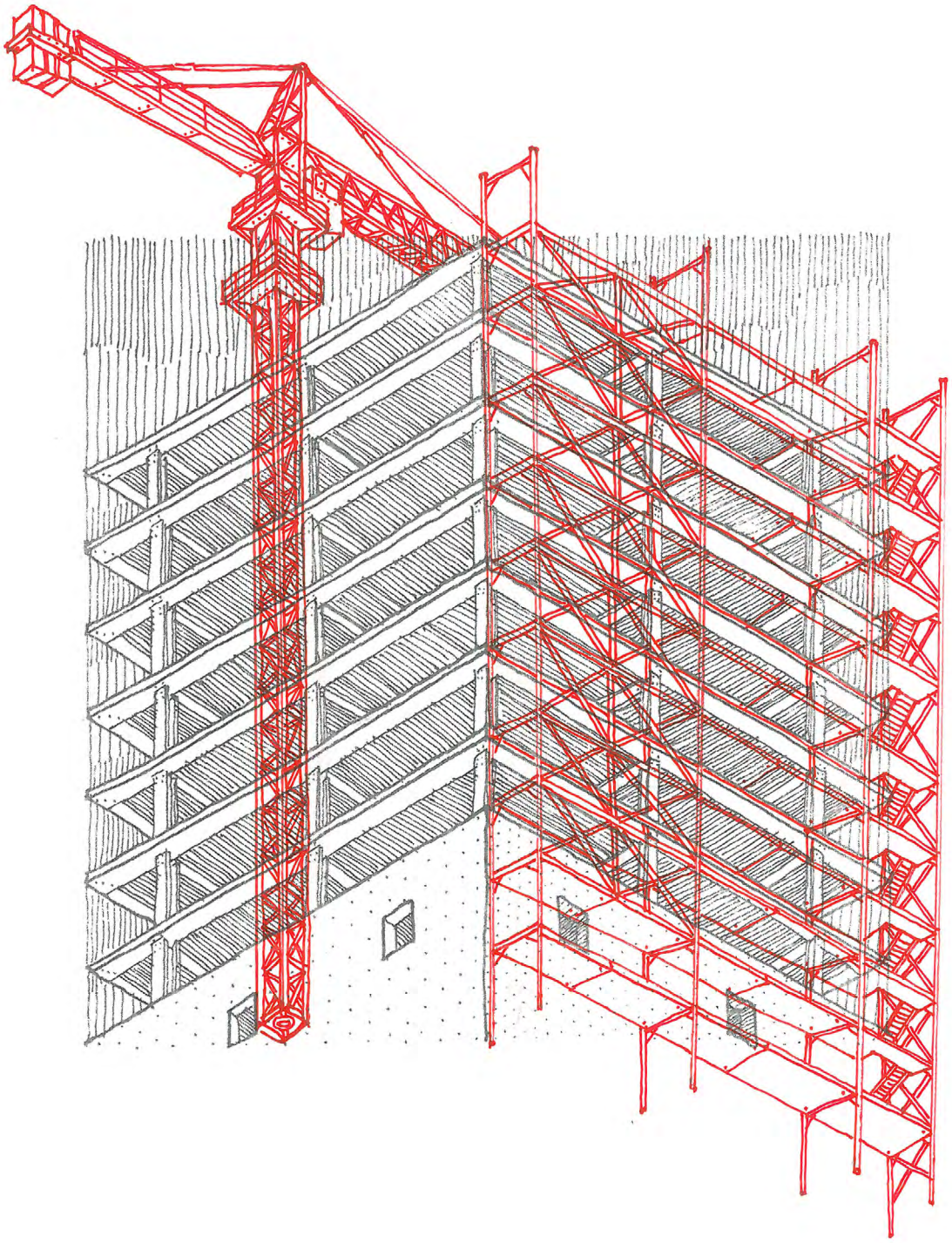
VICEVERSA

Number 2 - June 2015



The Building Site

Pietro Valle, editor

VICEVERSA
Number 2 - June 2015

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ISSN 2421-2687

Two-monthly architecture magazine, published in PDF format and on ISSU; each issue is curated by a member of the editorial staff or by a guest editor.
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The Architect and the Building Site

EDITORIAL

Valerio Paolo Mosco

This issue of *Viceversa*, edited by Pietro Valle, is a collection of texts on the building site, on the physical construction of architecture and how this process intervenes in the fine tuning of the project itself, often modifying it in a substantial way. This subject is considered under a number of viewpoints: historical, critical, by practising and non practising architects, Italian and international.
Now more than before, the relationship with the building site is key to understanding the current state of architecture. In the last few years we have witnessed some radical changes in technologies and materials, to which, over time, there have been added countless operative prescriptions that put the project, as a creation, under increasing jeopardy. The literature on the subject is incredibly spare. The national as well as the international critical scene appear to have little interest on praxis, as if it were an accident from which one should protect him or herself. On the contrary, praxis intervenes more and more in the conception of works, especially when they come with a significant size. There is no denying that the relationship between the project and the building site is of a conflicting nature. This is demonstrated by the fact that for some time now a number of architects have tried to stage this conflict, while others have opposed this staging, claiming for the project a *ius* which is basically autonomous from praxis. Over the last few decades, imported from the American operative culture, there has been a constant increase in the importance of project engineering, a very delicate intermediate process which has become the negotiating table for almost all those who have the power to modify the project itself. Today, the project, project engineering and the building site ratify the architectural product: being unaware of this means being blind to reality, that is, being subjected to it.

June 2015, Valerio Paolo Mosco

NO MATERIAL EVIDENCE

Pietro Valle

“An advanced, technological, urban environment is a totally manufactured one. Interaction with the environment tends more and more towards information processing in one form or another and away from interactions involving transformation of matter. The very means and visibility for material transformation become more remote and recondite. Centres for production are increasingly located outside the urban environment in what are euphemistically termed “Industrial Parks”. In these grim, remote areas as the objects of daily use are produced by increasingly obscure processes, and the matter transformed is increasingly synthetic and unidentifiable. As a consequence, our immediate surroundings tend to be read as “forms” that have been punched out of unidentifiable, indestructible plastic or unfamiliar metal alloys. It is interesting to note that in an urban environment construction sites become small theatrical arenas, the only places where raw substances and the processes of their transformation are visible and random distribution is tolerated.”

Robert Morris, *Notes on Sculpture - Part 4*, 1968.[1]

The environmental art and visionary architecture of the Sixties unveiled mass culture and the artifice of communication. In reacting to them, they seem to have been searching for the chance, the unconscious perception, the meaninglessness hidden behind industrial mass production. These explorations, however, were not a yearning to return to a supposed “naturalness” that had been lost, but were instead indicators of a new type of material evidence, unsurprisingly defined as “theatrical”, which involved the audience in a game of analogue perception. The “transformation processes” and “raw materials” mentioned by Robert Morris are nothing but allegories of the division of labor and the synthesis of the machine. We can recall faceless products that global distribution manages to dislocate in ever new combinations. The material is *crude* in its evident visual-tactile nature but is supremely *artificial* in its production process. The ambiguity of contemporary postmodern progress here is already fully delineated. It is visceral not for its *physicality* but for the exchange speed with which it recombines discrete parts. The “random distribution” mentioned by Morris is a sign of the nomadism of constructive fragments that remain disconnected whilst being able to be connected to anything else.

It seems, to some extent, to return to what the Modern Movement abhorred: stratified construction, *cladding* as masking, and the application of superficial surfaces. All of this denies the unified hierarchy, perception of transparency and tectonic expression that the twentieth century had canonized. The building site is no

longer an expression of the truth of technique but the economic forces that dominate it. This fragments reality into specialized parts, related to a pulverized market of semi-finished works, dividing hidden *raw* work and the visible *finished* work in order to increase the effectiveness of communication (and commerce).

The kind of building Construction most akin to the mechanisms of the Post-Fordist market is additive: in it, every part is adjacent and connected to the other but not integrated with them. There must be maintained a degree of autonomy and flexibility of use that allows it to be detached from other parts to follow the needs of a volatile market that requires exploitation of the real estate of differentiated parts. In new buildings, the interior is replaced, but not the front (or vice versa), the plant design equipment can change; the usage is modified by integrating the shell with new functional partitions. The life of a structure involves stratification without sedimentation, a combination of contiguous realities that are never tied together completely. At the dividing between between different building parts, cavities, crevices, passages and bays are created for future usage that are always left open in the case that the use, user, tenant, or property, are changed. The site becomes the battleground of conflicting requirements, implemented by several companies that work in parallel but independent processes from each other. Construction is affected by this: to allow for the flexibility of use, there must be the use of *light* parts that can be added together as a whole. Production processes can be complex in different ways but they are all related to the skills of a workforce, either primary (the raw), or specialized (the finite). No middle ground between these two extremes can exist: one actor conscious of the whole process is the General Contractor coordinating it all, but he or she does not build. This type of construction has an American origin: it is the United States that, in contrast with the ideology of Modern Europe, invented the construction process of industrialized parts that are minimal and generic and that are layered upon each other: *frame, infill, cladding, sheathing, interior and exterior finishes*, are words that, appearing along with the *balloon* (in wood) or the *steel frame* (steel), have become the preserve of the entire Western world with varying degrees of thickness in their wrapping. The internal and external finishing touches that hide the structure and the systems are designed by multiple designers who provide parallel contexts with often very different clients.

In recent decades, the need to save energy has led to a more careful use of plant equipment and with the desire to reduce the use of primary sources, it has generally been decided to implement greater thickness in passive building shells so that heat is trapped within its mass. In a world now dominated by the division of lightweight industrialized parts, this need has not led to a reduction in the stratification of walls but rather its increase, both in the number of levels which are utilized and in their thickness. The marketing of insulation and finishing has benefited from this and building sites have positively welcomed the increase as it is aligned with the divisions with which it is organized. The black line in a building plan that marks the boundary of a building has become thicker (with this increase of layers of thermal insulation, we can liken it to the spreading of coats) but it is also divided into more skins (through glass curtain walls interposed with air gaps). Such thickening creates an interregnum at the boundary between the inside and outside that denies both the monolithic form (the building

is made of layers) and transparency (windows multiply in a game of reflections which has instigated the search into the ambiguity of shells — as an example we can consider the *Light Construction* exhibition by Terence Riley, or the research on mirror facades by the artist Dan Graham).[2] To say that this fragmentation of parts of a building (and the site) is the mirror of the postmodern division between signifier and signified is almost an understatement. Never before, has the architectural language been so free to choose its own constructive expression from so many options. All of this is because of the mutual independence between visual representation and the divided materiality that supports it. The architect does not have to respond to the imperative of building holistically and to bind expression and materiality. The signifier-cladding is an applied decoration that can either mimic a monolithic construction (which actually does not exist) or assume a graphic immediacy independent of any visual weight. Tectonics and anti-tectonics have become two sides of the same coin: the building oscillates between imitation and concealed masking without a solution of continuity. In this logic, the traditional expression of the major elements of a building is not at all excluded; rather, it becomes only one of the possible options, and an option in the general economic concern of a structure. Tectonics is revealed as an artifice, perhaps as it always was, always possible but no longer necessary. Buildings are equal in their assembly but appear different in their material expression. The building site reifies this Babel of options: they are planned but can also become variations during construction and decided upon at the last minute. In the same way that building space and materials are divided, so also is the construction time divided up into parcels.

Grafting, a term currently fashionable that describes the connection between different structures, is internal to each building. The supporting structure is a perforable frame and is divided into parts to be joined that are never visible. It is always hidden, framing fittings but not sustaining them. The exterior facade is the signifier/mask that supports the fetishism of material detached from the whole. The layering of lightweight building envelopes has led to an anthology of diaphragms and screenings that have liberated the front elevation from compliance with window patterns and floor heights. Passages such as cavity walls, pillars, shafts, false ceilings and raised floors are the vehicles of the flows of the building: they can be cut within the structures but it is better if they are made in the separations between the layers and thus assume an interstitial nature. The internal claddings are partial finishings tied to a specific user and time, perhaps only that of a *tenant*, a temporary resident.

The pulverisation of construction parts sometimes makes them interchangeable in their structural roles: becoming a wall or a frame, an ongoing or short-term system which creates unexpected relationships. There is no longer only the pairing of the sustaining/sustained but the work of solidarity between structures and filling as occurs with *balloon frames*, where sheathing combines with the studs that make up the diaphragm wall, thus providing the brace for the entire outer shell. The two parts are clearly separate in form and assembly work but are united in forming a new type of composite wall. With the miniaturization of the supporting element (but also of that which is supported) multiple readings of the construction roles are formed that dissolve sharp boundaries. As there is no longer an evident hierarchy between supporting and

supported, there is not even a gradation between the principle and secondary parts: there remains a widespread movement of roles between the different components of a building. This relativity can lead to both a reduction of minute fractal parts and the exaltation of a single structural element which becomes the only material signifier of the building, even when it is not alone. How many times in the last years have we seen architectural awards for, and publications on, single materials? Even this type of reading, while celebrating traditional elements such as wood or stone, is the daughter of the alienation of the part from the whole, of form from materiality and of language from space. Construction, and with it the building site, assumes a virtual dimension and displays the seeming identity of a building but also the possibility of becoming something other, at multiple levels and stages. This takes place not only due to the separation of the form from the technique, but the relative reading of the latter.
The fragility and uncertainty of technologies related to the arrival of new products on a consumerist building market, the differentiated management of different areas of a building, the mutability of real estate needs in the short term, all demand a profound modification of the planning and construction process:

- they require an integrated design with the commercial and real estate management (the so-called *project management*) but are, in reality, divided into different technical skills that correspond to the specializations of the building (structures, finishes, plants, raw and finished work).
- they make it so that design no longer comes before execution but is temporally superimposed on it. Variations during construction and subsequent changes that take place after the completion of a building trigger a time stream where each step changes the reading of an artifact.
- they require a decision-making process in which the spatial-construction fragmentation and continuous changes can extend the design process during and after construction. Such indefinite postponement can be a nightmare for the designer in that it continually undermines the identity that has been designed for a building. It may, alternatively, transform the building site into a sort of *open-source* where the project is continually reviewed along with experimentation using new construction solutions.

In this scenario, the building doesn't become the resolution of the project but rather its projection into multiple parallel dimensions, leaving open the possibility of revisions, even when the building site has started work and, often, even after its conclusion. This process is more like a continuous *restyling* of an existing building (without the idea of the preservation of identity of its original facies) than the new construction of a completed unit. The architect has to make those involved realise that he or she will need to make adjustments to the plans, during and after construction. If this potential uncertainty is incorporated into the planning process of a structure, it can give a major boost to such open design. It will end up defining a number of public nodes and will leave a number of interchangeable appendices open: this is the only possibility in controlling the growth of a structure in a process that is dominated by the unforeseen, where time is working not to consolidate but to multiply architectural identities in strange iridescent semantics. Even the definition of a *brand* image of a building, often represented as a single iconic symbol separable from all others does not exclude the presence of grey sections, deliberately anon-

ymous that can change as it remains untouched.
Such an open and market condition empowers clients, users and the manufacturer to propose constructive alternatives during construction. Some have no impact on the overall picture apart from some functional role if in the planning the desire to control everything is left aside and a margin of variability is included thus resulting in a building structure that can no longer be considered unitary. The duality between identity and flexible elements fragments the perception of a structure but builds a continuous emergent dialectic that changes with each project. Commercial Functionalism imposed by increasingly numerous consultants would seem to reduce the role of the architect to defining the facade and external cosmetics alone. In truth, the real challenge today for the executive designer, who is required to deliver a song sheet to follow at the building site, is the definition of coexisting parts with a use and interpretation that can be differentiated. The logic of consumerism that dominates the site organization triggers a new pragmatic, experimental functionalism that seems to proceed empirically by following the dictates of the market, but instead requires a more subtle projective imagination that must consider the building as a composite palimpsest in which multiple needs characterized by different temporalities coexist. The timing of structures, which are orphans of classical *firmitas* (solidity), as well as the forward projection of the contemporary, presents itself as a mirror of today's complexity. The building site becomes the vast plane in which this coexistence plays out: it is consolidated, but can also dissolve to recompose itself in new configurations. To be able to perceive this objective, which is formed in equal parts by identity and otherness, in the unfinished of a structure in the making is a challenge for contemporary architecture.

1.
Robert Morris, *Notes on Sculpture - Part 4*, in id. *Continuous Project Altered Daily, the Writings of Robert Morris*, The MIT Press, Cambridge 1993, p.123.

2.
The first is the catalogue of the exhibition: Terence Riley, *Light Construction*, The Museum of Modern Art, New York 1995. To understand the architectural thinking of Graham, see the interviews contained in: Adachiara Zevi and Pietro Valle, *Dan Graham, Half Square Half Crazy*, Charta, Milan 2005.

REALITY, IN THEORY

Giovanni Corbellini

In the mid-seventies, Robert Venturi pointed to Alvar Aalto as his main source of inspiration:[1] one of the most influential critics of his generation, the author of at least two fundamental texts, declared to pay particular attention to an architect who, as Venturi himself highlights, "never wrote of architecture".[2] Twenty years later, this text is published again in *Iconography and Electronics upon a Generic Architecture*, a collection of essays in which the American author, at the height of his career, credits himself above all as a practicing architect.[3] The fact that Venturi distanced himself from a theoretical activity he clearly considered marginal by publishing one more book is indicative of a "complex and contradictory" condition, both with regard to his specific contribution, certainly more incisive in words than in bricks, and, more generally, to the cultural situation in which he operates. Something similar, for instance, comes also out of a book by Hal Foster, significantly titled *The Return of the Real*, which describes this situation from the point of view of the arts in the second half of the last century, "when theoretical production became as important as artistic production"[4] but this critical approach was strongly intertwined with the conditions of reality and its interpretation, especially within the Duchampian neo avant-gardes, such as pop art. And the same, powerful attraction for the consistency of the real has recently fuelled the philosophical debate as opposed to the postmodern "weak thought"[5] and its interpretative vertigo.

Venturi's example, both in spite of and thanks to its inconsistencies, shows very clearly how a similar "return of the real" has crossed the architectural debate at the turn of the millennium, focusing on the professional practice rather than on other disciplinary methods, even as a privileged place for research. The speculative proposals protagonists of the radical scene as well as the "autonomous" investigations on form, at the time responsible for tons of "paper architecture," have gradually disappeared from the pages of major magazines. The latter have enhanced the role of images and, in parallel, reduced the space given to theoretical-critical[6] texts, as happened for example in our *Casabella*. The same 1996 in which Venturi and Foster published the above mentioned books hails the new editor in chief of the Milanese magazine and a shift in its approach.[7] The fact that the protagonist of this turning point is a historian only confirms a growing "realist" tendency, although the disciplinary clerics' fascination for construction often reveals a vision of architecture as a concluded and self-referential act, in which the built world is separated from the reasons, accidents and consequences of its realization.

However, this path from utopia to reality, from theory to action, more than by cultural evolution and its fluctuations seems to be determined by the radicalization of the market economy as the sole planetary system of production and exchange. The pragmatism to which architecture was driven, in the reality of the profession as well as in its disciplinary self-conscious-

ness, entails nonetheless some unexpected loss of efficiency. The ever increasing space granted to commercial negotiations reduces simultaneously the space of planning. The environmental transformation is therefore subject to phenomena of deregulation, with the gradual withdrawal of the public hand accompanied by an overwhelming set of defensive laws, especially in countries like Italy where the cultural and professional fabric is particularly weak. The complication of our practice makes it extremely difficult to manage the profession individually or in small groups: due to the incapacity to withstand competition and the liberalization of fees, to cope with the insurance obligations and the constant updating of software licenses, to integrate in the design process the ever-growing, necessary technical and legal expertise. The result is an anomalous fragmentation of the design control among different subjects and in its early stages, one that is driven by regulations and even recognized within our specific discipline. On the one hand, for example, measures such as the so-called *Merloni Law* transform the way from concept to completion in a relay race in which the different steps from preliminary to detailed design, and to construction supervision are entrusted to different professionals. On the other hand, the same Institute of Architects has added other specialized categories (planners, landscape architects, heritage curators), recognizing from within the erosion of our coordinating role in the design process of the different forms of knowledge, times, scales and interests involved.

It happens therefore that the more architecture becomes realistic the harder reality restricts its ambition and delimits its action within the analytical, sectorial dimension typical of other disciplinary approaches involved in the environmental transformation. Unlike the latter, architects have always supported their specific technical skills with the need to mediate between conflicting views, keeping together social responsibility and impulses of individual affirmation, not only their own.[8] Each architectural project attempts a synthesis between unstable and contingent, potentially conflicting plans: customer satisfaction, in economic, functional but also aesthetic and representative terms,[9] and collective protection of rights, health, safety and, particularly today, of landscape and environment.[10] The interpretation of the friction between private and public needs gives the opportunity to make room for experimentation, looking for the innovative solutions that the discipline considers as an indispensable ethical function of the architectural project. When the latter is able to set new paradigms, it takes prominent positions in historical reconstructions even regardless of its successful realization. Many "rationalist" masterpieces have resulted in buildings of dubious habitability, for inherent conceptual flaws or unwary executions. So much so that, according to Mark Wigley, "the sign of technical incompetence becomes the sign of artistic brilliance",[11] and both were claimed as the two sides of the coin of quality in architecture: "If the roof doesn't leak", declared Frank Lloyd Wright "the architect hasn't been creative enough."[12] Of course there are also examples of "signature" technical problems nowadays, from the infiltration of the villa Lemoine[13] to the cracks of the Guangzhou Opera House,[14] until Viñoly's "burning glass" in London.[15] However, apart from the disappointing performance of various "sustainable" buildings, the ideological link between experimentation and failure that characterized the heroic phase of the modern seems to be getting feebler. In comparison

with Wright's leaking rooftops, to which the architect gave a key role in symbolic terms, more recent functional failures appear more as side effects of excessive complication than signs of a research one should be proud of.
It is also true that the growing mistrust of architecture towards the processes of its implementation can be read as a result of a kind of "original sin" of the discipline. The modern architect's identity is in fact based on overcoming the shared responsibility and the substantial uncertainty of the medieval construction: according to Leon Battista Alberti and for us, the heirs of his authorial vision, a building must be an exact copy of the architect's project.[16] This determinist idea is also reflected by the law, for which built results cannot be different form the projects approved. So much so that the place and time in which the project negotiates more closely with the reality of its materialization also represent a threat to its integrity, something to which a strenuous resistance must be opposed. The architect should learn from the process, but the experience gained will be available only on subsequent projects, producing a structural gap between the incidents and the opportunities offered by the building site and their interpretation.[17] The volatility of contemporary technical offer, with continuous variations of the available materials and their characteristics, requires however that the project deals with an increasing need for rapid adjustments, even and especially in the construction phases. However, such need is limited by a number of adverse reactions (cultural, regulations etc.) that, in fact, have progressively reduced the margin available to the architect to provide the appropriate modifications. The strategies we need in order to create this margin, to extend it and exploit it intelligently, become therefore more and more sophisticated.
Recent innovations, whether they are consistent with technological developments or mere formal experiments, generally provoke a widespread suspicion, occasionally exacerbated by technical faults but clearly present even when everything works as planned. The proliferation of regulatory constraints that affect the profession is also indicative of a kind of immune response of society towards the mutagenic ethics of architects. Designers, apart from rare occasions of great scope, run their practice within strictly controlled tracks by codes that seek to hold together indications of hygiene, privacy, energy and structural performance with the type - morphological - material - aesthetic continuity that still represents the dominant ideology of the current cultural debate (even of large sectors of our discipline), of political negotiation and planning.[18]
The internal contradictions in each of these aspects are even more evident in their interaction, so much so that buildings pedantically abiding by the norms end up betraying deeply their sense and, above all, participating in increasingly widespread picturesque masquerades.[19] Technology, which in itself has no ethical intention, plays a decisive role in accelerating this situation by providing materials and finishes that promise to hold together cost, performance and nostalgia. The current, exasperated stratification of walls, in addition to analytically ensure compliance with the most diverse requirements, reflects the fragmentation of the design process we have mentioned above, with architects addressed to take care of surfaces and walls to progressively increase their thickness.
It is not easy to regain control over the "black section"[20] of the buildings and produce architectural innovation starting from construction techniques, apart from rel-

atively simple and limited situations. Equally difficult is to propose an experimental research locked up in the role of decoration specialists in which the contemporary reality forces us. In order to get reacquainted with this same reality and pursue a progressive function it seems then necessary to practice a certain detachment from reality itself. In other words, it is vital for us to interpose a critical distance from tools, objects and procedures of environmental transformation and derive from the concreteness of our limits the space for imagining a new reality.

1.
Robert Venturi, *Learning from Aalto*, in Id., *Iconography and Electronics upon a Generic Architecture*. A View from the Drafting Room (Cambridge, Mass.: The MIT Press, 1996), pp. 77-79, previously published as *Alvar Aalto* in "Arkkitehti" (July-August 1976).

2.
"But Aalto's most endearing characteristic for me, as I struggle to complete this little essay, is that he didn't write about architecture." Ibid., p. 79.

3.
I have intended these essays and aphorisms to derive from informed experience – that of living and working – and not from researched knowledge." Ibid., p. xiii.

4.
Hal Foster, *The Return of the Real. Art and Theory at the End of the Century* (Cambridge, Mass.: The MIT Press, 1996), p. xiv.

5.
See Maurizio Ferraris, *Realismo positivo* (Torino: Rosenberg & Sellier, 2013). Ferraris' proposal has been widely discussed on Italian newspapers. Umberto Eco framed it with his usual lucidity in *Il realismo minimo*, "La Repubblica" (March 11, 2012), p. 46.

6.
"the 1990s saw the emergence of a critical practice of architecture, whose 'death,' in the meantime, has been announced by advocates of 'post-critical' and 'post-theoretical' positions." Tom Avermaete, Christoph Grafe, Klaske Havik, Johan Lagae, Véronique Patteeuw, Hans Teerds, Tom Vandeputte, *Editorial - Constructing Criticism*, in "Oase", 81 (2010), p. 4.

7.
Vittorio Gregotti quits as editor in chief of *Casabella*, replaced by Francesco dal Co, with one of the monographic double issues that characterized his mandate (630-631, 1996, *Critical Internationalism*).

8.
See Tom Spector, *The Ethical Architect. The Dilemma of Contemporary Practice* (Princeton NJ: Princeton Architectural Press, 2001), and Barry Wasserman, Patrick J. Sullivan, Gregory Palermo, *Ethics and the Practice of Architecture* (New York, NY: Wiley, 2000).

9.
See, between ethics and economics, *Design Professionals and the Built Environment: An Introduction*, edited by Paul Knox and Peter Ozolins (Chichester; New York: Wiley, 2001).

10.
See *Ethics and the Built Environment*, edited by Warwick Fox (London, New York: Routledge, 2000).

11.
"The sign of technical incompetence becomes the sign of artistic brilliance". Mark Wigley, *Learning from Leaks*, in "CLab File", n. 3, *Leaks*, p. 1, allegato a "Volume", n. 4, 2005.

12.
Ibid. On Modern architecture technical failures, see Peter Blake, *Forms Follows Fiasco: Why Modern Architecture Hasn't Worked* (Boston, Mass.: Little, Brown, 1977).

13.
See the movie by Ila Bêka & Louise Lemoine, *Koolhaas Houselife* (Living Architectures Series, 2008).

14.
Malcolm Moore, *Guangzhou Opera House falling apart*, "The Daily Telegraph", 07.08.2011, www.telegraph.co.uk/news/worldnews/asia/china/8620759/Guangzhou-Opera-House-falling-apart.html, accessed 01.23.2015. See also larryspeck.com/architects/zaha-hadid/, accessed 01.23.2015.

15.
Oliver Wainwright, *The Walkie-Talkie skyscraper, and the City's burning passion for glass*, "The Guardian", 09.03.2013, www.theguardian.com/commentisfree/2013/sep/03/walkie-talkie-skyscraper, accessed 01.21.2015.

16.
"In Alberti's theory, a building is the identical copy of the architect's design; with Alberti's separation in principle between

design and making came the modern definition of the architect as an author," Mario Carpo, *The Alphabet and the Algorithm* (Cambridge, Mass.: The MIT Press, 2011), p. x.

17.

About this open and indeterminate condition I remember an old article by Francesco Venezia, which was also dedicated to Le Corbusier's Swiss Pavillion, see *Incidenti a reazione poetica*, "Domus", 681 (1987).

18.

The problem of overregulation in territorial transformation is not an Italian exclusive: see the monographic issue of *Volume*, 38 (2013), *The Shape of Law.*

19.

See my text *Imparare da Sappada/Learning from Plodn*, "Paesaggio urbano/Urban Design", 3 (2013), pp. 4-11, republished on the web in O11+, www.zeroundicipiu.it/2014/12/17/imparare-da-sappada, accessed 12.17.2014.

20.

"The more sophisticated the building, the greater the expansion of the inaccessible zones...: the section becomes battlefield; white and black compete for outright domination." Rem Koolhaas, *Last Apples*, in Id., *SMLXL* (New York, NY: The Monacelli Press, 1995), p. 664.

THE REALITY OF ARCHITECTURE

Michele Nastasi

In the last years I have been carrying on a research on spectacular architecture in a few global cities of Europe, Asia and the United States. To the exception of some lucky cases, I deal with projects that have been criticised by many for their excessive formalism, incongrous scale and total indifference to the place they are located, remarks that I share and that, however, make them attractive to me. It is just these kind of buildings that, observed during construction as veritable heterotopias, thanks to the spectacularisation provided by photography, are able to reveal fundamental aspects of architecure that are not visible in their completed state, but are part of ther reality and become a key to their multilayered meaning.
To the exception of projects where technical-constructional issues make the critical and innovative content, usually designers and the media always prefer to interpret the finished work, leaving the building phase as a documentary record. A reading of architecture that highlights its outline and originality, that is its formal principle, is usually preferred to one that shows it as part of an evolving context and as a result of a process where construction becomes an unavoidable phase. Construction sites, often invisible, are a concrete moment in the life of a building that forecast and unveil ongoing changes in the social, cultural and economic context in which design takes shape. In his famous 1925 book *Amerika* where he portraits the U.S. townscape, Erich Mendelsohn includes images of skycrapers taken during construction. Mendelsohn describes an efficent and complex labor structure, sees in the new

next page
View of Al Sowwah Island by day
Abu Dhabi 2010
below
View of Al Sowwah Island by night
Abu Dhabi 2012

building sites and typologies an exemplary demonstration of the profound ongoing changes in American society that he compares with European culture with mixed feelings. To depict the highlights of the new cities, he entitles two chapters of his book *Das Gigantische and Das Groteske*, introducing typical Expressionist categories that, reconsidered nowadays, could outline the main features of the current architectural production. The photographing of a modern bulding site cannot overlook, in every photographer fantasy, the Manhattan of Lewis Hine and Charles Clyde Ebbets who, at the beginning of the Thirties, captured the rise of some archtypical towers such as the Empire State Building and the Rockefeller Center. At a second glance, their photogrpaphs emerge as promotional media, born out of the Depression to promote an optimistic view of America, an image of its dynamism and progress. They created a veritable building epic by narrating the extreme conditions and efforts that shaped thes large structures. It is, after all, an engaged form of photogrpahy: Hine, a sociologist by training, had started taking pictures because he believed that documentary images could be employed to promote social reform. Throughout his career, his photographs, commisioned by magazines, institutions and foundations for social studies, exposed the working conditions of the weakest classes and denounced child labour. With regard to the building sites, some of his pictures have become famous for their portraying a spectacular daily routine in which the workers eat or sleep on a suspended beam. They appear as the residents of a new kind of setting and disclose a different use of urban space. A similar atmoshere could emerge nowadays by photographing buildings under construction in some cities of China or the Arabic Gulf where totemic projects rise in front of a desertic background in a surreal juxtaposition. When I approach a large building site to photograph it, and keeping in mind the aforementioned icons, I am always impressed by the familiarity of the workers with such inhospitable places. I tend to look at these everyday workplaces in deference, as if I am entering someone else's house: here, workers spend days and years in contrast to my being in permanent transition. In selecting photographs of places whose image has been shaped by years of promotional renderings, I do not look at buildings and the city only, but at the overheated climate, the crowding, the inner migrations, the working conditions, etc... that is at another kind of scenery not always acknowledged by architects. I believe these pictures expose the absurdity and the fragility of some commonplaces of contemporary architecture; they give back a ltttle bit of consistency to the abstract and self-referential perception that often characterizes designers. I will try now to give a real example to what I just said. The unfair treatment of workers in large scale building sites of some of the world's more renowned architects in the United Arab Emirates and Qatar, has been reported by groups such as *Human Right Watch* already in 2006. It has been picked up again by institutions such as NYU and by artist groups in relation to the new Abu Dhabi museums to promote better working conditions in these places. However, apart from a few exceptions, only since 2014 architectural magazines have started to cover these issues, following the controversy raised by Frank Gehry and Zaha Hadid statements about architcts' involvement in these issues. Other cases are personally related, having I had first-hand experience on how much a construction site could be a potential harm for those handling the public image of an archi-

tect or a developer. Many times i have been denied to publicize photos of bulding sites where workers show up not to harm the sleek play of finished architecture. Other times I have not been allowed access to sites that were already covered by photographers and film crews hired by the developers, or, in a few cases, the permit has been allowed provided that I would not publish the photos earlier than a few years, given that construction was late on schedule. Even in Milan I was asked to refrain from any reference to ongoing construction and to show only the completed parts even if they were a minor portion of the project. The photographs of cities underoing transformation displayed in these pages fulfil the need to broaden the viewpoint of architecture, to see it in relation to the places it shapes and to the global themes it is tied to, in a way to give it back a stronger sense of reality. Just like Foucault heterotopias, large construction sites have, with regard to the built work we live in, "a function that takes place between two opposite poles. On the one hand they perform the task of creating a space of illusion that reveals how all of real space is more illusory, all the locations within which life is located. On the other, they have the function of forming another space, as perfect, meticolous, and well-arranged as ours is disordered, ill-conceived and in a sketchy state."


UNDERGROUND
UNCOVERED


E-MAX
E-MAX
E-MAX


ALBAKA
MERANO
Basma

BUILDING SITE

Marko Pogacnik

Both in *the Atlantic and Madrid Codexes* there are Leonardo's drawings that show his studies on the balance of elementary structures. Leonardo does not employ calculation procedures then in use, he does not rely on sizing methods *more geometrico* based on the proportional ratio between section and height of the different elements, but submits the operation of structures to a mechanical study. Cables are connected to an arch keystone with counterweights attached at their opposite ends. A pulley allows to increase or reduce the action of the counterweight and thus to precisely estimate the value of the horizontal component of the force that allows to keep the keystone in balance under the parallel counterforce of the arch. In further drawings, this method is expanded to all the arch ashlars so that the simultaneous action of each element can be studied. Ashlars are hinged to one another and the arch thus becomes an unstable structure whose balance is the result of the action of forces that the builder must reduce to exact mathematical calculations. The forces' action is conveyed in numbers, such as the maximum value allowed, the ultimate weight of the arch.

A century and a half later, Galileo carries out a similar procedure in his *Discourse and Mathematical Demonstrations Relating to Two new Sciences (1638)*. To simplify the reduction to calculus of the stress that a ledge undergoes when loaded on its apex, its mechanical behaviour is compared to a lever action, where the locking becomes its foothold.

Levers, pulleys, wedges, cogged whelles, sloping planes, the static operation of a building is reduced to its resistent structure which, in turns, is equated to a working machine, such as those that had been in use in building sites to lift components, to move weights or to dig excavations. The building site in antiquity — in the fine image that we borrow from Giorgio Benvenuto — was a sort of theater where machines, scaffoldings and provisional supports enabled to represent components during their installation and therefore, still undergoing the dangerous influence of loads that could unbalance or crush them: the action of an arch on its pier, the strain of a beam caused by its own weight and the span it has to cover, the thrust of a vault on its side walls. At the end of construction, though, when scaffoldings and provisional works are removed, the ancient building is shrouded in a stillness that obliterates the previous turmoil and ornament is established, the column and the beams become the referrers to a *firmitas* based on *venustas*, and therefore not on technical perfection nor on the appropriate sizing of a structure. In the modern age, on the other hand, once construction is over, the machine does not disappear, but is incroporated within the building, enabling us to read the functioning of its parts as if they were pulleys and valves moved by invisible cables. This is obvious when dealing with a work whose meaning is mainly technical: a bridge, a skycraper, a large span roof but, as Pierluigi Nervi once noticed, large building contrac-

tors have the resources to state their authority and to put their mark on the style of an epoch. Minor builders refer to it. To build a five-meters-span is not a challenge but this can be evoked in a certain arrangement of the building parts or in an extreme reduction of the sizing of the structural elements in the same way in which the streamlined outline of a refrigerator does not enable it to fly better, but gives it a shape that partakes a collective fascination for speed.

Mechanical sciences, greatly influenced by Galileo, reestablished a centrality to the building site that had been contested in the humanist age to the benefit of a design concept (*lineamentum*) that had to be mechanically translated in the finished work (*structura*). The architect's authority was not based on the building site, where his presence was not even required, but in the project drawing that was given to the workers who had to take care of its faithful translation into the built work. His prestige was authorial, representing a liberal art that was free from mechanical duties.

Galileo makes sure to give back to the construction site the authority of a place where the translation of an architectural idea into built work is an operation that is mediated by procedures that need a continuous testing. In the Eighteenth Century, the site of St.Genevieve in Paris (designed by Soufflot with the aid of Rondelet) becomes a laboratory for the testing of the strength of different kind of stones and for experiments on the efficiency of various kinds of arch sections. In the previous century an equal character was expounded by the building site of the cathedral of St. Paul in whose project the mathematician Christopher Wren had engaged Robert Hooke (the scientist to whom we owe the explanation of the principle of the elasticity of materials). In the Nineteenth Century, the development of architecture could be written again as the history of the exemplary building sites in which it was established the authority of new construction techniques (Navier), of new practices tied to the employ of materials such as iron and of new professional figures such as the engineer. The great building sites of the Nineteenth Century such as the Britannia Bridge by Robert Stephenson, the Crystal Palace by Joseph Paxton and the works of the 1989 Paris Universal Exposition (Tour Eiffel and Galerie de Machines) push architecture to confront the new technical forms, a challenge that will be taken by the construction sites of the Neues Museum in Berlin (Friedrich August Stüler), of the Bibliotheque St. Genevieve by Henri Labrouste, of the Mole Antonelliana in Turin (Alessandro Antonelli) of the Paris Opera (Charles Garnier), of the Reichstag in Berlin (Paul Wallot) and of the Sagrada Familia in Barcelona by Antoni Gaudi. The most important european magazine of the Nineteenth Century, the *Allgemeine Bauzeitung*, printed in Vienna by architect Ludwig Förster, starts its long editorial cycle with an issue devoted to the building site of Schinkel's Allgemeine Bauschule (known as Bauakademie). The text issued by the foreman, Emil Flaminius, is a literary masterpiece for the way in which the narrative of the construction succeeds in weaving together technical and formal observations showing how detail choices can condition the general balance of the architectural outlook (format and color of the cladding bricks, window design, terracotta applied works).

In the Twentieth Century, the building site does not lose the aura of a collective endeavour related to the collaboration of different knowldges to whom the architect affixes that seal of unity that no other technical figure can guarantee. The building sites of the

Beaubourg (in the tale of Peter Rice), of the Sidney Opera House (architect Jorn Utzon) e and of the Olympiapark in Munich (Frei Otto and Fritz Leonhardt with Jörg Schlaich) are key points in a history of architecture that does not endorse only technical achievements. In these examples, the building site is still the physical place where the project takes shape as a complex negotiation among architect, technicians, contractors, construction industry and, last but least, the client. Everything happens within codes and norms that public institutions issue to exercise a control on the finished work; these have gradually become more and more prescriptive ending up depriving the building site of its original meaning. The digital revolution described by Mario Carpo is getting ready to transfer the construction site in a virtual environment such as the *BIM* (*Building Information Modeling*) where different figures involved in a project can interact by avoiding a noisy and dirty place such as the building area.
Having lost any sense of a collective adventure (epic and playful), the building site is reduced to an individual experience (getting inebriated by smelling fresh mortar) or to an historical event. Works such as Terragni's Casa del Fascio in Como acquire a completely different meaning if the deciphering of the abstract architectural language is combined with the reading of the construction phases as done by Sergio Poretti.
In the Palazzo della Regione by Adalberto Libera in Trento, the design is finalised on the site through a complex dialgue between the architect and his structural engineer, Sergio Musmeci. Without the timing of construction, the architectural work cannot ripen the issues that the project defines in a still incomplete form. In what other places or dimensions can we obtain that time if the building site is precluded as a context where to practice architecture as aa costructional event?

CALL IT PREFAB

from the Serial to the Custom Oriented

Gianandrea Barreca

Unlike other words that leave ample room for interpretation and shifts in meaning, the definition of prefabricated given by the Italian dictionary is simple and unambiguous.
Prefabricated: "building components previously manufactured in different locations from that in which they are deployed".
On closer inspection, however, there are two areas that are not clearly defined; the first element of doubt lies in the fact that there is no mention of the size or the base materials with which these elements are made. The second is related to the fact that there is no mention in any way of the type of manufacturing process of such elements, which is to say that a product to be defined as prefabricated need not necessarily be produced as a series or through an industrialized process. So actually, with this definition, virtually everything that is manufactured outside of the place of its final use is included: from bricks — the smallest, individual, basic element of construction — to the whole system, or the completed prefabrication. A wardrobe designed and made to measure in some workshop in Brianza, installed in some house in Milan is, in effect, a finished product manufactured elsewhere, which means that it is prefabricated.
Therefore, with the term prefabrication one cannot determine a reduced number of cases and construction practices on which to reflect, the term prefabrication must accompany a noun that qualifies and determines it and that, in some way, circumscribes its meaning.
In general, at least in the building industry, what is meant by prefabrication is the production of standardized building elements of modest size that are easily transportable. That are to be assembled at the construction site with the objective of reducing production *in situ* and therefore the size of the site area, in order to optimize the characteristics of the element through the monitoring of its production process, and to reduce the time of production, not so much of the single piece, but of the entire system and, therefore, of the building itself.
Seen in this way, prefabrication assumes an identity that immediately leads to more reassuring areas for those for which, roughly speaking, the prefabricated building is that practice dealing with, almost exclusively, the production of elements related to the skeleton of the building and some parts of the facade, and that are used for the construction of production buildings or large commercial containers.
Consequently, prefabrication has been used relatively little in construction, where, at least until a few decades ago, all, or almost all, the experiences of application have been marked by some interesting theoretical reflection, but with poor aesthetic results. In particular, it seems that the results were dissatisfactory, as the use of prefabrication systems was rigid, radical and, dare I say it, obsequious in comparison to "factory" systems and indications and production of the same elements, and their subsequent use and installation,

and therefore of the final result.
Apart from rare cases, this widespread situation has meant that the issue of prefabrication in Italy has often been used only for industrial or infrastructure projects where it seems that it was not necessary to think about the aesthetic value of each component and, accordingly, of the whole but, on the contrary, was sufficient for responding to factors inherent in the efficiency of the production line, standardization, speed of assembly and cost reduction.
That said, however, it remains clear how prefabricated products have held, and still hold, a certain level of attraction and interest for architects and engineers involved in experimentation.
I believe that this attraction has meant that, in the past, architects like Zanuso, Magistretti and Mangiarotti, but also Spadolini, Gregotti and Valle, made their name with this particular practice because of the unique relationship between prefabricated and construction architectural elements.
The first are produced in a place other than that in which they are installed but must meet specific, often local needs once assembled together, needs that the proposed architectural design should then interpret and shape. It is as if, in a sense, the deepest rationale behind architecture, which is normally to respond to "localized" needs, was realized through elements which are the expression of processes and systems, produced "elsewhere", often very far away.
And it is perhaps for some of these reasons that prefabrication in Italy came late compared to other European countries. As has often been the case with technical (or technological) innovation, which has its roots in the Enlightenment and in the industrial revolution that followed, prefabrication has also had a slow and difficult path in order to take root in the construction practices of our country.
The strong tradition of building techniques related to the use of brick and, above all, concrete, which is popular, malleable and easily available throughout the country, has slowed the spread. Prefabrication also requires a major effort at the beginning of the decision-making process of project development and a complex and intricate organization of the construction site, leaving little room for changeability and adaptability during construction. Such a need for change, be it an expression of the mood of the client or that of the architect, cannot be reconciled, or for a long time has not been reconcilable, with the structure and organization of professional studios and construction companies, both of which are organized around artisanal rather than industrial systems, and where there is a stronger need to implement systems to streamline the production process.
There is then set out a clear and very specific nature for prefabrication in Italy. This specificity is to be found mainly in the history and evolution of Italian industrial design and its particularities, the impossibility of separating its development from architecture at least in its origins. In particular, the process of architectural industrialization was marked by several important steps, often derived from changes related to the mechanical industry, in particular to the car industry at the beginning of the century. We have to wait thirty years to identify the clear processes of architectural industrialization, especially when it was motivated intentionality, as Gregotti says, by a "unity of method" in the design and relationship between the steps of the project, those inherent in the city and those most typical of the product design. But it is only in the years

after the war that we can really appreciate the first real undertaking implemented by Pierluigi Spadolini, for example, in emergency management, creating the Emergency Housing System (*SAPI: Sistema Abitativo di Pronto Intervento*), in fiberglass.[1] First stage of a series of buildings that together with the headquarters of the newspaper La *Nazione* and the Palazzo degli Affari in Florence mark important steps in the history of the evolution of the relationship between architecture and the construction industry in our country.

From this point on, prefabrication in Italy appears to be able to determine a more precise and specific autonomy, so that, as I have already mentioned above, the research and application of prefabrication become a relevant part in the experience of many authoritative interpreters of modern Italian architecture, to the point that within this shift there appear at least two different and distinct attitudes. On one side there are the experiences of Vittorio Gregotti, Pierluigi Spadolini and Gino Valle, who despite being different, are similar in the degree to which they look at the bigger picture of construction before defining the single elements. It is as if the experiences of these authors were mainly "industrial" in the sense of the search for a certain acceptance of the base element as a product of a matrix. This can be observed, for example, in the project for a complex of rental properties in Novara designed by Gregotti, where the prefabricated element, albeit obvious, is never to be identified except as part of a set.[2] On the other side instead there are Zanuso, Magistretti and Mangiarotti. Their professional work related to the use of prefabricated systems tends, as it were, to 'bend' prefabricated elements to the needs and service of their ideas and project proposals. It is as if there was a need to design, a kind of handmade nature that puts the very process of production into question every time, and therefore constantly rethinks the product. In the project for Corso Europa in Milan, for example, Magistretti assembles a number of construction systems, almost all prefabricated, almost all of prefabricated design.[3] With a particular compositional skill, he builds into the front of the building a sort of catalog of prefabricated elements and construction techniques, where it seems he attempts to tame elements produced elsewhere, to bring them to a size and attention to detail in keeping with the place and the type of building to which they should contribute to shaping. Mangiarotti, by contrast, seems to accept the large size and the consequent reduction in the number of elements and, in his project for a church at Baranzate di Bollate captures and clearly brings out the characteristic features of prefabrication and, what was then, the distinctive "skeleton" nature of the building. He too, however, moves in the direction of the search for a drawing or a profile, in his own particular style, that makes the elements stand out. In a way, he treats the prefabricated elements with discernment as an object to be produced in a series, and achieves on the roof of the nave of the church a sort of short circuit between architecture and product design. In those years of experimentation and multiple opportunities, there was set up a kind of prefabrication "to measure", or rather, a design that was articulate and modern, induced by the architecture and not penalized for it, as it seems to me is happening today.

In reality, today, the prefabrication of building components is a very complex subject and the brief specification above perhaps explains some of the reasons that have made our country as it is, but without yet making it clear what their status is today.

Currently, buildings are generally constituted by a series of sets of elements, disciplines and processes that are often very autonomous compared to what the final outcome of the building itself is, which in its completion as a combination of space and material, includes them all.
Every environment, every combination, albeit connected, lives a life that is more and more separate and autonomous with respect to production techniques and installation.
Every combination is as if it were regulated by its own specific code of prefabrication and the realization of its basic individual elements. This implies that virtually all, or almost all, operations of dry mounting are configured and fall fully within a system of prefabrication. So it is clear that, today more so than in the past, the contribution of prefabrication is no longer detectable in the structure or in the macroscopic parts of the building, but is instead pervasive and present in almost all areas. I believe that this is leading to a sort of detachment and separation between those designing the individual pieces and those who compose them into forms which define the space. It seems that the unity between product design and the subsequent architectural construction is essentially lost and that, although it could be considered, in many cases an expression of the mannerisms of modernity, it did have the undeniable merit of holding together production, product design and architecture.
How do we now reconcile some of the needs of prefabrication that require large quantities of elements produced per time units and a strong repetition of such elements in a market where the demand for pieces made to measure instead predominates, where the exception has become the rule, and where, for necessity or for marketing, the issue of certification and zero kilometres tend to undermine the basis of the principle of prefabrication and therefore the construction of elements in a place other than the construction site?
Certainly there was a time that any work to be carried out was done *in situ*, depending on the latitude, a makeshift, temporary furnace or sawmill was used, which was dismantled once the work was finished. It was a sort of type of nomadic prefabrication, which moved depending on the needs, something which today, with the extremely high costs of installation governing any job, and with projects being of such great dimension, has become practically impossible.
The global market today then opens up new opportunities but at the same time in order for prefabrication to be "exported" it has to be reduced in size and weight and it must become packable, even before being mountable. In addition, with the spread of building systems in prefabricated wooden elements, the need for "design" and the happy intuition of the architects mentioned above has become even more evident regarding the construction of an idea of prefabrication upon "design".
A new opportunity for prefabrication and architecture itself comes from a necessity for reunification between the disciplines of architecture and product design, which have been separated for far too long. Not so much in the direction of the production of objects designed by architects, as in the search for a common space, a common field of action and design of architectural components, the "bricks" at the base of a potentially new way for prefabrication that is able to combine the best instances of our architectural, professional and entrepreneurial culture.

1.
Pierluigi Spadolini, *Umanesimo e Tecnologia*, curated by Francesco Guerrieri, Electa, Milano 1988.
2.
Editorial, *Case d'Affitto a Novara*, in "Casabella Continuità", 241, 1960.
3.
Fulvio Irace and Vanni Pasca, *Vico Magistretti, Architetto e Designer*, Electa , Milan 1999.

TRIAL AND ERROR

Kester Rattenbury

I have nothing to do with construction sites. I haven't worked on one for thirty years; and Pietro Valle, editor of this "on-site" issue, knows it. Obviously, there are construction sites and construction sites, but I'm deeply suspicious of the metaphorical ones. But the residual trained architect in me impels me to improvise with the material and conditions which I have available. To make something, anyway.

Which is really, what this article is about: our subconscious and under-rated core architectural skills of improvisation. And about a curious thing I noticed in my last two years as a very long-established teacher of architecture, in one of the UK's leading schools[1]. A peculiar, core anomaly between the way that we are supposed to design, practice, and teach, and the way that we actually do it.

This is, it seems to me, is essentially about risk. We, as architects (which I'm not) and teachers of architecture (which I am) are supposed to do everything we can to minimise it; to cut it out. To make our design, our drawings, our teaching, and, of course our building sites, as utterly predictable as possible.

And yet, perversely, as teachers (at least in schools like mine[2]) we deliberately structure risk in to our student design projects, at all levels and to an astonishing degree. We write in new, extreme, untested criteria every year, and we issue them to new and unknown students, to the extent to which we don't, *can't* know, what our teaching outcomes will be.

Which is far from being as reckless as it seems. Because though we don't usually express it as such, one

next page
Ruby Ray Penny, 2014
Image directed by I Ching. Photograph of self as child (1:1) and thrown paint.

of the key things we are doing, in our immersive education of new designers, is teaching people to improvise, productively and well, and in detailed, complex, developed form, given unpredicted variables. To work actively with situations which are inherently *not* predictable.

Like those on site, for instance, where so many complicated, inter-related things turn out to be not as predicted. Where the budget may change, or the site, or the brief. Where site conditions, structural or material defects, manufacturers, contractors, wars, strikes, economic crises, or new legislation kick the project way off course; requiring a rethink at all levels, from the setting-out to the ironmongery schedule.

Professional legislation of all kinds increasingly tries to nail down every circumstance of building and teaching. But real architectural conditions are *always* non-standard. They *always* have vast numbers of variables — practical, aesthetic, human, chronological, economic: you name it — shifting in relation to each other all the time.

And in the very bizarre fictional student project briefs we invent (and re-invent) every year, perhaps we are - more subconsciously than deliberately — teaching people to work, creatively and well, with this pretty well limitless range of unpredictable conditions. To make something good, something in some way coherent, intelligent, enjoyable, *better*, out of a seething concatination of unreliable circumstances. To do something which is, in fact, *always* a kind of prototype; *always* a kind of experiment; *inherently* risky. To design, that is.

Ruby Ray Penny,
2014
Alphabet using two hands, ink and blowing.

*

My take on this anomaly came from two things. First was our teaching studio, DS 15,'s latest student project. It was my teaching partner Sean Griffiths[3] ' idea to use tactics of random compositional choices, generated by the ancient Chinese Book of Changes, the *I-Ching* — in the way the musician John Cage used it to compose his famous pieces — thus setting up a peculiarly left-field *architectural* project, driven 'entirely' by chance.[4]

My interpretation (Sean's would naturally diverge) came partly from my coincidental involvement, over the same period, with the innovative *RMIT/Adapt-r PhD by Practice programme*, where eminent architectural and design practitioners explore, describe, test and improve their own design, in practice, to the level of a PhD, building up an individual and collective contribution to our almost uncharted knowledge about how we really *do* design[5].

Design is a peculiar skill set: highly sophisticated, powerful, widely used, rarely explained or even understood. And design teaching is a really major part of this surprisingly uncharted territory[6]. Indeed, it is a core aspect: where we start developing, and how we pass on, our powerful, rarely defined sense of what architecture is, how we produce it and appraise it.

The last few decades of architectural research, have tended to be framed through *theory*, rather than describing what we actually *do*. So recent architectural writings have addressed the contrast between the "perfect" building ideal and the contingent realities of real architecture on site — in a more or less theoretical

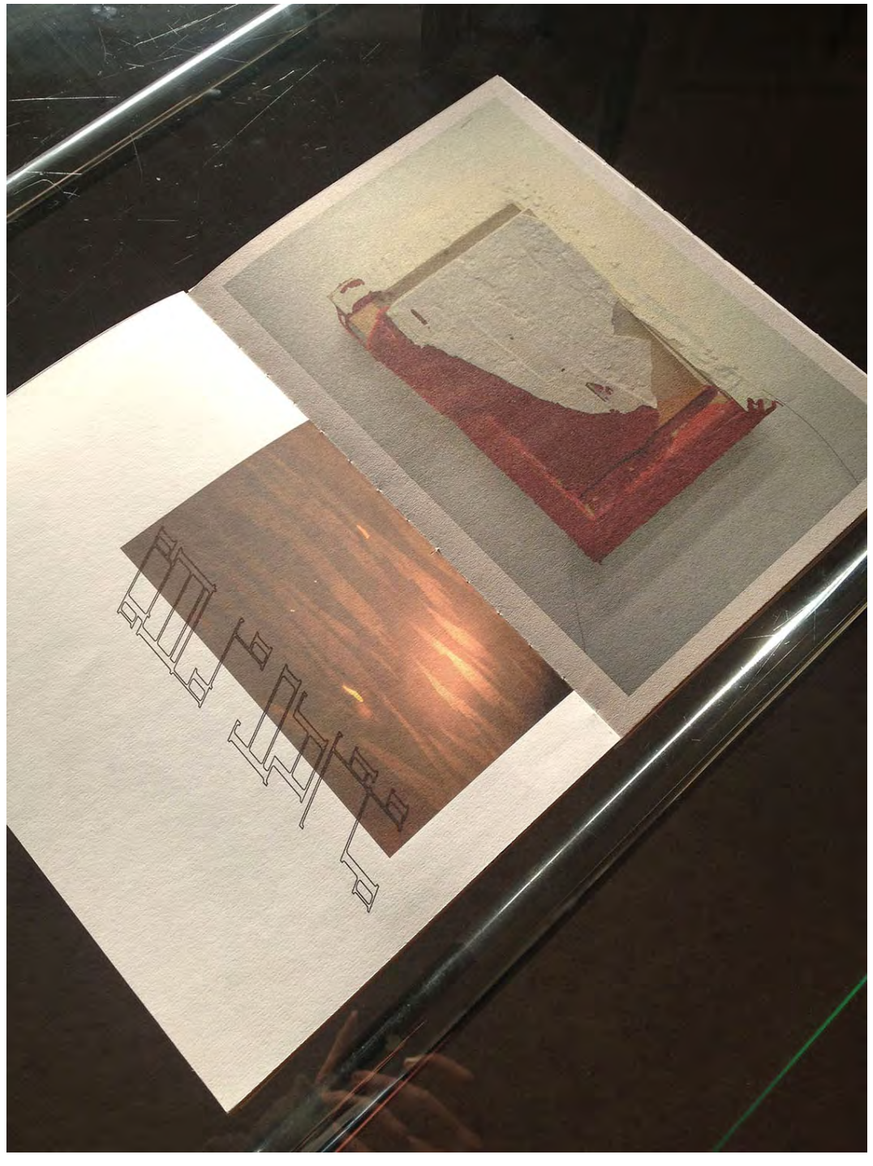
way[7]. My interpretation came accidentally, from trying to describe what we were actually *doing*, as teachers — and noticing parallels in the *RMIT/ADAPT-r's* unusually honest, analytic — and *not* artificially perfect — investigation of their own *real* work in progress.
Our reticence about our risky abilities may be an inherent part of our tacit and unexpressed design abilities. But surely it's also because the legal, economic and insurance requirements of our various professional commitments *demand* reticence. As Tom Holbrook of 5th Studio recently said (in the last PRS discussion), we spend our time having to pretend to have absolute certainty about extremely uncertain things. "That discussion, about risk and doubt, is being constantly erased"[8].
I'd noticed that too. As our students' unexpected, "purely by chance" work developed, it became clear that they were using core, largely undescribed architectural skills. The ability to improvise, to work with what we've got. To deal with unforeseen, unforeseeable circumstances: exactly those skills which are essential on site. Bizarrely, the value of those practical, little described skills became clearest in what seemed like the most esoteric and unrealistic student briefs we've ever set.

Ricardas Blazukas, 2014
Design studio 15, ceramic sign.

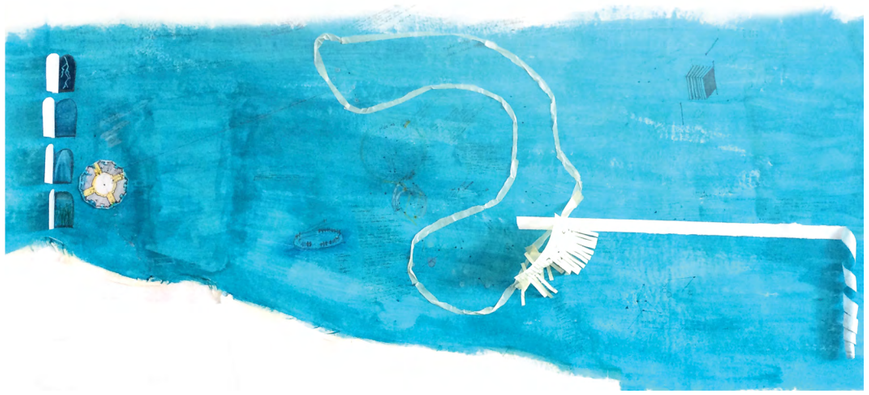
Thus suggesting that we have, perhaps subconsciously, come to set such peculiar teaching projects *precisely* to deal with a critical aspect of professional practice - which our industries don't otherwise encourage us to discuss.

*

It's refreshing writing for a non-UK publication, because the weird things we take for granted really do



Michael Perkins, 2014
Extended portfolio, first semester.



Simona Cojocaru, 2015
Lost map of programme.

need explaining. Teaching studio is the core of the odd, sophisticated and largely unexplained design education of architecture schools like ours — fairly typical for London and other major urbanised, really diverse, English-speaking zones — where we put our main educational emphasis on the design *project,* an imaginary, unreal, often bizarre form of projective thinking[9].

These projects are developed, individually, by the student, from a loose, demanding, polemical brief set by the tutors; and they result in the "design" of something, called a project: usually, but not necessarily, an imaginary building; usually, but not necessarily, on a real site; typically with more or less stringent technical requirements; and varying from the fairly realistic to the most extreme forms of science fiction[10] or conceptual art.

This is *always* a kind of unpredictable experiment. The briefs often challenge aspects of current professional thinking, and more or less form part of the tutors' "research" experiments in design. We call the teaching studio a laboratory for the profession, and we mean it.

But setting experiments as the core part of your professional training sounds terribly risky. Unless of course, it is the *approach* to such an unpredictable world that you are teaching.

The characteristics of these projects are so complicated, familiar and varied that it's hard to know where to start (or stop) describing them. It's currently normal practice in schools like ours, to teach in Studios or Units which set entirely their own briefs. These are usually led by two tutors, (practicing architects; other designers; academics)[11], with inevitable debates and arguments between them. Interestingly, this conforms with research[12] where creative design is actively helped by the individual's ability to define their own position in relation to *two* other people's views. But so far as I know, teaching pairs is a formula which has evolved through trial and error.

As has almost everything else. Vertical studios - that is, different years of the same course, taught together, on the same brief, at different official levels - breaks all sorts of academic norms. But it works incredibly effectively, because this type of teaching is *not* through acquiring ability in a given syllabus or explicit skill set, but by doing unknown design experiments, and assessing and improving the results. So design — perhaps a strange vernacular variant of the scientific method — is fundamentally learned by doing (*curated* doing); watching others do it, and seeing yourself how to distinguish what works from what doesn't. Attending and participating in the feedback is how students — *and* staff — learn.[13]

There are all kinds of other evolving characteristics and tropes of the student projects, which are almost never explained or discussed.[14] Typically, our briefs in Westminster now last a whole academic year.[15] Briefs

of different groups vary widely, for instance in driving interests in programme, theory, site, representation, technology, strategy, aesthetics, social matters. Exercises, experiments or "research" at the early stage are set up to generative speculative making; often with emphasis on special forms of representation.[16] Feedback and further references come through tutorials and pin-up crits, and might include buildings, places, books, movies, art works, political movements, other types of representation or theory. Moreover, a highly visible (but usually tacit) group dynamic and *collective* direction of the students' work means tutors have to adjust or redirect the brief, issuing new criteria, tasks and exercises, making specific drawing/representation requirements, as the project goes along.

At some point, any successful student's individual work takes on its own internal coherence; its own credibility, as a proposal, as a fiction, as an exploration, as a body of work, with some kind of relationship to the built world. It becomes what we can, somehow, *agree* is a project. We are often asked how we manage to cross-mark such different studio work. But the answer is that it's fairly easy — assessing the value, complexity, development, coherence, clarity and resolution of any body of work is exactly the shared ability we are teaching. It's no wonder architects often end up married to each other; almost no-one else can understand what they're talking about.

Simona Cojocaru, 2015
Technical drawing, 'pet/monster'.

*

I've been teaching with Sean, on and off (mainly on) for twenty-odd years; from before FAT's first publication through their spilt at the end of 2013 into three different practices, with Sean rebranding himself as an architect-artist. There are always repercussions (or projections) in a studio' work of what their teachers are doing in practice. That's a reason why practitioners — especially working designers — are highly valued teachers. And it's *reciprocal* nature, — its use for the *practitioner*, is why so many continue teaching — not a lucrative business in the UK.

Our path at Westminster has therefore taken some swerves. Early on, we did a lot of work on master-planning (for practical and polemical reasons). This

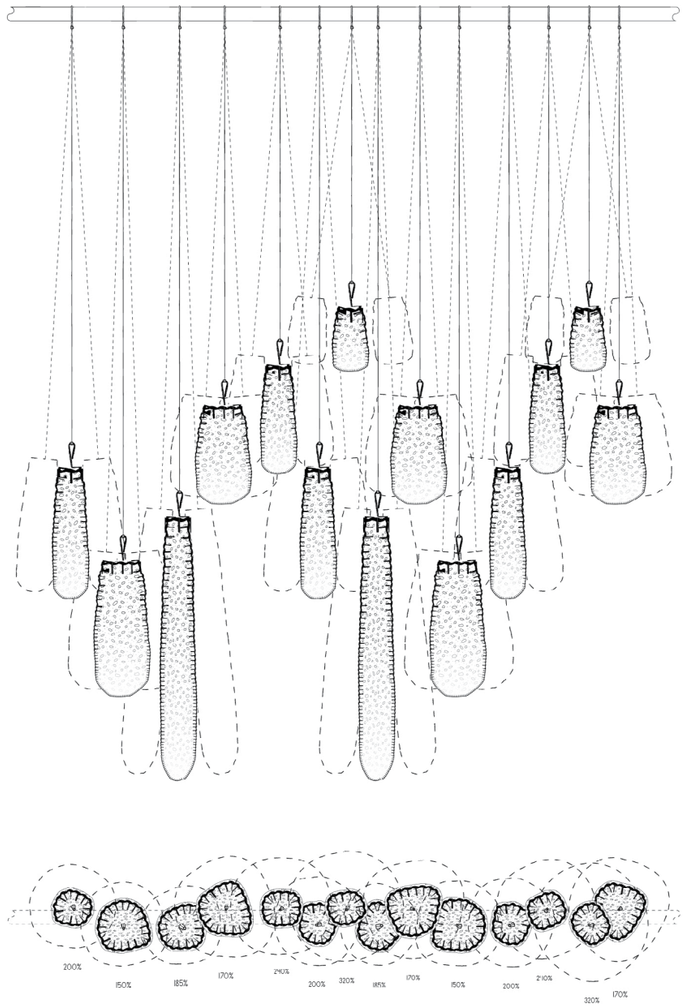
gradually extended into a non-digital exploration of Sean's interest in Platonic geometry. Naturally, this developed to explore Utopias. Our last project was a particularly challenging juxtaposition of this with my own conviction that environmental issues should be tackled, more laterally, and from a smaller scale outwards. The project worked from the smallest behaviour-changing components (derived from the past: canopy beds, bath-houses) outwards, to a radical retrofit of Rome's great ruins. It was so successful (Sean argued) it couldn't possibly be repeated.

Sean's new enthusiasm for Cage's use of the *I-Ching* as a tool for generating randomised, compositions was our biggest swerve yet. Cage did it by setting various criteria (note, duration, etc) and then tossing coins and consulting the book's hexagrams, to decide the notes, silences, periods and durations of the composition — most famously Music of Changes " A *mistake* is beside the point, for once something has happened, it authentically is" said Cage.[17] Mistakes in architecture are a much riskier area, of course.

We didn't really know what our students would do, because they hadn't done it yet. To a certain extent, you *never* know what you're expecting from a student project. There's a risk implicit in all design projects, which never fits comfortably in academic predictive learning criteria — any more than it would in our rules about the construction of real buildings. And yet that projective, complex ingenuity — the ability to work through any bizarre circumstance in detail, a kind of creative futurology, is just what we teach. An approach to creatively managing mistakes, flukes and other realities.

The *I-Ching* process was astonishing — producing, almost immediately, a kind of *Arte Povera* factory of work which students had (partly randomly) instructed themselves to do: get up in the middle of the night and do a drawing with their left hand for three and a half minutes; build everything in clay and fire it in random Pantone colours; draw on a laptop while riding a bicycle; dip a drawing in plaster, dribble wax; build from the leftovers. Or, of course, leave the paper blank.

It seemed like we might be removing ourselves — our choices and tastes — from the equation. Of course,



Liam Atkins,
2015
Technical drawing, sensory satellites.

we weren't. At all stages, we and the students intervened — discussing the questions, deciding how to use the *I-Ching*. Quickly, the students learned that if they thought something particularly bad, we would welcome it with glee. In retrospect, it was natural that a mass of *Arte Povera*, type work would arise from a process using such methods, freely available materials, tutors who had a taste for that kind of work anyway (however different to the year before). In retrospect, we were always curating their experiment — a hidden

Molly de Courcy Wheeler,
2015
Wax shingles.

core of design teaching — and showing them how to do it themselves.

Sean kept thinking we would get stopped by some academic process, crit, colleague or line manager. But it never happened, and as the process continued, I became intrigued by how *typical* this all was of our student projects. In fact, my main concern about the project was how to stop it becoming too intensely normative.

Because it seemed that this wilfuly randomised process was a kind of x-ray of *all* the student projects which were going on in our University; city; culture. The students had — *as usual* — done a series of bizarre experiments, set by the tutors. They had presented and discussed them, learned to recognise values in the work. They had to repeat, develop, test, combine them; working in different kinds of media, at different sizes or scales. They had to use their skills of recognition, criticism, post-rationalisation; discovering connections between originally random bits of work and using them to make further decisions and development[18] They had to develop, assemble, improve, refine, draw, model, re-draw, work out technical details and deliver strategic reports. To post-rationalise everything as though it *were* some kind of building project – even though of course it was not. We were teaching them how to improvise, assemble this nebulous, crucial entity, the design project, the qualitative, coherent, legible thing which made buildings architecture – out of whatever came to hand.

*

Our first year was something of a white-knuckle-ride for the brave students, who signed up two deep. The

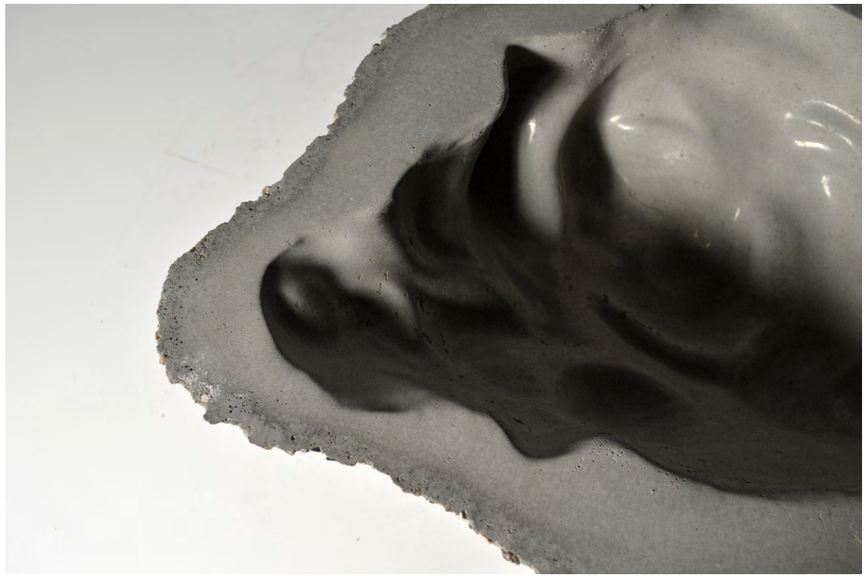
first pieces of work were great – giant doodles; strange notational systems, soundscapes, peculiar process inventions; wax, dipped paint, two-handed drawings, glazed clay, dribbled latex; drawings done by toy insects — often making stunningly convincing installations.

Sean loved the first bit of the process and would happily have stayed there all year; asserting (in his new role as architect-artist) the unarguable thing-in-itself-iness of the work. Which was fundamentally true. But I became increasingly gripped by the *problem* question of how you make all this experimentation turn into a building. Or better still, into some deeper interpretation of related possibilities: a *project*.

That's the real crunch: "turn it into" a building — that most classically difficult bit of any student project (unless they just shunt down the experiment-means-funny-shape line, which has its merits, but is wildly overused). This bit is next-to-impossible for the young students — and problematically easy for the teachers, who all too easily see former architectural models in unfamiliar territories.[19] It was made harder by our insistence on the real qualities of all the mad stuff: the masking paper columns, the wax screens, the dribbled paint. But addressing that problem meant *learning.*

First, there was the big mid-year struggle to put together intelligent portfolio when from a random collection of strange, glorious or problem objects or drawings and some photos and drawings of Marrakech (the "site" in our first year). To assemble images in such a way as to allow viewer and *student* to see new possibilities — to sort of *guess* what they might be used for.

There were some great portfolio successes — typically art-catalogue type juxtapositions, with suggestions of a design direction. There was one astounding in-



novation: a folio-maze which folded in endless directions, with randomised readings of overlays and cut-outs of found and made images, previewing an as yet unreal urban reality. And one honorable near-failure (everything stuffed in a suitcase). We'd asked for it, our colleagues said.

These odd folios, too seemed a magnification of what we do *normally*. They showed how critical post-rationalisation is, in assessing and developing a project. That we teach how to recognise, react to unexpected qualities of their own work, in relation to *real* found circumstances, and to develop from it: not through the ruthless projection of whatever idea they had it the first place, but by a highly varied assessment of whatever that had (perhaps accidentally) found and made.

So those bizarre extremes — the masking paper columns, the wax screens, the dribbled paint, made the student discussions of their own work better than I have ever known, in 25 years of teaching. The real crunch of the technical and strategic reports was perhaps more intense than ever, but it forced the students to ask what on earth it means to try to do technical or

Miranda Hammond
Concrete basin made using vacuum formed acrylic mould.

James John Clifford Rogers, 2015
First semester folio submission: painting on 40 bedsheets.

presentation drawings, as a student in a school of architecture, about an unreal project, when the project was generated partly by random circumstance, and would inevitably change on site (as building do).
It made them actively, individually question how on earth this related to 'real' construction. To discuss how such a building might be set out on site. To discuss the values of a wax wall, in a place where the temperature reached 40 deg in summer — (a mad proposal, sure, but a visiting movie Art Director and an environmental engineer both saw real possibilities in it). It made us readily discuss how long a building project might last; how the programme might be interfered with by strike or flood or earthquake, or arguments on site. Or how might be changed by being built under a different kind of contract, or in a different material. About far more real stuff than usual.
It meant we naturally started discussing the peculiar notion of a perfect set of drawings as the architectural ideal. It meant we naturally started talking about what really happens on site; how far the predicted, risk-averse projects would inevitably go off the rails and change the project. Because the problems we were facing were surprisingly like real life.

*

I am touching wood now, because in some ways this second project, — a film school in the cave-city of Matera — is even riskier than last year's, closer to the mainframe of studio teaching. We shunted the *building* part earlier, to make sure they had longer on the technical aspects of the work — I'm not saying we've sorted it; I'm saying we try; we adjust.[20] The students haven't finished yet, (naturally some are doing better than others), and the technical and strategic reports, separately marked and taught — and often divisive — haven't been marked yet. Some students (as usual) have chickened out and worked out completely different, much easier structural problems. But some have really gone for the main issues and tried to work it out. And boy, do they look interesting.
And strangely close to architectural life.[21] Not as it is usually published, with the risk hidden away, but as it

is forensically explored at the PRS. Alice Casey of the wonderful TAKA architects in Dublin made a brilliant presentation on concrete

"Concrete, unlike many other construction practices, is a dark art. Technical literature tends to be dense and difficult to penetrate. More than any other building material, the quality of the final product is dependent on site specific or temporal factors. Unlike other building materials, the qualities to which an Architect pays attention – colour, texture, form, finish, detail – are almost impossible to establish prior to making. In a process in which off-site standardisation does not really exist, control of on-site making is the only mechanism to achieve a desired result."

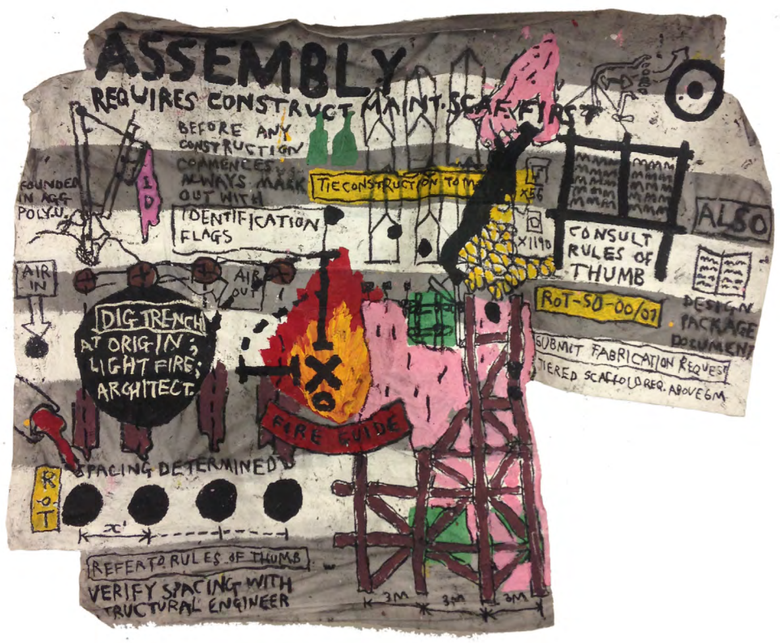
"By their nature each site is different — contractors have varying skills and knowledge, suppliers change, weather and temperature are unreliable, forms vary between projects. To add further pressure, the making of concrete is unwieldy, time-consuming and expensive. Concrete must be right first time."

"...in a process which is inherently out of our control, how to we exert control?"

"...Be wilfully naive."[22]

Casey's report was in some ways spookily close to the most extreme of all our *Monster Factory* projects; a second year, James John Clifford Rogers. His experiments in structural uses of insulation foam, provisionally reconceived as part-randomised *bad building system* where chance components were tested to destruction. A deliberately primitive project — producing experimental open caves heated only by ruthlessly managed open fires; he aimed consciously to test our strange teaching process to the limits (he claims he wants a mark of either 85 or 38 — very high pass, or fail). His first semester folio was delivered as a vast carpet-roll of about 40 bedsheets covered in paintings in the manner of late Philip Guston; his technical report ruthlessly coded the now 200 large paintings and troubling prototypes of which it was made.

Casey's exquisite, high-code hardline architectural drawings could hardly have looked more different; nor TAKA's tightly controlled architectural richness from Rogers' polemically gruesome work. But there were odd overlaps. Both used real "script" of discussions with contractors (in Taka's case a real firm, in Rogers'



James John Clifford Rogers, 2015
Assembly painting (bedsheets, 1/200), technical report.

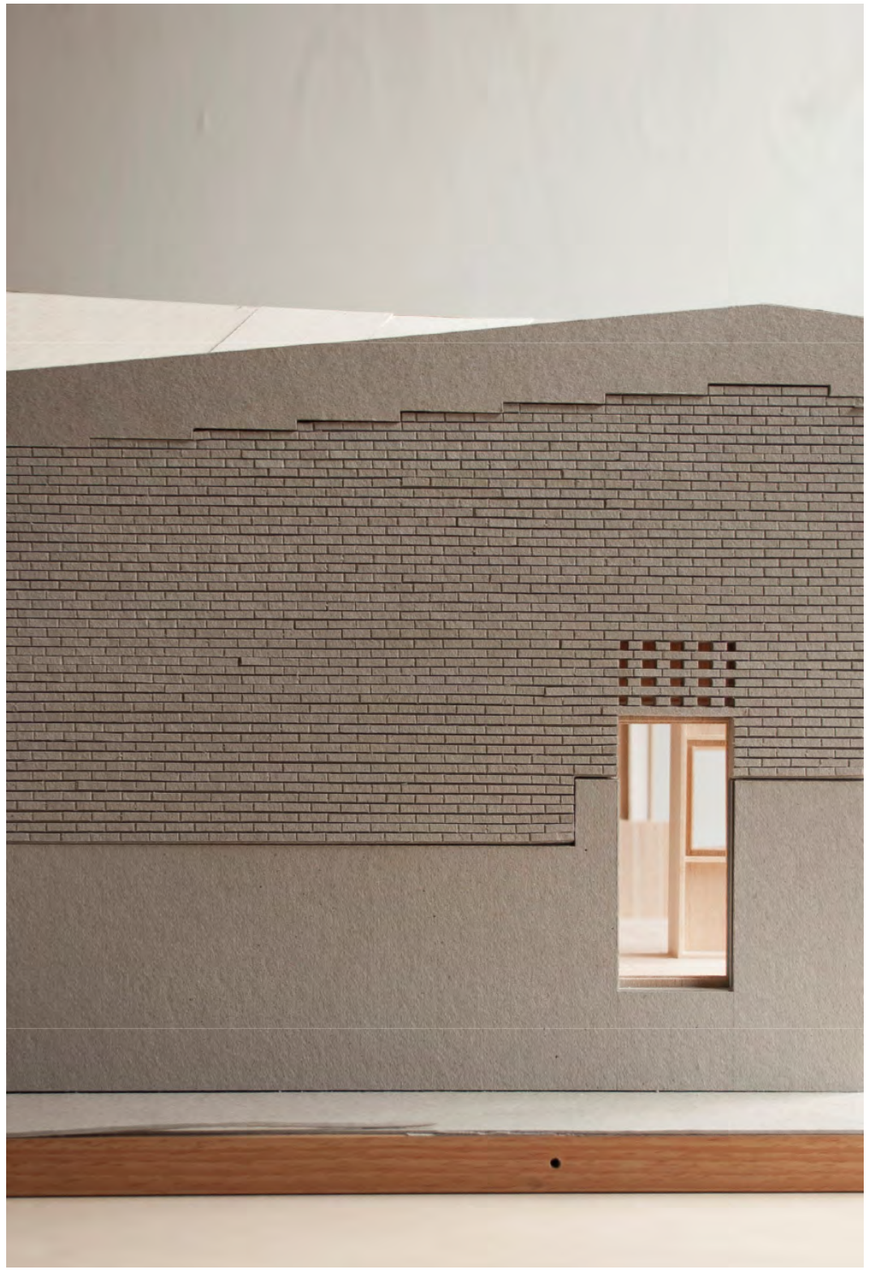
one of the workshop technicians mending a broken insulation foam joint with steel strip). Both described the struggle to achieve perversely engaging outcomes. Both were wilfuly inventing against the norm. Both documented technically based arguments, which are normally concealed. Both expose the real risks and experiments of architectural work.

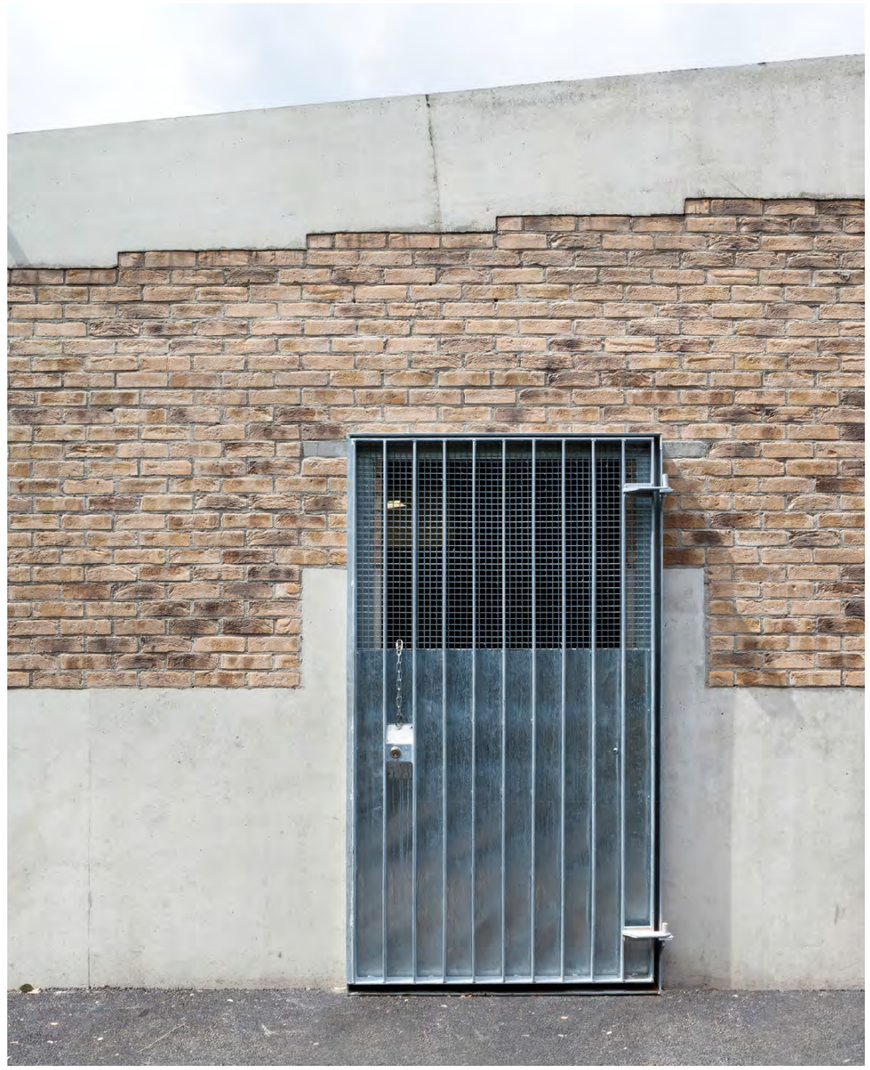
Of course, this argument is self-defining. If you look for similar patterns, you'll find them. Maybe that's what architectural thinking does. It makes you see relationships between very different things, and work projectively from them, to make something new.

So here's my own proposal (which turns out to be a sort of amateur neuroscience). That our wilfuly weird teaching, our deliberate defamiliarisation makes it clearer that we are teaching (almost subconsciously) almost subconscious skills. That our assessment and discussion, our drawings and crits of these curious projects teach some of what architects will actually have to do, in entirely unknown circumstances, to make a building have the coherence and quality, the spatial and material sense, the functional beauties that we call architecture. That this projective improvisation skill: observing, describing, making, assessing, rejecting, assembling, connecting, changing, testing, selecting, reworking, improving is one of our core skills.

To work projectively. To conceptualise something from unknown variables. To work through trial and error.

Alice Casey, TAKA Architects How to make beautiful concrete: where it went wrong (left) and right (right) (ADAPT-r presentation, PRS4, Ghent 2015. See ADAPT-r disclaimer).





Alice Casey, TAKA architects
How to make beautiful concrete: Succeeding at being wilfully naive. Merrion Cricket Club design model and final building. (ADAPT-r presentation, PRS4, Ghent 2015. See ADAPT-r disclaimer.

1.
Kester Rattenbury is a writer and Professor of Architecture at the University of Westminster. She teaches an MArch design studio (DS 15) with Professor Sean Griffiths, and runs the *EXP* research group.

2.
I have come to characterise schools of architecture (within my local UK experience) as being either "Canon" or "Monster Factory " types. The Canon (Cambridge &c) emphasise a shared and continued tradition. The Monster Factory (Westminster, Bartlett, AA &c) emphasise experiment and innovation in each new project. But these are corollaries - opposite views of the same model. Both use references and innovate from them, though the type, range and nature of the references and the degree of hybridisation vary, and they share common tactics and methods. "Monster Factory" is a name adopted from David Greene, a founder of Archigram and former Professor and colleague at Westminster.

3.
Founder of FAT, Sean Griffiths Modern Architect, and Professor.

4.
The student blog is designstudiofifteen.wordpress.com.

5.
Developed by RMIT and extended through the European *ADAPT-r* partnership of European Universities. Accounts of this can be found by Richard Blythe and Leon van Schaik in, *Design Research in Architecture: An Overview*, Murray Fraser, Ashgate 2014; Leon van Schaik in *Mastering Architecture*, *Becoming a Creative Innovator*, AP 2005; *Practical Poetics in Architecture*, Wiley, 2015; *Spatial Intelligence: New Futures for Architecture*, Wiley 2008 and my own articles in *AR Academic* and *RIBA Journal*, both 2014 www.architectural-education.club/revealing_secrets_kester_rattenbury www.ribaj.com/culture/the-imagination-game. These last emphasise van Schaik's inaugural role and in no way fully describe the key role of other contributors, notably RMIT Dean, Richard Blythe who led the *ADAPT-r* bid, or the input of RMIT head in Europe, Marcelo Stamm. It is an endeavour of awesome complexity, and cannot possibly described in a single article, let alone a footnote.

6.
The recent emphasis on design research in UK universities is showing signs of shifting this, and many studios publish regularly. The usual formats are the visually led catalogue, an official course document type overview, or a tutor led polemic. Critical analysis may happen within these, but is rarely the driver. A recent collection, Neil Spiller and Nic Clear, *Educating Architects: How Tomorrows Practitioners Will Learn Today*, Thames and Hudson 2014, is a good sample of the range of writing about studio teaching.

7.
eg Jeremy Till, *Architecture Depends*, MIT Press, 2009, Yeoryia Mananopoulou, *Architectures of Chance*, Ashgate, 2013

8.
Discussing Alice Casey's PRS 4 presentation, *RMIT/Adapt-r Practice Research Symposium Ghent*, 2015.

9.
This differs from an essentially historical /reference based ethos of other European architectural schools.

10.
CJ Lim, *The Imaginarium of Urban Futures* — " an architect's greatest influence lies in the visualisation of an alternative reality", p 151, in Spiller and Clear, op cit, 2014.

11.
The horizontal year structure is now less fashionable, though there are powerful arguments that it is far more appropriate for places without London's extreme diversity of real practice types. I'm indebted to Andrew Clancy for his forthright exposition of this.

12.
Randall Collins, *The Law of Small Numbers.* See *Mastering Architecture*, op.cit.

13.
Effectively, the PhD by Practice extends the same learning model into practice, and to a higher academic level.

14.
Our department's own Learning Futures discussions were an exception to this.

15.
Countries offering far more and shorter projects (eg Iran, South Africa) have a very different expectation of project work.

16.
See Robin Evans' *Translations from Drawings into Buildings*, "AA Files", Summer 1986 on this fundamental paradox of architectural teaching.

17.
John Cage: *Composition: To Describe the Process of Composition Used in Music of Changes and Imaginary Landscape No 4*, first published as part of *Four Musicians at Work*, "Trans/formation", volume no. 3, 1952, p. 59

18.
Riet Eeckhout's PhD by Practice, *Process Drawing*, RMIT, 2014, describes this kind of work in some detail. *ADAPT-r* work is credited: The research leading to these results has received funding from the *People Programme (Marie Curie Actions)* of the European Union's Seventh Framework Programme FP7/2007-2013/ under REA grant agreement n° 317325.'

19.
Cedric Price famously (and unusually) challenged the architectural belief that the answer was always a building.

20.
We initially set a building design early in Semester 1; it didn't take - some teaching exercises don't. We retro-fitted a 'technical drawing' brief into the first semester experiments instead, which worked well.

21.
I am indebted to discussions with Sam Kebbell of KebbellDaish in Auckland, NZ, and *ADAPT-r* Fellow at Westminster. He both observed the 'on-site' relation of our bizarre student work, and separately observed that some most revelatory learning moments of his career were the mistakes, the things he would never even talk about to his children about.

22.
Alice Casey, *PRS 4, PhD by Practice (RMIT) presentation*, Ghent, April 2015. See note 18 for *ADAPT-r* disclaimer.

AS NERVI WROTE...

Valerio Paolo Mosco

In the early 1960s, Nervi wrote that "it is clearly impossible to bring the construction industry to such a high level that every building can become an artwork, yet this is in the scope of its possibilities, and it would be very important under the moral, economic and social point of view to direct our construction activity towards fulfilling the characteristics of good functionality, good economic return, that is to say towards a construction correctness from which today we are too often removed."[1] Nervi wrote this in a book with an eloquent title: *Building Correctly*, and building correctly (i.e. with an objective completeness) was one of the utopias of the late modern movement. A utopia based on reaching a correctness which is able to capitalize modern language by *stabilizing it definitively* (the phrase belongs to Ernesto Nathan Rogers); all of this in a concurrence which, in making the built work, would hold together the cultural, social and technical projects. From the pages of Nevi's book there surfaces some unconcealed satisfaction, the same that in the early 1960s, just before changing style completely, made Philip Johnson claim that: "The battle of the modern has by now been won!" On the other hand, while Nervi exalted correctness, the technique of reinforced concrete, steel and prefabrication had already reached a degree of development that would have made a Viollet Le Duc or a Perret very happy. Yet such victory is very short lived. The ideology of *building correctly* soon loses consensus, in some extreme instances becoming even a non-value. For those who enter the profession in the 1960s, the slogan then becomes no longer *building correctly* but *building expressively*, the sign of a profound change of paradigm which sees in communication with mass society, the affluent society, the main operational target. Who pays for such paradigm shift is the discipline's autonomy, or thinking that within the profession's rules one could find all the answers. We are in the 1960s, the expansive apex of the western market. Also Architecture is infected by such euphoria: new materials (plastic, silicon materials) and new shapes (geodetic domes, for instance) become objects of admiration for a public that feels, lives and anticipates a future that is already at hand. Yet the real revolution is not given by the inception of new materials and new forms, but it is the one started in the 1950s by the big American architectural offices, that of the new organization of processes, both of design and building. It is from there that the real revolution starts, one that is based on the ideology of the built object as a result of an assembly process of different components eventually wrapped by a sealed shell. In short, the establishment of a new organization of work, both in the design and the building phase, shapes a tectonic system only partially edited in the modern, that of shells. History, as Arnold Toynbee claimed, feeds on meaningful coincidences, which are hard to explain. We can thus consider the architecture of shells both as the outcome of a revolution in the production processes, and as the effect of the revolution brought about

by the advent of the mass media. Releasing, not only under the tectonic by also under the stylistic point of view, the facades from the building's body allows in fact the former to register with an ever increasing freedom the icons and the patterns one needs to make the *affluent society* happy. In other words, the organisation of the big American offices, such as SOM in the days of Bunshaft and Graham, in the following decade meets Venturi and Scott-Brown's *decorated shed*. The United States are the home of a form of postmodernism that only later will make history a friend.

Some time ago I wrote a book titled *Naked Architecture* in which I collected a series of contemporary architectures that, referring conceptually to nudity, seen under a strictly iconographic point of view, showed their opposing stance towards the postmodern shell.[2] An opposition that by now we see in a number of places (I am referring to Swiss o South American architecture, or to the return of brutalism in Germany) but which is unable to undermine the superpower of shells, particularly in the large size. On the other hand, the revamping of shells and assembled construction in the last decade, when these were starting to show the first symptoms of yielding, is linked to those provisions for energy containment that have imposed the application on the building of many more shells than those Venturi and Scott-Brown hypothesized.

In my view, today we clearly see a vertical rift between the assembled or the shells' construction and that which can still be referred to Modernism, to its conceptual and tectonic bareness. A rift containing countless expressive pockets that attempt to mediate the two hypothesises. Contemporary Italian architecture, for instance, still focused on the values of *finitio* and *concinnitas*, therefore generally reluctant towards the culture of assembly, is among those that are more interested in this mediation and the results are often interesting. Going back in time, another crucial moment in the tectonic evolution related to figurative evolution were the 1990s, when Rem Koolhaas imposed to it a substantial acceleration. In spite of becoming the advocate of turbo-capitalism, Koolhaas thinks as a Marxist through the Hegelian categories of historical materialism. For him, given the actual situation that for market and communication reasons imposes the assembled construction and shells, it is useless to oppose such condition with regressive utopias: on the contrary, it is essential to acknowledge this situation by operating a radicalization of the conditions the market dictates through their unrestrained spectacularization. This is a position that absorbs from Marxism the certainty that operating is the direct consequence of the conditions that produced it and that it is useless, it is something for *beautiful souls* (the phrase is Hegel's, and was scornfully directed to Novalis) to try and counter such state of things. The real is therefore rational in any case and the new rationality corresponds to the staging (I am in this case using a Marxist phrasing which doesn't belong to me at all) of the capital's contradictions, that as such will lead to an implosion of the system and more. It is therefore necessary to ride the tiger, and the best will be the one who will ride it, even deconstructing the shells, without reins and without qualms. Paolo Desideri is in accord with Koolhaas when he writes that "it is necessary to take note of the necessity of a likewise radical transformation of the ways and strategies for producing a project. Starting from the crises of the modern representations and management processes and from the resulting numeric increase of the variables that the project is called to

confront, every figurative approach based on self-referentiality and disciplinary autonomy appears for instance less and less legitimate and always more inadequate." And with apodictic tones, typical of the 1990s, he concludes: "today form does not admit any apriori-stic legitimization, it cannot invoke any poetic authority outside the system itself."[3] Desideri thus wishes for a coincidence between project and construction, one in which the former is completely subjected to the latter. In this new condition induced by the productive system, the designer is actually transformed into an assembler and a director, more or less authoritative, of the ever more complex processes that exist between the conception and the construction of the work. He finally rises to a political role, and it is not a coincidence that people such as Stefano Boeri see the profession very much in a political sense, actually relegating authorship to a secondary role or at least instrumental to the direct action on site.

Certainly until the late 2000s this was the scenario's dominant ideology, one that was no doubt winning in terms of the turbo-capitalism's large quantities and big figures, that is in its *bigness*. Over time, especially in the last few years, the forms of resistance to this ideology have increased, to the point that today we see a divided scene, where on the one hand we have the shells' architects who, generally speaking, correspond to the well known archistars, while on the other we see a new generation of architects-craftsmen, of *beautiful souls* that stubbornly refuse to be subjected to the rapacity of the conditions induced by the relations of production. On the one hand, therefore, Marx's belated followers (even if no longer communists, but capitalists with no remorse), on the other Weber's, who try to oppose the disenchantment and don't give up thinking that ideas can change the world as they depend only partially on it. Between these two poles there are almost countless intermediate positions that strive for finding an escape route from what, at a first sight, may seem an antinomy, and do so trying to put in practice that *building correctly* Nervi spoke of. The fact remains that big revolutions in architecture, paradigm shifts, happen with and through tectonic revolutions, and that of assembled or shells' architecture (the two terms do not coincide perfectly, yet they are very similar) was the last of these revolutions, the importance of which was such that it has attracted to itself even the idea of a city. Without shells, we would never have had Bilbao's Guggenheim, the building which, according to Ignasi de Solà Morales, is "a compendium to the city." Yet I am convinced that this paradigm has already reached a critical point, or that it at least shows clear signs of weakening. Aesthetic sensibility today seems to be increasingly oriented (and this was the sense of my book *Naked Architecture*) towards a reduction of the power of images and mass communication. But, particularly in the large size, the real estate market imposes its own rules, which are often strict and we cannot think of a building (particularly tall ones) that is oblivious to the theme of the shell or that renounces to components to be assembled during construction. This issue, which, I insist, is not devoid of ideological connotations, remains wide open. Around it, most of architecture's future is at stake.

1.
Pierluigi Nervi, *Costruire Correttamente*, Hoepli, Milan 1964, p.8.
2.
Valerio Paolo Mosco, *Naked Architecture*, Skira, Milan 2012.
3.
Paolo Desideri, *La forma come risorsa*, "l'Industria delle Costruzioni", n. 423, January-February 2012, pp.4-19.

THE BUILDING FIRST LODGERS

Giovanni La Varra

Building site meetings are the first attempt at living in a place that is still unfit for habitation. In a future operating theatre, in a sitting room one barely figure out, in an underground garage or even just in a future meeting room, makeshift furniture is set up, drawings of plans and elevations are hung on walls. The weekly ritual of a building site meeting is also the moment in which the construction site gets turned off and work is put on hold; the team of designers, the client and the construction manager, technicians and suppliers, the building company's managers and safety staff make an orderly recognition at the end of which they meet up to "see how we are".

During the meeting, the architect designer — who more and more rarely acts also as construction manager — lives through a strange situation of centrality and encirclement.

The meeting is the post-industrial form of work. Most of the time, contemporary work develops through meetings. The meeting is today's pure form of operating, ongoing meetings that amount to moments of preparation to actions or further meetings. The parcelling of decisional processes has made the confrontation between different levels ever more significant. Everybody knows that single individual decisions have relevance somewhere else, the meeting doesn't have the function of managing the flow of things but rather of tackling collateral effects that are constantly produced.

The evidence of this all, in the building site, is absolute. And it is not a coincidence that *Skype* communication has not yet entered the building site meeting. Who is there decides. Who is not, has neither representation nor power.

Obviously, the dimension and complexity of the building site changes the nature of the problem and the intensity of relationships between the sides, but not the substance. In any case, the figure of the architect designer is meant to provide answers to the production of those collateral effects that don't actually correspond to the unexpected. A collateral effect is not unforeseen: one could say it is unfathomable. It is a question of scale. As if the project's scale had not allowed one to glimpse in good time what would sooner or later come out and present itself as a problem, hidden in the drawing and not considered with enough detail.

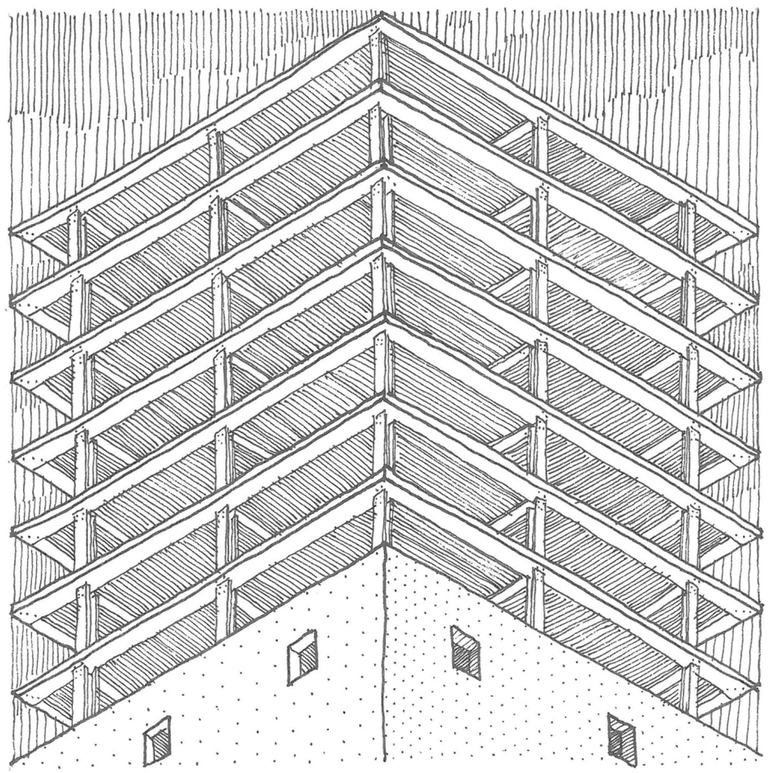
The architect's centrality in the building site is a paradox: the ever increasing crowd of professional figures around the drawing table has enhanced the architect's centrality and, at the same time, reduced his or her field of action. The architectural project becomes an Esperanto that allows communication with and between the other disciplines and competencies.

However, the building site decision process is altogether different from the one the architect has experienced and managed during the design stage. The agenda of a building site meeting is normally defined by the construction company. It is commanded by urgency but also by the coordination and sequence of the different working phases. The apodictic character of

the drawing mellows down in the flow of operative decisions, tight schedules, in the tension of necessity.
Even more than the completed construction, the following phases of the building site are the true moments in which a deep reflection on the project is set in motion. The collection of collateral effects puts the blueprint in a perspective which, in the best scenario, corrodes its edges but often leaves its characters intact. The building site is a kind of ongoing biopsy of the architectural project. And the building site meeting the diagnostic phase of the bioptic process.
The articulation of building site meetings also corresponds to a strange deconstruction process of the architectural project. Contrary to expectations, as the building takes shape the project is deconstructed. The slow composition of the design stage is overturned in a number of sudden deconstruction gestures, each one articulated through meetings and inspections.
In the sequence of meetings one sees the emerging of some momentary protagonists, who are destined to go back into the shadow. There is a sequence of short epochs: first the foundations, structures and floors, then the arrival on stage of plasterers and plasterboard installers, up to the final catwalk of finishers. The architect's and construction manager's reverse shot changes from week to week, as the project is temporarily entrusted to single competencies and given back with features that get closer and closer to the final stage. Such deconstruction work, with its weekly staging, is a remarkable experience in terms of checking project choices. Each building site meeting focuses on a precise aspect. It works like a magnifying lens, drawing attention on one aspect at a time. For the architect designer, such deconstructing vertigo is the true legacy of the building site experience. Seeing things one by one casts a retroactive light on all the project phases. The more so, particularly on public commissions, when the building stage takes place significantly later than the design stage. The building site then becomes a strange *déjà-vu* phenomenon. Drawn things take shape, before as samples on the meeting table, then as *mock-ups* and finally, once fostered, as parts of the building.
In this sense, if the building site experience prefigures the future, the continuous meetings during construction are a way to rethink the past experience of the design stage. Thus delayed, the building site experience is always a material that is difficult to handle. To observe the project's slow deconstruction produces an odd confusion. To acquire the building site experience means to recompose its fragments, to insert the different parts into the flow of architectural sense, to discover with a certain surprise the irrelevance of some carefully measured choices and the relevance of others, that were underestimated.

THE ARCHITECT AND THE BUILDING SITE

A short anthology of statements by architects that tell their viewpoint of the building site



Sometimes Buildingsites - Peter Wilson

Construction Site - Christian Sumi

Divide et Impera - Stefano Pujatti

Ideas and Buildings - Jonathan Sergison

For Pietro Valle - Giacomo Borella

SOMETIMES BUILDINGSITES

Peter Wilson

I would like to think of building sites as laboratories, places of material experiment, playgrounds even. They are not. They are zones of tactical warfare, to be entered flanked by yellow-waterproofed and helmeted foremen. For the skirmish even the architect is supposed to don steel-toed boots and helmet. Whether aggressive or friendly every word from the yellow, lego-figure like, site foreman is a minefield and even a nod in answer could lead to a surprising and unexpected cost increase. They invariably imply that the planning is incomplete (normally this means that they have chosen to misread the plans) and that it would be far more expedient to substitute material B for material A. Luckily one cannot and legally must not, speak to all site operatives, those casting furtive glances in the direction of the person who has invented the geometrical puzzle they are trying to cast in concrete. Most are dreaming of returning to Romania, Hungary or Kosovo to build superior illegal buildings with concreting skills picked up in Germany or Switzerland.

Louis Kahn once said that it is only during construction or as ruins that the grandeur of a building is accessible. While locked in servitude (in use), the drama of a building's making is rendered invisible. It is my habit to explore BOLLES+WILSON building sites on weekends or in the evening when, without the distraction of role playing, their magic has time to emerge. Deserted they emanate an aura of becoming, imagination fills in the missing details and the beast, frozen in its becoming, speaks of what it wants to be, of the comforting spaces and passages of movement it will soon engender. It is at this moment that any building has the potential to take its place alongside arcadian ruins or whatever taxonomy of reference the perceptive explorer has in his or her baggage.
The experience of this suggestive "sometimes poetic" is one of the greatest rewards for an architect. This is the moment when a reconfiguring of the material world, one that was incubated elsewhere (the studio and in the architects imagination) becomes fact, place.

This poetic potential of the building site is echoed in my favourite sentence in Vladimir Nabokov´s Berlin novel *The Gift*: "On yesterday's vacant lot a small villa was being built, and since the sky was looking in through the gaps of future windows, and since burdocks and sunlight had taken advantage of the slowness of work to make themselves comfortable within the unfinished white walls, these had acquired the pensive cast of ruins which, like the word "sometimes", serve both past and future."

CONSTRUCTION SITE

Christian Sumi

Mobility and adaptability: the concerns of an architect "about the future of the construction site's culture" often seem somewhat helpless to me. I think that we, as architects, should come to terms with the radical transformations in the construction field and its associated areas in the same manner as the surgeon, whose operating room — in a certain sense, "his construction site" — is fundamentally transformed every ten years.

Reality and Pragmatism: the dream of a wholesale industrialization of building has long been expended. Even shortly after the war in France, for example, *préfabrication lourde* had already displaced *préfabrication légère* because it was closer to the reality of the time and thus more pragmatic. Every small entrepreneur with three or four employees could purchase a vibrating table and with it, enter the prefabricated concrete component business in smaller series without requiring large financial investment to turn his business into a mechanical shop, as the example of Jean Prouvè in Maxéville shows. This realistic way of seeing things, the pragmatism of deciding on a case-by-case basis (conventional construction and/or the deployment of prefabricated components such as "wet" elements, elevator shafts and facade elements) still characterize construction sites today. It is precisely this fact that produces the variety of constructional/tectonic solutions as represented impressively in the exhibition *Detail – Architecture Seen in Section* presented by the IUAV at the 2014 Biennale and curated by Marko Pogacnik, Orsina Pierini and others.[1]

Curiosity: Architects such as Angelo Mangiarotti and Marco Zanuso have set a high standard with their buildings in terms of the intersection between construction and architecture, creating a building culture that can hardly be achieved under contemporary conditions (see below). What nonetheless remains is the uncompromising will and curiosity of these architects to see things differently every time, especially when considering how a construction site is organized.

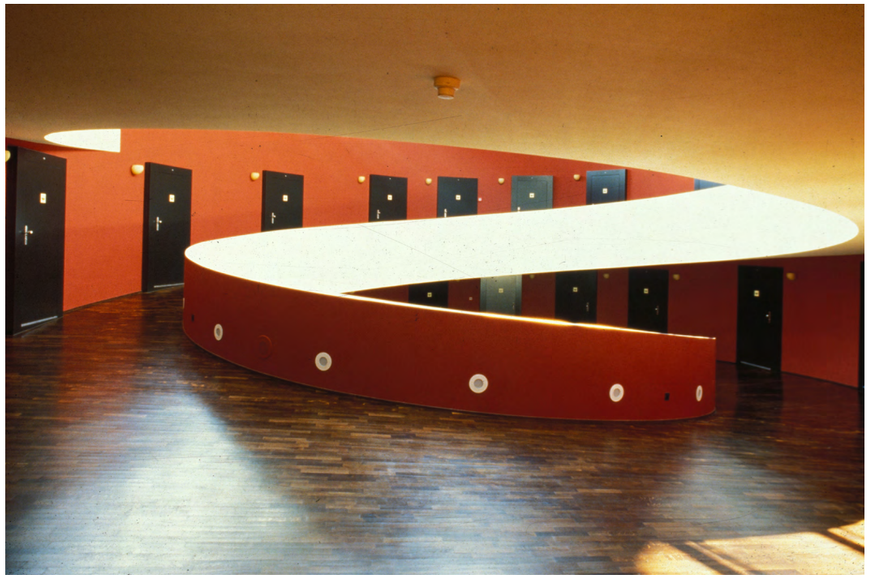
The social: construction sites create jobs. This was also one of the intentions, which motivated the founding of *INA Casa*. Often employing workers from more than ten different countries with different religions, a construction site is a *social project*. Increasingly, however, we are also dealing with an opaque conglomerate of subcontractors. Pay rates below minimum wage and socially precarious living conditions for workers, especially those from Eastern Europe, are therefore no longer rare.

Profession and construction site: the productive rejuvenation of the architectural discourse, the critique of *naive functionalism* and so forth in Italy in the late 1960s also meant a strong ideological turn in the debate "away from the profession and towards a social

project." Those especially subject to critique were the so-called *professionisti*: here one recalls Tafuri's "curse" on Caccia Dominioni.[2] It is no coincidence that many of these architects are being rediscovered and rehabilitated today, including Asnago and Vender, Caccia Dominioni or Giulio Minoletti.[3] Profession and construction site were, for these architects, a natural, uncontested whole, a responsible, realistic "way of seeing things" without any romantic transfiguration.

Serenity and potentials: we like to go to the construction site, often also on weekends when work is paused and there is an atmosphere like that of an archeological excavation. The construction site is a place where architects can still make changes at the last minute. We see a space for the first time in its raw form and can transform it again radically using color, an intervention less than one mm thick, as, for example, in the Hotel Zürichberg: the color red works against the space centrality and its construction — concrete ramp and the back wall of the hotel rooms (see construction photo) — and instead emphasizes the space's tangential perception. It denaturalizes, to a certain degree, the construction devices.

Construction site, interior, Hotel Zürichberg.



Interior, Hotel Zürichberg.

1.
See www.detailsinsection.org.

2.
Elli Mosayebi, *Luigi Caccia Dominioni — der Architekt im Fauteuil*, in: "Werk, Bauen Wohnen", 12, 2013 p. 13, Footnote 15.

3.
In the fall, the first comprehensive monograph on Giulio Minoletti will be published by the Archivio del Moderno *AdM* in Mendrisio, edited by Christian Sumi, Annalisa Viatti and Cristina Loi. See also: Maria Vittoria Capitanucci, *il Professionismo Colto nel Dopoguerra*, edited by Alessandro Sartori and Stefano Suriano, Ordine degli Architetti P.P.C. , Abitare, Milan 2015.

DIVIDE ET IMPERA

Stefano Pujatti

The value of what follows is absolutely personal and relative: I therefore intend to keep open the (very realistic) possibility of contradicting myself in the future.
Along with the detail, the building site is one of the myths of universities, one teachers use in order to endow with a sense of concreteness what is not yet concrete. The building site is seen as the seat of truth, the place where the chickens come home to roost, where theory and lines meet reality. I believe I have never talked about the building site with my students and there is no doubt I have never taken them to visit one of mine.
In my view, the building site is an intimate, personal experience, the most private phase of the design process. To me, it is like the childbirth moment: after that, all becomes public, all belongs to the world. Before, it does not. We like a lovely pot belly and talk about the child, their name, about expectations and hopes. Yet childbirth is a private business: the moment the mystery is revealed.
My building sites start at a very early stage, usually before I sign the assignment, when I clean my drafting table and prepare the sheet for the first drawing, cutting the paper, positioning the pins and cleaning the square rulers. In that precise moment, in my head there begins a building site stage at which you still don't know whether there will follow a final step: and yet, after all one doesn't care about that future, because construction has already begun with imaginary building blocks and pouring, made up plasters and roof tiles, all summarized on paper by the lead pencil's imprint.
But experience feeds presumption, and the fact of having brought to conclusion a number of projects, of having gone through the phases of construction, often risks to hinder the production of new thoughts that, inescapably, get checked — and often mutilated — by the filter of experience. The main effort thus consists in starting always from scrap, in belittling as much as possible (or actually in forgetting) difficulties ... and in doing the same with success.
For me, the building site and its rules are design tools, which become the more interesting the more they evolve and change in time and places.

The first draft already employs these tools, nourishing a process which I would like never to be sequential so that the building site's tools, its numbers and restrictions can translate into compositional elements, suggestions for shape and use. Sometimes, even decorative elements.
I often find myself thinking about when one work can be called finished. If, as an architect, I believe this happens when my contribution is no longer needed, on the other hand I am drawn to think that the work finishes at a moment which is independent from the end of construction. It happens in fact that the project's soul reveals itself when the building process is over and everything, finishing included, contributes to making it visible. At other times, instead, the soul appears at a certain point during construction: it strongly reveals itself, yet is destined to undergo the taming brought about by the subsequent stages, that are instrumental to the structure's practicality, to its functionality, its use and "appropriateness".
When this happens, I think my work has come to the end and I would prefer not to go forward, as any successive operation cannot but dilute such magic. From then on, every choice fights against the original design in order to keep that aura which has suddenly appeared, and which, being unplanned, gets the upper hand. I think this is the reason why I love ruins and I perceive the building site, to quote Robert Smithson, as a *ruin in reverse*. Ruins leave all that is unnecessary behind, and exposing its soul, they show the essence of the original design. That is why we have good ruins but also meaningless ruins, and that is why in some building sites one can reach levels of poetry which are not always visible in the finished work.

But we are not sculptors, so we cannot avoid finishing: the architect's unfinished is a formal and aesthetic choice which cannot hinder function. We must make practicable, inhabitable, sellable, liveable, walkable, cleanable, maintainable, heatable, air conditionable... all we build. We must thus insert our work inside a real

world, accepting the limit that divide our work from the artist's.
I have explained how for me the building site begins at the very initial stage of a project, and how for me it is a design tool. In the same way, I believe the design phase does not end with the beginning of construction, but that the building site is a moment of maturation for

the original idea.
In that moment, making and design are in a state of co-participation, producing a system in which the spaces of intervention, instead of reducing with the progress of construction, open up to fresh thinking, designing and testing opportunities. It is a never ending process, which can go beyond the design's boundaries to influence the choices of other projects, be they upcoming or under construction.
Not only an elastic process, then, but a single work in progress, in which the stages mix up and the end of the *oeuvre* never coincides with the end of the project, which often involves works that are wide apart in time and space.
It is licit to think that such a mythological vision of the building site is by now anachronistic, and that it does not correspond to the way construction is managed today. On the other hand, I believe this lens might help us recognize the potential and the strengths of the actors involved in our projects (*project and safety managers*, accountants, builders...), freeing us from the risk of taking shelter in predefined positions.
In order not to lose the battle on quality, architects must evolve and adapt to new processes, without specializing and without losing their global vision.
When we speak of the building site as the place and time of construction, we often forget that it is the meeting place of very diverse cultures: the place and time in which the different actors and humanities must coexist, speaking a common language and following a plot outline in which roles must be defined beforehand, hierarchies must be clear and all interpretations must interact in a constructive way. The building site is the time-place of a *performance* that is the object of contention for many actors, but to which the architect often

renounces, as he or she sees in it a risk for their original idea rather than a possibility of evolution.
That the economic dimension (and often also the financial one) should determine the choices connected with the project's construction and technology must not induce one to pull out. On the contrary, this should spur us towards a deeper knowledge of all those disciplines that are defining the future of building ever more prominently. New data, new elements and new limits to be read as growth opportunities that can offer new possibilities for controlling the project. Only a wide, non specialized culture can give back a role in the building site to the architect: an interdisciplinary culture that can take into consideration the project's diverse dimensions in order to use them within a complex process, inaccessible to "specialized" professionals.
I therefore believe the rationalization and industrialization of the building site represent an opportunity for producing new projects, different (in form and content) and rich in that culture which hangs always in the balance between humanism and the technology which is peculiar to our profession.

IDEAS AND BUILDINGS

Jonathan Sergison

We are interested in in the manner in which concepts can be translated into tangible, physical things: buildings. This is an ambition we share with most architects, and certainly those that are committed to a practice that prioritises building.

From the outset we organised our studio around a form of research that is sustained by the opportunities we have found to build. In all our projects, right from the outset, we ask ourselves questions about a building's form of construction and what materials we should employ.

When we started in practice nearly twenty years ago, we spent more time on construction research than we do today. This was obviously because we did not have a body of work to draw upon, and many of the things we found ourselves doing, we were doing for the first time. Clearly this is no longer the case. Now the task is one of refining and developing ways of building we have the experience of seeing perform over time.

Our very first buildings were produced by Stephen Bates, Mark Tuff and myself working in a very intimate and structured way. We were, and still are, interested in a procedure that mediates between strategy and detail. Drawings were produced in a manner that enabled us to make our strategy manifest in the detail and allow the detail to contribute to a conceptual framework.

Over time, the scale of the projects we are invited to work on has increased, as has the complexity of the building programmes. In parallel to this the structure of building commissioning and procurement has evolved, and it is necessary to engage with these changes, rather than to lament the loss of a way of doing things that is no longer relevant.

One of the biggest challenges we face is that of geography. In recent years more of our work has been outside the United Kingdom. Naturally this requires us to become familiar with the differing forms of local building practice and all that goes with it. In all cases the questioning of an appropriate form of construction is influenced by a sense of what is both reasonable and possible, as building in Chile is not the same as building in China or Switzerland. This requires us to reconcile constructional ambition and rigour with what

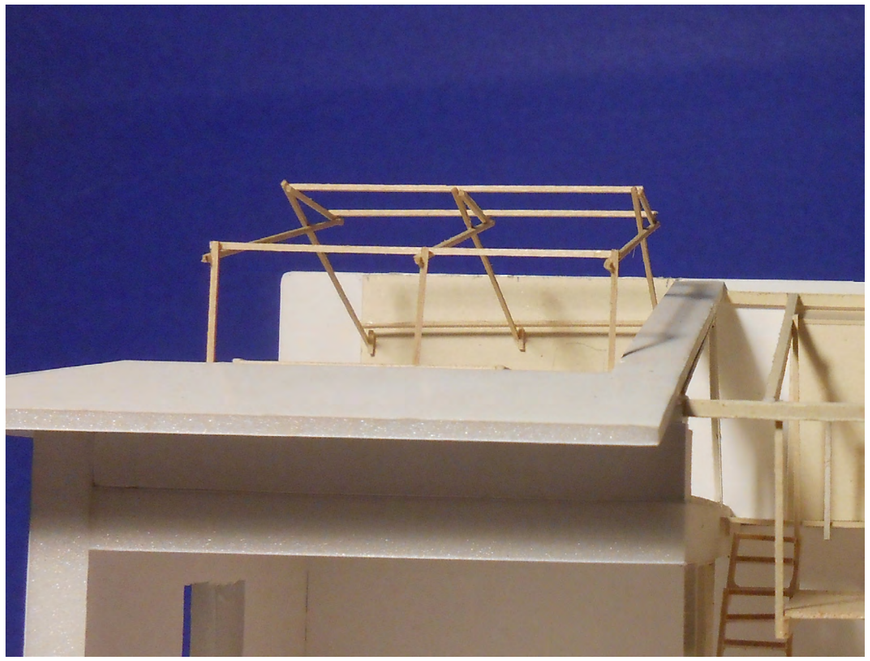
can reasonably be achieved.
Building is still a rather low-tech form of industry, and requires finding some common basis between the different interests of the various building trades involved, which is rarely a straightforward process. The two images that accompany this text represent an attitude to building tolerance. Both are records of our social housing projects being built on site. One shows a bricklayer on a UK building site working in a rather casual way, the other, taken in Switzerland, shows very precise precast concrete panels being craned into position. The two photographs represent two very different building industries, but rather than judge whether one is better than the other, it is important to know what it is possible to achieve in the particular building culture we have to work with. The success of these projects is to some extent based on the conscious acceptance of an appropriate level of tolerance.

FOR PIETRO VALLE

Giacomo Borella

There's a conundrum here: you asked me to write something about the building site and I never succeed in doing it because I am always on the building site.
We do have some small construction going on here around Milan but, above all, there is a sort of building site in our office. You should not imagine a Renzo Piano-like workshop, sponsored by UNESCO and with a view on the sea, but a dark and messy basement filled with the tools of those who make architecture (or attempt to) with a do-it-yourself attitude. Architecture, referred to what we do, is really a big word, but, from our small viewpoint, we try to blend hand and intellectual (this is another big word!) labor. It's been a while since we had enough of sitting in front of a computer and leaving the practical, physical, bodily part (that is, all the fun!) to others! We still, though, are able to make only small things by ourselves; those that are a little bigger, we still give them to a real builder. Blending design, hand labor and dialogue with builders is what we like to do. In *Fields, Factories and Workshops* (a classic, written more more than one century ago and more up-to-date than a lot of the featheredbrained assertions of Rem Koolhaas...), Kropotkin says that those who try to blend hand and intellectual labor are "individuals who escaped the much praised work specialisation. They are the irregulars, the kossacks who fell out and broke through the barriers built between classes".
At times there has been friction with builders and, other times, a profound understanding. Some days ago, for example, I was on a roof with Mr. Oscar, who is finisihing our project for a small extension. He is a shrewd craftsman, he does the masonry but also the wood and the metal work. He was using a hand riveter, the same as mine, a cheap tool, elementary, perfect: one of those tool that Ivan Illich labeled as "convivial". I said to him: "Shit, the riveter is still a fantastic tool!". he stopped for a moment, looked at me and, smiling, said "Pota... (Pota is his favorite quote) "...it always work...".
Here is Oscar working at the flashing.

The next day it was our turn: we had to build a pergola on a balcony, in another building site, without any Mr. Oscar to help us. A pergola done with chestunt poles, the ones used in agriculture, bound with ropes without any metal tie. This is the way we thought of building it:



While we were making it, though, we realised there was a flower box overhanging just in the place where the central pole was planned and and interfering with it. Our structural engineer, Carlo, was there, and playing the rope binding master. We consulted with him and he figured out that the pole thickness was strong enough to allow us to get rid of the central pole. He also suggested to bend the two side bays some forty centimeters towards each other, so that they would contrast; we did as he said. Luisa, the apprentice helping us, in the end said. “I have learned more today with these poles than in a whole year of structures class”. This is the pergola as it came out.

In general, the building site has been reduced to an annoying interregnum that gets in the way between the bodiless output of the computer processing and the abstraction of the finished work that wants to resemble a rendering.
In a modern country, it is absurd to spend such a long time and effort to go from the conception to the finished product!
Contemporary architecture (but Modernism had already taken giants steps in this direction) seems to be thought to conceal its nature of human product.

Dear Pietro, excuse my messy thoughts. I would like to write something more structured but we are in Rovinj, Istria, now, assembling a small shop, and I am a little bit in a hurry.
I say farewell with a small sketch of Rovinj.
Goodbye now, and thank you for your patience!

Giacomo
Rovinj, april 17, 2015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BIOGRAPHIES

Gianandrea Barreca is one of the founders of the A12 group who promoted projects, exhibitions and installations internationally. In 1999, together with Giovanni La Varra and Stefano Boeri, he established Boeri Studio who promoted important urban and architectural projects in Italy and abroad. Since January 2008, together with Giovanni La Varra he started the professional practice Barreca&La Varra, based in Milan. He has taught at the Domus Academy in Milan and the University of Genoa. He has been a visiting professor at Kent State University, California State University and Syracuse University all based in Florence and i2a in Vico Morcote.

Giacomo Borella received his architecture degree at the Milan Polytechnic and has been a pupil of Umberto Riva and Alvaro Siza. In 1993 he founded Studio Albori in Milan with Emanuele Almagioni and Francesca Riva, and works at architectural and landscape projects that consider environmental and ecological issues. He has written essays and pamphlets, collaborating with many publications like *Lo Straniero, Gli Asini, Corriere della Sera, Lotus, Radio Popolare*. He has been a visiting professor of architectural design in many universities.

Giovanni Corbellini is a professor of architecture and research leader at the University of Trieste, as well as a tutor in the *Villard de Honnecourt* international doctorate. His many books include: *Ex Libris - 16 parole Chiave dell'Architettura Contemporanea, Bioreboot - The Architecture of R&Sie(n), Le Pillole del Dott. Corbellini, Housing is Back in Town*, *Parametrico Nostrano* (with Cecilia Morassi).

Giovanni La Varra, deputy editor of *Viceversa*, started his professional practice in 1994 and in 1999, together with Giovanni La Varra and Stefano Boeri, he established Boeri Studio who promoted important urban and architectural projects. Since January 2008, together with Giovanni La Varra he started the professional practice Barreca&La Varra, based in Milan. He has been granted awards such as the *International Highrise Award 2014* for the Vertical Forest tower in Milan. He has taught at the Milan Polytechnic and Statale University. He is currently associate professor of architectural design at the University of Udine.

Valerio Paolo Mosco, editor-in-chief of *Viceversa*, is a practising architect and critic. He has written: *Naked Architecture, Ensamble Studio, Cinquant'anni di ingegneria in Italia e all'estero, Steven Holl, Architettura contemporanea: Stati Uniti East Coast, Architettura contemporanea: Stati Uniti West Coast, Architettura a volume zero (with Aldo Aymonino), Valerio Paolo Mosco: scritti di architettura*. He teaches a the IUAV in Venice and at the IED (Istituto Europeo di Design) in Rome; he has been a visiting professor at the Milan Polytechnic, at the Brescia Architecture University and at the Illinois Institute of Technology in Chicago.

Michele Nastasi, since 2004has been working as a photographer in the field of architecture, urban landscape and interiors for architectural firms and magazines, as well as developing his own research projects. His pictures have been published extensively and exhibited at the Biennale di Venezia and in other exhibitions in Italy and the USA, among which *Suspended City. L'Aquila after the Earthquake of 2009. Photographs by Michele Nastasi*, Wolk Gallery, MIT, Boston 2013. He co-authored with Davide Ponzini the book Starchitecture. *Scenes, Actors and Spectacles in Contemporary Cities*. He is part of the editorial staff of *Lotus international*. He teaches Architectural Photography at the Milan Polytechnic.

Marko Pogacnik is an associate professor at the IUAV in Venice, He has been a visiting professor of architecture in Potsdam, Triest, Graz, Aachen, Dortmund and Innsbruck. He is in charge of the Venice unit in the Italian *National Research Program Atlas of the Structural Forms in Italian Architecture of the 1950s and 1960s*. He has been curator of the exhibition *Adolf Loos und Wien* in Vienna in 2011-2012. He has written monographs on Adolf Loos and Karl Friedrich Schinkel, as well as curated books on Adalberto Libera and Hans Sedlmayr.

Stefano Pujatti received his architecutre degree at the IUAV in Venice as well as a Master in Architecture at Sci Arch Los Angeles. He worked in the firms of Gino Valle in Paris and Coop Himmelblau in Los Angeles. In 2005, he founded Elasticospa based in Chieri, near Turin who promotes architectural and urban design projects that have won international recognition. He has been a professor at the Turin Polytechnic, a visiting professor at the University of Toronto as well as a guest critic in many international schools of architecture.

Kester Rattenbury is an architectural journalist, critic, author and teacher. She has taught at the University of Greenwich and then, from 2000, at the University of Westminster in London. In 2003, she set up EXP, *the Research Centre for Experimental Practice* that promoted the *Archigram Archival Project* and the *Supercrits series*. She has contributed to the most important english architectural magazines, published books in the *Supercrit, Architects Today* and *The House Book* series, as well as written monographs on Cedric Price, O'Donnell and Tuomey and Terry Farrell. Since 2003, she has been working *Another Country: The Architecture of the Novel*, a research which re-explores some of England's most famous imaginary environments.

Jonathan Sergison, together with Stephen Bates, established Sergison Bates architects in 1996. The practice has been awarded the Heinrich Tessenow and Erich Schelling medals and many of their buildings have won international recognition. Having taught at a number of prestigious schools of architecture, the Architectural Association in London, ETH in Zurich and the Graduate School of Design at Harvard among them, Jonathan Sergison is currently Professor of architectural design at the Accademia di Architettura, Mendrisio.

Christian Sumi, after his degree at ETH in Zurich, collaborated with the Institute of History and Theory of Architecture within the ETH. Together with Marianne Burkhalter in 1984 he founded Burkhalter Sumi in Zurich that won international recognition for their innovative wood buldings and color schemes. He has taught at Harvard Graduate School of Design in Cambridge (USA), at Lausanne Polytechnic and at the University of Strathclyde in Glasgow. He is currently Professor of

architectural design at the Accademia di Architettura, Mendrisio.

Pietro Valle, guest editor of the *Building Site* issue of *Viceversa*, received his degree at IUAV in Venice in 1987 and a Master of Architecture at Harvard Graduate School of Design in Cambridge (USA) in 1989. He worked in the firms of Boris Podrecca, Emilio Ambasz and Frank O. Gehry. Since 1990 he has collaborated with Studio Valle in Udine/Milan and is nowadays the firm main partner and designer. He has been a visiting professor of architectural design in many U.S. universities, in Ferrara and at IUAV in Venice. He has contributed with essays to many art and architecture magazines, as well as he keeps on writing books. His last is *Alpe Adria Senza, Paesaggi Contemporanei a Nord Est*.

Peter Wilson studied at the University of Melbourne and at Architectural Association where he taught from 1974 to 1988. In 1980 he founded the Wilson Partnership in London. In 1989, together with Julia Bolles, he founded Architekturbüro Bolles+Wilson in Münster that has won international recognition with its built projects in Germany, Holland, Japan and the United Kingdom. He has taught as a visiting professor of architectural design and theory in Berlin, Mendrisio, Edinburgh, Rotterdam, Cambridge, Havana and Venice. In 2013, he has been awarded the Gold Medal from the Australian Institute of Architects.

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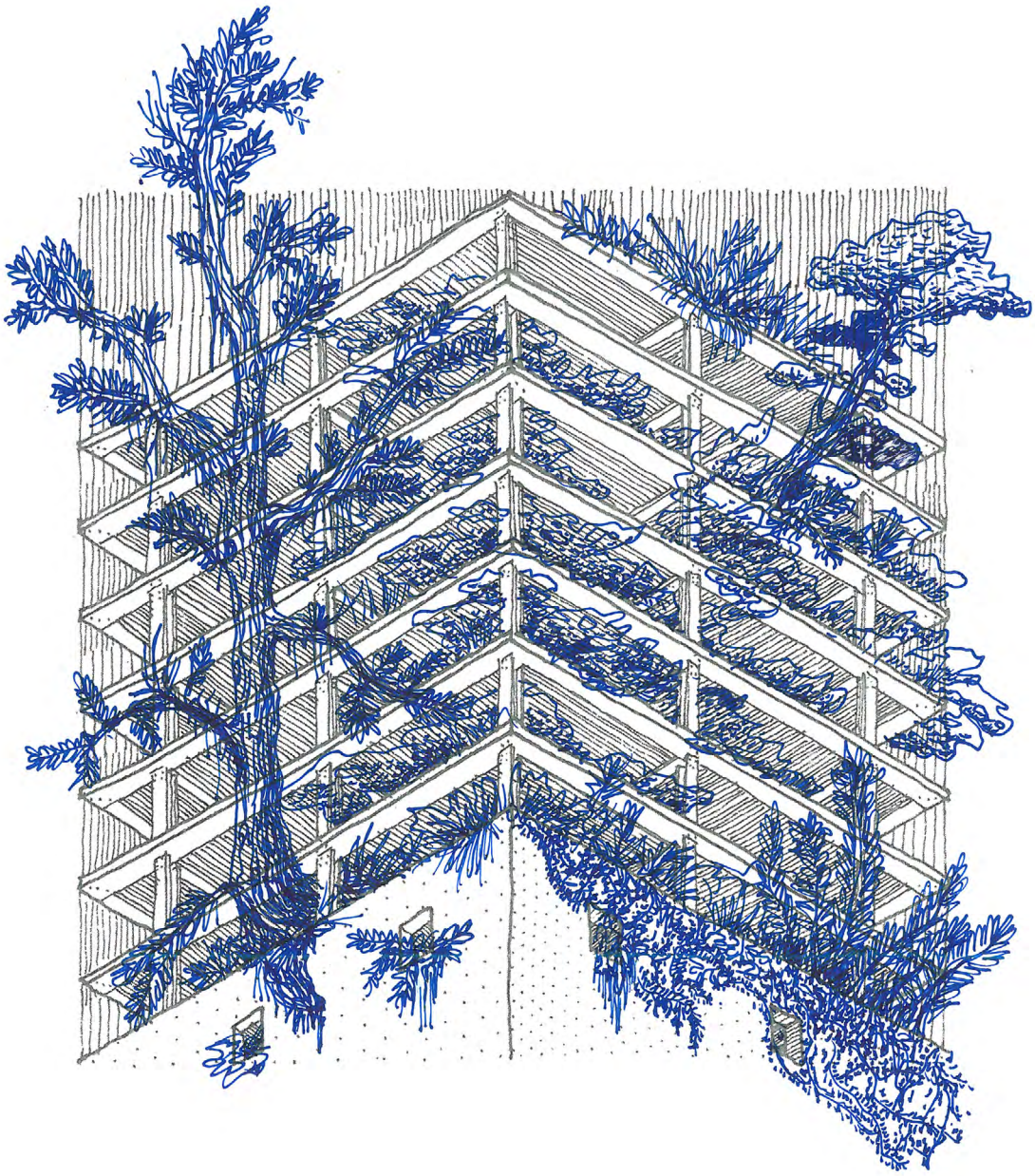

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OII+

ISSN 2421-2687