

Learning from Chicago-Barcelona

A Euro-American urban design studio in five principles

Abstract

Urban Design education is fed, among other sources, by direct experience of cities. The Urban Architecture Studio, framed in the agreement between the ETSAB-UPC_BarcelonaTECH and the Illinois School of Architecture-UIUC, has been developed in Chicago and Barcelona for the last two years, thus benefiting from the vibrant urban conditions and the acknowledged good urban practices in both metropolises. Capitalizing on ongoing processes of urban regeneration, the Studio has been testing methodologies and approaches to similar challenges in both cities. The paper presents five pedagogical principles that build the methodological structure of the Studio. First conclusions about this ongoing Euro-American teaching experience are also announced.

Keywords: Urban Design, Higher Education, Urban Regeneration.



Fig. 1: Urban Architecture Studio at the Illinois School of Architecture, December 2013. Final review of the proposals drafted by students on Pilsen, Chicago. Jurors with a diverse background actively contributed to the discussion, thus providing a very valuable feedback to students.

The Urban Architecture Studio, definition and goals

The Urban Architecture Studio (UAS) is integrated in the Master of Architecture curriculum at UPC_BarcelonaTECH (Spain) and the Illinois School of Architecture (USA). Conceived as a bi-national two year long Studio (Barcelona 2012-13, Chicago 2013-14), it is focused on the regeneration of obsolete and declining industrial estates. The transition of the productive sector in western countries, from manufacturing to knowledge-based economy, results in the obsolescence of extensive industrial areas. Morphological re-adjustment, infrastructural optimization and public space are critical components explored by UAS in relation with the regeneration of such territories. The main goal of the studio is to promote a comprehensive understanding of architecture in a wide range of scales, thus claiming for the capacity that architecture has in designing not only buildings but also urban environments.

Based on a “learning by design” methodology, UAS’s teaching goals consider both generic and specific competences. As for the set of generic apprenticeship, common to the rest of architectural education content, the studio pays special attention to rigorous graphic analysis of given data, to intentional analysis of site conditions and to graphic skills for design and communication. Regarding the specific competences, the studio seeks a special focus on

- The ability to develop simultaneous reflections at a diverse set of scales.
- Analysis beyond description by formulating specific and intentional designing hypothesis.
- Rooting the architecture in the urban context where it is located.
- Exploring the flexible formal content of codes, guidelines and urban regulations.
- Including time and processual thinking as a critical component in urban design.



Fig. 2: Sites for Urban Architecture Studio editions. On the left, Pilsen at Canal St & 18th St, Chicago (AY 2013-14, Fall Semester). On the right, Can Batlló alongside the Gran Via, Barcelona (AY 2012-13, Fall & Spring Semesters). Both sites have a similar extension –around 10 acres- on obsolete industrial areas that are prospective sites for urban regeneration. The proposed program is a mixed-use complex that includes residential, civic and tertiary uses. Public space is a relevant component, meaning around the 50% of the total area.

Pedagogical methodology: five principles for five goals

UAS' methodology is based on five pedagogical principles, being each one of them related with the five specific competences to be achieved. They are "Contextual dialectic", "Intentional Reading", "Boundaries blurring", "Urban structure" and "Time dimension"

1. Contextual dialectic, from site to city.

One of the most important lessons that students learn as participants in UAS is the intimate relation between Architecture and its contexts. This simple but extremely powerful assertion is particularly revealing for those students who are challenged for the first time by urban scale. They learn to infer from the context designing criteria that, by providing the awareness of place belonging, substantially improve the quality of their proposals. UAS studio seeks to train in this particular approach, thus educating students in the very basic capacity of site-reading that every single good architect should prove.

There is, however, an even deeper and more enduring component in Urbanism: since Architecture is able to improve the quality of buildings, Urban Design should be able to improve the quality of our urban environment, that is to say, of our cities. This optimistic, but realistic too, statement implies a critical understanding of the outreach of Urban Design: far from being just the logical translation of inextricable forces into physical form, urbanism holds an extraordinary transformative potential in the city. Initially assumed conditions –such as Real Estate trends or Planning Policies- are based, in some cases, on the physical conditions of the existing city. But, what if these conditions change? What if, instead of considering the Urban Design as a final stage of the decision-making process, we train our students in a proactive urbanism? UAS aims to overcome the fatalistic understanding of city production, where, following the Taylorist logic, Urban Design plays the role of the technique for "good-city form" shaping. UAS proposes, on the contrary, a far more ambitious consideration of Urban Design, based on its dynamic, cyclical and interactive dialectic with the rest of agents in the city. In synthesis, urban design will envision new urban scenarios able to impact on planning policies or Real Estate trends, thus affecting a wider conception of the city. Local urban design is, potentially, able to precipitate decisions at city scale.

Such a radical understanding of urban design demands for a flexible pedagogy: instead of deterministic problem formulation, UAS proposes an open-formulation of probable hypothesis. Both the program, but also the specific sites where students will develop their proposals are defined through an intentional reading of the context. Although a first physical frame is provided to students as an initial field for analysis, further formulation of hypothesis lead them to find strategic locations with city scale potential impact. They are encouraged to test every single decision at city-scale, thus proving how the scenario drafted at Urban Design will eventually change the contour conditions of the site. An enriching dialectic is, therefore, built from the very beginning of the designing process.

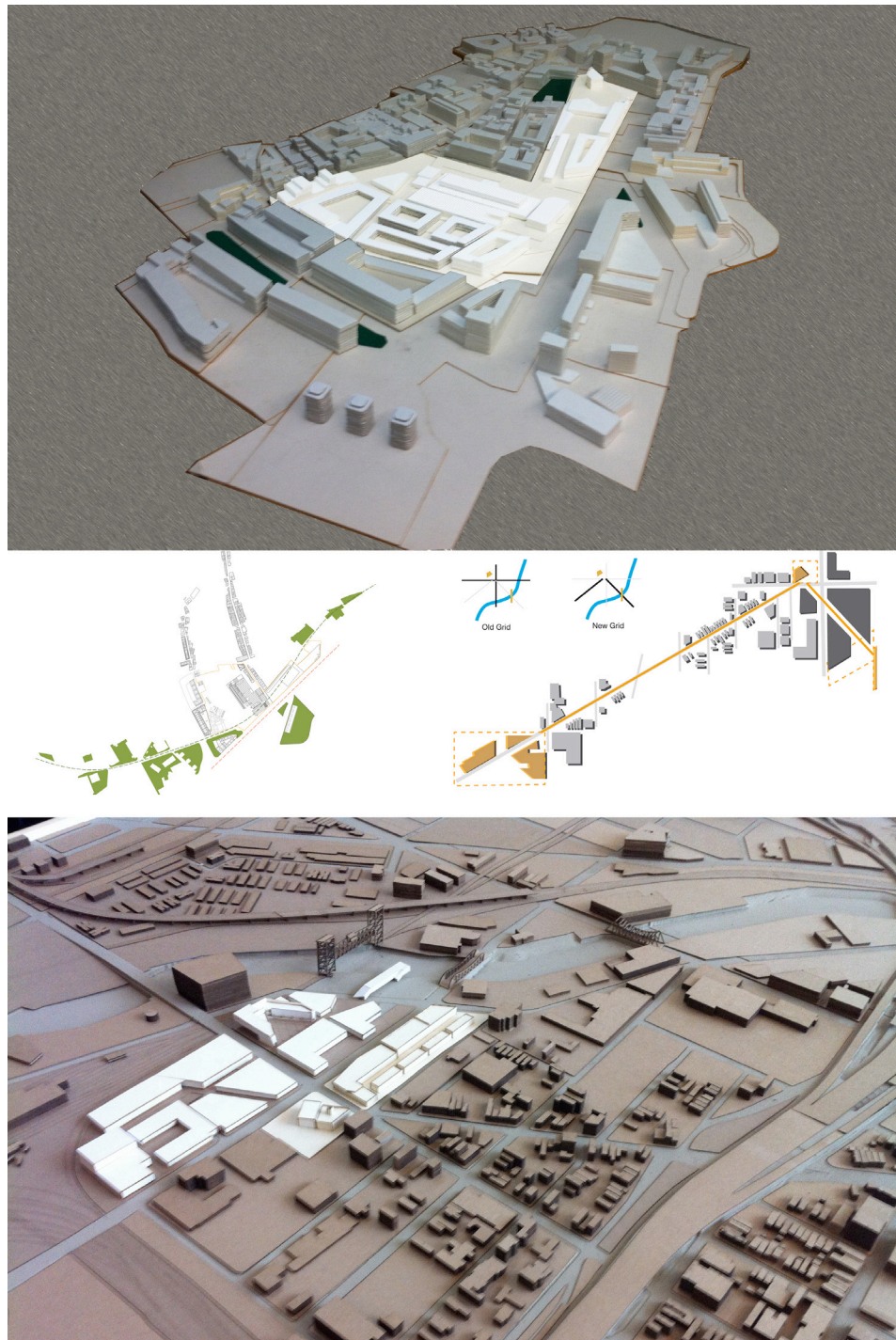


Fig. 3: Contextual Dialectic. Images above –Barcelona- and below –Chicago- show the models that cover far more than the urban design proposal, modeled in white. The city scale physical models are used during the first stages of the Studio as a pedagogical material for the morphological understanding of the site. Produced as teamwork by all participant students, they also promote the collaborative and discussion approach, which the Studio is based on. Image at the center-left shows a hypothesis for Can Batlló (student: C. Girau, UPC_BarcelonaTECH). Image center right, shows the contrast between the grid and the diagonal as a driving force for design in (students: M. Barret & M. Barkoviak, UIUC).

2. *Intentional reading, analysis beyond description.*

One of the most valuable lessons that students learn is that the ever-changing condition of urban contexts becomes especially acute when proposing their new designs for a specific area. They are trained in the awareness that a specific intervention in the city, no matter how tiny it may seem, is able to significantly change the qualities of a broader urban context. Recent urban interventions in many cities, especially in Barcelona, prove that partial urban acupuncture, if planned smartly, is far more effective than general master planning¹.

The transformative potential of the so-called Urban Project², being an ambitious one, demands, however, a continuous testing of how the city context might react to the local intervention. One might argue that urban complexity makes barely impossible to simulate how the city will evolve in an even short-term future. But once complexity is assumed, UAS students develop one of the most specific skills of urban designers, that is to say the capacity read and interpret information. Today, differently to what happened only a student generation ago, obtaining data is not a hard task: on the contrary, the overwhelming amount of available information constitutes one of greatest risks for untrained students. One of the goals of the UAS is to train students in the intelligent reading of data and their intentional use in the designing process. That goal is achieved through two complementary strategies, namely, deduction and intuition:

- The deductive use of technology enables the effective simulation of future scenarios based on the iteration of several variables. GIS and graphic restitution software are, when applied smartly, very valuable tools in the designing process. Students are encouraged to use them as a mean for dialectic between their proposals and the context. More than placing their proposal into context at the very end of the designing process, they are encouraged to use technology as a tool that will continuously inform their decisions, thus providing “on time” information about how their proposals change the contour conditions. The pedagogical challenge in such an open process relies in how to translate plain information into intentional designing criteria.
- The intuitive use of information becomes, therefore, the most specific and critical skill that participant students acquire in the UAS. By assessing what data are relevant, they establish a proper hierarchy of all managed information. This specific skill, which is based more in intuitive capacity of “reading with intention” than in induction-deduction processes, can only be trained through a designing-will methodology. It’s only by formulating a site hypothesis that a certain intentional reading is enabled. It is through designing-practice, through learning by doing, that intentional reading is trained and apprehended.

The intentional reading approach, as defined above, becomes the driving force of the designing process. Once the hypothesis is set up, it will fuel all the decision-making, from analysis to proposal and back, from building to public space and back, thus blurring the boundaries between Architecture and the City.

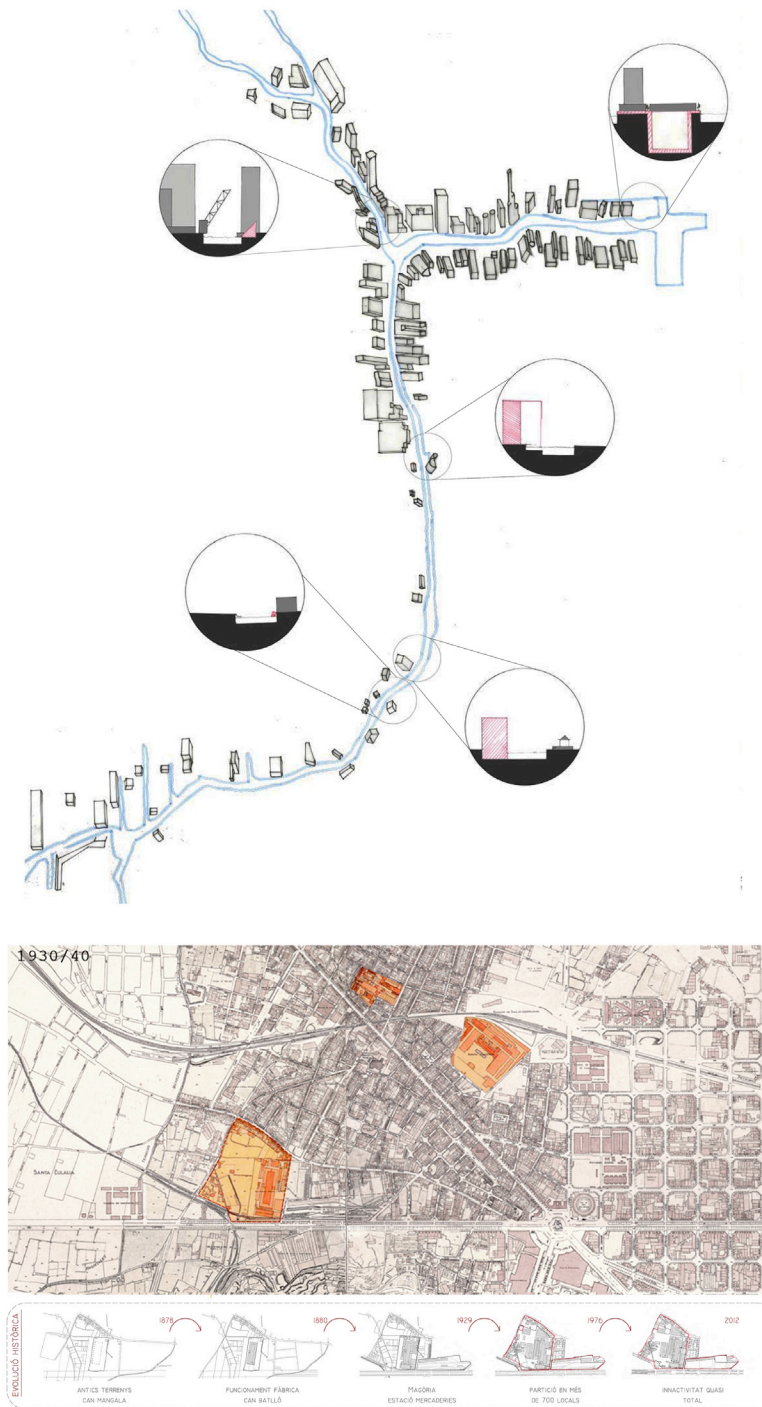


Fig. 4: Intentional reading of the site. Based on designing hypothesis, students are encouraged to go beyond site description and start designing from the very first contact with the site. Initial designing strategies are announced in the analysis phase. Image 4a, above: The Chicago River scape and the relation between water and architecture (students: D. Lueken & K. Doroba, UIUC) Image 4b, below: morphological evolution of Can Batlló in relation with other industrial estates in the vicinity (student: L. Andreu, UPC_BarcelonaTECH).

3. *Boundaries blurring, between Building and Open Space.*

“Bigness”, large-scale, enormous dimensions... these are usual comments from novice students during their first days participating in the UAS. After some weeks the conversation turns to the more sophisticated concepts of complexity, simultaneity or transcalarity. And that is what UAS is about: the deepness and complexity of reflection instead of the mere quantity of acres to be designed.

The traditional division between Architecture and Planning, particularly explicit in the American context, has been reinforced by higher education curriculums that insisted on the artificial divisions between both. Experience demonstrates how the design of physical space requires an integrative approach where all components of the urban environment play a relevant role, no matter their size or scale. As stated in the previous principle, UAS is about blurring the boundaries between Architecture and Physical Planning, between the urban fabric and its buildings, between codes and design, between city and architectural design. This very basic statement has some relevant pedagogical approaches regarding scale and domains.

Regarding scale, it seems critical to overcome the simplistic assignment of competences according to scales. City design needs a radical transcalar approach. Urban Design is not fulfilled by setting up a general volumetric layout at a certain scale that will be abandoned for future development at “architectural scale” in further stages. Splitting reflection by scales is far from being acceptable in the UAS and students are required to explore concepts through a profound designing process along all scales, from the general layout, crucial at city or even territorial scale as seen, to the assembly detail of a façade or a pavement, critical components of the public space materiality and identity.

As for the domains, blurring the traditional division between private and public domain requires, firstly, a new understanding of how collective spaces are publicly used and entitled. Public-private division, strongly rooted in the continental European tradition, ignores the vibrant and complex way in which collective identity is built in our cities. Based on the more effective definition of “collective” spaces³, UAS explores the multiple grades and intensities of public character in the city. Instead of a black & white definition of public-private domain, UAS proposes a more complex understanding of “greys”, thus providing a rich range of designing criteria adapted to the real social use of our contemporary cities. Secondly, the redefinition of public-private domains means also a consideration about the outreach of urban design. The traditional division between private and public space has frequently led to urban policies very much focused on the design of public space while promoting a “laissez faire” freedom in regards of private sphere. UAS states that urban design should provide criteria not only for public spaces but also for private architecture. The delicate balance between the necessary (and positive!) flexibility that architecture needs shouldn’t compromise the responsibility that every single building has towards the city⁴. Very simple, but clear, designing principles –codes in urban planning terminology- are also basic learning materials of the UAS. They cover a wide range of issues, from the traditional building heights or FAR to the more innovative façade codes or ground floor entrances locations.



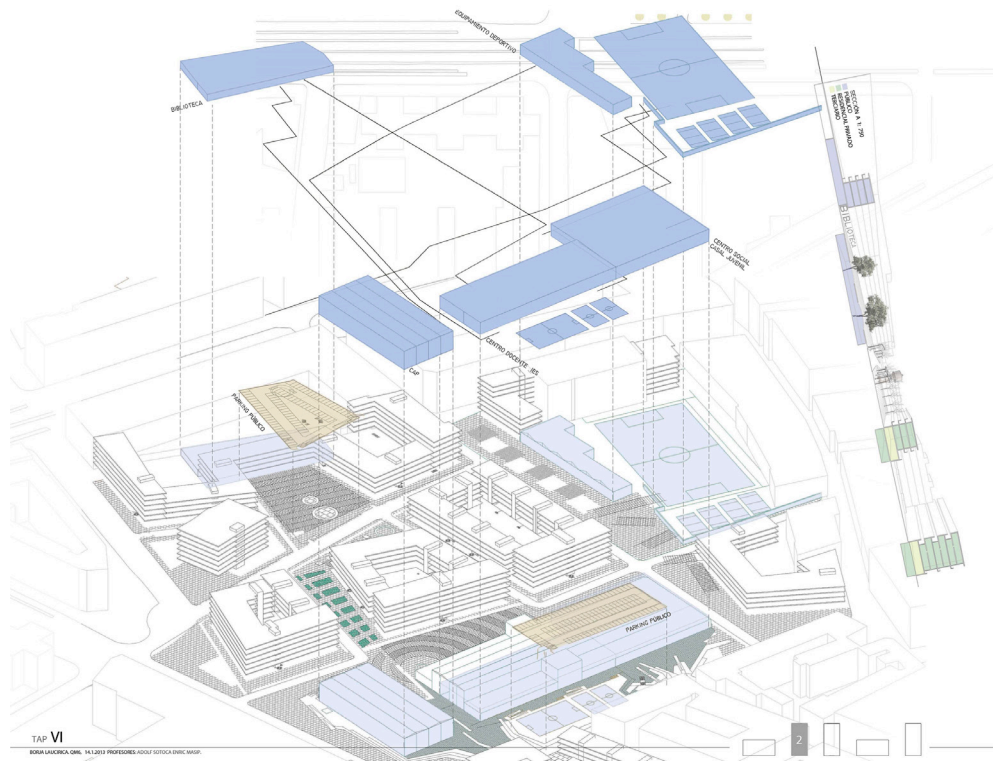
Fig. 5: Architecture and Public Space are designed simultaneously as complementary components of one single continuum. Fig. 5a, above, vignettes showing three different conditions of relation between buildings and open space in Can Batlló-Barcelona (student, X. Requena, UPC_BarcelonaTECH) Fig. 5b, below, view of a water inlet where a library, the residential fabric and the public space assure urbanity in Pilsen-Chicago (students M.Barret & M. Barkoviak, UIUC)

4. *Urban structure, essential vs flexible.*

What is the link between designing a building and drafting an urban design layout? Can both challenges be approached with the same methodology? This apparently naïf question puts on the table one of the critical dimensions of Urban Design. Whereas designing at building scale is intimately related with a final and precise materiality, Urban Design envisions formal scenarios without the compromising need for their immediate construction. Building scale stands close to the translation from design to stone; Urban Design, on the contrary, stands at the very beginning of a series of future designing decisions. Urban Design does not foresee one single final built materiality, but sets up the rules of the game so that architecture can be performed according to the increasingly ever-changing conditions that will ultimately affect it. Urban Design timing is far longer than building design and therefore the risk of changing conditions should be seriously considered. Urban Design needs to include optionality and adaptability in the designing process.

However, an apology of flexibility could lead to the wrong conclusion that precise and accurate decisions need to be postponed to further stages, when design at building scale is performed. We don't need to insist about how damaging this logic is to urban landscape: our contemporary cities, especially in the US, are built through the addition of individual initiatives lacking of a general order. The result is a heterogeneous and fragmentary urban landscape that, although vibrant, proves to be, at least, morphologically dysfunctional. Taking accurate and precise decisions at the right scale and the right moment, thus assuring a general understanding of the fabric when singular architectures cannot do so, is the mission of Urban Design. And does not mean avoiding compromise, but finding where and when decision-making is necessary and where flexibility should prevail. The balance between prefiguration and adaptability is essential in city design.

UAS students are emphatically encouraged to design hierarchically, namely, to distinguish what is essential from what is not at urban scale. Their proposals do not treat with the same deepness and intensity the whole site, neither all issues nor problems. The successful proposals are extremely accurate in defining the critical emerging locations while providing a flexible set of rules for the homogeneous fabric. The approach of UAS is based in what we call the "essential structure" of the city, a systemic skeleton of the significant urban spaces that, defined at Urban Design scale, assure the morphological and functional coherence of the city. Essential structure is methodologically very closely related with "contextual dialectic" –principle 1- and "intentional reading" –principle 2-, since it is its logical consequence: critical issues at city scale discovered by students through an intentional description are developed as essential morphological and functional skeleton of their design. This particular essential structure is intensively designed and will blur, hopefully, the simplistic boundaries between building and city scales, between public and private domains. During the designing process, students are encouraged to move forward and backward through all scales, as well as to constantly test their proposed urban structure with the analysis – intentional reading- that they have developed at the early stages of the design process. As for the rest of the proposal, students are trained to reflect about generic urban codes and regulations that will enable a flexible development of the urban fabric.



THE NEW SOUTH-BRANCH CHICAGO RIVERFRONT

CHICAGO-SCALE LANDMARK

PILSEN-SCALE LANDMARKS

CHICAGO-SCALE LANDMARK

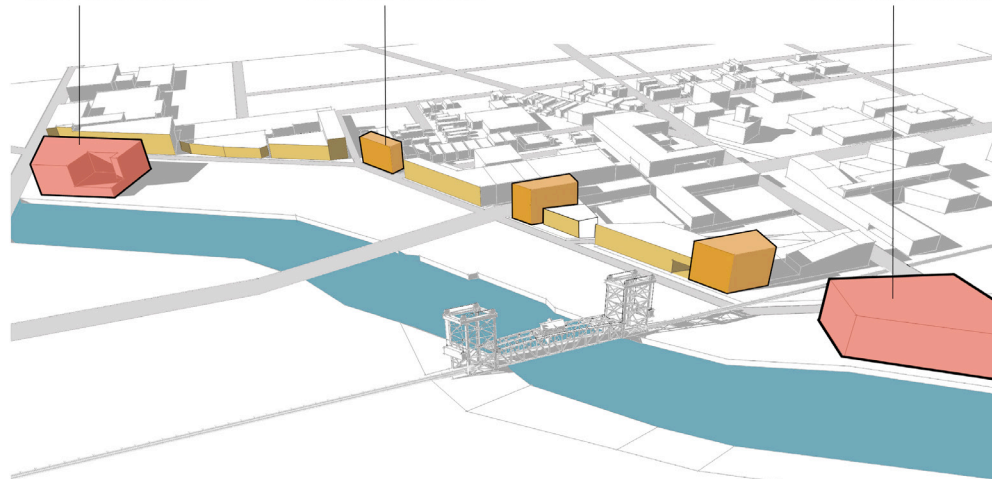
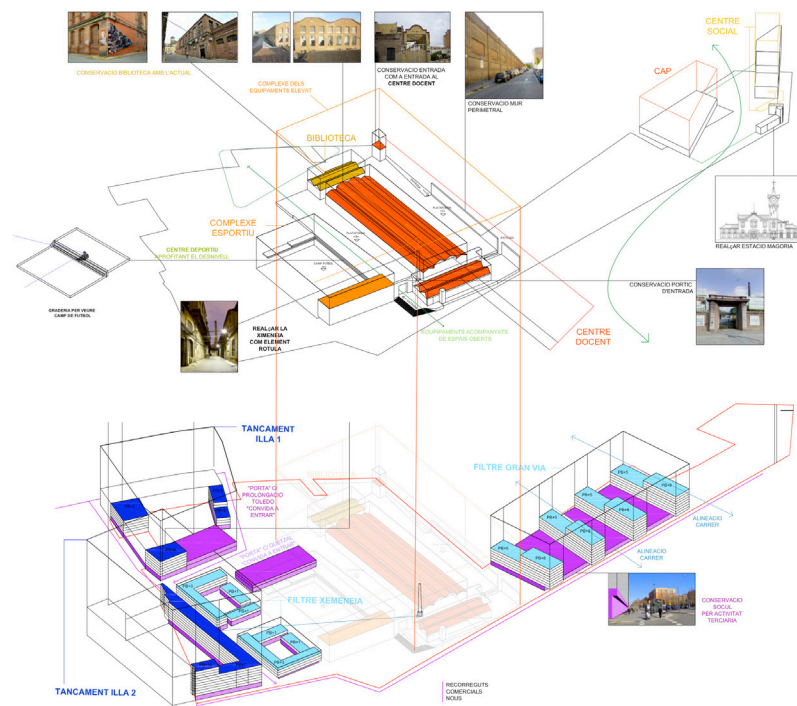


Fig. 6: Emphasis on those elements to be designed at the urban scale. Fig. 6a, above, axonometric view of Can Batlló-Barcelona highlighting the elements that are determined accurately at the urban design layout (student: B. Laucarica, UPC_BarcelonaTECH) Fig. 6b, below, view emphasizing the volumetric composition of key elements defining the riverfront from Pilsen to the Sout-Branch Chicago river (students M. Pramod & S. Khabibullaeva, UIUC).

5. *Time dimension, design as a process.*

Time is, as mentioned in “essential structure”, a critical vector in city design. This statement, being the most transversal for the UAS, widely affects the pedagogical approach of the studio⁵. The search for an essential structure is, as seen, the logical consequence of a time-based understanding of the making-decision process. And essential structure is based in contextual dialectic, intentional reading and boundaries blurring. However, the increasingly object-focused approach in most of the literature and massively distributed architectural magazines do not promote specific tools for reflection about time in architecture. The very same features of architecture transmission through images prevents from reflecting on the importance of time design. That might be the reason why some students pay more attention to the result-image than to the process the leads to it: much of their effort is addressed to represent the instant icon-architecture through renderings. That option, being very informative, is also partial, since single images are extraordinary powerful in transmitting one of the components of architecture –appearance- but not others. Besides visual appearance, UAS aims to explore other critical elements of Design, such as implementation along time, cultural insertion or typological appropriateness. Since all of them are related with the concept of process, UAS proposes specific tools that, beyond renders or two-dimensional graphics, may promote processual thinking:

- Context: Morphological description of how urban environment is built along time promotes in students an awareness of how their proposals fit in the city timeline. Following up with the ideas developed in principle 1, contextual dialectic is not only about placing a proposal in its spatial but also in a historical context.
- Tool for reflection: Physical models are essential tools in the UAS. They simulate not only the materiality of the site but also how city is finally shaped through a process of negotiation and trial & error. Students are requested to cooperatively work on a common model where they test and discuss their proposals. The model is repeatedly modified all along time, like the city is.
- Construction: The design of implementation stands as central in the processual understanding promoted by the UAS. Students are encouraged not only to envision a linear phasing, but to Design the iterations of scenarios that may occur along time during the implementation of their proposals. Based on how cities are built, the UAS emphatically avoids the on-single-step urban renewal schemes and reinforces, on the contrary, a transitional approach based on the cohabitation of new and existing urban fabrics.
- Representation: New graphics tools beyond renderings are promoted in the UAS as a way to show the interaction between Architecture and Time. Movies and animations are able to show either the spatial understanding of architecture through movement or its evolution along time.



Palimpsest Exploded Axons

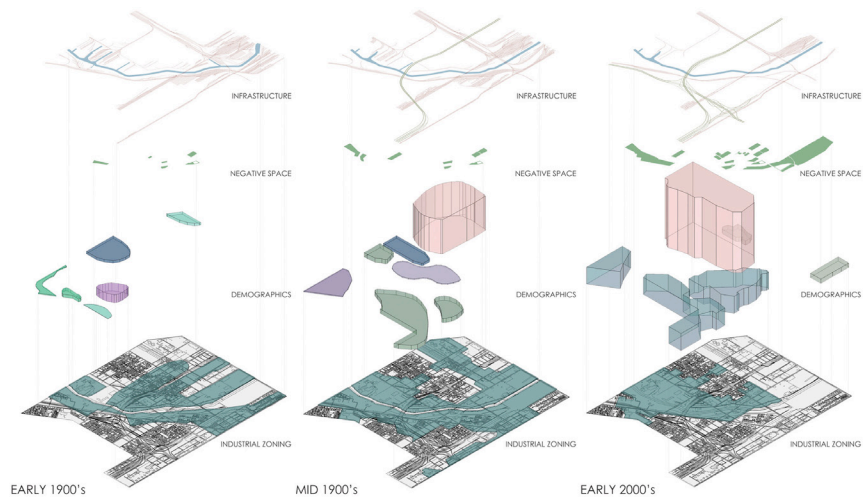


Fig. 6: Processual understanding of Urban Design. Fig. 6a, above, axonometric views of Can Batlló-Barcelona rendering in red existing buildings kept on site and rendering in blue the phasing of implementation (student L. Nadal, UPC_BarcelonaTECH). Fig. 6b, below, diachronal analysis of Pilsen-Chicago, emphasizing time-palimpsest as designing strategy (students S. Neville & B. Kalman, UIUC)

Urban Architecture Studio, from principles to lessons

The urban design studio, jointly celebrated at UPC_BarcelonaTECH and at the Illinois School of Architecture, constitutes a unique opportunity to build a solid methodology on Urban Design studio teaching. Whereas the specific urban conditions in Chicago and Barcelona allows for a clear distinction between the European and American context, the finding of a common denominator in both cities might be also a very interesting outcome of this international initiative. Once assumed the specificity of each context, it is also possible to announce a common pedagogical approach that, not only in Chicago and Barcelona, but also in a wider global context, might be useful for Urban Design studios curricula. Capitalizing on the UAS experience and considering the five previously presented principles, we propose a pedagogical approach that may emphatically insist on scale, complexity, integration, urban structure and time,

- The **scale** where urban design can potentially operate reaches far beyond a specific site. Being the urban project intimately linked to a contextual dialectic, decisions at site-scale might easily become city-scale catalyst for further improvement.
- The huge amount of inputs and information at our disposal demands for a complex-thinking approach. Intentional urban design, based on the formulation of hypothesis rather than the traditional reaction-to-description methodology, becomes an extremely useful strategy to manage **complexity** with.
- The way contemporary cities are built proves unprecedented relations between the public and the private realms. The traditional split between building and open space give floor today to a continuous spatial understanding of urbanity. Based on an **integrative approach** between scales –architectural and urban- and domains –public & private- urban design plays a critical role in defining transitions more than hermetic identities.
- Urban design does not exhaust the final configuration of the city. Placed in-between architectural design and urban planning, it should determine accurate formal and functional decisions at city scale – **urban structure**- while establishing guidelines for urban morphology to be implemented in further stages –urban fabric-.
- The dynamic of cities are so increasingly variable that designs usually become obsolete before they have the chance to be implemented. Therefore **time** becomes a critical content in a urban design studio, not only as the usual historical description of the context, but also as a methodological approach to design.

Scale, Complexity, Integration, Flexibility, Structure and Time are the pillars of the Urban Architecture Studio pedagogical methodology. One might argue that they should be principles of every single Urban Design studio no matter whether with such an international scope as UAS' or not. But one might also admit that they become more solidly based when proved to be a successful approach in such vibrant, challenging, fertile and diverse case studies. The future of the UAS, still to be developed in several future editions, anticipates an interesting field for Urban Design education.

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¹ See Carracedo, O., Sotoca, A.: "From Masterplan to punctual interventions", CNU New Urban Research, 2013, Salt Lake City.
<http://www.cnu.org/sites/www.cnu.org/files/frommasterplantopunctualinterventions-oscar.pdf> . The paper criticizes the common masterplan practice and defends a more intentional and selective approach to urban regeneration.

² The theory of the Urban Project is an original contribution of the Laboratory of Urbanism of the Barcelona School of Architecture. The term, coined by Manuel de Solà-Morales, refers to the designing strategy that, considering simultaneously the architectural and city scales, has an extraordinary transformative potential. To learn more about its definition and principles, see Solà-Morales, M.: "La segunda historia del proyecto urbano", in UR5 Urbanisme Revista, 1987, Barcelona. See it online: http://lub.upc.edu/web/arxiu_LUB/UR_informacionrevista5.html

³ See the article "Public Spaces, collective spaces" in Solà-Morales, M.: "A matter of things", Gustavo Gili, 2008, Barcelona.

⁴ See the article "Towards a material urbanity", in Solà-Morales, M.: "A matter of things", Gustavo Gili, 2008, Barcelona.

⁵ See Lynch, K.: "Controlling the Location and Timing of Development" in Banerjee and Southworth "City sense and city design. Writings and projects of Kevin Lynch". The article is part of the chapter that, under the name of "City design: education and practice" exposes the theories of Prof. Kevin Lynch related to urban design education.