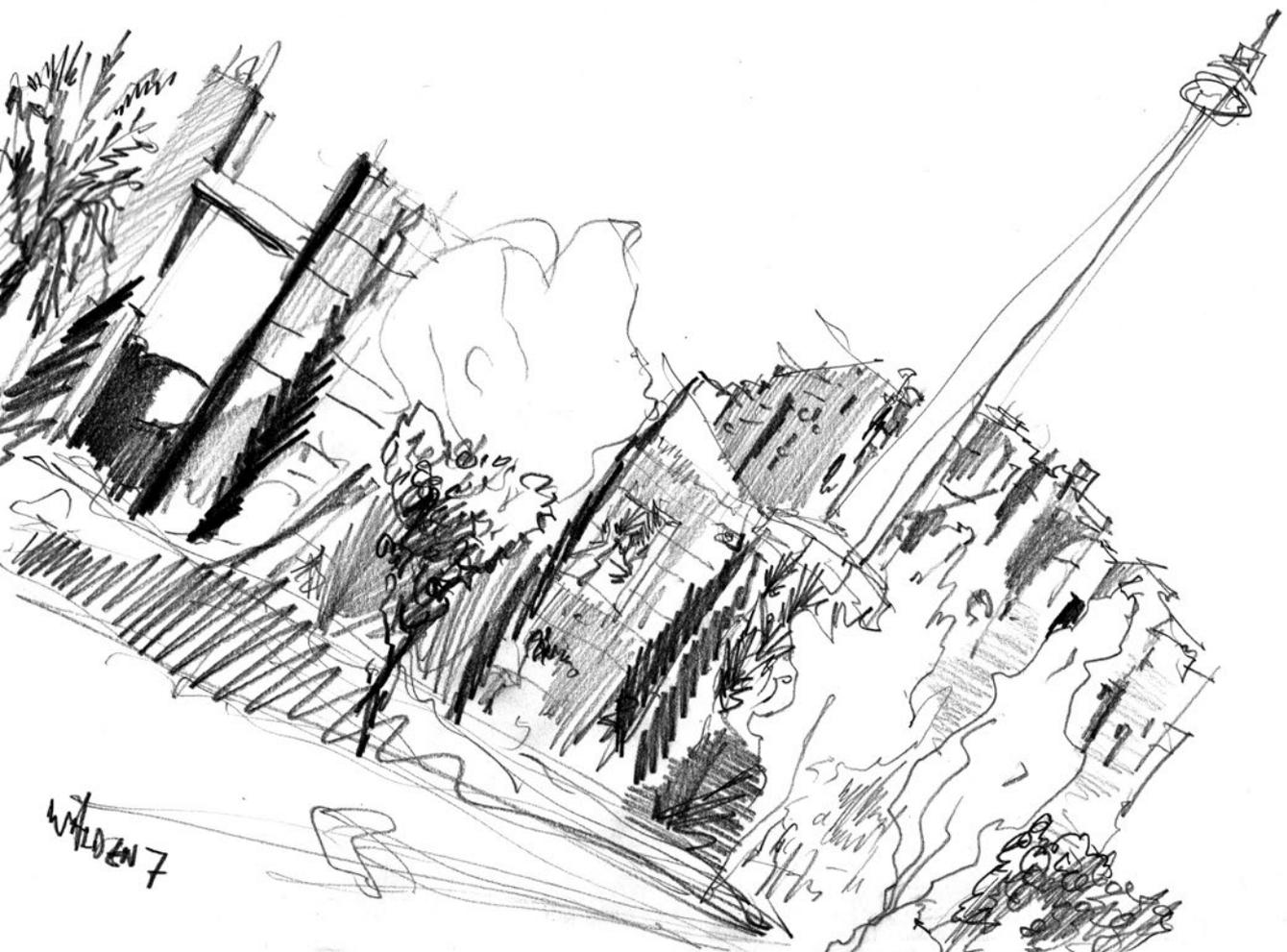
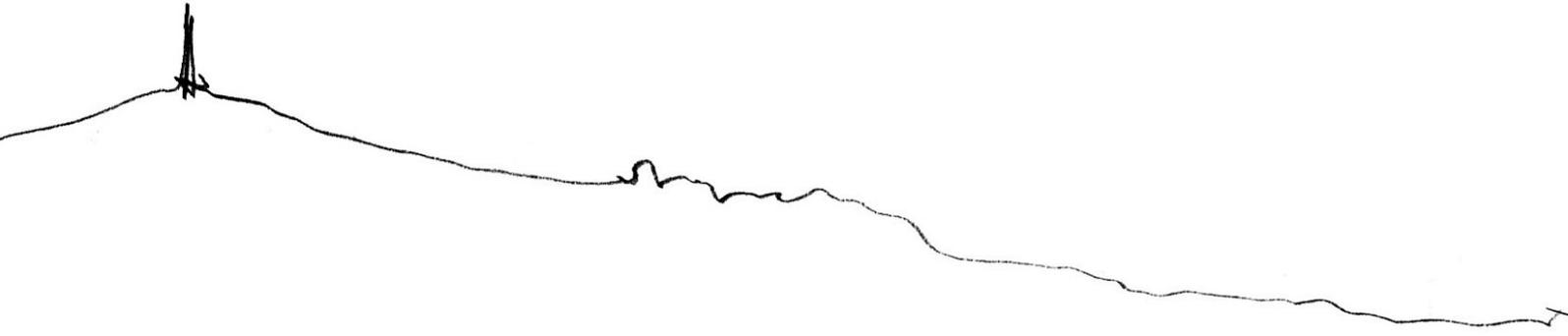


Fig. 392: Sagrada Família under construction in 2011, Barcelona, Gaudi. (SH)





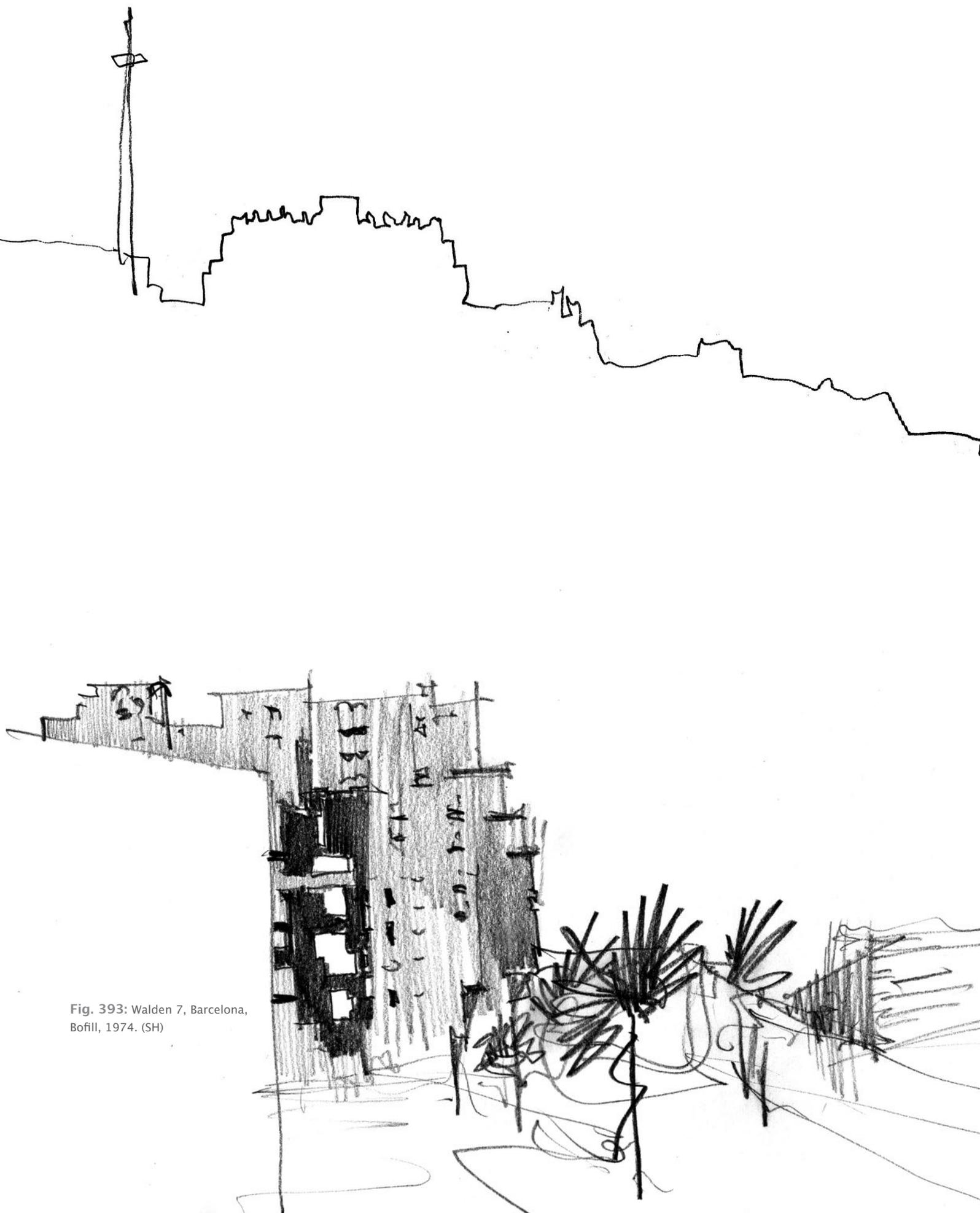


Fig. 393: Walden 7, Barcelona,  
Bofill, 1974. (SH)

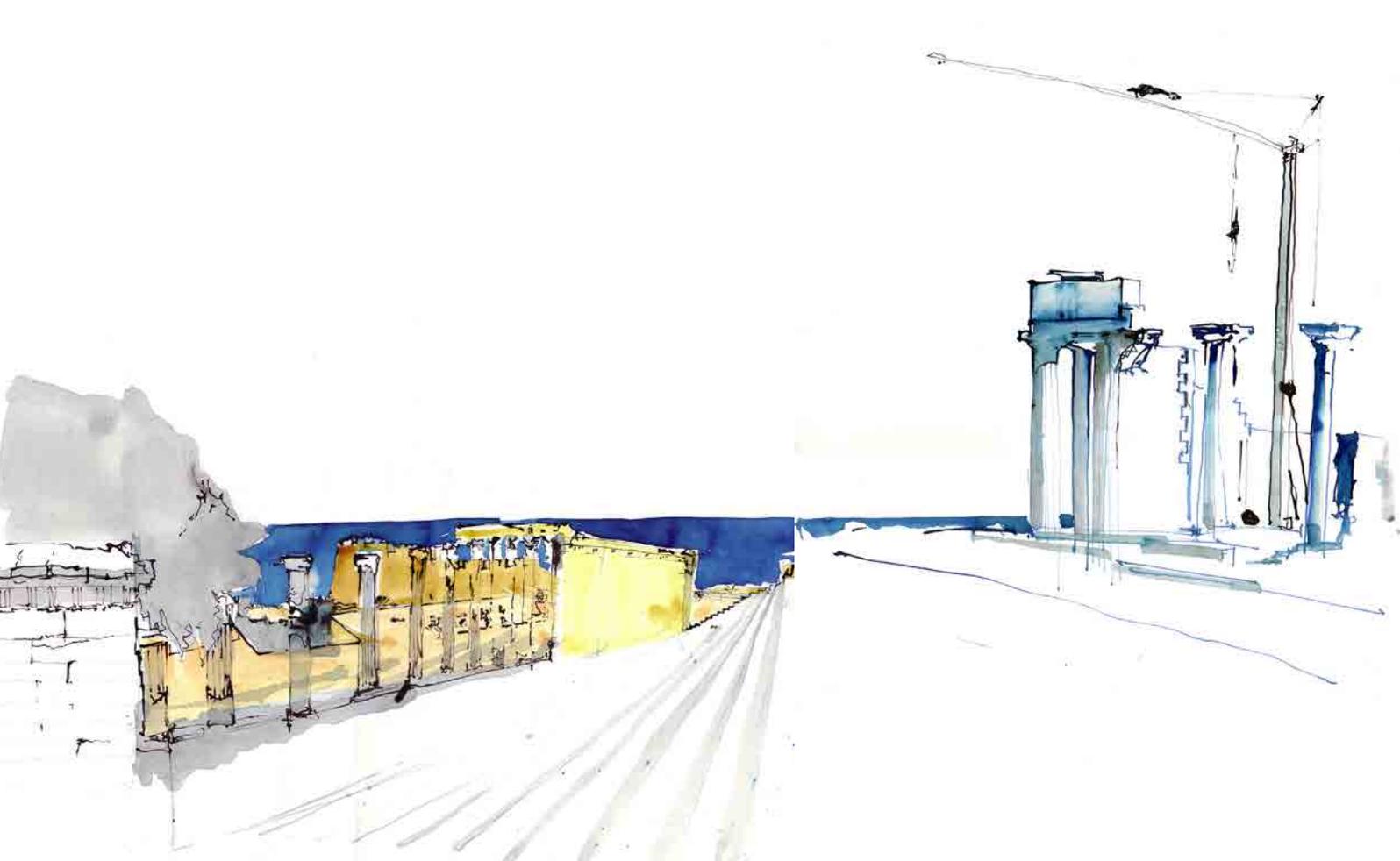
## 14 – Place and authenticity.

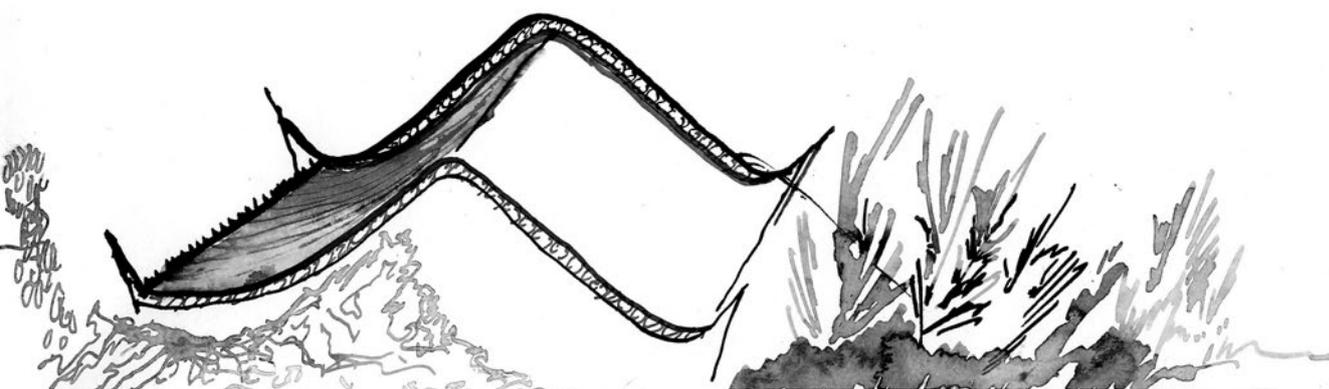
Rebuilding symbolic structures of the past to recreate a historical sense of place. Reconstructed temples and pagodas in Hangzhou, China, re-vindicating a past golden era through isolated reconstructions of symbolic buildings destroyed long before.

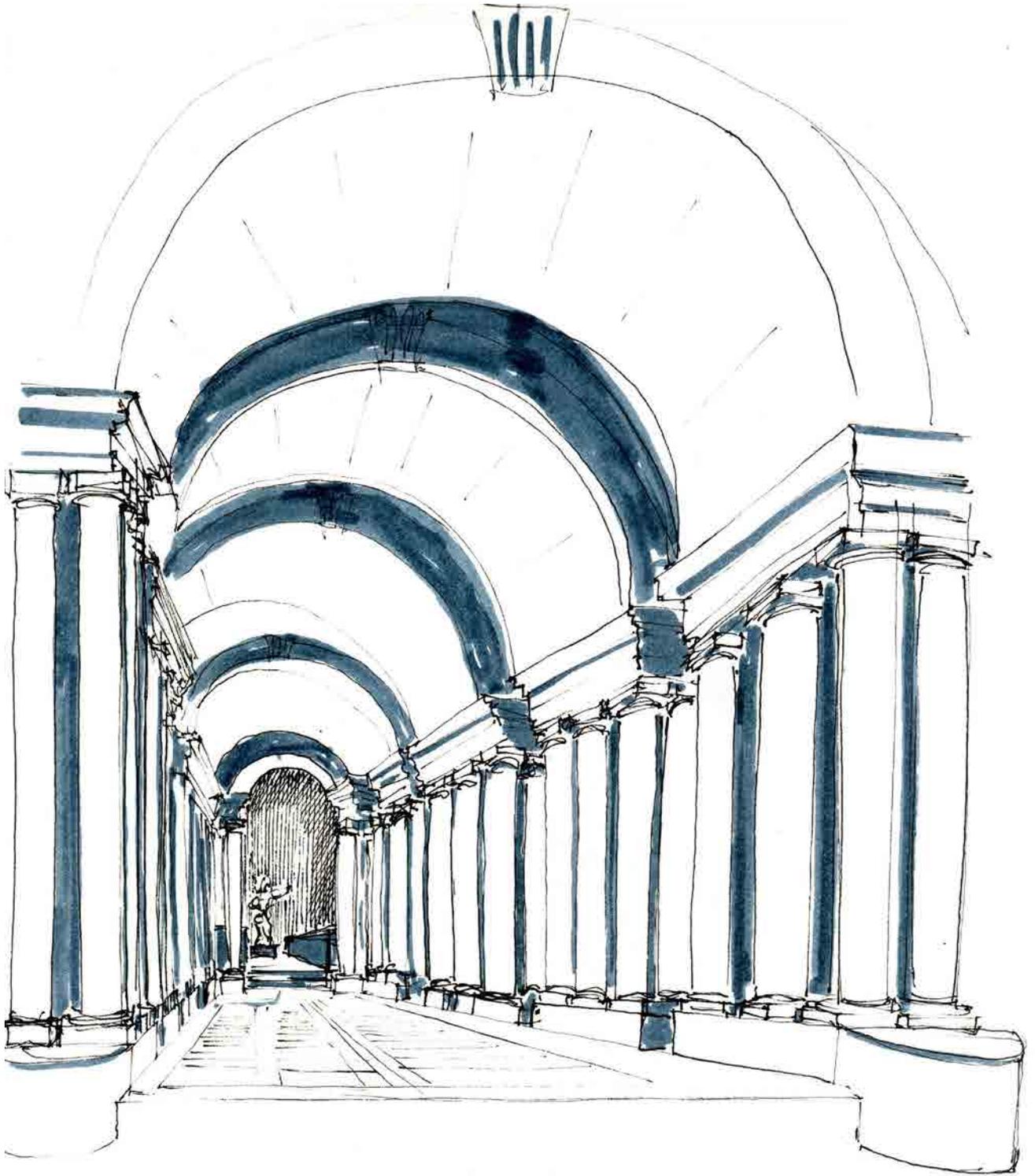
Compared to the authentic house of an important chinese doctor, now a chemist, medical centre and museum, Hangzhou.

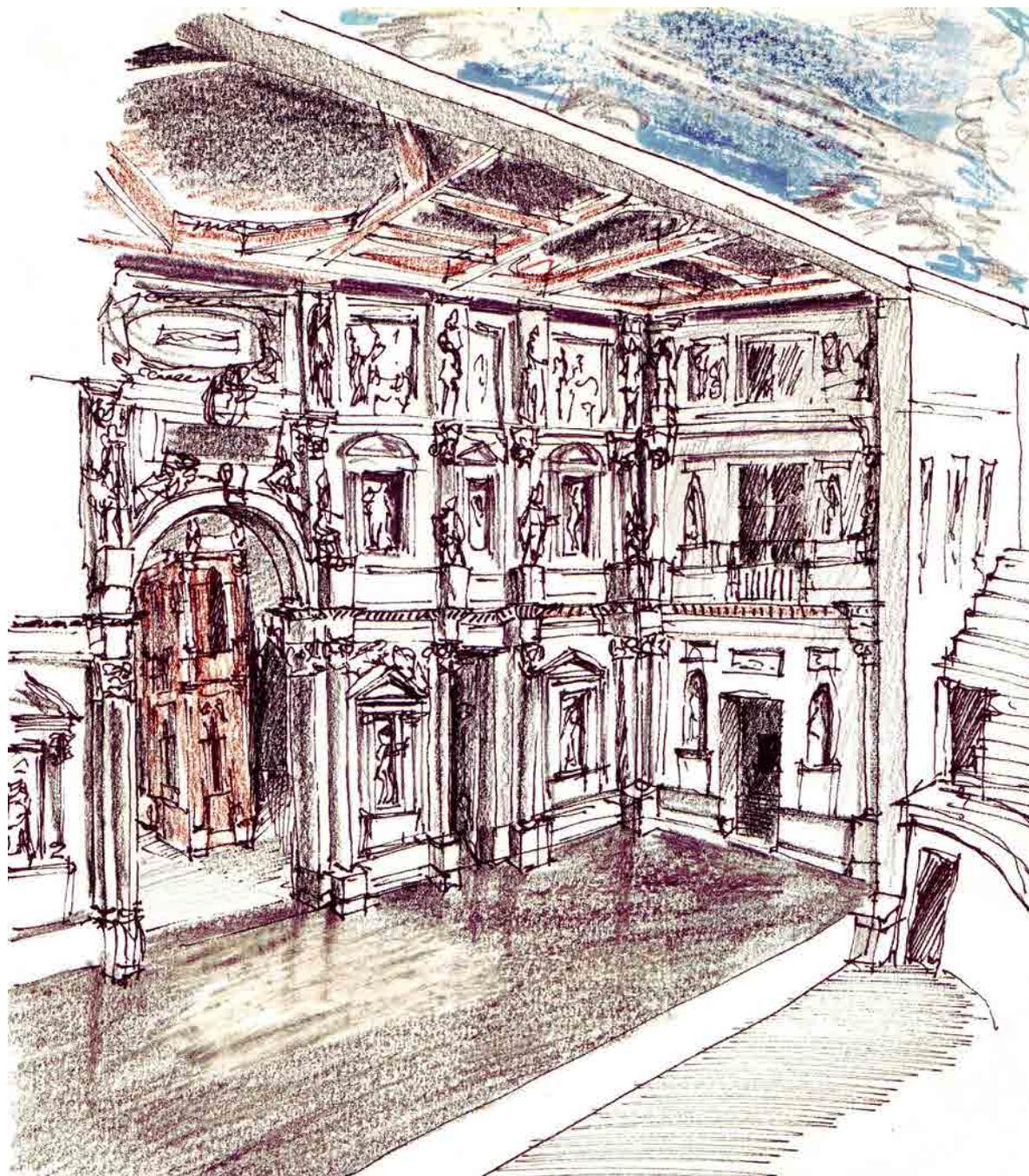
A stage in between: the reconstruction of a temple at Lindos, Rhodes.

**Fig. 394:** BELOW: Rebuilding the temple at Lindos, Rhodes, Greece. Chemist in Hangzhou, China. TOP RIGHT: Rebuilt temple overlooking Lake Hangzhou. BOTTOM RIGHT: Traditional chemist in Hangzhou, China.(SH)









## 15 – Stage sets

Fig. 395: LEFT: Borromini's perspective, Palazzo Spada, Rome, 1653. RIGHT: Teatro Olimpico, Vicenza, Palladio, 1585. (SH)

Using architecture to re-create a visual impression of place, through optical effect. Based exclusively on the single sense of sight. Borromini's Perspective in Rome uses optical illusion to create a misleading impression of space and depth. The scenery in Palladio's Teatro Olimpico uses equivalent perspectival distortion. The city which the stage portrays creates visual framework within which the sense of place is created by the actors and their actions.

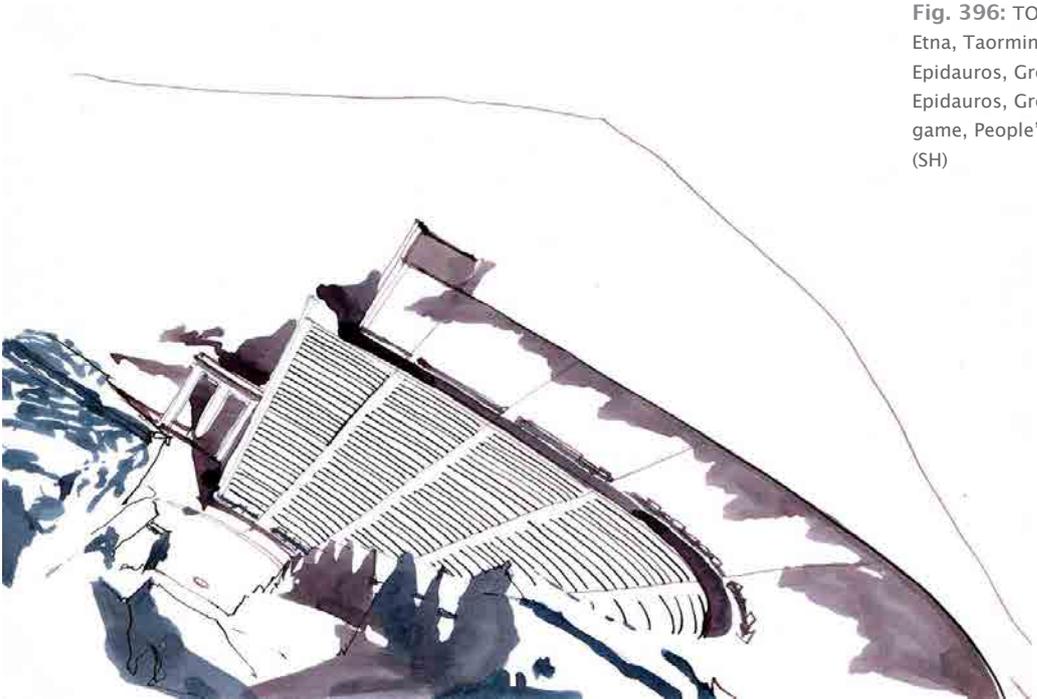
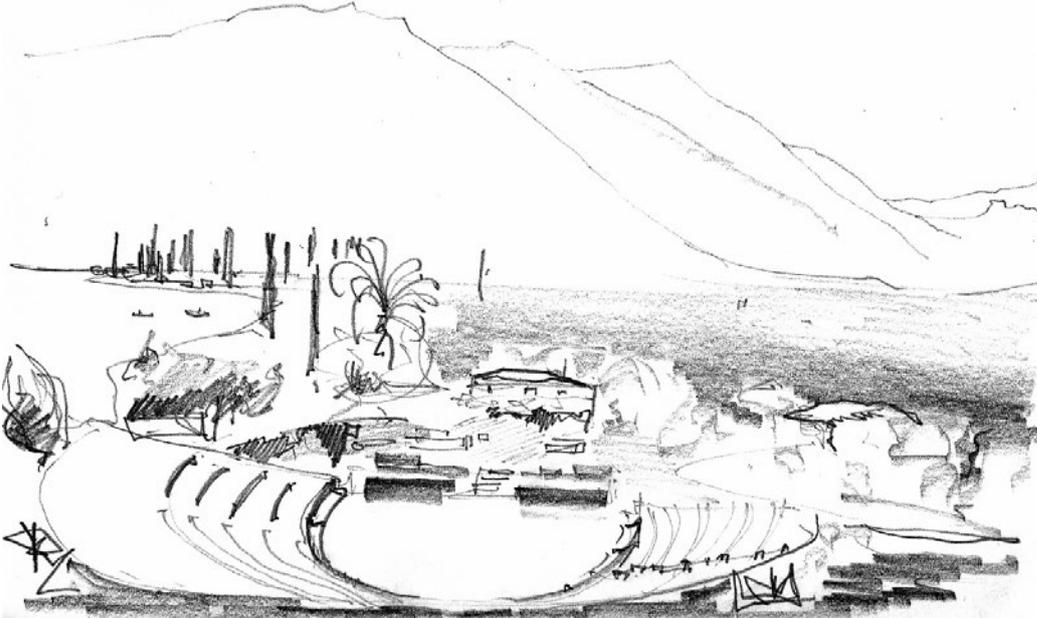
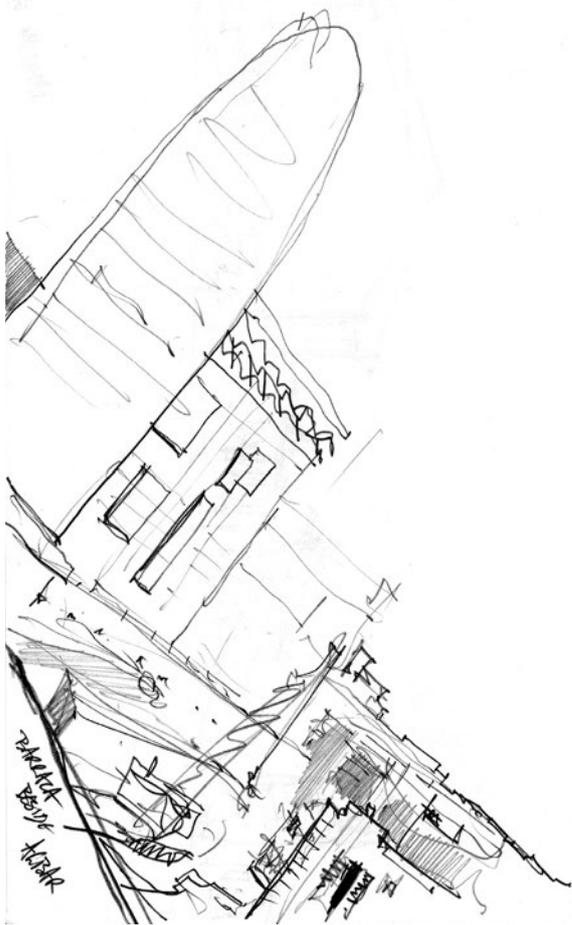


Fig. 396: TOP: Theatre and Mount Etna, Taormina, Sicily. LEFT: Palaio Epidauros, Greece. BOTTOM LEFT: Epidauros, Greece. RIGHT: Card game, People's square, Shanghai. (SH)



Stewart  
Pepper SA.  
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## 16 – Esponjament (Miralles 1995)

Clearing way for sanitised versions of place. How far can a building be dismantled before its sense of place evaporates into non-place?

The external perimeter of the temple at Selinunte, Sicily. Demolition of self-built houses in Vallcarca, and Glories, Barcelona, and along the banks of Suzhou Creek in Shanghai.

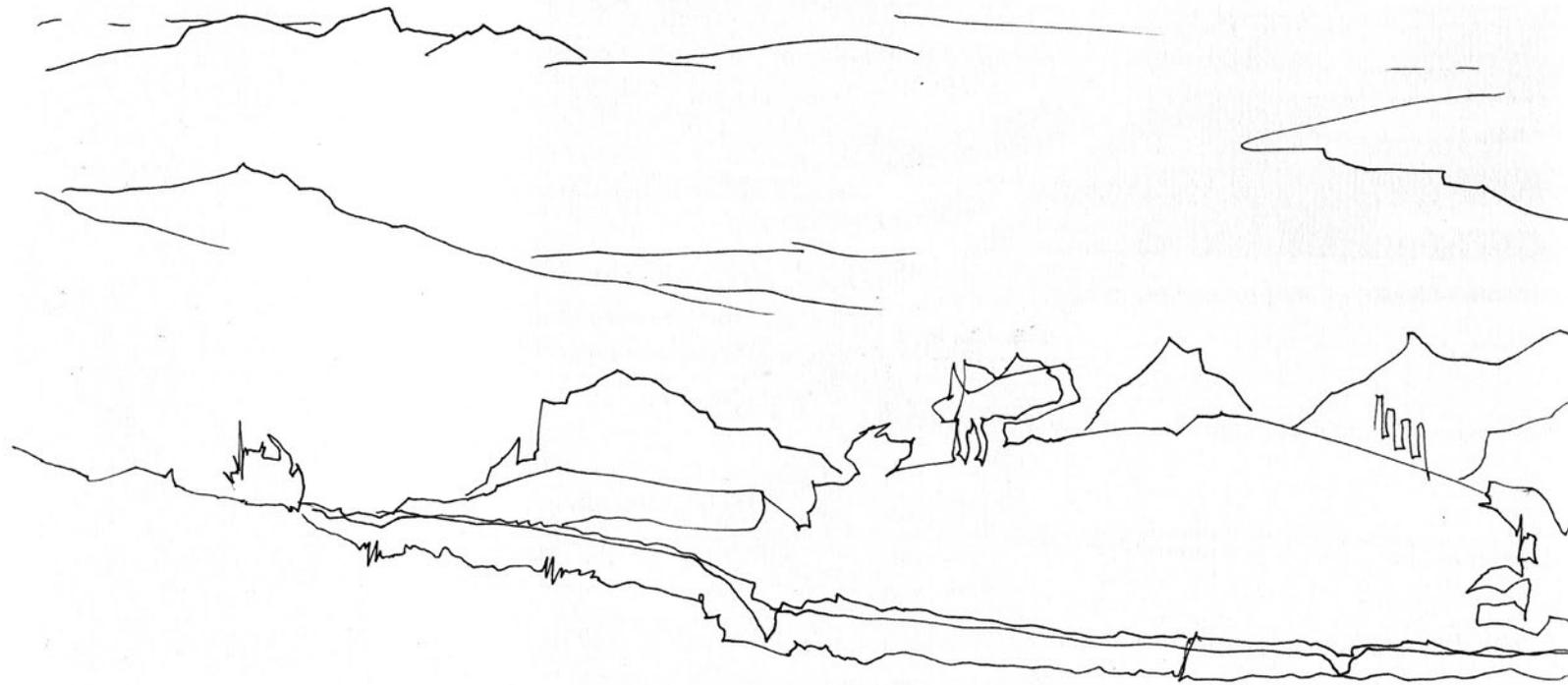


Fig. 397: TOP LEFT: Demolition beside the Agbar tower, Barcelona, 2009. LEFT: Temple at Segesta, Sicily. (SH)



**Fig. 398:** ABOVE: Vallcarca, before and during clearing, Barcelona, 2011.  
 BELOW: Demolition of traditional housing along Suzhou Creek, Shanghai, 2016. (SH)



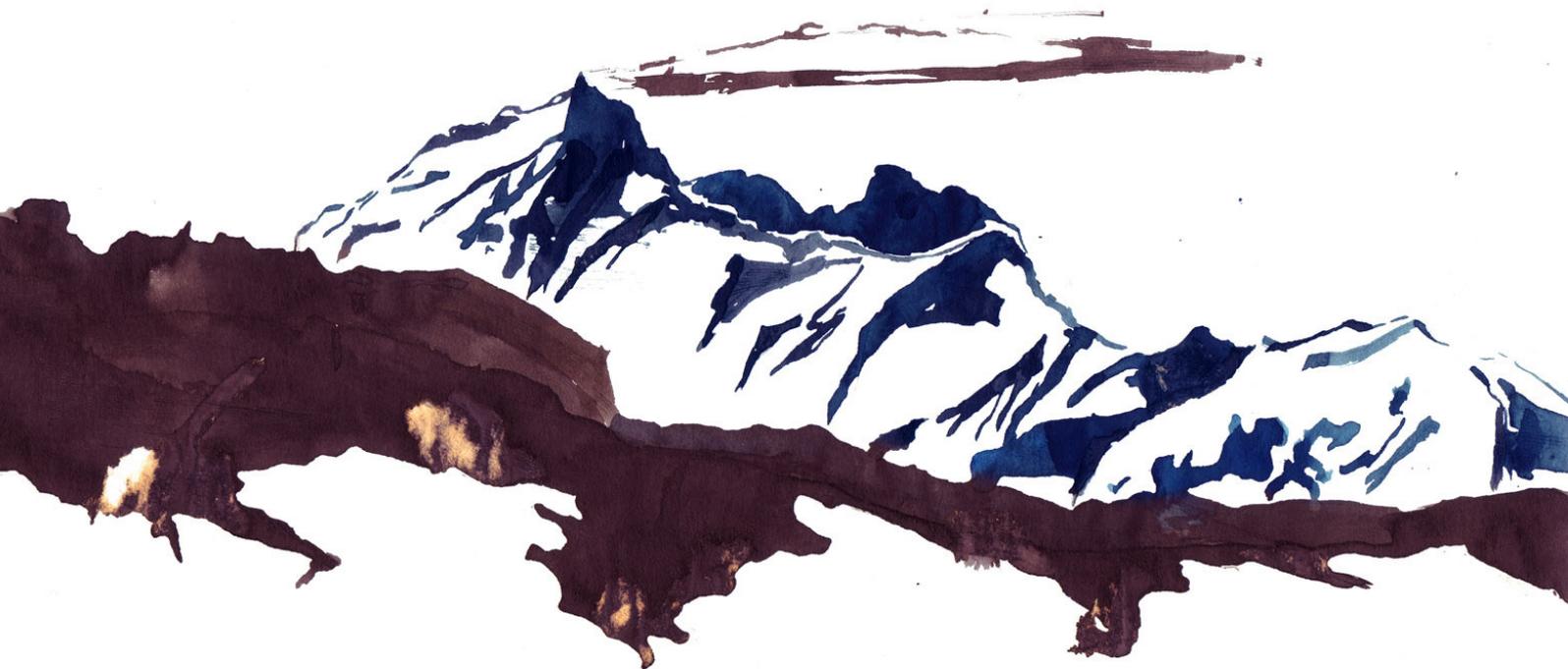


### 17 – Open places; Dissolving limits

How far can places be opened before place becomes wilderness? (Casey 1994) The Horizon is our boundary and the essential limit of place. Seen from the mountain top, the boundary or horizon is distant, but the greater the vista the less the real the sense of place even though still within visibility. Two mountains facing one another: Montserrat, Catalunya and the Puig Major, Mallorca.

**Fig. 399:** TOP: Palma Bay from Es Teix, Mallorca. BELOW LEFT: Montserrat, Catalunya. BELOW RIGHT: Puig Major, Mallorca. (SH)







1

Timanfaya del 25/9/94 1



2

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**Fig. 400:** Sequential views from a bus, along a road laid out by Cesar Manrique in the Timanfaya National Park, Lanzarote. Finishing at El Diablo restaurant. (SH)



5

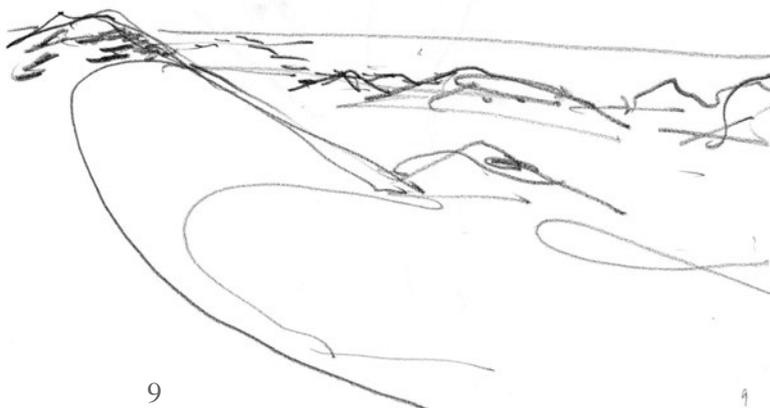
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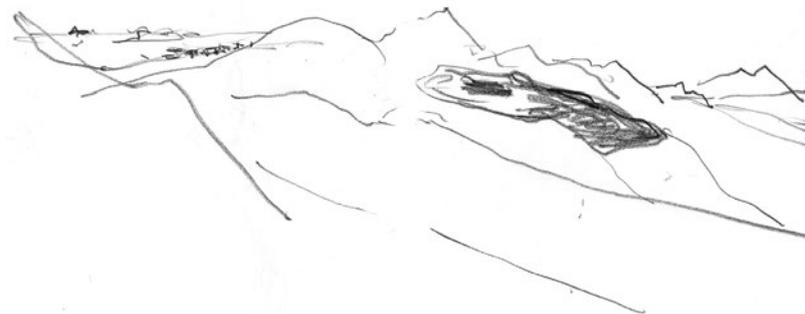
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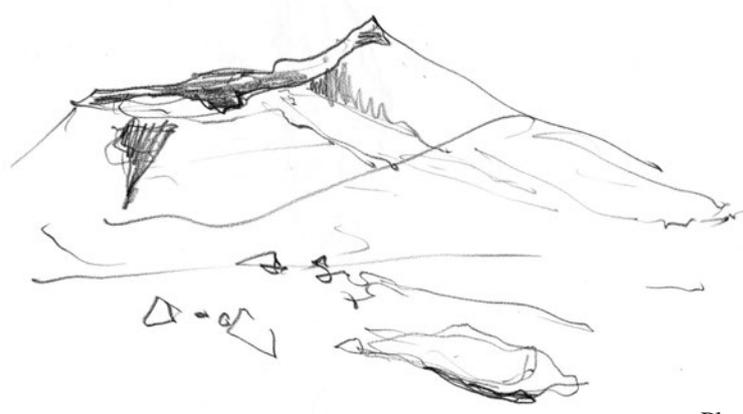
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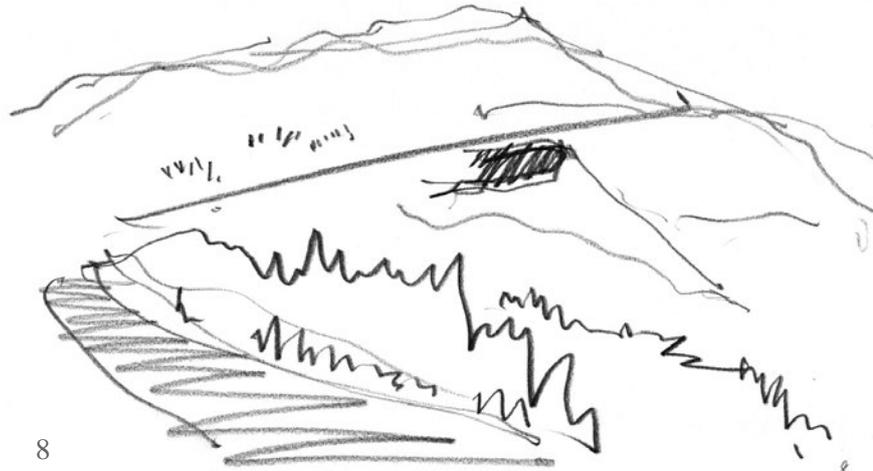


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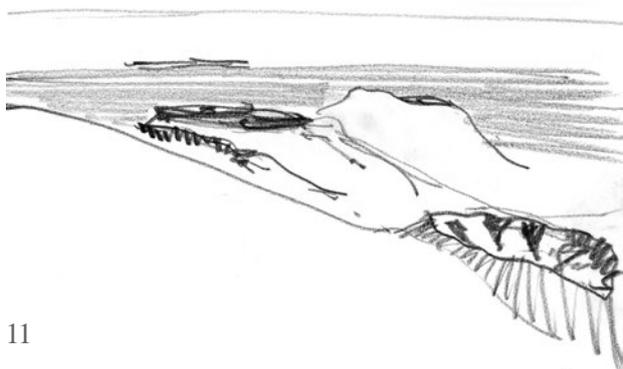
Place is more than just that within line of sight. Open expanse leads to wilderness not place. Place needs a focus, a hearth. Or a source of heat. Sequential views leading through Timanfaya park in Lanzarote. El Diablo restaurant becomes the single man-made focal reference within the almost untouched volcanic landscape. The restaurant is positioned over volcanic chimneys which are used for cooking.



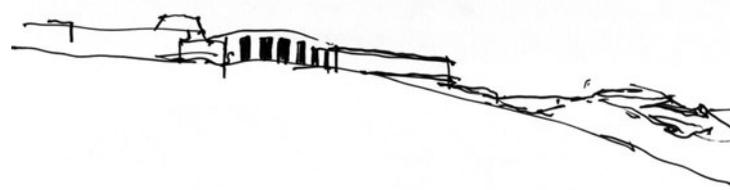
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8



11



12 El Diablo



**Fig. 401:** Rialto Fish Market, Venice. (SH)

## **18 – Non-visual borders**

Wide expanses can become places even when the visual horizon is distant. Other senses can define the extent of place. A fish market may be defined by the smell of fish far more than by enclosing walls. Or places delimited by sound, a muezzin or a church bell. Annotations of bells tolling at noon, from the Dorsoduro, and notes on the churches, bell towers and squares within earshot.

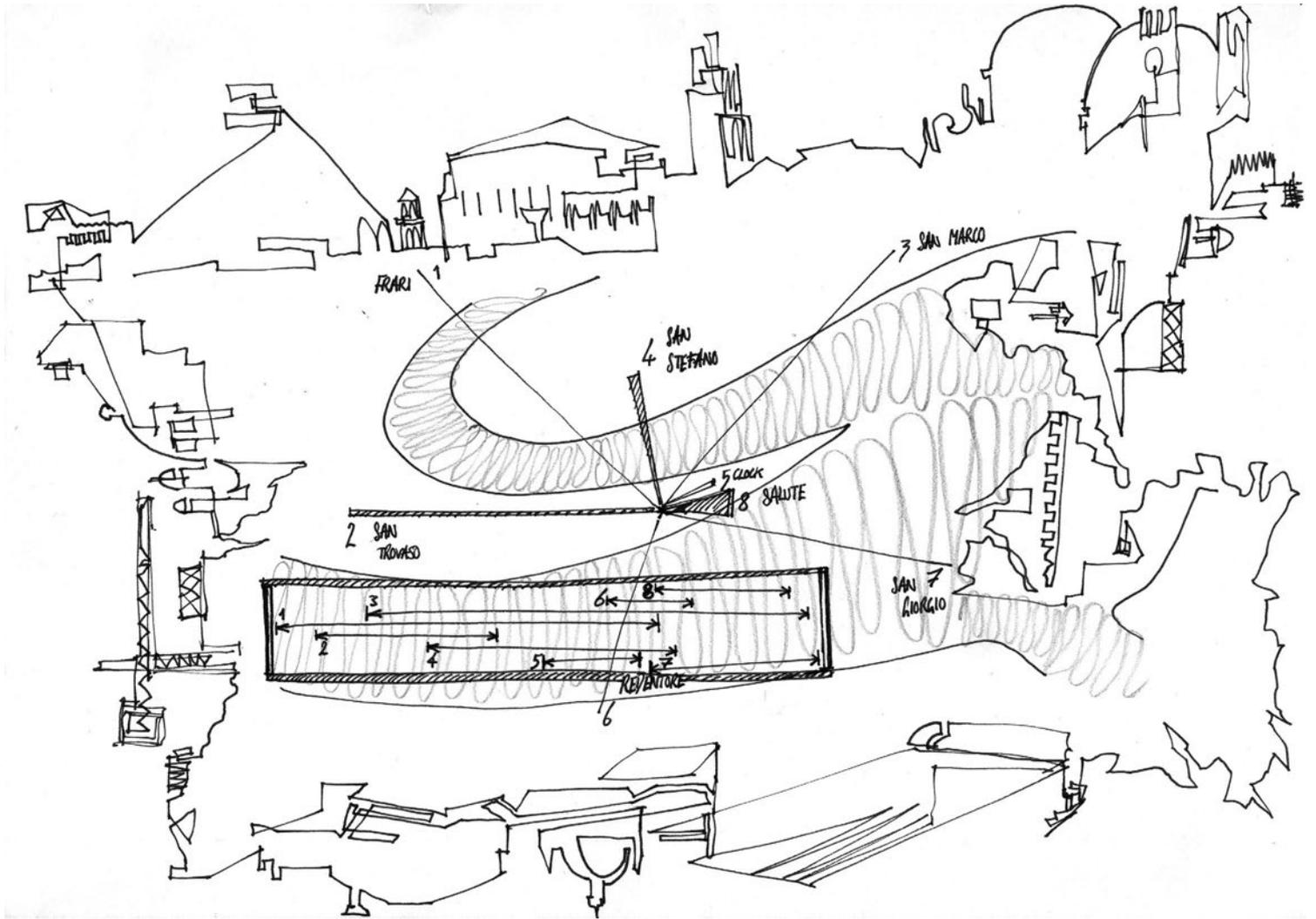
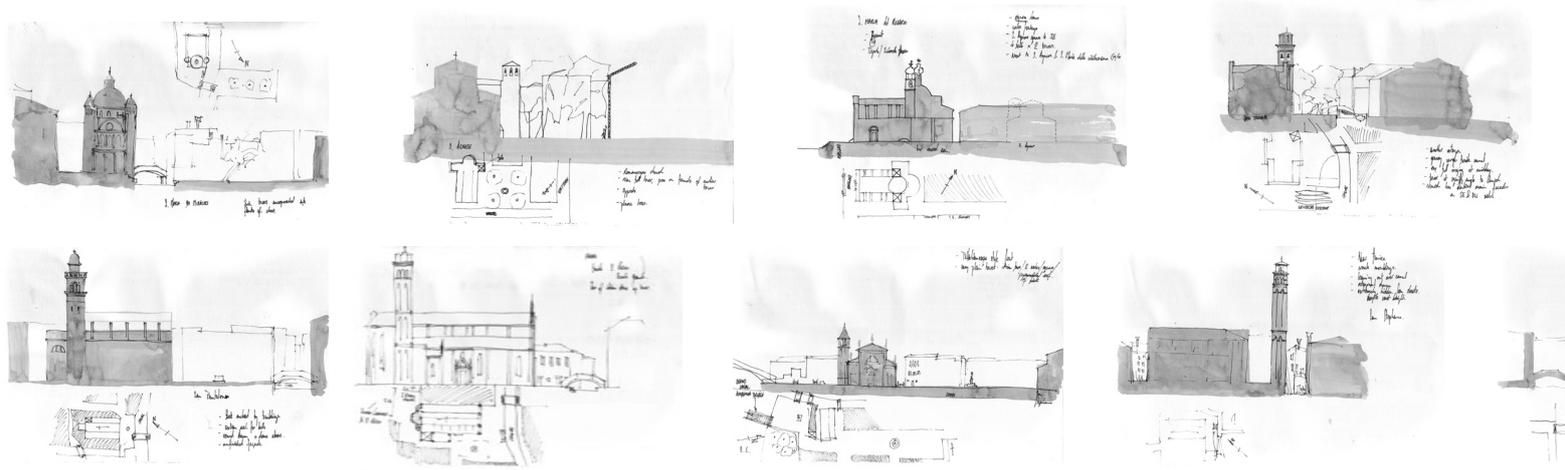
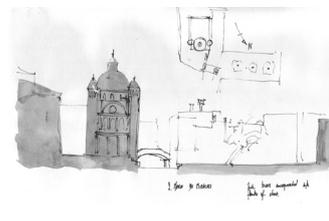
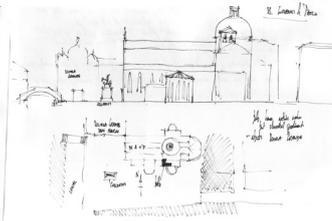
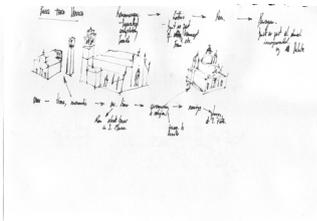
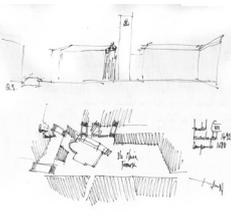
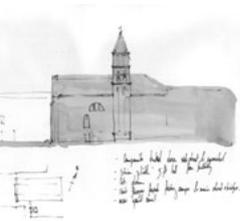
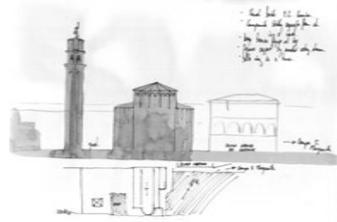
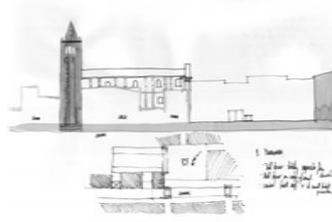
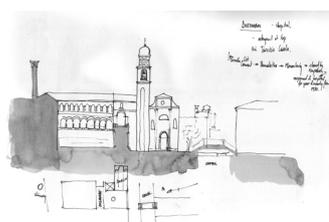
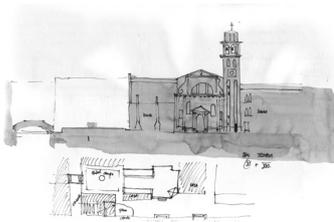
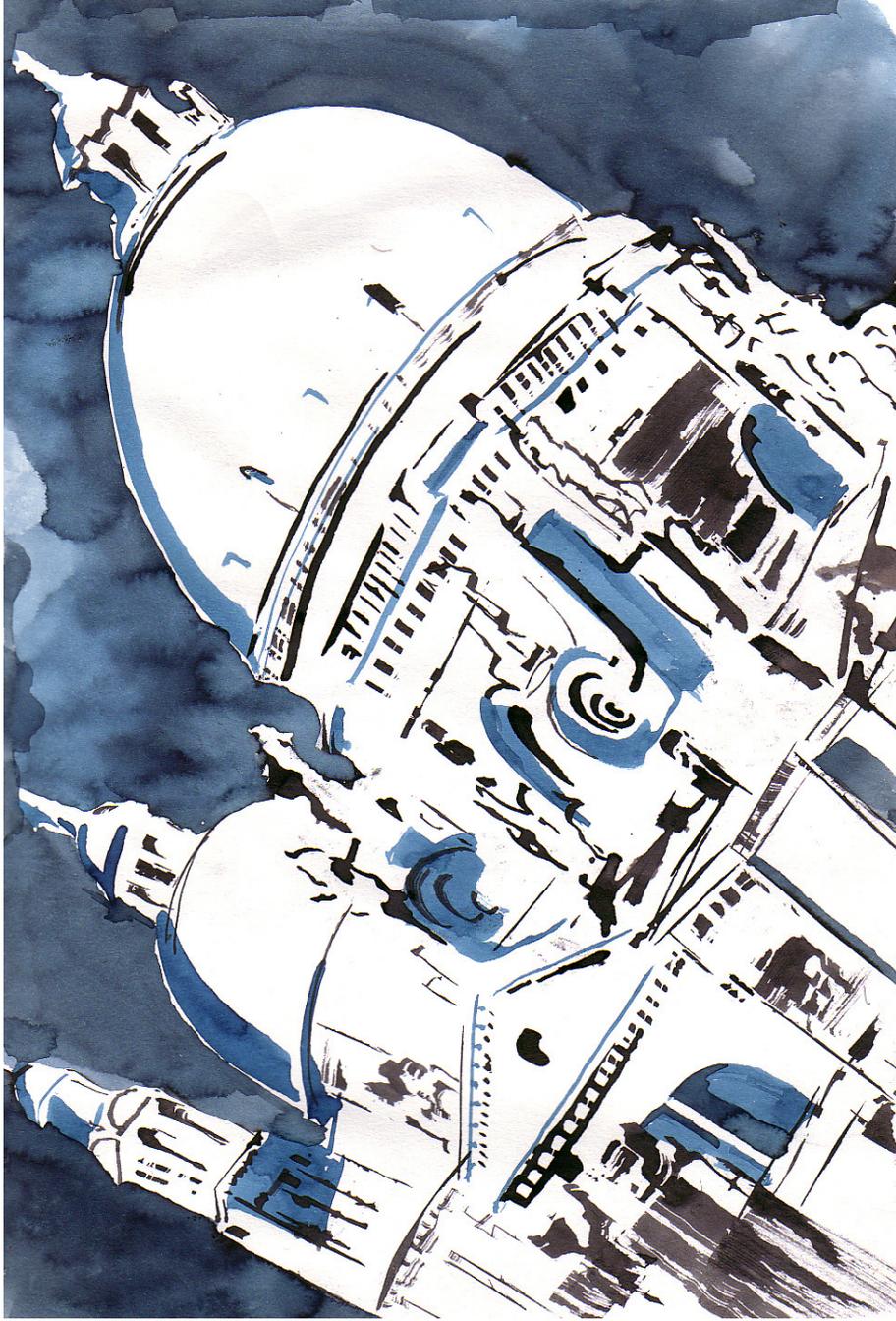


Fig. 402: ABOVE: Map/Score of bells ringing at noon, with panoramic skyline from a rooftop in the Dorsoduro, Venice. RIGHT: Santa Maria de la Salute, Venice. BELOW: Bell towers and public spaces across Venice. (SH)

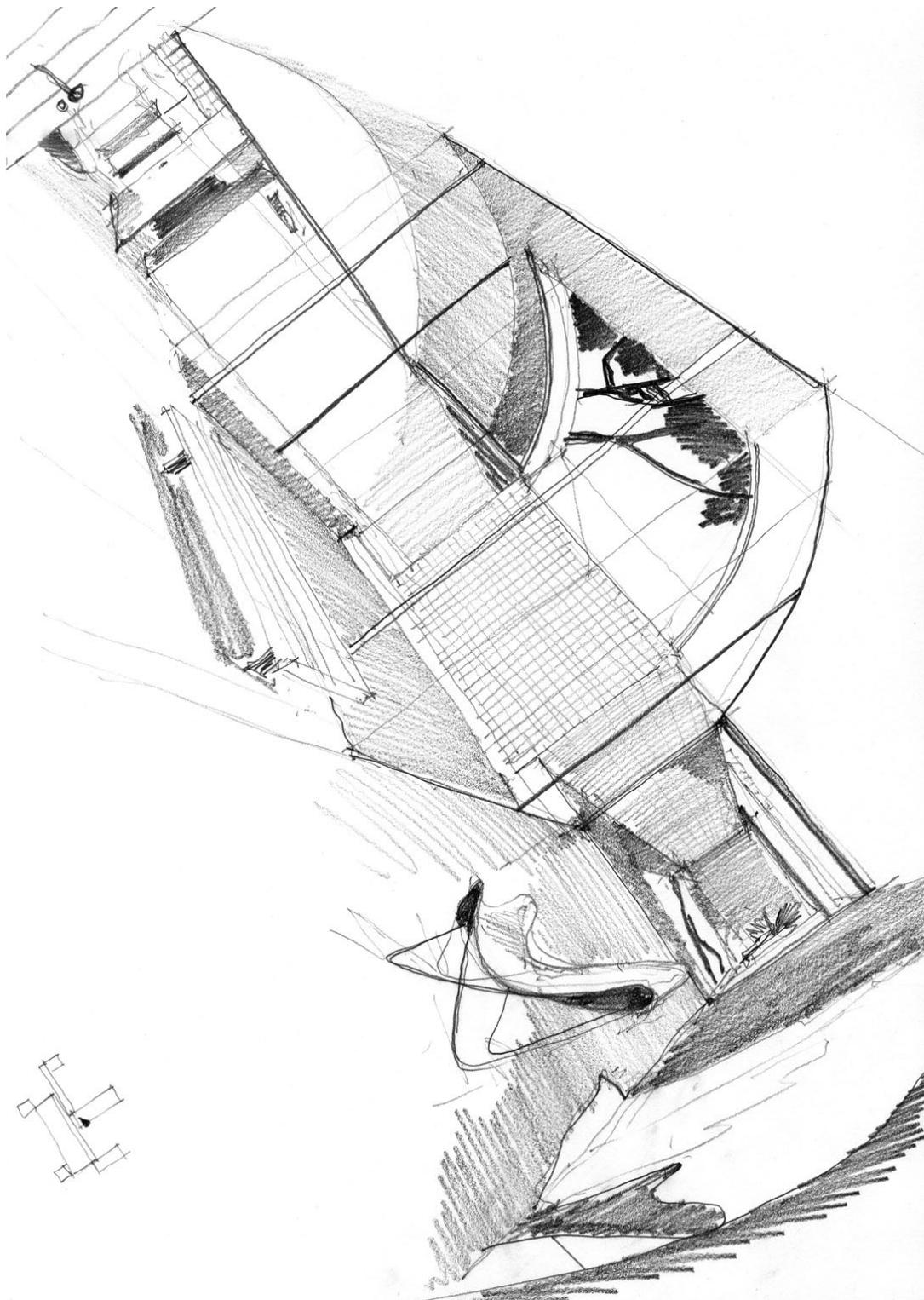


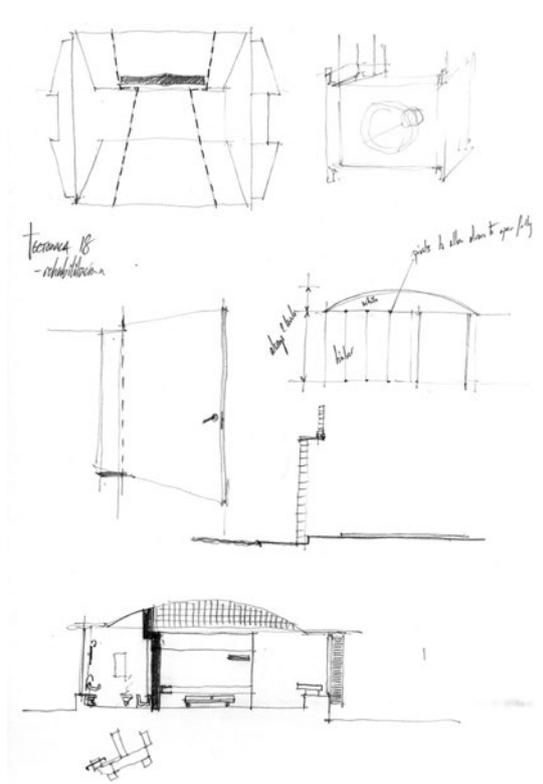
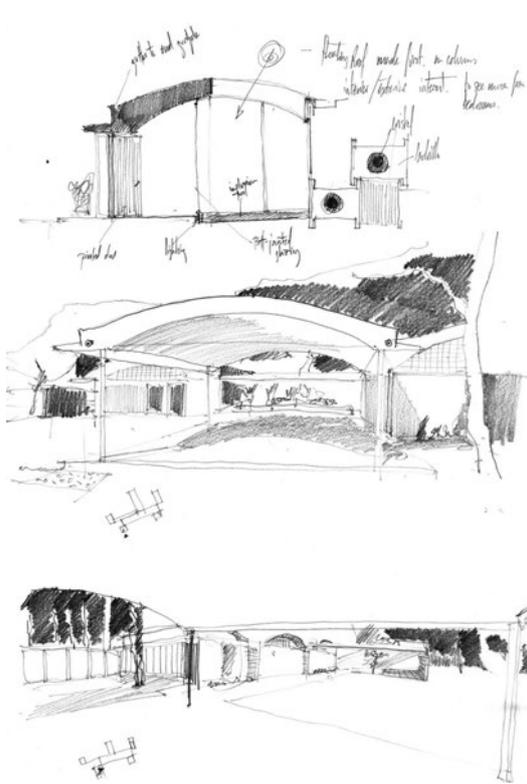
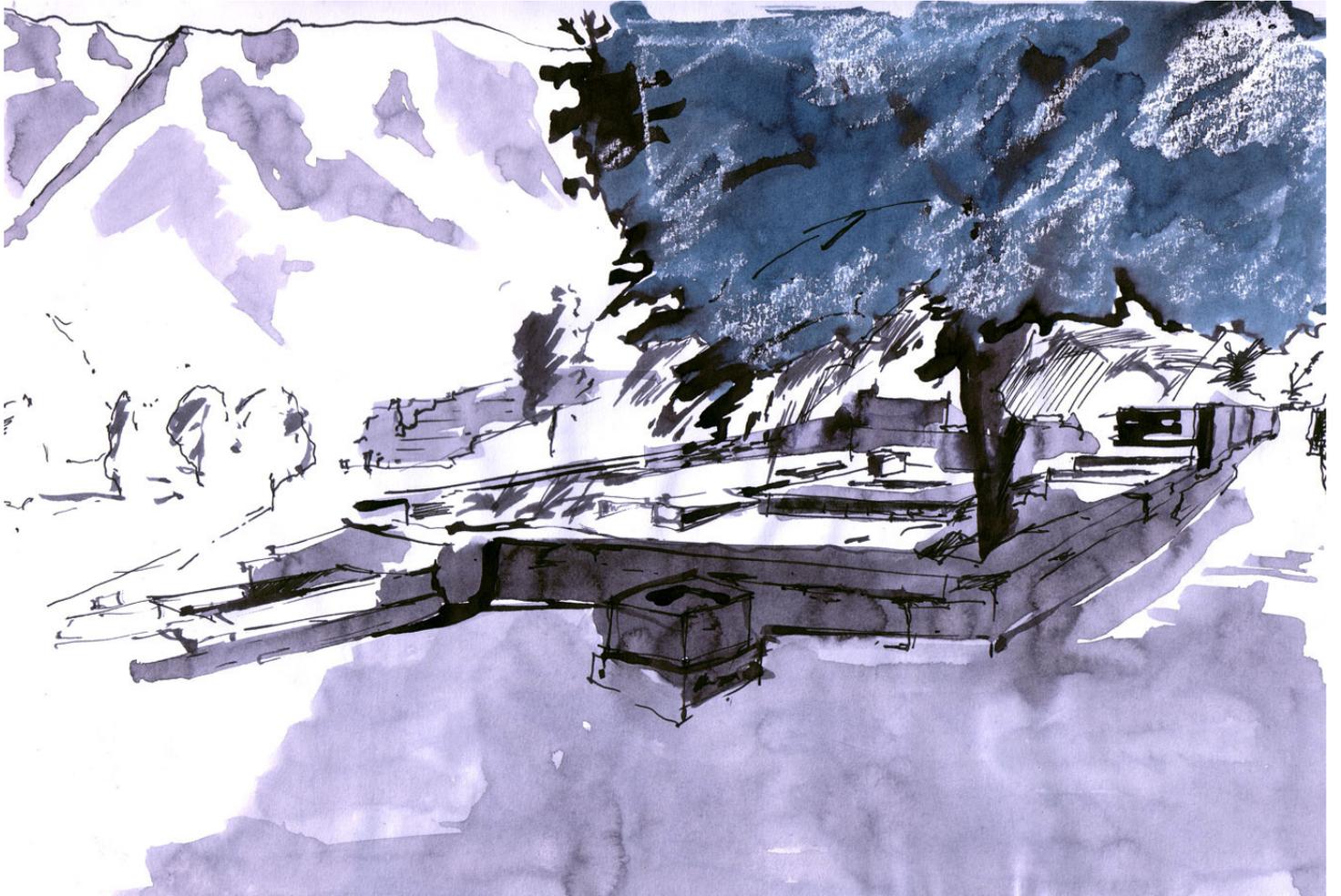


Place centred on sound and myth. The oracle at Dodona in Epirus, the earliest in Greece, was focused around a sacred oak tree, the Sybil interpreted the sound of the acorns falling into bronze cauldrons.

The central impluvium in La Ricarda, by Bonet Castellana, near Barcelona, now deafened by the planes above from Barcelona's new runways next door.

**Fig. 403:** BOTTOM LEFT and RIGHT: La Ricarda, Barcelona, Bonet Castellana, 1965. TOP RIGHT: Oracle at Dodona, Epirus, Greece. (SH)





When the wind is too strong for the tourist ferries, the straits at Delos returns to its earlier character of noisy, natural commotion, its harbour selected for the shelter from timeless conditions of wind and sea.

Place evolves; architecture is one means to transform it for the better.  
The reformation of Santa Caterina Market, Barcelona.

**Fig. 404:** LEFT: The ancient harbour front at Delos, Greece. RIGHT: Santa Caterina Market, Barcelona, EMBT, 2005. (SH)





THESIS

CONCLUSIONS

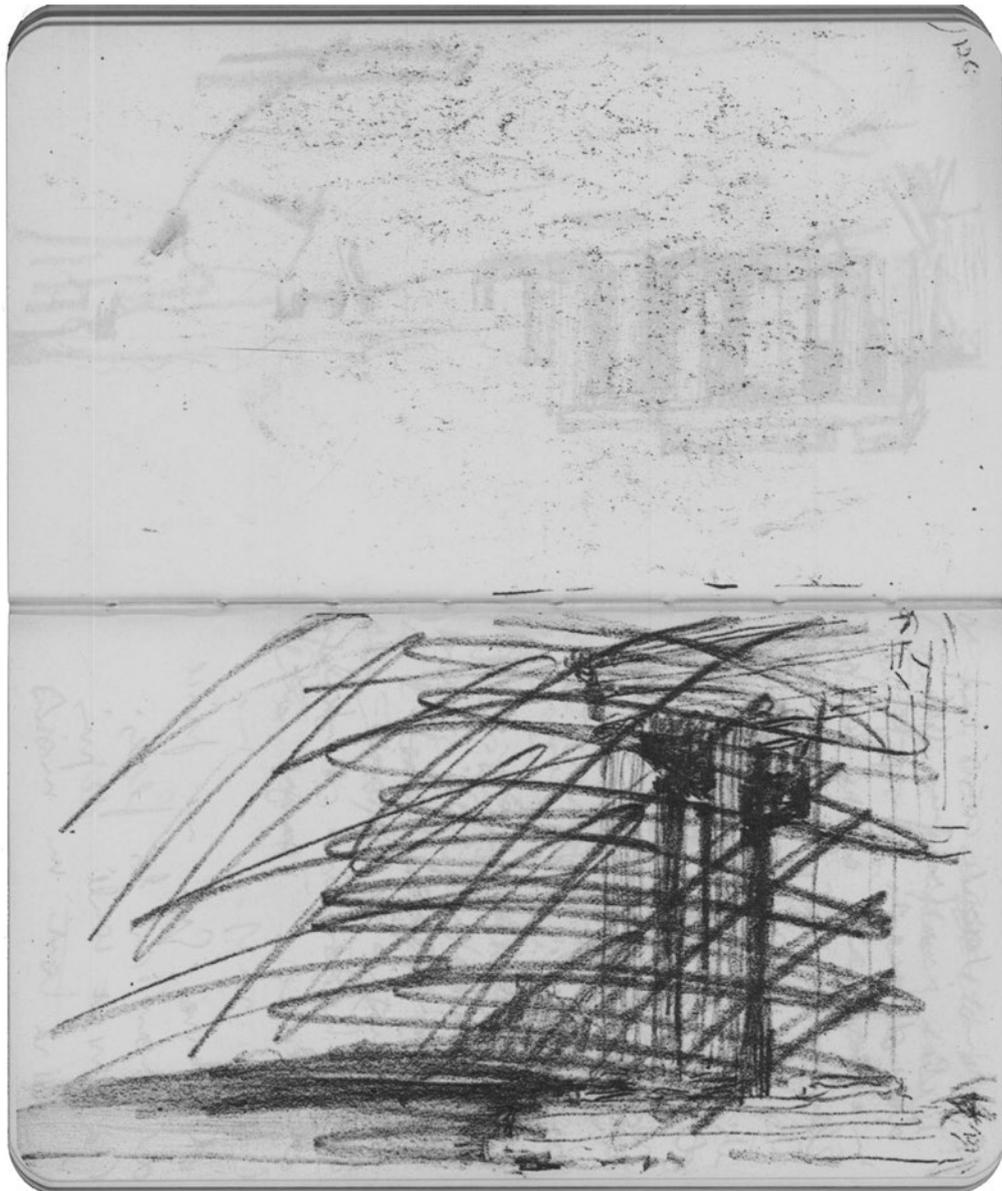
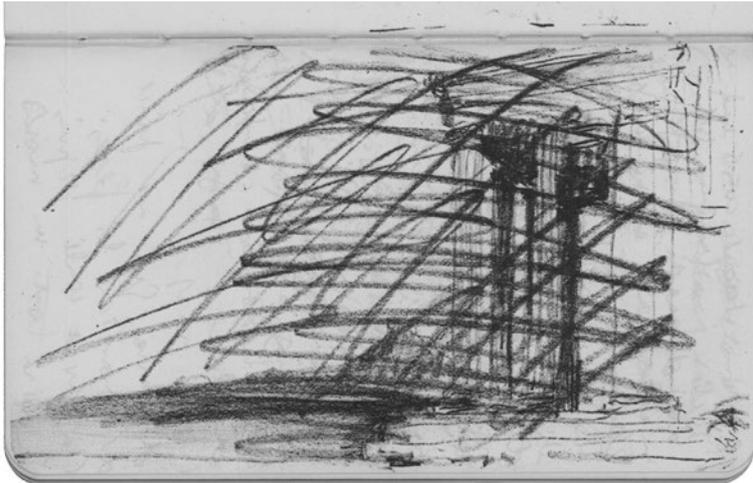
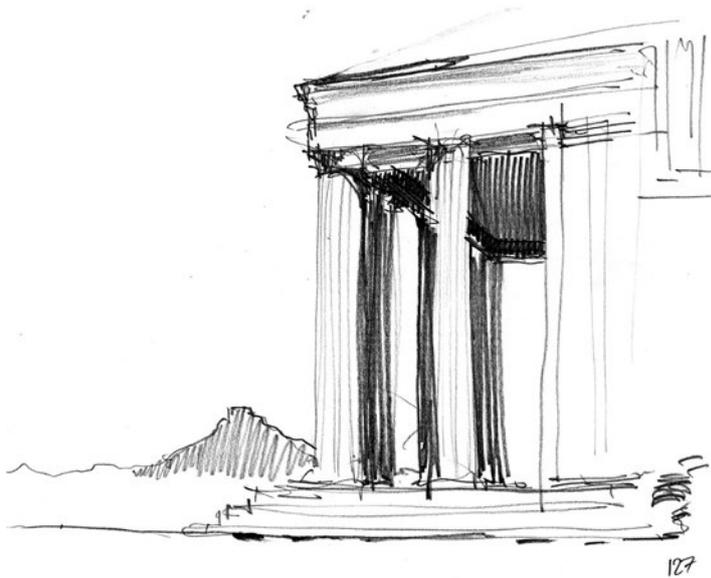


Fig. 405: In situ pencil sketch of the Erechtheion, September 1911. p127 (LC, Voyage d'Orient, Carnet 3).

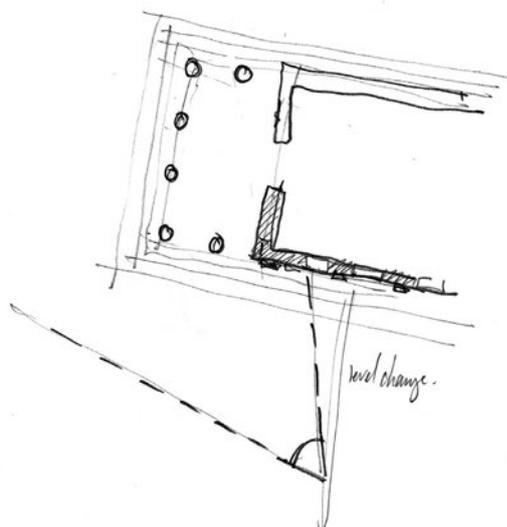
Shortly before leaving Athens in September 1911, Le Corbusier made a further pencil sketch of the Erechtheion with Mount Lycabettus in the distance (Fig. 405). However, this was left not only unfinished, but most interestingly, vigorously defaced as if in a moment of final frustration with the difficulty of interpreting the effect of the Acropolis. The example may shed light on the role of the in-situ sketch from a different perspective, precisely because it appears to have failed to achieve the intended result despite having no obvious or irresolvable aesthetic



**Fig. 406:** In situ pencil sketch of the Erechtheion, September 1911. p127 (LC, Voyage d'Orient, Carnet 3).



**Fig. 407:** p127 redrawn. Mount Lycabettus is clearly visible to the north (SH).



**Fig. 408:** Sketch plan of viewpoint of sketch 127. (SH).

defect. Something significant has gone wrong with this unfinished sketch, but it is hard to tell quite what. It is not a case of mistaken proportion, but it clearly had an emotional value, hence the vigour with which it has been crossed out. Frustration is obviously the cause of the scrubbing out, but where is the cause for the frustration? Perhaps this was due to something totally arbitrary which happened at that moment, but if this were the case, why would the sketch be crossed out so emphatically rather than be simply abandoned as on other occasions. The answer appears to be less about the aesthetic results of the sketch than the thought behind the drawing – less therefore about the drawing itself than about the thoughts going through Le Corbusier's mind. But the sketch, and the evident mental and emotional processes it records, serve to summarise the ideas discussed throughout the thesis that there is something about the act of drawing which sets up this friction and which occasionally ignites into a useful idea, and sometimes into anger – if an instant photograph would not cause such an emotion, why should a sketch?

This 'failed' drawing may help to illustrate the underlying process of thinking which takes place beneath the superficial appearance of drawing and the few graphic traces of this thought which remain on the page. The act of sketching – the practical and conceptual processes which go into it – requires certain essential attitudes on the part of the sketcher, which other more convenient methods avoid to a large degree. These are significant as they have a number of consequences which can be extremely positive for developing designs which interact with place. Drawing in-situ obliges the sketcher to make mental effort, to respond to his observations and take action through proposing new ways of seeing, to control the development of the drawing and cope with the difficulties this involves. On the one hand this all results in a gradual process of learning, developing commitment to selected aspects of place, while on the other, the aesthetic quality of the sketch becomes less important than the conceptual statement that it makes.

#### **FOUR ATTITUDES FOR DRAWING PLACE**

Sketch 127 is the combination of these attitudes towards effort, proposals, structured process and difficulty which has got out of line, and led to the final negation of the drawing. The ideas explored throughout the thesis offer the following explanations

for Le Corbusier's drawing, highlighting four characteristics essential to the process of sketching in-situ.

### **The effort of drawing**

First, that drawing in order to learn requires significant mental effort. The effort involved in the process is far deeper than that required to simply start sketching – of being bothered to organise the necessary conditions for the sketch and committing a period of time and concentration. Apart from the physical and disciplined effort required, the practice of sketching in situ entails the far more important underlying effort of committing oneself to reflect on one's own surroundings and to respond to them through proposing a way of understanding and representing these thoughts. The real effort involved in sketching lies therefore in trying to understand what one is drawing - sketching is thinking - but a complex form of thinking. Rather than just occupying the mind, the effort involved in sketching is the effort of proposing new thoughts and new ways of seeing, which is the same as the effort in the design process; this creative process is often concealed within the excitement and pleasure of doing it, but at other times the difficulty it involves is only too evident.

How does making this effort help to either understand or to design place? Place is far too complex to be understood immediately. In-situ sketching builds up the sketcher's comprehension through breaking down observations into smaller more manageable parts, proposing ways of seeing them which can then be judged against reality in situ. This ability of the sketch to structure observation, proposal and evaluation, allows one to reach an understanding of something which at first sight is far too complex to appreciate in depth.

The entire process of sketching works as a cycle, from thought and observation, to mark-making and evaluation against the rest of the sketch tested against reality, and followed by revisions and further proposals. The dynamic process of sketching and comprehension evolve together therefore – actively driving one another along. The more friction this process has, the more one stands to learn. In-situ sketching is particularly successful for learning as it can adapt whilst the process of drawing is underway, rather than having to wait until the end of the cycle before evaluating and retrying; and so this allows new and increasingly sophisticated conceptions to be proposed and tested in-situ using the entire person as the holistic instrument (all of the senses, knowledge and imagination) embodied in a specific and unique place.

The process of sketching extends the period of thought which concentrates the sketcher on the continual but gradual comprehension of place - this process helps to gain the understanding of place through proposing ways of seeing it. This involves the determined effort to think around the subject, selecting certain parts, criticising and evaluating them before rejecting or emphasising them which is in part conscious and in part intuitive; but even intuition is something to be trained and practiced by the development of sensitivity to specific criteria, while seeing beyond others.

### **Taking action - proposing ways to understand place.**

A second reason for Le Corbusier crossing out sketch 127 concerns the propositional nature of sketching. Unlike the many passive means through which modern technologies can be used to capture site data, sketching requires taking positive action, responding to observations and actively proposing new ways of seeing.

For both in-situ sketching and design, making design proposals requires taking decisions to tackle the unknown issues about the future, and the benefit of this is the discovery of new insights from what is drawn. The aim is to discover and learn about one's surroundings through trying out new ways of seeing them. The result of taking action in the drawing is to get beyond the everyday, superficial, or obvious assumed understanding. Active proposals in the sketch allow the author to go beyond the superficial immediate appearance and uncover a deeper meaning, such as the principles behind the end results, which is the underlying structure of place. To escape the typical mechanical forms of representation requires the application of thought, intuition and judgement. In Heidegger's terms, to be human is to take things into one's own hands, to take action: To exist means to confront one's surroundings, to understand them and respond to them. This is inevitably subjective, being an act of individual will. While you may ask someone else to take a photograph on your behalf, but to get that person to do a sketch for you will never express your own thoughts or point of view.

### **Turning difficulty to advantage.**

How does sketching help one to take action in design? Through improving one's control over the design process and through

finding and overcoming points of difficulty.

First, sketching does this through providing a strategy for managing future uncertainty by allowing one to try to control the future course of things, attempting to guide a way through the unknown, and it also provides a way to select the best course of action to lead towards the most positive outcome. Subjective reasoning and intuition are fundamental strategies for dealing with uncertainty, when objective reasoning gives no direct answers.

Second, sketching can help to find and resolve points of difficulty. Because of the difficulty generated in this task, sketching can show where the resistance lies, and suggest ways to go beyond it. This is significant in design because the difficulty may become the source of new ideas and the route of intuition. In an equivalent way, in site sketching, the effort in dealing with difficulty, resistance and ambiguity focuses this path of thought and commences the chain reaction of other complex processes to do with learning about place, and sympathetically incorporating new and foreign ideas into place. Drawing and its method of proposals therefore can find where difficulty lies and reveal the most important aspects. Through this cyclical learning by trial and error, sketching can work out new ways to get around these problems and develop alternative ways of seeing place. For Le Corbusier on the Acropolis, this process of learning was developed throughout his sketchbook, learning through finding difficulties and proposing ways of seeing them.

**Educating the eye - using the process of sketching to guide the direction of ideas.**

The third argument concerns how to guide the development of the drawing over time, during the course of its production. This is part intention and part spontaneous, which like all forms of improvisation must be both well informed and well structured to be successful. Whilst inconsistencies in proportions and perspectives are common throughout this sequence of Le Corbusier's sketches, most have been turned to advantage, helping to explain a particular way of understanding the Acropolis. This process of both working around graphic mistakes and also taking poetic liberties over the visual accuracy of the view, is an essential part of what makes the process of sketching in-situ so interesting for discovering and developing ideas. However this process can equally go off course, leading to results which for one reason or another contradict the underlying intention of the

sketcher. This makes sketch 127 so interesting as it clearly demonstrates how sketching in-situ is no free ride where any kind of sketch may be considered of equal value. Le Corbusier clearly decided that, even though the sketch contained no irremediable errors, the process of constructing the sketch had taken a wrong turn which went against his broader comprehension of the subject matter until reaching the stage where he considered it was beyond repair, past any reasonable way of reforming the conception of the Erechtheion which it represented. This shows the significance of the gradual layered process of sketching, but also how this means of using the sketch to guide the author's understanding of place must retain a critical and detached eye.

To summarise these points, the process of sketching generates a complex process of thinking and learning about place on many levels. This involves effort, taking action, dealing with difficulty, guiding the design process and improvising around given conditions.

### **CONSEQUENCES FOR DESIGN**

These attitudes have several consequences of immense value for establishing a deeper connection between architect and place, which can later be transmitted to design.

First, they increase the depth of learning, helping to develop intuitions further and making them more memorable. Le Corbusier first discovered a number of his most significant theories whilst drawing on the Acropolis. Had he not drawn, is it less likely that he might have found these concepts at the beginning of his career and seen them so vividly, understanding them as structuring principles which, regardless of stylistic interpretations relate to the architecture of any period?

Second, they develop a sense of commitment to the characteristics of place which are then more likely to be transferred into design. Through drawing, Le Corbusier developed an intense and sustained commitment to the concepts he found in the Acropolis, which he transformed into his own architecture throughout his career.

The thinking that sketching in-situ requires can therefore also establish the commitment of the sketcher to certain aspects of

the drawing which he has struggled to understand. The mental effort of tackling difficult parts may reveal the actual importance of things drawn which might otherwise have gone unnoticed. The concentration and reflection may help to evaluate better their underlying importance beyond superficial appearance, and these important elements are then more likely to become registered in the memory. The difficulty of drawing therefore involves not only the increase in awareness of the existing structure of place, but also the understanding of what aspects of the existing elements are most worthwhile.

The more difficult uncovering the underlying structure of place is, the more thought, effort and will is devoted to it and the greater the commitment to the most important parts of it. The result of this commitment is that these parts are more likely to be remembered and maintained in the future design, or at the very least, the significant aspects of a place are more likely to be modified to the minimum degree required. Any changes to this hard won understanding of place are now likely to be considered and evaluated more carefully and reasonably than would otherwise have been the case. And so the in-situ sketch is more likely to develop this sense of commitment to place as a result of critical judgement rather than following pre-conceived value judgements. In the case of Siza's site sketches, certain principles are revealed which the new project remains committed to throughout its development. The incorporation of travel sketches into design work therefore may act as a way of retaining aspects of place in a design, and as a means to check whether the transformative effect of the project will change place for the better or not. In this sense, the travel sketch itself states an opinion about place, but it is then up to the architect to maintain commitment to these findings. The travel sketch is not just a source of inspiration, but reveals the existing context and point of departure for design, which any new project must serve to improve. This makes it more likely for place to be evaluated both in full detail and in a positive but critical light.

Third, that the ideas and thought process behind the sketch become more significant than aesthetic concerns. The drawing is less a means of illustration than an instrument (both in the scientific sense as an apparatus for observation, and in the artistic sense of being played). While the aesthetic quality of the sketch can never be fully separated from the concept which lies behind it, in the sketches discussed this is always of secondary importance. Sketches that are intended to represent ideas clearly to

others are based on different priorities to those where sketching is for personal investigation, and the ‘non-trivial’ architectural sketch may not necessarily therefore serve to communicate ideas with anyone other than the drawer. The aesthetic quality of these sketches is of secondary importance compared to the underlying architectural ideas which the sketch states. In fact the capacity to convince through the aesthetic competence of the sketch is precisely what may hinder fair judgement of its content. The learning process may become distorted by certain aspects of a sketch whose graphic representation is far more appealing than the original subject. Siza consequently draws with a biro so as not to be misled by the attraction of the pencil line.

For learning about place, excessive attention to aesthetic criteria can therefore inhibit understanding by impeding the cycle of proposal and evaluation during the drawing process, and by emphasizing the end result of the drawing (and its internal graphic relationships alone), instead of the outward relationship between sketch and place. Referring to the drawings of Bruno Taut, Iñaki Abalos talks of a successful drawing as one which does not need to be finished in order to convey its meaning (Abalos, 2015), because the underlying structure of the architecture conveyed is compelling enough to go beyond the syntax of the drawing. This allows the aesthetic of the drawing to recede in importance and not interrupt the fundamental architectural statement contained within it.

For the architect, sketching is most important for the process of active and receptive thinking that it involves, and as counter to this example, by removing the effort and difficulty that place sketching requires, the learning process that goes with it is greatly reduced. As Nicholas Carr explains, technology which analyses and which is intended to increase convenience by reducing the need for human thought, also has the effect of reducing both skill and knowledge (Carr, 2010). The quality of thought is reduced due to the lack of effort made, and in consequence the mental ability to understand and think about place independently is compromised.

These various aspects which sketching obliges the drawer to undertake have particularly positive rewards for architects; they develop the process of learning about place gradually, thereby establishing commitment to certain selected aspects. In the current architectural context, Kenneth Frampton emphasises the urgent need to refocus buildings on their relationship to place. The

question throughout this thesis has been how the manual craft of drawing and mental reflection combine to absorb local aspects fused with foreign ones; in terms of drawing this is directly related to what has been referred to here as place-sketching, whose importance lies primarily in the thought processes it generates and sustains.

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## **SPECIFIC CONCLUSIONS**

The objectives of the thesis have been developed into the following conclusions.

### **1 – Drawing and thinking; designing conceptions of place**

For many of the same reasons that Richard Sennett considers that ‘making is thinking’, the basic hypothesis for this thesis has been that for architects ‘drawing is thinking’. The ways in which these are intertwined has been considered through theoretical argument in Part I, case studies in Part II and practical application in Part III. The thesis has argued that the process of sketching involves subtle and complex interactions between sketcher and place, through time and by subjective thought. This helps architects to understand both the existing and to imagine its transformation. Sketching helps to reveal subjective intuitions, and rationalize them in the objective format of drawing. Sketching can guide the design process over time to connect it to the underlying structures of place (Navarro Baldeweg 2014), and can modulate the effects of these ideas on architectural design. Both the process of sketching and the sketch itself can help architects to understand the complexity of place and visualise its transformation through a design proposal as theoretically discussed in Part I, which considered what makes sketching uniquely capable of interacting between project and place.

However, understanding place is extremely complex. Sketching in-situ offers a sequential procedure for thinking and learning through breaking down observations into smaller more manageable parts and then proposing ways of seeing them which can then be judged against reality in-situ. The ability of the sketch to structure observation and proposal by critical evaluation allows an understanding and opinion of something which at first is too complex to comprehend in depth. The entire process of sketching works as a cycle, from thought, observation to mark-making, repeated evaluation, followed by revisions and further proposals.

This dynamic process of sketching and comprehension evolve together – actively pushing one another along. The more friction this process has, the more one stands to learn. In-situ sketching is particularly useful for focusing the learning process of place as it adapts during the course of the process, rather than waiting until the end of the cycle before re-evaluating and trying again. This allows new and increasingly sophisticated conceptions to be proposed and tested in situ using the holistic embodied instrument of the whole person (all senses, knowledge and imagination).

This thesis has argued that the free and interconnected synthesis of these principles during the act of sketching is what makes it, for architects, a unique process in relation to other forms of representation or analysis.

## **2 – Integrating travel drawing and design sketching**

In the current architectural context Frampton emphasises the urgent need to focus buildings on their relationship to place. The question throughout the thesis has been how the manual craft of drawing and mental reflection combine, absorbing local inputs and fusing these with foreign ones. In terms of drawing this is directly related to what has been referred to here as place-sketching, the importance of which lies essentially in the thought process it generates and sustains.

Part II has demonstrated that architectural in-situ sketching and design sketching form part of the same continuous process. Architectural ideas may maintain this connection even though travel sketch and design project may be separate in both time and location.

However, an drawing observed from life also incorporates other ideas, both formed by past experience and future imagination. In relation to other forms of studio based drawing, travel sketching combines the sensitivity of the sketching process with the direct stimulus of a foreign environment. Le Corbusier's Acropolis sketches show an example of how this process of learning from precedent can work in practice by the success and effectiveness at discovering and developing committed ideas, demonstrated by the clear conceptual connection between the Unité d'Habitation and these first sketches. The analysis of Siza's project sketches shows that this initial extraction of ideas from one place ('drawing' in the sense of extracting) and their re-insertion in another

form is all part of one single process. This thesis argues that the travel sketch and design sketch are seen to be one and the same thing whose inter-connection should be used to maximum advantage throughout design, and as with Siza's house in Mallorca, in-situ sketches should help to guide the design towards creating a profound relationship with place.

In the case of Siza's project, the site sketches have been used to re-introduce and maintain commitment to the essential characteristics of place throughout the project. The site sketches form part of the design at many different stages, their meaning for the architect gradually becomes enriched as the design evolves, as Berger explains (2005). The result is that the site sketch is used to guide the process, as an instrument of design created under the influence of the real human-centred conditions of place.

Even in cases where the travel sketch and eventual design project are separated by significant distance in both time and location, as in the case of the Acropolis and the Unité and Hadrian's Villa and Ronchamp, the thought process and the ideas remain connected. As a learning process, the act of drawing helps not only to reason out ideas into considered opinions but also to commit to their value and memorise, thereby greatly increasing the chance of their positive influence in later designs.

From the perspective of architectural design and specifically the design of place, it is beneficial to combine travel sketching and design sketching into one single process. This takes advantage of the immersive analysis that the travel sketch provides, weaving it into design work across all stages of the design process, which has the potential to create designs based fundamentally on the real, observable conditions of place standing the greatest chance of revealing and transforming place for the better.

### **3 – In situ sketching; a contemporary approach to architecture and place.**

The example of Le Corbusier's sketches of the Acropolis together with my own sketches made a century later, shows how site sketching can lead to different but equally valid interpretations of the same precedent. The meaning of the sketch for its author is built up through the act of sketching which both examples share, with a similar intention to use site sketching to discover a personal interpretation of the architecture. This is developed from an individual point of view and in the context of a particular

period in time.

This approach considers that the subjective and objective nature of the sketch creates an ideal medium to analyse architecture accurately but also imaginatively. This has been considered again under different conditions in the examples of Utzon's Can Lis and EMBT's Santa Caterina market, the conclusions of which have been reached from the direct development of analytical in-situ sketches of both projects. This has then been demonstrated further with a sequence of travel sketches discussing buildings designed at different times, of different scales, uses, cultures and with totally different ways of relating to place.

Part III has used the practical application of in-situ sketching as an approach to researching the relationship between architecture and place in widely different cases studies, and shows that sketching is a highly effective means to research existing precedents; apart from its use for analysis, the sketch also provides a means to connect place and project together during the design process through combining research and design.

### **THREE APPLICATIONS FOR IN-SITU SKETCHING IN CONTEMPORARY ARCHITECTURE**

The results of these arguments suggest how sketching in-situ may be of great relevance in the three areas of research, design and education in architecture.

#### **a – Research**

In research, sketching in-situ is a simple means to investigate directly from primary sources, basing conclusions on direct first hand experience of architecture in context. Whilst this inevitably requires considerable mental effort on the part of the researcher in order to be productive, it is also a highly flexible and creative process. It has the benefit over other more apparently objective or quantifiable methods, by focusing analysis on a human centred viewpoint.

Sketching in situ can uncover the relationship between place and architecture in complex as well as simple settings. Both the procedure of drawing in-situ (position / view angles / subject matter) and the process of editing and redrawing are necessary in order to reach considered and innovative conclusions. In-situ sketch-

ing is based on human-centred and therefore real experience of place, which gives it independence from alternative sources – although, as in the case of Santa Caterina, this depends on the complexity of the case and the type of inquiry. It can tackle complex questions of interpretation, but is most effective in combination with other forms of architectural analysis.

As a research process, the multiple ways of sensing time and forming interpretations over time make in-situ sketching particularly sensitive to how architecture and place relate to different rhythms and scales of time.

### **b – Architectural Education**

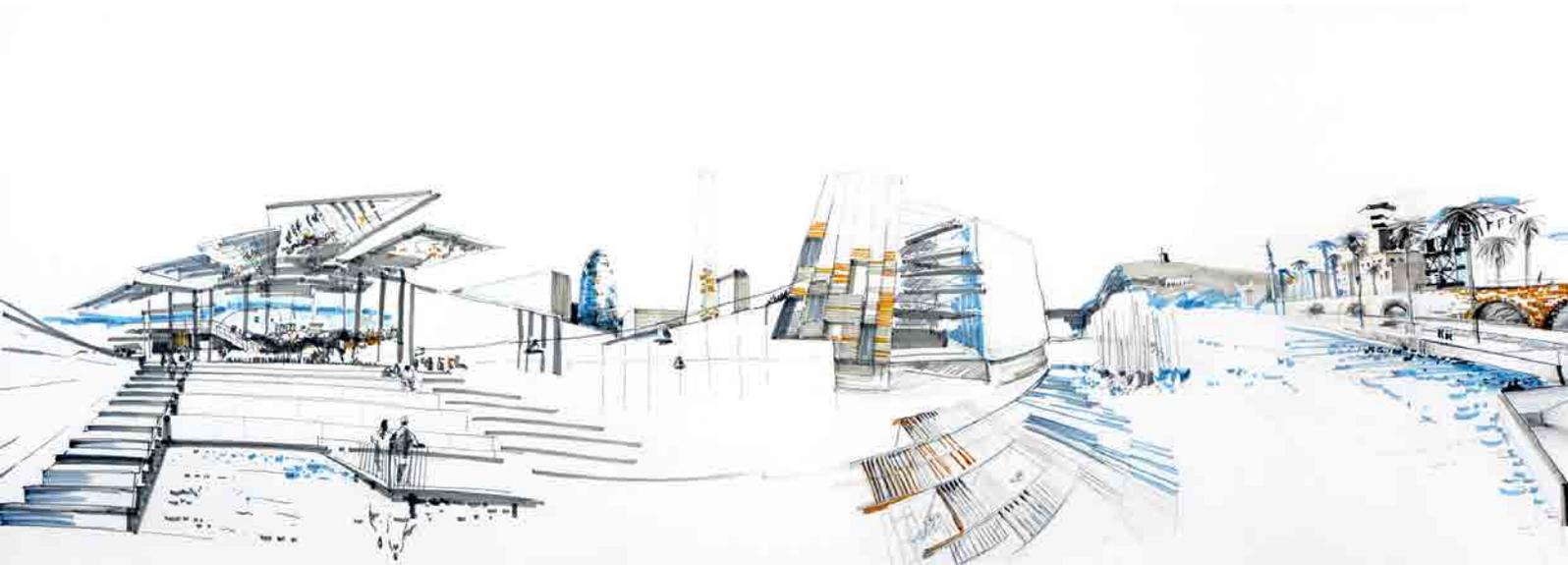
In architectural education, in-situ sketching provides an incomparable means to help students learn about architecture in context through actively engaging them with the built environment. Sketching on location, combined with the necessary guidance and information, can provide an extremely wide ranging learning experience. It improves observation and critical responses to architecture from direct first hand experience and encourages original and creative interpretations of architecture in response to the most important qualities of place.

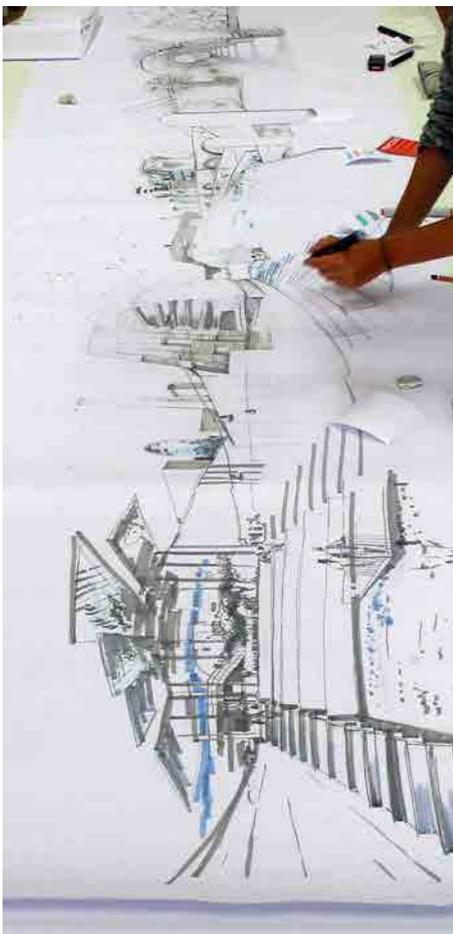
Sketching provides a subjective viewpoint for learning about the built environment which is an extremely positive exercise for students learning how to take advantage of intuition and perception, while retaining control over the subjective responses which this may lead to. Sketching can help the student to develop, justify and explain opinions and committed ideas which they have formed in response to the real conditions of architecture in place. Sketching in-situ therefore is urgently needed in architectural education, reaching far beyond the simple graphic illustration of the built environment, to counter-balance the concerns of the sole reliance on new technologies.

**Fig. 409:** Group drawing in class, based on prior in-situ sketches.

(Final project, IED Summer School 2014, “Barcelona Architectural Sketchbook”)

**Fig. 410:** BELOW: Final project, Summer School, “Barcelona Architectural Sketchbook” at the Instituto Europeo de Diseño, Barcelona 2014. A group drawing 6 m long, elaborated by students from their in-situ sketches and coordinated by the author.





### c – Practice.

Sketching in-situ which is suitably integrated into the design process can help to base design on the specific qualities of a particular place. Given the importance that Frampton and many others attribute to the relationship between architecture and place, sketching in-situ and in design can provide a highly versatile, effective and creative means to integrate project and place together.

In architectural practice, place sketching serves to focus design concepts by revealing and transforming place to positive effect. One essential part of using place-sketching effectively involves repeatedly re-reading and redrawing sketches, which assists the continual integration of place throughout the many iterations of a project as the meaning of a sketch changes over time, developing into new and always richer ideas about place into projects as they evolve. The example of Siza's travel and design sketches demonstrate how intelligently executed place sketches can be integrated into the design process in a relatively disciplined manner, ensuring that the resulting design is closely connected to place. However to take advantage of sketching in the design process in general, it needs to be incorporated into all stages together with a variety of other media.

Site-sketching, when used in design, tends to influence only the initial stages of the process, but to reach its full potential, place-sketching and therefore place itself, should be incorporated at all stages of design - analysis, invention and production. Sketching is a cyclical process of learning through experiment, evaluation and improvement, which remains equally effective at all levels in the maturity of the process, helping to make it develop better, faster and further by way of proposing different ideas and solutions.

Sketching can also help in architectural practice through struc-



turing time into the design process – both as a record of design development, and also as a discipline for keeping flexibility in design and maintaining the openness of design as long as possible throughout the design process.

Sketching is therefore a particularly useful method for bringing place into all the design stages, as by its nature it is sufficiently flexible and ambiguous to both suggest and adapt to new ideas. This delays the closure of idea formation while providing a structure for it to evolve based on place. Hence, the travel sketch used in design work is a method for guiding the transformation of place, but remains flexible and capable of evolving as particular knowledge of the project deepens throughout the design.

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### **Limitations**

Through improving the architect's control over the effect of time subjectivity and place of design, this thesis has argued that sketching can improve the connection between a project and its context. The practice of sketching can help both to analyse precedents and also to imagine their transformation. Nevertheless, although sketching in-situ has the great benefit of responding to first hand primary sources through real experience, this can develop far further given the stimulus of further material from different sources. As an approach to place-specific design, in situ sketching can only provide part of the information which a design will require; it can and must be complimented with other sources. Even so, the process of sketching on location can provide intuitions about essential aspects of place, its underlying structures, which might otherwise go unnoticed by alternative techniques.

### **CONTRIBUTIONS:**

Drawing in architecture has been a determining factor in its evolution since the early Renaissance. As with many old traditions which have evolved with little explicit written justification, the scarcity of theoretical explanation behind the role of sketching in architecture relative to the extent of its use especially throughout the twentieth century may have two causes. Either the practice itself was not considered sufficiently important to merit much discussion, or in contrast, its use was so significant, obvious and

innate, that it required no explanation.

However it is clear that the situation is now changing exponentially. On the one hand, the need for the human thought process which drawing stimulates is as necessary as always in the design process, and the added connection of in-situ sketching to place is more urgently needed than ever. On the other hand however, the tacit taken for granted acceptance of drawing's merit and purpose is no longer present, and here lies the importance of explaining in explicit terms the opportunities which in-situ sketching creates for architectural practice, research and education.

Given the change in culture of drawing across the field of architecture, any such explanation must be approached in a both practical and theoretical manner. Drawing as an active, propositional and iterative process needs to be conveyed in an engaging manner. In the classroom, (as in Le Corbusier's South American lectures recorded in *Precisions*, or previously in the Renaissance atelier according to Sennett), this engagement can be encouraged by leading the way through drawing. As a result this thesis has based part of its methodology by using the author's own drawings to develop and explain ideas and arguments, which builds on the conclusions of the EGA conference on travel drawing in 2014, that theory and ideas can and must be conveyed through personal drawing. As a result, this thesis provides the following contributions in terms of methodology, new directions for the relevance of sketching in architecture, and ideas on how sketching can help architects reflect on and design place.

## **1 – Method**

The first contribution has been methodological in the use of my own sketches to develop and justify the argument. This has assisted in the following three ways - by providing a consistent approach to the analysis of disparate cases by placing all examples on an equivalent wavelength, and allowing different cases to be compared and contrasted; by adding to the written narrative a stream of sketches on architecture and place - a graphic argument which establishes relationships between the approaches to place in apparently diverse architectures; and the incorporation of the narrative structure of a travel sketchbook into the thesis to convey a condensed demonstration of how reflections about place gradually build up over the course of a set of in-situ sketches, and in so doing, a subtle, but complex web of connections is gradually woven between interpretations of different projects in different places.

## **2 – Proposing new relevance for drawing in architecture.**

This thesis has aimed to contribute to the current debate over the role of sketching in architecture in three principle ways. First, that sketching has been shown to provide a direct link between the complimentary tasks of analysis and design – a vital connection for any architectural design which attempts to relate to its surroundings or context. In-situ sketching is a complex process, which simultaneously incorporates analysis of existing precedents and projects new ideas which is demonstrated by Le Corbusier's in-situ sketches of the Acropolis.

The process of sketching combines qualitative analysis with proposing ways of seeing and understanding which combine the introspective ideas of the sketcher with his observation of the surrounding environment. This link between analysis and design can be seen in the development of Siza's design for the house at Formentor where in-situ sketches are repeatedly used to guide the course of the design process. The sequence of design sketches record how ideas observed on site were repeatedly combined with external ideas from the architect's imagination and experience. This shows how sketching provides a single medium capable of developing analytical ideas observed from reality, and also developing new creative design ideas. In-situ analysis and design are fused together into one continuous process which helps to integrate place into all stages of architectural design.

This gives sketching great potential to transcend the boundaries between research, practice and education. The example of Siza's design methods as shown in his house in Formentor, demonstrate how in-situ sketches can positively improve the specific qualities of place in a design project when used consistently throughout the design process. The second major contribution of the thesis is to explain and justify using well recognised examples, how sketching can link in-situ analysis with design work. This can help to integrate architectural projects with place from their inception through to their completion.

3 – In the contemporary context of architectural research and design, modern technologies now provide more convenient alternatives for many of the tasks performed by sketching as practiced in the past, and so the third contribution of this thesis has been to highlight how sketching remains uniquely useful to architects. This has focused on the relevance of sketching in con-

temporary architecture through its ability to modulate the relationship between architect, place, subjectivity and time in the design process.

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## **FUTURE WORK**

The use made of sketching in architecture depends to great degree on what alternative instruments may be available. The widespread use of perspective in the Renaissance allowed architects to comprehend and visualise spaces accurately making possible new ways of thinking about design. The use of sections and axonometrics have also allowed architects to use sketching to design in new ways. In the last twenty years, the traditional role of drawing by hand has been in large part superseded by modern technologies. However these have replaced only some aspects of the sketch's capability. In other ways, such as analysing the qualities of place in their full complexity, the sketch will in fact be more useful and relevant to the architect of the immediate future than ever before.

In his 'Lecture on nothing', the Experimentalist composer John Cage criticised those who describe certain kinds of sounds as old, and points out that the sounds are as new as ever - it is simply the way of listening to them which ages. Drawing and architecture have been tied together over the thousands of years that architecture has evolved, but in one way or another drawing has remained connected to it. Sketching as a specific form of architectural drawing, and place-sketching as a particular form of rapid hand-drawn images used throughout the design process, is neither old-fashioned nor out-dated but it is simply the way of considering its relationship to architecture which is evolving, which requires drawing to relate in new ways to the context of architecture and the way it is conceived now. It has been widely shown that many kinds of hand drawing are as relevant as ever within the context of new technologies, however their optimal combination is not obvious. The synthesis of computer and manual techniques through drawings - loosely termed 'hybrid' drawings, may not necessarily make the most of the opportunities provided by each medium.

The originality of this thesis lies in its attempt to re-present a traditional, even ancient, architectural method within a new and changing architectural context arguing that drawing by hand is

not out-dated, even if the way it has been traditionally used may be. To do so, one specific area of architectural sketching has been focused on, one which takes full advantage of the opportunities that drawing by hand allows, and one that relates directly to a fundamental, and according to Kenneth Frampton, an increasingly urgent principle in architecture - its relationship with place.

If sketching is lost, so an immensely valuable part of architectural thinking built up over centuries will be detached from the new processes of design. Ways of designing architecture built upon constructional, climatic, social and cultural relationships with place and context, will lose a unique form of dialogue with the underlying structures of place. Echoing with Frampton's concerns, the opportunities that remain to connect new architecture to the qualities of place will be further eroded, and to remain relevant, sketching must be re-evaluated for the positive role it can play in design. The benefits offered by alternative technologies must be combined with it, replacing only those aspects of sketching which are improved and not simply obscured by more dominant new techniques. Precisely how sketching may be best combined with new technologies must evolve in time with these new technologies, but this falls outside the scope of this study. The intention here is to encourage the considered and enlightened use of sketching in new ways which must continue to relate to the changes within the overall context of architectural design, research and education.

Without denying the advantages posed by new technologies in architecture, sketching has been presented as a means of improving the design process considered essential for a deeper understanding of place, by strengthening its' connection with sketching on location.

This encourages research by design into different ways of combining in-situ sketching with other technological instruments of the design process. Seeking to find how the advantages of different approaches may be combined most productively and creatively in order to make the architecture of the future, in whatever form it may take, connect with the specific nature of place.

The results of the thesis also suggest opportunities for education, taking up the challenge to encourage students to interact with place through the embodied act of in-situ drawing. To be successful this must be followed with a sustained didactic process

focused on integrating site based drawing into the design process. This opens another field of research into how to re-integrate drawing into architectural education both inside, and crucially, outside the classroom.



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# THESIS SUMMARY

## **1 - Background**

This thesis explores how sketching on location can form the conceptual basis for place-specific design. Sketching in-situ offers an approach which is propositional more than merely descriptive, and which can integrate the qualities of place into the very essence of architectural design.

The topic has been motivated by the context of changing attitudes toward sketching in both architectural practice and education, as observed first-hand in both at the University of Cambridge and Barcelona School of Architecture (ETSAB, Universitat Politècnica de Catalunya).

Considering the profound value it has held for the great architects of the last century, the thesis investigates how the contribution which sketching can make to architectural design may be re-evaluated in order to remain of equivalent value to future generations of practicing architects. It proposes that the current role of sketching in architecture must also evolve with the changing context, because the relationship between architectural representation, theory and its practical execution has always been a

force driving the evolution of the discipline and the transformation of the architect's role (Cook, 2008). Consequently, this thesis approaches sketching from a new and changing context, both in education and in practice. It builds on a wide range of literature from architectural theory and practice, and goes on to develop an original opinion for the new use of sketching as a central part of the design process through focusing on how sketching can integrate place and design. The thesis proposes how drawing in-situ may provide a crucial connection between architect's thinking and the realities of place and context.

It is clear that the role of sketching in contemporary architecture is now changing exponentially. On the one hand, the need for the human thought process which drawing stimulates is as necessary as always in design. But the added connection of in-situ sketching to place is more urgently needed than ever. However, on the other hand, the tacit, taken for granted acceptance of drawing's merit and purpose is no longer present in the coming generation.

For the architect, sketching is most important for the process of thinking that it involves. This combines effort, making proposals, countering difficulty and educating the architect's way of seeing. In contrast, through removing the effort and difficulty that place sketching requires, the process of learning and understanding that goes with it is greatly reduced. As Nicholas Carr explains, technology which is intended to increase convenience by reducing the need for human thought, also has the effect of deteriorating skill and unlearning knowledge (Carr, 2010). The quality of thought is reduced and the architect's capacity to understand and think about place independently is compromised. Here lies the importance of explaining in explicit terms the opportunities which in-situ sketching creates for architectural practice, research and education.

## **2 - Objectives**

Given changes in the culture of drawing across the field of architecture, any such explanation must be approached in an equally practical and theoretical manner. Drawing as an active, iterative process needs to be conveyed in an engaging manner. Highly significant examples of this may be found as far apart as Le Corbusier's South American lectures (1930) the Renaissance

atelier (Sennett 2008). Likewise, in the classroom, this engagement can be encouraged by leading the way through drawing. As a result this thesis has based part of its methodology of using the author's own drawings to develop and explain ideas and arguments. Building on the conclusions of the 2014 Congreso Internacional de Expresión Gráfica Arquitectónica on Travel Drawing (EGA, 2014, Las Palmas de Gran Canaria, Spain), theory and ideas can and must be conveyed through personal drawing. As a result, this thesis intends to contribute to current architectural debate in terms of methodology, new directions for the relevance of sketching in architecture, and ideas on how sketching can help architects reflect on the design of place.

Sketching in-situ may in fact provide architects with a single comprehensive approach for linking their design with the tangible reality of place, forming a unique opportunity to integrate their design thinking with the specific nature of place, context and time. Rather than being confined to the initial stages of design alone, sketching in-situ gives architects an unparalleled opportunity to combine analysing precedents with proposing new interpretations and ways of transforming the existing. The thesis therefore reconsiders the value of sketching for design through refocusing the debate over drawing by hand in architecture towards place, and how in-situ sketching may positively transform the design process.

The thesis attempts to understand and explain how freehand sketching in-situ has helped the great architects of the past and present to understand the complexity of place, develop their own informed reaction to it and then apply their results to their architectural design. Although this research combines analysis of historical sketches, the central aim of the work is to understand sketching in-situ as an integral part of the process of architectural design, and not just description of places and preformed ideas.

### **3 - Research context**

In recent years the use of freehand drawing in practice, research and education has dwindled as architectural production increasingly relies on continually advancing technologies to improve efficiency and the potential to open new opportunities for design. At the Escuela Técnica Superior de Arquitectura de Bar-

celona (ETSAB, UPC), in 1999, Santiago Roqueta described the potential loss of a means of thinking so essential to architects and the design process:

“Es perd així un recurs de comunió amb el món real que augmentaria la pura percepció i interiorització: dibuixar és quelcom més que mirar, és entendre les coses molt millor, la seva estructura subjacent, la manera tal i com s’han fet i, d’altra banda, ens ensenya a fer servir els objectes que ens envolten. Dibuixar és entendre i també explicar els altres, és a dir, comunicar-se.”

El dibujo y la reverencia del Arte - Santiago Roqueta. 1999.

In reaction to this dramatic decline in the role of drawing in architecture over recent years, across a wider international context there now appears to be renewed interest in the positive role which drawing by hand may have in architecture. It allows for new ways to combine with rather than compete against modern technologies. As the 2014 Congreso Internacional de Expresión Gráfica Arquitectónica on Travel Drawing (EGA, 2014, Las Palmas de Gran Canaria, Spain) and the recent Yale Symposium (Yale School of Architecture, 2012. Symposium: Is Drawing Dead?, Feb. 9-11 February 2012. Yale.) bear witness, in architectural research, a substantial base of literature on sketching and its role within architecture has grown over the past three decades or so and continues to expand. In the context of architectural education, drawing by hand has received renewed attention in the last decade, in some cases returning to university curricula in original and highly successful ways. In the Escuela Técnica Superior de Arquitectura de Barcelona (ETSAB, UPC), the success of the subject Caminar Barcelona is evidence of the productive use of specifically on-site methods of representation in architectural education.

During this same period, Kenneth Frampton (1981, 2011) has argued with increasing urgency for the need for contemporary architecture to reflect and interact with the place it stands in. He argues that place and project must be fused together right from the start of the design process, often citing Alvaro Siza’s work as a role model. The primacy of place in architectural design remains at the centre of much contemporary architectural theory, often standing in contrast to rapid recent developments in areas related to the new possibilities and mental framework of the digital era. Architects such as Siza (2007), Moneo (1992, 2004), Wigley (2011), and Hernandez Leon (2007), together with theorists from other disciplines such as Massey (2005), continue to focus

their attention on the topic of place and its evolving meaning.

This thesis re-evaluates the use of architectural sketching in the light of the current architectural context of the Projects Department at the Escuela Técnica Superior de Arquitectura de Barcelona (ETSAB, UPC) which considers drawing to be an essential part of design and that drawing must be integrated into the design process for it to have positive effects in architectural practice and education. The ideas developed throughout the thesis have been implemented by the author in a variety of taught courses at undergraduate and masters level, combining in situ drawing with design projects.

#### **4 – Approaches**

The thesis is structured in four parts:

Part I, *The Uniqueness of Drawing*, is a theoretical discussion of three themes of particular significance in contemporary architectural design and which distinguish sketching in-situ from current alternative media: place, subjectivity and time. Each has an important influence on the design process which can be positively affected by drawing.

Part II, *Analysis and Design: travel drawing and design sketch as a single process*, comprises first, an analysis of how in-situ sketching has been used productively in the past to analyse the relationship between architecture and place, through an investigation of Le Corbusier's travel sketches of the Acropolis. The next chapter considers what affect this in-situ analysis may have on later design work through comparing Le Corbusier's sketches of the Acropolis to the design of the *Unité d'habitation* in Marseille. This process of transformation from antecedent into a new project and place is examined further in the following chapter. Alvaro Siza's design process for his house in Formentor, Mallorca is analysed from the initial site sketches through to the final design.

Part III, *Project, Place and Sketch*, applies the approaches discussed in the previous section to two modern and contemporary projects which interact profoundly with place. Projects include *Can Lis*, Jorn Utzon's own house on Mallorca completed in 1971, and *Santa Caterina Market* in Barcelona by Enric Miralles and Benedetta Tagliabue completed in 2005. The author's own in-si-

tu sketches are used to form interpretations of dramatically contrasting places from direct experience. These are subsequently compared to both original design material and to other research.

In Part IV, Logbook, the same approach is extended to a broad range of buildings and places. A visual argument is developed connecting a series of reflections on architecture and place through a progressive log-book of the author's travel sketches and design drawings. This is organised in the sequential manner of a travel sketchbook, but structured in thematic rather than chronological order. This builds on the arrangement of Warburg's *Mnemosyne Atlas* (1929), the composition of Calvino's *Invisible Cities* (1972), Rowe's *Excursus in Collage City* (1979), as well as the visual argument in Miralles' thesis (Miralles 1987, with recent commentary by Moneo 2012).

## 5 – Method

Sketching is used throughout the following arguments not only to illustrate ideas and express conclusions, but as the essential method of investigation. The graphic and written arguments are developed together in parallel throughout the course of the thesis. The sketches of the great architects of the last century are most relevant to architectural design today for what they reveal about the way in which they were made, and the processes of thinking which this followed. Sketching is important for the sequential build up of ideas that it involves rather than just for the choice of elements to omit or include. These arguments focus on analysing the process of sketching more than the static end result of each sketch. Therefore, to understand this process of creation, the most appropriate method is to use the same kind of sketching to recreate and analyse the construction of the original drawings. As a result, sketching is not only the subject matter of the thesis, but forms the method through which the thesis develops. The thesis is drawing, not just about drawing.

There is a distinction between the approach of drawing in-situ and the method of graphic analysis which deconstructs original sketches and investigates using sketch diagrams. Therefore different methods and approaches are used in different parts of the thesis according to the specific intention of each section. Part I uses a theoretical discussion of ideas about sketching. Part II uses a method of comparative graphic analysis to investigate in detail the historical sketches of Le Corbusier and recent site and design

sketches by Siza. Part III applies an approach equivalent to those discovered in the examples of part II using sketching in-situ to investigate place through first hand experience and creation.

## **6 - Findings**

The thesis leads to two principle conclusions. First, that sketching is a way of thinking, and that most significantly for architects in-situ sketching can focus this thinking on both future design and existing place simultaneously. Second, that the travel sketch and the design sketch are essentially part of the same process. Through seeking to combine rather than separate these two activities, architectural design can gain valuable insight into place and precedent which can improve the strategies used in its transformation through design. Consequently the place sketch is of fundamental relevance to architectural design, research and education. This highlights an important direction in which architectural drawing by hand can shift its focus to the greater benefit of architects in the future.

## **7 - Contribution**

This thesis provides an original contribution to this field of literature in several ways. First through the method used. Cases are observed and analysed first hand and in their contemporary context through drawing in situ. Arguments are then developed and expressed throughout the thesis using the author's own drawings. This provides a consistent graphic logic across the different cases and parts of the thesis, and develops the arguments visually as much as verbally. In-situ sketching is a complex process which combines both investigation and design through simultaneously incorporating both analysis of existing precedents and projecting new design ideas.

Second, it focuses the discussion over the relevance of sketching in contemporary and future architecture on questions of place. It uses the process of sketching in-situ to connect design work with the actual conditions of place. It argues that while modern technologies now provide more convenient alternatives for many of the tasks performed by sketching in the past, a real human-centred understanding of place is essential to architectural design in all its forms and is achieved most effectively of all by means of the in-situ sketch.

Third, for reviving and re-evaluating an old method which is particularly useful for architectural research, education and design. The major conceptual contribution is to establish grounds for the direct continuity between architectural travel sketch and design sketch, proposing how the design of place can be improved through the careful overlapping of these traditionally separated areas. The arguments focus on the relevance of sketching in contemporary architecture through its ability to modulate the relationship between architect, place, subjectivity and time in the design process.

# RESUMEN

## **Antecedentes**

Esta tesis explora cómo el croquis (sketch) in-situ puede constituir la base para el diseño conceptual de un lugar específico. El croquis in-situ ofrece un enfoque que es proposicional más que meramente descriptivo, y que puede integrar las cualidades del lugar en la esencia del proyecto arquitectónico.

El tema de la tesis ha sido motivado por el contexto actual del croquis arquitectónico tanto en la ejercicio profesional como en la educación arquitectónica. Estos últimos han sido observados de primera mano por el autor de la tesis en la Universidad de Cambridge y en la Escuela de Arquitectura de Barcelona (ET-SAB, Universidad Politécnica de Catalunya).

Teniendo en cuenta el profundo impacto del dibujo a mano alzada en los grandes arquitectos del siglo pasado, la tesis investiga como la contribución del croquis in-situ al proyecto arquitectónico puede ser re-evaluada para permanecer como valor equivalente para las futuras generaciones de arquitectos. La tesis propone que el papel actual del dibujo en la arquitectura debe evolucionar con el contexto cambiante, ya que la relación entre

la representación arquitectónica, la teoría y su ejecución práctica siempre han sido una fuerza impulsora en la evolución de la disciplina y en la transformación del papel del arquitecto (Cook, 2008). En consecuencia, esta tesis aborda el dibujo in-situ en un nuevo contexto dinámico, tanto en la enseñanza como en la práctica. La tesis se basa en una amplia variedad de literatura teórica y práctica, y desarrolla un argumento original para el uso del dibujo como parte central del proceso de diseño como eje integrador entre ambos. La tesis propone cómo el dibujo in-situ puede proporcionar una conexión esencial entre el pensamiento del arquitecto y la realidad del lugar.

Es evidente que el papel del dibujo en la arquitectura contemporánea está cambiando de manera exponencial. Por un lado, el proyecto necesita más que nunca el proceso de pensamiento humano que el croquis fomenta. Pero más que nunca es necesaria la conexión adicional que el dibujo ofrece entre proyecto y lugar. Por otro lado, el valor y el fin del dibujo en el oficio de la arquitectura deben de ser explicados de manera explícita dado que actualmente el dibujo no está tan interiorizado en la generación actual y futura de arquitectos.

Para el arquitecto, el dibujo es importante debido al proceso de pensamiento que requiere: combina el esfuerzo, la capacidad de hacer propuestas, contrarrestar dificultades, y educa la manera de ver del arquitecto. Por el contrario, si se elimina el esfuerzo y dificultad que requiere el dibujo, el proceso de aprendizaje y la comprensión que va con ella se reduce considerablemente. Como explica Nicholas Carr, la tecnología que está destinada a aumentar la comodidad, reduce la necesidad del pensamiento humano, deteriora la habilidad y hace perder conocimiento previamente adquiridos (Carr, 2010). En consecuencia, la capacidad del arquitecto para entender y pensar de forma independiente se ve comprometida. Aquí radica la importancia de explicar en términos explícitos las oportunidades que el dibujo in-situ ofrece para la práctica de la arquitectura, la investigación y la educación.

## **2 – Objetivos**

Dados los cambios de cultura en relación al dibujo arquitectónico, las explicaciones sobre el dibujo deben ser abordadas de una manera tanto práctica como teórica. El dibujo como proceso activo e iterativo debe ser transmitido de una manera interactiva. Ejemplos muy significativos de cómo se puede transmitir

este conocimiento incluyen conferencias como las de Le Corbusier en América del Sur (1930) y el taller Renaissance (Sennett, 2008). Basándose en las conclusiones del Congreso Internacional de Expresión Gráfica Arquitectónica de Dibujo de Viaje (EGA, 2014, Las Palmas de Gran Canaria, España), la teoría y las ideas pueden y deben de ser comunicadas a través del dibujo personal. Como resultado, el objetivo de esta tesis es el de contribuir al debate actual sobre la metodología de la investigación en arquitectura, sobre las nuevas orientaciones de la importancia del dibujo en la práctica de la arquitectura, y sobre cómo el acto de dibujar puede ayudar que los arquitectos reflexionen sobre el lugar durante el proceso del proyecto.

Dibujar in-situ proporciona a los arquitectos un enfoque integral y único para la vinculación del proyecto con la realidad tangible del lugar, formando así una oportunidad única para integrar el pensamiento proyectual del arquitecto con la naturaleza específica del lugar, el contexto y el tiempo. En vez de utilizarse sólo en las etapas iniciales del proyecto, el dibujo in-situ da a los arquitectos una oportunidad para combinar el análisis de los precedentes y proponer nuevas interpretaciones y formas de transformar lo vigente. Por lo tanto, la tesis estudia de nuevo el valor del dibujo para el proyecto a través de la reorientación del debate sobre el dibujo a mano en la arquitectura hacia el lugar, y cómo el dibujo in-situ puede transformar positivamente el proceso de proyecto.

La tesis intenta comprender y explicar cómo el dibujo in-situ a mano alzada ha ayudado a los grandes arquitectos del pasado y del presente para comprender la complejidad del lugar, desarrollar su propia reacción informada al mismo y luego aplicar sus resultados al proyecto arquitectónico. Aunque esta investigación combina el análisis de los croquis históricos, el objetivo central de la obra es el entender el croquis in-situ como parte integral del proceso de proyecto arquitectónico, y no sólo la descripción de los lugares y de las ideas preformadas.

### **3 - Contexto de la Investigación**

En los últimos años el uso de dibujo a mano alzada se ha reducido tanto en la práctica arquitectónica como en la investigación y también en la educación. Esto ha sido debido a la introducción progresiva de las nuevas tecnologías que avanzan continuamente para mejorar la eficiencia y el potencial de abrir nuevas oportunidades para el diseño. En la Escuela Técnica Superior de Arqui-

tectura de Barcelona (ETSAB, UPC), en 1999, Santiago Roqueta describe la posible pérdida de un medio de pensar tan esencial para los arquitectos y el proceso de proyecto:

“Es perd així un recurs de comunió amb el món real que augmentaria la pura percepció i interiorització: dibuixar és quelcom més que mirar, és entendre les coses molt millor, la seva estructura subjacent, la manera tal i com s’han fet i, d’altra banda, ens ensenya a fer servir els objectes que ens envolten. Dibuixar és entendre i també explicar els altres, és a dir, comunicar-se.”

*El dibujo y la reverencia del Arte* - Santiago Roqueta. 1999.

En reacción a la dramática disminución del rol del dibujo en la arquitectura durante los últimos años, ha habido un reciente y renovado interés por la función positiva del dibujo a mano alzada que puede tener en la arquitectura. El dibujo in-situ permite la posibilidad de combinarlo, en vez de competir, con las tecnologías modernas. Por ejemplo, en investigación arquitectónica, el Congreso Internacional de Expresión Gráfica Arquitectónica de Dibujo del Viaje del 2014 (EGA, 2014, Las Palmas de Gran Canaria, España) y el reciente Simposio de Yale (Yale School of Architecture, 2012. Simposio: es un dibujo Dead?, 9-11 de febrero de 2012. Yale.) dan testimonio de que existe una base sustancial de literatura reciente sobre el dibujo arquitectónico que ha crecido en las últimas tres décadas. En el contexto de la enseñanza de la arquitectura, el dibujo a mano ha recibido una renovada atención en la última década. Por ejemplo, en algunas universidades, el dibujo a mano alzada ha regresado a los programas universitarios en formas originales y de gran éxito. En la Escuela Técnica Superior de Arquitectura de Barcelona (ETSAB, UPC), el éxito de la asignatura Caminar Barcelona evidencia claramente el uso productivo de los métodos específicamente basados en la representación in-situ en la formación del arquitecto.

Durante este mismo período, Kenneth Frampton (1981, 2011) ha argumentado rotundamente sobre la necesidad de una arquitectura contemporánea que reflexione e interactue con el lugar en el que está ubicada. Sostiene que el lugar y el proyecto se deben fundir juntos desde el principio del proyecto, a menudo citando la obra de Alvaro Siza como un modelo a seguir. La primacía del lugar en el proyecto arquitectónico permanece en el centro de la teoría de la arquitectura contemporánea, que a veces contrasta con la evolución de áreas relacionadas con las nuevas posibilidades y el marco mental de la era digital. Arquitectos como Siza (2007), Moneo (1992, 2004), Wigley (2011), y Hernández León

(2007), junto con los teóricos de otras disciplinas, tales como Massey (2005), siguen centrando su atención en el tema del lugar y su significado cambiante.

El contexto en el que esta tesis se ha desarrollado es el que evalúa el uso del dibujo arquitectónico en el contexto actual, teniendo en cuenta tanto el patrimonio del dibujo como una parte esencial del proyecto con el Departamento de Proyectos en la Escuela Técnica Superior de Arquitectura de Barcelona (ETSAB, UPC) y también en un contexto más amplio, a nivel general. La tesis también se basa en la idea de que el dibujo debe estar integrado en el proceso de diseño para que tenga efectos positivos en la práctica de la arquitectura y la educación. Las ideas desarrolladas a lo largo de la tesis han sido implementadas por el autor en una variedad de cursos que se imparten a nivel de grado y de máster, que combina in-situ dibujo con proyectos de diseño.

#### **4 – Enfoques**

La tesis se estructura en cuatro partes:

Parte I, La Singularidad de Dibujo: discusión teórica de tres temas de especial importancia en el proyecto arquitectónico contemporáneo: el lugar, la subjetividad y el tiempo. Cada uno tiene una influencia importante en el proceso de diseño que puede ser afectada positivamente por el dibujo. Éstos distinguen el dibujo in-situ de las corrientes que advocan por medios alternativos.

Parte II, Análisis y Proyecto: Dibujo de Viajes y Los Croquis del Proyecto como un Único Proceso. En primer lugar, hay un análisis de la forma en como el croquis in-situ se ha utilizado de manera productiva en el pasado para analizar la relación entre arquitectura y el lugar. Se analizan los croquis de viaje de Le Corbusier de la Acrópolis. El siguiente capítulo considera los efectos de éste en los proyectos posteriores a través de la comparación de los bocetos de la Acrópolis de Le Corbusier con croquis de la Unidad de Habitación de Marsella. El capítulo siguiente analiza la transformación de un lugar existente en un proyecto arquitectónico. El capítulo examina el proceso de diseño desde los bocetos iniciales hasta el proyecto final utilizando un ejemplo de Alvaro Siza para una casa en Formentor, Mallorca.

Parte III, Proyecto, Lugar y Croquis, aplica los argumentos de las secciones anteriores a dos proyectos modernos y contemporá-

neos que interactúan profundamente con el lugar. Los proyectos que se analizan son dos: Can Lis, la propia casa de Jorn Utzon en Mallorca completada en 1971, y el mercado de Santa Caterina en Barcelona, de Enric Miralles y Benedetta Tagliabue que completaron en 2005. Se utilizan los croquis del autor de la tesis para interpretar los contrastes dramáticos entre estos lugares desde la experiencia directa. Las conclusiones de este análisis son posteriormente comparadas tanto con el original material del proyecto como el de otras investigaciones.

En la Parte IV, Cuaderno de Bitácora, extiende el mismo enfoque a una amplia gama de edificios y lugares. Se desarrolla un argumento visual que conecta una serie de reflexiones sobre la arquitectura y el lugar a través de un cuaderno de bitácora de los bocetos de viaje del autor de la tesis y de los croquis de proyecto. Este se organiza en una forma secuencial, como en un cuaderno de apuntes de viaje, pero estructurado por temática en vez de ser por orden cronológico. Este cuaderno se basa en los siguientes antecedentes: la disposición de Mnemosyne Atlas de Warburg (1929); la composición de las Ciudades Invisibles de Calvino (1972); Excursus de Rowe en el Collage City (1979); y el argumento visual en la tesis de Enric Miralles (Miralles, 1987) y el comentario posterior de Moneo (2012).

## 5 – Método

El croquis in-situ se utiliza a través de los argumentos no sólo para ilustrar las ideas y expresar conclusiones pero sobretodo como método esencial para la investigación. Los argumentos gráficos y escritos se desarrollan en paralelo a lo largo de la tesis. Los bocetos de los grandes arquitectos del siglo pasado son relevantes para el proyecto arquitectónico de hoy por lo que revelan acerca de la forma en que se hicieron, y los procesos de pensamiento que les sucedió. El croquis in-situ es importante para la acumulación secuencial de ideas y no sólo para la elección de los elementos para omitir o incluir. Estos argumentos analíticos se centran en el proceso de dibujar más que el resultado final estático de cada dibujo. Por lo tanto, para entender este proceso de creación, el método más adecuado es utilizar el mismo tipo de dibujo para recrear y analizar la construcción de los dibujos originales. Como resultado de ello, el dibujo no sólo es la materia de la tesis, sino que es también el método a través del cual se desarrolla la tesis. La tesis es el dibujo, no sólo sobre el dibujo.

Hay una distinción entre el dibujo in-situ y el análisis gráfico, que deconstruye bocetos originales utilizando diagramas conceptuales. Por lo tanto, diferentes métodos y enfoques se utilizan en distintas partes de la tesis de acuerdo con la intención específica de cada sección. Los métodos utilizados en las diferentes partes de la tesis son las siguientes. La primera parte utiliza una discusión teórica sobre el croquis in-situ y lo relaciona con la literatura relevante. La segunda parte utiliza un método de análisis gráfico comparativo para investigar en detalle la relación entre los bocetos históricos de Le Corbusier y también los croquis in-situ y de proyecto de Siza. La tercera parte utiliza los dibujos in-situ del autor de la tesis para investigar la relación entre proyecto y lugar.

## **6 – Conclusiones**

La tesis tiene dos conclusiones principales. En primer lugar, se argumenta que el dibujo es una forma de pensar, y específicamente, para los arquitectos el croquis in-situ puede enfocar simultáneamente la forma de pensar tanto en el diseño futuro como en el lugar existente. En segundo lugar, la tesis concluye que el croquis viaje y el de proyecto son esencialmente parte del mismo proceso. Combinando estos dos tipos de croquis, el proyecto arquitectónico puede revelar información valiosa sobre el lugar y los precedentes. La fusión de los dos pueden mejorar la manera que los arquitectos proyectan. En consecuencia, el croquis in-situ tiene una importancia fundamental en la práctica, como en la investigación y también en la docencia.

## **7 – Contribución**

Esta tesis aporta una contribución original a la literatura. La primera contribución reside en el método utilizado. Los casos se observan y analizan utilizando los dibujos a mano del autor de la tesis en su contexto contemporáneo a través de la elaboración del croquis in-situ. Luego se desarrollan argumentos basados en los bocetos in-situ utilizando análisis gráfico. Estos diagramas proporcionan una lógica gráfica con la cual se desarrollan los diferentes casos examinados en la tesis y se complementa con una argumentación verbal. El croquis in-situ es un proceso complejo que combina la investigación con el proyecto incorporando simultáneamente el análisis de los antededenets con el diseño de nuevas ideas.

En segundo lugar, la tesis argumenta que el dibujo es relevante en la actualidad cuando se centra en cuestiones de lugar. El proceso del dibujo in-situ conecta el proyecto con las condiciones reales del lugar. La tesis argumenta que a pesar de las nuevas tecnologías es más necesario que nunca que el arquitecto tenga una comprensión del lugar real y centrada en la percepción del ser humano, y que la mejor forma de lograrlo es a través del croquis in-situ.

En tercer lugar, la tesis resuscita y vuelve a evaluar un método antiguo, el dibujo in-situ, que es particularmente útil para la investigación, práctica y docencia arquitectónicas. El aporte conceptual importante de esta tesis es el de establecer la unidad entre el croquis in-situ y de proyecto. Esta unidad puede mejorar la transformación proyectual del lugar. Los argumentos expuestos en la tesis se centran en la importancia del dibujo en la arquitectura contemporánea a través de su capacidad para modular la relación entre el arquitecto, el lugar, la subjetividad y el tiempo en el proceso de proyecto.

