



Enhancing of Heritage Awareness and
Sustainability of Built Environment in
Architectural and Urban Design Higher Education

STATEMENTS

for Teaching through Design
for Sustainability of the Built
Environment and Heritage
Awareness

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INTELLECTUAL OUTPUT 3

2021

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TITLE

Statements for Teaching through
Design for Sustainability of the Built
Environment and Heritage Awareness

PUBLISHER

University of Belgrade, Faculty of
Architecture

DESIGN LAYOUT

Aleksandra Milovanović, Aleksandra
Đorđević, Ana Zorić, Mladen Pešić

First edition, 2021

ISBN 978-86-7924-281-5



Co-funded by the
Erasmus+ Programme
of the European Union

Statements for Teaching through Design for Sustainability of the Built Environment and Heritage Awareness

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This result has been produced as a part of O1 INTELLECTUAL OUTPUT within HERSUS project within Erasmus + Strategic Partnerships for higher education. The creation of these resources has been co-funded under grant no. 2020-1-RS01-KA203-065407 (funding period 2020-2023; total grant 246.922,00 €). This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



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Celia López Bravo

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design approaches
statements

MULTISCALE DESIGN APPROACH



проектовање кроз више размера • *Progettazione interscalare* • Πολυεπίπεδη
σχεδιαστική προσέγγιση • *Diseño Multiescalar*

GENERAL DEFINITION/ EXPLANATION



The **multiscale design approach** in architecture and heritage shapes complex projects such as regional planning ones, in which city, infrastructure, building and public space are, at different scales, goals and economic and social resources. Besides, the historical characterization of the territory plays a role of the utmost importance within this design strategy, because each of its historic layers have determined patterns that must be part of the new urban decisions.

As a practical teaching model, it is based on open project statements that integrate different work scales. This approach, usually used as a model of analysis in social sciences, begins to be used in architecture and heritage teaching as a teaching method for design projects during the last decade.

In this specific field, projects and multiscale learning manage to work together on territorial problems, urban or rural, which reach the architectural detail.

WHAT?

CONTENT

The methodology of approach to the multiscale project is based on the practical work of the students in heritage issues of a territorial nature that, in a guided way, give rise to an architectural and landscape project solution.

This methodology implies the determination by the student of a specific area and an object of work from the proposed statement, of initial, final and intermediate scales and an appropriate graphic system for them. In this way the student makes his own decisions that will differentiate his project from the beginning, becoming aware of the complexity of the heritage work. Thus, multiple results and supports of class work will coexist, which function as training for future situations of the career.

Therefore, this approach results appropriate during the last years of degree, once the student has already experienced others design courses using delimited scales, has acquired the skills and theoretical base and, consequently, the maturity, necessary to face open statements and work autonomously using different scales.

HOW?

METHODS

The project must be divided in several phases of study and proposal. There are usually three. In the first phase, a contact with the reality is carried out. To do this, field visits can be made depending on the possibilities, as well as a comprehensive recognition through cartography, photography and bibliographic documentation of the territorial and landscape context that is proposed. This data must be graphically materialized. In the second phase each group set its project object. To do this, they must take into account the analysis carried out in phase 1, as well as position themselves in terms of the degree of intervention they are going to formulate and the criteria on which they are going to be based. In the third phase, the implementation of the idea and its program of uses is carried out graphically, defining the structural and constructive scheme used.

During the development of these phases, the teaching team invites students to reflect on the obsolescence of constructions, structures and landscapes. For this purpose, problem-based learning methodologies are used, in which groups of students discover, through trial-and-error work and critical thinking, what solutions they must provide (Flipped learning).

WHY?

GOALS

The main objective of the use of this approach is that the student gathers the maturity and the necessary skills to answer to diverse and complex territorial problems, including associated material and intangible heritage and using geographical, urban, administrative, heritage and environmental tools.

To do this, the class must function as a workshop in which you work as a team, stand up, discuss, etc. in which the students are the centre and the teacher is an agent who sets the rhythms, ensures an appropriate environment for learning and raises new questions when necessary.

One of its specific objectives is the students to obtain new interdisciplinary skills. Employing and experimenting with documents, terminology and agents from other knowledge areas is one of the skill and conceptual contents that distinguishes this teaching approach. In fact, an interdisciplinary teaching team could also be recommended in workshops where this idea would be experimented.

TEACHERS' COMPETENCIES

The teacher must have the following general and specific competences, to ensure the appropriate teaching of the subjects that use this methodology:

- Have the capacity to gather and interpret relevant data in the field of architecture, to make judgments that include a reflection on relevant issues of a social, scientific or ethical nature.
- Ability to analyse, synthesize, organize planning and manage information and bibliographic resources, solving problems and enhancing teamwork.
- Adequate knowledge and applied to architecture and urbanism of graphic survey techniques (topographic, cartographic) in all its phases, from the drawing of notes to scientific restitution.
- Capacity for the conception, practice and development of sketches and drafts, for the elaboration of functional programs of buildings and urban spaces.
- Ability to intervene in and conserve, restore and rehabilitate the built heritage, employing capacities related to architectural criticism.
- Adequate knowledge of the relationship between cultural patterns and the architect's social responsibilities.
- Capacity for analysis and formal ideation as bases of the project action.
- Aptitude to carry out preliminary studies to intervene in built heritage.
- Ability to develop intervention proposals for the transformation of the environment; architecture and urbanism.

COURSE TYPE

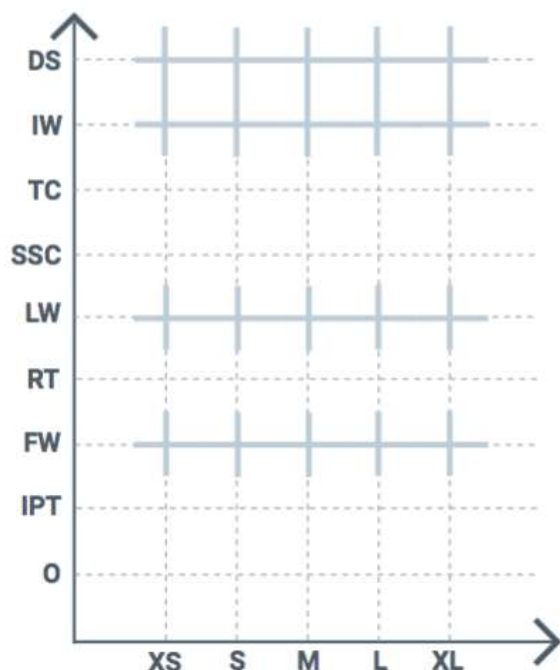


- Design Studio (DS)
- Intensive Workshop (IW)
- Theory Course (TC)
- Seminar (short comprehensive) (SSC)
- Laboratory work (LW)
- Research Thesis (RT)
- Field work (FW)
- Internship Practical training (IPT)
- Other (O)

SCALE



- Construction Detailing and Interior Design Scale (XS)
- Architecture: Buildings Scale (S)
- Urban Design Scale (M)
- Urban and Regional Planning Scale (L)
- Landscape Scale (XL)



LEARNING OUTCOMES

- 1 Ability to create architectural designs that satisfy both aesthetic and technical requirements. The student could have the ability to:**

 - prepare and present building design projects of diverse scale, complexity, and type in a variety of contexts, using a range of media, and in response to a brief;
 - understand the constructional and structural systems, the environmental strategies and the regulatory requirements that apply to the design and construction of a comprehensive design project;
 - develop a conceptual and critical approach to architectural design that integrates and satisfies the aesthetic aspects of a building and the technical requirements of its construction and the needs of the user.

- 2 Adequate knowledge of the histories and theories of architecture and the related arts, technologies and human sciences. The student will have knowledge of:**

 - the cultural, social and intellectual histories, theories and technologies that influence the design of buildings;
 - the influence of history and theory on the spatial, social, and technological aspects of architecture
 - the application of appropriate theoretical concepts to studio design projects, demonstrating a reflective and critical approach.

- 3 Knowledge of the fine arts as an influence on the quality of architectural design. The student will have knowledge of:**

 - how the theories, practices and technologies of the arts influence architectural design;
 - the creative application of the fine arts and their relevance and impact on architecture;
 - the creative application of such work to studio design projects, in terms of their conceptualisation and representation.

- 4 Adequate knowledge of urban design, planning and the skills involved in the planning process. The student will have knowledge of:**

 - theories of urban design and the planning of communities;
 - the influence of the design and development of cities, past and present on the contemporary built environment;
 - current planning policy and development control legislation, including social, environmental and economic aspects, and the relevance of these to design development.

5 Understanding of the relationship between people and buildings, and between buildings and their environment, and the need to relate buildings and the spaces between them to human needs and scale. The student will have an understanding of:

- the needs and aspirations of building users;
- the impact of buildings on the environment, and the precepts of sustainable design;
- the way in which buildings fit into their local context.

6 Understanding of the profession of architecture and the role of the architect in society, in particular in preparing briefs that take account of social factors. The student will have an understanding of:

- the nature of professionalism and the duties and responsibilities of architects to clients, building users, constructors, co-professionals and the wider society;
- the role of the architect within the design team and construction industry, recognising the importance of current methods and trends in the construction of the built environment;
- the potential impact of building projects on existing and proposed communities.

7 Understanding of the methods of investigation and preparation of the brief for a design project. The student will have an understanding of:

- the need to critically review precedents relevant to the function, organisation and technological strategy of design proposals;
- the need to appraise and prepare building briefs of diverse scales and types, to define client and user requirements and their appropriateness to site and context;
- the contributions of architects and co-professionals to the formulation of the brief, and the methods of investigation used in its preparation.

8 Understanding of the structural design, constructional and engineering problems associated with building design. The student will have an understanding of:

- the investigation, critical appraisal and selection of alternative structural, constructional and material systems relevant to architectural design;
- strategies for building construction, and ability to integrate knowledge of structural principles and construction techniques;
- the physical properties and characteristics of building materials, components and systems, and the environmental impact of specification choices.

9 Adequate knowledge of physical problems and technologies and the function of buildings so as to provide them with internal conditions of comfort and protection against the climate. The student will have knowledge of:

- principles associated with designing optimum visual, thermal and acoustic environments;
- systems for environmental comfort realised within relevant precepts of sustainable design;
- strategies for building services, and ability to integrate these in a design project.

10 The necessary design skills to meet building users' requirements within the constraints posed by cost factors and building regulations. The student will have the skills to:

- critically examine the financial factors implied in varying building types, constructional systems, and specification
- understand the cost control mechanisms which operate during the development of a project;
- prepare designs that will meet building users' requirements and comply with legislation, appropriate performance standards and health and safety requirements.

11 Adequate knowledge of the industries, organisations, regulations and procedures involved in translating design concepts into buildings and integrating plans into overall planning. The student will have knowledge of:

- the fundamental legal, professional and statutory responsibilities of the architect, and the organisations, regulations and procedures involved in the negotiation and approval of architectural designs, including land law, development control, building regulations and health and safety legislation;
- the professional inter-relationships of individuals and organisations involved in procuring and delivering architectural projects, and how these are defined through contractual and organisational structures;
- the basic management theories and business principles related to running both an architects' practice and architectural projects, recognising current and emerging trends in the construction industry.

BUILT ARCHITECTURAL / URBAN DESIGN PROJECT EXAMPLE



Project title and location:

✕ Work and landscape intervention
in the Archaeological Complex of
Baelo Claudia, in Cádiz

Authors:

✕ Andalusian Historical Heritage
Institute (IAPH)

Year (period) of the project

✕ 2008

The work, started in 2008, has a first historical-landscape approach to the city of Baelo Claudia, a sub-project of intervention and a final action based on the proposal of itineraries, which improve the heritage reading (cultural and environmental) and the accessibility of the environment of the Inlet of Bologna. To do this, a basis of the action is first established, the project mechanisms are developed and finally the actions are planned and executed, in this case a series of built elements that delimit, close and generate a promenade through the archaeological complex.



Figure 1. Scheme of geographical identification of the areas intervened

Source: Projects Department, IAPH



Figure 3. Structure of the walkway over the dune of the coastal edge. Leisure areas and geometry translation of the shape of the cardo

Source: IAPH

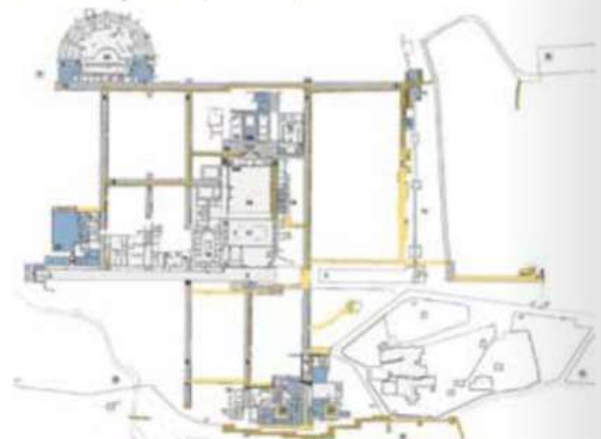


Figure 2. Intervention on the Archaeological Site of Baelo Claudia. General Planimetry

Source: Projects Department, IAPH

RELEVANT LITERATURE / SOURCES FOR FURTHER RESEARCH



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