LX Design with Food

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ABSTRACT: This paper exposes the results of an academic experience which informs how the food system can be reinforced in architectural higher education, while providing: (1) a better relation of the urban realm to the food thematic; (2) perceive the impact of urban form on the food system, in space and time; and (3) promote design solutions for a more resilient, socially inclusive and sustainable city, as recently proposed by the Urban Food Policy, signed by several European municipalities.

1 INTRODUCTION

Food is one of the hottest topics of contemporary architecture and urbanism. On the other hand, there is a growing consensus that we are facing epochal challenges in global food security, which will impact on the metabolism of cities and their sustainability.

The promotion of sustainability in the design of the built environment is a key factor to addressing the challenges mankind faces in response to climate change, resource availability, environmental degradation, energy consumption but also food security.

Architecture is a unique discipline that facilitates spatial solutions for human needs and has a fundamental responsibility to ensure a sustainable urban environment. Paramount to the discussion of the 'integrity' between sustainability and food design through architecture is to discuss how the concept of food system is being considered in architectural education.

Within this context, this paper aims to analyze to what extent can Food-Design contribute to meet the sustainability challenge in Architectural higher education. Thus, the results of a pedagogic experience, which aimed to articulate design criteria, food systems and urban metabolism within the urban realm, will be here exposed.

Finally, this presentation exposes how the sociocultural dimension of urban metabolism can be greatly perceived by students throughout a design proposal which takes into account the food system analysis, and therefore reinforce students architectural education to: (1) better relate the urban realm to the food thematic, which represents a vital daily need of humanity; (2) perceive the impact of urban form on the food system, in space and time; and (3) promote design solutions for a more resilient, socially inclusive and sustainable city, as recently proposed by the Urban Food Policy, signed by several European municipalities.

2 FOOD AND DESIGN

2.1 *Bringing the Food System into an Urban Project course*

The pedagogic experience, which is here analyzed, took place at the *Instituto Universitário de Lisboa ISCTE-IU*L, Department of Architecture and Urbanism, at the Integrated Master of Architecture.
More precisely, it took place on the Urban Project III module, that runs on the first semester of the 4th year of the Integrated Master Course of Architecture, during the 2016/2017 academic year, and was led by the author of this paper, as the responsible professor of such course. This course, which is theoretical-practical, contained a strong analytical and design focus.

The introduction of the food thematic in this Urban Project course occurred mainly because of the following reasons. First, the research context within which the author of this paper, that is the Professor that coordinated the course of Urban Project III here analyzed, has been for the past years related to the study of Urban Sustainability and the Social-Urban Metabolism of cities, mostly, focused on water and food issues with the urban realm (Niza, 2016 and Marat-Mendes, 2015). In addition, her main interest towards the study of urban form has greatly contributed to emphasize the needed articulation that the physical dimension of urban form has to do with the

social, economical and natural dimensions of the urban environment (Marat-Mendes, 2002)

Secondly, because the complexity to which the urban realm is exposed demands new understandings and tools to intervene within it, including at its design dimension. Therefore, it was an ambition of Urban Project III, the last Urban Project course that students undertake at their Integrated Master of Architecture, for students to focus not only at the physical dimension of urban form, but rather to better relate it with other dimensions, such as the social, the economic and the natural one. Furthermore, to identify throughout a specific thematic debate centered on the food system, how does the city work and is relates to such system. The main goal would be to make students more aware of the implications of different dimensions on the urban form solutions as well, and therefore became more conscious of their design options against different dimensions of the urban realm.

2.2 *The Urban Project III goals*

The main goals established for Urban Project II, and which were expected to be fulfilled by students were the following ones:
1) to understand the relationship between the food system and the urban space;
2) to recognize the various types of urban form related to the food system and the possible symbiosis established between them;
3) to address the various components of the urban system and determine the existing relationship between them;
4) to acquire knowledge of urban morphology and metabolic assessment;
5) to identify the principles of urban design that allow making communities, while designing successful public spaces and create responsive and vital urban areas;
6) to develop an urban strategy for the city of Lisbon, in particular to the study area in question, while taking into account the public space, the urban fabric, the existing and planned infrastructures, in order to unify the whole and at the same time integrate the food system within the urban space, in an efficient manner and guarantee a more efficient metabolism for the city.

3 THE URBAN PROJECT PROGRAM

3.1 *The Program layout*

In order to respond to the above-identified six goals the Urban Project III program was organized in three stages.

The first stage aimed to contextualize the student within the thematic under analysis: the food system. The second stage aimed to focus the student within the design proposal for a specific case study, wherein informing him/her about how does the food system operates, and guaranteeing that the design proposal would contribute to improve the food system identified within the case study. For this stage two specific typology of the food system were identified for analysis. The third and last stage aimed present a design solution that could contribute to improve the overall food system of the case study under analysis.

3.2 *Stage 1 – The Food System general approach*

In order to contextualize the student with what is a food system it was first organized a brief exercise, which aimed to invite students to identify worldwide different examples of situations related to the food system, in its various stages. Including: Production, distribution, commercialization, waste disposal and recycling.

Students were organized in group4 to 5 people, and and proceed with a worldwide survey about urban models which denote the relationship of the food system in the urban space, in order to:
1) Understand the relationship between the food system and the urban space, at the most varied scales of resolution, and in different historical moments;
2) Identify different types of integration of the urban spaces with the food system (in particular: markets, restaurants, cafes, supermarkets, vegetable gardens, etc.) as well as the relationships that are established between them, for different historic periods of time, geographical areas and cultural contexts;
3) Reference the identified urban models in relation to the case study (Lisbon).
For simple equations in the text always use superscript and subscript (select Font in the Format menu).

The survey conducted by the students in Stage 1 of the exercise was very well received by students and stimulated them towards the exercise. The examples selected by students included per group, a well-known example, one which should be familiar to the student according to his/her home place, and other examples from around the world, which would less familiar to them.

Almost at the same time that students searched for the various examples, they begin an exercise of systematization of the information according to the given categories of the food system.

The student's reaction to this exercise was very enthusiastic. Their surprise towards the less none examples, and the discovery of the different levels of the food system in their better-known examples was stimulating for them. Furthermore, Stage 1 of the exercise provide the opportunity for students to compare all the different examples in terms of number, repletion and frequency that the several levels of the food system was being responded, but also

which were the urban form solutions which were associated to each food system.

Finally, Stage 1 provide an opportunity for Urban Project students to compile an exhaustive Catalogue of examples of design solutions associated to Food Systems, in different geographical and cultural contexts worldwide. This exercise took place for 4 weeks. In the end of Stage 1 students were also conscious about which stages of the food system were better perceived by architects and planners, and which ones were less perceived and needed greater attention in future.

3.3 *Stage 2 – The SWOT Analysis*

The second stage of the exercise took place immediately after the conclusion of Stage 1. Students were now aware of the different stages of the food system and were invited to identify those stages within a given case study. Lisbon was the case study selected for this academic year.

A SWOT analysis of the food system operating in Lisbon was immediately initiated. However, givern the complexity of the territory under analysis and the available time to perform the exercise, students were invited to identify within the city of Lisbon only two specific typologies of the Lisbon Food System: i) Supermarkets of small to medium dimension; and ii) Markets. For the first case the 'Pingo Doce' shops were selected and the general markets for the second case. In this way the entire class was working over the same typologies and would be able to compare results throughout their exercise.

A SWOT analysis, orientated towards two specific typologies of the food system was now being undertaken.

The aim was to identify how these two specific typologies respond to the overall food system of the city and is related to the city urban form, at two specific scales of resolution (the city, and the urban area under analysis). Thus, the class was again organized according to groups of students (4 to 5 elements per group) and each group was given a specific area of the city for analysis. Again, a Catalogue of these two specific typologies was organized and the results of student's analysis allowed to identify a number of elements that gained their attention, including: access to transports, dimension of the urban bock where the supermarket is located, the age of the buildings, the public spaces surrounding the markets and Pingo-Doce, the social portrait of the people that use each supermarket, each neighborhood socio-economic fabric and physical one. All these elements were compared and allowed to evaluate the social and the urban space within the different parts of the city, and therefore identify areas, which would deserve greater attention, form the students in the following Stage of the exercise. This resulted in the most exhaustive stage of the exercise but implied a whole body of research by the students, including the collection of a number of elements provided by statistical accounts (number of housing, age of population, etc.) and therefore provide a more realist perspective of the area under analysis.

3.4 *Stage 3 – The Design Proposal*

The last Stage of the exercise consisted on the development of a Strategic Proposal to improve the food system of a given area within the city of Lisbon, e.g., which seeks to benefit a better articulation of the urban space with the food system
This Stage was informed by the results of the SWOT
The proposal should also reflect a design strategy that would identify and develop a specific urban form solution which would reflect the application of the proposed strategy. Moreover, the various programmatic dimensions included in the proposal strategy (for example, socio-economic, environmental, etc.) should also be indicated.

4 THE DESIGN SOLUTIONS

Several Design solutions emerged throughout the different groups of students. The majority of them are related to more conventional solutions, such as the proposal of new green urban areas within the city, within buildings woofs or empty areas within the city. A number of other solutions indicate the need to improve public space, wherein integrating the local population in specific collective activities. For this solutions, temporary markets and ambulant food stores were proposed.

Other examples indicate however a more ambitious strategy, which implies the construction of a cultural transition towards current practices. For example the proposal of an electronic mobile application, which would allow food distribution in a more convenient manner for elderly people. Other solutions pointed out the proposal of a Good Practice handbook for local people in the different Lisbon neighborhoods to maintain their public space and guarantee the god functioning of the whole food system.

The following pictures portraits some of the final posters presented by students to discuss their design ideas and strategies to improved the food system within the case study. Figure 1 identifies the several typologies analyzed and the areas, which are accessed by them. An improvement of public spaces is emphasized. Figure 2 shows the cover of the Handbook of Design good practices proposed by students to be given to local authorities and local neighborhoods.

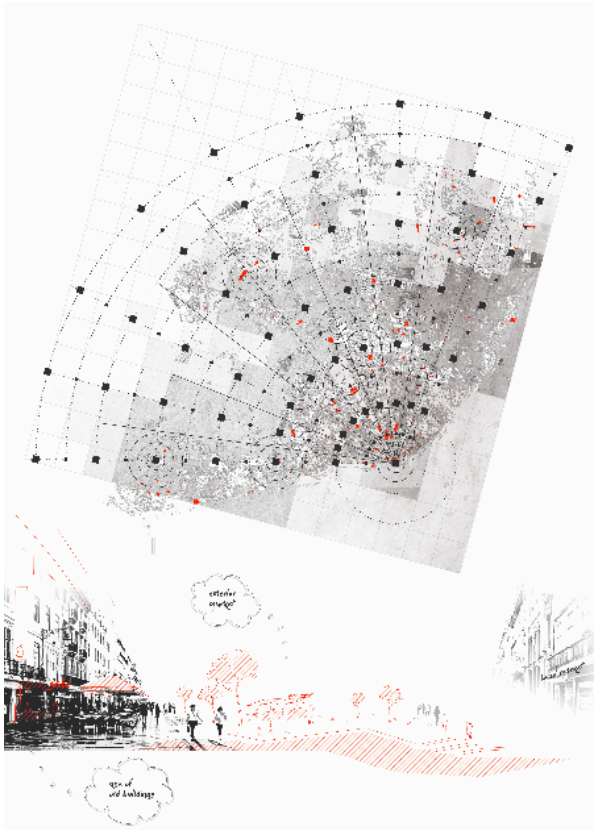

Figure 1. Example of student's work, indicating public space improvement.

Figure 2. Example of student's work assessing a Good Practice Guide for Public Users towards the Food System.

5. CONCLUSIONS

Given the time available for the development of the exercise LX Design with Food, in one semester of 12 classes, each one with 3 hours, one should emphasize the interesting results that emerged from the different design proposals. Furthermore, one should also stress the importance of the comparative strategy that this exercise involved, allowing for the compilation of a number of examples for future reference by the students. Finally, it is notorious that a greater conscious of the food system and the metabolism of the cities acquired by students was succeeded at the same time that urban form was being examined.

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