



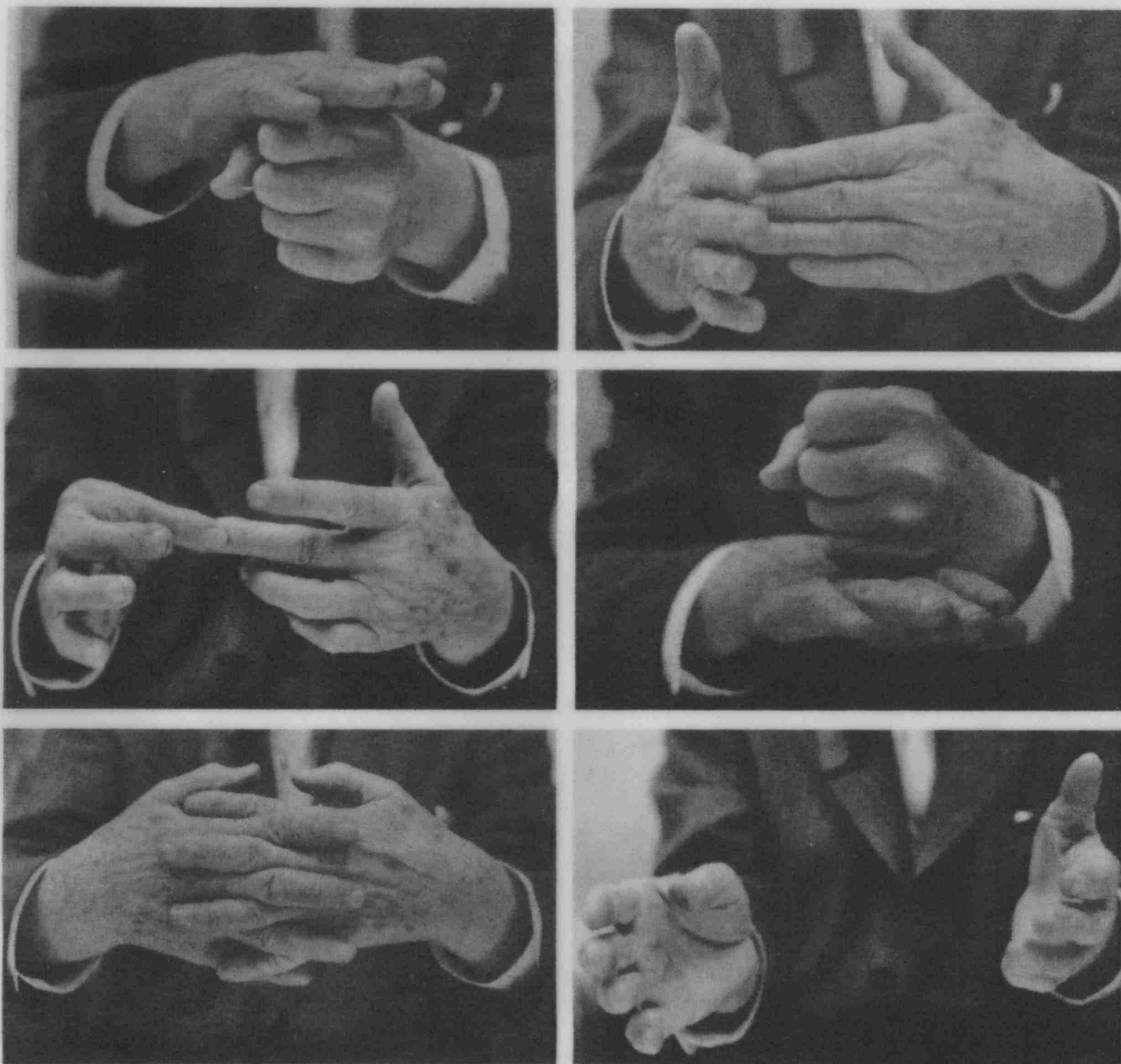
Frank Lloyd Wright, architect's hands

Bartlett School of Graduate Studies
MSc Architectural History
FINAL REPORT
September 2006



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IS THERE SUCH A THING AS THE *MODERN* DETAIL?



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IS THERE SUCH A THING AS THE *MODERN* DETAIL?

Carolina Rodríguez Grenci

Is there such a thing as the *modern* detail?

...it appears that the central position of the detail in architecture is a matter of completely unspoken agreement. It could almost be called the conspiracy of the detail, with its unequivocal, yet never openly expressed status. This sense of secrecy contributes to the detail's initial predicament. On one hand, it is of incredible importance, and architecture really is judged on it (...). On the other, it seems impossible to discuss it openly; it is one of those shameful 'facts of life' that get swept under the carpet.

Ben van Berkel and Caroline Bos, 1994 ¹

It seems that there is always a tension in every attempt to define what architectural details really are. There is a confident assumption that details have a concrete presence in the smallest scale of a building – exactly where 'separate elements of the structure come together'. But when you look for a consistent account from the whole to the detail you get a point of elusiveness, an absence of certainty of what a detail is supposed to be. Are details simply a matter of articulated relationship between the *whole* and the *parts*?

Why do architectural detail's definitions become so disputable? Is this a common feature in other disciplines as well?

The word *detail* is generally defined 'as the small part in relation to a larger whole.' Apparently, though, this definition needs an adjective that qualifies and assures its position as a resolved architectural matter: the *typical* detail, the *standard* detail, the *appropriate* detail, the *principal* detail, the *minimal* detail, the *good* detail, the *bad* detail, and so on. However, such precarious characterisations easily become meaningless, if not ambiguous. What are we trying to say, for example, when we describe a detail as *modern*? Detail, on the one hand, and modern on the other, again becomes an unanswered situation. What does *modern* detail mean?

The concepts of modern, and the related concepts of modernity and modernism, are commonly distinguished as being components of *Modern Architecture*. Modern architecture is mainly associated with the Modern Movement (1914-1939), but is also generally understood as descriptive of the architecture that emerged between the industrial revolution and the beginning of World War two. Consequently, anew assumption is formulated yet again: if there is such a thing as *Modern Architecture*, is there also such a thing as the *modern architectural detail*?

This enquiry is my point of departure of this report; I will critically explore what makes modern detail different, physically and conceptually. Why do we call them *modern*?

In order to formulate possible answers, I will pay particular attention to the Modern Movement. As the origin of a *New Architecture*, the Modern Movement offers unique possibilities to engage the key issues related to details, for example ornament, style and standardisation, and put them in constant conflict, instability, contradiction and ambiguity. If those concepts describe the very condition of being modern, I want to understand that an attempt to define the *modern detail* is also an attempt to demonstrate whether detailing is a modern problem. Here, I have no hesitation in taking

¹ Ben van Berkel and Caroline Bos, 'Storing the Detail', in Kristin Feireiss (ed.), *Ben van Berkel: Mobile Forces*. (Berlin: Ernest & Sohn, 1994), p. 73.

two quotations as the basis of my general position in relation to both concepts of *detail* and *modern*: ‘all that is solid melts into air’ and ‘everything is pregnant with its contrary’.²

Establishing my approach to the topic, the above quotations articulate how details constantly play a game of presence and absence; negotiating a tacit existence and explicit materiality, originating a supposed dynamic in the architect’s spatial concepts becoming material in the joints of a building.

If omission is one aspect concerned with details, my primary objective is to identify its exact opposite, and authentic (?) condition: the material nature and the physical evidence of (*modern*) details’ objective existence. At this point, I will look for the solid, the concrete, and the tangible through an examination of three key subjects where details are openly shown and discussed. Firstly, details identified as the frequent source of building failure. Secondly, I will explore details showing changes in the methods of building. Thirdly, I will specifically explore details specially developed when new buildings are facing existing fabric. In brief, the materiality of detail will be captured as the physical expression of ideas and concepts.

Questions of ornament, decoration (therefore style) and constructional solutions are consistent with detail, so much so that the boundaries between them are often indistinct. I would like to recognize in those transformations the occurrence of episodes that determined the beginning of modern detailing. In fact, ornament and style –being subjects widely studied in history and theory- are the first topics connected with details in general and *modern* ones in particular. What happened when both were purposely concealed from the Modern Movement’s vocabulary? Did the approach to details –from the *whole* to the *parts*- lose its consistency due to this suppression? Has the *modern* detail changed its significance due to an undecided distinction from a standardised technical solution?

With the purpose of searching for responses to the above questions, I will refer to ‘the theoretical and the empirical’ understanding of the role of the detail developed by Italian architect Marco Frascari in his remarkable essay *The Tell-the-Tale Detail* (1984). Frascari’s identification of a duality between a ‘physical production’ and a ‘mental production’ of the detail, that is, the detail seen as ‘the place of the meeting point of the mental construing and of the actual construction’³, engages interestedly with my consideration of *modern* detailing as two parts or aspects intertwined permanently. This can be illustrated through confronting the aspirations of the *International Style* to create a ‘new single style’ with the dissimilar –and sometimes opposing- ‘exercise of detailing’ of *modern* architects.

Consequently, having limited my research to the Modern Movement, I will in turn define a particular historical frame within this period by considering the experiences of two architects: Auguste Perret (1874-1954) and Alvar Aalto (1898-1976). Perret’s ‘no vocabulary detailing’ and Aalto’s abandonment of the use of ‘modern details’, on the one hand; and the completion of two dissimilar buildings (both equally *modern* though) within their work –Perret’s church of Notre-Dame

² Marx quoted in Marshall Berman, *All that is solid melts into air: the experience of modernity*. (London: Verso, 1983), p.15 and p.22, respectively.

³ Marco Frascari, ‘The Tell-the-Tale Detail’ (1984), in Kate Nesbitt (ed.), *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965-1995*. (New York: Princeton Architectural Press, 1996), p.503.

du Raincy (France, 1922-24) and Aalto's Paimio Tuberculosis Sanatorium (Finland, 1929-33) -on the other, will be regarded as revealing confirmations of a detailing that can be called *modern* in the overall meaning of the word.

This chronological frame will then consider evidences of 'mental' and 'physical' productions of details within the practices of *modern* architects when making use of features -which being current aspects (*present*), opposing to the old (*new*) and pointing 'the way toward the future' (*transient*)- speak of their unmistakable *modern* quality.⁴ Cladding and standardisation, therefore, will be understood as two of the main tools employed by *modern* architects in order to materialise a *modern* image (for example white surfaces) through a *modern* construction (for example the use of mass-produced parts).

My intention is not to elaborate a genealogy or chronology of the *modern detail*; rather it is to underline that a reflection on detailing should draw attention to the fragmentary and contradictory nature of the discourses. Indeed, the central inquiry of this report immediately becomes contradictory as it faces the radical statement 'there are no details.' This declaration was assessed by August Perret, Le Corbusier, and Sigfried Giedion when reporting on the role of details in *modern* architecture.⁵ If both productions and discussions of details move from presence to absence, from meaningfulness to meaningless; are these dichotomies equally connected to the production of a *modern* detail in its mental and physical construction? How do the ideas of Frascari operate when trying to report on the modern detailing?

Furthermore, if the idea of modernity is conceived in numerous fragments⁶, I will assume that it is only possible to recognize the existence of a modern detail through the gathering of these different fragments: architects' stated intentions, buildings' constructional details and historians' critical discussions. Thus, my strategy will be less 'to single out an isolated detail', but rather to 'try to redefine [*modern*] detail as a whole' -to quote Ben van Berkel and Caroline Bos⁷, whose text opened this introduction.

We can therefore see that the first step is to learn from the definitions of a detail; so, first and foremost, what is a detail?

⁴ Here I am referring to the three basic levels of meaning of the word *modern* -*present*, *new* and *transient*- explained by Hilde Heynen, who in turn based them in Marshall Berman's. See 'Concepts of Modernity', in Hilde Heynen, *Architecture and Modernity: a critique*. (Cambridge, Mass.; London: The MIT Press, 1999), pp.8-14.

⁵ 'there are no details' is the powerful sentence that dominates Perret, Le Corbusier and Giedion's quotations. The complete quotations, as well as the references, will be given in the following sections when being referred to the discussion.

⁶ Marshall Berman, *All that is solid melts into air: the experience of modernity* p. 17.

⁷ Ben van Berkel and Caroline Bos, 'Storing the Detail', p. 72.

What is a detail?

'What is a detail if not itself a small, but complete form?'

Roger Scruton, 1979⁸

Details are ... the minimal unit of signification in the architectural production of meanings.

Marco Frascari, 1984⁹

Searching for definitions of the concept of detail -from its etymological origin (*de-taille*: Renaissance French word that means "to cut in pieces"¹⁰) to contemporary redefinitions- is to encounter various fragments and numerous tales. Despite this, details do offer unmistakable outlines:

the concept of detail, which we use today arises at a convergence point of many –each independently unequivocal and stable- definitions and traditions if studying it. In other words that which we regard as details is compiled of many elements –the detail is imbued with many different stories.¹¹

The beginning of some of these stories can be simply found in dictionaries. Although, dictionaries' definitions of the word detail certainly offer neutral approaches, they are contradictory and meaningless for architecture according to Marco Frascari. However, going through these explanations is very helpful for the purpose of this report.

Basic descriptions, without any kind of qualification; suggest secure ideas of what a (*modern*) architectural detail might be. In fact, it seems that these definitions have frequently been used as a starting point when trying to describe the role of the detail in architecture, a task that has undoubtedly kept architects and historians active in a virtually endless debate.¹² To begin from them, therefore is to trace the variations and deviations within these stories, until reaching the point when the term is exhausted and meanings become obsolete. These impartial definitions also offer opportunities to investigate the presence of details in other disciplines. Has architecture borrowed notions of detail from other disciplines in order to create its own?

That is, the unrelated notions of detail in the relation whole and part, detail seen as drawing, and detail as a piece of information, will lead us to discover the circumstances of a *modern* detail.

⁸ Roger Scruton, *The Aesthetics of Architecture*. (London: Methuen, 1979), p. 207.

⁹ Marco Frascari, 'The Tell-the-Tale Detail', p.500.

¹⁰ Omar Calabrese (*Neo-Baroque*, 1987) quoted in Steen Hammershøj Andersen, 'An Introduction to the Contemporary Concept of the Detail', *B Arkitekturtidsskrift - Architectural Magazine*, special issue: 'Details', n° 54, 2005, p.3.

¹¹ Steen Hammershøj Andersen, *Ibid.*, p.1.

¹² See for example the series of 'details of significant architecture by master architects' in *Architectural Record*, where architects such as Mies van der Rohe, Marcel Breuer, Philip Johnson and Walter Gropius introduce their own details. Interestingly, Johnson's include the always quoted proclamation attributed to Mies van der Rohe 'God lies in the details', April 1964, vol.135, p.137. (First of these series was published in Oct. 1963 and seventh –and last one- in Jan. 1966). See the answers given by architects –such as Tadao Ando, Toyo Ito, Rem Koolhaas, Alvaro Siza, among others- when asked what significance constructional detail have for them in their personal design work, in Christian Schittich, (ed.), 'Discussion: 16 statements on details by famous architects and engineers', *Detail*, special issue: 'The purpose of details'; vol. 40, n° 8, Dec. 2000, p. 1427-1438.

1 'a piece or part of a larger architectural whole'

Despite the ambiguities of the definition of detail as 'a piece or part of a larger architectural whole',¹³ this general explanation has the advantage of outlining the classical and earliest understanding (for example architectural treatises recommended how to balance the conflict between parts and whole), and general conformity (or disagreement) of the position of details in architecture. It is clear that the dependence between part and whole corresponds to a production of a certain meaning and a 'way of achieving harmony'.¹⁴ Thus, separate and significant parts are being harmonized in order to transfer its sense to the whole.

Roger Scruton and Marco Frascari are among the contemporary authors that have investigated this association of whole to part in the production of meaningful architecture. Both coincide in mentioning Leon Battista Alberti, who, when considering the beauty of a building, has highlighted an awareness and understanding of the parts. For Alberti beauty is 'the harmony [‘concinny’] of parts [all the details], fitted together with just reflection, in such a way that nothing could be added, diminished or altered but for the worse'.¹⁵

Furthermore, Scruton's explorations of the 'sense of the whole' and the 'sense of its parts' result in distinguishing that the same 'semantic dependences observable in language'¹⁶ are also present in architecture. Whole and parts then, have provoked him to elaborate an interesting analogy:

It is true that, in language, the sentence is the unit of meaning –it is through the complete sentence that something is *said*. But it is also true that the meaning of a sentence is determined by the meaning of the words which compose it. It is because sentences have meaning that words do; and it is because words have meaning that significant sentences can be composed from them. It seems then that we can trace linguistic meaning down to 'significant detail'. And the process is finite: there is a point beyond which meaning expires (...). In architecture, too, the pursuit of meaning comes to an end.¹⁷

Thus, the 'minimal units of meaning' –words in language and joints in architecture- are the indivisible details that have a decisive importance in the way texts are understood and buildings perceived. Both disciplines have in common 'the creation of aesthetic significance', therefore they meet again 'on the discovery of 'correct' and 'appropriate' details'. Scruton writes: 'we cannot assimilate this idea of correctness to a semantic rule. The ability of the poet is the ability to choose between words *despite* their identical semantic properties (...)'.¹⁸ Similarly, the ability of the architect is the capacity to

¹³ Cyril M. Harris, *Dictionary of Architecture & Construction*. (New York - London: McGraw-Hill, 2000 - 3rd edition). Frascari also uses -as a starting point for a discussion whole/part- a similar definition: 'Dictionaries define "detail" as the small part in relation to a larger whole. In architecture this definition is contradictory, if not meaningless', 'The Tell-the-Tale Detail', p.501.

¹⁴ See the argument about 'wholes and parts' developed by Steven Groák in *The Idea of Building. Thought an action in the design and production of buildings*. (London: E&P Spon, 1992), p.3 (Preliminaries: 'The whole is greater than the sum of its parts').

¹⁵ Roger Scruton, *The Aesthetics of Architecture*, p. 209. Marco Frascari is quoting the same paragraph; though, his quotation is different due to the different translation of Alberti's *De Re Aedificatoria* (1485). Words in brackets belong to Frascari's.

¹⁶ *Ibid.*, p. 172.

¹⁷ *Ibid.*, p. 207.

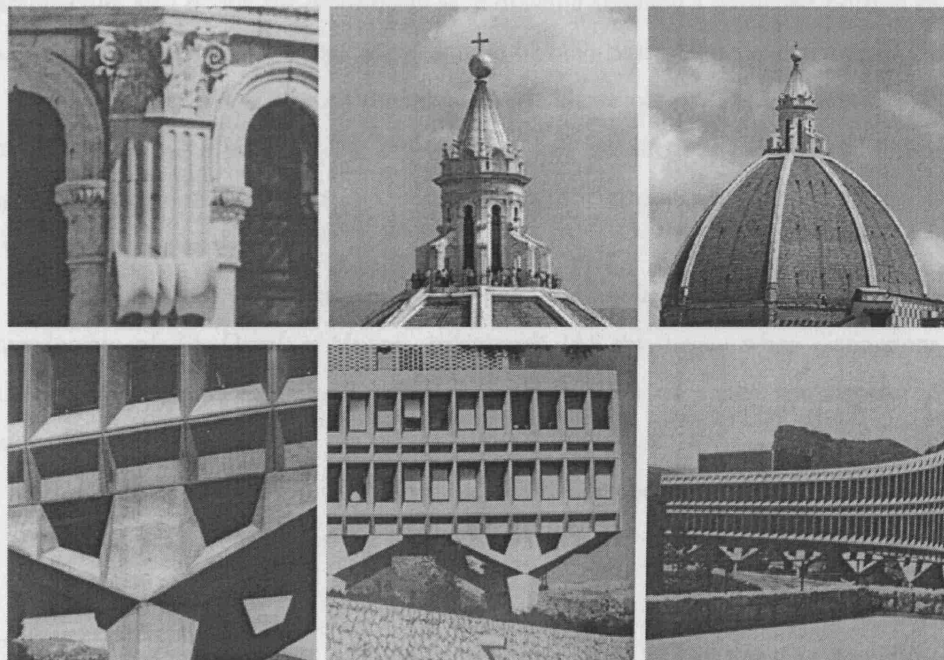
¹⁸ *Ibid.*, p. 176.

decide on solutions that, offering equal technical advantages, suggest a consequent design, coherent to the spatial concepts that they have originated from.

Scruton's analogies, however, imply that the 'parts' have a secure and established state –there is neither ambiguity nor contradiction addressed in them. But what happens when the 'parts' enter a play of relativity in their position to the whole? In other words, what is the position of details when the 'parts' modify their nature due changes in style and technology?

'The word "details" means different things to different architects' wrote Philip Johnson in 1964 in an attempt to define *Architectural Details*. Johnson used two different examples to question the issue of the parts: a Brunelleschi's pilaster capital and the twist of a Breuer's concrete column. Indeed, he is pointing out the change in meaning embodied in these pieces, and the dissimilar nature of details as the result of a specific historical moment. 'One is a decoration to cause richness, shadow and delight, helpful to the architecture. The other is merely the shape of a necessary structural piece.'¹⁹ Both are obviously 'parts of a larger whole', but these varieties in type and difference in order, problematically destabilize this general definition, since the correlation to the whole has evolved and the role of detail as articulation has become obsolete.

A column is a detail as well as it is a larger whole, and a whole classical round temple is sometimes a detail, when it is a lantern on the top of a dome. (...) The problem of scale and dimensioning those classifications and the relationship between aedicule and edifices makes the dictionary definition useless in architecture. However, it is possible to observe that any architectural element defined as detail is always a joint.²⁰



(1) Top, [Filippo] Brunelleschi (1377-1446). Dome of the Basilica Santa Maria del Fiore, Florence (1420-36): details of pilaster capital, lantern on top of the dome and dome. Bottom, [Marcel] Breuer (1902-1981). IBM Research Center, France (1960-61, addition 1968-69): detail of concrete column, portion of façade and view of the wing from the terrace.

¹⁹ Philip Johnson, 'Architectural details', *Architectural Record*, April 1964, vol.135, p.137.

²⁰ Marco Frascari, 'The Tell-the-Tale Detail', p.501.

Taking advantage of Johnson's examples I would like to draw attention to issues of ornament and technical assembly indirectly reported in his definition, which will be explored *–in detail–* in the following sections. The evidence suggests that the elements that constructing the levels of the scales from the whole to the parts, are different in quality and quantity. Therefore, it is necessary to discuss in more depth what the *pre-modern* vision of the concept of detail was, in contrast to the idea of detail understood by modern architects. The image of the naked twist of Breuer's concrete column, suggests that the detail is being replaced by a merely structural connection, as Johnson assumed. Nevertheless, the architect is producing an 'appropriate' detail as a 'mental' and 'physical' construction. 'The thinking about form and detail', said Breuer, 'is all part of the same process: the design. I am as much interested in the smallest detail as in the whole structure'.²¹

Why then, is there a general perception that in modern architecture joints are not 'the minimal unit of signification', but merely structural connections? Why are these joints regarded separately from the whole as isolated and meaningless constructional solutions?

As experience and study of buildings has gathered over the centuries, reinforced by the division of labour, our knowledge of the parts and our knowledge of the wholes have diverged -to the point where they appear sometimes to refer to different worlds.²²

2 'a drawing showing a particular portion of an element'

Dictionaries of architecture also define the word detail as 'a drawing showing a particular portion of an element of a design depicting specifics about how it should be built, assembled, or constructed'²³.

This second definition engages directly with the above quotation by Steven Groák, since the division of labour –as a result of the capitalist building production- has not only been generated through the separation of design and construction, but also through the consequent development of working and detail drawings.

'Detailing was born when craftsmanship died', has implied Edward R. Ford in the first volume's introduction of *The Details of Modern Architecture*²⁴. 'All this began when distinctions were drawn between practical and conceptual action, between heights of ability and depths of reflection', has added Vittorio Gregotti.²⁵

Indeed, a complete history of architectural details can be traced from 'a period in which architects did not have to prepare working drawings' because the execution of details 'was a

²¹ Marcel Breuer (apropos Breuer House I) quoted in Cranston Jones, *Marcel Breuer: Buildings and Projects 1921-1961*. (London: Thames & Hudson, 1962), p. 26. (RMIT University Website: http://users.tce.rmit.edu.au/E03159/ModMelb/mm2/lect/50_60_70/html/mb/mb.html (accessed 9 August 2006).

²² Steven Groák, *The Idea of Building*, p.3.

²³ Alan Jay Christensen, *Dictionary of landscape architecture and construction*. (New York: McGraw-Hill, 2005). It is worth to mention that two other dictionaries –*The Penguin Dictionary of Civil Engineering* and *A Dictionary of Environmental & Civil Engineering*- only define 'detail' as 'detail drawing'.

²⁴ Edward R. Ford, *The Details of Modern Architecture*. (London: The MIT Press, 1990), p.7.

²⁵ Vittorio Gregotti, *Inside Architecture*, (Cambridge, Mass.: The MIT Press, 1996), p.49.

matter of common knowledge.²⁶ To a current situation in which the detailing 'is left to another office specializing in the preparation of construction drawings,²⁷ since the building industry had ceased to be a single organism capable of overall coordination.²⁸

Should detailing, therefore, be understood as a *modern* activity, and details as specific to *modern* architecture?

Certainly, the moment when details started to be studied and resolved on the drawing boards marks the end of one architectural tradition and the beginning of a new one. It is the inversion of the subordination of builder to architect, 'the elimination of the builder's traditional role exacerbated the difficulty of assembly and of anticipating the life of the construction'.²⁹ As a consequence, the production of detailed instructions through plans was necessary in order to achieve effective control over the craft of a building. Due to the urgency 'for controlling the work of variable crews of vocationless workers,' and to compensate this lack of confidence in craftsmanship, the work of skilled draftsmen began.³⁰

From this point of view the detail was no longer part of the building. The detail was no longer seen as a joint; instead, it was seen as a production drawing.³¹

Rarely are these details available as original drawings done by the hand of the architect. Drawing details have become architectural products in themselves: extensively redrawn, reproduced and published in books and magazines, 'no longer part of the building,' they have simply turned into quotations out of context.

Publications, such as historical surveys, technical catalogues and periodical magazines in particular, are directly responsible for characterizing details by giving them a qualification. That is, a detail can be 'selected' (when presenting outstanding examples of historical buildings or brilliant technical solutions³²); 'standard' or 'typical' (when teaching designers and students how to deal with specific issues of construction³³); or even 'modern' (when presenting the fashionable and *up-to-date* details for both interior and exterior finishes³⁴).

It seems that these publications are an effort to balance the particular attention dedicated in design practice and architectural criticism to spatiality - 'the least material aspect of

²⁶ Marco Frascari, 'The Tell-the-Tale Detail', p.502.

²⁷ See Koichi Yasuda, 'Fascinating Details, Concealed details', *The Japan Architect*, n° 23, autumn 1996-3, p.8.

²⁸ See Steven Groák, *The Idea of Building*, p.3.

²⁹ See Mohsen Mostafavi and David Leatherbarrow, *On weathering: the life of buildings in time*. (Cambridge, Mass; London: The MIT Press, 1993), p.21, p. 23.

³⁰ On the development of the working drawings in nineteenth-century, see Tilo Amhoff, *Adapting the Architect's Products to the Capitalist Building Production. The development of the legal obligations, building specification and working drawings in the first half of the nineteenth-century in England*. (Unpublished MSc. Architectural History Report, 2004), pp. 30-37.

³¹ Marco Frascari, 'The Tell-the-Tale Detail', p.503.

³² See for example the series of 'details of significant architecture by master architects' in *Architectural Record*, (first series published in Oct. 1963 and seventh -and last one- in Jan. 1966); and the series 'Selected Detail' in *Progressive Architecture*, (first publication of the series May 1946, then published sporadically from Dec. 1974 to Aug. 1995).

³³ See for example, *The Architects' working details*, fifteen volumes collection of 'standard details' published from 1953 to 1971 (see bibliography); and also the compilation by Cecil C. Handisyde, *Everyday Details*. (London: Architectural Press, 1976).

³⁴ See for example, the series 'Modern details' in *Architectural Review*, issues from Nov.1925 to Nov.1926; and the 'Series of comparative details' published by American magazine *Pencil Points* from Oct. 1932 to Oct. 1935.

architecture'. As a result, though, this reversing of the secondary position given to details generally concludes in an ambiguous duality. On the one hand, there is a (re)production of an architectural detail that has been created as an exclusive and unique solution for the completion and expression of a building; and on the other, a hypothetical detail has been designed for guaranteeing a supposed technical requirement. The latter can be seen as an explanation of the way a building has materialized its spatial concepts, and therefore has established its identity in a concrete sense. The former, as an account of detail's ability 'to specify size, scale, and shape prior to building' making possible the 'prediction of future performance'.³⁵

Through drawings, therefore, both kind of details have firstly been deconstructed and decoded from a three-dimensional -concrete and imaginary- entity through sections (here the connection with the etymological origin of the word detail); and secondly they have been put in the same category. That is, details of an existing building (physical wholes), and details originated from an indistinct collaboration between tradition, theory and technology (fictional parts), show the capacity of the detail (drawing) to erase the origins of what has a 'phenomenological' existence, and what only exists, isolated, in a piece of paper or in a page of a book.³⁶

The indistinctness seen between detail drawings can also be extended to their concrete reality. If a building has an existence as material, image and text; considering the two-fold existence of details as material and drawing; which of those three details' realities is more genuine: the drawing detail that anticipates the solution of a joint in site; the physical detail (the built joint) – whose execution is uncertain and which that sometimes we neither see nor grasp; or the drawing of that detail -redrawn in order to show and explain what has been hidden from view? Which one is telling the truth? Are all three lending their identity at once to create the notion of 'detail'?

Consider now the detail represented as a text. How authoritative are both a building specification and a critical architectural discourse, without the presence of a detail (drawing)?

American architect Edward R. Ford's two volumes book *The Details of Modern Architecture*³⁷ attempts to put the detail (drawing) back as 'part of the building'; that is, to restore the relationship between methods of construction, languages of architecture and architect's reports. The interest of Ford's books lies in the huge effort put into the redrawing of details in axonometric projections, exploiting the capacity of this drawing technique to make direct visual comparison

³⁵ For a complete description of drawing details see Joseph A. Wilkes and Robert T. Packard (eds), *Encyclopaedia of architecture: design, engineering & construction. Vol.2, Concrete-lightweight aggregates to Hunt, Richard M.* (New York; Chichester: Wiley, 1988), pp. 237-240.

³⁶ A third category of detail (drawing) could have been included: details from an architectural project never built. However, I did not include them because usually they do not get the point of an exhaustive detailing (they could be named, following my analysis, 'fictional wholes'). Besides, there is a new issue related to drawing and detailing in architecture; the arrival of the computer (and the 'CAD drawing') which has changed drastically the world of architecture. 'Details can now be created, digitally stored, retrieved, and used over and over again, with alterations made to fit any new condition'. See Osamu A Wakita, and Richard M. Linde, *The professional practice of architectural detailing.* (New York; Chichester: Wiley, 3rd ed., 1999), p. vi.

³⁷ In 1996, Ford published a second volume: *The Details of Modern Architecture: Volume 2 1928 to 1988.* (Cambridge, Mass.; London: The MIT Press, 1996). The book reviews that followed both publications are interesting because of having received equally supportive and critical comments. See for example the book reviews written by: Dan Cruickshank, 'The Details of Modern Architecture', *AA files*, 1991 spring, n° 21, pp. 109-111; Benedetto Di Cristina, 'The Details of Modern Architecture, volume 2: 1928 to 1988', *Parametro*, 1997 Nov.-Dec., n° 221, pp.2-7; Neil Jackson, 'The Details of Modern Architecture', *Newsletter. Society of Architectural Historians of Great Britain*, 1991 winter, n° 45, and 'The Details of Modern Architecture, Volume 2: 1928 to 1988', *Newsletter. Society of Architectural Historians of Great Britain*, 1998 spring, n° 63, pp.15-16; Tom F. Peters, 'Modem Dissemblances', *Progressive Architecture*, 1992 Jan., vol. 73, n° 1, pp. 102-120; Michael Stacey, 'Layer and Monolith. Detailing Modernism', *Architects' Journal*, vol. 193, n° 25, 1991 June 19, pp. 57-60; Paul Vermeulen, 'The Details of Modern Architecture', *Archis*, 1993 March, n° 3, pp. 89-90.

between different buildings. Ford pays particular attention to showing 'how details can strengthen an overall architectural concept',³⁸ the composition of the facade and the interior design focused on structure and construction. However, Ford gives unclear criteria in selecting 'canonical' buildings, has a lack of 'objective technical criticism', and has an absence of reporting on the possibilities of new materials in generating new spaces, which leads to the conclusion that 'he is not presenting the possibilities of Modernism'.³⁹

In short, after the publications of *The Details of Modern Architecture* it was clearly stated that, to put the situation of the *modern* detail into some kind of open discussion, is neither an easy nor a straightforward task. I will quote Ford's books in the following sections, considering them as fragments that propose answers for the enquiries previously stated.



(2) Detail drawings, three examples. Left: Typical detail drawing from German magazine *DETAIL*; Herzog & de Meuron, Extension Tate Gallery of Modern Art, London: section through cathedral window. Right-top: Hypothetical detail drawing of brick sill. Right-bottom: Axonometric projection from Edward R. Ford's *The Details of Modern Architecture*; Mies van der Rohe, Barcelona Pavillion: wall detail.

³⁸ Paul Vermeulen, 'The Details of Modern Architecture', p. 90.

³⁹ Michael Stacey, 'Layer and Monolith. Detailing Modernism', p.60.

3 'a single piece of information or fact about something'

Intentionally, the third definition of detail comes from an English Language Dictionary. It is probably the most general definition presented in this section - 'a single piece of information or fact about something'⁴⁰, and will open up the possibility analyse of the 'individually perceived details' by means of tracing the operation of details in Photography and Fashion.

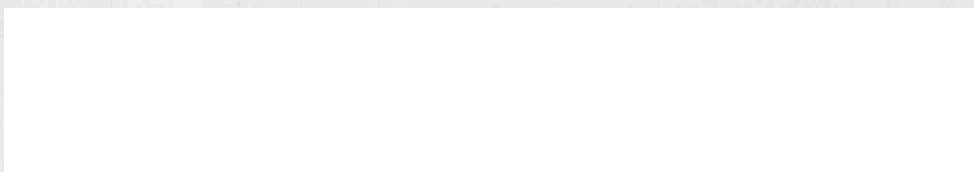
The attraction of this definition is the sudden turn in meaning of the word. If the additional and complementary definition is 'the small features of something that you only notice when you look carefully'; then, the following one is contradictory: 'an unimportant part of something'. Surprisingly, it is exactly the same play of words once used by August Perret: 'Detail is certainly not just a matter of detail'.⁴¹

What are these 'small features' if not 'sensory stimuli' supplying signs? 'Such signs, that is, the details, acquire a meaning by virtue of which they become a vehicle of knowledge through a long process of association and comparison and through a set of geometric relationship'.⁴²

Words in language and joints in architecture have a common nature when operating in the production of meaning -as Roger Scruton demonstrated. In making an analogy to details in Photography, is it possible to establish direct parallels?

'Photography evades us', wrote Roland Barthes in *Camera Lucida* (1980);⁴³ so do architectural details. Writing on Photography, Barthes identifies a photography that interested him: a 'partial object', a 'sensitive *point*', a 'detail' that he calls *punctum*. At this 'point', we can find a remarkable similarity to with the architectural detail. 'Those details', according to Barthes, 'constitute the very raw material' of knowledge that informs him about which he does not know.⁴⁴

The photographer teaches me how the Russians dress: I note a boy's big cloth cap, another's necktie, an old woman's scarf around her head, a youth's haircut...⁴⁵



(3) Details of William Klein's *Mayday* (Moscow, 1959).

In the same way, architectural details give important information regarding basic functions, construction processes, structural criteria, costs, and more significantly -following the classical meaning- the architect's ideas for the expression of the whole. This coincides with Vittorio Gregotti's

⁴⁰ *Cambridge Advanced Learner's Dictionary*. (Cambridge Dictionaries Online: <http://dictionary.cambridge.org/default.asp>. Accessed 1 August 2006).

⁴¹ 'Il n'y a pas de détail dans la construction', August Perret quoted in Vittorio Gregotti, 'The Exercise of Detailing', in Kate Nesbitt (ed.), *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965-1995*. (New York: Princeton Architectural Press, 1996), p. 496.

⁴² R. Torretti (*Philosophy of Geometry*, 1978) quoted in Marco Frascari, 'The Tell-the-Tale Detail', p.505.

⁴³ Roland Barthes, *Camera Lucida: reflections on photography* (1980), trans. R. Howard. (London: Vintage, 2000), p. 4.

⁴⁴ *Ibid.*, p.28.

⁴⁵ *Ibid.*, p.29.

understanding of the architectural detail as playing a significant role in both defining and grounding architecture in time and place and in relation to culture.⁴⁶

Likewise, a detail can be revealing of the interaction of particular constructional technology and concepts of architecture. Taking this into account, consider, for example, the information given by the detail of the glazing bar in Melnikov's USSR Pavilion for the Paris Exhibition (1925, demolished). Edward R. Ford (1990) detects that the bars 'despite their apparent thinness, are wood, and not steel as one might suspect', thus, he states that 'there is little in the technology of this building that was not available to Palladio or Wren'.⁴⁷ Ford's objective is, in fact, to declare that the 'typical modern detail' is the steel window frame and not one made of wood.⁴⁸ Hitchcock and Johnson, on the other hand, observed in 1932 that '[s]ome of the finest examples of fenestration in modern architecture are executed in wood'.⁴⁹ Were Melnikov's details truly *modern*? Was the USSR Pavilion a *modern* building? Is the information that architectural details can give, precise and satisfactory enough to define a building as *modern*?

It is interesting to confirm that (unimportant) details in Photography and architecture can be the starting point for stories and discussions, as are details of a garment. To make a comparison between details in architecture and details in fashion is to begin with the recognition that both disciplines operate in a 'three-part system' constituted by 'material products' (building/garment), images (architectural drawings/photography) and words (critical architectural discourse/fashion commentary).⁵⁰

Having identified this tripartite system in his *The Fashion System* (1967), Roland Barthes's analysis of garment's details is an inspiration for studying such matters in relation to architecture. 'The *detail*', writes Barthes, 'involves two constant and complementary themes: tenuousness and creativity'⁵¹. While the latter could be considered a quality inherent in every man-produced object, I would like to focus on the former, the 'nothing', which unexpectedly connects with the disposition of (*modern*) architectural details. That is, the way something which is essentially physical, imparts its presence intangibly:

[fashion's] matrices and chains are precisely responsible for radiating meaning through inert materials; (...) it is precisely this 'nothing' which is the radiant nucleus; its importance is energetic rather than extensive, there is a propagation from the detail to the ensemble, *nothing* can signify *everything*.⁵²

⁴⁶ Vittorio Gregotti, *Inside Architecture*. (Cambridge, Mass.: The MIT Press, 1996), p.56.

⁴⁷ Edward R. Ford, *The Details of Modern Architecture*, pp.283-285.

⁴⁸ *Ibid.*, pp.240-241.

⁴⁹ Henry-Russell Hitchcock and Philip Johnson, *The International Style*. (New York: Norton, 1966), p.47.

⁵⁰ See Adrian Forty, *Words and Buildings A Vocabulary of Modern Architecture*. (London: Thames & Hudson, 2000), pp. 13-14.

⁵¹ Roland Barthes, *The Fashion System* (1967), trans. M. Ward and R. Howard. (Berkeley; London: University of California Press, 1990), p.242.

⁵² *Ibid.*, p.243.

The power of 'nothing' lays precisely in the fact that from a 'tiny being' an 'entire outfit' is created and permeated with meaning: 'a little thing that changes everything, those little nothings that can do everything'.⁵³

The authority of details therefore, can be summarised as detail's capacity to express processes of signification through elements that make a creation unique and attractive, as well as durable and inexpensive; being as architecture and fashion are evaluated on them. Also, both details might embody the information of its construction -if it is a building, or its sewing -if it is a garment. That is, the traces of craftsmanship might be perceptible, although mechanised pieces could have participated in the materialisation of the final product. For instance, a particular detail can be the result of the anticipation of problems in cutting a piece of timber or fabric.

Overall, we have seen that the three concepts that would describe detail, are completely unrelated, occurring in such different levels that an enquiry into which three accurately defines an architectural detail, is still unanswered.

⁵³ Roland Barthes, *The Fashion System*, p. 242 (italics in the original text).

A detail is always a connection

Amazingly, not all the dictionaries consulted for the preparation of the previous chapter included a definition of the word ‘detail’⁵⁴. Apparently, here the term is being considered either inoperative or meaningless. This is exactly what the *Encyclopaedia of Architectural Technology* (2002) has demonstrated: here, the word detail does not appear, instead, the concept of ‘connection’ embraces the whole concept of detailing.

Moreover, the concept of ‘joint’ (the ‘traditional terminology’) is clearly distinguished from ‘a connection that allows some degree of movements between elements’, which ‘is now more commonly used to describe timber connections or the mortar layers between adjacent layers of brickwork’. ‘Connection’ therefore, seems to be the correct term, not only from a structural and technical point of view, but also, because it does not exclude the ‘varied interfaces within a building where the design team has an opportunity to *make its mark*’.⁵⁵

In short, to find these expressions informed by technology in ‘professional practice books’ is to encounter convinced approaches to the subject matter: detailing is seen confidently as something ‘absolutely necessary for architects if they are to have complete control over *every* aspect of *any* structure.’⁵⁶ To capture this assertiveness is the objective of this section, after facing the unrelated and escapist character of the previous section. Therefore, it will be intentionally assumed that there are three key issues when details are openly exposed, compared and criticized. Firstly, when details are identified as the frequent source of building failure; where, for instance, matters related to building maintenance and restoration are directly involved. Secondly, when details show changes in the methods of building; improvements in the building industry and advances in techniques promote both the development and dissemination of new resolutions in joints and connections. Thirdly, when details are specially developed when new buildings are facing existing fabric; that is, how refurbishments, extensions or new designs, embodying *current* spatial and material concepts, recognize or neglect an old structure. However, all three are part of the same exercise of detailing, interconnected and overlapped as they are, they will be discussed separately.

Moreover, through these three classifications it is possible to cover the history of *modern* details from the beginning of modern architecture to the present.⁵⁷ By looking at the Modern Movement specifically, it will investigate the life of details (weakness) and in which way the ‘new’ (innovation), and the ‘aged’ (intervention) delineate *modern* detail’s character.

⁵⁴ For example, the *Oxford Dictionary of Architecture*. (Oxford: Oxford University Press, 1999).

⁵⁵ Jacqueline Glass, *Encyclopaedia of architectural technology*. (Chichester: Wiley-Academy, 2002), p. 73.

⁵⁶ See for example, Osamu A Wakita, and Richard M. Linde, *The professional practice of architectural detailing*. (New York; Chichester: Wiley, 3rd ed., 1999), p. 14. (Emphasis by the author).

⁵⁷ Today, conversions and upgrades account for nearly forty per cent of construction in Central Europe. See Christian Schittich, ‘Creative Conversions’, in C. Schittich (ed.) *Building in existing fabric: refurbishment, extensions, new design*. (München: Edition Detail; Basel: Birkhäuser, 2003), p. 9.

Building failure: Weakness

No building stands forever, eventually every one falls under the influence of the elements, and this end is known from the beginning.⁵⁸

The life of details has to face this drastic reality. On the contrary, details seem to (literally) carry all the weight of the responsibility for the duration of the outer construction; so, that when building failures are detected, the details are identified as the guilty party.

‘A masterpiece of detail, is it the work of who conceives or he who executes?’ was Le Corbusier’s reflex reaction on being told of a defect caused by bad craftsmanship.⁵⁹ In a moment in time when the building industry is marked by the division of labour, this inquiry does not have a decisive answer. If generally speaking modern architecture has so often been associated with failures and deterioration caused particularly by weathering; how is, in that, this *modern* detail? If it is a detail that has physically created new spaces but has been incapable of guaranteeing durability, what were the ‘ideologies’ behind that production of *modern* details?

The image of the flat, white surface (‘whiteness’⁶⁰) of early modern buildings expresses the desire of modern architects to freeze the *newness* of their works in time by means of *contrast* with the traditional, therefore, overlooking the potential damage and decay of the fabric. But, are stains, cracks, surface faults and erosions not expectable? Are they not also predictable?

Indeed, there is on the one hand an assumption that scientific information about building materials and components is available: continually informing about physical behaviours of whole buildings. On the other hand, there is a supposition that elements created to resist deterioration –sills, cornices, copings, eaves, for example- are always present to protect them. Both in turn are supposed to be summarized in compendiums of details (drawings), suggesting solutions to building and design problems. However, these successive improvements in knowledge and experience, technical and aesthetic, are not directly applicable. Paradoxically, architecture has largely been built upon a tradition of the exchange of information of other architects’ experiences; but at the same time there has been an incessant process of ‘trial and error’ when facing problems of detailing. ‘There is more unnecessary duplication of effort in architecture than in any other profession’, implies the introduction of *Architects’ working details* (1953)⁶¹. Architects know that jointing is extremely complex and ‘a detail performing satisfactory in one building may fail in another for very subtle reasons’.⁶² In this context we also find that the information given by science has been inadequate for the problems

⁵⁸ M. Mostafavi and D. Leatherbarrow, *On weathering: the life of buildings in time*, p. 5.

⁵⁹ Le Corbusier (apropos La Tourette) quoted in Cyrille Simonnet: ‘Architectural Detail’, *Techniques & Architecture*, n° 386, October 1989, p. 90.

⁶⁰ On ‘whiteness’ see for example Mark Wigley, ‘White Out: Fashioning the Modern’, Fausch, Singley, El-Khoury, Efrat (eds), *Architecture: In Fashion*. (New York: Princeton Architectural Press, 1994), pp. 148-268; and *White Walls, Designer Dresses: The Fashioning of Modern Architecture*. (Cambridge, Mass.: The MIT Press, 1995).

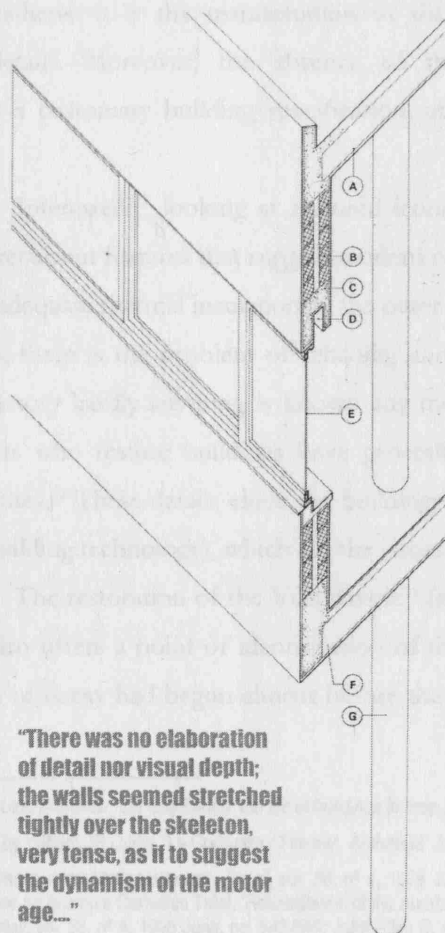
⁶¹ Colin Boyne (ed.), *Architects’ working details 1*. (London: The Architectural Press, 1953), p. 5.

⁶² Marco Frascari, ‘The Tell-the-Tale Detail’, p.503.

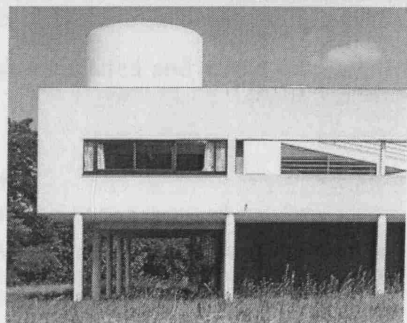
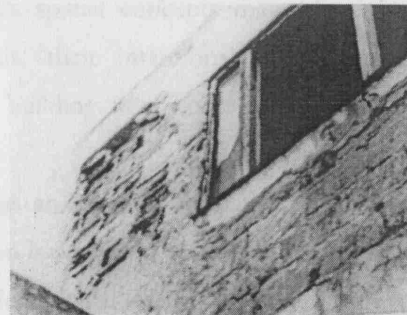
dealt within architects' work; 'too indigestible for everyday use, too general, too simple and too partial'.⁶³

Modern architects have either adjusted or ignored this knowledge when envisaging and producing new buildings. Not only have they removed the elements formed to resist erosion, the 'weathering shapes' always present in traditional design, but also have introduced new methods of construction, brought together by the incorporation of semi-finished products and pre-fabricated parts. The consequence is the materialisation of unpredictable details. Indeed, 'unpredictability was a result not only of a lack of experience in new methods of assembly, but also of the use of both new and traditional materials in unprecedented and varying proportions'.⁶⁴

[Architects] abandoned traditional building construction so that simple problems that had been solved for generations reappeared with the advent of modern construction. This has led not only to structural failures but aesthetic failures.⁶⁵



"There was no elaboration of detail nor visual depth; the walls seemed stretched tightly over the skeleton, very tense, as if to suggest the dynamism of the motor age..."



(4) Le Corbusier, Villa Savoie. Walter McQuade (1962) quoted in Kevin D. Murphy (2002), p. 81. Axonometric, detail section, south wall at second floor. Detail of masonry deterioration (before restoration). Under restoration and finally as a museum.

⁶³ On the role of science in the production of buildings see Steven Groák, *The Idea of Building*, p. 4.

⁶⁴ Mostafavi and Leatherbarrow, *On weathering: the life of buildings in time*, p. 17.

⁶⁵ *Chartered Surveyor*, Building Defects Supplement, April 1981, quoted in Katherine Shonfield, *Walls have feelings: Architecture, Film and the City*. (London: Routledge, 2000), p. 44.

Flatness and whiteness -that is, the suppression of formal elements and the covering of the outer skin, had an effect on the way details were understood and developed. It was first a shaped object connecting different materials, which became an attached layer of a chemical product. For instance, a waterproof layer of sealant replaces the weathering shapes, and a thin surface material (for instance a layer of white cladding) has become a substitution for the strength of a thick wall.⁶⁶

It is probably the production of an abstract and uniform joint-less skin that had led Le Corbusier to affirm that “there are no details” in a fully resolved work of architecture.⁶⁷ Were those details to be understood as a technical solution rather than a matter to be solved by architects? Would there be a standard method of assembly or fabrication not significant enough to warrant a detail? When using new jointing solutions, would they not also identify an obsolete description in the classical position of the detail in the relationship of the whole to the part?

This ‘absence’ of details is actually directly linked to pursue an uncompromised architectural aesthetic: it is the manifestation of the architect’s spatial concepts materialised by ‘appropriate’ details. Moreover, the absence of these details, their intentional removal and replacement by a customary building specification, affects the building as a whole materially and visually.

Interestingly, looking at restored iconic buildings and houses from the 1920s and 1930s, we find recurrent features that suggest modern construction is unable to withstand weathering. For example inadequate thermal insulation of the outer skin and leaking flat roofs. However, in terms of construction, there is the problem of retaining and restoring a building ‘whose technology and technological history hardly anything is known any more’.⁶⁸ Facing the strangeness of these *modern* details, architects who restore buildings have generally identified these joints and connections as bewildering entities.⁶⁹ These details elude the buildings’ historical and material identity (the traces of the history of building technology), which are the issues concerned with its preservation.⁷⁰

The restoration of the Villa Savoie⁷¹ (a representation of the ‘fully formed [modern] movement’⁷²) also offers a point of identification of the position of the *modern* detail. Although the house’s process of decay had begun almost before the house was completed and it had only briefly

⁶⁶ M. Mostafavi and D. Leatherbarrow, *On weathering: the life of buildings in time*, p. 36 and p. 64.

⁶⁷ Le Corbusier quoted by William JR Curtis, ‘Le Corbusier / Firminy’, *Architects’ Journal*, 13 April 2006, p. 31 (no source given).

⁶⁸ Susanne Funk, ‘Bauhaus rehabilitation scheme’, *Detail*, vol. 38, n° 4, 1998 June, p. 542. Further information about the restoration of Bauhaus Dessau (1925-26), see for example Cornelius Tafel, ‘Rehabilitation of the Auerbach House (1924) and the Zuckerkandl House (1927-29) by Walter Gropius in Jena’, *Detail*, vol. 38, n° 4, 1998 June, pp. 543-546; John Allen B. and Deborah Stephens B., ‘The Bauhaus as you’ve never seen it’, *AIA Journal*, vol. 70, n° 8, 1981 July, pp. 54-59.

⁶⁹ ‘No doubt, the time will come when someone will produce the definitive paper on how to treat these houses, and its statements will become mandatory.’ On the restoration on British Modern houses, see for example John Winter, ‘Conserving the ‘white architecture’ of the 1930’s’, *Journal of Architectural Conservation*, n°1, March 2000, pp. 6-17.

⁷⁰ ‘Diverging conservatory attitudes and different renovation techniques define today’s practice of preserving buildings from the modern era. Questionable solutions of renovating a building in its original image often unknown in its entirety, come face to face with preserving a building and telling its story through visible traces.’ Berthold Burkhardt, ‘Preservation of Buildings from the Modern Era’, in Christian Schittich (ed.), *Building in existing fabric: refurbishment, extensions, new design*, p. 29.

⁷¹ On the history of the restoration of Le Corbusier’s Villa Savoie, see Kevin D. Murphy, ‘The Villa Savoye and the Modernist Historic Monument’, *The Journal of the Society of Architectural Historians*, vol. 61, n° 1, March 2002, pp. 68-89.

⁷² Bruno Zevi quoted in Kevin D. Murphy, ‘The Villa Savoye and the Modernist Historic Monument’, p. 83.

served as a residence, it is in its true function -as a demonstration of the architect's aesthetic- where the sense of its detailing can be found. In fact, it was Le Corbusier who recognized that the vocabulary of his 1920s houses were no longer applicable -'[he] never used white forms, slender *pilotis* and ribbon windows in [the same] way again'-⁷³ and accordingly, proposed the house as a museum for his own work and a 'site of memory' of early Modernism.⁷⁴ If the house's earlier 'idiom had become historical' relatively sooner, is this not proof that by its own definition that a *modern* detail, which has begun to exist as *new*, is in fact a *momentary* matter?

All in all, are modern building failures simply the result of an extreme simplification of a joint -an attempt to erase the detail- or an exaggerated trust in new building technologies?

New building technologies: Innovation

It is only through constant contact with newly evolving techniques, with the discovery of new materials, and with the new ways of putting things together, that the creative individual can learn to bring the design of objects into a living relationship with tradition and from that point to develop a new attitude towards design...

Walter Gropius, 1926 ⁷⁵

The technological advances made during the years of 'technical transformations' were significant and allowed architects of the 'classic Modern Era' to confidently face their social and aesthetic objectives.⁷⁶ The ideology of the modern architect continually sought to emulate the aesthetic and the successful technologies developed in aviation and naval engineering and particularly in the production methods of the car. Actually, technology during the so-called 'Machine Age' might be recognized in the term described as 'technology transfer'. That is, the instances where designers find inspiration from other industries and then use the production techniques in their own buildings.⁷⁷

Accordingly, modernist goals might be summarized as falling into two categories. Firstly, innovation was seen as the tool for reaching economy in modern buildings' technology⁷⁸; that is, the projection that entire buildings would be mass-produced efficiently 'like industrial products on

⁷³ William Curtis quoted in Kevin D. Murphy, 'The Villa Savoye and the Modernist Historic Monument', p. 75.

⁷⁴ See Kevin D. Murphy, 'The Villa Savoye and the Modernist Historic Monument', p. 69, p. 75 and p. 82.

⁷⁵ Walter Gropius, 'Bauhaus Dessau – Principles of Bauhaus Production' (1926), in Benton, Benton and Sharp (eds), *Form and Function. A source book for the History of Architecture and Design 1890-1939*. (London: Crosby Lockwood Staples, 1999), p. 148.

⁷⁶ 'We see...that the architecture we now describe as "new" is a legitimate part of an entire century of development', Sigfried Gideon (1928) quoted in Adrian Forty, *Words and Buildings A Vocabulary of Modern Architecture*, p.290. On an outline on technical transformations, see for example Sigfried Giedion, *Space, Time and Architecture. The growth of a new tradition* (1941). (Cambridge: 3rd ed. Harvard University Press, 1956), and Kenneth Frampton, 'Technical transformations: structural engineering 1775-1939', in *Modern architecture: a critical history*. (London: Thames and Hudson, 1980), pp. 29-40.

⁷⁷ On 'technology transfer', see Jacqueline Glass, *Encyclopaedia of architectural technology*, pp. 299-300. It is precisely in this operation of transference that Reyner Banham believed the International Style, which claimed to be a 'Machine Age' architecture, failed to acquire the fully advanced design and technology, employed, for instance in the manufacture of vehicles. Reyner Banham, *Theory and Design in the First Machine Age* (1960). (Oxford: Architectural Press, 1996), p. 329.

⁷⁸ The idea of a modern architecture including a 'general economic system' was one of the main declarations proclaimed in the first CIAM (*Congres Internationaux d'Architecture Moderne*). The called La Sarraz Declaration of 1929 also included the promotion of 'the most efficient methods of production': rationalization and standardization. See Kenneth Frampton, *Modern architecture: a critical history*, p.269.

an assembly line⁷⁹. Secondly, revolutionary building systems, particularly the progress on iron technology and reinforced concrete technique enabled a new architectural vocabulary to materialize.⁸⁰

In what way has technology specifically improved and modified details during the 'Machine Age'? Has this perfection in methods and techniques *permanently* defined the form and quality of a *modern* detail? If new building technologies naturally promoted the exclusion of details from modern construction, how did architects transfer these advantages for the solution to the problem of detailing?

From this standpoint, the dependence on technology should be put it into some kind of perspective. First of all, the prediction of mass produced buildings was not realized entirely,⁸¹ and, (as the evidence indicated in the previous section) modern construction through the incorporation of innovative and experimental building methods, did predispose with the occurrence of technical problems. All the buildings, though, can neither be put in the category of 'experimental architecture', nor identified failed solutions. Architects, in fact, seemed to have been conscious of their limitations. 'It is wrong to generalize that technology is greatly advanced, this may be the case in the manufacture of small goods, but in building, technology is too backward to execute what we want to do'.⁸²

Along these lines it will be demonstrated that it was both 'uniformity' and 'standardisation' which personified the decisive measures taken in order to create a different and efficient architecture: a *modern* architectural detail. Standard parts (standard details) not only would have improved effectiveness, but also would have come to eradicate the work and the time spent in the elaboration of unfashionable details.

Walter Gropius (*the* mayor exponent of functionalism in the twenties⁸³) acted as a guide in spreading awareness of technology's role. He advocated the partnership of engineers, designers and craftsmen with the intention that it would optimise building construction through the 'rational (pre-) fabrication of semi-finished products'.⁸⁴ Positioning standardisation as one of the main principles for Bauhaus production, Gropius wrote in 1926:

⁷⁹ On the goals of a 'functionalist architecture', see for example Karin Wilhelm, 'From the Fantastic to Fantasy', *Architectural Association Quarterly*, vol. 11, n° 1, 1979, pp. 4-15.

⁸⁰ Architects could 'construct buildings of free standing panels with flat ceilings across wide spans and cantilevered roofs'. Berthold Burkhardt, 'Preservation of Buildings from the Modern Era', in Christian Schittich (ed.), *Building in existing fabric: refurbishment, extensions, new design*, (München: Edition Detail; Basel: Birkhäuser, 2003), p. 29. Illustrations of these technical achievements are Mies van der Rohe's Barcelona Pavillion, Le Corbusier's *Plan libre* and Walter Gropius's Bauhaus Dessau, among many others.

⁸¹ 'Despite numerous attempts, the concept [mass-production] has remained utopian', has said Berthold Burkhardt, (*op. cit.*, p. 31). However, among those attempts we find, for example, the competition of 1,500 units of prefabricated houses under the direction of Ernst Meyer (Frankfurt, 1925). On Meyer's work see Kenneth Frampton, *Modern Architecture*, pp. 137-138; and Karin Wilhelm, 'From the Fantastic to Fantasy', pp. 7-8.

⁸² Walter Gropius quoting J.J.P. Oud (1926); quoted in Berthold Burkhardt, 'Preservation of Buildings from the Modern Era', p. 29.

⁸³ Charles Jencks, *Modern Movements in Architecture*. (Oxford: Penguin, 1973), p. 111.

⁸⁴ See Walter Gropius, 'How can we build cheaper, better, more attractive houses?' (1927), in Benton, Benton and Sharp (eds), *Form and Function. A source book for the History of Architecture and Design 1890-1939*. (London: Crosby Lockwood Staples, 1999), pp. 195-196.

There is no danger that standardisation will force a choice upon the individual, since due to natural competition the number of available types of each object will always be ample to provide the individual with a choice of design that suits him best.⁸⁵

Interestingly, the workshops at the Bauhaus were like laboratories where prototypes of products that ‘deviate[d] from the conventional’ and were suitable for mass production were developed. The transformation of ‘unusual and surprising’ prototypes into mass produced objects can be illustrated, for instance, by the built-in switch for the modern flat, which became a standard detail for the Bauhaus.⁸⁶

Le Corbusier’s *Towards a New Architecture* (1927) outlined the advantages of standard products introduced for the purpose of detailing in modern construction. He planned that ‘the mass production house will impose unity in the various elements, windows, doors, methods of construction, materials. *Unity in detail and large general lines (...). Uniformity in detail and variety in the general effect* (the exact opposite of what we do to-day: a mad variety in the setting out of our streets and towns)’.⁸⁷ Nevertheless, it is Le Corbusier’s essay *Standardisation cannot resolve an architectural difficulty* (1925) that tells us how the design of one hundred and twenty houses built in Pessac was a quest for standardisation and mass-production techniques:

we are working *with standard elements only*: the same window everywhere, the same stairs everywhere, the same door, the same heating, the same concrete cell measuring 5 x 5 and 2½ x 5 metres, the same fittings for cooking, washing and sanitation.⁸⁸

Despite the use of only standard elements, the architect was not able to avoid the ‘detailed and difficult, critical’ work that standardisation was supposed to eliminate. This led to the client (Henry Frugès) asking ‘does this indicate the failure of standardisation and mass production?’. ‘In fact it is the failure of standardisation. *Unless it is its redemption.*’ answered the architect.

The use of individual pre-fabricated parts ‘was to challenge the traditional relationship between larger, more permanent elements and smaller, replaceable parts’⁸⁹. The address of a new conception of details, in the encounter of standard and traditional materials, defines a new position in the relation of the whole to the part. Considering the details at Pessac, Edward R. Ford observed that ‘[t]he conceptual system of the fenestration is a small model of the conceptual system of the building as a whole’; that is, ‘the system of detailing is a direct outgrowth of the building’s

⁸⁵ Walter Gropius, ‘Bauhaus Dessau – Principles of Bauhaus Production’ (1926), p. 148. Nevertheless, Gropius’ position in 1919 was far different. ‘He attached functionalism as the curse, not the spirit of the age: ...*return to the crafts...built in fantasy without regard for technical difficulties. To have the gift of imagination, is more important than all technology, which always adapts itself to man’s creative will.*’ Conrads and Sperlich (*Fantastic Architecture*, 1963) quoted in Charles Jencks, *Modern Movements in Architecture*, p. 112.

⁸⁶ See Paolo Ferrari, ‘The culture of architectural detail: switches’, *Domus*, n° 685, July-August 1987, p. 63.

⁸⁷ Le Corbusier, *Towards a New Architecture*, trans. F. Etchells. (London: The Architectural Press, 1970), p. 265. (Italics in the original text).

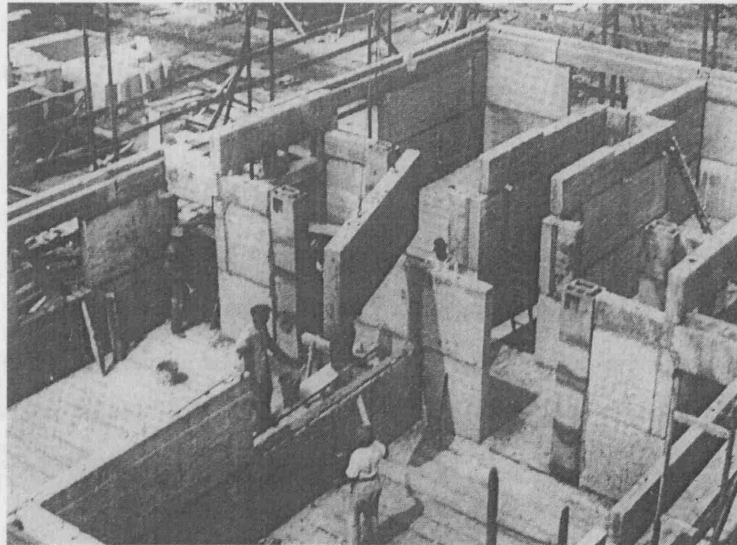
⁸⁸ Le Corbusier, ‘Standardisation cannot resolve an architectural difficulty’ (1925), trans. in Benton, Benton and Sharp (eds), *Form and Function. A source book for the History of Architecture and Design 1890-1939*. (London: Crosby Lockwood Staples, 1999), p. 138.

⁸⁹ Mostafavi and Leatherbarrow, *On weathering: the life of buildings in time*, p. 17.

parti.’⁹⁰ The standard casement window became, in this way, the basic module for all windows and openings. If the standards have become the new language of modern construction, what has been the real impact of standardisation for architects’ practice? Has it consistently been an advantage?

Sigfried Giedion writing on building in iron and ferroconcrete in 1928 had issued an emphatic declaration of what he thought the firm advantages of ‘normalisation’ and ‘standardisation’ available for architecture were. Considering both as true liberators he continued categorically:

Details lose their disastrous tyranny only when they are standardised. In every sense it can be understood for the future: there are no more details, there is only an ensemble!⁹¹



‘Placing the slab in position, including jointing, takes approximately half an hour. It would take some five hours to lay a brick wall of the same size.’

(5) Ernst May, pre-fabricated slab construction. (The quotation is by E. May (*Das Neue Frankfurt*, 1926) quoted in Karin Wilhelm, ‘From the fantastic to fantasy’, p. 7).

Was an *ensemble* the nature of the solution materialised when new and traditional materials were used ‘in unprecedented and varying proportions’? In other words, what is the quality of the new physical part created from this combination if not a detail? Can the *ensemble* truly replace the role of detail in the relationship of the whole to the parts?

There is also a different fact to consider: when modern buildings included a diverse presence of pre-fabricated (and therefore replaceable) parts –exceeding obviously those in traditional ones, what happens when these parts are not designed to perform as an *ensemble*? Do the limitations on the manufacture of products have an effect on whether these parts merely come into contact or are assembled? When two or more elements and materials are simply jointed; is this the very sense of a detail being eliminated?

⁹⁰ Edward R. Ford, *The Details of Modern Architecture* (1990), p. 241.

⁹¹ Sigfried Giedion, *Building in France, building in iron, building in ferroconcrete* (1928). (Santa Monica, CA: Getty Center for the History of Art and the Humanities, 1995), p.179.

The increase in the number of parts went hand in hand with the increase in the number of joints, or points of connection between elements –joints by juxtaposition rather than synthesis.⁹²

Consequently, when standardised, is the *modern* detail being generated by the occurrence of an *ensemble* and/or juxtaposition? For example, both solutions can surely take place in the same building, but is the choice between those solutions not ambiguous? They do not express the same meaning in terms of their material distinctiveness. An ensemble is a group of things brought together as a whole;⁹³ from this definition it might be understood that ‘a complete form’ has been produced: a *synthesis*. Synthesis, indeed, is the mixing of different ideas or things to make a whole which is different or new.⁹⁴ In other words, an *ensemble* -or a *synthesis*- has the characteristic of a detail (for instance, an elaborated design enclosing both function and meaning at once) but configures to make a mixed but unified element. *Juxtaposition* is merely the contact of different elements, which keep their individuality intact without generating a new concrete entity. To give a visual example of this analysis, a *juxtaposition* would act as a ‘physical’ or ‘mental’ gap, through which something formless like water would easily go. Taking into account the failures of modern construction, does *juxtaposition* then explain the sense of the statement ‘there are no more details’, rather than the replacement of details by an *ensemble*?

Considering the complex nature of modern architecture and the formation of the *modern* detail, it could be that the ambiguous possibility of having an *ensemble* and *juxtaposition* for the same solution at once would be the indication of an ambivalent completeness and incompleteness of the *modern* detail in its relation to construction technology.

All in all, if innovation promoted ‘simplification’ and ‘standardisation’—through new building technologies aspiring to emulate other industries’ aesthetic and efficiency, was it also the desire to distinguish the new architecture from existing fabrics’ variety of details?

Building in existing fabrics: Intervention

When new designs, extensions or refurbishments encounter existing fabrics, they intervene and impose their character upon the existing fabrics. In the case of interventions, these ‘meaningful’ details are located exactly where two elements are jointed; yet this time, one of them is part of an existing fabric, and the other, a *new* building technology. I would like to see in these architectures the presence of details expressing their purpose towards a strong identification. So, how is this detail *modern* when in contact with a traditional construction? What makes it recognisable?

Since innovation was so fundamental to the development of the architecture of the Modern Movement, the approach to the architecture of the past was characterised by the same

⁹² Mostafavi and Leatherbarrow, *On weathering: the life of buildings in time*, p.17.

⁹³ *Cambridge Advanced Learner's Dictionary*. Cambridge Dictionaries Online, <http://dictionary.cambridge.org/default.asp> (accessed 30 August 2006).

⁹⁴ Cambridge Dictionaries Online, <http://dictionary.cambridge.org/default.asp> (accessed 29 August 2006).

dominant modernist concept: *contrast*. It is possible to recognize in the *contrast* between 'newness' and 'oldness' a concept of intervention relative to the period that is no longer in use.⁹⁵

Accordingly, the pair 'newness' and 'oldness' belongs to a specifically modern sensibility: where old is defined negatively in relation to new.⁹⁶ This dichotomy was sensitively analysed by Aloïs Riegl in 1928, he developed a notion of monument's 'age-value' suggesting that 'the essence of every modern perception of history is the idea of development'.⁹⁷ Consequently, the idea of detail as a piece of perceived information is essential in the conception of modern detailing:

the modern citizen is not interested in erudite information that can be decoded in the detail of an ornament or the arrangement of a colonnade, but in the more sweeping view.⁹⁸

D E S I G N F O R M O D E R N L I V I N G

PRODUCTS OF THE NINETEEN THIRTIES. WHEN THINGS MADE FOR THE SAME PURPOSE ARE SO DIFFERENT IN APPEARANCE, IT IS TIME TO DECIDE WHICH ARE TO SET THE MODERN STANDARD.

(6) 'DESIGN FOR MODERN LIVING', published in *The Modern House* (1934).

⁹⁵ Nowadays, the position of conservators and restorers is a 'new and more complex relationship that current sensibility has established with the architecture of the past' –which can be identified under the concept of *analogy*. The categories of *contrast* and *analogy* are discussed by Ignasi de Solà-Morales, 'From contrast to analogy. Developments in the concept of architectural intervention', *Lotus International*, n° 46, 1985, pp. 37-46.

⁹⁶ Alan Colquhoun, "Newness" and "Age-Value" in Aloïs Riegl', in *Modernity and the classical tradition: architectural essays, 1980-1987*. (Cambridge, Mass.: MIT Press, 1989), p. 218.

⁹⁷ Aloïs Riegl, 'The Modern Cult of Monuments: Its Character and Its Origin' (1928), trans. K. W. Forster and D. Ghirardo, *Oppositions*, n° 25, Fall 1982, p. 21.

⁹⁸ Ignasi de Solà-Morales, 'From contrast to analogy. Developments in the concept of architectural intervention', p. 40.

The recognition of modernity 'is a purely perceptual satisfaction, which seeks no precise gain in knowledge, expressing itself as pure feeling of a subjective, vague and conforming character.'⁹⁹ Therefore, it can be suggested that in the materialisation of *modern* objects the appearance is prevalent, and the nature of a *modern* detail is that which assures a perception of its modernist character. The detail of the glazing bar in Melnikov's USSR Pavilion is *modern* accordingly.

The clear concept of *contrast* that must be produced between a historical building and a new intervention was also championed by *The Athens Charter for the Restoration of Historic Monuments*, 1931:

...modern materials should be used on certain occasions, but above all by the repeatedly expressed criterion according to which difference is noted in the different arrangement of added elements, in the use of different materials and in the absence of decorations in new constructions, in their geometrical and technological simplicity. Thus it can be said that the Athens charter accepted in a generalized and standardized fashion the criteria and approaches already elaborated in that period by architects.¹⁰⁰

In fact, avant-garde architects and restorers had the same historical sensibility –a drastic rejection of historic building decoration. The debate about ornamental detail -'between functionality and embellishment, between adorned and unadorned'- reached 'its peak with the architectural rationalism of the early 20th century's total refusal of any decoration'.¹⁰¹ This resulted in the *contrast* of the new works of architecture through a clear and abstract detailing. Moreover, a radical *contrast* was that which promoted no intentional elaboration of details. If we compare this with one of the most significant pre-modern ideas about detailing -proclaimed by A.W.P. Pugin in 1841, we see the discrepancy between what the *new* (detailing) position was, and the conception of detail in a period when ornamental decoration (guaranteed by skilled craftsmanship) had come even before architectural projection and construction:

'...all ornament should consist of enrichment of the essential construction of the building'. He went then on to add two supplementary principles: 'In pure architecture the smallest detail should *have a meaning or serve a purpose*; and even the construction itself *should vary with the material employed*, and the design should be adapted to the material in which they are executed'.¹⁰²

⁹⁹ Ignasi de Solà-Morales, *Ibid.*, p. 40.

¹⁰⁰ Ignasi de Solà-Morales, *Ibid.*, p. 42. For the Athens charter, see *The Athens Charter for the Restoration of Historic Monuments*; digitally published in http://www.icomos.org/athens_charter.html (accessed 30 August 2006). The other *Athens Charter* – the CIAM's 1933- (written by Le Corbusier), also 'demand[ed] that new interventions in historical zones be made in the language of present-day architecture', Ignasi de Solà-Morales, *op. cit.*, p. 42. On the Congrès Internationaux d' Architecture Moderne - CIAM, see Giorgio Ciucci, 'The Invention of the Modern Movement', *Oppositions*, n° 24, 1981 spring, pp. 68-91.

¹⁰¹ See Eugenio Battisti, 'Concepts of Ornament and Decorative Art', *Rassegna*, vol. 12, n° 41 (1), March 1990, p. 8. On the issue of ornament see for example *Rassegna*, special issue: 'The Senses of Ornament', vol. 12, n° 41 (1), March 1990, pp. 4-88; and *L'Architecture D'Aujourd'hui*, special issue: 'Ornament', n°333, March-April 2001, pp. 38-123. Similarly to the contemporary position of architects facing the problem of intervention, the ongoing discussion about ornament –according to the articles published in the French magazine- cannot be situated in an absolute rejection of decorative ornamentation. 'Is ornament back?' (Andreas Hild, p. 66) for example, is the catchy enquiry of one article's title.

¹⁰² A. W. N. Pugin, *The True Principles of Pointed or Christian Architecture* (1841) quoted in Adrian Forty, *Words and Buildings A Vocabulary of Modern Architecture*, p. 297-298.

Despite the obvious differences, it can be said that Pugin and modern architects shared the same critical position on the superficial imitation of stylistic methods. In fact, Pugin's first Principle is 'that there should be no features about building which are not necessary for convenience, construction, or propriety'.¹⁰³ Above all the words of Adolf Loos in *Ornament and Crime* (1908) seemed to define a modern attitude: there should be no ornament, because 'ornament is no longer a natural product of our culture'.¹⁰⁴

Additionally, the history of ornamentation has a parallel to the history of styles - 'as to be confused with them'.¹⁰⁵ The International Style, for instance, moved from 'applied ornament' towards 'quality of details'; 'detail actually required by structure or symbolic of the underlying structure provided most of the decoration of the purer styles of the past', wrote Hitchcock and Johnson.¹⁰⁶ The origin of the *modern* detail therefore might be located in this circumstance when modern architects avoid ornament or unnecessary detail. But, what does this 'no ornament' mean for the problem of *modern* detailing?

'The word 'ornament' comes from the Latin *ornare*, *ornamentum*, and is a literal translation that does not have the ambiguity of terms like 'art' or 'aesthetics', even 'decoration'.¹⁰⁷ Having said this, it seems that the attempt of the *modern* detailing to establish a standard execution, an aesthetic distinction, and to quote Loos, a 'plain, undecorated simplicity', has tended towards an uncertain identity. That is, the materialization of a complete form that is not a three-dimensional ornament and which architects do no longer name as detail. Furthermore, in this context, the effort to abolish style and the intention to create an '[a]rchitecture without design -in effect, style-less style- is a contradiction in terms', implied J. Moordaunt Crook in *The Dilemma of Style*. Moordaunt Crook also recognized the extreme effects that simplicity had in early modernist works.

By suppressing ornament, by ignoring context, by eliminating association, by surrendering metaphor and symbol, architecture lost more than half its power of speech. Without detail, even the language of proportion was lost.¹⁰⁸

The classic modern era attached little value to old buildings as it 'focused all its energies on innovation', which is the reason why is difficult to find examples to illustrate a case of intervention during this period.¹⁰⁹ Pierre Chareau's *Maison de Verre* (Paris, 1927-1932) is one particular instance where the issue of intervention has defined the entire structural solution.¹¹⁰ More importantly, the

¹⁰³ A. W. N. Pugin, *The True Principles of Pointed or Christian Architecture* (1841) quoted in Adrian Forty, *Words and Buildings A Vocabulary of Modern Architecture*, p. 297.

¹⁰⁴ See Adolf Loos, 'Ornament and crime' (1908), in *Ornament and crime: selected essays*. (Riverside, Calif.: Ariadne Press, 1997), p. 170-171. Loos 'was perhaps the only person who was clear about what is *modern*.' (Afterword, p. 175).

¹⁰⁵ Eugenio Battisti, *Ibid.*, p. 10.

¹⁰⁶ Henry-Russell Hitchcock and Philip Johnson, *The International Style*, p. 69-70.

¹⁰⁷ Stephane Laurent, 'Brief Chronicle of Ornament', *L'Architecture D'Aujourd'hui*, n°333, March-April 2001, p.57.

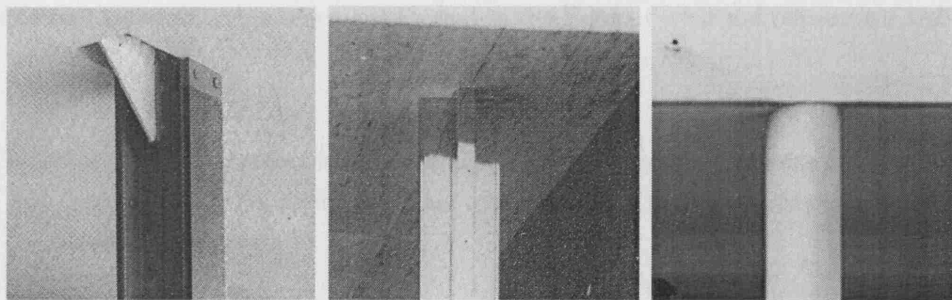
¹⁰⁸ J. Moordaunt Crook, *The Dilemma of Style: architectural ideas from the picturesque to the post-modern*. (London: Murray, 1987), p. 249.

¹⁰⁹ See Christian Schittich, 'Creative Conversions', *op. cit.*, p. 9.

¹¹⁰ The initial intention of demolishing the existing house was impracticable due to the presence of an uncooperative neighbor. Resulted in the decision of conserve that floor and underpin it with a permanent steel frame. See Kenneth Frampton, 'Maison de Verre'. *Perspecta*, Vol. 12

house is a pretext to draw attention to a modern building that contradicts modern principles, and which establishes the sense of its design and detailing in the ambiguities of its built elements. To illustrate: the materials and techniques used were totally industrial, yet its realisation was a crafted structure. There were, apparently, no working drawings, instead there were full-scale models run up by a master ironsmith:¹¹¹ one could no longer tell where 'the instrumentality of function' began and 'the sensuality of ornament' ended.¹¹² As significant as it is, an article written in 1933 suggested the Maison as something accurately *new* and different from what has been called *modern* architecture hitherto.

The present epoch has created a life of new awareness and reflexes, but architecture has not evolved sufficiently to be able to express it; for it cannot be expressed only by a detail or a façade, nor by iron mongery or through the use of certain materials, nor by the use of such clichés as horizontal or vertical windows. It is discouraging to observe this decorative application of *moderne*, changed in accordance with fashion ... to alight upon these so-called "pure" buildings which, like a poster, have nothing in common with the advertised product.¹¹³



(7) Three *modern* details. From left to right: Pierre Chareau, Maison de Verre (1927-1932): interior steel column supporting the existing floor. Mies van der Rohe, Barcelona Pavilion (1929): cruciform column, 'the finest detailing that the modern movement has witnessed' (Scruton, p. 213). Le Corbusier, Villa Savoie (1929-1931): *naked pillar* supporting the first floor.

What then, is the authentic materialisation of the *modern*? Is something *modern* by means of imposing a fashion? Is the *modern* detail a structural connection? Is *modern* an overall cladding effect in an attempt to erase the detail as ornament? Or is the *modern* detail one that is made of the latest technology's standard parts?

(1969), pp.77-109, 111-128. It is worth to mention that the Maison de Verre was not included in Edward R. Ford's *The Details of Modern Architecture*, volume 1.

¹¹¹ Neil Jackson, *The Modern Steel House*. (London: E&F Spon, 1996), p. 15-17.

¹¹² Kenneth Frampton, *Studies in Tectonic Culture. The Poetics of Construction in Nineteenth and Twentieth Century Architecture*. (Cambridge, Mass.; London: The MIT Press, 1995), p. 321.

¹¹³ Paul Nelson, 'Maison de Verre', *L'Architecture d' Aujourhui*, N° 9, November - December 1933, p.9; reprinted in K. Frampton, 'Maison de Verre', *Perspecta*, vol. 12, 1969, p.85.

What is a *modern* detail?

To be modern is to live a life of paradox and contradiction.

Marshall Berman, 1983 ¹¹⁴

'There is a conventional view among historians and the general public that some unified theory and practice called 'Modern Architecture' really exists'.¹¹⁵ The modern era was commonly known as 'early', 'classic', or 'heroic' which also referred to the concept of Modern Architecture. The architectural production during this period was dominated by the architects Le Corbusier, Mies van der Rohe and Walter Gropius, whose work 'clearly defined a common position based loosely around certain social ideas'.¹¹⁶ More importantly, looking at the production of details within their practices, we find what distinguishes modern architecture from other styles, conceptually and materially: 'a new sense of space and the machine aesthetics'.¹¹⁷ Even if the mechanisms chosen by the *masters* were as dissimilar definitions of the word 'detail' exist. Indeed, modern detailing instead of producing one single 'language', resolved the problem of detailing through (sometimes) opposing approaches, in this way generating different solutions. This scheme is located in the heart of what the *International Style* intended to be.

Today a single new style has come into existence. (...). This contemporary style, which exists throughout the world, is unified and inclusive, not fragmentary and contradictory like so much of the production of the first generation of modern architects.¹¹⁸

'There is now a single body of discipline, fixed enough to integrate contemporary style as a reality and yet elastic enough to permit individual interpretation and to encourage general growth'.¹¹⁹ Hitchcock and Johnson's lines, written in *The International Style* (1932), also included the list of 'the four leaders of modern architecture': Le Corbusier, Oud, Gropius and Mies van der Rohe'.¹²⁰ Frank Lloyd Wright was not included because he 'has remained an individualist',¹²¹ and '[u]nlike his Modernist contemporaries [he] continued to pursue and develop the use of ornament'.¹²² However, a symposium held in 1961 identified Walter Gropius, Le Corbusier, Ludwig Mies van der Rohe and Frank Lloyd Wright as the *Four great makers of modern architecture*.¹²³ Did the issue of detailing take part

¹¹⁴ Marshall Berman, *All that is solid melts into air: the experience of modernity*, p.13.

¹¹⁵ Charles Jencks, *Modern Movements in Architecture*, p. 11.

¹¹⁶ Charles Jencks, *Ibid.*, p. 31.

¹¹⁷ Reyner Banham, *Theory and Design in the First Machine Age* (1960). (Oxford: Architectural Press, 1996), p. 2. 'The true pioneers of the Modern Movement are those who from the outset stood for machine art' wrote Nikolaus Pevsner, in *Pioneers of the Modern Design: from William Morris to Walter Gropius*. (London: Penguin Books, 1991), p. 26.

¹¹⁸ Henry-Russell Hitchcock and Philip Johnson, *The International Style*, p.19.

¹¹⁹ Hitchcock and Johnson, *Ibid.*, p.20.

¹²⁰ Hitchcock and Johnson, *Ibid.*, p.33.

¹²¹ Hitchcock and Johnson, *Ibid.*, p.26.

¹²² See Charles Calvo, 'The Concrete Block designs of Frank Lloyd Wright', *Forum*, vol. 30, n°4, 1986, p. 168.

¹²³ This is the title of the verbatim record of a symposium held at the School of Architecture, Columbia University in March-May 1961, and later published as *Four great makers of modern architecture: Gropius, Le Corbusier, Mies van der Rohe, Wright*. (New York: Da Capo Press, 1970).

in these selections? If architectural historians have virtually unanimously positioned the work of these four leading architects in the very construction of *modern architecture*, are they the makers of the *modern detail* as well?

We can see that Mies van der Rohe is considered one of the greatest detailers of the twentieth century,¹²⁴ while, in contrast, '[f]ew would describe Le Corbusier as a great detailer. He lacked the patience, the eye for precision, and perhaps even the technical knowledge...Mies, Aalto and even Gropius developed details which are integral to the success or failure of their architectural intentions.'¹²⁵ Discourses of these kinds filled pages, going through explanations of how the *masters* not only continually changed materiality, improving the design or transforming their details,¹²⁶ but also their constant, and sometimes contradictory, change of mind.

It is exactly this 'turn of mind', (a modern attitude towards a built and written work)- which prompts me to start this definition of the concept of the *modern* detail by looking at the figure of French architect Auguste Perret. Perret's modern position, despite regarding himself as a 'classicist'¹²⁷, can be read in Kenneth Frampton's words:

Perret's significance as a theoretician lay in his aphoristic, dialectical turn of mind – in the importance that he attached to such polarities as order versus disorder, frame versus infill, permanent versus impermanent, mobile versus immobile, reason versus imagination, and so on.¹²⁸

Probably with the same intention to highlight Perret's importance, Scruton observed that Perret 'used no 'vocabulary' of detail.'¹²⁹ In opposition to this, Edward R. Ford wrote: 'Perret's intention was to modernize Classicism, not to create a new architecture.'¹³⁰ Did Perret use *modern* details to make this modernisation possible? The probable answer is an unexpected one, because he intended that 'in a work worthy of its name, there are no details'.¹³¹ Perret's Notre Dame du Raincy (1922-1924) - considered the first modern church in France- encloses the *concrete* and conceptual fundamentals of this intriguing statement.¹³²

¹²⁴ Mies van der Rohe's (attributed) aphorism 'God lies in the detail' (Philip Johnson, 1964) has become so famous that nearly all the texts dealing with details mention this compulsory statement. On Mies' details, see for example Edward R. Ford, 'Ludwig Mies van der Rohe and the Steel Frame', in *The Details of Modern Architecture* (1990), pp. 261-287; Steven Groak, *The Idea of Building*, pp. 196- 204; David Dunster, 'Mies van der Rohe and the Craft of Architecture', *UIA International Architect*, Issue 3, 1984 (editorial); and Ed Melet, 'The Architectural Detail. God is not in the detail', in *The Architectural Detail: Dutch architects visualise their concepts*. (Rotterdam: Nai Publishers, 2002), p. 11, 15-16.

¹²⁵ Edward R. Ford, *The Details of Modern Architecture* (1990), p.241. One exception is British scholar Tim Benton, 'who worked assiduously to bring order to the study of Le Corbusier's houses, has written of their "poignant" detailing and "touchingly sincere craftsmanship'. George H. Marcus, *Le Corbusier: inside the machine for living*. (New York: The Monacelli Press, Inc., 2000), p. 83. Sigfried Giedion, on the other hand, mentioned 'J.J.P. Oud's "infinitely painstaking attention to detail' in order to put Le Corbusier's achievements into context. S. Gideon, *Space, Time and Architecture. The growth of a new tradition* (1941). (Cambridge: 3rd ed. Harvard University Press, 1956), p. 530.

¹²⁶ An interesting matrix showing Mies' systematic exploration of details can be seen in Steven Groak, *The Idea of Building*, p. 197.

¹²⁷ Roger Scruton, *The Aesthetics of Architecture*, p. 214.

¹²⁸ Kenneth Frampton, *Modern Architecture: a critical history*, p. 108.

¹²⁹ Roger Scruton, *The Aesthetics of Architecture*, p. 214.

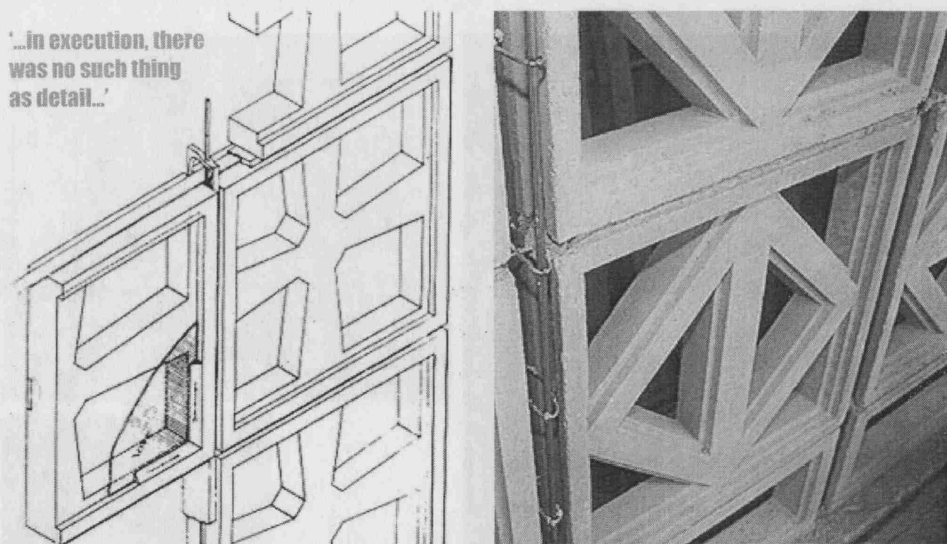
¹³⁰ Edward R. Ford, *The Details of Modern Architecture* (1990), p. 239.

¹³¹ Marie Dormoy, quoting Paul Valéry [Apropos Notre Dame du Raincy] quoted by Karla Britton, *Auguste Perret*, p.77.

¹³² On Perret's Notre Dame du Raincy see for example Sigfried Giedion, *Building in France, building in iron, building in ferroconcrete* (1928), p. 157; Karla Britton, *August Perret*. (London: Phaidon Press Limited, 2001), pp. 76-103; and Kenneth Frampton, *Studies in Tectonic Culture. The Poetics of Construction in Nineteenth and Twentieth Century Architecture*, pp. 131-134.

'The church is not just incidentally concrete; it is purposefully concrete, with a definable unity between what it says and what it is.'¹³³ Here, the dual meaning of the word concrete as both 'hard material' and 'clear existence' provokes the question, where is the essence of this concreteness?; seeing that the architect's description insists in the 'lack of distracting detail.'¹³⁴ It is in the exterior skin where the use of pre-fabricated geometric blocks (*claustra* patterns) plays a decisive role: proportioning a subtle indistinctness between an ornamental and ceremonial, yet functional throughout effect (the *claustra* are also used in the interior as railings, as well as constructing the altar, tabernacle and pulpit).

By the permutation of only five different prefabricated *claustra* patterns, set within a bounding square (a cross, a circle, a diamond, a half-square, and a quarter square), Perret was able to avoid the monotony of a regularly reticulated curtain wall, while giving a certain scale to an otherwise uninflected, columnless exterior.¹³⁵



(8) Auguste Perret. Two *claustra* patterns; axonometric detail drawing and blocks under restoration. Quotation by Paul Valéry (origin of Marie Dormoy's comment about Perret's Notre Dame du Raincy).

By 'giving a certain scale', every *claustra* is embodying the classical function of a detail as 'parts' harmonising the 'whole'. Nonetheless, it is in the fact that these 'parts' are being assembled which effortlessly demonstrates both the approach of the architect, and Giedion's statement - 'there are no more details.' That is, every *claustra* is embodying an ambiguity between the sense of a classical detail, and the position of a *modern* standard detail.

This ambiguity lies in the definition of detail; a detail should exist to assure its individuality and specificity, preventing its standardisation. Accordingly, how detailed a project needs to be will always come into question. There must be a point of control between the definition of the structure and the incorporation of finishes, which architects must establish in order to assure the completeness and materialisation of their concepts. But where is the point of control in *modern*

¹³³ Karla Britton, *August Perret*, p.89.

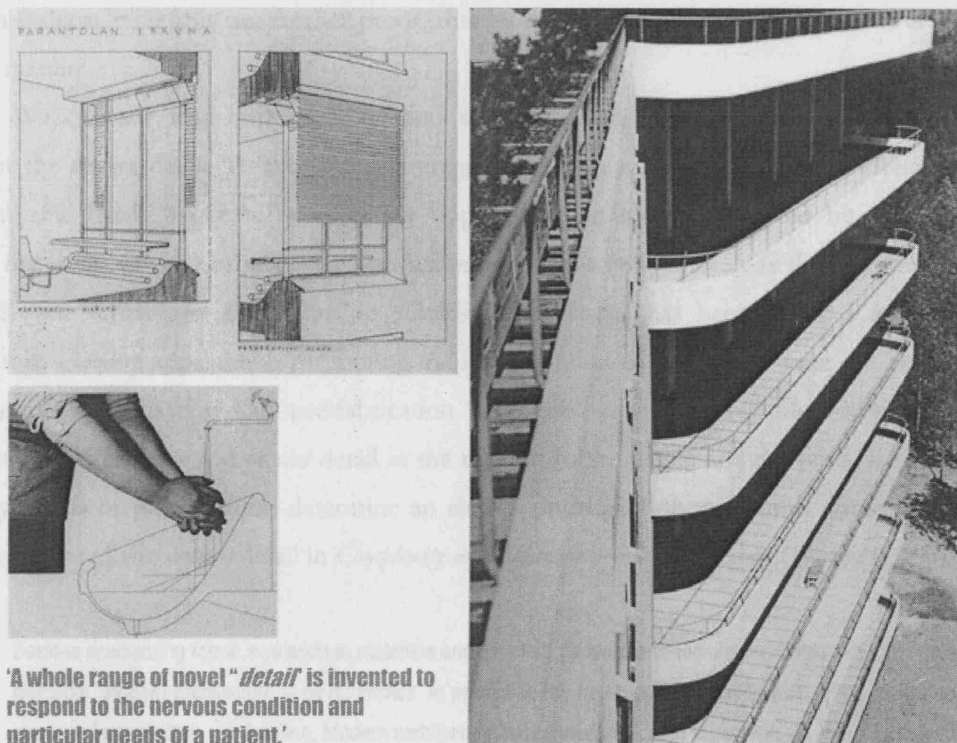
¹³⁴ 'The small size of the columns, their greater height and lack of distracting detail aid materially in producing this effect [sense of spaciousness and vastness].' Auguste Perret (1924) quoted in Kenneth Frampton, *Studies in Tectonic Culture*, p.132.

¹³⁵ Kenneth Frampton, *Studies in Tectonic Culture*, p. 134. (My emphasis).

detailing? If there are no details but standard *ensembles*, is the (conceptual) control only to be done on the drawing boards? Is this control also an attempt to dominate what cannot be controlled, the fact that 'no building stands for ever'?

What other than the 'whiteness, purity and newness' imposed by modern buildings represents the domination of the detail? The 'timelessness' in the appearance of these buildings was obliged to preserve them 'under conditions of the most lavish, meticulous and constant maintenance.'¹³⁶ Interestingly, the problem of control over the ageing of the building was what seriously concerned Finish architect Alvar Aalto. Aalto explicitly abandoned the use of '*modern details*' used in the construction of the largest modern building: Paimio Tuberculosis Sanatorium (1929-33).¹³⁷

[Aalto] subsequently moved further and further away from the conception of *building-in-time* which it represents, to another, quite different one, which seems almost deliberately intended to save his works from time's painful ravages. All his buildings after Paimio give the impression of 'having been aged in advance'.¹³⁸



'A whole range of novel "detail" is invented to respond to the nervous condition and particular needs of a patient.'

- (9) Alvar Aalto, Paimio Tuberculosis Sanatorium. Patients' room window: perspectives, washbasin section, and view of the cantilevered balconies from the rest hall (solarium) on top of patient's wing. (Quotation by Reima Pietila, in Kirmo Mikkola (ed.), *Alvar Aalto vs. The Modern Movement*, p. 112).

Steven Groák -interpreting Baird's discussion- explains that 'Aalto was appalled at the rapid ravages of time on his buildings, with their *modern details*, and tried to pre-empt its worst effect.'¹³⁹ Therefore, '*modern details*' are identified as the production of an aesthetically demanding surface, becoming both

¹³⁶ George Baird, *Alvar Aalto*. (London: Thames and Hudson, 1970), p. 12.

¹³⁷ According to Sigfried Giedion, Aalto's sanatorium at Paimio is one of the 'three institutional buildings inseparably linked to the rise of contemporary architecture'; see S. Giedion, *Space, Time and Architecture. The growth of a new tradition*, pp. 575-578.

¹³⁸ George Baird, *Alvar Aalto*, p. 12. (My emphasis).

¹³⁹ Steven Groák, *The Idea of Building*, p.3. (Emphasis in the original text).

'aged' and 'historical' relatively quickly. Nevertheless, the functionalism and regularity at Paimio are not the result of a structural standardisation in the sense that a building by Le Corbusier is standardized.¹⁴⁰ In fact, the interior show significant innovation in resolving specific needs; giving an illustration of a different order from an abstract composition of pre-fabricated parts. The individual rooms, particularly, have a series of 'minute elaboration of details', for instance the position of the light near the bed, arrangement of the window, and the specially design wash basins.¹⁴¹

What Baird is actually exploring is Aalto's pursuit of the *ruin* as an attempt to fight against the decay and damage of the forms and materials of the International Style. Aalto's transformation is essential since the concept of ruin might be understood as opposed to the concept of *modern*. In other words, *new* versus *old* has been what promoted the *contrast* sought by modernist architects. The conclusion of the previous statements implied that Aalto has ceased to be *modern* from the point of view of its own modernity. Additionally, Aalto's attitude towards his International Style buildings¹⁴² was to regard them as products of the 'decorative application of *modern*, chang[ing] in accordance with fashion.'¹⁴³ Is this not further proof, that by its own definition, a *modern* detail is in fact a *momentary* matter?

We can see that both cladding and standardisation have been involved in the discussion about the *modern* detail. If 'everything is pregnant with its contrary', the united effect of cladding, on the one hand, might be seen as the opposite of an aptness achieved by multiple ornaments and materials. On the other hand, standardisation might be identified as the contrary of traditional –and even vernacular- craftsmanship. Cladding (whiteness) has been the tool used by modernist to assure a *modern* appearance; promoting the interpretation of the 'whole' over the 'parts'. More significantly, standardisation and pre-fabrication have produced more complex details. To describe the position of this *new* and *present* detail in the relation to the whole and the parts, it seems that either its synthesis or juxtaposition determine an elusive position. Robert Venturi wrote about this fragmentary nature of the *modern* detail in *Complexity and Contradiction in Architecture* (1966):

Besides specializing forms in relation to materials and structure, Modern architecture separates and articulates elements. Modern architecture is never implicit. In promoting the frame and the curtain wall, it has separated structure from shelter... in detailing, Modern architecture has tended to glory in separation. Even the flush joint is articulated, and the shadow joint predominates.¹⁴⁴

Standardisation informed technologically modern architecture and it created in turn what Venturi identified as the representation of a new formalism unconnected with experience.¹⁴⁵ That is the

¹⁴⁰ On Paimio Tuberculosis Sanatorium details see for example Edward R. Ford, in *The Details of Modern Architecture: Volume 2 1928 to 1988* (1996), pp. 117-149.

¹⁴¹ S. Giedion, *Space, Time and Architecture. The growth of a new tradition*, p. 578.

¹⁴² Viipuri Library (1927-1935). According to Edward R. Ford, 'more than Paimo, Viipuri is the beginning of Aalto's own brand of Modernism', p. 121.

¹⁴³ Paul Nelson, 'Maison de Verre', p.85.

¹⁴⁴ Robert Venturi, *Complexity and Contradiction in Architecture*. (New York: Museum of Modern Art, 1966), p.41.

¹⁴⁵ Venturi called 'false simplicity' this complexity promoted by early Modern architecture. See Robert Venturi, *Complexity and Contradiction in Architecture*, p. 25.

mechanical manufacture of details 'produced in separate processes in factories and later assembled, was responsible for the development of an indifference towards their ultimate use.'¹⁴⁶ This resulted in every built object losing its particularity, which then reduced it to a purely functional role. 'There are no more details' because modern architects did not re-establish the duality between what Frascari defines as a 'physical production' and a 'mental production' of the detail.

...the skilful assemblage of materials by labour on sites to make buildings...are doomed to fatalistic conclusions because they lack any understanding of the 'dialectic' between materials and thought.¹⁴⁷

This disconnection is the same circumstance brought about when detailing was born, and details were resolved on the architect's drawing boards. Frascari's words seem to define, from this point of view, the essence of the *modern* detail: 'the [*modern*] detail [is] no longer part of the building.'

¹⁴⁶ Karin Wilhelm, 'From the Fantastic to Fantasy', p. 8.

¹⁴⁷ David Dunster, 'Mies van der Rohe and the Craft of Architecture', *UIA International Architect*, Issue 3, 1984 (editorial).

Conclusion

...the concrete *versus* the abstract, perpetual movement *versus* rest, the inner *versus* the outer, quality *versus* quantity, culture-bound *versus* timeless principles, mental strife and self-transformation as a permanent condition of man *versus* the possibility (and desirability) of peace, order, final harmony...these are some of the aspects of the contrast.¹⁴⁸

A seemingly basic question, what is a detail?, has suggested that detail is continually looking for its opposite. The definitions and evidence collected propose that the material nature that describes details as physically permanent - 'a complete form', 'a joint'- is repeatedly escaping fixed and rigid definitions. When it seems that a description fits perfectly, the examples show how meaningless it can be. Details are not only repeatedly requiring new and specific explanations, but also searching for them in what is not concrete, rather in what is 'tenuous'.

Moreover, there are incessant dualities between the authority of the physical detail and the drawing detail which accurately summarizes a spatial concept. There is also a duality in the meaning of details; there is an 'endless set of architectural ideas' (Frascati), on the one hand; against a 'finite process of meaning' (Scruton), on the other.

And finally, the information that was optimistically seen as the revelation of 'raw material' and the explanation for 'something that we do not know', has resulted in a source of complex and contradictory facts. Details, visually perceived 'only supply signs of the presence of architecture, but do not give us an adequate understanding of it'.¹⁴⁹

The *modern* detail constructs its identity through an immediate impression; and simultaneously, neglects its own reality as soon it refers to a constructive detail, a connection, or a small part of a whole reaching a conventional understanding. If there is something different between a detail and a *modern* detail, it is that the modern detail is not a single concept, but different.

The *modern* detail is always the idea of development. Mostavafi and Leatherbarrow reinterpreted the steps followed by a new (and *modern*) detail from its initial origins as a refusal of the traditional; to its consequent failure and recognition of both its weakness facing weathering and its technical problems. Finally, how the process of these details (being subject of a further development) ended in the discovery of a new spatiality.¹⁵⁰ Similarly, we can consider these failures and weaknesses of details produced during the early modern movement as the starting point for an evolution that has brought about the origin of a new synthesis – a new detail, and has given a new meaning to an element that constituted an archetype. That is, how the elements that have formed and defined building construction, can be defined and understood in a way that is completely new –unanimously *modern*.

¹⁴⁸ Isaiah Berlin quoted by Steven Groák, *The Idea of Building*, p.4.

¹⁴⁹ Marco Frascari, 'The Tell-the-Tale Detail', p.505.

¹⁵⁰ Mostavafi and Leatherbarrow, *On weathering: the life of buildings in time*, p. 96.

In this process of evolution and regeneration (“The Modern movement has died many times”¹⁵¹), how are details that are no longer *modern* born again as *modern*? This implies that an investigation of the modern detail must follow the path of its continual destruction and renewal: it must become solid again after being melted. How were modern details masters in the 1940s, 1950s or 1960s? How can they be described a *modern* detail today? There is surely a persistent creation of a detail that is not only *modern* ‘physically’, (technology has proved that it will be always informing and modifying building construction) but also *modern* mentality. It will therefore continually provokes the definition of its concept. A drawing detail, a built joint, a new technical connection define what a ‘detail’ is; however, it gives the impression that when an explanation of these forms has been made, the physical evidence no longer exists. ‘All that is solid melts into air’ finds in every attempt to define an architectural detail proof of its truthfulness. Moreover, because architecture is no longer a unified language, there will always be controversy, complexity and contradiction. At the extreme ambiguous statements that otherwise would be pointless, suddenly make sense: for instance, ‘Varied as they are in type, they may sometimes all be called, I suppose, ‘details’”, (Philip Johnson, 1964).

This is the tyranny of details. It seems they are compelled to start all over again through a continuous and complex process of conceptualisation and materialisation. Therefore to repeat the question for a new research to begin once more: is there such a thing as the *modern* detail?

¹⁵¹ Gian Carlo de Carlo quoted in Colin St. John Wilson, ‘Alvar Aalto and the State of Modernism’, in Kirimo Mikkola (ed.), *Alvar Aalto vs. the Modern Movement*. (Helsinki: Rakennuskirja, 1981).

BIBLIOGRAPHY

LIST OF ILLUSTRATIONS

1. The Pavilion of the 1937 World's Fair, Chicago, Illinois, designed by Richard Longwell, 1937. *Architectural Record*, vol. 11, no. 1, 1937, pp. 44-52.
2. The Pavilion of the 1937 World's Fair, Chicago, Illinois, designed by Richard Longwell, 1937. *Architectural Record*, vol. 11, no. 1, 1937, pp. 44-52.
3. The Pavilion of the 1937 World's Fair, Chicago, Illinois, designed by Richard Longwell, 1937. *Architectural Record*, vol. 11, no. 1, 1937, pp. 44-52.
4. The Pavilion of the 1937 World's Fair, Chicago, Illinois, designed by Richard Longwell, 1937. *Architectural Record*, vol. 11, no. 1, 1937, pp. 44-52.
5. The Pavilion of the 1937 World's Fair, Chicago, Illinois, designed by Richard Longwell, 1937. *Architectural Record*, vol. 11, no. 1, 1937, pp. 44-52.
6. The Pavilion of the 1937 World's Fair, Chicago, Illinois, designed by Richard Longwell, 1937. *Architectural Record*, vol. 11, no. 1, 1937, pp. 44-52.
7. The Pavilion of the 1937 World's Fair, Chicago, Illinois, designed by Richard Longwell, 1937. *Architectural Record*, vol. 11, no. 1, 1937, pp. 44-52.
8. The Pavilion of the 1937 World's Fair, Chicago, Illinois, designed by Richard Longwell, 1937. *Architectural Record*, vol. 11, no. 1, 1937, pp. 44-52.
9. The Pavilion of the 1937 World's Fair, Chicago, Illinois, designed by Richard Longwell, 1937. *Architectural Record*, vol. 11, no. 1, 1937, pp. 44-52.
10. The Pavilion of the 1937 World's Fair, Chicago, Illinois, designed by Richard Longwell, 1937. *Architectural Record*, vol. 11, no. 1, 1937, pp. 44-52.



BIBLIOGRAPHY

LIST OF ILLUSTRATIONS

Bibliography

- Allen B., John and Stephens B., Deborah, 'The Bauhaus as you've never seen it', *ALA Journal*, vol. 70, n° 8, 1981 July, pp. 54-59.
- Amhoff, Tilo, *Adapting the Architect's Products to the Capitalist Building Production. The development of the legal obligations, building specification and working drawings in the first half of the nineteenth-century in England.* (Unpublished MSc. Architectural History Report, 2004.).
- Baird, George and Futagawa, Yukio (photographer), *Alvar Aalto.* (London: Thames and Hudson, 1970).
- Banham, Reyner, *Theory and Design in the First Machine Age* (1960). (Oxford: Architectural Press, 1996).
- Barthes, Roland, *The Fashion System* (1967), trans. M. Ward and R. Howard. (Berkeley; London: University of California Press, 1990).
- _____, *Camera Lucida: reflections on photography* (1980), trans. R. Howard. (London: Vintage, 2000).
- Battisti, Eugenio, 'Concepts of Ornament and Decorative Art', *Rassegna*, special issue: 'The Senses of Ornament', vol. 12, n° 41 (1), 1990 March, pp. 8-10.
- Berman, Marshall, *All that is solid melts into air: the experience of modernity.* (London: Verso, 1983).
- Birksted, Jan, 'Thinking through architecture', *The Journal of Architecture*, Vol. 4, spring 1999, pp. 55-64.
- Bonta, Juan Pablo, *Architecture and its interpretation: a study of expressive systems in architecture.* (London: Lund Humphries Publishers Ltd., 1979).
- Boyne, Colin (ed.), *Architects' working details 1.* (London: The Architectural Press, 1953).
- Britton, Karla, *August Perret.* (London: Phaidon Press Limited, 2001).
- Brookes, Alan and Grech, Chris, *The Building Envelope. Applications of new technology cladding.* (London: Butterworth Architecture, 1990).
- _____, *Connections: studies in building assembly.* (Oxford; Boston: Butterworth Architecture, 1992).
- Burkhardt, Berthold, 'Preservation of Buildings from the Modern Era', in Schittich, Christian (ed.), *Building in existing fabric: refurbishment, extensions, new design*, pp.29-35.
- Calvo, Charles, 'The Concrete Block designs of Frank Lloyd Wright', *Forum*, vol. 30, n°4, 1986, pp. 166-175.
- Carter, Peter, 'Mies van der Rohe', *Architectural Design*, n°3, March 1961, pp.95-121.
- Christensen, Alan Jay, *Dictionary of landscape architecture and construction.* (New York: McGraw-Hill, 2005).
- Colquhoun, Alan, "'Newness" and "Age-Value" in Alois Riegl', in *Modernity and the classical tradition: architectural essays, 1980-1987.* (Cambridge, Mass.: MIT Press, 1989), pp. 213-221.
- Crook, J. Moordaunt, *The dilemma of style: architectural ideas from the picturesque to the post-modern.* (London: Murray, 1987).
- Cruickshank, Dan, 'The Details of Modern Architecture', *AA files*, 1991 spring, n° 21, pp. 109-111. (Book review: *The Details of Modern Architecture* by Edward R. Ford, 1990).

- Curl, James Stevens, *Dictionary of Architecture*. (Oxford: Oxford University Press, 1999).
- Curtis, William JR, 'Le Corbusier / Firminy', *Architects' Journal*, 2006 April 13, vol. 223, n° 14, p. 27-39.
- Di Cristina, Benedetto, 'The Details of Modern Architecture, volume 2: 1928 to 1988', *Parametro*, 1997 Nov.-Dec., n° 221, pp.2-7. (Book review: *The Details of Modern Architecture* by Edward R. Ford, 1996).
- Dubois, Marc, 'The Universe of the Detail', *Forum*, vol. 30, n°4, 1986, pp. 176-185.
- Dunster, David, 'Mies van der Rohe and the Craft of Architecture', *ULA International Architect*, Issue 3, 1984 (editorial).
- Ferrari, Paolo, 'The culture of architectural detail: switches', *Domus*, n° 685, July-August 1987, pp. 58-64.
- Ford, Edward R., *The Details of Modern Architecture*. (Cambridge, Mass.; London: The MIT Press, 1990).
- _____, *The Details of Modern Architecture: Volume 2 1928 to 1988*. (Cambridge, Mass.; London: The MIT Press, 1996).
- _____, 'A Short History of Cladding', *B Arkitekturtidskrift - Architectural Magazine*, special issue: 'Details', n° 54, 2005, pp.149-171.
- Forty, Adrian, *Words and Buildings A Vocabulary of Modern Architecture*. (London: Thames & Hudson, 2000).
- Foster, Norman, 'Ornament or Detail?', *L'Architecture D'Aujourd'hui*, special issue: 'Ornament', n°333, March-April 2001, pp.92-93.
- Frampton, Kenneth, 'Maison de Verre'. *Perspecta*, Vol. 12 (1969), pp.77-109, 111-128.
- _____, *Modern architecture: a critical history*. (London: Thames and Hudson, 1980).
- _____, *Studies in Tectonic Culture. The Poetics of Construction in Nineteenth and Twentieth Century Architecture*. (Cambridge, Mass.; London: The MIT Press, 1995).
- Frascari, Marco, 'The Tell-the-Tale Detail' (1984), in Kate Nesbitt (ed.), *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965-1995*. (New York: Princeton Architectural Press, 1996).
- _____, 'The Particolareggiamento in the Narration of Architecture', *Journal of Architectural Education*, Vol. 43, N° 1. (Autumn, 1989), pp. 3-12.
- Funk, Susanne, 'Bauhaus rehabilitation scheme', *Detail*, vol. 38, n° 4, 1998 June, pp. 540-542.
- Futagawa, Yukio (ed.), *La Maison de Verre [de] Pierre Chareau*. (Tokyo: A.D.A. Edita, 1988).
- Giedion, Sigfried, *Building in France, building in iron, building in ferroconcrete* (1928). (Santa Monica, CA: Getty Center for the History of Art and the Humanities, 1995).
- _____, *Space, Time and Architecture. The growth of a new tradition* (1941). (Cambridge: 3rd ed. Harvard University Press, 1956).
- Gijsberts, Pieter Jan, 'The mason's grammar', *Forum*, vol. 30, N° 4, 1986, pp. 157-161.

- Glass, Jacqueline, *Encyclopaedia of architectural technology*. (Chichester: Wiley-Academy, 2002).
- Gregotti, Vittorio, *Inside Architecture*. (Cambridge, Mass.: The MIT Press, 1996).
- _____, 'The Exercise of Detailing', in Kate Nesbitt (ed.), *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965-1995*. (New York: Princeton Architectural Press, 1996).
- Groák, Steven, *The Idea of Building. Thought an action in the design and production of buildings*. (London: E&P Spon, 1992).
- Gropius, Walter, 'Bauhaus Dessau – Principles of Bauhaus Production' (1926), in Benton, Benton and Sharp (eds), *Form and Function. A source book for the History of Architecture and Design 1890-1939*. (London: Crosby Lockwood Staples, 1999), pp. 148-149.
- _____, 'How can we build cheaper, better, more attractive houses?' (1927), in Benton, Benton and Sharp (eds), *Form and Function. A source book for the History of Architecture and Design 1890-1939*. (London: Crosby Lockwood Staples, 1999), pp. 195-196.
- _____, 'Unity in Diversity' (1961), in *Four great makers of modern architecture: Gropius, Le Corbusier, Mies van der Rohe, Wright*. (New York: Da Capo Press, 1970), pp. 216-229.
- Hammershøy Andersen, Steen, 'An Introduction to the Contemporary Concept of the Detail', *Arkitekturtidsskrift - Architectural Magazine*, special issue: 'Details', n° 54, 2005, pp.1-8.
- Handisyde, Cecil C., *Everyday Details*. (London: Architectural Press, 1976).
- Harris, Cyril M., *Dictionary of Architecture & Construction*. (New York - London: McGraw-Hill, 2000 - 3rd edition).
- Hitchcock, Henry-Russell and Philip Johnson, *The International Style*. (New York: Norton, 1966).
- Heynen, Hilde, *Architecture and Modernity: a critique*. (Cambridge, Mass.; London: The MIT Press, 1999).
- Jackson, Neil, *The Modern Steel House*. (London: E&F Spon, 1996).
- _____, 'The Details of Modern Architecture', *Newsletter. Society of Architectural Historians of Great Britain*, 1991 winter, n° 45. (Book review: *The Details of Modern Architecture* by Edward R. Ford, 1990).
- _____, 'The Details of Modern Architecture, Volume 2: 1928 to 1988', *Newsletter. Society of Architectural Historians of Great Britain*, 1998 spring, n° 63, pp.15-16. (Book review: *The Details of Modern Architecture* by Edward R. Ford, 1996).
- Jencks, Charles, *Modern Movements in Architecture*. (Oxford: Penguin, 1973).
- Jenkins, David and Louis Dezart (eds), *Architects' working details*. (London: Architects' Journal, 1989).
- Johnson, Philip, 'Architectural Details', *Architectural Record*, Vol.135, April 1964, p.137.
- Kesik, Ted, 'Enclosure Detailing', *Canadian Architect*, Vol. 47, N° 11, November 2002, pp.48-49.
- Kinney, Leyla W., 'Fashion and Fabrication in Modern Architecture', *The Journal of the Society of Architectural Historians*, Vol. 58, N° 3. (September 1999), pp. 472-281.
- Kohyama, Hisao, 'Is God or the devil in the Details? The Return of material; the Decline of Space', *The Japan Architect: Space in Detail IV* (special issue), n° 54, summer 2004, pp.4-7.

- Kroll, Frank-Lothar, 'Ornamental Theory and Practice in the Jugendstil', *Rassegna*, special issue: 'The Senses of Ornament', vol. 12, n° 41 (1), 1990 March, pp. 58-65.
- Lachmayer, Herbert, 'Some notes on the love for detail', *Forum*, Vol. 30, N° 4, 1986, pp. 162-165.
- Laurent, Stephane, 'Brief Chronicle of Ornament', *L'Architecture D'Aujourd'hui*, special issue: 'Ornament', n°333, March-April 2001, pp.54-59.
- Le Corbusier, *Towards a New Architecture*, trans. F. Etchells. (London: The Architectural Press, 1970).
- _____, 'The decorative art of today' (1925), trans. J.I. Dunnet, in Max Risselada (ed.), *Raumplan versus Plan libre: Adolf Loos and Le Corbusier, 1919-1930*. (New York: Rizzoli, 1988. Article from *L'Esprit Nouveau* published in *L'Art decoratif d'aujourd'hui*, Editions Crés, Paris.), pp.142-145.
- _____, 'Standardisation cannot resolve an architectural difficulty' (1925), trans. in Benton, Benton and Sharp (eds), *Form and Function. A source book for the History of Architecture and Design 1890-1939*. (London: Crosby Lockwood Staples, 1999), p. 138.
- _____, 'Twentieth century building and twentieth century living' (1930), in Max Risselada (ed.), *Raumplan versus Plan libre: Adolf Loos and Le Corbusier, 1919-1930*. (New York: Rizzoli, 1988. Article reprinted from *The Studio Year Book on Decorative Art*, London), pp.145-149.
- Loos, Adolf, 'The principle of cladding' (1898), trans. J.O. Newman and J.H. Smith, in Max Risselada (ed.), *Raumplan versus Plan libre: Adolf Loos and Le Corbusier, 1919-1930*. (New York: Rizzoli, 1988), pp. 135-137.
- _____, 'Ornament and crime' (1908), in *Ornament and crime: selected essays*. (Riverside, Calif.: Ariadne Press, 1997), pp. 167-176.
- _____, 'Regarding Economy' (1924), trans. F.R. Jones, in Max Risselada (ed.), *Raumplan versus Plan libre: Adolf Loos and Le Corbusier, 1919-1930*. (New York: Rizzoli, 1988), pp. 137-141.
- Maki, Fumihiko, 'Material and Materiality', *The Japan Architect: Space in Detail II* (special issue), n° 27, autumn 1997, pp.50-51.
- Marcus, George H., *Le Corbusier: inside the machine for living*. (New York: The Monacelli Press, Inc., 2000).
- Martin, Bruce, *Joints in buildings*. (London: G. Godwin; New York: Wiley, 1977).
- Melet, Ed, 'The Architectural Detail. God is not in the detail', in *The Architectural Detail: Dutch architects visualise their concepts*. (Rotterdam: Nai Publishers, 2002), pp. 7-16.
- Mikkola, Kirimo (ed.), *Alvar Aalto vs. the Modern Movement*. (Helsinki: Rakennuskirja, 1981).
- Mostafavi, Mohsen and Leatherbarrow, David, *On weathering: the life of buildings in time*. (Cambridge, Mass.; London: The MIT Press, 1993).
- _____, *Surface Architecture*. (Cambridge, Mass.; London: The MIT Press, 2002).
- Murphy, Kevin D., 'The Villa Savoye and the Modernist Historic Monument', *The Journal of the Society of Architectural Historians*, Vol. 61, N° 1. (March 2002), pp. 68-89.
- Nelson, Paul, 'Maison de Verre', *L'Architecture d' Aujourd'hui*, N° 9, November - December 1933, p.9; reprinted in Frampton, K., 'Maison de Verre', *Perspecta*, vol. 12, 1969, p.85.
- Peters, Tom F., 'Modern Dissemblances', *Progressive Architecture*, 1992 Jan., vol. 73, n° 1, p. 102-120. (Book review: *The Details of Modern Architecture* by Edward R. Ford).

- Pevsner, Nikolaus, *Pioneers of the Modern Design: from William Morris to Walter Gropius*. (London: Penguin Books, 1991). Originally issued as *Pioneers of the Modern Movement: from William Morris to Walter Gropius*. London: Faber and Faber, 1936.
- Reigl, Aloïs, 'The Modern Cult of Monuments: Its Character and Its Origin' (1928), trans. K. W. Forster and D. Ghirardo, *Oppositions*, n° 25, Fall 1982, pp. 21-51.
- Roth, Alfred, *The New Architecture* (1939). (Zürich; München: Artemis-Verlag, 1975).
- Solà-Morales, Ignasi, 'From contrast to analogy. Developments in the concept of architectural intervention', *Lotus International*, n° 46, 1985, pp. 37-46.
- Schittich, Christian (ed.), 'Discussion: 16 statements on details by famous architects and engineers', *Detail*, special issue: 'The purpose of details'; vol. 40, n° 8, Dec. 2000, p. 1427-1438.
- _____, *Building in existing fabric: refurbishment, extensions, new design*. (München: Edition Detail; Basel: Birkhäuser, 2003).
- Scott, John S., *The Penguin Dictionary of Civil Engineering*. (London: Penguin Books, Fourth Edition, 1991).
- Scruton, Roger, *The Aesthetics of Architecture*. (London: Methuen, 1979).
- Schafer, Ashley and Reeser, Amanda, 'Defining detail', *Praxis*, special issue: 'Detail: specificity in architecture', vol. 1, n° 1, 2000, p. 4-6.
- Sharp, Dennis, 'Rebuilding Bauhaus History', *Building Design*, n° 1032, April 26, 1991, pp. 28-32.
- Shonfield, Katherine, *Imprisoned Rooms. Architectural ideologies and post-war public housing constructional failure in Britain*. (London: University College London, unpublished MSc thesis, 1993).
- _____, *Walls have feelings: Architecture, Film and the City*. (London: Routledge, 2000).
- Simonnet, Cyrille, 'Architectural Detail', *Techniques & Architecture*, n° 386, October 1989, pp.89-91.
- Slotboom, Eric, 'The revival of architectural detail', *Archis*, n°6, 2002, pp. 84-87.
- Smith, Norris, 'The Domestic Architecture of Frank Lloyd Wright', in *Four great makers of modern architecture: Gropius, Le Corbusier, Mies van der Rohe, Wright*. (New York: Da Capo Press, 1970).
- Stacey, Michael, 'Layer and Monolith. Detailing Modernism', *Architects' Journal*, vol. 193, n° 25, 1991 June 19, p. 57-60. (Book review: *The Details of Modern Architecture* by Edward R. Ford, 1990).
- Tafel, Cornelius, 'Rehabilitation of the Auerbach House (1924) and the Zuckerkandl House (1927-29) by Walter Gropius in Jena', *Detail*, vol. 38, n° 4, 1998 June, pp. 543-546.
- Taylor, Brian Brace: *Pierre Chareau: designer and architect*. (Köln: Benedikt Taschen, 1992).
- Till, Jeremy and Wiggelsworth, Sarah, 'The future is hairy', in Jonathan Hill (ed.), *Architecture: the subject is matter*. (London: Routledge, 2001), pp. 11-28.
- van Berkel, Ben and Bos, Caroline, 'The ideal detail: theme and motive', *Forum*, vol. 30, n°4, 1986, pp. 186-192.
- _____, 'Storing the Detail', Feireiss, Kristin (ed.), *Ben van Berkel: Mobile Forces*. (Berlin: Ernest & Sohn, 1994), pp. 72-77.

- Venturi, Robert, *Complexity and Contradiction in Architecture*. (New York: Museum of Modern Art, 1966).
- Vermeulen, Paul, 'The Details of Modern Architecture', *Archis*, 1993 March, n° 3, pp 89-90. (Book review: *The Details of Modern Architecture* by Edward R. Ford, 1990).
- Wakita, Osamu A. and Linde, Richard M., *The professional practice of architectural detailing*. (New York; Chichester: Wiley, 3rd ed., 1999).
- Webster, Len, *A Dictionary of Environmental & Civil Engineering*. (New York; London: The Parthenon Publishing Group, 2000).
- Wigley, Mark, 'White Out: Fashioning the Modern', Fausch, D., Singley, P., El-Khoury, R., Efrat, Z. (eds), *Architecture: In Fashion*. (New York: Princeton Architectural Press, 1994), pp. 148-268.
- _____, *White Walls, Designer Dresses: The Fashioning of Modern Architecture*. (Cambridge, Mass.: The MIT Press, 1995).
- Wilhelm, Karin, 'From the Fantastic to Fantasy', *Architectural Association Quarterly*, vol. 11, n° 1, 1979, pp.4-15.
- Wilkes, Joseph A. and Packard, Robert T. (eds), *Encyclopedia of architecture: design, engineering & construction. Vol.2, Concrete-lightweight aggregates to Hunt, Richard M.* (New York; Chichester: Wiley, 1988).
- Winter, John, 'Conserving the 'white architecture' of the 1930's', *Journal of Architectural Conservation*, n°1, March 2000, pp. 6-17.
- Wright, Frank Lloyd, *The Future of Architecture*. (New York: Horizon Press, Inc., 1970).
- Yasuda, Koichi, 'Fascinating Details, Concealed Details', *The Japan Architect*, n° 23, Autumn 1996, pp.7-9.
- _____, 'Towards a New Fake Age of Materials', *The Japan Architect: Space in Detail IV* (special issue), n° 54, summer 2004, pp.8-9.
- Yorke, F.R.S., *The Modern House* (1934). (London: The Architectural Press, 8th edition, revised, 1957).

Websites

- Cambridge Dictionaries Online:
<http://dictionary.cambridge.org/default.asp>
- ICOMOS (International Council on Monuments and Sites) Website:
http://www.icomos.org/athens_charter.html
- RMIT University Website:
http://users.tce.rmit.edu.au/E03159/ModMelb/mm2/lect/50_60_70/html/mb/mb.html
- Wikipedia:
<http://en.wikipedia.org>

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(front page) Frank Lloyd Wright, architect's hands.

From Frank Lloyd Wright, *The Future of Architecture*. (New York: Horizon Press, Inc., 1970).

Photo P.E. Guerrero.

- 1 (top) Filippo Brunelleschi, Dome of the Basilica Santa Maria del Fiore, Florence.
 - (left) [Detail pilaster capital] from Giovanni Fanelli, *Brunelleschi*. (Florence: Becocci Editore, 1977). Photo Scala. [original in colour]
 - (middle) Lantern on top of the dome, from Encyclopaedia Britannica Website: <http://concise.britannica.com/ebc/art-6337> (Accessed 8 August 2006). [original in colour]
 - (right) Dome, from Wikipedia: http://en.wikipedia.org/wiki/Filippo_Brunelleschi (Accessed 8 August 2006). [original in colour]

(bottom) Marcel Breuer, IBM Research Center, France.

From Tician Papachristou, *Marcel Breuer: new buildings and projects, 1960-1970, and work in retrospect, 1921-1960*. (London: Thames and Hudson, 1970).

- (left) Photo Robert Mottar. [original in colour]
- (middle) Photo Yves Guillemaut.
- (right) Photo Robert Mottar.

- 2 Detail drawings.
 - (left) Herzog & de Meuron (architects), Extension Tate Gallery of Modern Art, London. Drawing detail: section through cathedral window. From *Detail*, vol. 40, n° 8, Dec. 2000.
 - (right-top) Drawing detail of brick sill. From Cecil C. Handisyde, *Everyday Details*. (London: Architectural Press, 1976).
 - (right-bottom) Mies van der Rohe, Barcelona Pavillion. Wall detail. From Edward R. Ford, *The Details of Modern Architecture*. (Cambridge, Mass.; London: The MIT Press, 1990).

- 3 William Klein, *Mayday* (Moscow, 1959) [details]
From Robert Klein Gallery Website:
http://www.robertkleingallery.com/gallery/main.php?g2_itemId=16516 (accessed 30 July 2006).

- 4 Le Corbusier, Villa Savoie (1929-1931)
 - (left) Axonometric projection. From Edward R. Ford, *The Details of Modern Architecture*. (Cambridge, Mass.; London: The MIT Press, 1990).
 - (right - top) Photo Jean-Yves Le Guyader (Bibliothèque du Patrimoine). From Kevin D. Murphy, 'The Villa Savoye and the Modernist Historic Monument', *The Journal of the Society of Architectural Historians*, vol. 61, n° 1, March 2002, pp. 68-89.
 - (right - middle) Photo © 1998 H.J.P. From: http://nuist.com/ilke/paper_design_theory/ (Accessed 25 August 2006).
 - (right - bottom) Photo David Churchill. From: <http://www.davidchurchill.co.uk/R1A.htm> (Accessed 25 August 2006). [original in colour]

- 5 Ernst May, *Plattenbauweise* (pre-fabricated slab construction).
From *Ernst May und Das Neue Frankfurt, 1925-1930*. (Frankfurt am Main: Deutsches Architekturmuseum, 1986).

- 6 'Design for modern living'
From F.R.S. Yorke, *The Modern House* (1934). (London: The Architectural Press, 8th edition, revised, 1957).
- 7 Three *modern* details.
- (left) Pierre Chareau, Maison de Verre: detail steel column. Photo Jordi Sarrá. From Brian Brace Taylor, *Pierre Chareau: designer and architect*. (Köln: Benedikt Taschen, 1992). [original in colour]
 - (middle) Mies van der Rohe, Barcelona Pavilion: detail column. Photo © The Bauhaus Dessau Foundation. From George Dodds, *Building Desire. On the Barcelona Pavilion*. (London; New York: Routledge, 2005).
 - (right) Le Corbusier, Villa Savoie: detail of 'naked *pillar*'.
From http://figure-ground.com/travel/image.php?villa_savoie/0003
(Accessed 13 September 2006). [Original in colour]
- 8 Auguste Perret, Notre Dame du Raincy (1922-1924).
- (left) Axonometric projection. From Kenneth Frampton, *Studies in Tectonic Culture. The Poetics of Construction in Nineteenth and Twentieth Century Architecture*. (Cambridge, Mass.; London: The MIT Press, 1995).
 - (right) Detail of restored *claustra*. Photo François Poche.
From <http://www.culture.gouv.fr/culture/inventai/itiinv/archixx/pann/p36.htm>
(Accessed 22 August 2006) [Original in colour]
- 9 Alvar Aalto, Paimio Tuberculosis Sanatorium (1929-33).
- (left-top) Patients' room window: perspectives. (India ink and pencil on tracing paper. Alvar Aalto Foundation, Helsinki). From Peter Reed (ed.), *Alvar Aalto. Between Humanism and Materialism*. (New York: The Museum of Modern Art, 1998). [detail]
 - (left-bottom) Washbasin section. (Ink, pencil, and photocollage on board. Alvar Aalto Foundation, Helsinki). From Peter Reed (ed.), *Alvar Aalto. Between Humanism and Materialism*. (New York: The Museum of Modern Art, 1998).
 - (right) View of the cantilevered balconies. Photo © Simo Rista. From Richard Weston, *Alvar Aalto*. (London: Phaidon Press Limited, 1995).

'Architectural details'

The Bartlett School of Architecture, Summer Show 2006. Text and photograph by the author.