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METHODOLOGICAL REPORT

TAP G. INHABITABLE COMMUNITIES

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International Competition for the Extension of Bocconi University Campus

PREAMBLE

The course objectives TAP G: *Inhabitable Communities*

The course TAP G (Architecture Workshop and Projects) of the ETSAV (Superior Technical School of Architecture of the Vallès) coordinates in the same workshop the parallel development of two key aspects of learning architecture: what refers to the **architectural project** and what develops its **technological, environmental and sustainable resolution**. These are two ways to proceed jointed together by defined operations in order to find enough analogies to reach a consistent final result in each specific program to be solved.

The project issues that are resolved by Tap G are those whose protagonist is a basic spatial unit that repeats and necessarily incorporates mechanisms to link with other similar units, greater size units and open urban or rural spaces, to form a true *inhabitable community*.

For all these reasons, the bases of the competition of expanding the Bocconi Campus in Milan perfectly suite either the subject as the course dynamics.

METHODOLOGY

In an interdisciplinary workshop as TAP G, it is essential to establish a methodology that considers, in parallel, so the qualities of architectural spaces such as its environmental and technological resolution. Therefore, the developing processes to be performed by students are prescribed by a specific order of procedures:

1. At first, we **design the interior space** of the **inhabitable units** (classrooms and apartments) offering formal and constructive answers to the existential needs of a human group. The basic units are designed from the inside, because they have to be the built witness of the everyday, hosting the activities developed by the group.
2. Secondly, it creates an **aggregation system of inhabitable space units** that allows its growth and its annexation to **common areas of access, relation and service**. Units are projected in order to be attached, so they become part of a complex system where, in addition to the consideration of the internal parameters, the mechanisms of linking, connectivity and communication are designed as well. The strategies are based on **patterns** that have the ability to generate growth of units by establishing a system which, at the same time, provides a basis for **extending the private living to the public space**. Out of this aggregation system of cells, common areas, service areas and free spaces, emerge the global order of the project.
3. Once this global order is established, the designed system is obligated to define its limits. It happens when the whole ensemble is located on a specific site, and submitted to partial changes according to the **requirements of the environment** where it is inserted: the urban environment, climate, topography and culture of the place. The set of units, linking systems and singular elements have to flexibly adjust their growing rules to adapt to the solar limits, topography variations, orientation, current urban regulations, social and cultural context and environmental changes. The adopted patterns have to offer enough freedom to allow changes and deformations without creating a crisis of its internal structure.
4. The system defines its **wrappers** and confronts the **construction and environmental limits** that characterizes it. The cellular forms and linking mechanisms must be coherent with used materials and their dimensions must respond to the selected structural morphology. Materials and construction procedures must be sensitive to tensions issued by the urban solar where the architectural action is located, in order to insert itself in an harmonious way and not to create tension or added expenses that come into contradiction with the sustainable aim of the course. In the same way, the facades and volumes must provide a coherent composition with the program and living conditions within the different parts of the building, harmonizing with the surrounding buildings and integrating the natural and artificial elements of the whole.

ETSAV's TAP G

EDITION ADAPTED TO CAMPUS BOCCONI'S EXPANSION PROJECT

The projects that have as protagonist a basic spatial unit that repeats and incorporates linking mechanisms with other similar units, larger elements and open spaces, until forming an inhabitable community, can be diverse and respond very different demands. This TAP G 's eighth edition approaches the program that offers the International Competition for the Extension Campus Bocconi in Milan, in order to plan a set of existing buildings within the university fabric, which respond future needs of the institution.

The will to open fields beyond the university studies, joined with the demand for a permanent forming process, forces to promote a post-graduate Business School, following the ethical, scientific, social and business tradition that characterizes the Campus Bocconi. Because of this expansion the adjacent plot is sort and gifted of new infrastructures complementing the existing ones, such as a residence for students and professors, a cafeteria, a commercial area and a recreation center. Within the cultural, urban and vanguardist context that characterizes the city of Milan, these operations must be part of an inclusive campus where students and teachers, academic and administrative structures, research and study and recreation and sport live together harmoniously.

It is about, therefore, posing a real inhabitable community, a micro-cosmos in which the built spaces are as important as the free ones. A community that, in addition, provides a technological and designing proposal that gives an answer to a systematic structuring of the entire complex to ease the logical of its implementation. Similarly, calibrating the ergonomic and microclimatic conditions, consumes have to be optimized and edifications and open spaces must be integrated according to environmental and sustainable criteria.

ORGANIZATION OF THE COURSE

Course length is about 15 weeks. It is weekly organized in 2 hours theoretical sessions and 8 hours of practice.

The requirements indicated by the regulations of Campus Bocconi's competition added to the complexity and extension of the program force to consider the course in an exceptional way, with an initial period of individual work and a posterior one of group work.

INDIVIDUAL WORK: 3 WEEKS

The units are resolved, whether apartments or classrooms, and the patterns of repetition and the system of its growth are posed, in a way that it also includes part of campus facilities.

A first group of students will solve the Master classrooms and Administrative facilities.

A second group of students will solve the student residence, the Cafeteria and Commercial Area.

WORKING GROUP: 12 WEEKS

Once the system is established, groups of students are formed, addressing the whole program established in the contest and place the individual solutions in the terrain, in a way that a common proposal can be reached, consistent with the posed systems and the surrounding conditions. At this stage the rest of facilities are also resolved (sports and recreation), the garden areas and urban areas.

From the resulting projects of the working groups of students the most interesting project at the design level as at the environmental and technology level is chosen to be developed together in its final phase.

THEORY CLASSES

Theory classes are adapted to the pace of the project and program issues to be solved. In this course, that is dedicated to Campus Bocconi Competition, the following topics has been developed:

projects / technology

01.1 where to teach, where to inhabit

The lesson emphasizes how human groups and their ways of teaching, learning and living condition and transform the environment in which they operate. Also how their wrappers establish their particular influence in vital processes that take place inside them. At the same time, explains the importance of exterior green spaces and communication zones as essential areas to develop the socialization of university communities.

01.2 habitability and resource management

Pondering about the role of the architect as the main responsible of the management of basic resources to obtain living and comfort conditions. Presenting several primary action strategies related to the environment, the material and the country.

02.1 classrooms and rooms: joining patterns and systems

Resolution of architectural programs based on systematic repetition of similar units, has led to models in which the alternation of full and empty is linked to different forms of articulation and interesting ways of growth. These open systems are related to other existing processes in other artistic disciplines and several scientific demonstrations.

02.2 environmental quality and housing unit

Study of the aggregation processes of living units in relation to environmental conditioning systems, natural and artificial. Analysis of possible strategies that have a significant influence on the architectural shape and t are also looking for the creation of comfortable and livable spaces without damaging the environment.

03.1 joining systems and common areas

Analysis of the different ways in which spatial units growing systems incorporate architectural elements that, for its size, form or function differ from the other components. The joints used deformation or flexibility of the formal structure, the incorporation of new morphological parameters or simply absorbing the special unit by the system itself, are some of the coexisting mechanisms used.

03.2 aggregation and material aspects

Analysis of important aspects in the realization process of the building: link between the functional unit and the structural unit, relation between the system of supports with the closings and interior compartmentalization, strategies for future flexibility and adaptability, resource management and environmental convenience of the materials.

04.1 limits of the system

Study of several cases in which a group system of spatial units is forced to adjust their laws of growth to certain limits. These ones may be the irregular perimeters of a solar, the topography, the presence of significant natural or architectural elements, the influence of a determined urban context and culture, regulations imposed by governments, constructive or structural conditions, or environmental indices.

04.2 indoor conditioning and environmental quality

Review of the main factors and conditions to take into account according to the indoor environmental suitability to certain comfort conditions approaching the optimized energetic resource's management.

05.1 rhythm and facades

Facades present a relevant formal system that contains several topics as a volumetric, composite, representative, cultural or perceptual level, as a climate, structural and constructive level. From different examples it is studied how the architecture offers solutions through its external limits and the systematic repetition of units.

05.2 environmental conveniences: instruments of justification

Architectural approaches for improving the concepts of sustainability and energetic efficiency shape an ensemble of measures especially relevant to contemporary projects that require specific tools for verification and justification. Different strategies and benchmark examples are reviewed and proposed.

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