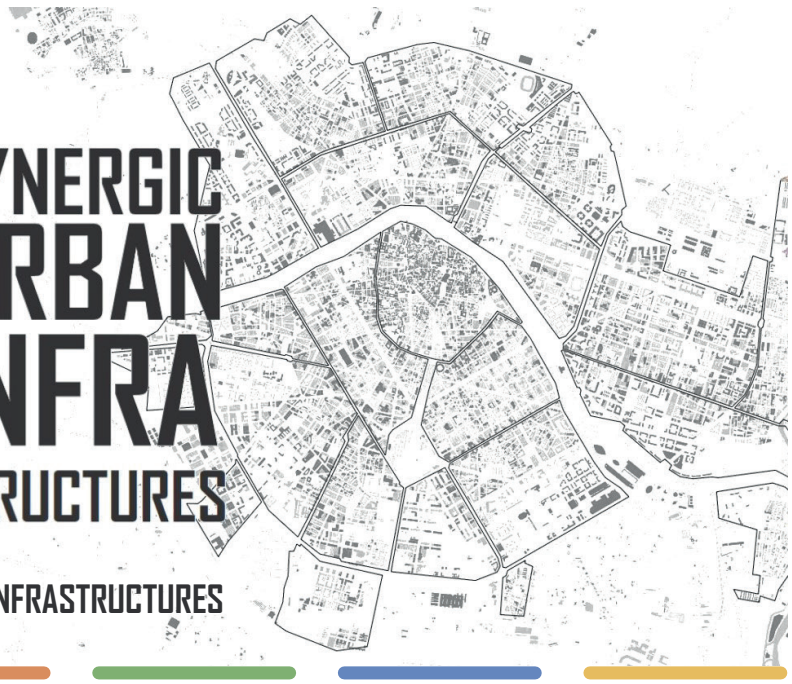
VLC SYNERGIC URBAN INFRA STRUCTURES



VALENCIA SUMMER SCHOOL ON SYNERGIC URBAN INFRASTRUCTURES

Editors: Juanjo Galan Vivas | Luis Bosch Roig

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4.6_TEAM 6. BRING BACK THE SEA TO THE CITY + DOWN THE RIVER WE GO

Luis Bosch | Associate Professor, Polytechnic University of Valencia
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Adolfo Vigil | Associate Professor, Polytechnic University of Valencia

4.6.1. Introduction

This text introduces the work carried out by group 6 of the Valencia Synergic Urban Infrastructure Summer School. It is worth highlighting the multidisciplinary nature of the group, which comprises students from six different universities from various fields of study, such as Urban Planning, Architecture, Construction and Robotics and Agricultural Engineering. The aim of this workshop, as defined by the students of team 6, was "*to enhance the integration of various urban infrastructures in order to formulate a comprehensive master plan for the future development and transformation of the designated study area.*"

As displayed in Figure 4.6.1. the team was integrated by 6 master and bachelor students with different academic backgrounds and from different ENHANCE universities: Yanran Chen (RWTH Aachen University), Zofia Gancarczyk (Warsaw University of Technology), Olesia Sakhareva (Technical University of Berlin) Nacho Del Rio (Technical University of Valencia), Vilmante Daulenskyte (Politecnico di Milano) and Mohammadreza Movahedi (Norwegian University of Science and Technology). Their work was tutored and facilitated by Associate Professors Julia Deltoro Soto, Luis Bosch Roig, and Adolfo Vigil de Insausti (Technical University of Valencia, School of Architecture).

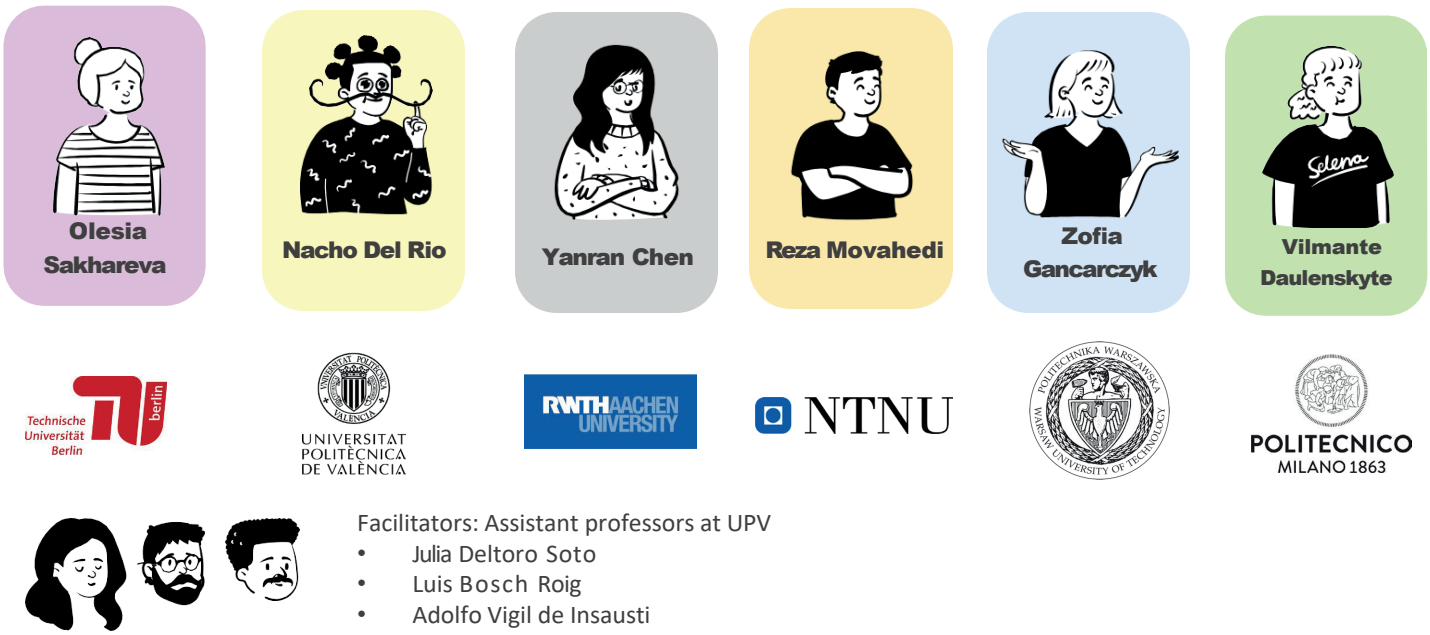


Figure 4.6.1. Team 6: students and tutors/facilitators (Source Team6: Chen, Gancarczyk, Sakhareva, Del Rio, Daulenskyte, & Movahedi, 2023)

The team closely followed the methodology proposed in the course, which consisted of creating a synergy meter between infrastructures as a critical tool in the design process of a spatial strategy for the pilot area in Valencia. As shown in Figure 4.6.2, one of the particularities of the team was that in task 3, they made an internal competition to propose two different spatial strategies, which they then tested against the synergy meter. This gave them critical information about which option was working best for each aspect so they could choose the best parts from them to create a final version of the proposal for the site. Finally, it is also important to mention that the input of the representatives from the neighbourhoods allowed them to generate an improved proposal.

As the students said: *"The primary methodology employed in this workshop centres around co-creation. Our proposal is informed by a combination of our own insights and research, as well as the contributions and recommendations provided by representatives from the neighbourhoods within the study area, professionals affiliated with the Valencia municipality, and experienced architects and urban planners who are actively engaged in and knowledgeable about the study area."*

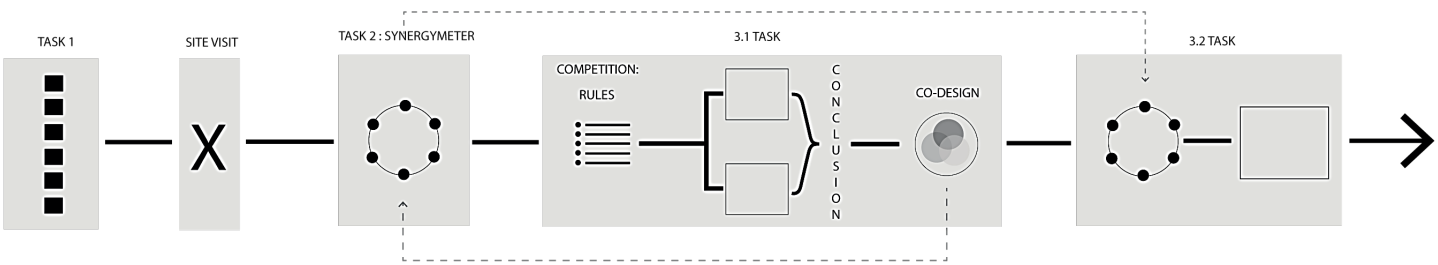


Figure 4.6.2. Team 6: students and tutors/facilitators (Source Team6: Chen, Gancarczyk, Sakhareva, Del Rio, Daulenskyte, & Movahedi, 2023)

4.6.2. TASK 2: A synergy-oriented planning methodology and a 'synergy-meter.'

According to the team: *"The initial phase of our methodology involves an organised review of various infrastructural components, with a specific emphasis on comprehending Valencia's diverse objectives and prospective strategies."*

The primary objective of Team 6 in Task 2 was to analyse and elucidate the dynamics and interactions among various urban infrastructures. From a theoretical and qualitative perspective, they categorised the advantages (synergies) and obstacles (conflicts) associated with each binary intersection between the social, mobility, green, blue, housing and energy infrastructures. As displayed in Figure 4.6.3, the analysis was systematised through a matrix in which the upper right section shows the positive interactions that should be emphasised, and the lower right section shows the opposite, interactions that must be treated with special sensitiveness to be minimised.

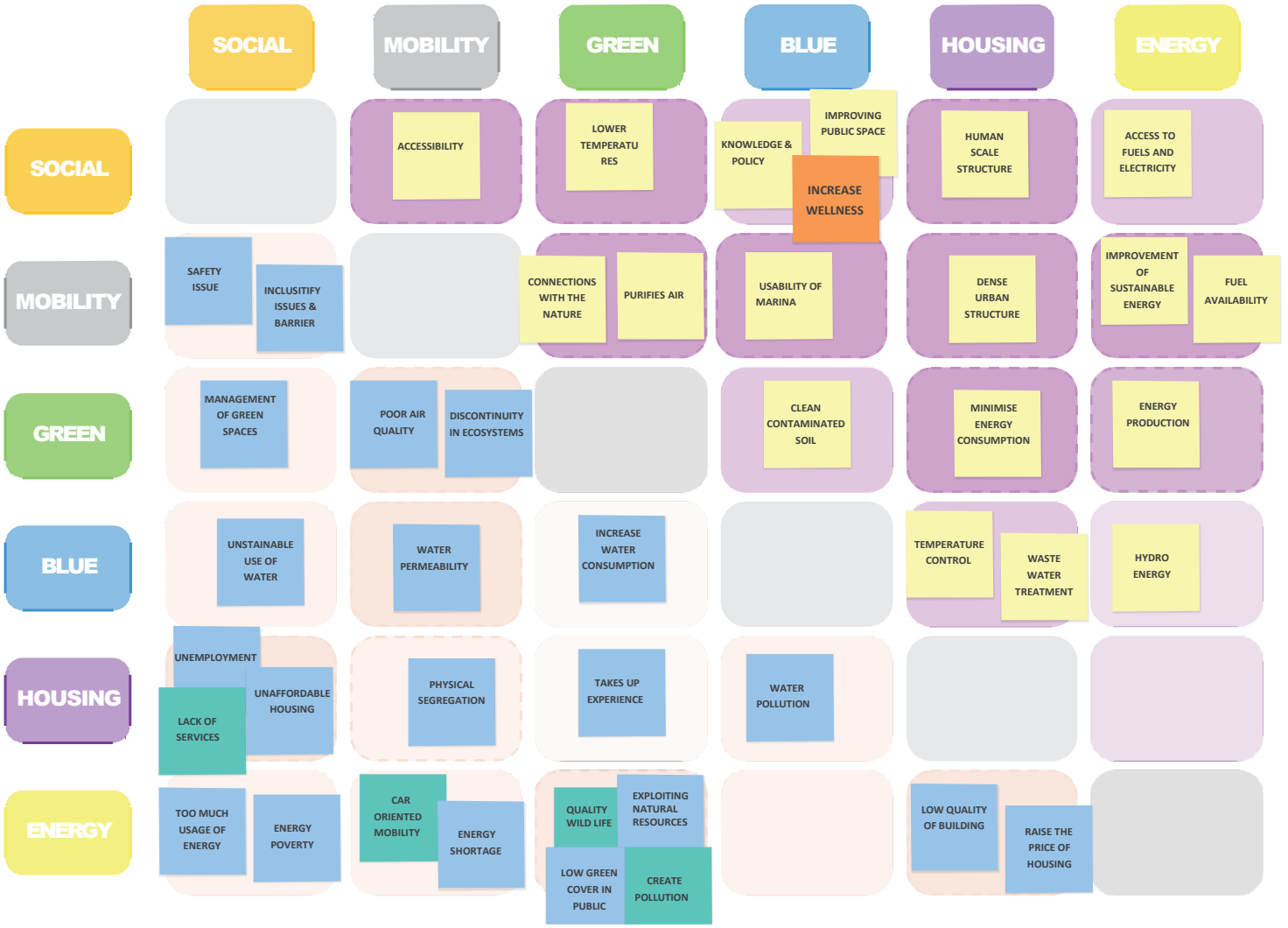


Figure 4.6.3. Conceptual matrix displaying positive and negative interactions between each pair of urban infrastructures (Source Team6: Chen, Gancarczyk, Sakhareva, Del Rio, Daulenskyte, & Movahedi, 2023)

In a second step (Figure 4.6.4), these interactions were synthesised and operationalised through a reduced number of indicators.

Managing the grid was somehow complicated, so a more visual and helpful way to represent the main interactions was implemented. As displayed in Figure 4.6.5, each synergic interaction between each pair of infrastructures was conceptualised in one term which were then arranged in a spider graph. This spider graph (or synergy-meter) was perceived as a practical tool to support the planning process.

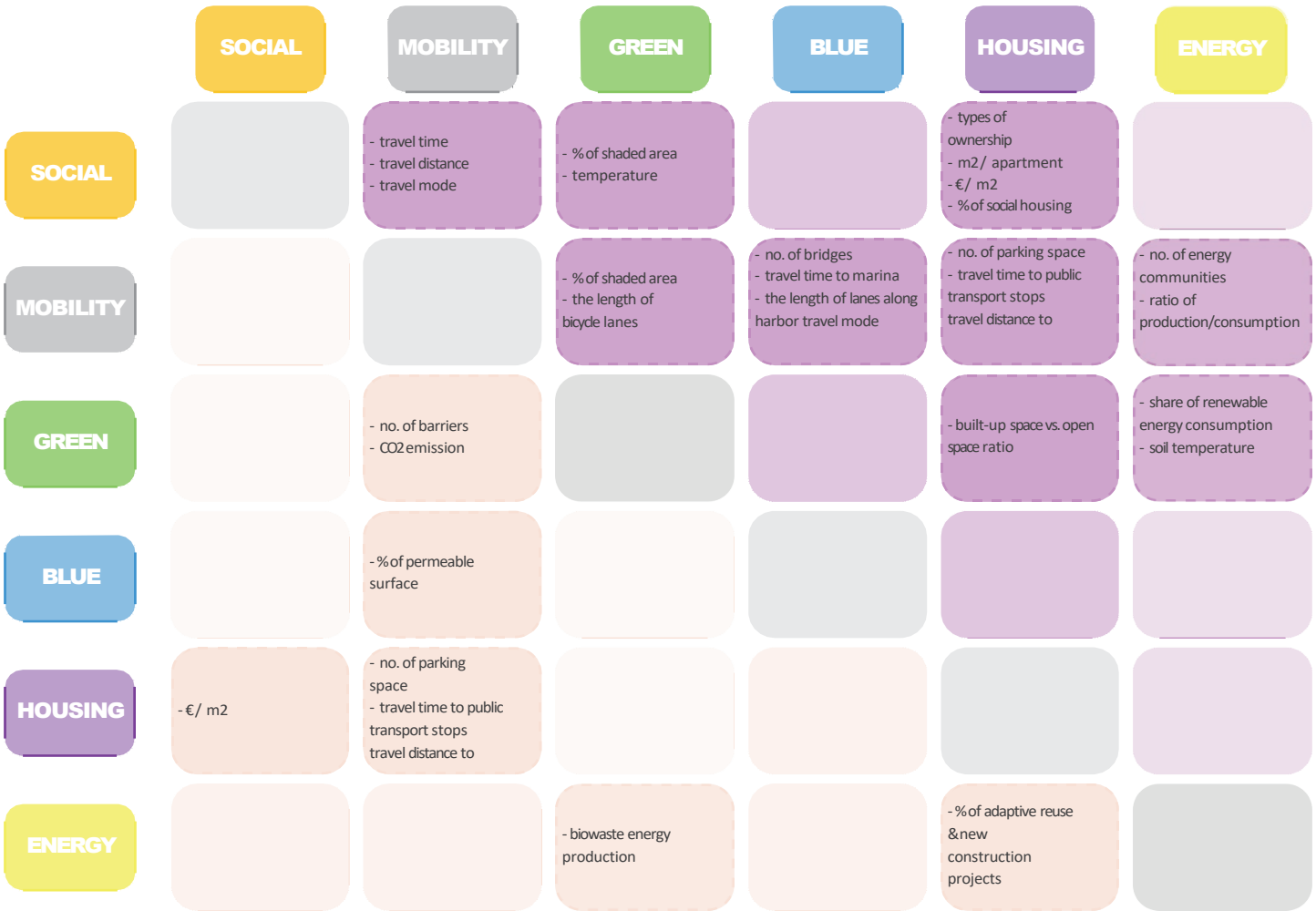


Figure 4.6.4. Main indicators to assess the level of synergy or conflict between each pair of urban infrastructure (Source Team6: Chen, Gancarczyk, Sakhareva, Del Rio, Daulenskyte, & Movahedi, 2023)

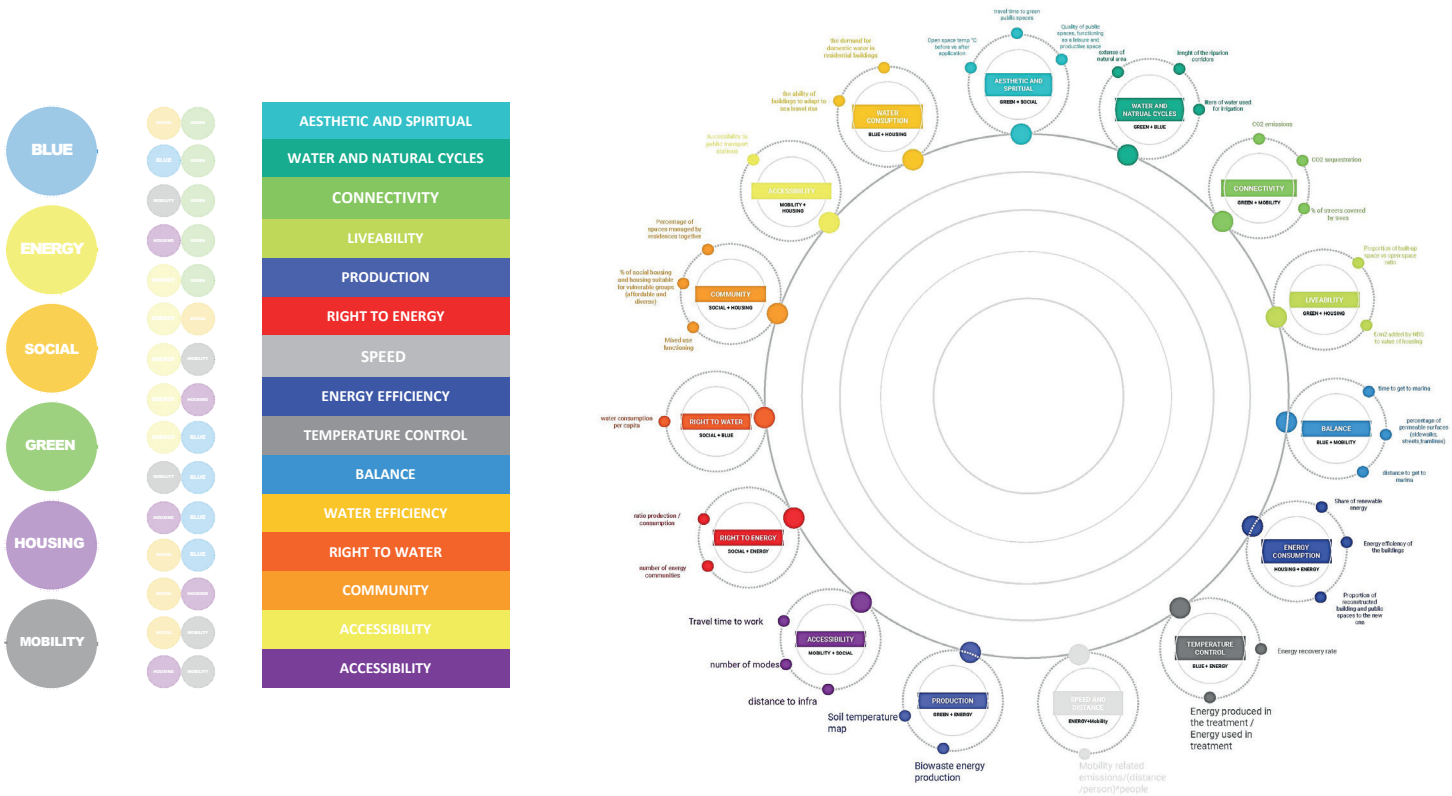


Figure 4.6.5. Synergy-meter (right) displaying the main types of synergies (column to the left) (Source Team6: Chen, Gancarczyk, Sakhareva, Del Rio, Daulenskyte, & Movahedi, 2023)

Developing all these synergies in matrices and in a spyder web allowed the students (in a second step) to translate them into design objectives and strategies, but also revealed the lack of some data and how data-dependant was the method.

The definition of design objectives probably became tedious and needed more time than expected. Educative tools linking theoretical instruments (e.g. synergy-meter) and practical applications (e.g. development of a spatial plan) serve not only to test their applicability but also to prioritize actions and to organize them according to a logical timeline. This way, splitting the work was somehow complicated, and the results became hard to be completed in a single session.

4.6.3. TASK 3.1: A Spatial Strategy for the VLC_Pilot Site

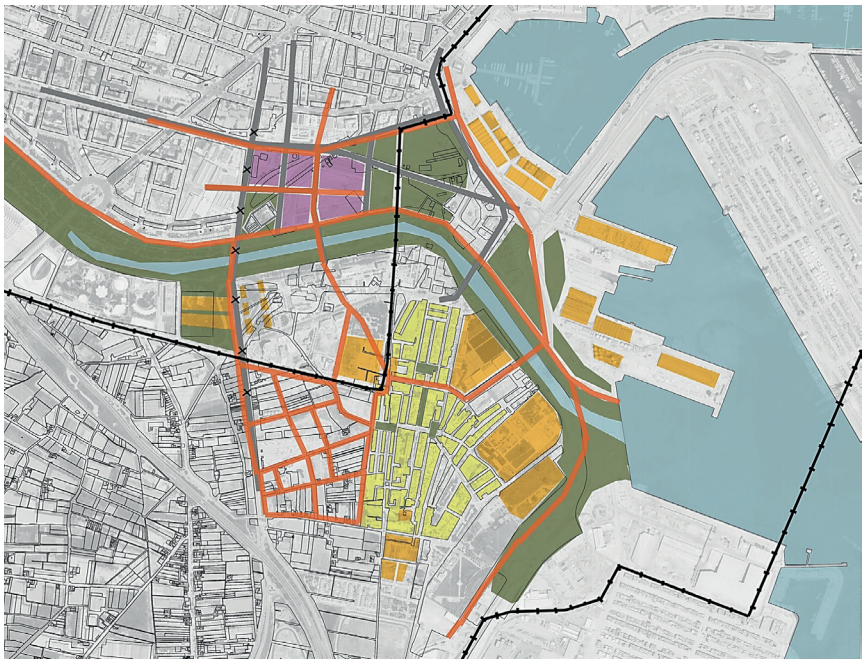
In task 3.1, the students had to define a spatial strategy for the pilot site. After the analysis and visit to the site, the students divided the area into six distinct subareas according to their location, characteristics, and urban structure: the residential area of Nazaret and the new one of Las Moreras, the empty area the former Formula 1 circuit, the harbour and the marina, the agricultural land and houses of La Punta, and the end of the Turia River. They analysed the potentialities and characteristics of the subareas and assessed the existing situation of the whole area with the synergy meter they had created in the previous task. Then, they worked into two smaller teams to develop two alternative proposals (Figure 4.6.6).

Luis Bosch + Julia Deltoro + Adolfo Vigil

'BRING BACK THE SEA TO THE CITY'

Proposal 1

public spaces
residential buildings
green spaces
water
bike paths
train tracks / tramway tracks
roads



'DOWN THE RIVER WE GO'

Proposal 2

public spaces
residential buildings
green spaces
water
bike paths
train tracks / tramway tracks
roads

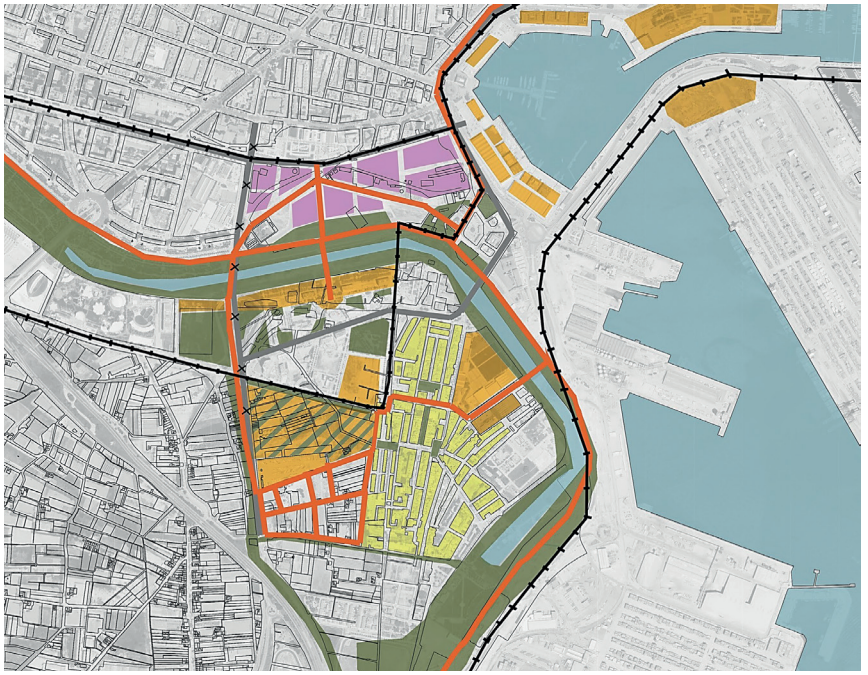


Figure 4.6.6. Proposals developed by two subteams ot Team 6 (Source Team6: Chen, Gancarczyk, Sakhareva, Del Rio, Daulenskyte, & Movahedi, 2023)

The main difference in the proposals was that proposal 1 took part of the the space of the cargo harbour and transformed it into a new public area for the enjoyment of neighbours and the city. By so doing, they also connected the old Turia River with the sea, creating new green areas and synergies between the blue and green infrastructures and opening the city to the sea.

In El Grau, both proposals provided new residential areas connecting the existing residential area in the north with Nazaret. Option 1 created a bigger park beside the port area and the proposed new housing. In the harbour subarea, option 1 connected the city to the sea by opening the docks, reusing the existing infrastructure, and creating a mixed-use area. In Las Moreras, both proposals were quite similar; new public sports areas and social facilities were provided. In Nazaret, the existing buildings were improved for climate adaptation with energy communities, new activities and local entrepreneurship were encouraged to attract newcomers to the site, new facilities for the existing residents were included, and public transport system was improved. The Turia Park in option 2 was extended along the wall of the harbour, trying to create a nicer limit with the Nazaret neighbourhood. Finally, for La Punta subarea, in the second option, new areas and activities related to agriculture were contemplated to activate the orchards and offer education and entertainment, always respecting the housing typologies present in the *Huerta*.

As seen in Figure 4.6.7, they compared and analysed more in-depth each of the two proposals for the six distinct subareas and assessed which improvements they were achieved using the synergy meter. This allowed them to better understand which proposals would make a bigger change in the area and which infrastructures they affected, giving them a broader view of each option's implications.

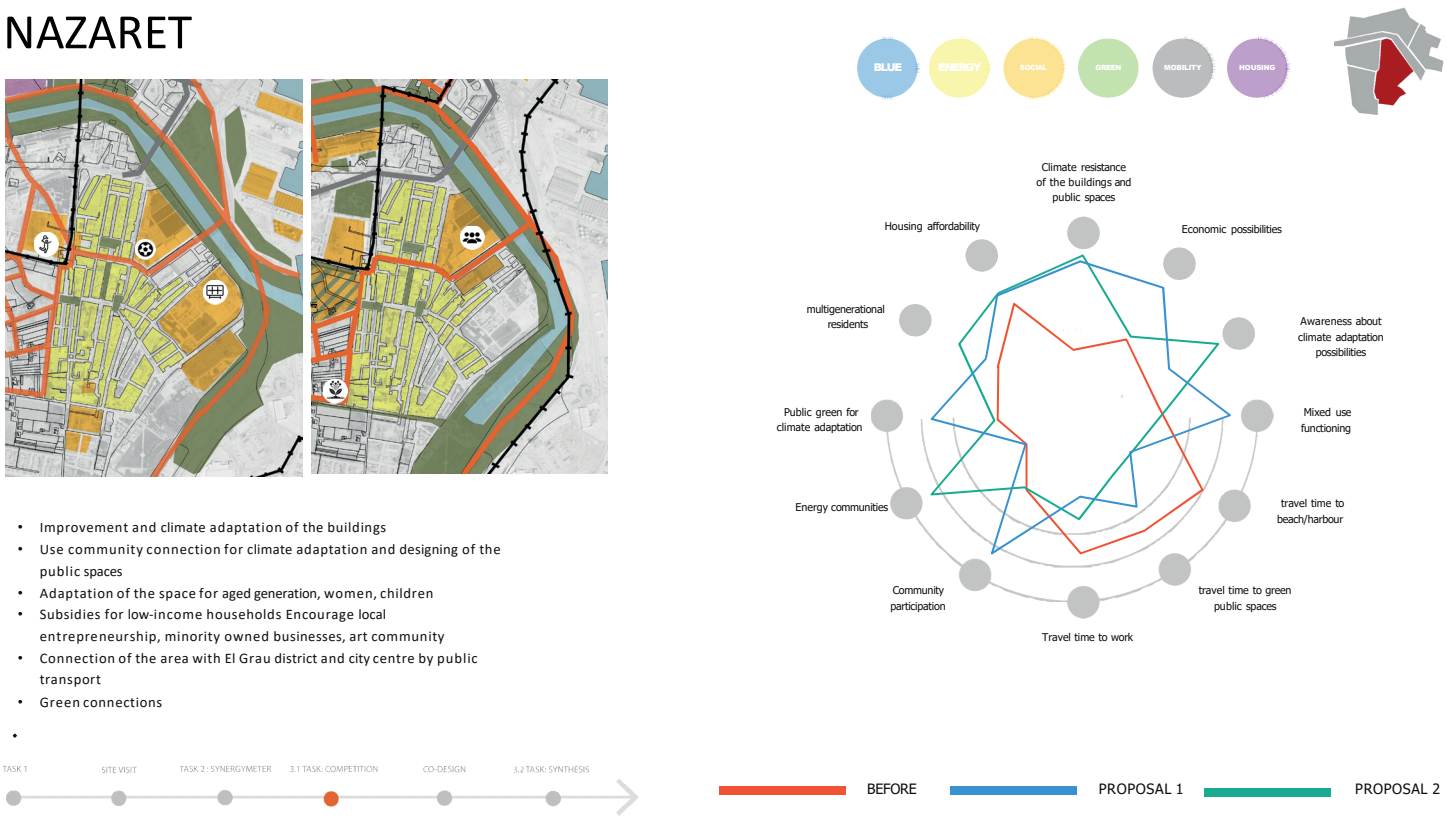


Figure 4.6.7. Comparison of the two proposals in the subarea of Nazaret, and the assessment of both with the synergy meter. They produced similar comparisons for the six subareas. (Source Team6: Chen, Gancarczyk, Sakhareva, Del Rio, Daulenskyte, & Movahedi, 2023)

Figure 4.6.8. Presentation of their proposals in the meetings with the stakeholders (Source: Photo by Julia Deltoro. Map: Chen, Gancarczyk, Sakhareva, Del Rio, Daulenskyte, & Movahedi, 2023)

At this point, they maintained meetings with the local stakeholders, to which they asked about their needs to acquire a deeper understanding of the site, juxtaposed their ideas with the current circumstances, and presented their proposals to get their feedback. They then readjusted their two proposals, considering the feedback the stakeholders provided (Figure 4.6.8).

4.6.4. Final proposal

Task 3.2 consisted of a synthetic work in which the characteristics with the best indicators of the two proposals put forward in task 3.1 were included based on the evaluation carried out with the synergy meter. This synthesis considered five fundamental objectives: climate adaptation, connections, social justice, quality public spaces and economic development (see Figure 4.6.9).

These objectives were translated into a series of proposals that were defined according to the different infrastructures studied. From the spatial strategy, it is worth highlighting three significant operations that respond to the blue, green and mobility infrastructures: (1) reconnecting the riverbed with the sea through the port, “transforming the harbour into a vibrant public space for the people”; (2) creating a green belt along the old riverbed, surrounding the areas of Nazaret, Moreres and La Punta as a ring, and connecting with the south of the city; and (3) improving the north-south and east-west connections through various operations such as burying the railway tracks, creating new public transport routes as well as pedestrian and cycle routes following the trace of the new green belt (see Figure 4.6.10).

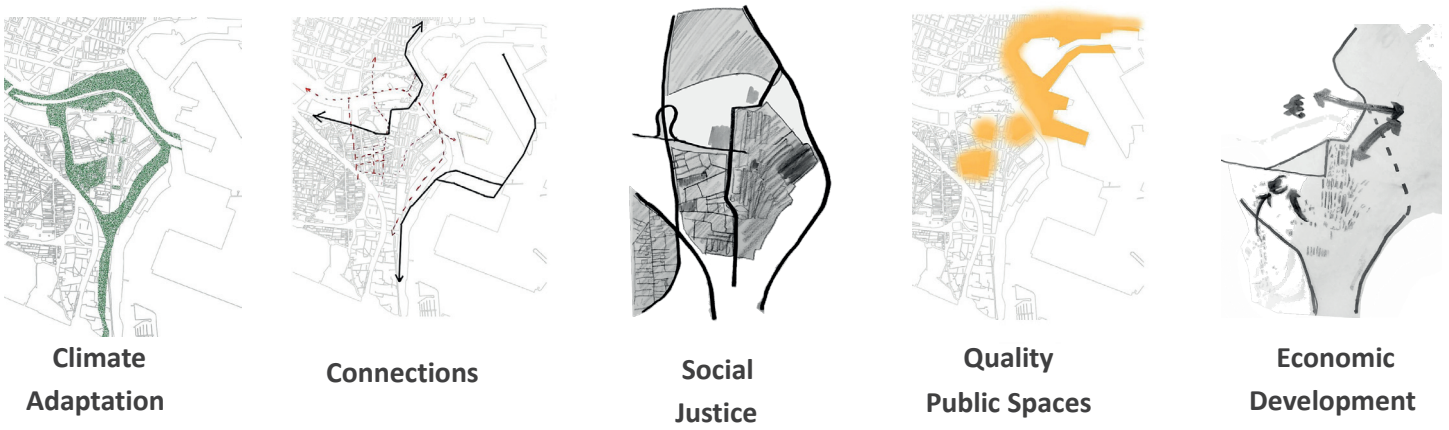


Figure 4.6.9 Narrowing down the goals (Source Team6: Chen, Gancarczyk, Sakhareva, Del Rio, Daulenskyte, & Movahedi, 2023)

SPATIAL AND PROGRAMMATIC STRATEGY 1:5000

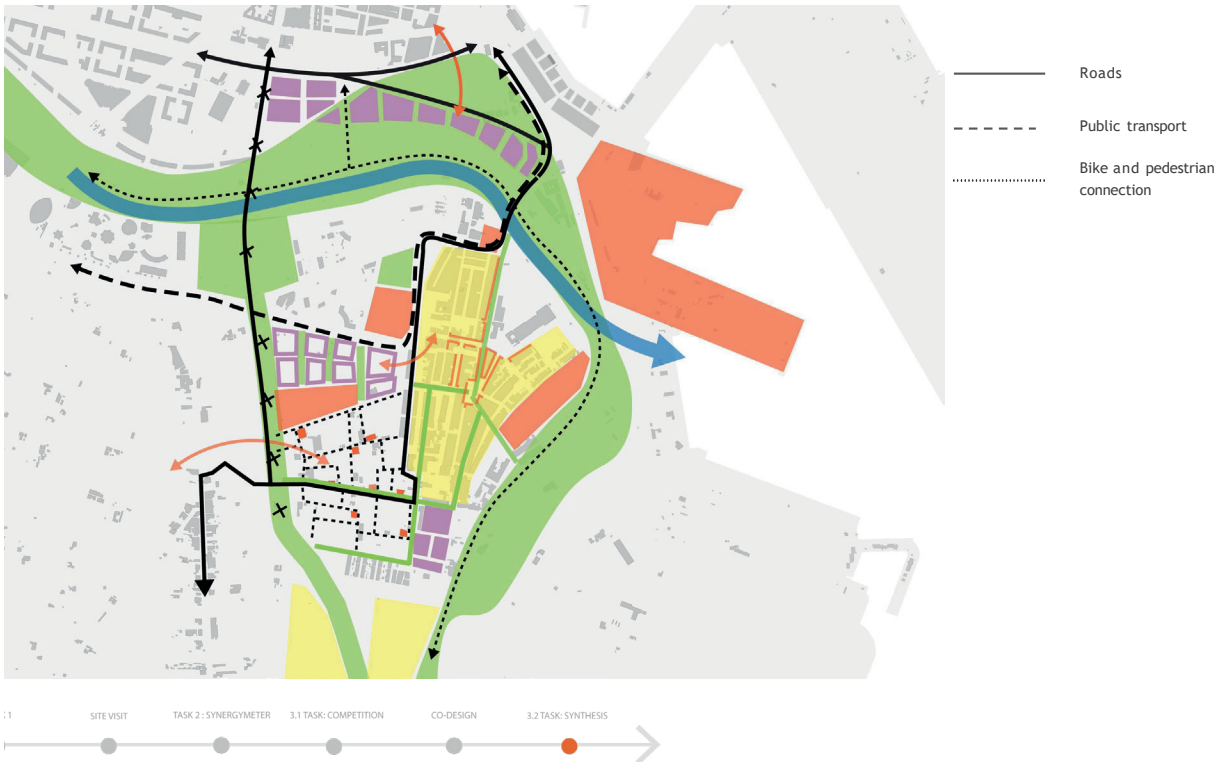


Figure 4.6.10. Spatial and programmatic strategy (Source Team6: Chen, Gancarczyk, Sakhareva, Del Rio, Daulenskyte, & Movahedi, 2023)

From a housing point of view, a distribution of buildings of different heights is proposed according to the urban environment: medium-rise buildings are located in the Grau area, with commercial spaces on the ground floor; while low-rise buildings are located in the Punta with flats for different types of families, mixed uses and priority uses. In addition, public orchards and gardens are proposed to connect with the surrounding crop fields (see Figure 4.6.11).

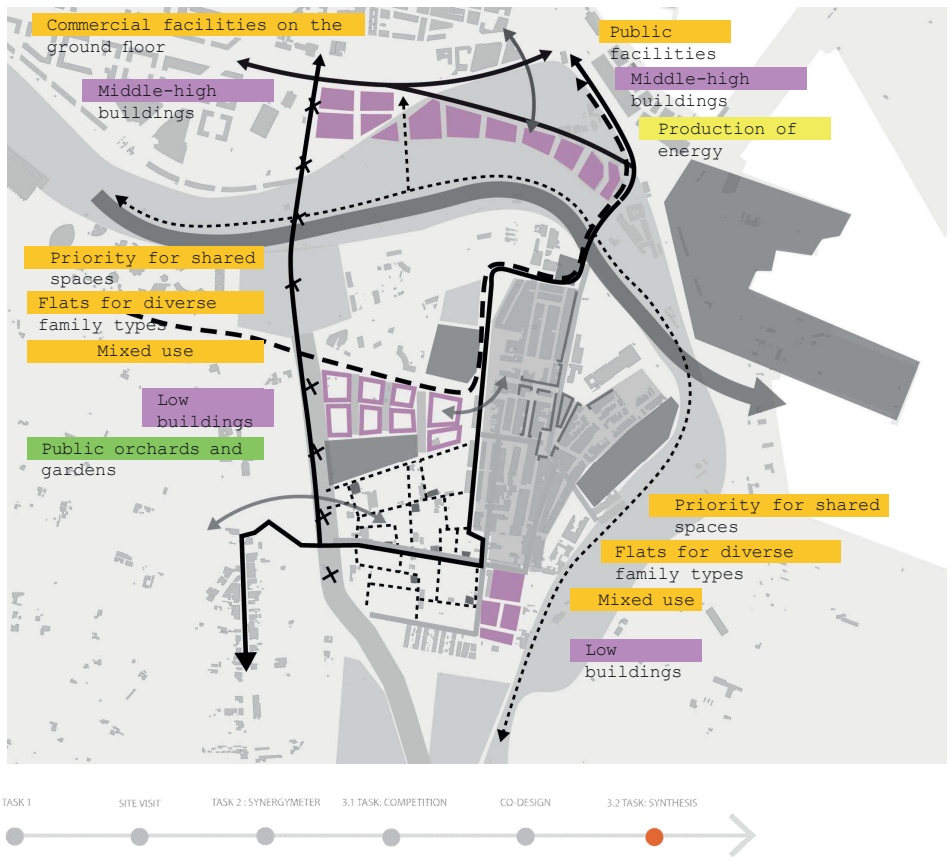


Figure 4.6.11. Housing Infrastructure (Source Team6: Chen, Gancarczyk, Sakhareva, Del Rio, Daulenskyte, & Movahedi, 2023)

From the energy point of view, measures such as promoting energy communities, providing information on climate adaptation of buildings, or using industries for energy production are proposed. The inclusion of green elements in small gardens and streets to alleviate high temperatures is also presented (Figure 4.6.12).

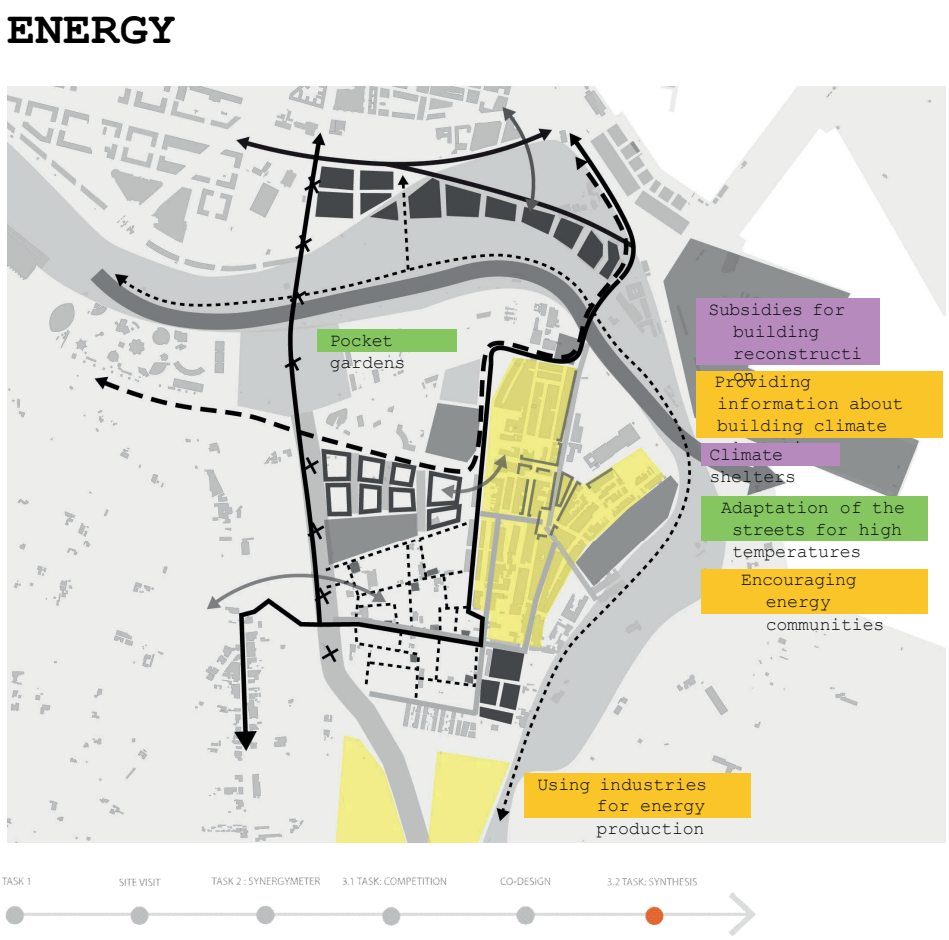


Figure 4.6.12. Housing Infrastructure (Source Team6: Chen, Gancarczyk, Sakhareva, Del Rio, Daulenskyte, & Movahedi, 2023)

From a social point of view, it is suggested to encourage the use of public spaces and empty ground floors by residents and local businesses, as well as to promote the relationship with agriculture through cultural events, services, restaurants, agro-tourism and the creation of vegetable gardens, and to promote social cohesion through the creation of creative communities (see Figure 4.6.13).

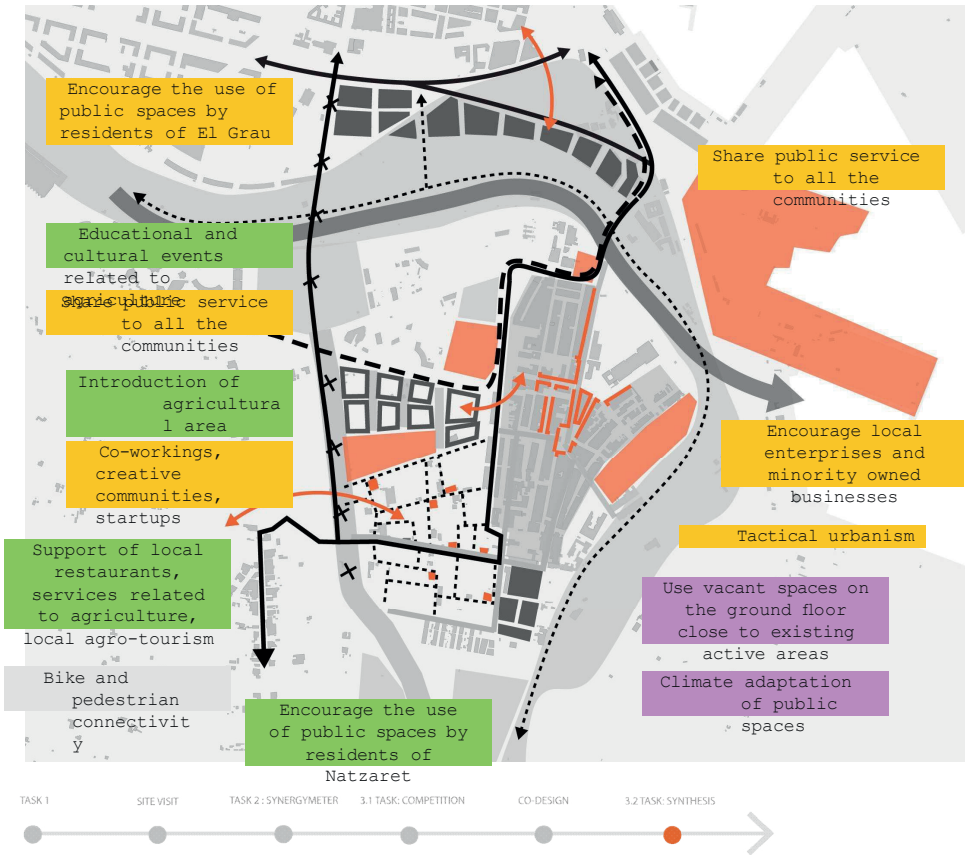


Figure 4.6.13. Social Infrastructure (Source Team 6: Chen, Gancarczyk, Sakhareva, Del Rio, Daulenskyte, & Movahedi, 2023)

The final proposal was evaluated through the synergy meter to check the improvement of the indicators compared to the initial situation and the two proposals elaborated during the design process (see Figure 4.6.14). Just the students wrote in their final report, the use of the synergy meter was key in their decision-making process: *"The utilisation of this comparative analysis facilitated the development of our ultimate synergistic proposition, which was formulated by integrating the most successful recommended solutions from each respective subarea."*

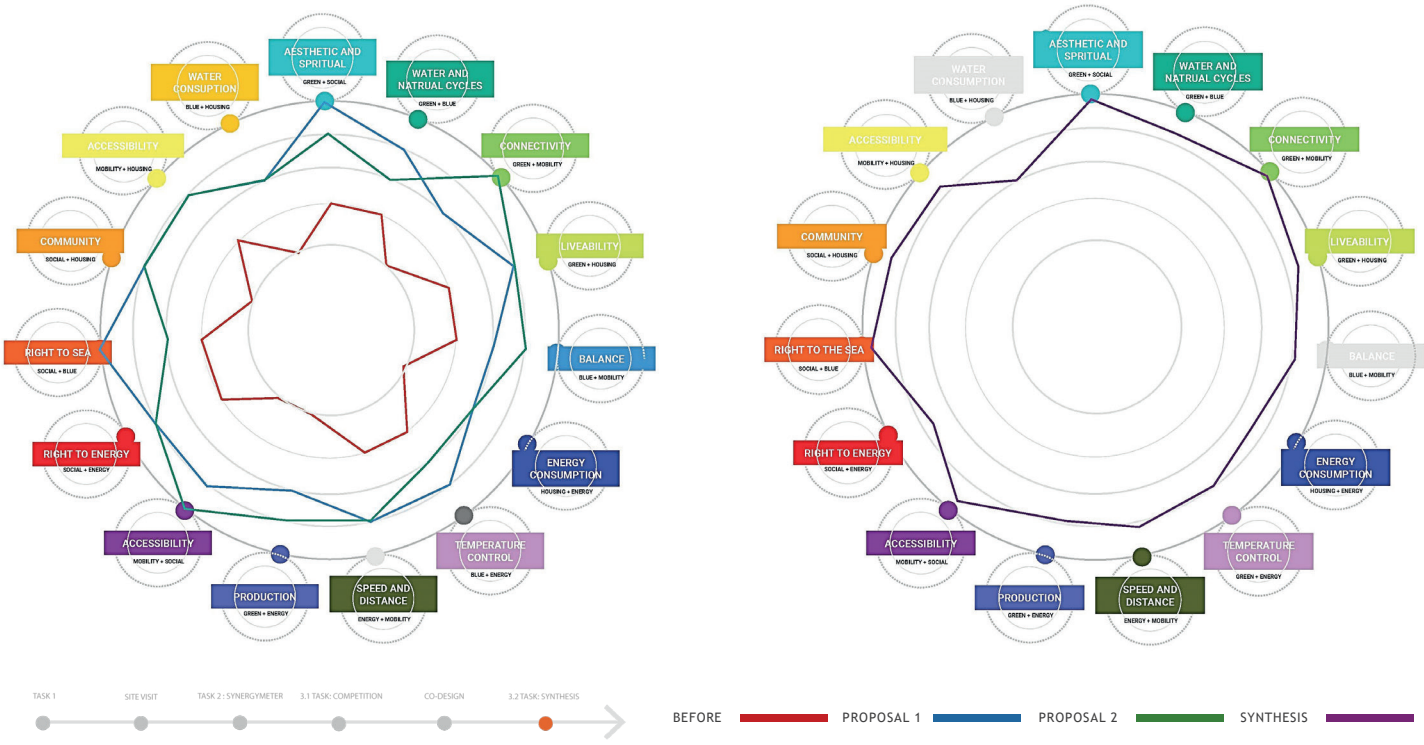


Figure 4.6.14. Analysis with the synergy meter: before, proposals 1 and 2 and synthesis (Source Team6: Chen, Gancarczyk, Sakhareva, Del Rio, Daulenskyte, & Movahedi, 2023)