DESIGN STUDIO 2: FORM AND MATERIAL

IE University
Professor: JOSE VELA CASTILLO
E-mail: jvela@faculty.ie.edu

Academic year: 22-23
Degree course: FIRST
Semester: 2º
Category: BASIC
Number of credits: 6.0
Language: English

PREREQUISITES
The students should have presented all the necessary documentation to access the Bachelor in Architectural Studies degree following the policies of IE University.

SUBJECT DESCRIPTION
Design Studio 2: Form and Material is the first year/second semester design studio, the second in the Design Studio sequence of the Bachelor in Architectural Studies. It is a propaedeutic subject that keeps developing the work already done in Design Studio 1: Idea and Form. Both subjects together lay out the FUNDAMENTALS of Design. They should be understood as a unit, yet at the same time each of them emphasizes distinct aspects of the design process.

Design Studio 2 interrogates the processes through which architectural objects reflect, interact with and transform the existing environment, with emphasis in both the materiality of architecture and in its symbolic (meaningful) capacities. Context, both historical and present, in its wide-ranging definition (social, political, economic, environmental, cultural, physical, etc.) is considered determinant in the design of the architectural object: in fact, any possible divide between an architectural object and the broader context in which it is built will be challenged along the semester. Designing architecture, thus understood, is equal to designing the bigger material and symbolic world in which human (and non-human) habitation takes place, and even more.

It is significant to consider that Idea, Form and Material, the three words that define the first-year studio, are not disconnected concepts stored in separated drawers, but the three interconnected figures through which architecture comes into being: conception, design and construction. These three figures coalesce into architectural concepts (or ‘ideas’), that provide the backbone of the built environment.

An architectural concept is not an abstraction or a Platonic ‘ideal’ that dwells in a realm beyond the tangible world. Produced by architectural imagination (following K. Michael Hays conceptualization), it has both a ‘form’, a particular configuration and a ‘materiality’, a physical reality. This means that architectural concepts come into being simultaneously intermingling these three aspects. A preexisting form cannot be stuffed a posteriori with an idea or a material as much as an idea cannot be later given a particular materiality or a form.
It should be noted that architectural ideas are distinctively architectural, which means that there is a particular type of knowledge to be found in architecture, and only there. But this does not mean that architecture shouldn’t establish exchanges with other disciplines in a quest for better understanding, interpreting, and changing (cf. 11th thesis on Feuerbach) the world. Different artistic media and practices (video, cinema, painting, sculpture, dance, music…), social science disciplines (such as sociology, social geography, anthropology or philosophy) and hard sciences (mathematics, physics) need to be engaged in fruitful dialogue with the discipline of architecture, which cannot be isolated in its own autistic autonomy.

**Design Studio II: Form and Material (DS2)** continues to develop the representational concepts and tools introduced in Design Studio 1 (DS1) Graphic Communication 1 and 2 (GC) and Digital Tools and Operations (DTO), and applies them in broader contexts. Drawings and other representation tools (models, maps, diagrams) are not only systems of re-presentation, but also systems of presentation, ideation, and imagination. It is important to carefully delineate the differences between mere representation and construction, between a simple rendering of what exists and its production as a meaningful object. The architect uses drawings and other representation tools (models, virtual reality but also writing or cinema) to explore and understand reality in order to change it, not just as a way of describing it. In that sense, representation techniques are also, or even mainly, production techniques: those that enable the architect to produce, present and communicate the embedded design ideas.

The architect is a seer. Its basic task is to ‘see’ what others can’t. What the architect ‘sees’ needs to be communicated, explained to others: needs to be shared. With the client, with other professionals that may help in the process of design, with the contractor, with the city administration and, especially, with society in general. Architectural design is the process of seeing, of understanding what exists and how it should be transformed through the mediation of architectural production. Representational tools are necessary both for the production of the design and for its communication to the others.

Designing is a complex process that unfolds in time. The students will be confronted with this increasing complexity along the design studio path in the first year. This growing complexity also demands different tools to be used productively in the design process. The semester will start with perception and the phenomenological understanding of the body, but quickly the symbolic aspects of architecture will be introduced, and, accordingly, new methods for mapping reality used. Managing complexity, finding ways of neither reducing it by oversimplification nor being overwhelmed and paralyzed by its sheer size is one of the key skills the students will practice in this course. Distinctive architectural ideas should help to express complexity in ways that makes easy to grasp and understand it.

Different scales and different levels of complexity will be analyzed through specific exercises, but always taking into consideration that focus into a singular scale does not mean that other scales are not present anymore. From the phenomenological scale of the individual human body to the social and political scale of the city, there is not only a whole range of intermediate steps that should be addressed, but there is also a fundamental connection that needs to be understood from the very beginning. In that sense, society is not considered as an abstraction but as the ‘being together’ of individual humans, each with their own body, interacting with a whole range of non-human actants. And this implies that the architectural decisions taken at the level of the singular human body will affect the society at large and the world (as a simple bench in a public plaza designed in a way that forbids people to lay and sleep in). And vice versa: apparently abstract social structures have profound impact at the smallest architectural level. If architecture is to house and shape the activities of all different human—and non-human—beings living together, it cannot focus on the objecthood of the detached architectural product, but on the entangled net of relations that traverses it. However, the intermediate scale of architecture as building has its own specific particularities that students will explore in its relations with the smaller scale of the body and the bigger scale of the social represented in the city.
Confronting the existing (the world in its full complexity) implies critical engagement, not mere observation. The architect is no neutral witness, but an active producer of reality. This means that analysis and criticism are basic skills to be developed at the individual and personal level. Accordingly, the students will not be given formulas or examples to be followed, but would be trained in how to use their critical capacities to discriminate, following clear and logical reasoning, relevant architectural content. Architectural knowledge can be deciphered after careful analysis of architectural works; design processes followed by other architects are accessible through critical observation (as you learned in DS1 and GC), as are the student’s own designs and design processes.

Designing is basically a process of taking decisions. Architectural ideas don’t spring fully armored like Athena from the head of Zeus. They are modelled, piece by piece, in direct and constant dialogue with reality, via the different crafts and skills of representation the students have learned and led by their critical capacities. This means that design implies working and reworking, a process in which intermediate stages must be understood not as the logical steps towards an already known goal, but as tentative stages in which new opportunities open up at every moment. To know which of these opportunities, these opened paths, must be taken, critical analysis should be practiced. At every stage of design, after every line in a drawing or piece in a model, the basic questions are: What’s next? What if? Why and why not? Any design decision taken closes some of the foreseen paths and opens new ones. The student needs to record, at every key moment, not only the path already taken, but the main reasons that led to take this or that decision. Because, in many cases, it will be necessary to return to this fork in the path. And try a different move.

STRUCTURE OF THE COURSE

The structure of the course follows a rational logic that guides the learning process of the student at every step. Each different assignment is carefully integrated into a logical sequence, and will be introduced with theoretical lectures, analysis of precedents and case studies and hands-on assignments.

Continued work in the studio is deemed necessary to fulfill the different intermediate and final objectives of the course. The physical studio space at the IE University building is not just a given space but a space that you should build to work in and transform into your ‘working place.’ It is a ‘protected environment’, a medieval scriptorium in which you and your design engage in productive discussion, pace Antonello da Messina. This is perfectly explained in an all-too-famous quote, yet worthy of being quoted again: ‘Inspiration exists, but it has to find you working.’ (Pablo Picasso). It cannot be truer.

Design Studio 2: Form and Material addresses the main questions that are posed in every single and possible architecture act and will help the student in giving adequate answers to all of them, without emphasizing any one in favor of the others. The main questions that this semester will address are summarized as follows:

Program, uses, function: Architecture is a built answer to an existing need or demand on the part of society. Architecture is tied to function and use, although they need to be understood broadly. In some cases, it is the architect who identifies the needs, in other cases it is the society or the individuals who pose the problems to be solved. In DS2 the student will explore the processes of identifying needs and transforming them into specific programs, with different levels of detail.

Space and body: Architecture is conceived by and for humans, although it also affects, interacts with and more often than not houses non-human creatures. One of the starting points of any design is the phenomenological configuration of the human body. Human understanding of, and relation with, space (and time) is constructed through the entanglement of our senses, perceptions and brain articulations with the myriad of stimuli that the body is engaged with. In fact, the common dualistic conception of a divide between our body, our perceptions and what is ‘outside’ is false: we form a compact unity with the world. Perception is always embodied perception. DS2 will make special emphasis in the relations between body, space, and architecture, to the point that this relationship will constitute the main framework of the semester.
Material and materiality: Architecture cannot be understood detached from its materiality. The struggle of matter against the force of gravity (i.e.: weight) is the initial physical condition of any architecture. Its form is always a built form, constructed in real materials: in stone or brick or glass. In some cases, even the first spark for a design comes from materials and materiality, from the capacities and properties of a given material, from its physical structure, its phenomenological qualities, or the way it is aggregated to form bigger configurations (its tectonics). Even ‘paper architecture’, that which is only present in drawn (or model) form implies materiality. The student will learn how to incorporate into the design process the material vector of architecture from the start.

Context and the world: Architecture is part of the world. It is immersed in the bigger context of human society, with its demands, aspirations, and desires. It cannot be self-referential, but should be designed, analyzed, and criticized as part of the broader world it both reflects and transforms. Cartography (aka mapping) is the tool to explore, understand and decipher architectural meaning in the existing reality. Students will use advanced tools to capture, understand and represent the material side of the real, but also the immaterial, the ordinary daily life or the major events, the teeny tiny subjective impressions of the city as well as the collective community trends.

Environment: Since the world, as said, is both socially and physically constructed it needs to be cared for, protected, kept for us and for the next generations. This implies environmental awareness and conscience in an effort to make the world, our world, durable in time, i.e. sustainable. For this, in the first place we must define the parameters and ecological systems that are referred to when we talk about sustainability and the demands and the effort of reducing the carbon footprint that humans leave on Earth, along with preventing resource depletion and pollution of the environment. We will do this through the lens of architecture, which historically has been and is a heavy consumer of raw materials and creates structures of huge energy consumption. In this semester we will focus on designing according to specific climate conditions and carefully consider how orientation, using materials responsibly, and reducing our carbon footprint, is not only a desirable approach to architectural design, but a necessity. We will do this first by trying to identify the ecological relationships of our given site, how considering temperature, weather conditions, sun paths, cast shadows, and prevailing winds, can help us not only create more sustainable designs, but more importantly help us to identify the needs of our users over time without depending on energy draining or polluting technologies to create comfortable environments. We will then implement this analysis by proposing a design for structures that help to benefit the existing ecology rather than harm it.

Environmental and sustainability considerations are necessarily a core element in any possible architecture design, and they need to be implemented at the very beginning of the design process and, consequently, of the design studio sequence in IE School of Architecture. The responsibility of the architect with the environment and with, in fact, the future world to come, necessary starts here.

Symbol and language: Architecture produces and communicates meaning in particular ways, and in that sense, it is highly symbolic. It has been already said that there is particular and specific architectural knowledge that is part of the discipline and that the student should be able to decipher in the buildings and designs. Design is also the selection and combination of architectural elements, that are put together meaningfully, pretty much as words following grammar rules into the creation of spoken or written discourse. This also implies that architecture is tied to narratives and narrativity. Architecture can communicate power for example, as seen in the imposing King’s Louis XIV palace of Versailles. Or poetry, as in the tiny Bruder Klaus chapel designed by Peter Zumthor. Or fear, as in Auschwitz Death Camp. All these different ways in which architecture is language will be explored during this semester of DS2, so the student can be fluent in it.
**Drawing:** Drawing techniques are not algorithms to translate ‘ideas’ stored in the brain to paper (or to model or the computer screen). They are the tools that allow these ideas to have a form, to be formalized, and to be given a materiality. It is only in the dialectic process that happens between hand and brain where the form of the design appears. Besides, drawings are the tools to communicate to others architectural designs before building and, more precisely, to give the necessary instructions for construction. Hence, drawings need to be accurate and precise, and should clearly communicate the main aspects of the design. They are the code in which architecture is thought, transmitted, and read. They are the language that every actor involved in the process of constructing a building speaks. DS2 will unpack this complex character of drawings and will, accordingly, emphasize the necessity of correct, precise, and skillful drafting, both by hand and using computer software. Learning how to dominate the tools and not being dominated by them, as often happens with CAD and BIM software, is one of the main objectives of DS2. An objective shared with other first year courses as GC, DTO and AG, with which DS2 will be fully coordinated.

**COORDINATION BETWEEN DS1 AND DS2**

As previously stated, Design Studio 1: Idea and Form and Design Studio 2: Form and Material address the FUNDAMENTALS that make up the base of the entire First Year Design Studio sequence for the Bachelor in Architectural Studies.

DS1 makes a special emphasis on questions of representation and the definition of architectural acts, while DS2 focuses on materiality and the phenomenological and social experience of architecture.

DS1 explores the ordinary and the everyday life, defining the minimum conditions of inhabitation and underlying the functional dimension of architecture; DS2 foregrounds the political dimension of architecture, its signifying capacity, its ability to give voice to concepts and meanings in a social context. It also addresses the experimental condition of architecture, that which makes it at the same time poetical and practical, but especially that which allows architecture to intervene in the concrete reality of everyday life by foreseeing what is not present yet, but should be.

Hence, DS1 and DS2 explore the relationship of the architectural work with site, function, form and materiality in somewhat opposed yet complementary ways.

In DS1 the site condition is fictional and abstract, and relationships between a point of view and an architectural threshold are usually established through function. In DS2 the site condition will be concrete and will provide a specific context in which the project will be produced. An important part of the project to be developed in DS2 will be site-analysis, surveying and mapping. DS1 primarily focuses on the exploration of the activities of everyday life in the domestic scale, while DS2 explores the extra-ordinary activities that take place in a city and examines the contextual relationship between public and private spaces.

In DS1 students explore the question of architecture as frame (its ability to create a relationship with the outside); in DS2 the big question the students will explore is architecture as interface (its ability to create a relationship with society and culture and a coherent narrative meaningful to collective human—and non-human—life).

**COORDINATION BETWEEN DS2 AND GRAPHIC COMMUNICATION (GC)**

Graphic Communication 2 will explore the graphic representation of complex systems of diagramming and organization that you will gather and process in DS2. It will continue to focus on observation translated into representation through technique. While DS2 will concern itself with the processes of design, Graphic Communication will help you to develop the skills needed to clearly reveal and explain that process.

**COORDINATION BETWEEN DS2, DIGITAL TOOLS AND OPERATIONS AND ARCHITECTURAL GEOMETRY 1**
OBJECTIVES AND SKILLS

Digital Tools Operations serves as the basis for Architectural Geometry 1. Both provide the student with the fundamentals of digital representation and descriptive geometry, specifically applied to architecture and urban design. Descriptive geometry deals with the two-dimension representations of objects in three-dimensional reality, using both analogical and digital tools. It complements and further develops some of the basics learned in GC1 just at the beginning of first semester (linear perspective, orthographic projections, dimensioning, axonometric system). DTO and AG1 provide, then, fundamental tools to allow architectural imagination to fully develop spatial intuitions, and in these capacities its teachings will be applied in DS2 to produce substantial designs. These tools provide the student with the vocabulary and the grammar of the language. DS2 will teach how to use them in complex narratives, in the telling of meaningful stories.

OBJECTIVES AND SKILLS

(Per Ministerial Decree EDU/2075/2010, 29 of July; and the official accreditation request for the Bachelor in Architectural Studies, July 2015; see BOCYL, 14 March 2018: p. 10477-10481)

2.1 BASIC AND GENERAL COMPETENCIES

CB1: Students have demonstrated knowledge and an understanding of a given area of study, building upon the foundation of secondary education, supported by advanced texts, and including aspects that engage the latest state of the art in their area of study.

CB2: Students know how to apply their knowledge professionally to their work or vocation and possess the competencies that are often demonstrated through elaboration and defense of arguments and the resolution of problems within their area of study.

CB3: Students can gather and interpret relevant facts (usually within their area of study) in order to make judgments that include reflection on relevant social, scientific, and ethical topics.

CB4: Students can transmit information, ideas, problems, and solutions to both specialized and non-specialized audiences.

CB5: Students have developed the necessary learning skills to continue their studies with a high degree of autonomy.

CG2: Knowledge of the role of the fine arts as a factor that can influence the quality of architectural creation.

CG7: An understanding of the relationship between people and buildings, and between buildings and their contexts, as well as the need to relate buildings and adjacent spaces to needs and to the human scale.

2.2 SPECIFIC COMPETENCIES

PREPARATORY MODULE (CE1-11) (W: Workshop Format)

CE1: Ability to apply graphic knowledge to the representation of spaces and objects.

CE3: Adequate knowledge of systems of spatial representation, as applied to architecture and urbanism.

CE4: Adequate knowledge of the analysis and theory of form and the laws of visual perception, as applied to architecture and urbanism.

CE5: Adequate knowledge of metric and projective geometry, as applied to architecture and urbanism.

CE6: Adequate knowledge of graphic surveying techniques in all phases, from sketching to scientific restitution, as applied to architecture and urbanism.

CE10: Adequate knowledge of the fundamentals of topography, hypsometry, cartography and site grading, as applied to architecture and urbanism.

2.3 TRANSVERSE COMPETENCIES OF THE UNIVERSITY

CT2: Ability to exercise professional behavior in accordance with constitutional principles and ethical values of the respective profession.

CT3: Manage unforeseen situations with the capacity to respond to changes within organizations.

24th October 2022
CT4: Use disciplinary knowledge to analyze and evaluate current situations.
CT5: Integrate oneself into interdisciplinary and multicultural teams to achieve common goals in a context of diversity.
CT6: Work actively in an international context.

2.4. SPECIFIC OBJECTIVES AND SKILLS

This course will emphasize the fundamentals of architecture and of architecture design. The main goal is to train the students in the different processes and scales of designing architecture, starting from the individual body and reaching the common space of the city. In that sense the students will develop the necessary graphic tools to represent the existing world in all its complexity and scales (CE1, CE3, CE5), understanding its material, formal and social construction (CE4). An important part of the semester will be devoted to the practice of mapping techniques, including data collecting and graphical restitution of existing buildings and sites in the city (CE6, CE 10), in order to better understand the reality to which their designs will dialogue with and respond to.

The experience of physical spaces will be complemented with the experience of the social spaces that build the city at large, in the belief that architecture cannot be detached from the moment and place in which it is both lived and built (CG7).

A key element in the semester will be the development of critical capacities, both through examples (not only coming from architecture, CG2) and through the close analysis of their own designs. If designing is taking decisions, an advanced critical awareness is one of the most necessary tools of the designer in order to both provide solid reasons to test the decisions already taken and to come across new ones that can provide better answers to the design questions posed.

METHODOLOGY

3.1. Teaching methodology

The methodological system used in DS2 pursues to make students aware of the fact that the knowledge they are going to acquire in this subject is, broadly stated, the consequence of the personal experience and critical self-reflection that they can accumulate on the topics that are proposed in the program.

The subject is organized in a series of design proposals (some of them individual, others collective) that are accompanied by theoretical lectures that follow a progressive and additive analytical sequence.

The material will be learnt through the development of the design proposals, the content of which will be properly explained and reviewed in class through a series of critical sessions.

The lectures will consist of a series of classes on architecture design that will provide students the necessary information to produce critical and formal analysis of architecture and to design following these analyses. The lectures will help to explain, through theory and through architectural examples, the fundamentals of the different assignments and the main competencies as developed in the syllabus. The lectures also will prepare them for historical inquiry and for research in the material, technical, social, environmental and economic foundations of architecture.

By the end of the semester the students acquire a high degree of control over the process of design.

IMPORTANT NOTE: Although we live in uncertain times, we expect that the semester will develop in its traditional format, that is on-site and in Studio. For that reason, students are only permitted to attend online with prior arrangement with the architecture department and only under the most urgent circumstances.

Development of design projects:

The professor will always introduce the design project giving a brief description of the limits of the intervention and the basic objectives that will need to be pursued. Drawings, photographs, texts, and references will be brought to class in digital format. Students will be able to download these documents from the IE Campus. Students are encouraged to broaden and complete this documentation either individually or in group, relying on the resources of the library or different databases.

24th October 2022
Students will work on their design projects both individually and in groups. Over the critical sessions, students will present their exercises in front of the rest of the class, by means of drawings, models, power point presentations or a simple written text. Corrections will follow both the desk-crit method that consists in correcting the work while being developed by the student, and the pin-up system, a more formal method that consists in hanging up all the work in a vertical wall. The professor will comment on and correct, publicly, the most outstanding aspects of each presentation in order to lead the students towards the different potential lines of development and research of the design projects. Peer to peer feedback will also be practically articulated.

3.2. Student learning method/Distribution of ECTS load

Class development and students’ dedication:

The subject of DS2 consists of 6 ECTS units, equivalent to 60 IE sessions (or 90 hours of f2f classes). There will be usually 3 sessions per day of class, typically one day of class per week (and exceptionally two) during the semester.

Lectures will introduce the theoretical theme from which the students will draw the basic foundations to develop the exercise in and outside the classroom. An important part of each class will be devoted to reviewing the evolution of the design projects.

Public corrections of the design projects will represent the intermediate moment in which the instrumentality of the general concepts explained during the lectures and discussed in the classes can be tested. These tutorials will try to follow the evolution of the learning process of the students and will help the students get used to showing their work in public, both graphically and verbally, from the initial stages of their analytic and design work.

The character of this subject is primarily practical, which demands students to work outside the class consistently. The design projects will be assessed during in-class sessions and the mid-term and final reviews. External jurors will be invited to the reviews.

Communication and supporting tools:

DS2 will take advantage of the IE Campus (Blackboard Ultra). Although the professor will be present in class every week, students will rely on the different tools of the IE Campus in order to download and upload documents, the different steps of their exercises, leave comments on their own work –or that of their classmates– and formulate different questions. Personal communication between the professor and the students, besides the office hours and classes, will also happen through email in a fluent way.

Class electronic requirements:

The use of a laptop in class is necessary to adequately follow the classes. However, the use of Wi-Fi in class for any activities not related to this course will hinder the grade in participation. Absolutely no messaging or texting is allowed during the class.

Distribution of the ECTS load:

The analytical and design proposal exercises are the basis of the evaluation of the students’ work and will be necessarily completed and submitted. The development of these exercises is accumulative and the assessment is continuous.

3.3. Training Activities

AF1: Workshops and Laboratories, 30 hours
AF2: Lectures, 18 hours
AF3: Discussions and Seminars, 10 hours
AF5: Projects presentations, 2 hours
AF6: Case studies, 2 hours
AF9: Individual study, 18 hours
AF10: Submission preparation, 70 hours

ECTS subjects: (150 hours are required = 6ECTS x 25h)


<table>
<thead>
<tr>
<th>Teaching methodology</th>
<th>Weighting</th>
<th>Estimated time a student should dedicate to prepare for and participate in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>20.0 %</td>
<td>30 hours</td>
</tr>
<tr>
<td>Discussions</td>
<td>20.0 %</td>
<td>30 hours</td>
</tr>
<tr>
<td>Exercises</td>
<td>30.0 %</td>
<td>45 hours</td>
</tr>
<tr>
<td>Group work</td>
<td>20.0 %</td>
<td>30 hours</td>
</tr>
<tr>
<td>Other individual studying</td>
<td>10.0 %</td>
<td>15 hours</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100.0 %</td>
<td>150 hours</td>
</tr>
</tbody>
</table>

PROGRAM

4.1. General contents
Typically, the semester is developed as a continuum. However, it is also split in two parts separated by the mid-review. The two parts deal with two main sets of architectural scales, with increasingly more complex programmatic questions and progressive engagement in site analysis within broader social/urban context happening in the second part. The first part remains more focused on issues of perception, body, sense-and-site-mapping and program/use at a more intimate scale. Materiality, drawing, and phenomenological perception function as constant links through the semester. A participatory site visit for advanced site mapping performs the link between the two sections. In any case, the two parts are understood as part of a unified and single comprehensive design process.

The conceptual framework for the studio semester is twofold:
-On the one hand, it focusses on the exploration of the experiential as well as the social and symbolic dimensions of architecture, engaging both the individual and the collective (including other living actors in the external world).
- On the other, it closely explores the physical and material conditions of architecture, from basic assemblages of elements to complex environmental systems.

This comprehensive framework also allows the students to thoroughly explore the poetic dimension of architecture and its ability to signify and to create meanings that can provide an experiential and symbolic engagement with places and cities.

A general narrative is provided at the beginning of the semester to set the theoretical and practical framework for the architectural explorations of the real that the students will undergo. This narrative will be addressed from different scales and points of view, in order to fully grasp the bigger picture of architectural engagement. The different projects assigned to the students will involve working processes that are authored at times individually, and at others, collectively. The assignments will help the student to progress in the exploration of the different range of scales in which architecture works, from a volume to house the size of the human body to a series of constructions that can shelter a community.

4.2. Description of core exercises
The development of the project will be divided into 4 phases as follows:

A. Architecture as Body Interface: Site and senses mapping (collaborative/individual)
In DS1, your investigations into the threshold dealt with the liminal space between two entities with distinct psychologies, such as the interior/exterior, public/private or passive/active. In DS2, you will begin by thinking how these thresholds are, in the first moment, constructed by the human perception, the different senses and by the human body itself, establishing what can be defined as an ‘embodied experience’ of reality.
In the recent pandemic times, where covid-19 forced many of us to confine in private spaces and to retreat into digital interactions through screens rather than through physical and material ones, the role of the body, of the senses and perceptions in the construction of reality has been challenged. The way virtuality and physical distance influences our material and social interactions with sites, people and other non-humans has been reevaluated. This initial assignment helps to put the body back to the center of human experience and addresses its fundamental role in the construction of meaningful architectural spaces.

The first assignment is divided into two main parts as follows:

A.1. The semester starts by a hands-on mapping of the intimate interactions of the triad body-senses-space using specific narrative techniques. The students will use video as a tool to actively explore these complex interactions by actively mapping the movement of the body in space and its engagements with domestic and social spaces across time. Starting with the production of a detailed drawn storyboard, the students will create a narrative framework that will enforce the body-sense-space interaction from subjective points of view, and will develop it using video techniques (video mapping). The aim is to develop a recorded document of an embodied experience of the world as a starting point for further architectural investigations.

A.2. Once the video document is produced, the students will concentrate in analyzing and extracting spatial and temporal information from it, thus mapping its architectural content. Orthographic drawings will be used in the first place to transfer the four-dimensional spatial of the video experience to two-dimensional mapping drawings. Site plans and sections that explore body movement interaction with the site will pave the way to a bigger scale set of plan and section drawings of specific spatial occasions happening within the broad narrative.

Three dimensional axonometric drawings and models will help in this process of reading, representing and transforming the reality mapped in the video. The sequence, then, goes like this: first video maps the embodied experience of reality, then drawings (and models) map the constructed narrative already contained in the video and transfers it into the conventions of architectural drawing.

The compound video plus drawings and models acts as a kind of abstract ‘mapping machine’ which output is a defined ‘architectural site’ to be further developed in the following assignment.

The work will be carried out in groups with individual responsibilities within them.

B. Architecture as Social Interface: Building the site (individual)

The next step is to develop the abstract assemblage of video, drawings and models already created into a first material architectural object. This means that a main activity and user (let’s not call it a program yet) needs to be introduced. This activity and user will help to implement the transition from the individual body and the embodied experience of the space to the more complex interaction between different bodies (human or non-human) in a social context: the ‘social interface.’

The social I, at this level, a particular and restricted context and not society at large. The scale of the architectural piece to be designed is small (the size of an architectural ‘folie’), however its connection with the broader context in which it is placed implies a more ambitious scope for the design.

The architectural device thus produced might be ephemeral and reusable. The student will develop a personal narrative to which it should accord. Materiality will be addressed from the beginning as a way of form-giving. Site remains and abstract construction in reality, and is not tied to an existing spot in the world.

Orthographic drawings and physical models will be the tools to both design and represent the architectural design. No computer drawings are allowed at this step.

Both assignment A and assignment B will be presented in the Midreview.

C. Mapping: Participatory Site-Visit (collaborative/individual)

After these incremental explorations of space, the senses and the body, and the spatial-social interactions involved, the second part of the semester starts with the students jumping into the full complexity of the ‘real’ world. The following assignment confronts them with the multilayered reality of a city and a determinate site in it.

24th October 2022
At this point the students are already familiar with ‘architectural mapping’, yet now it is the moment to fully develop it. The point is to discover, understand, interpret and represent ‘what is there’ with the aim of, later, intervene in and transform it.

The aim is to understand a piece of urban tissue from many different points of view using different representational techniques to identify potential pocket sites and discrete areas of latency within the city, diachronically and synchronically. The resulting material will serve as the basis for the final project of the semester.

The entry point to the mapping project will be the ‘site’ built in the first and second assignments (i.e., the abstract mapping machine), both in its literal sense (the architectural design produced) and in its metaphorical sense (the enhanced understanding of the relations between body, space and activities the student developed). They will serve as the ‘goggles’ from which the reality of the site will be read, analyzed and represented. Both the body-interface and the social-interface will perform now their task as machines that direct the search that will result in a comprehensive (yet biased) site-analysis.

Analytic diagrams that trace the plan of the city will serve to project a multi-layered, simultaneously historical and meta-historical story of the city, opening up the context to the past and to the future. Photo-joiner techniques will allow to produce a detailed and personal haptic survey of the given area. Spatio/Visual urban transects will address the narrative experiencing of architecture in body motion. Drawings, photographs, and maps, will sustain anthropologic layers and personal impressions of the site, blending the phenomenological and the abstract-mathematical in a comprehensive, complex and instrumental output.

Environmental analysis is also highlighted in mapping. The students would carefully survey the key physical data of the site (local climate conditions, solar orientation, winds prevalence, light-shadow patterns in urban environments, sound-noise distribution, pollution etc.) so they can apply them later to the final design.

The work will be carried out in groups and individually at different stages of its development.

D. Site Re-Programming (individual)

After identifying a defined site inside the broad city area previously mapped, the last project will deal with the reprogramming of this site, introducing a new program (now going beyond the mere activity) into an existing building which complements, improves or transforms what is already there.

Students will devise a detailed program of their own according to their site of choice and the potentials identified through mapping, building on the work developed in the previous assignments. The program will be structured to identify spatial relationships between new uses and existing ones. Direct material engagement with the existing is a requirement of this assignment. Addition, subtraction, transformation, recycling and upcycling will be commonly used verbs.

The body-interface and the social-interface will cohere now in a complex architectural-interface, that developing the previous spatial relations and experiences, the embodied perception of the world, and the wider role of the society at large, will allow to emerge a critical architectural proposition.

This final part of the semester invites the students to reflect on the processes of transformation and adaptation that are produced in any pre-existent work of architecture along time. Changes in society, in context, in tastes, in economy and so on, affect architecture and demand new responses to the new situations through the transformation and re-elaboration of existing constructions.

The intervention, though permanent, would consider its potential mobile transformations across time and space. Provisions for its enlargement or shrinking and for further reprogramming need to be considered. Dialog between the permanent materiality of the existing and lighter conditions of the new design are, accordingly, to be thoroughly explored.

The previous detailed mapping of environmental conditions will help the students to adequately ‘orient’ their intervention within the complex urban conditions. Material definition, taking into consideration the pre-existing constructions but also sustainable values, will be carefully developed.

4.3. Schedule of class sessions:
SESSIONS 1 - 2 (LIVE IN-PERSON)

SESSIONS 3 - 5 (LIVE IN-PERSON)
Architectural narratives. Sequential layout/storyboard. First video draft. Pin-up critique and in-class development.

SESSIONS 6 - 8 (LIVE IN-PERSON)
Storyboard and second video draft. In-class development and desk-crits.

SESSIONS 9 - 11 (LIVE IN-PERSON)
Final video. In-class presentation and critique of the First part of first assignment. Introduction to Second part of first assignment.

SESSIONS 12 - 14 (LIVE IN-PERSON)
Spatial representation applied to architecture. Site and narrative drawings (drafts). In-class development and desk-crits.

SESSIONS 15 - 17 (LIVE IN-PERSON)
Advanced site drawings. Orthographic set (draft) and model (draft). In-class development and desk-crits.

SESSIONS 18 - 20 (LIVE IN-PERSON)
Second part of first assignment due. Presentation of second assignment. In-class development.

SESSIONS 21 - 23 (LIVE IN-PERSON)
Assemblage of materials. Tectonics of architecture. Design, program and material. 1st iteration. In-class development and desk-crits.

SESSIONS 24 - 26 (LIVE IN-PERSON)
Design, program and material. 2nd iteration. Pin-up. In-class development.
SECTIONS 27 - 28 (LIVE IN-PERSON)
Design, program and material. 3rd iteration.
In-class development and desk-crits.

SECTIONS 29 - 31 (LIVE IN-PERSON)
Second assignment due.
MIDREVIEW

SECTIONS 32 - 34 (LIVE IN-PERSON)
Third assignment presentation. Theoretical introduction: Mapping and advanced mapping techniques.
Coordination with Graphic Communication 2 on Mapping techniques. Overview of graphic surveying techniques, topography, hypsometry, cartography and site grading.
Preliminary work for mapping assignment starts.
In-class development.

SECTIONS 35 - 37 (LIVE IN-PERSON)
Participatory Site-Visit. Sketching and active mapping (to be taken at the end of visit).
The visit will help to understand the relationship between people and buildings, and between buildings and their contexts, as well as the need to relate buildings and adjacent spaces to needs and to the human and non-human scales.

SECTIONS 38 - 40 (LIVE IN-PERSON)
Introduction to Climate and the City (general Climate zones + specific conditions of the given place: temperatures, pattern of rains, prevalent winds, sun hours etc. that affect cities and its architecture and how). Case Study.
Comprehensive drawings and photo-documentation of the site. Orientation and environmental diagrams.
In-class development.

SECTIONS 41 - 43 (LIVE IN-PERSON)
Advanced mapping drawings. Layered mapping. Final diagrams.
Pin-up and in-class development.

SECTIONS 44 - 46 (LIVE IN-PERSON)
Mapping assignment due.
Fourth (last) assignment presentation.
In-class development.

SECTIONS 47 - 49 (LIVE IN-PERSON)

24th October 2022
Overview of structural systems.
1st iteration of design. Orthographic projections.
In-class development and desk-crits.

SESSIONS 50 - 52 (LIVE IN-PERSON)
Introduction to Building Code.
In-class development and desk-crits.

SESSIONS 53 - 55 (LIVE IN-PERSON)
3rd iteration of design. Exploded axonometric (showing construction systems), draft. Orthographic projections (final draft). Relevant views (collage, photocollage, render, sketches…).
In-class development and desk-crits.

SESSIONS 56 - 57 (LIVE IN-PERSON)
Final axonometric and orthographic drawings. Views. Preparation of Final submission.
In-class development and desk-crits.

SESSIONS 58 - 60 (LIVE IN-PERSON)
FINAL REVIEW
BIBLIOGRAPHY
Recommended
- James Corner and Alex MacLean. *Taking Measures Across the American Landscape*. Yale University Press. ISBN 9780300086966 (Digital)
EVALUATION CRITERIA

6.1. GENERAL DESIGN STUDIO SEQUENCE OBSERVATIONS

Student progress is monitored via regular individual and group tutorials, and pin-ups. There will be two critiques (midterm and final reviews) in which students are expected to produce a coherent visual and verbal presentation of their design proposal and to communicate and debate their work with others.

Grading will be based on the completion of periodic assignments, attendance and punctuality, student-instructor dialogue, participation in class-wide critiques and discussion, and the individual development of the design process. All these factors are equally important in the final evaluation and neither will take precedence over the others.

6.1.1 Midterm evaluation

After the Midterm Review, students will be evaluated based on four items:

- **PROCESS**, which will encompass work habits, production, development, and ability to evaluate and incorporate the received criticism.

- **CONCEPT**, which will evaluate the architectural ideas embedded in the design.

- **CRAFT**, which will evaluate the material and graphic quality of the work present (models, drawings, etc.)

- **DESIGN**, which evaluates the adequacy of the design to the concept.

Failing to present, verbally as well as graphically, or an absence during the midterm review will translate into the deduction of 2 (two) points from the final grade.

After the Midterm Review, students will receive a non-binding grade as an indication of her or his progress at that point of the semester. This grade will be based on the following scale:

- **Check**: the student has reached the goals set up for the first part of the semester.

- **Check +**: the student has surpassed the goals set up for the first part of the semester.

- **Check -**: the student has not met the minimum goals set up for the first part of the semester.

This grade will not determine the final grade and should be taken as an indication of progress.

6.1.2. Final Evaluation

For the Final Review the students will receive a grade on a scale from 0 to 10, with a minimum passing grade of 5.0.

After the Final Review, and considering the totality of the work developed over the course of the semester, students will be evaluated on four areas:

- **PROCESS**, as described above, applied to the entire semester.

- **CONCEPT**, which will evaluate the architectural ideas embedded in the design.

- **CRAFT**, considering the material and graphic quality of all the work developed and presented.

- **DESIGN**, that takes into consideration the correct development of the main conceptual and technical ideas into architectural form

Failure to participate in the final review, in terms of deliverables or in terms of attendance, will automatically translate into failing the whole course with a grade not higher than 4,5.

No late submissions will be accepted.

The minimum attendance allowed will be that established in the IE University regulations: those students that do not attend at least 70% of all sessions will fail the course with a 0,0 and will proceed directly to third enrollment.

24th October 2022
Students that have failed the subject in first enrollment pass to the second enrollment, except those who do not meet the minimum attendance percentage. The maximum grade a student may achieve in second enrollment is 8.

6.1.3 Grading Standards

According to IE University policies, the students will be evaluated in a scale from 1 to 10. The standards of each grade are described below:

1, 2, 3, 4: Not passing level of work -- significant areas needing improvement and/or not enough deliverables to properly represent the project strategy.

5: Passing level of work with a few areas needing critical improvement, and/or the need for developing minimum required deliverables to properly represent the project strategy.

6: Fair level of work with some areas needing critical improvement.

7: Consistent, solid work during the whole semester. Solid grade, student producing what is expected at that year level.

8: Advanced level of work for what can be expected at that year level.

9: Exceptional level of work, within the standards of a slightly higher year-level of studio. Starting on a 9, the student could (according to the necessary consensus among professors) receive a MH as a recognition of an exceptional work.

10: Beyond exceptional level of work, within the standards of a much higher level of studio.

6.2. DSI EVALUATION CRITERIA AND WEIGHTENING

This course will involve the following evaluation methods:

**SE1**: Attendance and Active Participation

**SE2**: Submission and/or Presentation of Group Projects

**SE3**: Submission and/or Presentation of Individual Projects

The final projects will be evaluated, with a grade number (from 0 to 10) according to the following criteria:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Percentage</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE2, SE3: PROCESS Development of the proposed exercise</td>
<td>22 %</td>
<td>Analytical and synthetic abilities/ Development of the design idea</td>
</tr>
<tr>
<td>SE2, SE3: CONCEPT Ideas, narratives, and argumentation</td>
<td>23 %</td>
<td>Proposal’s rigorousness, coherence, and character/ Appropriated and well-structured presentation</td>
</tr>
<tr>
<td>SE2, SE3: DESIGN Adequacy of the design to the concept</td>
<td>23 %</td>
<td>Correct development of the main conceptual and technical ideas into architectural form</td>
</tr>
<tr>
<td>SE2, SE3: CRAFT Formal presentation of the developed ideas</td>
<td>22 %</td>
<td>Ability to graphically express the ideas /Ability to formally materialize ideas according the required representation systems</td>
</tr>
<tr>
<td>SE1: PARTICIPATION Attendance and active participation in class</td>
<td>10 %</td>
<td>Active participation in class /Research beyond the class</td>
</tr>
</tbody>
</table>

Second Enrollment (extraordinary):

24th October 2022
Students that have failed the subject in first enrollment pass to the second enrollment. As explained, those who do not meet the minimum attendance percentage according to IE University policies will not have the option of attending the second enrollment and will automatically pass to the third enrollment.

For those attending the second extraordinary exam period, the exam will have two parts: Part I that will be a presentation of the project originally produced during the ordinary period with a further development of those areas that were underdeveloped for the final review, and Part II which consists on a design exercise to be presented and administered the day of the exam. The students will have to pass Part I to be able to pass to Part II. Those students that do not pass Part I will go to third enrollment.

Part I and Part II should obtain a passing grade for the student to be able to pass the second enrollment. The minimum grade to pass the second enrollment is 5.0.

The second enrollment conditions and requirements will be explained by the professors in a specific document handed out to the students that fail the class. The students attending the second enrollment have the right of requesting office hours to follow the progress made in the improvement of their projects.

6.3 GRADING, ATTENDANCE AND PUNCTUALITY NOTES:
1. Students have access to a total of four enrollments, in two consecutive academic years.
2. Students must attend at least 70% of all class sessions to pass the class. Class attendance will be carefully controlled by the professor. Students who do not meet this minimum percentage automatically fail both first and second enrollments, and are placed directly in the third enrollment.
3. Regular and punctual attendance is fundamental for the fulfillment of the continuous evaluation requirements. Any student who arrives more than 10 minutes late to the beginning of the class will lose the attendance of that class.
4. Grading of students in the extraordinary enrollments will follow these guidelines: Students that have failed the subject in first enrollment pass to the second enrollment, except those who do not meet the minimum attendance percentage and therefore pass directly to the third enrollment.
5. The maximum grade that a student may achieve in second enrollment is an 8.
6. All extraordinary exams and evaluations must be held on-campus. Should a student be unable or unwilling to return for a make-up exam for the 2nd enrollment, the school can only offer the advice to enroll again in the class in 3rd enrollment in the following year.

**PROFESSOR BIO**

Professor: **JOSE VELA CASTILLO**

E-mail: jvela@faculty.ie.edu

**JOSE VELA CASTILLO**

Dr. José Vela Castillo (ETSAM-UPM) teaches History and Theory of Architecture and Design Studio at IE School of Architecture and Design (Segovia and Madrid, Spain).

His writings have been published in Spanish and English in numerous journals, including: Nexus, VLC, REIA, Charrette, Architecture and Culture, Conditions-Independent Scandinavian Magazine for Architecture and Urbanism, Arquitectura, Zarch, i2, and others. He has presented papers in various international conferences on architecture. His more recent publications are:

—(2022) TRANSNATIONAL EXPERTISE AND LOCAL POLICIES FOR THE ARCHITECTURE OF SPANISH TOURISM INDUSTRY

(Co-Author: S?la Karata?)

24th October 2022
In: Sibel Bozdo?an, Panayiota Pyla, and Petros Phokaides (ed.), *Coastal Architectures and Politics of Tourism. Leisurescapes in the Global Sunbelt*
   Ed. Routledge, London (2023)
   ISBN 9781032147208

—(2022) SHAPED FROM ABOVE: CARTOGRAPHIC DOMINATION AND U.S. MILITARY INFRASTRUCTURE IN 1950’S SPAIN
   In: Joseph Heathcott (ed.), *The Routledge Handbook of Infrastructure Design. Global Perspectives from Architectural History*
   Ed. Routledge, London (2022)
   ISBN: 9780367554910

Vela Castillo is also author of the books *(De)gustaciones gratuitas: De la deconstrucción, la fotografía, Mies van der Rohe y el pabellón de Barcelona* (Abada Editores, 2010; portuguese translation: Casa da Arquitectura, 2012) and *Richard Neutra: Un lugar para el orden: un estudio sobre la arquitectura natural* (Universidad de Sevilla, 2003).

*He appreciates ghosts* (and: PLS).

**OTHER INFORMATION**

Contact: jvela@faculty.ie.edu
Office hours: By appointment.