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EXERCISE II SYLLABUS

## **A COLLECTIVE SENSE OF HOUSING**

### **URBAN AND ARCHITECTURAL PROJECT FOR COLLECTIVE HOUSING**

#### **EXERCISE FRAMEWORK**

The second work of semester VI aims to develop project skills based on reflection on the topic of collective housing, starting from an urban context for the definition of the building, addressing contemporary challenges.

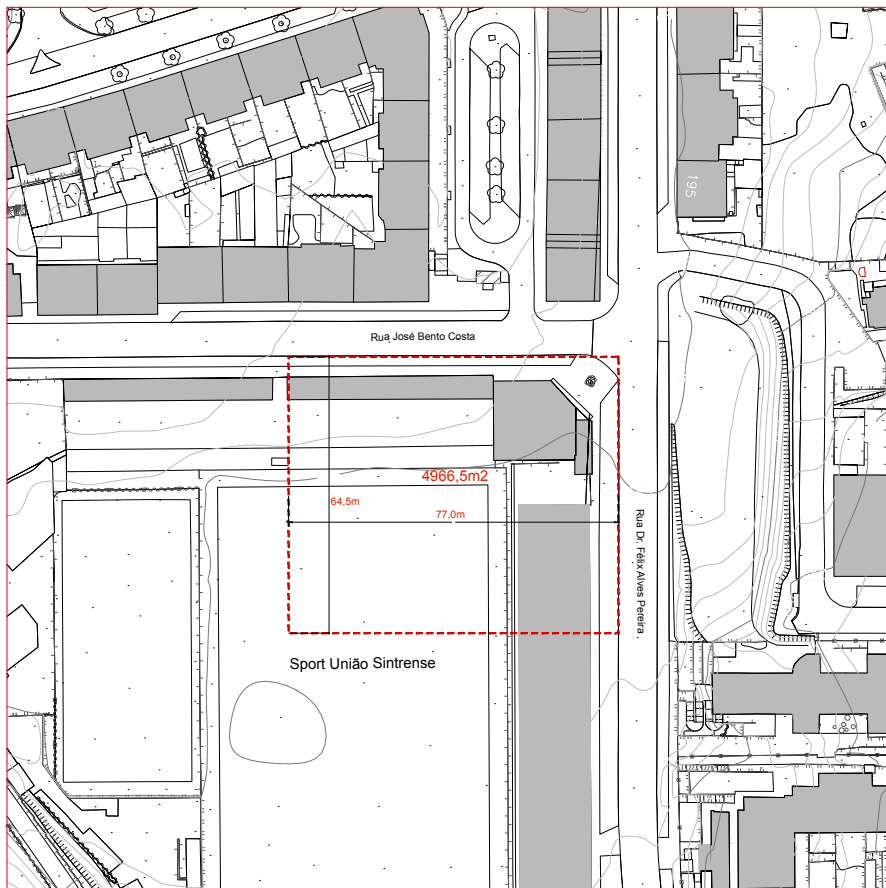
In this academic year 2019/2020, the project exercise of the 2nd semester focuses on the same site where the project for the Curricular Unit of Project Laboratory II was elaborated. The central exercise of Project Laboratory III focuses on the space next to the one worked in Project Laboratory II and considering the project developed in the 1st semester by the student as an “academic” urban commitment

Thus, the corner defined by Rua Dr. Félix Alves Pereira and Rua José Bento Costa is proposed as an intervention area, integrating a wider urban operation result of the conversion of the sport complex of Sport União Sintrense to a new urban area, within the framework of the academic setting for the relocation of the club's facilities in a new sports complex in Sintra.

The intervention area, of 4,966.5 m<sup>2</sup>, is defined from the corner and establishes the definition of two new street (automobile or pedestrian), parallel (or close to it) to the existing streets, adjacent to the external extremes of the area, according to the drawing below and considers the demolition of the entire existing buildings.

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In addition to the general framework for the construction of the city, based on generic collective housing programs properly articulated with other functions and spaces of a collective use, new questions arise such as the creation of a new urban project that takes into account the sense of urban continuity and the definition of new street.

### **OBJECTIVES**

The exercise deepens the themes raised in the first semester and has as main objective to answer, simultaneously:

- (i) Adequate functional resolution of a collective housing program, which must necessarily overlap, on different floors, the housing program, the commercial program and the basement parking;
- (ii) The development of a qualified piece of architecture, intentional in its language and aesthetic party, framed by references from Theory and History of Architecture;
- (iii) Its effective, correct and complete technical implementation in its representation at the various scales, supported by an elementary structural design and by areas for hosting infrastructures.

When developing areas of intersection with the other curricular units of the 2nd semester, it is intended to implement a "synthesis of knowledge" in a practical exercise, making a disciplinary meeting of various valences in Architecture possible in the last semester of the Degree in Architectural Studies.

In addition to the generic issues identified above, the project should reflect on the contemporary urban and architectural residential condition, namely those arising from the obligation of **#stayhome**, generating new debates on the demands and perception of the individual, family and collective space. In the current global context of **#stayhome**, **#homeoffice** and **#homestudy**, we ask ourselves what are the resources of architectural project, in built and non-built space, that can respond to the current functional and societal demands of individuals and families, namely:

**Flexibility and Adaptability** - the demands for multifunctionality in domestic spaces, as well as common spaces in buildings, require a rethink of conventional housing models, promoting the ability of each family to adjust the space to its needs.

**Transition spaces** - in this same context, transition spaces can be assumed as spaces of relationship between the domestic space, the collective space and the public space, as areas of individual and / or collective decompression, being outside at home.

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**Hybrid spaces** - in the context of collective spaces, hybridity leaves space to accommodate unexpected uses.

The exercise also addresses specific objectives.

With the development and conclusion of the exercise, the student should:

- Establish relationships between the proposed building(s), the preexisting ones and the surroundings, at the level of the buildings and exterior spaces;
- Recognize and use different forms of repetition and aggregation of apartments, as structuring systems that convey unity, extension and diversity;
- Recognize and deal with preexisting rules (regulations and norms);
- Design houses according to clear and coherent principles, which recognize and welcome different practices and times (day-to-day, seasons, generations, new requirements);
- Articulate and dimension common accesses and circulations as effective functional structures, qualified spatial structures, and of transition (interior-exterior, public-private, individual-collective, domestic-urban...);
- Ensure adequate conditions of habitability (lighting, ventilation, shading), privacy and accessibility to apartments and to neighboring buildings;
- Design the proposal as a coherent, logical, viable and technically correct whole (articulating structural system, infrastructure and constructive processes);
- Establish relationships between structural, typological and spatial dimensioning.

## **PROGRAM**

### **Conditions of the brief**

The **first phase** of the work is aimed at developing an urban and volumetric occupation solution, typological aggregation and definition of the corresponding articulation structures.

Establishing a complementary relationship with the UC of Urbanism II, the adopted solution can explore different urban concepts, as long as the integration and consolidation qualities of the intervention area are guaranteed.

The program considers a set of minimal, interrelated parameters that allow the construction of a typologically complex solution. The proposal to be developed should therefore guarantee the following:

### **Quality and Type of Apartments**

- Minimal quantity of "Large Apartments": 14
- Minimal quantity of "Small Apartments": 28

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Large Apartments must be able to accommodate a family of at least 5 people and Small Apartments must accommodate a minimum of 2 people.

The buildings must necessarily consider the vertical overlapping of the two types (small and large apartment), making structural, infrastructural, spatial and aesthetic issues compatible.

Despite the project starting from two types of apartments (small and large), the existence of typological variants can be considered, that is, apartments that explore a particularity related to its location in the building or its articulation with another apartment; the possibility of using some of its spaces for non-housing purposes or a particular relationship with the access system, among others.

There may also be "exceptions" to the base type, that is, apartments that present differences in organization due to their location in the building, such as corners, limits not aligned with the composition of the building, etc.

**Maximum Floor Areas of the Apartments**

- Maximum Floor Area of Large Apartments = 160 m<sup>2</sup>
- Maximum Floor Area of Small Apartments = 80 m<sup>2</sup>

The floor areas indicated include the common parts of the building, that is, they do not correspond only to the measurements of the apartment by the exterior of its walls, also including the share of common circulation area (vertical and horizontal). Balcony areas are not considered in this accounting.

**Areas of Commerce (Shops) and Services (Office Space)**

- Minimum floor surface of shops and offices = 1200m<sup>2</sup>

(This area corresponds to the sum of the two functions that both must exist).

**Parking**

The parking spaces to be integrated in the built lots must be intended for residents and permanent users of commerce and services in the proportion of:

One place (25 m<sup>2</sup>) for each apartment (small or large)

One place (25 m<sup>2</sup>) for each 100m<sup>2</sup> of services or commerce

20% of the total covered parking places should be added, to be integrated in public space.

All the different programmatic components (housing, commerce / services and parking) must be articulated vertically in the building complex to be developed.

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### **Outdoor Spaces**

Based on the strategic proposal and the occupation studies defined in Urbanism II, the outdoor spaces should be an integral part of the project considering an integrated relationship with the building and the richness of its nature in the very urban fabric. Considering the motto **#stayhome**, these can be seen as areas complementary to the home and transition between the private and public spaces. In this context, a minimum of permeable area is considered to correspond to 20% of the intervention area.

### **WORK STAGES**

The exercise is divided into three distinct phases, subdivided into tasks, along with critical bibliography.

STEP 1 - Urban Project

STEP 2 - "Assembly" of the building (s)

STEP 3 - Constitutive and constructive materialization

Each phase and task will be developed according to its own contents, with incursions in the next, to justify project decisions, and in the previous one, to adjust the options taken, in view of the more in-depth development of the proposal.

**STEP 1;** Definition of an urban project, structure and strategy for the definition of the built space and free spaces, considering the relationship with the urban environment; the functional organization of the building; the aggregation of apartments and their distributive system. The work is to be developed individually. Reference scale: 1/500.

#### **Task 1: drawing the empty space**

Present the hypotheses of occupation of the area, discussed in the UC of Urbanism II, taking into account: a) implantation, b) volumetry, c) terrain modeling, d) definition and design of non built spaces (public and private) and e) relations with the surroundings.

Reference chapters:

Urban Ensemble (in: Housing Design, a Manual)

3. REhabitar la calle (in: REhabitar)

4. REhabitar las plantas bajas (in: REhabitar)

#### **Task 2: structuring the building**

Based on a form of occupation resulting from the revision of the previous phase, structure: a) definition of the spatialization / location of public functions: commerce and services, b) definition of the vertical and

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horizontal access system of the building, c) aggregation of large and small houses, simultaneously considering what type of apartment you want to propose, and d) general organization of parking.

Reference chapters:

- 7. REhabitar, entrar por el balcón (in: REhabitar)
- Acceso e flexibilidade (in: Casa collage)
- Repensar el bloque de viviendas (in: Casa collage)

Delivery / Sending of tasks 1 e 2 - March 26 - in accordance with the elements defined below.

**STEP 2;** Development of the "assembly" of the building / general architecture study, defining the spatial structure and the support structure starting from the cellular conception of the apartment. Reference scale: 1/200.

**Task 3: Drawing the apartments**

Taking the scale 1/200 as a base but using studies on the scale 1/100 and / or 1/50, consider: WHAT APARTMENTS DO WE WANT? What is the conceptual basis on which the design of large and small apartments is based? Task 3 is dedicated to the design of the APARTMENTS based on: a) definition of a conceptual structure of the house, reflecting on the large and small variants and forms of access b) the dimensioning and design of the houses, considering the relative proportion of the various compartments, the role of each of these spaces and the relationship with the outside c) articulation with a support structure that will define a larger support structure common to the other areas of the building, d) consider the position and dimension of the infrastructural systems and e) to define the compositional elements that contribute to the compositional reading / architectural language of the building as a whole.

Reference chapters:

- Dwellings (in: Housing Design, a Manual)
- 7. REhabitar, entrar por el balcón (in: REhabitar)
- Acceso e flexibilidade (in: Casa collage)
- Repensar el bloque de viviendas (in: Casa collage)
- La ambigüedad válida (in: Casa collage)
- La habitación exterior (in: Casa collage)
- 5. REhabitar , más puertas (in: REhabitar)

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**Task 4: Design areas for public and collective use**

Starting from the stabilization of Phase 1 of the exercise, and moving to work on a 1/200 scale, Task 4 is dedicated to the definition and design of the public and collective areas of the building (without forgetting the unbuilt spaces), aiming at: a) dimensioning and designing of commercial and service areas, with special attention to the access spaces to the building, whether in its housing component (entrance hall) or in its public component (trade and services), b) articulating with the support structure from the definition of a structural grid that will be made compatible with the apartments, c) considering the compositional expression / architectural language of this component built into a whole to be considered, and d) solving the adopted parking solution.

Reference chapters:

Residential Building (in: Housing Design, a Manual)

7. REhabitar, entrar por el balcón (in: REhabitar)

Acceso e flexibilidade (in: Casa collage)

Repensar el bloque de viviendas (in: Casa collage)

La ambigüedad válida (in: Casa collage)

La habitación exterior (in: Casa collage)

6. REhabitar fuera de lugar (in: REhabitar)

Dentro de la pared (in: Casa collage)

El almacenamiento racional (in: Casa collage)

La Cocina, un motor de câmbios (in: Casa collage)

La habitación exterior (in: Casa collage)

**Task 5: On a compositional sense**

Task 5 is dedicated to the moment of reassessing the whole and responding to the general objective of the exercise: “manipulating and organizing the various elements that make up the proposal in an expressive way and allowing the appreciation of the whole as an “architectural language”, and obtaining a qualified synthesis that transcends the specific resolution of each of the challenges of the project.”

Delivery / Sending of tasks 3, 4 e 5 - May 07 - in accordance with the elements defined below

**STEP 3;** Development and detailing of the architectural project in scales of greater detail and constructive materialization. Reference scale: 1/50.



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**Task 6: On the constitution and construction**

Considering that a compositional sense and the fulfillment of the program's issues have already stabilized and structural, infrastructural issues and their relationship with the architectural party have already been generally considered, it is important to concretize the constitution and the sense of constructiveness of the current project in the project, 1/50 scale, the elements and materials

Reference chapters:

Tectonics (in: Housing Design, a Manual)

Urbanes Wohnen/Urban Housing (in: best of DETAIL)

Delivery / Sending of task 6 - May 28 - in accordance with the elements defined below

**WORK INSTRUMENTS AND FINAL ELEMENTS**

The design work should be developed using mainly "traditional" means of drawing (pencil, ink, graphite, markers, watercolours, etc.) over transparent or opaque paper, with A2 as minimum size. Scale models should be used, in the same scale as the drawings or other.

The final panels can use CAD and must respect a maximum number and an organization matrix to be provided.

**STEP 1**

The reference scale for the development of the **urban structure** solution is the 1: 500 scale, with integration pieces and solutions for characterizing the Public Space, considering as minimum pieces:

- 1) Plans, Sections, Elevations at 1:500; (according to the given layout)
- 2) Scale Model 1:500.

The work process for this stage should include the production of diagrams that explore categories of analysis from the previous exercise "Collective Housing Examples - Analysis" relating to urban integration, functional organization, apartment aggregation and distribution systems.

**STEP 2**

The reference scale for the development of the 2nd Stage - "assembly" of the building / general architecture study is the scale 1: 200, considering as minimum pieces:

- 1) Plans and Sections and Elevations of the building at 1:200; (according to the given layout)
- 2) Study Models.

The work process of this stage should particularly address issues such as the three-dimensional articulation of the various components of the building, the composition of facades, the internal

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organization of the apartments, the relationship with the ground and the public space, the structural grid and the infrastructural systems.

The completion of this stage should imply the approach to the two standard apartments on a more detailed scale (1:50).

**STEP 3**

The reference scale for the development of the 3rd Stage - **development / detailing** of the architectural project, is the 1:50 scale, considering as minimum parts:

- 1) Type floor plan showing a large apartment, a small apartment and a vertical circulation core at 1:50;
- 2) Vertical section through the building, showing the articulation between different apartments, their relationship with the circulations, the "touch with the ground" and the "touch in the sky", as well as the resolution of the materials, scale 1:50;
- 3) Partial Elevation, scale 1:50;
- 4) Work and Final Models.

The design process of this stage should particularly include the development of the building materialization, not only from a constructive point of view but also from the architectural detailing.

**SPECIFIC BIBLIOGRAPHY**

FRENCH, Hilary – Key Urban Housing of the Twentieth Century, 2008

GAUSA, Manuel – Housing new alternative

HABITAR, grupo de investigação - REhabitar em Nove Episódios , 2010

HABRAKEN, John – The systematic design of supports

LEUPEN, Bernard, MOOIJ, Harald – Housing Design, a Manual, 2011

MONTEY, Xavier, e FUERTES, Pere, Casa Collage, Un ensayo sobre la arquitectura de la casa, Editorial Gustavo Gili, 2001

**CALENDAR**

Start: March, 3rd

Delivery of Step 1: March 26.

Delivery of Step 2: May 07

Delivery of Step 3 (complete work): May 28 - until 23:59 in FA cloud