

Drawing for the Project: Dimension and Space for an Architecture Imagined before its Realization

Gianandrea Barreca

Introduction

The languages with which we communicate thoughts, sensations and ideas are attempts to make the feelings we experience legible and above all aim at the desire to share our perspectives on life with the people around us. We learn as children to attempt a description of the things we feel on an emotional level, in a synthesis that respects rules of syntax and grammar, primarily in the language that belongs to us, because in this way we try to make things transmissible that do not seem to be so and which concern an internal sphere which, apparently, does not have such a clear form of communication and is instead more soul and chemistry than sound and vision. We soon realize the need to articulate in more complex ways the passages of state of mind that pass through

us or even simply primordial requests such as the need to feed ourselves, to sleep or to find protection. At the beginning of the journey of our life we try almost instinctively to express ourselves also through guttural sounds, in a basic way which constitutes the first effort in the direction of establishing social relationships with those around us, in order to form the first knots of the mesh of collective exchanges that we then know regulate our entire existence.

In the 1950s, the linguist Noam Chomsky, in an essay entitled *Syntactic Structures* [Chomsky 1957], configured for the first time how human language is evidently the highest demonstration of the conquest of thought, finding direct explanation in spoken language and its

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continuous change over time. We are perhaps the only living species that alters its way of communicating by declining it into different idioms, where we use words that over time no longer belong to us at the expense of new ones that enter into our daily transmission and understanding of thoughts.

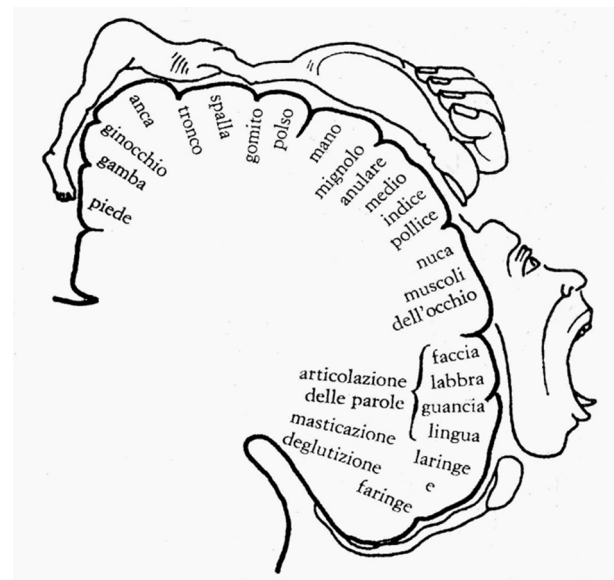
The evolution of ways of expressing oneself is then a function of different stages of maturation and is strongly conditioned by the environment in which we live. Even if some scholars affirm that there is also a genetic transmission of language, it is empirically perceivable how the habitat in which we live, especially the first phases of our life, conditions our ways of expressing ourselves, educating us in a precise vocabulary which are the linguistic foundations for the construction of our way of using our own identifying language to communicate to our peers. The need –but also the awareness of the limit– of using a platform for transmitting thoughts through regulated and recognizable sounds, properly defined as words, only partially allows us to give figurative structure to that emotional and variable framework that conditions our behaviors, so much so that we often try to accompany this vehicle with other often non-verbal supports which must complete –but sometimes even surpass– language, in some cases replacing it.

While verbal language is the exclusive prerogative of human beings, gestural language is not the same, which instead in the other animals that inhabit this planet becomes an essential attribute in their way of interacting, to the point of becoming a peculiarity of the expressiveness of the species. We too adopt body language that expands our talkative abilities.

There are, therefore, many other methods of communication, in addition to the verbal one, but one is just as characteristic as the word, for identifying *sapiens* in a completely univocal way, and that is drawing.

The language and the tracing of graphic signs that black on white prefigure a new vision of the state of things, represent the most notable aptitudes that man has refined in the flow of his evolution as well as prerogative faculties. The suggestive representations of the fissure of Rolando highlight, in fact, that among all the functional areas of the telencephalon, speech and the movement of the hands constitute the pre-eminent functions of the cerebral cortex, since the origin of time (fig. 1) [Penfield, Rasmussen 1950].

Fig. 1. Representation of the Roland Canal (from Penfield and Rasmussen, 1950).



Drawing is a primordial language: it is no coincidence that the child uses it spontaneously, almost as if to highlight a powerful alternative to the verbal one, just as to declare that, in the first cognitive phases, drawing expresses better than words the communicative variation that he needs to express an uncontrolled flow of emotion. For children, expressing themselves through visual signs becomes a determining part of their projection of affective development and this is why it also becomes essential for understanding the psychological state, precisely because it manages to explore sectors of the unconscious that not even words are able to objectify with the same effectiveness.

Just like children who at a certain point in their communicative maturation are not limited only to repeating grammatical forms learned from adults, but combine more complex sentences in an autonomy granted to them by the knowledge of an adequate syntax to the point of formulating autonomous speeches, so with the drawing allows us to identify a personal phrasebook whose different composition produces a cognitive identification specific to that person.

Drawing in the project experience

Perhaps it is also for the reasons just described that this ability to better and more directly penetrate the human unconscious that drawing is a favorite tool of artists and architects, who intend to explore sectors of human knowledge not yet known and visible. In the Renaissance, which was an era where the desire for knowledge went beyond any sector of man's work in an unstoppable thirst for knowledge, the visual arts became an exploratory method even before a tool for fixing ideas and images. Leonardo da Vinci, who embodied the most representative artistic expression of that era, considered it the most effective instrument for investigating the reality that surrounded him, because through it there was the most immediate reproduction of the idea, of thought, of project and therefore a deeper and more conscious abstraction of the finished and created work, which almost became the final consequentiality of the knowledge process that occurred in the process and not in the final form.

Drawing becomes the bridge between the intimacy of the ideational moment, which is only in the head of

those who develop a project and its development which occurs slowly, with subsequent modifications and clarifications, but always starting from already established principles, themes and forms.

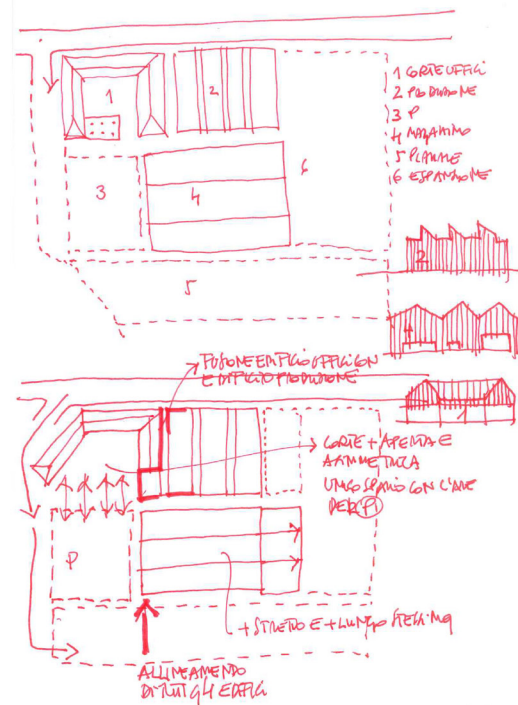
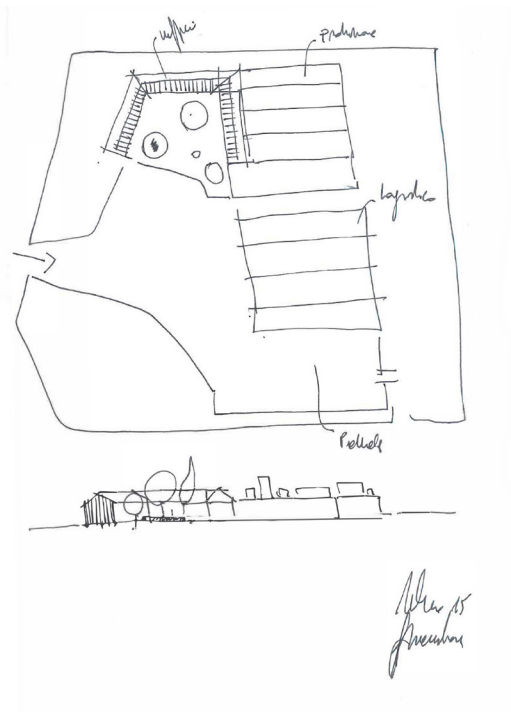
For this reason, in the drawing the project can already assume its full formal identity, even perhaps without a necessary transposition into reality. Drawing –and together with it painting which he believed to be its main descendant– was pure science for Leonardo as an instrument of knowledge of the reality that surrounds us. In a complementary relationship with these assumptions, then the drawing is also the tool that can best explore the most suitable paths for the modification of a space and therefore in the exercise of the project it becomes the vector that better than any other can travel and anticipate the not completely revealed consciousness of an architecture at the moment in which it is about to be conceived: perhaps it is also the place where it takes on cognitive concreteness even before any realization, which is instead a material translation entrusted to more knowledge and therefore outside the unconscious of its first generator/foreshadower.

The project drawing is in fact a 'study drawing' in the sense that it generates information relating to the design task through graphic processes. This role is one of the various epistemological properties of study designs [Herbert 1992], which are recognized as having the capacity to generate concepts, externalize and visualize problems, organize cognitive activity, facilitate problem solving and creative effort, facilitate perception and translation of ideas, representing real-world artifacts that can be manipulated and reasoned about, reviewing and refining ideas [Yi-Luen Do et al. 2000].

Sliding your hand over the paper presupposes a pre-visualization through the mind's eye of the image you want to graph [Amistadi, n.d.]. But its representation, understood as the translation of the vision into specific figures, pertains to a narrative punctuated by assertions, decisiveness of the gesture, second thoughts, denial, uncertainty, silence, false starts, affirmations and oppositions that chase each other in a flow guided by the hand and by its power of concentration [Focillon 1990].

In my activity as a designer, always shared with Giovanni La Varra, I have always used drawing to explore the form not yet visible, even if I have never given excessive importance to the drawings as they are a fetish of the architect's own ideational process. I have never

Fig. 2. Project sketches, Ugolini Headquarters, Torrevecchia Pia, Pavia, 2014-2020 (drawing by the author).



thought of them, nor traced them, seeking an aesthetic specificity that went beyond the function of giving a primitive image of an idea of space and consequently I have perhaps never pursued a specific technique. The idea of drawing as a means to seek a formalization of design thinking has almost always been placed before specific representation techniques, to the point that the supports where I fixed the first forms, which led me into a still unclear idea of space, they have always been of different types and formats of paper, often using tools such as pens, pencils, markers which were those that I found in front of me on the table where I was thinking about how a new architecture could respond to the needs expressed by the client rather than by the context (figs. 2-5). For this reason, I have never experienced particular affection for an instrument rather than a technique.

Despite this apparent carelessness, however, I was always concerned, almost instinctively, with preserving those visual notes which, although summary, evoked in me a deeper imagery relating to the space I was pre-figuring. I felt that they had perhaps a more personal, intimate, private meaning rather than a representative value of what would later be the much more detailed insights into the technical representations that would later follow. For this reason, I stacked them without a precise order, with affection but never with the care of someone who consciously wants to create an archive. The opportunity to rethink and take up those sketches was when the University of Genoa, the same one where I trained, asked me to offer some of my drawings to the Architecture Archive, causing in me a sense of amazement because I didn't, I had never considered them as possible parts of a memory dedicated to others. This solicitation, however, generated in me the desire to reopen those boxes where I had placed them to finally try to give order to those traces of completed projects, which represent the archeology entrusted to the design of my past as a designer: sediments in graphic form of projects created or even just thought of, which seemed to be on the same level as bearers of reflections between spaces, functions and places. At that moment I became fully aware of how much drawing, and the verb that identifies its action, are a constant and indispensable part of my work, to which it is indispensably linked to overcome the effort and inertia of the project and of its construction: the

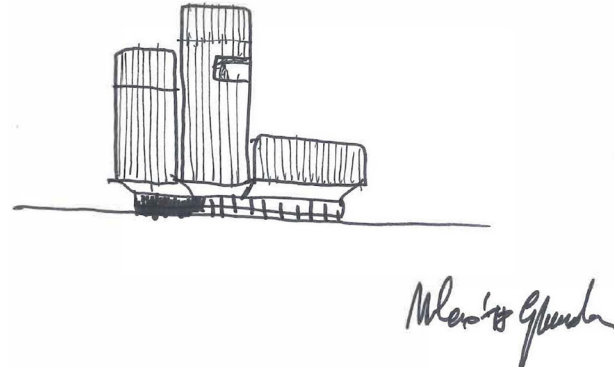


Fig. 3. Project sketch, Campus Symbiosis, Milan, 2018-2020 (drawing by the author).

act of drawing outlines the space in which, after having imagined, ordered and defined, we return to redo, undo and mend, and do so as if in an unconscious perpetual desire to revisit, correct, readjust, question the fixity inherent in the act of building.

On the occasion of that collection of author's drawings for the Architecture Archive of the University of Genoa, I wanted to clearly highlight the indispensability of the drawing in the construction of the project in which the drawing is the space for comparison and sharing of the articulated relationship between the hand, the thought and the eye, between project and imagination, within which error and misunderstanding fuel, as if chasing each other, the flow of thoughts, the action of the hand and the capacity for synthesis of the gaze [Trucco, Lucentini 2022, p. 30].

In other words, representing the reality of space with signs that are fixed on paper is seeking a dimension of comparison and sharing of the cognitive relationship between the hand, thought and gaze, the labile border between planning and imagining, in a limited context where error and misunderstanding chase each other.

My relationship with drawing expresses my constant desire for ideas to be able to overcome the fixity of paper to complete their transmigration from pure ideation to the state of materiality, to be realized in facades, squares and spaces to be lived and inhabited, to the point of giving new configurations to the environments in which we live and interact.

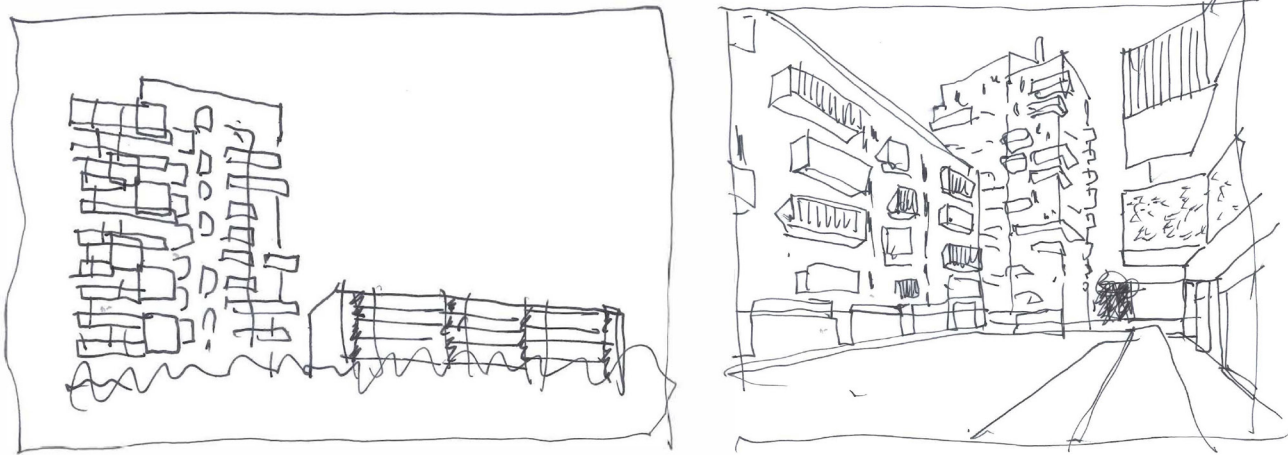


Fig. 4. Project sketches, *Housing sociale Ex-Boero, Genoa, 2016-2022* (drawing by the author).

Finding the drawings, I had made in the past defined a timeline of my memory, allowing me to relive my thoughts regarding completed buildings, but even more interesting those referring to unbuilt architecture, which did not refer to careless actions but rather to a time future in which to awaken to offer a new contribution to the realization of projects to be built tomorrow.

How has drawing changed in my generation?

Precisely the capacity for synthesis –also understood as compression, in an intelligible graphic sign, of all the meanings that a trait brings with it– has guided the evolution of drawing over time and the change in the forms of representation of the architectural project that my generation witnessed.

The first great revolution was undoubtedly represented by the introduction of CAD (Computer Aided Design): the search for reduced times for the production of classic project documents fascinated the architects of the time between the 70s and 90s, especially the new generation, progressively moving them away from the complex drawing board and replacing the pencil in their hands with a mouse. The splendid hand drawings of the great designers of the past and their study

sketches are gradually joined and, in some cases, replaced by digital projections in which, however, one does not give up finding one's own identity and expression of one's 'creative self'. In this direction, Renzo Piano and his unmistakable drawings with white lines on a blue background, a memory and link with the familiar world of the shipyard, represent a significant example of how the new CAD digital representation can be at the same time a synthesis of design reflections and a manifesto of a stylistic figure. And if the control of forms, in the ideational flow, in the doing and undoing of the mind, is clearly expressed in the spatial representations in central or cylindrical projection, soon the synthetic images of Computer Graphics enriched the range of graphic production of the architectural project. I have always looked at these evolutions, first as an architect who was training, and then as a professional, questioning myself on how to adopt and make these expressive possibilities my own, in a process of analysis and reflection during which, in truth, I have not never put down my beloved pencil. Faithful companion who, even today, continues to transport the mental images that are built in my thoughts into the visible, although what was once the upheaval brought about by CAD is now represented by BIM (Building Information Modelling). New acronyms heralding equally new forms of representation and communication of

the architectural project. The possibility of working with intelligent objects within a model where this intelligence manifests itself in the form of geometry definitions, relationships and data that determine how the model reacts as it evolves is undoubtedly fascinating as well as significantly effective in a professional world in which the collaboration between experts and professionals working on the same project is increasingly stronger and integrated. Thus, the sketches and notes that 'old guard' architects or nostalgic architects like me bring to paper in the flow of their thoughts seem to increasingly migrate into representations substantiated by solid, three-dimensional, digital objects, to which all annotations and labeling are associated in an intelligent metadata filing. Precisely in this aspect, in 'intelligence', a further change has resulted in the very last period, namely the experiments on the use of Artificial Intelligence (AI) in architecture. An ever-increasing number of publications and professionals are questioning the validity of this use and the implications that AI algorithms capable of generating not only images but even 3D models and even formal solutions to design problems, may have on the role of architect in the future and on his expressive possibilities. Even important studies, such as Foster & Partners, are exploring the frontiers of machine learning with a proactive and optimistic approach, in which algorithms are exploited not "to replicate or replace designers, but to improve our knowledge, our instincts and our sensitivities, free ourselves from routine tasks and to optimize and push the boundaries of our projects" [Tsigkari et al. 2021]. In this complex debate, I confess that there are many questions that I ask myself but, at the same time, I still denounce with conviction the powerful role that I continue to recognize in hand sketching, which I hope that the new generations will not shy away from, even if enchanted by the fascination of AI, an essential future tool for our work.

And precisely with this spirit, at the Department of Architecture of the University of Naples *Federico II*, last February we created an educational workshop aimed at students to offer them the opportunity to explore the potential of extemporaneous drawing in relation to the concept of the architectural project. The workshop entitled *Il disegno per il progetto* (Design for the project) was divided into a cycle of four meetings, curated by the architects Massimiliano Campi,

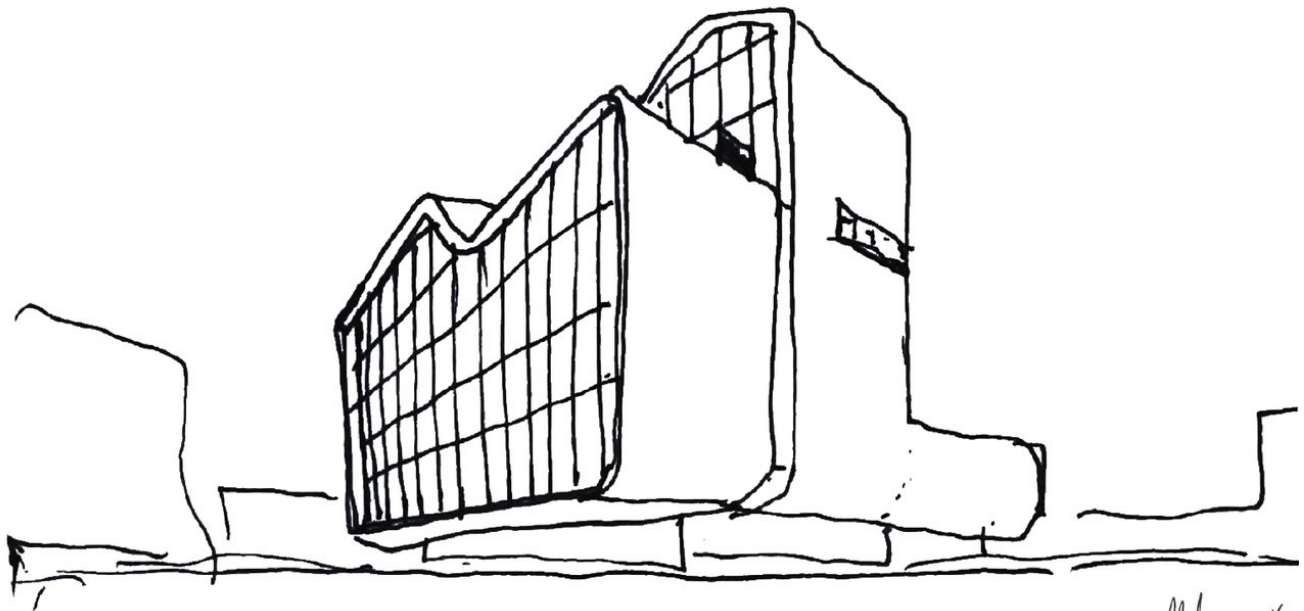
Valeria Cera and Marika Falcone, with a final exhibition of the students' works [1] presented, as a section, on the occasion of the exhibition *Disegno e progetto di architettura* (Architecture drawing and project), set up in the ambulatory of the historic building of Palazzo Gravina in Naples [2].

The architect remains a professional figure in balance between the technical, scientific, creative and humanistic aspects and the need to work in a group. In these terms, the need for a common language becomes a necessary condition, otherwise the already difficult synchrony of aspects and specialisms that the project implies risks becoming a cacophonous buzz, rather than a chorus in rhythmic and harmonic harmony. Drawing has always given the possibility to talk to each other even belonging to different skills and has always been the synthesis tool par excellence, as well as acting as a means of knowledge. The architectural project is born from the drawing, it is communicated through it and always through its interpretation the historical memory of the building is generated, even when time has made it a memory or when degradation has caused it to lose its original conformation. In the search for tools that are proposed as preparatory to the project we can affirm that the drawing has overcome the obvious particularity of a 'useful for' tool, to the point of becoming an integral part of the project.

The project is not only expressed in the drawing but is influenced by it until it becomes indissolubly integrated. Let's think about how not only the practice of the design process has changed, but rather how the form has evolved and been influenced by digital representation tools. Architectures perhaps not even previously imagined are now represented and created thanks to graphic simulation and visual synthesis platforms, which constitute the terrain where new abstractions take shape, where they are modeled and where they occur for the subsequent possible transition from the imaginative dimension to the real.

I belong to the generation that experienced the transition from analogue to digital design, indeed we supported this transition in some way, aware of undoubtedly easier practicality and improved operations in times and practices, but not equally aware that that path –perhaps inevitable– involved a loss of at least part of the open field given to the imagination of diversifying the forms by not squeezing them into a graphic and geometric

Fig. 5. Project sketch, Campus Symbiosis, Milan, 2018-2020 (drawing by the author).



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register, however bound by the awareness of the commands, imposed through a keyboard and a video and less than on a sheet of paper, in a dialogue between the mind and the instrument which for the first time was in favor of the latter.

While I do not at all deny belonging to that generation of designers who developed their professional path in this way in the last decade of the last century and in the first twenty years of this century, I must say that I have always continued to make the first design developments transmigrate almost always and almost only with the help of a pencil and a piece of paper and that I have never had direct comparison with digital drawing, which always arrived after the origins of the conceived and analyzed form and only subsequently developed in execution and in-depth analysis with the help of CAD software, never managed personally but rather entrusted to others.

Conclusions

This is what the project drawing has the power to do: represent even in a few pencil strokes a complete architecture, which goes beyond the image and has its own concrete cognitive dimension, even if it will never be built and manufactured.

The reflections proposed in the first exhibition held in Rome at the Embrice Gallery in 2021 [3] were expanded and reported in the aforementioned exhibition which took place at Palazzo Gravina, the historic seat of the Faculty of Architecture of Naples, in March 2023 where the prefiguration of the design and the

consequentiality of the project was shown in a sequence primarily of drawings so as not to confuse the plan of the designer's ideational moment with that (other) of the realization of the construction.

Drawing, fortunately for all architects, continues to represent one of the most immediate and effective tools for formal research and conceptual synthesis. The graphic sign is the only tool that allows him to think, design and communicate exclusively visually, surpassing any further technological support. The drawing accompanies the designer in his creative process, it becomes an extension of thought and a real language that is expressed in the definition of the initial project idea, in the spatial verification, in the study of details.

For these reasons, the architect wants to reserve the right to express, through him, the possibility of exploring the potential of prefiguring reality through the sign representation that expresses the architectural project, in a continuous dialogue and comparison.

The hand is promoted almost as an extension of thought in a relationship where the imagined shape is translated into traits, composing an image that is immediately compared with the shape until then placed in one's private imagination. A scenario opens up where there are no filters between the idea and its realization, in a rapid and expeditious process that is more effective, in some cases, more than any digital representation, because it is full of an expressiveness that is difficult to replicate and carries within itself a incompleteness that leaves space for a collective imagination that amplifies the boundaries of design possibilities.

Notes

[1] The students who participated in the workshop are: Lorenzo Giuseppe Aleo, Sara Autieri, Stefano Autuori, Aurora Bonora, Renata Califano, Chiara Camele, Francesco Castiglia, Antonio Capobianco, Marika Casoria, Federica Colella, Federica Cuozzo, Fabiana De Maio, Alice Claudia Allegra De Vita, Laura Devoto, Carmela Di Senna, Fabiana Raimondo, Gianpiero Sangermano, Flavia Scotti.

[2] Scientific director of the exhibition: Gianandrea Barreca, Massimiliano Campi, Antonella di Luggo. Curators: Massimiliano Campi, Valeria Cera, Marika Falcone.

[3] Curators of the first exhibition: Eleonora Carrano and Carmelo Baglivo.

Author

Gianandrea Barreca, studio Barreca & La Varra, Milano, comunicazione@barrecaelavarra.it



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