Emerging Perspectives on Teaching Architecture and Urbanism

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Edited by

David Leite Viana, Emílio da Cruz Brandão, Franklim Morais, Isabel Cristina Carvalho, José P. Duarte and Nicolau Brandão

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EMERGENT PERSPECTIVES ON TEACHING ARCHITECTURE

DAVID LEITE VIANA, FRANKLIM MORAIS AND NICOLAU BRANDÃO

The Perception of a Certain State of Crisis

This book contains a set of essays on the teaching of architecture and urbanism, written by university professors from various countries.

Reading these texts, we understand that their authors perceive a state of crisis, which is not absolutely totalising, but is very widespread in the global academy.

Crisis in the current teaching of architecture

Teaching seems frozen in time, maintaining the same curricula and the same pedagogical models for decades [see almost any chapter, but see chapters 3, 7, 10, 11 and 13], not reflecting the new problems or the different realities facing architecture and the world.

It is so much so that "international events end up being more relevant to the profession than to what is going on in universities, a curriculum of thirty years ago didn't change much while the world changed and keeps on changing each day faster and faster and there's not a real awareness about the fact that university is the place for the critical approach of knowledge, not an ideology conducive to propaganda" [chapter 11].

Crisis in the profession of the architect

Architects face new challenges and professional problems, for which education has not prepared them. The predominant vision of the architect as

the “creator of masterpieces” [chapter 7] does not find a parallel in real professional activity, which is no longer that of the self-employed professional, but that of the salaried (and low-paid) one. At the same time, the architect's professional skills also seem to be overlapped by other professions in the construction area and are becoming increasingly limited in scope.

Crisis in architecture

The whole activity of architecture itself, specific in the global construction sector, seems to suffer from devaluation in relation to other stakeholders, like those in real estate or politics; no longer being able to respond to problems: “architecture is too important to be left to architects alone” [chapter 7]. This derives from many factors, including the dominant autopoietic conception of architecture in which “the study of reality is considered as a threat instead of a process to contribute to the common good.”

Economic and social crisis

The world is experiencing new problems that immediately affect architecture, such as the rapid evolution of humanity's urbanisation, with the need to quickly accommodate hundreds of millions of people, the ecological problems of preserving the planet, external migrations, and changes in production methods and intelligent automation.

This situation is still pressured by acute situations, such as the current economic and financial crisis (since 2008), which has greatly affected the housing sector. And, finally, the Covid-19 pandemic, which questioned some certainties about urban and architectural configurations. It should be noted that most of the chapters in this book were produced under containment measures.

Critique, proposals, experiences

The proposals are presented in a very diverse way. We can see historical analyses, systematisation of concepts, manifestos and social evaluations, but essentially an alignment of new objectives, curricular plans and pedagogical methodologies.

The texts are not limited to making diagnoses or presenting proposals. In nine of the texts, concrete pedagogical experiences are presented (projects, workshops, fieldwork, research, new courses, etc.), carried out by

universities to test the new proposals, obtaining results that are evaluated and serve as validation and correction of theoretical views that guide these experiments.

The styles are also very diverse, as they should be. They include systematic studies, some more integrated into culturalist discourses, but there are also mobilising discourses, some smoother, others more histrionic, but all compelling to urgent activism without loss of discernment.

The Academy and the Education of Architects

Introduction

Crisis can be a factual designation, but it can also be more or less emotional, or more or less mobilising; it already presupposes a state of attention that motivates action.

The world has new situations in a state of transformation, and current architectural concepts and practices are not responding to the new state of affairs. The training of architects does not seem to correspond to what the current times demand.

What matters is that there is a problem, that is, a mismatch between the structure and methods of teaching and its social function. But academia has managed to find solutions to these contradictions throughout history.

Over the centuries, the University has played a major part in building the professional—the architect—in its own visions of erudite architecture and in its interventions in the social and material world, through major transformations in the built environment.

The solutions that history has found for the academy always reflect the great economic and social formations, and the concrete problems of each historical period. These solutions shaped the very definition of the architect, as one of the intellectual professions in the construction sector, with its own specificities and specialisation. This definition has evolved, and the academy has contributed a lot to it.

One

Until very recently in the historical calendar, erudite architecture was dedicated almost exclusively to a reduced number of building programs,

important for the dominant classes. By synecdoche: the temple plus the palace.

The original model of the University[1] during the Middle Age was not particularly concerned with the production of architects. The masters involved in construction had other training processes, in a corporate system, essentially linked to natural technical problems. However, there were "Sorbonnic" influences in the architecture produced, especially in the most important program, from his point of view (and that of his client)—the temple. The episode of Jean Mignot in the cathedral of Milan or the geometric norms of the *ad quadratum* or *ad triangulum* demonstrate a clear interference of an ideological nature, responding to the needs of the feudal mode of production and its dominant classes.

This separation between the two "eruditions"—the technical-productive and the ideological-cultural—had wide repercussions throughout the history of architecture and still greatly influences the problems it is now experiencing.

Two

In the subsequent era, which some historiographies call the Modern Age, but which refers to a transitional era between the feudal and capitalist modes of production, the old architectural models ceased to be interesting for the nascent ruling class. Likewise, its preferred political form, the absolute monarchy, represents a situation of dynamic compromise between the old and the new social orders.

The political representation of commitment (the centralised royal power) needed other symbolic forms of representation, which medieval models no longer responded to.

But there is another, much more significant factor: the new economic order was developmental, which originated another vital historical achievement—the formalisation of construction teaching, with the appearance of formal schools in the eighteenth century, which only reflected the growth of the scientific and ideological apparatuses involved in this development [chapter 5].

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[1] Let's use the French case, which is somewhat paradigmatic. The twentieth century is excluded, in which the Soviet and German experiences are much more significant. It would be interesting to compare it with the evolution of architect training in England, which had a different evolution of capitalism from that of the continent.

As far as construction is concerned, we witnessed the creation of two lines of higher education schools. The first, from the *Corps des Ingénieurs du Roi* and through the *École Royale du Génie* and the *École Royale des Ponts et Chaussées*, ensured technical and productive knowledge. The other was created from the *Académie Royale d'Architecture*, with its school, which ensured the ideological-cultural vision. It should be noted that, in the beginning, although with a now explicit distinction and with different points of view, the two lines collaborated perfectly in the constructive policies of the kingdom.

Three

Starting in the seventeenth century, the growing preponderance of the capitalist mode of production over the previous modes promoted the appearance of a new client capable of "paying" for erudite architecture, in addition to the usual clients. The financial, commercial and industrial bourgeoisie had a much broader base, and brought several new programs: first of all, bourgeois housing, but also those linked to economic activities. A novelty, very relevant in today's world, emerged, the real estate market, whose first major achievements were even by royal initiative.

With the final defeat of feudalism, the capitalist mode of production could grow freely, and now without compromises. Eventually, it even ended up getting rid of the king. Schools for the king's civil service became very limited. It was necessary to deepen and extend the scientific-technical conquests to a much wider group of highly qualified professionals. Hence, the emergence (from the turn of the eighteenth to the nineteenth century) of a tandem of schools dedicated to scientific development (the *Polytecnique*) and technical development (the *École Nationale Supérieur des Arts et Métiers*, with a tendency still towards the public administration) and the *École Centrale Paris* (with no longer any administrative constraints and clearly oriented towards technology and liberal entrepreneurship). These models were repeated massively throughout the territory.

Simultaneously, the ideological-cultural line did not experience the same revolutionary and explosive surge.

Sciences and techniques occupy an infrastructural place in economic and social development. They are, themselves, the main trigger of economic development. Contrariwise, ideologies always reflect all the opposing positions in society, therefore, they are multiple and contradictory. And they still have one characteristic—it is that the dominant ideologies at a certain

time are those of the dominant classes at that time. In the historic phase of the end of a regime, the dominant ideologies are the conservative ones.

This is what happened to architecture in this situation. With the end of the *ancien regime*, the dominant, academic architecture maintained the compromise between feudalism and capitalism, at a time when capitalism was already preparing its conclusive victory. This commitment manifested itself in the academicism of aesthetician tendency.

Architecture, whose school had been born independent of that of the *Académie Royale de Peinture et de Sculpture*, gradually assumed a posture of approximation to these arts until it finally lost independence and became one of the three *beaux arts* (up to four, with music,[2] in the case of the *Académie*). The school disappeared, reappearing as the *Académie des Beaux-Arts*. This trend crystallised well into the twentieth century, in the *École Nationale Supérieure des Beaux-Arts*.

The conception of architecture as one of the beaux-arts, which is still widely accepted today, is an ideological construction of the eighteenth century. Its acceptance depends on the positions and social interests in dispute. Readers of this book will see that this is not its dominant position.

It must be said that, although less expressive in the nineteenth century, there was something of the "progressive" architecture that remained in schools like *Arts et Métiers*, although this is much more visible in countries other than France.

Four

But capitalist evolution did not stop there.

A situation of concomitant necessity and possibility was generated. On the one hand, the industrial revolution attracted millions of peasants to the city, creating the need for millions of new buildings. Capitalism also needed these new customers since, by its internal operating logic, it needs a continuous increase in production. On the other hand, the industrial revolution itself provided the scientific-technical and, at the same time, productive development that brought the ability to carry out this task of radical growth of the built environment. Therefore, from the nineteenth

[2] In the case of music, the evolution was even more remarkable. In the original Sorbonne-type university, music was integrated into another radically different *quadrivium*, with arithmetic, geometry and astronomy.

century onwards, and particularly in the twentieth century, there was a substantial expansion of the field of action of erudite architecture, both in terms of scope and depth.

It should be noted that this creation of a massive capitalist housing market for the working classes came much later than that of other products (e.g., energy or clothing). The housing produced by erudite architecture was, for a long time under capitalism, the production of bourgeois housing, no longer reducible to the palace and the temple, but still not far enough away from it.

Finally, another very important factor joined—the very powerful appearance in the social conflict of new classes—the working classes, who lived in miserable housing conditions. And, in addition to decent housing, they claimed a set of new living conditions that gave rise to new constructive programs, such as public education and health equipment. These new social actors achieved victories in some cases and compromise solutions in others, as was the welfare state.

Both the mercantile needs of capitalism and popular demand created a situation that was not compatible with Beaux-Arts architecture.

It was in this situation that evolutions arose from the timid surviving solutions in the *Arts et Métiers* and, at the same time, a new proposal for the training of architects that intends to bring the great achievements of the industrial revolution to the popular masses. The most resonant names of this fourth generation of architecture schools are the German *Bauhaus* [chapter 11] and the Soviet *Vkhutemas* (much larger, but less known, due to its geographic and political distance from Western historiography). It should be said that this model was never predominant in the world academy. And it should also be said that the greatest transformations in architectural thought in the twentieth century, to which we are still indebted in the twenty-first century, were rehearsed and disseminated many times outside academia, in professional practice and in organised movements.

Epilogue

All these major transformations in the teaching of architecture were responses to crisis situations, the need to adjust teaching to the profession and from the latter to society.

A certain teaching model is born revolutionary and asserts itself because it responds to the needs of the path of history. But it is not its internal characteristics, of scientific-technological content, ideological views and

pedagogical practices that ensure its continuity. They are not "right" and "true" forever and ever. At some point, the model ceases to respond to the historical needs of the moment and, through crystallisation into academicism, becomes a blocking force.

The successive transformations of academia were not carried out peacefully and often required the intervention of external (and even military) forces. A famous episode is the assumption of power on the Beaux-Arts by Viollet-le-Duc, in the nineteenth century.

The erudite architecture (that of the academies) always reflects the evolution of the primordial relations between humans and nature, as well as the power relations of the various social classes present in the various modes of production, throughout history.

Let's say that the "clients" are changing, and the erudite architecture must find the new products that the new clients need. We can also say that the evolution has been in a sense (a) of complexification of the problem that it can respond to, reflecting the growth of the scientific and ideological apparatuses involved in this development, and (b) of expansion of the customer base.

These major transformations fundamentally affected the most developed countries. But modern imperialism (after the sixteenth century) uncritically exported school (and high architecture) models to the colonies, albeit much later. The realities of these countries were very different

The current typical situation of teaching architecture is an eclectic mix of the *Beaux-Arts*, the *Arts et Métiers* and the *Bauhaus*, with the relative weight of one or the other being chaotically adjusted and with geographical distribution dependent on vicissitudes, specific to each country. Eclectic models, without great theoretical definition, often correspond to effective solutions for current and established situations. They reflect the compromises needed to make things work. This is not the case in crisis situations.

Essentially, we have been carrying out a diachronic study in a limited location. However, the crisis situation is also dependent on the diversity of places. There is a huge diversity of construction situations in the most diverse places in the world. The expansion of modern imperialism (from the sixteenth century onwards) also led to the export of models of architecture and its schools from colonial centres to socioeconomic environments that

were largely alien to it. Many of these contradictions persist and influence the developments suited to each concrete situation.

Many positions in this book propose that the current model (or lack thereof) does not respond to the needs of the moment and place and propose that changes to academia's programs and methods are, again, needed.

The Economic and Social Transformations

These days, our world has undergone rapid transformations, with enormous consequences in the area of building and, therefore, architecture.

Urbanisation Growth

The main change is certainly the rapid urbanisation of the last few decades, with the urban condition very recently reaching most of the world's population. This situation is not over yet. It is recognised that shelter and urbanisation are global issues to be addressed [chapter 11]. According to the UN in 2020, “three billion people will require adequate and affordable housing by 2030, and approximately one billion people live in informal settlements and slums worldwide” [chapter 8].

Housing Solutions that Respect Human Rights

Problems are only problems when someone assumes them. This someone means, in history, the social forces present. And, more and more, working masses, who migrate to cities by the millions, do not accept the old and unworthy solutions of informal accommodation, transforming, for the first time in history, the housing problem into a human rights problem, which world organisations, like the UN, have been dealing with for decades, for example, with the creation of the United Nations Centre for Human Settlements [chapter 11]. These requirements are not limited to housing, but to all human experience and activity that requires a built environment, health, education, culture and sport.

Sustainability

In recent decades, another problem has emerged: “we are not dealing with industrialisation but with the industrialised world consequences” [chapter 11], and with environmental changes due to human action, which bring the risk of becoming uncontrollable. The construction sector is the largest user of natural resources by mass and volume and is responsible for around a third of greenhouse gas emissions.

External Migrations

It is also impossible not to mention the millions of people who currently leave their countries, crossing one or more borders [chapter 11], and their weak sheltering situations in places of origin, destination and, often, in transit.

Global Production Process

The production processes characteristic of the industrial revolution has undergone very significant changes. These transformations are happening more and more quickly and, even if they are not recent, they prefigure a transformation from quantity to quality. The great past epochs of energy, mechanisation and automation are giving birth to another phase of increasing labour productivity. This is not about the rise of the tertiarization thesis, a theory that has already received more support than it currently does—nowadays, the production of material goods, once again, manifests its full relevance. This is the digital and intelligent revolution, whose predictable consequences could come into deep shock with our usual concepts of city and building. It suffices to mention (a) the possible radical reduction in the working day of the general population, (b) telework and the possible decrease in mobility needs, but also in sociability, (c) autonomous vehicles with radical changes in mobility models, and (d) smart cities and smart buildings, with radical changes in the "communication" between people and the built environment.

The Construction Sector and its Problems

Some of the problems addressed here are not new. The economies that had the earliest capitalist developments began to experience large urban migrations two centuries ago. And they found solutions that created new problems. It's all part of the historical repository that cannot be ignored.

Let's list three types of problems:

Productivity

About productivity, the construction sector, for reasons that have not yet been well studied, is one of the human activities in which the benefits of the industrial revolution were least felt. For example, in terms of mobility, the overall cost of transporting a person or a ton of merchandise per km, including travel times, has decreased thousands of times from classical antiquity to the present day. In clothing, a shirt takes producers hundreds of

times less time to manufacture. In construction, there is nothing like it. Production costs (i.e., the time it takes workers to produce one m^3 of construction), although relevant, have not changed similarly in millennia. Mass production, mechanisation, automation and other solutions found in other branches of activity have not reached any of the levels found in these other sectors.

In the architectural profession itself, production models of very low productivity are maintained. The idea of the "augmented architect at work" [chapter 2] is still in its infancy.

Sustainability

In terms of sustainability, construction is at an intermediate level. Although it is responsible for the use of most natural resources, the level of repercussions is still far from the energy sector or the aforementioned mobility and transport sector, with its preferred solutions of using non-renewable and highly polluting energy sources, and the individual motorised transport model. Of course, these parameters are also subject to great diversity (geographic and stage of economic development).

However, there is no reason to celebrate. For example, construction will be the second largest transformer of the natural landscape by area (after agriculture and forestry). But worse is that the evolution towards sustainability is much slower than the opposite. For example, the energy efficiency of buildings has evolved minimally since awareness of the problem appeared, and in no way compensates for the quantitative growth of buildings and the qualitative requirements in terms of comfort, which originate densification of energy consumption.

Social-economic Model

Let's focus, now, on the economic models that have tried to solve the housing problem. The dominant economic solution in the last two centuries was the real estate market. There were certainly other solutions, associated with both socialist experiences and the welfare model in capitalism, punctually distributed over the last century, particularly after World War II. For example, the Austrian Constitution even inscribed, in its articles, a norm that recognised housing as a right of citizens and that inhibited the commercial exploitation of real estate. For many years, only public or social solutions were allowed.

As usual, a solution brings a series of new problems.

The first is that it solved the problem for a small sector of the population, although growing quantitatively. We have seen that, historically, it first dealt with bourgeois housing (from the upper to the lower bourgeoisie) and only much later did it deal with proletarian housing. But, even so, it was confined to the imperial centre. Whenever the market solved a problem in a degraded neighbourhood in a "first world" city (as it was called at the time), five new slums, *bidonvilles*, *favelas, barrios, caniços* or *musseques* appeared in the colonised countries.

The second is that the capitalist mode of production propitiates epochs of disruption to normal functioning, which is called a crisis, due to the fact that the economy as a whole is developmentalist—it has to produce more and more products (overproduction) that the market will not have the ability to distribute, because the working masses will not have wages that allow them to buy them (under-consumption). The housing sector is paradigmatic in this sense. It is no coincidence that the last major economic crisis, which began in 2008 and is still in full force, was triggered by the so-called "sub-prime crisis", mainly in-home loans.

The third is due to the change in the organic composition of capital, with an increase in fixed capital to the detriment of variable capital, a phenomenon that is another expression of the previous problem, which gradually reduces the rate of profit and the appetite of capital for the production of residential buildings. A by-product of this trend is the diversion of industrial capital towards financial capital, which in housing translates into two lines: (a) part of the profit is realised through the financial mechanism of credit, which originates the aforementioned crisis, and (b) the building ceases to be considered a product to be used by people and becomes a financial bond. Exchange value is realised in financial markets, with valuation systems completely unrelated to the use value (that which is attributed by human beings with their sheltering needs). This situation even generates a completely new situation for architecture, which no longer must worry about human needs, to start designing buildings in which the optimisation criteria are those of greater or lesser interest by the real estate funds.

Fourthly, this transformation produces the situation that part of the building's value is purely fictitious, fuelled by the multiplication of financial means made available by easy funding monetary policies (which only serve to mask, postpone and tenfold the crisis in the future), in a financial hyperinflation. Unfortunately, this inflation does not remain within the financial markets, but is transmitted to the real economy, that of goods and services. On the one hand, real estate funds can refrain from giving real use

to buildings, they can keep them indefinitely empty, like financial bonds. On the other hand, they can still purchase buildings on the market, for values much higher than what people can afford to live in, resulting in even more inflation.

Fifth, and finally in this review, there is a recent and worrying development. Even speaking only of developed countries, the economic model no longer seems to be able to expand the popular base that has access to decent housing. For example, the recent model of gentrification, which gained scope for a solution for urban requalification, stated itself as not being able to do so for poor populations. Gentrification demonstrated to be the delivery of places formerly enjoyed by those populations to wealthy people. And while these operations were previously often compulsory but accompanied by resettlements by public initiative, they are now completely given over to market mechanisms. There is no need for anti-democratic coercive measures, but neither is there an obligation to find alternative solutions. The market takes care of everything.

The New Stages

Here, it is time to raise an alert: this book reports problems, debates, proposals and solutions essentially related to developed economies. This is not to say that there is no awareness of worldly problems [most striking examples in chapters 7, 8 and 11]. Some papers make valid proposals for these new stages.

The most striking feature that distinguishes new stages from old ones is scale. It is not the same to solve the housing problem of four trillion people in a few years or the urban problems of a local community. Emerging countries have problems of a scale never seen before. This scale is reflected in the scale of the proposed solutions. This volume focuses mainly on local and small-scale solutions, while the problems of more advanced developing countries require large-scale solutions.

The solutions they are finding seem to consider lessons learned from the experiences of market models prevalent in the first historical phase of world industrialisation and urbanisation.

The need for architecture to change, “altering practice, connecting design to social justice, and amplifying the diminished voice” [chapter 7] is already being carried out on a large scale. In many parts of the world, it ceases to be the voice of the diminished, because the popular masses are no longer being

diminished, and are starting to direct constructive policies. Incidentally, this empowerment is the real basis for all transformation.

For example, the housing problem can no longer be exported. It is the geographies of the world where the problem was exported that are now trying to solve the problem. There are no more colonies to export problems to. Then, the solutions will have to be endogenous or in symmetrical collaboration.

Moreover, the solutions of countries where there seems to be a greater effort in housing production have a very large public housing promotion component, such as Venezuela, Brazil and South Africa.

The case of China is remarkable for its very rapid evolution and its scale, and it gives an idea of the difference in approaches that problems at different scales require.

As examples, in the 2011-20 decade, more than seventy million dwellings were built; the current five-year plan (2021-5) provides for multiple housing policies, including the construction of 6.5 million houses for rent, in public promotion; the principle is that "housing is for living in, not for speculation. It will not use the property market as a form of short-term stimulus to prop up the economy"[3]. And yet the economy props up. The current five-year plan also mentions objectives for the construction industry that are not only for the housing problems of citizens, but concern the technological development to which architecture has to be more attentive: “The plan states that the industry will more greatly modernise its industrial chain, form the preliminary stages of a green and low-carbon production mode, see more widespread application of information technologies, and steadily improve the safety and quality of buildings (…) prefabricated buildings (…) will account for more than 30 percent (...). Building waste at new construction sites will be lower than 300 tons per 10,000 square meters”[4]. These solutions seek to solve the housing problem of 1.4 billion people in a few decades. New solutions necessarily bring new problems. For both, we have not been attentive.

[3] https://english.www.gov.cn/statecouncil/ministries/202101/07/content_WS5ff6b7c5c6d0f725769436a6.html

[4] https://english.www.gov.cn/statecouncil/ministries/202201/26/content_WS61f09bccc6d09c94e48a4473.html

The Crossroads of Architecture

Art *vs* Technique *vs* Ethics

Faced with the problems of our current world, there are completely different visions for the positioning of architecture and the architect.

The discussions go beyond but are indebted to the very old discussions about the relationships between its technical, ethical and artistic inclinations.

The global sense of the positioning of most of the interventions presented in this book goes towards contesting the characterisation, dominant in academia, of the architect "as the only, unique and autonomous creator of masterpieces" [chapter 7], in which the unique valid evaluation of architecture is of aesthetic nature, predominantly relative to the exceptionalism of the formal (or linguistic) component, alien to any social function. This characterisation is very generic and has many variants, but we will grant it some coherence by designating it as autopoietic, a word used for architecture by Patrick Schumacher[5]. This position does not argue that there is no relationship between architecture and its exterior. On the one hand, it needs human beings. But it claims that their relationship with architectural art has autonomy in relation to other human behaviours. It is rooted in an aesthetic positioning initiated by eighteenth-century German romanticism and idealism, which advocates an aesthetic experience of life, superior and autonomous in relation to everything else, for example, ethics. On the other hand, you cannot deny the existence of an architecture that deals with current affairs. It is very handy that there are many professionals with these qualifications, at low cost, for architecture offices. But there is an absolute differentiation of "the beautiful architecture from the ugly construction" [chapter 13]. The true erudite architecture, of which the academy is the bearer, reveals itself exclusively in autopoiesis.

In addition to the opposition between art-technics and art-ethics, there is also the perception of an opposition between technique and ethics, thus, closing the circuit of possible oppositions. "Nowadays ordinary questions about architecture and the training of architects are more technical then ethical, what means that it is mandatory to question the way we address to architects' knowledge about the challenges and options they face instead of training a future architect as artists or technicians that considers problems

[5] With due apologies, because it only reflects a vulgar, almost caricatured idea of his concept.

to address in an object scale instead of thinking in a broader scale in which their choices impact, what is a clear consequence of the way academy addresses the teaching of Architecture" [chapter 11].

Call to Commitment

The interventions in this book have, mostly, a common background of opposition to a vision of architecture that is unrelated to reality, and especially to social reality. Many are guided by ethical options—a need for social concern and intervention rather than being oblivious to people's problems: "Accordingly, the activist architect attempts to alter, expand, or tweak the current architecture system by altering practice, connecting design to social justice, and amplifying the diminished voice." [chapter 7] The autopoietic proposal is that art cannot solve social or technical problems and that an architecture that solves problems cannot be art. The constructive problems of the populations are solved by ordinary construction with an architecture without architects.

The underlying proposal that intends to be presented in this book is that erudite architecture can also solve problems.

In architecture, the autopoietic position is a recent phenomenon. In Vitruvius, the first written canon we have access to, all components appear. Although with sporadic glimpses in history, such as the *ars sin scientia nihil* (and even this one proposes both views), an integrally formal linguistic view only appears in treatises at the time of Vignola. From the eighteenth century, however, it had a fundamental boom. The historiography essentially created at that time, which became dominant, "focused on a selection of buildings and architects seen as exceptional" [chapter 10]. However, the twentieth century also saw vernacular architectures brought to academic study. And the history of construction also came to be considered of cultural value, especially since architects began to have to rehabilitate many buildings [chapter 10]. And especially the modernist movement (such as the Athenas Charter) brought attention to the housing problem of the popular masses.

Proposing an architectural vision that is deeply integrated with the world in all aspects is not new. It is a new assumption of an old path, now under new conditions.

The Function Is Dismissed by the Door and Re-enters by the Window

Whatever the architectural positioning, both this theoretically widespread positioning, and the concrete-built achievements that result from it, are

always related to the world in which they live, regardless of the awareness they may have of it.

Ideological positions generally present themselves as universal and timelessly valid values, regardless of the society in which they proliferate. The values they defend are all the more persuasive the more they present this character of universality. It can be presented as the beautiful, the perfect form, the exceptional, but also (and there is no way to ignore it) as the good, the people, humanity, human rights.

All trickery is done in the name of the greater good. Anyone who doesn't is a sociopath. There are few sociopaths. And it's always the others.

These ideologies are presented as universal but, in fact, they are biased; they represent the social interests present in each historical moment. And they are usually alienated, because they are not aware that they belong to a historical-social owner.

An autopoietic architecture has, as a global social consequence, the diversion of attention and efforts away from solving social problems. The mirage of an aesthetic life, superior to ordinary life, distances the individual from intervention in the real world, as does the promise of a *post-mortem* paradise that offers the realisation of universal justice. Both, being essentially conservative ideologies, interest the established powers.

The question of the reason for the bitterness against "the function" could be raised. Because the function of architecture is a specific concern, but which involves the total life of people, "the physical, emotional, social, aesthetic, creative, intuitive and spiritual aspects inherent to human behaviour" [chapter 9]. What is it that is so boring about people's lives that there must be a higher state concerned with the sole aesthetic enjoyment of some human products?

The defence of architectural exceptionality as a norm also hides the fact that its exceptional achievements are symbolic representations of exceptional economic, social and political power.

But it can also be seen in a much more common and unspiritual way.

Real estate lives in a competitive environment. The generation of exchange value obeys market criteria, unrelated to use values. The product must be valued against its rivals, where its unique character has a commercial advantage. The architect who manages to sell an exceptional brand or

“griffe” obtains commercial favours. Anyone who knows the rhetorical mechanisms of advertising knows what customers like. Architecture can make all the formal contributions it wants, in the end, it's up to the real estate agency to decide.

But the defence of social values is also ideological. As previously defended, it only means that there are new partners in the social and political game, to whom this ideology is favourable.

Proposals for the Teaching of Architecture

Everything mentioned above concerns the historical and social environment in which the teaching of Architecture is inserted. It is now a question of guiding the reading of the proposals presented throughout this volume.

It was not a question of carrying out an exhaustive study or proposal on the teaching of Architecture,[6] but only the aspects that, in the authors' opinion, deserve to be changed, in order to respond to new situations and the present state of teaching.

Objectives

Teaching must promote the creation of future professionals who “generate a social impact” [chapter 3], “educating activists” and not “PASSIVE citizens!” [chapter 7].

This activism should not be limited to solving current problems, which is the norm. “At the most, and in response to the paradigm of innovation mixed with industrialisation’s paradox of efficiency, universities produce doers, makers, problem-solvers” [chapter 7].

Students must be able to have a critical overview of problems and solutions. “Students and teachers [must] question how knowledge is constituted, by whom, for whom, and for what purpose” “by untangling and questioning the logic of power relations” [chapter 3].

The creation of an attentive, critical and activist future professional involves transforming the passive student into an active student. “The transformation

[6] The “UNESCO-UIA CHARTER FOR ARCHITECTURAL EDUCATION” https://www.uia-architectes.org/en/commission/architecture-education/ is the essential basis and is still up to date. Unfortunately, it is not the standard of the architecture teaching that is actually used.

of students from passive audience to active participants is a process widely discussed in collaborative pedagogy" [chapter 3]. "Students don't always learn by the reproduction of what they see, but they also learn by doing and trial and error" [chapter 3], "learning from failure just as much as from success" [chapter 7].

Education should not promote the vision of the architect "as the only, unique and autonomous creators of masterpieces" [chapter 7]. To this goal, a "co-creation methodology" must be implemented, in which the project's "social clients" participate, as well as the other technicians involved.

Students should incorporate into their learning the processes and methods that will, then, be common in future professional activity.

Curricula

One of the main generally proposed guidelines concerns the diversification of curriculum content, considering the new problems:

Settlements and informal buildings are a central problem of our time as well as massive urban growth [chapters 1 and 8].

In the same way, rehabilitation should receive greater importance, encouraging the best practices for the reuse and recycling of the built environment [chapter 10].

Sustainability, its principles and solutions must be strongly reinforced.

The management of buildings throughout their lifecycle, as well as adapting the project to meet the entire useful life of the building (construction, supervision, consumption, energy, maintenance, intelligent management and real-time problems) are fundamental for sustainability purposes, which should be addressed in courses [chapter 2].

Solutions for proximity to nature, urban agriculture and landscape architecture should be part of the study plans [chapter 4].

The holistic approach to problems must be reinforced for curricular solutions in which the diversity of approaches appears. All project orientation should take into account the diversity of human experiences—"proximity, solidarity, intergenerationality, multifunctionality and sustainability" [chapter 9].

The global vision of the human being must meet the WHO 2018 definitions: health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” and “mental health is a state of well-being in which an individual realises their own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to their community” [chapters 4 and 6].

The problem of aging is pressing for some countries.

For all this, the total diversity of historical, artistic, human, social, scientific and technical curricular units must be maintained and reinforced.

Regarding the traditional areas of history, theory and critique, several proposals are made, fundamentally, to transform them into operative instruments in the active practice of architecture. “The goal is to provide students with the ability to understand how cities are shaped by political, social, and environmental constraints that inform informal settlements' location and configuration in a design studio environment” [chapter 8].

For this, there must be fundamental changes, such as:

“The solution for collective and civic problems must be found locally in ordinary Architecture and not in extravagant and exceptional examples with no practical application to today's life. For all of these reasons, the teaching of Architectural History won't be able to regain this audience’s attention without a rewriting of the established historiography” [chapter 10].

The Project as the Basic Pedagogical Concept

The basic element of the pedagogical concept remains that of the project. However, the proposals point to a great evolution of the concept from Design-Studio to Design-Building [chapter 3], a “participatory, humanistic and co-creative pedagogical approach” [chapter 7] with new features.

Concrete and Real Experience

The project must refer to concrete, real cases of the lived world.

Finalist

The project outputs (the products the project delivers) should be more substantial than the project process, going all the way to 1:1 scale or immediately usable outputs, as contributions to society [chapter 3].

In-field

The project must leave the school campus.

Participative

The project should be carried out with the participation of the populations covered, for example, with the neighbourhood of the curricular project sites, meetings, contacts with populations, leaders or community associations. Participatory design makes the need for political assessments of populations and local administrations and their influence on project outcomes explicit [chapter 1]. It can even go as far as the phenomenological level, "to map the subjective experiences of our participants, as a multi-layered and plural collage that does not aim at fitting all, but to acknowledge individuality." [chapter 4]

Collaborative

Teaching should place students in situations of active collaboration with other professionals, anticipating what will happen in future professional practice [chapter 3], given that "there are no original architectural challenges in the twenty-first century that are simple enough for a single person to resolve on their own" [chapter 7].

Hands-on

The project must go down to the execution level: be it event production, manualities or, even, the real production of objects.

Pedagogy

Manifests

Manifests "that define the structural 'spine' of a student's essay, challenges, uncertainties, questions and anxieties should be expressed" [chapter 7]. This pedagogic tool guides the student to a concise definition of what really matters.

Project Methodologies

The papers in the book are extremely rich in the presentation of sound and rigorous project methodologies, for the most diverse phases and characteristics, with several systems of iteration between the theoretical and the empirical. For example, "co-creation as a five-step methodology,"

"NAIL (Needs-finding, Aim, Impact, Logical-framework)" or "reconception (reC), detailed design (detD), implementation (I) and planning for operation (planO)" [chapter 7]; "analysis, strategy, urban plan, and detailed plan with two additional phases" [chapter 8]; "design methodology in the strategies of sustainable urban design" [chapter 12] and many others for several situations.

New Techniques

Students must practice the new technical instruments, whether digital [chapter 2], like the hololens or the strava [chapter 4], 3D scanning, virtual reality, generative systems, machine learning or optimisation [chapter 8], or parametric procedures [chapter 2]; or even with the curious introduction of forms of acoustic representation [chapter 2].

Graphic representations retain preponderance [chapter 13] and several new graphic instruments are proposed, such as iconoclastic [chapter 1] and delimitation diagrams and graphical abstracts [chapter 7].

Buildings

Finally, school buildings participate in pedagogy. "Educational space needs are designed primarily around patterns of human interaction rather than the needs of particular subjects or technologies." It is this excess of interaction that generates novelty [chapter 5].

In summary, the emerging perspectives on the teaching of architecture and urbanism presented in this book reflect, themselves, the growing contrasts of and between the multiple social realities, built environments, digital and technological frameworks, times and places that we experience—locally and globally.