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# VERSÃO ACEITE

## INTRODUCTION

### **Drawing for the design process**

Architects draw for a plenty of purposes. They draw to assimilate places and precedents, to generate ideas, to develop a concept into a consistent project in a team, to communicate ideas and solutions to patrons and clients, to enable building contractors and to guide them during the construction stages as well as to produce further elaborations in order to publish their project on a 'treatise', a journal or their own portfolio. Most of all, architects draw to think and to manage complexity in a visual way.

The object of this book is the role of drawing in the design process. Examples of innovative, interdisciplinary approaches to drawing in the design process can be found both in the history, when architecture and urbanism were segments of a wider artistic formation, and in the present days, in which the role of traditional drawing is challenged by digital techniques. However, the current practicing context made of preexisting rules, procedures, standards, formats, protocols, algorithms and so on, results of a long process of systematisation, in which drawing had a pivotal role.

From the 15th century onwards, the practice of describing architecture, also in the design process, was gradually replaced by architectural and urban drawing. This was mainly shaped by hand made drawings and the diffusion of cheap opaque and transparent paper, which was to promote the early mechanical reproduction of drawings in the 19th century. Parallel with the intellectual redefinition of the figure of the architects and their primary tasks, a projective formulation, fostered by the Florentine perspective rediscovery, slowly moved the architectural drawing from an empirical to a scientific sphere. Added to this, a wide set of conventions, which include symbols, sheet sizes, units of measurement, scales of reduction, annotations and cross-referencing marks, were developed to facilitate the envisioning of architecture and to turn drawing into as a sort of visual language which lasted for centuries.

Since the last decades of the 20th century, the advent of computers has been changing dramatically the scenario. Also through software largely inspired by previous analogical tools, digital surveying and visualisation techniques have been innovating every step of the design and representation practice. Computer Assisted Designing and Drafting enabled an easier three-dimensional representation, reproduction in colour, real-time multi-players involvement and many other advancements. Digital techniques have transformed the visual interfaces, the practice of an architecture office and the relationship with clients, public, and society. They have expanded the repertoire of visual solutions of architects, through digital collage and modelling, photo-realistic rendering, animation, Augmented and Virtual Reality, and rapid prototyping. They have also enabled original approaches to the design process, from three-dimensional virtual drawing to the Building Information Modelling technology. This can relate the design and communication of the architectural form to the demands of the client, the environmental and regulatory constraints, the structure and plan engineering requirements, the production and assembly of parts produced with numerical control machines and the planning of building and its development and maintenance over time.

2

On the one hand, computer changed the mind of architects, who began to consider architectural representation as an exclusively infographic matter, eventually putting suddenly aside century-long tradition and practices; on the other, it provided a wide range of new perspectives. Only in the field of visualisation, it has enhanced the opportunity to relate distant fields and expressions, to experiment by mixing analogical and digital approaches, to better classify and analyse architectural visualisation. Retrospectively, it suggested the recovery of traditional practices, such as the physical scale and 1:1 modelling, to fight the growing virtualisation of the design process and increased the artistic aura of traditional drawings, triggered by Giorgio Vasari's *Book of Drawings* centuries ago; it also contributed, as the advent of a new pervasive tool generally does, to reframe and investigate the value and peculiarities of previous practices.

In every design process, the definition of procedures and tools of analysis, design and visualization of space is linked to a program, a specific economic and productive area an architect belongs to and his or her social and cultural agenda. For example, a project and its images can be conceived as either keys to inclusion and participatory transformation or, on the contrary, as an explicit representation of exclusive power and its ability to shape the territory. In this sense, even hardware and software, like every

tool, are a consequence of a specific cultural and economic environment and condition the design process as well the representation of it, occasionally forcing architects to hack, bypass or plug-in systems and procedures.

This strict relationship between architectural drawing and the human society makes the designs today preserved in physical and digital archives an unedited and intangible cultural heritage of ideas. These ideas may surface from the peculiar formats adopted by designers, surveyors, restorers, critics, and divulgators, and the artistic and social agency architecture and urbanism can play.

Graphic analysis and three-dimensional reconstruction of the projects, especially the unbuilt ones, can reveal the ideas (and the people) behind the drawings better than buildings. Rooted in the principles of mimesis and semantic efficiency and addressed to the several subjects involved in shaping the territory, architectural drawings may be very sensitive to the social and cultural changes of the contexts in which they are practiced. Architectural and urban drawing has always proved ductile to variations, interpretations, customisations, contaminations, and hybridizations of the neighbouring artistic and, later, scientific disciplines.

Since the 1960s, the description of the design process has been taking more and more space in the design communication. In parallel with the raise of Concept Art, the architect, half-philosopher and half-scientist, learnt how to combine together images of artworks, literary aphorisms, schemes, diagrams and annotations to draw the design process itself and emphasise the concept behind the building. In parallel, from the Renaissance treatises to the online digital portfolio, designers have consolidated the practice of presenting their own work in idealised terms to shape the public's experience and judgment.

Even today, individual architects and design firms look for inspiration in the historical models of architectural visualisation. They can find it both in the field of architectural drawing and in the extended field of visual media, particularly those developed between 18th and 19th century for scientific, touristic, and commercial purposes. Besides being a way to think of space, architectural and urban design is largely an outcome of artistic practices and specific gazes which are constantly fuelled by other disciplines oriented to space and territory and using drawing in peculiar ways. In this sense, the reasons for the use of specific typologies of drawing must be searched for in relationship with the intentions of the designer and client and the social, cultural, and economic conditions.

## Conceiving ADAUD

The idea of this book made its way at the beginning of the pandemic, in the first months of 2020. In those days, many of us experienced an unprecedented feeling of isolation. This was due not only to the fact that we could no longer move and meet freely but also to the awareness that the others constituted a potential threat to our health. Parallel, remote working was giving most of us the opportunity to look at our lives from outside, through a different perception of time and space. This was indirectly promoting a higher availability to listen to others, to share good practices and to find new forms of association and closeness.

The idea of a book with many voices and ideas was mainly an antidote to this invisible menace. It served as a system to react to the frustrating suspension of normality, but also to do it in a collective way. We wanted to demonstrate that a source of anxiety and suffering could be turned into a rare opportunity of shared growth.

The topic of this book – drawing approaches in architectural and urban design – symbolically represents the incurable optimism that characterises architects in every age and latitude. An individual (but not always) practice often with collective purposes, it acquires a peculiar meaning when the future seems more uncertain. Projecting oneself into the future in positive terms and anticipating possible visions are instinctive in all of the architects who carry within them the seeds of a better society and a more respectful approach to territory and memory.

The structure of this book was defined little by little, during virtual meetings involving an extended group of colleagues. The different points of view offered by the participants highlighted the need for the book to be inclusive of the multiple ‘approaches’ to drawing – a term that later imposed itself also for the title – and, at the same time, to highlight the disciplinary peculiarities of these approaches. In this sense, the book was to become a platform where the approaches of the historians, with their focus on the documents and facts, and the theoreticians, with their wide-angle considerations, could meet the current practice of drawing in the architectural offices as well as adjacent fields of studies.

These early objectives were made more difficult by the international breadth of the book, given that the perception and academic classification of architectural drawing studies vary from country to country, and by the geographical and temporal extension of the contents. We had established, perhaps even naively, that drawing research could not be limited to a specific period or geographical area. The “multiplicity”, to quote one of the categories of Italo Calvino’s lessons in literature<sup>1</sup>, appeared to us as a quality to share with readers, colleagues and students, of course.

As the three of us took the role of editors of the book, the colleagues involved in the early stage choose the role of contributor or just curious observer of the process, always available to advice.

After defining the theoretical structure of the book, our attention turned in two directions: on the one hand, we drafted an abstract of the book and sent it to a list of publishers who might be interested in the project; on the other, we planned the editorial process. We rejected the hypothesis of organising a sort of on-line conference or workshop, from which to obtain a proceedings book, because of the difficulties associated with these virtual events. Rather, we decided to invite specialists to write a chapter on the topic of architectural drawing.

We listed a pool of names of international colleagues exploring the issues of drawing who are distinguishing themselves for interesting explicitly in architectural drawing. Parallel to this, we also selected a number of designers currently practicing. In both cases, we combined world-wide celebrated scholars and architects with young emerging figures, also to compare different practices and goals.

In January 2021, we sent invitations to about 35 scholars and 15 designers. Our early intention was to follow this invitation with an open call-for-chapter but the high number of subscriptions received convinced us to give up this idea. We established the format of the long essay, the general timeline and the guidelines for the authors; then we started the process. Meanwhile, we prepared a series of standard questions for the interviews with the designers.

A few months later, we signed an agreement with Cambridge Scholars Publishing and fixed the deadlines of the manuscript development and delivery. Over the months, some of the contributors had to renounce and others were ‘recruited’ to replace them. All of the chapters were submitted

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<sup>1</sup> Italo Calvino, *Six Memos for the Next Millenium*, Cambridge, MA: Harvard University Press, 1988.

to a double-blind review exploited by the contributors themselves and other colleagues who kindly took part in the process.

Now that the book is about to be published, we see that our inclusive intent is only partially fulfilled. From a geographical point of view, we are surely satisfied. The 39 authors of this book represent five continents (Europe, North America, South America, Asia, Australia), fourteen birth-countries (Australia, Belgium, Holland, France, Germany, Greece, India, Iran, Italy, Peru, Portugal, Spain, UK and USA), and many others of adoption. Although the authors and their interests are directed above all to the Western world, and Europe in particular, their training, research and design experiences range over several continents and cultures. Added to this, the chapters testify of a wide range of methodological approaches and different cultural gazes on the architectural drawing, which seems far away from being considered dead or totally replaced by automated visualisation techniques. On the contrary, despite our efforts, only eleven of the 39 authors are women. Several of the invited women had to give up even when they were already working on their chapters. This aspect would deserve more considerations, especially in relation to the opportunity they are given to conciliate family and work in their own countries.

To highlight the methodological and operational specificities of the scholars, we ordered the chapters into three main sections: the first – *Histories* – includes historical studies and theoretical studies involving a specific age, place or subject; the second – *Theories* – includes theoretical and interpretative studies on drawing as a tool and medium; the third – *Connections* – includes interdisciplinary and multidisciplinary studies, whose critical considerations are fundamental to frame the current practice of drawing. A fourth section – *Practices and Conversations* – mostly of interviews with professionals currently working, provides a perspective on the architectural drawing as a ‘living matter’ and a language daily ‘spoken’ and ‘adapted’ to the contingencies.

Finally, we turned *Practices and Conversations* into the opening section, to let the reader start from the current practice of architectural drawing before exploring its historical and theoretical implications.

## **Practices and Conversations**

The ten interviews to designers that open the book focus on the different roles drawing can have during the design creative process. In particular, we discerned four main roles for drawing:

- observation and recording;
- exploration and conceptualisation;
- formalisation and communication;
- exploring the ephemeral and experiential *in, by – or through* drawing.

These roles, which cannot be seen in isolation as they tend to overlap in different phases of the design process, inspired four ‘standard’ questions that feature most of the interviews. Yet, the opening question of the interviews is instead centred on a single drawing chosen amongst the graphical production of each of the designers. This question is thought as a sort of *madeleine* to promote the mental and emotional involvement of the designer into the interview and to favour any sort of “stream of consciousness” about his or her previous design experiences. Added to these, one or two more questions have been inspired by the specific experiences of the designer. Occasionally, we also asked them to describe an architectural image made by someone else which inspired them in their drawing practice. Finally, all of the designers selected 10 or more pictures from their design practice to illustrate their words and works.

Most of the designers have been sent the questions by email – generally in English, but also in Italian, Spanish and Dutch – and have written their thoughts on a file. They also attached a digital copy of their drawings that only occasionally are explicitly referenced to in their text. Others have sent more than 10 pictures, leaving us the task to pick some of them.

However, some of the interviews were in presence and differ from the standard described so far. In these cases, the standard questions have been considered only as a general reference by the interviewers.

They have rather followed the mood and orientation of the conversation and, during the transcription, efforts have been made to preserve the natural spontaneity of the words.

When Jan De Vylder and Inge Vinck have been interviewed by Robin Schaevebeke in Antwerp, it mostly resulted as a conversation between the two architects, who went on for hours. In this sense, the text published in this book is only an excerpt of it.

Álvaro Siza Vieira has been interviewed by Greta Ruffino, who is also one of the contributors of the book. Together with the photographer Raul Betti, she met him in his office at 53 Rua do Aleixo in Porto on 23 July 2022. In the transcription of the interview with the architect.

Unfortunately, some of the designers were unable to either attend the interview or write the answers. Together with the editors, Wim van den Bergh



adapted the text of one of his previous articles into an interview<sup>2</sup>. Steven Holl gave us the opportunity to publish “Drawing as thought”, a text already included in the catalogue of the exhibition *Steven Holl: Making Architecture*<sup>3</sup>. Added to it, the editors collaged a short text combining excerpts about architectural drawing from previous interviews to him.

## Histories

*Approaches to Drawing in Architectural and Urban Design* gathers more than a millennium in its ten essays focused on drawing and representation in architecture and urbanism histories. This breadth, along with the volume's general thematic questions about theories and connections that follow this section, opens it to readers beyond architecture and urbanism. All ten chapters are recent scholarship to explore the opportunities presented by rethinking representation and narrative issues in architectural and urbanism histories. Unifying the volume is a set of intertwined questions: What kinds of representation does architectural history use? How are the architectural and urbanism histories organised in different narratives, and toward what ends? What might these concerns tell us about architects' and urbanists' disciplinary and institutional positions and practices in the past and present? And finally, how can consideration of drawing and representation help us all reimagine the limits and the potentials of the built environment? All these matters have not generally been addressed in the same place. Each chapter creates a space where historically grounded research into all aspects of architecture and the built environment can be made and are open to historical, historiographic, theoretical, and critical contributions. These engage with architecture and the built environment from several historical perspectives that include interdisciplinary with visual arts, anthropology, psychology, postcolonial studies, etc. Quoting Robin Evans, “Architects do not make buildings; they make drawings of buildings”. Was the architecture written before being drawn? In their essay, Belardi and Menchetelli explore the relationship between ‘written’ and ‘drawn’ buildings, focusing on the role of language and imagination in architectural design. They discuss how verbal descriptions of architectural spaces can

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<sup>2</sup> Wim van den Bergh. “Mental Perspectives.” *Disegnare*, No. 52 (2016), 7-11.

<sup>3</sup> Steven Holl: Making Architecture. An Exhibition at the Samuel Dorsky Museum of Art, State University of New York at New Paltz (New York: Samuel Dorsky Museum of Art, 2018), 17. The exhibition is currently touring through European cities.

evoke mental images and stimulate the reader's imagination. Belardi and Menchetelli further delve into the historical and theoretical aspects of the relationship between words and images, highlighting examples from Italian literature and architectural treatises. Also by examining the role of textual prompts in artificial intelligence to generate architectural images, Belardi and Menchetelli explore the interplay between language, imagination, and architectural design, highlighting the importance of writing and drawing.

Hubertus Günther also investigates the transition from description to representation in the practice of architecture and analyses the use of images in the architecture of the Renaissance and their role in conveying information. Through the interpretation of the Vitruvian *lineamenta* in the architects and engineers' drawings, it explores how Early Modern illustrations were more extensive than language in communicating complex ideas and how they were used to supplement architectural drawings. Finally, Günther highlights the importance of images in science and their role in enhancing understanding and memorability.

Basile Baudez focuses on a single typology of drawing and reflects upon the historical evolution of natural and conventional signs in Early Modern architectural plans. In particular, he explores the use of symbols, icons, and written measures in architectural drawings from ancient Egypt to the 18th century. His essay discusses the evolution of graphic conventions and the tension between legibility and information in architectural representation. He also highlights the strategies draftsmen use to convey information while maintaining the plan's clarity. Overall, it offers insights into the development of architectural plans and their visual language.

While the previous chapters focus on the process of formalisation of the architectural drawing as a language, Francisco Martinez Mindeguía discusses the role, limitations and customisation that emerge in the practice of the architects from the Renaissance on. He explores how architects use drawing as a means of communication and representation but also highlights the ambiguity and resilience of this medium. To illustrate these concepts, he references examples from the drawings of Raphael, Andrea Palladio, Gian Lorenzo Bernini, and Heinrich Tessenow. His essay, like Nuno Grancho's later does, emphasises the importance of understanding the context and interpretation of drawings and the aesthetic qualities found in their limitations. Overall, the essay provides insights into architectural drawings' artistic and communicative aspects.

The efficiency and limits of architectural drawing as a (international) language also emerge in the act of translating the architectural principles

from a cultural content to another. Marco Trisciuglio analyses the effects of translation in the work of the so-called “Chinese Vignola”, LIANG SICHENG’s collection of hand-drawn plates that depict traditional Chinese architecture according to a Western model. A repertory of plans, sections, construction details, and ornamental devices of Chinese buildings, this visual treatise was widely used in Chinese architecture schools and can even be found in stationery shops. Trisciuglio highlights the importance of understanding traditional Chinese architecture and its relevance in the context of today’s cities in China, indirectly framing the evolution of Chinese architecture in the past and extending its connection to Western architectural styles.

The strict connection between territory, society, and the architecture, which invariably interprets and represents them, makes architectural drawing a tool able to map and reveal the network of invisible connections and barriers of urban environment. Focusing on the post-colonial India, Nuno Grancho’s essay discusses architectural drawing and ethnography in understanding and representing the spaces of marginalised and subaltern groups. It emphasises the role of drawing and note-taking in creating a rich and detailed record of the experiences and observations of the architect, which can lead to a more nuanced understanding of the culture or community being studied. Grancho also highlights the complexity and diversity of social and cultural practices and challenges dominant narratives and assumptions by addressing the question of representation in postcolonial and subaltern studies, questioning the supposed transparency of academics and institutions. The essay also discusses the need to overcome binary systems and cultural differences in studying non-western architectures and cities. It emphasises the importance of recognising and essaying marginalised spaces and spatial practices. Overall, Grancho suggests that drawing and writing can offer alternative ways of representing and understanding marginalised spaces and communities.

The 20th century is a privileged context to read the effects of the social, artistic, and industrial revolutions on the architectural practice and drawing. The concluding chapters of this section are properly oriented to use drawings to highlight the architects’ growing interest in the scientific and industrial innovations, in the visual models of the popular media and in the experience of the means of transportations, which was quickly transforming the perception of the city and territory and imposing the concept of landscape.

The social and creative role of the colours in the built environment emerges in Luca Placci's analysis of Alvar Aalto's architectural drawings. Placci writes about the importance of colour for the creative process and how it shapes architecture. The essay highlights the architect's shift from refined drawings to more expressionistic representations and his adoption of a minimal colour palette. Moreover, Placci emphasises the role of freehand drawings in Aalto's design process and how they condensed his architectural concepts. It has a phenomenological mention of Aalto's use of pencils and brushes and his beliefs about paper for drawing architecture.

Fabio Colonnese contributes to the extensive work discussing Le Corbusier's works in the history of architecture. His analysis of Le Corbusier's drawings conveys spatial experiences and narratives using perspective, axonometric views, and other graphic techniques. Colonnese's discussion uses different perspectives, such as the representation of movement, the concept of the *promenade architecturale* and the incorporation of literary and cinematic elements in Le Corbusier's drawings. The essay suggests that the drawings go beyond mere visualisations of architectural plans and instead aim to evoke a sense of space and engage the viewer in interpreting architectural experiences. Overall, the essay offers the novelty of new insights into Le Corbusier's approach to architectural representation and his drawings' significance in conveying architectural ideas and spatial thought.

Maria Grazia D'Amelio and Lorenzo Grieco's essay applies the theory of visual perception and poetics to the analysis and design of Luigi Moretti's works. It explores his personal optical and perspective approach to design by analysing his drawings and the conventional signs on them. Through examples such as the Foro Mussolini in Rome and the master plan of Perugia, they illustrate his use of visual perception in design. In particular, D'Amelio and Grieco discuss how Moretti used visual cones and angles in his drawings to control the perceptive effect of the visitors, eventually defining a new role of the architectural forms in the extended field of the landscape. They also mention Moretti's inspiration from both science and Baroque art and architecture and his sensitivity to the material effects of architectural surfaces.

Fabio Lanfranchi's essay also focuses on the Foro Mussolini in Rome and Pietro Aschieri's unbuilt project for a new bridge over the Tiber. Lanfranchi discusses the interpretation of the bid requirements for the bridge design, the authorship of drawings, and the methods used to build the perspective views. His essay also proposes a detailed analysis of the survived

perspective views and graphical techniques of Aschieri's drawings – the vanishing points, the manipulation of shadows, and the materials used in the graphical treatment – to demonstrate his ability in overcoming in the mathematical rules to reach the effect. A priority according to his artistic and scene-maker education, Aschieri's intent indirectly demonstrates the implicitly conflictual nature of the education of the architects. They are constantly and painstakingly fighting for a delicate and provisional synthesis between science and art, which is today challenged by the dominance of the computer.

## Theories

The seven chapters of this section discuss the drawing as a tool and medium as well as the role of specific typologies and procedures in the design process and the education to it. They demonstrate that specific typologies of images are searched for their capacity to define alternative and ground-breaking design processes, out of the academic consolidated scenarios. The examples they present here also demonstrate that these typologies, like the diagrams analysed by Lidia Gasperoni or the comics studied by Luis Miguel “Koldo” Lus Arana and Simon Grennan, continually oscillate between an exploratory and a communicative agency, eventually affecting the architectural form and its relationship with the forces that shape human society.

Gasperoni discusses the recent “iconic turn” of the diagram in the design process, where “the introduction of digital techniques and the spread of a formalistic approach have reduced the diagram's critical power” expressed since the 1980s. After describing diagrammatic practices in architecture – diagram was used as a “medium for exploring new design fields, extending the means and meanings of architecture” and, thanks to the radicalisation of philosophical texts, as a “generative design process” able to produce the architectural form – she explores its conceptual expansion to various media (“diagrammania”) and its recent development as “a medium that relates territorial knowledge to spatial practices” which “has progressively emancipated itself from drawing, becoming an environmental practice”.

“Koldo” Lus Arana and Grennan describe the emergence of the comics as a cultural, narrative tool at the service of the design communication, most of all. They briefly frame the relationship between architects and comics in the historical scenario and list an impressive number of recent cases involving emerging artists, architectural offices and studios, and social networks to

express the different peculiarities and potentialities of the medium. Like other popular media of the past, comics provide a semantic potential able to depict time in space and to convey meanings to a wider public, indirectly involving the atmosphere of the literary and media source they are connected to into the design process. In this sense, they are narrative tools able to “unleash and guide” alternative creative processes, to present the stories behind them, which “have gradually grown as significant as the final object itself” in the postwar decades, and to regenerate the architectural visual language.

The chapters of Christoph Leuder and Marianna Charitonidou focus instead on the different typologies of architecture drawing to discuss the role of the point of view and the observer in their conception. As Leuder highlights, “viewing a drawing is an active act of reading and immersion, that draws on pre-conceptions, commentary and annotation, cultural knowledges of the viewer as well as of the drawer, as well as imaginaries”. A perspective view implicitly refers to an existing viewer in the physical space, who must stand still at the proper distance to experience the illusion of depth. On the contrary, an axonometric view, with its infinitely far-away point of view, calls for moving viewers and involves them in a psychological way. An immersive use of parallel projection invites to empathy through a specific use of human figures and open fertile ground for imagination.

In the case of Oswald Mathias Ungers, whose drawings reveal often an additional metaphorical value, the question of the reader is even more important. Charitonidou’s analysis of his ideas and designs on the city highlights the “primacy of the ‘observer’ or ‘fictive user’ over the ‘real user’ and illustrate the intrinsic socio-political agency of architectural drawing” in “relation to the tension between the individual and the collective in the post-war 20th century”. While Ungers’ collages and perspectival photomontages literally express his idea of a city, the axonometric view, often combined with plans, is assumed as an objective image oriented to a collective subject, whose scientific nature indirectly connote the whole design process.

Fabrizio Gay extends the exploration of drawing in the semantic field and frames the concept of style as a meta-language able to offer an allegorical representation of the socio-political values. He investigates the Italian art of the fascist decades and the Littorio-style to understand its genetical mechanism and the role of architecture’s image in it. Such a “style”, which, also for political opportunities, had to be inclusive of the several incipient, and even antagonist, architectural trends, emerged in the 1932 Fascist

Revolution Exhibition, whose many contributors were indirectly entrusted with producing a consistent representation of the Regime. In particular, Mario Sironi's (and his closest colleagues') work contributed to orient the overall figurative result towards an "image corresponding to the common denominator of the expressive characters of a vast array of visual artefacts, from architecture to design and graphics". While the term 'image' in itself, with its wide semantic field, is challenged and charged with new meanings and functions, which indirectly intersect with the scenography context, architecture, in its multiscale presence and artistic synthesis, is reduced to a medium with the task of representing the power and gaining its endorsement.

The pervasive role of images and the values that more or less explicitly they convey is also the topic of the chapters of Caroline Voet and Pari Rihai. They reflect on their experiences as teachers who critically approach the consolidated methods and tools of the architectural education to define a sort of maieutical way to let the students find their own way and subjects. Voet explores "how drawings surpass their function as mere representation" and become speculative tools to reproduce the experience of the design process of existing buildings. Starting from the evidence of the building, "speculative orderings and interpretations of the design process need to be objectively evaluated and superimposed upon historical research and contextualization". In particular, "the design sketch is the research field itself, an intense dialogue with the context, program, social and cultural forces, technological conditions, the clients, and all kinds of personal motivations". Through a constant application of an ontological doubt, "through the analysis of specific historical artefacts, urbanisms and atmospheres, through processes of abstraction and superposition in time, the students aim to create layered and critical contingencies for the current design practice".

Riahi presents a particular pedagogical format of teaching strategies for an experimental, open-minded, and open-ended design process. She explores the general principles of design, through a process-oriented method, the conceptual switch of media, a playful thinking in 2D and 3D, etc., not to learn how to produce buildings but to carry on a consistent creative process which is available to a plenty of situations. Her true goal is to let the students find their own "perceptions, interests, pace, and voice", thanks to intrinsic interest they have in generating a subject they chose themselves and then developing it by being responsible for its good outcome. In this guiding the students to be aware and realise their own potential by drawing,

Riahi's approach extends their education from a pedagogical to an ethical, political, and social dimension.

## Connections

The third section of the book presents seven chapters that provide only a small glimpse of the range of issues connected to architectural and urban design. Here the act of drawing is explored along the border line dividing and connecting, at the same time, architecture representation, scientific research, and artistic practices. In this sense, all of these chapters are not focused on architecture but rather use it in analogical or metaphorical way to explore the limits and opportunities of work methodologies.

The opening chapters illustrate the heuristic role of drawing in the artistic practice of Ana Aragão and Tobias Becker. Both of them are no properly scientific texts but rather a chronicle with considerations and occasional references to literature, which is written to describe the objectives of their work and the personal process they developed in the years. As an architect, Aragão devoted herself to illustration, looking in the available forms of the historical heritage for a “methods for the imagination, new models for the representation of subjective and personal reality”. Unlike the “generous” architect's drawing, which “aims transformation, the necessary ideological instrumentality, a desirable democratic idea of service to the other”, the artist's drawing has a “selfish nature”, which follows the urgency of a restless soul. In this sense, the artist is free to connect distant things beyond place and time, like built, unbuilt or only dreamt-of architecture; at the same time, the artist needs to build a scientific method to structure his or her work.

This is evident in the work of Becker, who approaches the representation of the ineffable and dynamic form of clouds with the power of a procedure tested in the architectural process. His process of pictorial translation through sketches, drawings, and models, highlights the implicit conditionings provided by the media, “the gaps in-between as one transfers from one to another, and the connections or breakages in between modes of drawings and what they express”.

Judith Dobler explores the epistemological mechanisms tied to the practice of drawing in the humanities, “particularly the philosophy-driven image theories, basic design research, and science and technology studies in sociology”. In this sense, she expands the concept of drawing to



collaborative and body drawing and the “performative and multimodal interactions in imaginative space” such as the hand drawing. According to Dobler, this peculiar kind of drawing serves “less to represent but rather to support the communicative processes within collaborations”, eventually connoting itself as a tool that can add to the drawn, written and spoken language.

Carolyn Lange and Hetty Berens explore the architects’ ability in absorbing the achievements of the scientific and technological research and in turning them into tools for the design process. Their chapter describes the case of the photographic process that brought to the so-called blueprints. They had a central role in innovating not only the operative organisation of the offices of architecture and setting a new standard for the conservation of projects but also the design communication, eventually attributing peculiar meaning to the colour blue itself.

Greta Ruffino explores the dimension of materiality of architectural drawings and their emotional and narrative agency on the public. In particular, her chapter describes the stages of the organization of an exhibition of Alvaro Siza’s travel sketches and the many choices she did as a curator to disclose the meanings of the drawings and to relate them to each other and to the building that houses the exhibition itself.

The chapter of Robin Schaevebreke and Hélène Aarts and the one of Thomas Schmitz conclude this section by focusing on the architects’ techniques to approach architectural space and assimilate basic data for the design process. In particular, both the chapters explore the relationship between the visual perception as it is investigated by scientists and philosophers and drawing as a way to register the experience not only of forms but also space, atmosphere and other ineffable elements of human environment.

Schaevebreke and Aarts focus on drawing-as-recording as “an activity to report about the world, complementary to sounds, words, diagrams, models, formulas the architectural space. In this sense, they explore “the conveying of the ephemeral qualities of spatial experiences” which are generally excluded from the traditional metric-projective approach of architects.

Schmitz focuses on the experience of drawing from life he carries on together with his students during the academic travels abroad he organizes every year. In particular, he focuses on the role the peculiar sensitive condition of the tourist’s gaze can have on the reception, interpretation, and representation of urban landscape as well as their atmosphere. This

perceptive condition is investigated by combining a retrospective analysis of some of the watercolours he produced among his students, with the literary contributes of philosophers, psychologists, and artists. This allows him to explore the analogy between the tangible and intangible nature of places, the layering of colours and textures on the paper sheet and the structuring of digital information in layers, introducing the pedagogical potentials of the blurred area between real and virtual.

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