DETAILS. ARCHITECTURE SEEN IN SECTION

Introduction to the study of detail
Marco Pogagnic

To avoid any possible misunderstanding, I like to stress that architecture is not exhausted in the attention paid to details and I am afraid that, in secular terms, the detail is not even the place where the existence of God manifests itself. Why then dealing with an issue that the current director of the Biennale fought already twenty years ago dismissing it as a mere fetishistic exercise, an opinion perhaps still prevailing nowadays? Many concerns led us to pursue a research that promises to arouse much suspicion: a reflection on architectural language and its transformations from modernity to post-modernity, a passion for the built rather than an imagined architectural language, the inconsistencies of a critical vocabulary inadequate to describe the complexity of a new architectural formation. In this regard, I believe an architect should be as innovative as a linguist explaining that words are made up of vowels and consonants. Elements like lavatory, balcony, ramp did not seem adequate to our purpose which was to retrace the path of modernity from ancient tectonic (base-drum-frame) to the most plastic representation of the constitutive elements of architectural language: column, frame and molding.

In 1900, it was possible to define the fundamentals, construction systems and enclosures along two sections of national character: Italian and Japanese. Even if it is a bit outdated, I like to focus on the first one only, which is our interpretation of the constitutive elements of architectural language: column, frame and molding.

In this regard, I believe an architect should be as innovative as a linguist explaining that words are made up of vowels and consonants. Elements like lavatory, balcony, ramp did not seem adequate to our purpose which was to retrace the path of modernity from ancient tectonic (base-drum-frame) to the most plastic representation of the constitutive elements we wanted to investigate. The acrylic panels used by Sejima are not framed nor tapering, they do not have a front or back, not an orientation nor they suggest gravity; on the contrary in his architecture Mies refers to all these elements even when he seems to subvert them. Nowadays it is often difficult to define a wall opening using the traditional term of ‘door’ or ‘window’ (it is not by chance that we generally call them ‘openings’). These are lexical uncertainties that emphasize the transformations of our language.

A detail is mainly engaged in what the German theorists of the nineteenth century defined the Junktur. The term defines a construction joint (i.e. an expansion joint) but also the suture line that marks the intersection between horizontal floor planes and vertical façade planes, the line where the roof meets the perimeter wall, or a window opening is cut into the wall thickness. The details presented in the following pages portray this elementary order. As a counterpart to the students’ work there are the boards prepared by professional firms we consider internationally representative. Each office has been asked to submit a board with four significant details of their architecture and a brief statement explaining the significance and importance that details have in their design and creative strategies.

As a counterpoint to the students’ work there are the boards prepared by professional firms we consider internationally representative. Each office has been asked to submit a board with four significant details of their architecture and a brief statement explaining the significance and importance that details have in their design and creative strategies.

The exhibition at the Biennale presents a semester long study developed by the undergraduate luav students together with a university research supported by a grant from Department of Architecture, Construction and Conservation (Dacc) luav. The aim was to describe the changes occurred in architecture during the last fifty years using a tool that could simultaneously highlight the formal, technological, building and structural aspects of these transformations. The choice that best satisfied this goal was to use the same 1:10 scale for all the drawings. The redesign of construction details offered a homogenous series of documents which had comparable graphic layouts and the same scale, thus facilitating comparative criticism which is essential to any interpretation. Our research task was therefore not only to define its own object, but also to ‘invent’ the documents to exercise on the architectural language.

Among all the graphic tools available to architects (from conceptual sketch to rendering), the detail section is certainly the most regulated. The graphic conventions imposed on this type of graphical representation are such as to make it almost impossible for any form of ‘fantasy’ or individual ‘creativity’. A detail in 1:10 scale is an operational tool, a pure construction drawing that must be absolutely unique in the content of its communication. Every artistic medium is characterized by ambiguity, polysemic character, rhetorical excess as the sudden minimalist silence, then the construction detail is the furthest thing from the art world. But art is also discipline, rigor, profound understanding of the fundamental language grammar one wants to use.

Entering a music school and walking along its corridors one is fascinated to hear the obsessive practice of young students required to rehearse a difficult score or the full range of musical scales. When we asked our students to redraw construction details of significant contemporary buildings we imagined them exercising like music scholars, performing scales and variations, obsessively repeating a passage until they would find the right notes without looking to the instrument. The didactic experience with the students confirms the usefulness of this approach and suggests to make it a customary educational practice.

The details drawn by the students have been grouped in three thematic sections: the Fundamentals, construction systems and enclosures along two sections of national character: Italian and Japanese. The details presented in the following pages portray this elementary order. As a counterpoint to the students’ work there are the boards prepared by professional firms we consider internationally representative. Each office has been asked to submit a board with four significant details of their architecture and a brief statement explaining the significance and importance that details have in their design and creative strategies.

The offices’ prompt response to our request makes us believe we have touched a sensitive point. Detail design is a mixed blessing for each architect following a project from concept to construction, it is an important viewpoint to look at the design process and the evolution of the construction site to innovations such as BIM, Building Information Modelling, or to the establishment of design offices specialized in construction detailing and shop drawings. These transformations are affecting more and more a domain that Mario Carpo defined as the design authorship level. Is it good or bad if a project is increasingly becoming the result of collective work, sometimes even anonymous? Let us remember Adolf Loos’ statement: Only a small part of the built environment belongs to Architecture, intended as Monumental Art. For everything else are worth the principles of good construction.

I would like to thank prof. Christian Sumi for his dazzling insights that have illuminated our work, prof. Donatella Fiorentini for her research at luav in 2013 focusing on the theme of detail, ing. Nicola Leonardi for the support given to our project by “The Plan” magazine, prof. Umberto Tame for his intellectual and institutional support as director of the Dppac Graduate School.

BACARDI OFFICE BUILDING MEXICO CITY

By raising the building above the ground in back of its columns, with the lower area open except for small enclosures, the relationship of structure and upper enclosing walls of mahogany and glass becomes visually clear. The details further this theme; note the clearly stated separation of elements, and the manner in which the corner is turned.

University of Venice
Santa Croce 191 Tolentini 30123 Venice
tel 041 257 1856/1844
www.luav.it
@luav 2014

luav giornale dell’università iscritto al n. 191 del registro stampa tribunale di Venezia a cura del servizio comunicazione com@luav.it
ISSN 2031-7814

direttore
Amerigo Restucci

stampa
Graffe Veneziane, Venezia (VE)
The occasion is certainly unique and in some ways it deepens the general nature of this Biennal, as if to say that the divine can be found in the detail nature and combination of materials in order to learn from them. In my early works I was influenced by some of the character of late nineteenth century architecture, mostly by Victor Horta, which informed quite a lot my first built architecture. The simplicity in the modelling and transformation of materials - from stone to iron, from iron to wood or plaster - and the use of steel as structural as well as formal elements introduced me to a research field I no longer abandoned and still fascinates me. This leads us to devote a lot of time to design details, in search of the profound nature of matter even before any aesthetic or compositional value, almost as if matter would contain in itself the form related to its potential use, almost as if the architect's task was to extract this form applied to the building. This has always been the case from the simplest domestic design to more complex and articulated constructions. In this regard, beside individual poetics, architectural profession has never changed.

**Umberto Trame**

**Detail and the Art of Building**

Looking at the construction development of the Regional Government building in Trento by Adalberto Libera and Sergio Musmeci one finds that the evolution of the project - which never questions the morphological and functional layout of spaces and buildings as defined in the competition brief - is entirely entrusted to the invention/definition of the structural features and construction details of the single constitutive parts of the building; especially in the Regional Council hall, these features reach an indissoluble unity, involving also the architectural elements of the façade. Therein lies the modernity of the work. The sections of the buildings that we show do not constitute a catalogue of possible solutions, a building manual for façade detailing, but rather the first part of a study on architectural works which implies their complete knowledge in terms of construction. This analysis and redesign of the works teaches us to look very carefully also at the nature and combination of materials in order to learn from them. In my early works I was influenced by some of the character of late nineteenth century architecture, mostly by Victor Horta, which informed quite a lot my first built architecture. The simplicity in the modelling and transformation of materials - from stone to iron, from iron to wood or plaster - and the use of steel as structural as well as formal elements introduced me to a research field I no longer abandoned and still fascinates me. This leads us to devote a lot of time to design details, in search of the profound nature of matter even before any aesthetic or compositional value, almost as if matter would contain in itself the form related to its potential use, almost as if the architect's task was to extract this form applied to the building. This has always been the case from the simplest domestic design to more complex and articulated constructions. In this regard, beside individual poetics, architectural profession has never changed.

**Detailed shuffling**

Marco Captanio

While inspecting buildings built before the 1970s energy crisis, or much of contemporary Japanese architectural production, we are often impressed by the straightforwardness and simplicity of the way materials come together. Occasionally, one wonders how, in Europe, due to an ever-stricter building code and rigorous performance requirements, a comparable quality of straightforwardness could be achieved again, knowing that a simple comeback is not given.

There are two main tactics that architects employ to deal with the conventional stratification of construction systems (i.e., structure, installations, insulation and finishing). The first is to work on the individual materials themselves (concrete, wood etc.) and question their use or shuffle the order in which they are layered. The second is to assign an additional function to an architectural element, which was initially monofunctional, so that the number of layers could be reduced. Let us examine the first tactic by looking at concrete. If fair-face concrete buildings seemed impossible to conceive after the heightened performative requirements of the late 1970s, we have been recently witnessing the resurgence of them, thanks to improvements in the underside of the planks. We have also been looking at concrete buildings seen as ducts. Within the thick central wall, flex duct carries air from main runs to open ends of the precast planks, where it is then forced into the voids and fed out into the space through openings in the underside of the planks." (Nordenson 2010:313)

These two approaches need a productive coordination with the structural engineer, and, in such cases, architects and engineers share their authorship on the building. The first tactic generally comes out of a specific decision, taken at the very start of a project, that balances structural and aesthetic concept, and is the foundation for all the following design and detailing. The second tactic tends to make the best out of given conditions, and is more efficient and adaptable.
FUNDAMENTALS

1. THE COLUMN

2. THE CORNICE

3. THE MOULDING
STUDENTS DRAWINGS

THE CLADDING

Herzog & de Meuron, Sammlung Goetz, Munich (D) 1992

Causo St John, Nottingham Contemporary
Nottingham (E) 2009

Walter Gropius - TAC, John F. Kennedy Federal Building, Boston (USA) 1966

David Adjaye, Rivington Place, London (UK) 2007

Sauerbruch Hutton Architects, Offices Dessau (D) 2002 - 2005

FAMT/Grimeshaw Partnership, Park Road Apartments, London (UK) 1960

Alejandro Aravena, Lakefront House Parihueico, Lake (Chile) 2004

Bevk Perovic, House SB, Ljubljana (SIL) 2002-2004

Bearth & Deplazes, Family House, Sumvitg (CH) 1998
Berlin, Germany, 1994 - 1996

David Chipperfield, House in Berlin

The rooms are laid out in an L-shaped form about an entrance and also provide more private areas for the changing rooms and ladies' and gentlemen's toilets. The horizontal tubing stiffens the structure, the work of Rittmeyer and Furrer and hosting, as well as temporary insulation, the visual transparency through the building. Around the reception, on the ground floor, are situated the public offices, interrogation rooms and cells.

The expansion of Kunstmuseum Winterthur offers the challenge of a low energy building. As a result, the building is in perpetual metamorphosis and acts as a weather skin, daylight modulator, sun shade and thermal insulator. The multi-layered facade of the same size, are neither perforated nor cut. The multi-layered facade serves not only as a line of circulation, but also as a line of circulation, that combines the pieces available to get a high quality result.

Besides the clear contribution to sustainability on the choice of timber as the main structural system, the timber main structural system is in great extent the most significant innovation of the project. From a technical and environmental point of view the proposed this timber structure is a unique response to this type of urban development, as it is a much more dense, sculpturally closed volume in order to assimilate the public offices, interrogation rooms and cells.

TheExpansion of Kunstmuseum Winterthur offers the challenge of a low energy building. As a result, the building is in perpetual metamorphosis and acts as a weather skin, daylight modulator, sun shade and thermal insulator. The multi-layered facade of the same size, are neither perforated nor cut. The multi-layered facade serves not only as a line of circulation, but also as a line of circulation, that combines the pieces available to get a high quality result.

Besides the clear contribution to sustainability on the choice of timber as the main structural system, the timber main structural system is in great extent the most significant innovation of the project. From a technical and environmental point of view the proposed this timber structure is a unique response to this type of urban development, as it is a much more dense, sculpturally closed volume in order to assimilate the public offices, interrogation rooms and cells.

The timber main structural system is in great extent the most significant innovation of the project. From a technical and environmental point of view the proposed this timber structure is a unique response to this type of urban development, as it is a much more dense, sculpturally closed volume in order to assimilate the public offices, interrogation rooms and cells.

The timber main structural system is in great extent the most significant innovation of the project. From a technical and environmental point of view the proposed this timber structure is a unique response to this type of urban development, as it is a much more dense, sculpturally closed volume in order to assimilate the public offices, interrogation rooms and cells.

The timber main structural system is in great extent the most significant innovation of the project. From a technical and environmental point of view the proposed this timber structure is a unique response to this type of urban development, as it is a much more dense, sculpturally closed volume in order to assimilate the public offices, interrogation rooms and cells.

The timber main structural system is in great extent the most significant innovation of the project. From a technical and environmental point of view the proposed this timber structure is a unique response to this type of urban development, as it is a much more dense, sculpturally closed volume in order to assimilate the public offices, interrogation rooms and cells.
STUDENTS DRAWINGS

THE ITALIAN CONTRIBUTION

Franco Albini, Franca Helg, La Rinascente, Rome (I) 1960

Ignazio Gardella, Mensa Olivetti, Ivrea (I) 1959

Luigi Caccia Dominioni, Office and apartment buildings in corso Europa, Milano (I) 1959

Ludovico Magistretti, S. Maria Nascente, Milano (I) 1947

Ignazio Gardella, case Borsalino, Alessandria (I), 1949/51

Marcel Breuer, Pier Luigi Nervi, Unesco Building, Paris (F) 1952-58

Cino Zucchi, D Building, Giudecca, Venezia (I) 1997-2000
Burkhalter - Sumi

Exterior Wall with Thickness

We want to create a façade that feels like animal skin. By being layered, the skin could become a structure to support architecture. The skin of sea cucumber is a great reference for this. Their bone is not located at the center of the body. It is broken into pieces and tucked into the skin. In my design also, bone is often scattered into the skin and the two elements are indistinguishable. As the result, such skin with thickness becomes soft and warm. Stroking it is so relaxing – like when you caress your sweetheart.
Takaharu + Yui Tezuka Architects
Beyond Architecture

Architecture should support society and exceeds its era. Following the passion of the architect, architecture that continues to survive across several centuries will mature due to the affection it receives from people. Architecture is an interdisciplinary field. We, as an architect, need to collaborate with different experts such as mechanical, structural engineers, and window joinery manufacturers. It is important to know the reason and the amount of effort and time given into each architectural detail. Materials, whether wood or steel, have their own character and construction method. We must understand the nature of each material and how they behave differently. For example, wood is heavy, thus wooden structure does not need to be thin. Steel structure follows the rationality of structural dynamics; on the other hand, wood structure is about the assembly of members and how they age over time. It is vital to understand the meaning of material to overcome the challenging factor of time. Good details can only be created when materials are behaving the way they should.

Throughout the ages, there is only one constant convention of architecture. Architecture exists to serve people. In the same way that a pair of chopsticks unused by people is no more than two rods, architecture that does not coexist with people is no more than boxes.

An architect always seeks the future. With the current advances in technology, architecture is now extremely liberated. Structures exceeding 2000m and all kinds of free-form surfaces are achievable. Nevertheless, the essence of architecture is constant. Architecture can become art, but architecture is not art. Architecture is charged with the mission of transcending era, from today into the future. Because it transcends time, architecture is permitted to occupy a special position among humanity’s various creations. Time is the enemy of architecture, and at the same time it is its ally. Architecture that cannot coexist with people cannot carry out its greatest mission, the transcending of time. No matter the technological advancements, our pursuit to understand material, detail, and people will always remain as the significant aspect of architecture.

Shim-Sutcliffe Architects
Walls of Light

We want to create thick walls of light that transform our architectural spaces through the seasons and from day to night. We have selected four projects that modulate light in very different ways, but in each case, the thickness of the wall assembly allows for the gradation and transformation of light as it washes across the surface while the thickness of the wall simultaneously provides containment and substance as well as enables the dematerialization by the light. For Congregational Beth Ha’am in Portland Maine, we create apertures above with skylights and clerestory windows that wash with light the inside face of a sacred space allowing the space to glow from within. For The Integral House on a ravine edge in Toronto, we create thick shaped and articulated wooden fins in which natural light washes across its face. For the Craven Road Studio, we create narrow skylights combined with articulated wooden light coffers to amplify the light. For the House on Henry’s Meadow, we transform logs into conceptual screens demonstrating their visual delight and plasticity. We use wood in different ways in each project, but in all cases, our spaces are given a humane dignity.

In our practice we are constantly experimenting and exploring the possibilities of light and its amplification and dematerialization into space. We are interested in the intense relationship between man-made materials that are controlled and shaped and how they react with changing light conditions and the larger unpredictable forces of nature. Our work is engaged by this ongoing dynamic engagement. By intertwining wood and light, we more accurately register the subtle and changing atmospheric conditions around us. By wrapping our buildings in walls of light, we link the inside and outside making us aware of our human condition on a daily basis.
OAB: Office of Architecture
in Barcelona
Light and Materiality

Architecture should support society and exceeds its era. Following the passion of the architect, a–chitecture that continues to survive across several centuries will mature due to the affection it receives from people. Architecture is an interdisciplinary field. OAB picks up on the trajectory of the earlier Carlos Ferrater Studio, whilst incorporating new ways of understanding architecture on the part of the members of the team in a richer, more varied and more flexible way of approaching project design. The renewal and creation of this new platform will attempt to confront the challenges that the architecture of this century has posed in the intellectual and social, technological and environmental fields.

Growing out of the socialization of collective work and based on the personal tendencies of its members, this report includes the projects and works built during this most recent period, projects and works that privilege the desire to work in different contexts by extending and enriching OAB’s range when seeking new channels of formal expression.

To touch upon the theoretical aspects of the project and upon the innovation and investigation of new technologies, without forgoing a respect for the location, the social origin of the work of the architect, and the constructional rationale in the latent aspects of the proposal and the development of the design. OAB has enabled us to experiment in different areas of architectural endeavor—buildings of varying sizes and functions, public spaces, interior spaces, ephemeral installations or themes to do with landscape—thus facilitating, at the same time, the internationalization of part of the work of the studio.

Different circumstances have led to the birth of this new platform, based on a transversal way of working that is open to innovation and experimentation, flexible in its conceptual propositions, and convinced of the fact that each new project offers a different experience in which we must start from scratch and be selective as we develop the project. This is something that has been learned beforehand, it having been demonstrated that the essence of the architect’s task does not lie in language or in displays of style but in his or her response to the conditions of landscape and the city, to the complexity of the social organization of the programs, to the utilization of light as design’s raw material, with a capacity to generate spatiality and emotion, and to the materiality that imprints on the more sensitive and sensorial aspects that bring the piece of architecture closer to its future users and inhabitants as the final recipients of the architect’s work. These questions of content and form are the ones that have led to the creation of OAB as a platform with which to confront the architectural challenges of this new century.
The building detail does not prefer one construction system or another. It expresses all of them by developing their own peculiarities. Within this board are pre-sent four exterior wall situations that differ from another: curtain wall, steel frame with HPL cladding, concrete wall with brick and stone cladding, monolithic wall with prefabricated concrete panels. Some of them pursue structural expression and others celebrate cladding; some deal with depth and others with surface; some are layered and others have a single material, some are light and others are heavy. All of them are coherent with specific strategies of material expression that dialogue with the in-dividual context of each building. There is not a general principle in this approach to construction: each project develops its own materiality. Formal and spatial articulation, though, do not exist outside of construction. The detail does not choose one architectural language or another; it articulates all of them in the relations of the parts to the whole of a building. In this regards, the detail does not exist in a realm that is separate from the general design concept. The material is visible but its visibility disappears within the whole of a building. The detail articulates the relationships among structure, cladding, insulation and openings. The best details do more than one job with the same element. This multiplicity is not apparent-ly visible. It needs to be analyzed in a plurality of representations to unveil its layering. The detail is therefore synthetic and not necessarily visible. The building detail deals with the arrangement of standard construction components that are interrelated in a coherent whole. It deals with market availability, budget constraints and comparison among parallel offers where the most economic bid often r-

Artec Architekten - Bettina Götz and Richard Manahl

The contour of the space

Architecture is three-dimensional thought accompanied with craftsmanship. The craft of architecture is revealed in the detail. The detail can be described as the transition from one surface condition to another. In the fine arts, painting is, for example, concerned with the surface, and the drawing with the detail — or, to be more precise, with the fault-lines between the surfaces. The articulation of the details defines the structure of the surface of a form. A specific way of articulating the details is a prerequisite to the distinguishability of designer and building in a homogenized world. The arbitrary applicability of the most diverse of formal conceptions, which are available everywhere and to everyone today through the possibilities of information processing, makes a new Classicism conceivable. Next to devising space, the detail, in combination with the structure, continues to be a means to authentic architecture.
The detail’s construction is a field of project as wide as the town planning. With Autocad, the conception of buildings is entered in the “power of ten” era, in reference to the Charles and Ray Eames’s movie. We can scroll in the files since the site plan towards the bolt assembly. Since 1:2000 scale towards 1/1 scale. Find the right scale, which in the most effective way to adjust a technical solution, interest us as far as conceptualize a program. The design of a front begins by technical requirements of the envelope. In this way, we use simple and classical materials like glass, aluminium, terracotta, concrete, wood, galvanized steel. We assemble them in a original way to obtain the wished effect. To compare it with cooking skill, we use fresh and natural products and we never use already made products (like a deep-frozen ready meal). In France, the architect doesn’t produce execution documents for the construction. Our plans are indicative of the deliberate architectural effect. The settling and responsibility are assured by the company which builds. All the construction site work is for us to keep essential elements of the detail’s conception integrating the technical expertise of the construction company. This reality is heavy because every time it’s a negotiation between the architectural effect which we have the power on and the technical conception is the responsibility of the construction company. Some discussions and exchanges are necessary to find the solution which suits both, between knowledge, deadlines, regulations and economy. However, this work in progress in the detail’s development of construction site is rich and allows to exceed our technical knowledge with the technological tools and the companies skills.

Annette Gigon - Mike Guyer
We like to imagine how materials can be “trained” to form spaces, to resist gravity, defy the weather, to enclose and shelter people. We think of buildings as specific, “composing” of material on the earth’s surface – durable, beautiful, precise compositions of materials that can be permeated by air and light. Architecture is material permanently joined, layered, poured, pieced together around space.
Dominique Perrault Architecture

Vanishing architecture, the aesthetic of disappearance

The creation of architecture is undeniably an act of authority. Our impression of architecture is usually one of something heavy, immobile, dense and complex. It separates the land and physically creates division. For Dominique Perrault, the challenge is to change this, to eliminate heaviness: to design walls that allow one to see through it, allow air to flow through it, and give one the impression that inside and outside are open to each other. One way he meets this challenge is by manipulating scale through the selection and implementation of materials. One material that possesses such fantastic properties is metallic mesh. It has a certain hardness and resistance that offers shelter, since that is architecture’s main role, but it also has a wonderful poetic and quasi-immaterial quality. The dialectic of this material interacting with the environment causes a building to appear then disappear, to be present then absent, and to be opaque then transparent.

The Grand Theatre of Albi serves as the focal point of a tree-lined avenue, the Theatre of Albi, Perrault is playing with the effects of immateriality enhanced by the visual aspect of metallic mesh; with the Grand Theatre of Albi, Perrault is playing with the effects of immateriality on its façade, and the ceiling of the main courtroom of the Court of Justice of the European Union in Luxembourg is attired in indefinable layers of moiré and luminescence. Perrault imagines and develops details designed to achieve his purpose. They enable him to implement metallic mesh in a way that erases and dematerializes his architecture, overcoming its quality of static object.

Conzett Bronzini Gartmann

Bridges Sections
Concepts versus Image

In the design of timber bridges durability is the crucial issue. In the Scandinavian countries, wood is often treated with chemicals in order to expose it to the elements. In the Alpine countries on the contrary there is a long and distinguished tradition of protecting timber work thanks to specific design features. These devices are not limited to the construction of roofs and side protective elements. In some cases for instance it is reasonable to use a central beam that can be easily protected against the weather. This solution is based on a certain hierarchy of space and importance: the more central a structural element is sectionwise the better it is protected from sun, rain and snow, and the greater its life expectancy. Railings and balustrades are ancillary parts and must be constructed so as to facilitate their replacement. If built of chestnut and larch they can last up to about forty years, the same goes for all the structural components that are weather exposed. If it is necessary to have such components, they must be replaceable and the structural conception of the work must be designed in such a way that the transitional absence of one such element does not affect the soundness of the overall structure during the replacement process. In such cases, a bridge will be closed during replacement work and therefore there will be a smaller operating load during construction.

Central truss bridges are sensitive to asymmetric loads. Eccentric effects due to wind force or accidental loads stress the bridge with torsional moments. These can be resisted by bulky sections resistant to torsion or with paired forces located on distant parts of the structure that are then transferred to the supporting points.

Our board presents the sections of the four wooden bridges whose structural concept is based on a central girder. Apparently so different, they share a common structural setting. For the understanding of a structure it is necessary to know the underlining concept of the project. An analysis based solely on form or image leads to a superficial understanding.
Working as an architect in Switzerland, I witness how much constraints about building performance can influence the design practice, steering great part of the architectural production towards standard constructive solutions and detailing. My concern here though is not to question the establishment, but to draw emphasis to the challenge that an architect faces when attempting to address materiality from outside the box and to highlight the importance of the architect/engineer collaboration.

See: G. Nordenson, Patterns and Structure: Selected Writings, Lars Muller Baden-London, 2020

**Phenomenology of the (no) detail**
Alberto Franchini

The only way to understand the meaning of Architecture is according to a phenomenological ap-proach, as art historian Heinrich Wöllfin briefly described in his Psychology of Architecture: “The most deep content of the architectonic impression is represented by the overflowing of the load of the matter which is satisfied with a will understandable for us in powerful masses”. With the mimesis these “powerful masses” were represented trough mouldings where you have a transition between a vertical and an horizontal element: for example in the connection between the column and the lintel you have the capital. Now, that the mimesis is gone, so to understand the “powerful masses” you have to look at the details, where the archi-
tects can really put their intentions. The detail is an intimate space where you can only be alone in intellectual connection with the physical world: we can say that this is the haptic realm of architecture.

In the Barcelona pavilion (fig. 5) Mies van der Rohe shows us very little about the connection: only two screws. The se-

screws hold a steel glossy carter that covers the column. The glossy car-
ter reflects everything that is around it, except for the most important part: the joints. The way the column is lin-
ked to the beam and to the concrete foundation is totally absent. The first impression is that the column, a tec-
tonic element representing the stabili-
ty of the building, is floating in the space. But this is not completely true, beca-
use Mies is not lying to you. He is tel-
ing you that the carter is floating and not the column! Because, if you really pay attention to what you see - you look the ar-chitecture - you’ll discover that the carter is a carter - you see it’s thickness - and you see that is hold in this position thanks to the screws.

What I’ve just described is really a dia-
logue between the viewer, that is expe-
rriencing, and architecture: only through this exchange a deep connection betwe-

en man and architecture is possible. SANAA in the Louvre-Lens Museum (fig. 6) is going further in this me-
" nailful abstraction of tectonic signs. In this museum there is a facade co-
covered by aluminum sheets, 2mm thick and 4m high, one besides the other without any visible joints (fig. 6). Everything is suspended. The emotion, that you experience, in front of this facade is provoked by the fact that you cannot understand how is possible that such a thin sheet and tall sheet can stand. Even if you get closer to the building and you see through the one cm space that is left between one she-
et and the other, you cannot see how the plate is erected. The honeycomb panel on which the aluminum is glued is arched of about 2.5 cm. So you cannot see it. This panel, a real struc-
tural element for the facade, gives the aluminum plane the necessary rigidity and the sufficient space for the screws that carry the brackets.

Mies was playing with the way you op-
tically perceive the things, but here SA-
NAA conceal everything from the view so that you are totally disoriented. No more screws, that like compass, tell you the correct direction to understand the construction. Here, in this absent de-
tail, SANANA is playing with the (light) matter, and more precisely with our ex-
petations in front of them. Rem Koolhaas in Casa da Musica (2005) in Porto (fig. 7) is also working in the abstraction of the tectonic ele-
ments like he wrote in SMXL. “For years, we have concentrated on NO-
Detail. Sometimes we succeed - it’s gone, abstracted; sometimes we fail - it’s still there. Details should disappear - they are old architecture” (3). In this building we see only a new concept of space that is covered with an irregu-
lar form, resembling a sheet of paper folded many times, without any clear structural meaning. The conception of the building was not aware of the construc-
tion: if you look at the section, you cannot find any relation betwe-

en form and build, you see better the enormous space that exist between the outside and the inside. In the inte-
rior, the false ceiling - the latest form of decoration - as it is not functionally necessary, is there only to disconnect human being form the outside. The building in this manner is really speech-
less to his obvious sparring partner the human being.

Details, for Koolhaas, should disappe-
ar only to show abstract concept that can, in this way, travel easier around the world. But here the phenomeno-

logy of architecture is impoverished, there is no difference between the image of the building and the real one, there are no additional informa-
tion to stimulate the visitor. A deep connection is no more possible in the perception of these no-details: “Is not only about the fact that a will has to be fulfilled, but what kind of will. A random cube respond to the first task really well, but the contents that are here represented are really poor”.

---

1 Heinrich Wöllfin, Psychologia dell'architettura, Etal. edizioni, Milano 2010, p. 31
4 Heinrich Wöllfin, Psychologia dell’architettura, op.cit., pp. 31-32.
The word “detail” means different things to different architects. It is obvious that a Brunelleschi pilaster capital is of a different order from the twist or taper of a Breuer concrete column. 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.

Mies van der Rohe says, “God lies in the details.”

**Paul Rudolph:** “There are no details.” There is of course a generational distinction, but also a semantic one. Can we ever speak meaningfully of details today? The most obvious example of shift of emphasis is in the work of Frank Lloyd Wright.

The Robie House of the 1890’s is full of beautifully worked out “details”. The Guggenheim Museum of the 1950’s has none, not even a stair rail. **Details today are hardly more than enlarged structural connection and corners.**

The collection that follows contains many kinds of “details”. Window enframements (Miesian or even Perretesque), geometric calculations as in the Roofless Church, decorative grills as in the stair rails, arbitrary steel curves as in the Museum of Modern Art’s East Wing, a single building section as in the Dumbarton Oaks Museum. Varied as they are in type, they may sometimes all be called, I suppose, “details”.

Phillip Johnson, “Architectural Record”, April 1964

Construction is the truest guardian of the spirit of the times because it is objective and it is not affected by personal individualism or fantasy. The idea of clear construction is one of the fundamentals we should accept. We can talk about that easily, but to do it is not easy; it is difficult to stick to this fundamental construction, and then to elevate it to a structure.

**Architecture begins when two bricks are put carefully together.** Architecture is a language having the discipline of a grammar. Language can be used for normal day-to-day purpose as prose. And if you are very good at that you may speak a wonderful prose. And if you are really good you can be a poet. But it is the same language and its characteristic is that it has all these possibilities.

The physicist Schroedinger said of general principles, “the creative vigor of a general principle depends precisely on its generality”, and that is exactly what I mean when I talk about structure in architecture. It is not a special solution. It is a general idea. And, although each building is a single solution, it is not motivated as such.

**Ludwig Mies van der Rohe, “Architectural Record”, October 1963**

Approaching a building from a distance, we gradually shift our attention from the whole to the detail. The nearer we come, the more the detail gains in importance. We are still with the basic conception – we remember the over-all architecture, the form, the silhouette, the structural modularity; we are still guided by the general orientation of the building – but now, we see and touch and experience detail.

The architecture of past periods tended to lend melodies to the details; a column capital was a piece of sculpture in itself – a bit of art decoration independent of the building. **Today, our details tend to exist solely for the service of the whole structure, and become inherent particles of the whole.**

While technical demands for details have in recent decades increased immensely – demands in regard to insulation, acoustics, fabrication, assemblage, time, maintenance etc. – their individual and visual expressions have become more simple and more subordinated to the whole composition. So much so that details often fuse completely with the greater architectural form to the point where it is difficult to separate them. It seems increasingly nonsensical to say, “that might have been great architecture, if somebody had only worked out the details…” Today, this case simply does not exist – in practice or in theory.

The above is true only as a generalization, of course, with allowance for transitional variations and overlapping notions. Much depends on the nature of the building, and perhaps still more on the material that is used. At the present point in architectural history, when reinforced concrete flamboyance seems fashionable, one might say that no other material has the potential for such complete and convincing fusion between structure, enclosure and surface; between architecture and detail; between the minute great form and the great small particle.

**Marcel Breuer, “Architectural Record”, February 1964**

**Un objeto es una sección,** es una porción definida de un espacio abierto de coordenadas físicas. Pensar en un objeto como sección en la masa indiferenciada de estratos materiales hace difícil una distinción convencional entre el contexto y su propia e inherente estructura, hace difícil asociar formas a límites, y refuerza, a su vez, la noción de diversidad constitutiva. En consonancia con esa materialidad diversa y diferenciada, los componentes de un objeto arquitectónico obedecerán a leyes constructivas, a geometrías y a impulsos figurativos que gozarán de autonomía, de una incondicional independencia. Podemos justamente denominar elementos, elementos de proyecto, a esas porciones particulares extraídas de la continuidad de unos estratos ilimitados. Como en el universo acumulativo de Brancusi, como en la multiplicidad gráfica de Hiroshige, los elementos convivirán libremente, sueltos.”

Juan Navarro Baldeweg, Statement on detail

“Details. Architecture seen in section.”