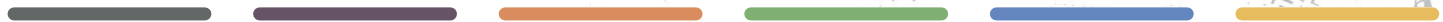


VLC SYNERGIC URBAN INFRA STRUCTURES

VALENCIA SUMMER SCHOOL ON SYNERGIC URBAN INFRASTRUCTURES



Editors: Juanjo Galan Vivas | Luis Bosch Roig

To cite this publication please use the following reference:

Galan Vivas, Juanjo and Bosch Roig, Luis (editors) (2024). *Valencia Summer School on Synergic Urban Infrastructures*.
Valencia: edUPV. DOI: <https://doi.org/10.4995/2024.677901>

Editors

Juanjo Galan Vivas
Luis Bosch Roig

Authors

Juanjo Galan Vivas
Mrudhula Joshy
Stefano Salata
Fabio Bayro Kaiser
Christian Larisch
Alena Cohrs
Carolina Pacchi
Christoph Wessling
Maciej Lasocki
Kinga Zinowiec-Cieplik
Luis Bosch Roig
Julia Deltoro Soto
Christa Reichter
Adolfo Vigil de Insausti

Edited by: edUPV, 2024
Ref.: 6779_01_01_01

Graphic design and layout

Júlia Martínez Villaronga
Juanjo Galan Vivas

© of the texts and images: the authors

ISBN: 974-84-1396-254-2 (printed version) ISBN: 978-84-1396-255-9 (electronic version)
DOI: <https://doi.org/10.4995/2024.677901>

If the reader detects a mistake in the book or wishes to contact the authors, he can send an email to edicion@editorial.upv.es



Valencia Summer School on Synergic Urban Infrastructures / edUPV

The reuse of the contents is allowed through the copying, distribution, exhibition and representation of the work, as well as the generation of derivative works as long as the authorship is acknowledged and it is cited with complete bibliographic information. Commercial use is not permitted and derivative works must be distributed under the same license as the original work.

TABLE OF CONTENTS

SECTION 0_FOREWORD	7
SECTION 1_INTRODUCTION	13
• Chapter 1.1. The VLC SUMMER SCHOOL on synergic urban infrastructures Juanjo Galan Polytechnic University of Valencia	15
SECTION 2_URBAN INFRASTRUCTURES: ANALYSIS AND TOOLBOXES	37
• Chapter 2.1. GREEN INFRASTRUCTURES: PRINCIPLES, DIAGNOSIS AND TOOLBOX IN VALENCIA Stefano Salata and Carolina Pacchi Politecnico di Milano	39
• Chapter 2.2. BLUE INFRASTRUCTURES: PRINCIPLES, DIAGNOSIS AND TOOLBOX IN VALENCIA Maciej Lasocki Warsaw University of Technology	53
• Chapter 2.3. SOCIAL INFRASTRUCTURE: PRINCIPLES, DIAGNOSIS AND TOOLBOX IN VALENCIA Mrudhula Koshy Norwegian University of Science and Technology	61
• Chapter 2.4. HOUSING INFRASTRUCTURE: PRINCIPLES, DIAGNOSIS AND TOOLBOX IN VALENCIA Christoph Wessling and Alena Cohrs Technical University of Berlin	67
• Chapter 2.5. MOBILITY INFRASTRUCTURES: PRINCIPLES, DIAGNOSIS AND TOOLBOX IN VALENCIA Christian Larisch and Fabio Bayro Kaiser RWTH Aachen University	73
• Chapter 2.6. ENERGY INFRASTRUCTURES: PRINCIPLES, DIAGNOSIS AND TOOLBOX IN VALENCIA Juanjo Galan Polytechnic University of Valencia.	85

SECTION 3 _ SYNERGY METHODS & TOOLS IN URBAN PLANNING **95**

- **Chapter 3.1. SYNERGY TOOLS: DETECTING, ASSESSING, AND INCREASING SYNERGIES BETWEEN URBAN INFRASTRUCTURES** **97**
Juanjo Galan | Polytechnic University of Valencia. Maciej Lasocki and Kinga Zinowiec-Cieplik | Warsaw University of Technology. Stefano Salata | Politecnico di Milano. Fabio Bayro Kaiser and Christian Larisch | RWTH Aachen University. Mrudhula Koshy | Norwegian University of Science and Technology. Alena Cohrs | Technical University of Berlin. Luis Bosch Roig and Julia Deltoro Soto | Polytechnic University of Valencia. Martina Schretzenmayr | Lecturer, ETH Zurich

SECTION 4 _ SYNERGIC PROPOSALS FOR THE VLC PILOT SITE **125**

- **Chapter 4.1. TEAM 1: VALENCIA WATERMOAIC: Revitalizing Ecosystem through Urban Wetlands** **127**
Summary by Stefano Salata and Carolina Pacchi | Politecnico di Milano
- **Chapter 4.2. TEAM 2: BYE LAZAROTE** **131**
Summary by Kinga Zinowiec-Cieplik | Warsaw University of Technology
- **Chapter 4.3. TEAM 3: SYNERGY SCAPE** **141**
Summary by Christoph Wessling and Alena Cohrs | Technical University of Berlin
- **Chapter 4.4. TEAM 4: THE HAM OF SYNERGIES** **145**
Summary by Mrudhula Koshy | Norwegian University of Science and Technology
- **Chapter 4.5. TEAM 5: RECONNECTION OF LITORAL NEIGHBOURHOODS** **153**
Summary by Fabio Bayro Kaiser and Christian Larisch | RWTH Aachen University
- **Chapter 4.6. TEAM 6: BRING BACK THE SEA TO THE CITY + DOWN THE RIVER WE GO** **157**
Summary by Julia Deltoro Soto, Luis Bosch Roig and Adolfo Vigil de Insausti | Polytechnic University of Valencia

SECTION 5 _ CONCLUSIONS **171**

- **Chapter 5.1. DISCUSSION AND SOME FINAL REFLECTIONS** **173**
Luis Bosch Roig | Polytechnic University of Valencia. Juanjo Galan | Polytechnic University of Valencia. Mrudhula Koshy | Norwegian University of Science and Technology. Stefano Salata | Politecnico di Milano. Maciej Lasocki and Kinga Zinowiec-Cieplik | Warsaw University of Technology. Christoph Wessling and Alena Cohrs | Technical University of Berlin. Fabio Bayro Kaiser, Christian Larisch, Christa Reicher | RWTH Aachen University. Julia Deltoro Soto and Adolfo Vigil de Insausti | Polytechnic University of Valencia

4.4_TEAM 4. THE HAM OF SYNERGIES

Mrudhula Koshy | Assistant Professor, Norwegian University of Science and Technology

The spatial strategy formulated by Team 4 -titled the 'Ham of Synergies'- paid tribute to the existing potentials of Nazaret, El Grau and the former river Turia delta, and primarily focussed on alleviating the physical borders between these areas that contributed to their socio-spatial fragmentation. This team relied less on the synergy meter as was presented in the Task 2 framework. The students instead used the idea of synergies between infrastructures to understand the existing interdependencies between the various infrastructures, and the contextual embeddedness of the infrastructures ensconced by the spatial-temporal trajectories and necessities of the case area. The site had a curious array of urban morphologies, ranging from the historically dense and depleted neighbourhood of Nazaret, the brownfield left behind after the Formula 1 race event, the slowly declining farmlands, and the globally aspiring science museum which is the legacy of the starchitect Santiago Calatrava. These diverse urban morphologies are located in close physical proximity but are fragmented by

large mobility infrastructure and interspersed with patches of neglected water bodies and disparate green areas. Stitching these disconnected urban elements with carefully thought-out spatial strategies informed by the perspectives of the communities were primary for this student group.

Figure 4.4.1. displays the initial conceptual images presented by the students regarding their general urbanism logic for the case.

The students firstly sought to understand the existing contextual synergies between the different infrastructures. The spatial logic demanded by the site motivated the students to enhance the existing infrastructure capacities through a layering and clustering experiment, wherein blue and green formed the base layers, mobility and energy the service-oriented cluster, and lastly, the housing and social infrastructure embedding the value-based morphological dimension. Students envisaged the blue-green fabric as the space for adaptive nature that can deal with potential floods in a

resilient manner. Furthermore, the renaturing and reclamation of brownfields and abandoned agricultural areas as an extension of the Turia river delta gave rise to new possibilities for recreation, biodiversity and play. The previously fragmented water systems were connected and seamlessly embedded within the new green fabric. In some areas, this meant that underground water was brought to the surface. Together, this creates an array of parks, sports fields, playgrounds, and outdoor gyms, that serve as flexible and adaptable spaces to host temporary exhibitions, local community events and seasonal food kiosks. Within this newly reconfigured blue-green fabric, the students envisage low-rise housing and energy efficient typologies powered by solar panels. Flexible use is given priority, enabling residents the freedom to imagine and reimagine their living and recreational spaces. Existing mobility systems were complemented by soft mobility walkable and bikeable paths. Figures 4.4.2, 4.4.3 and 4.4.4 show the enhanced clustered systems of blue-green, housing-social, and mobility-energy infrastructures respectively.

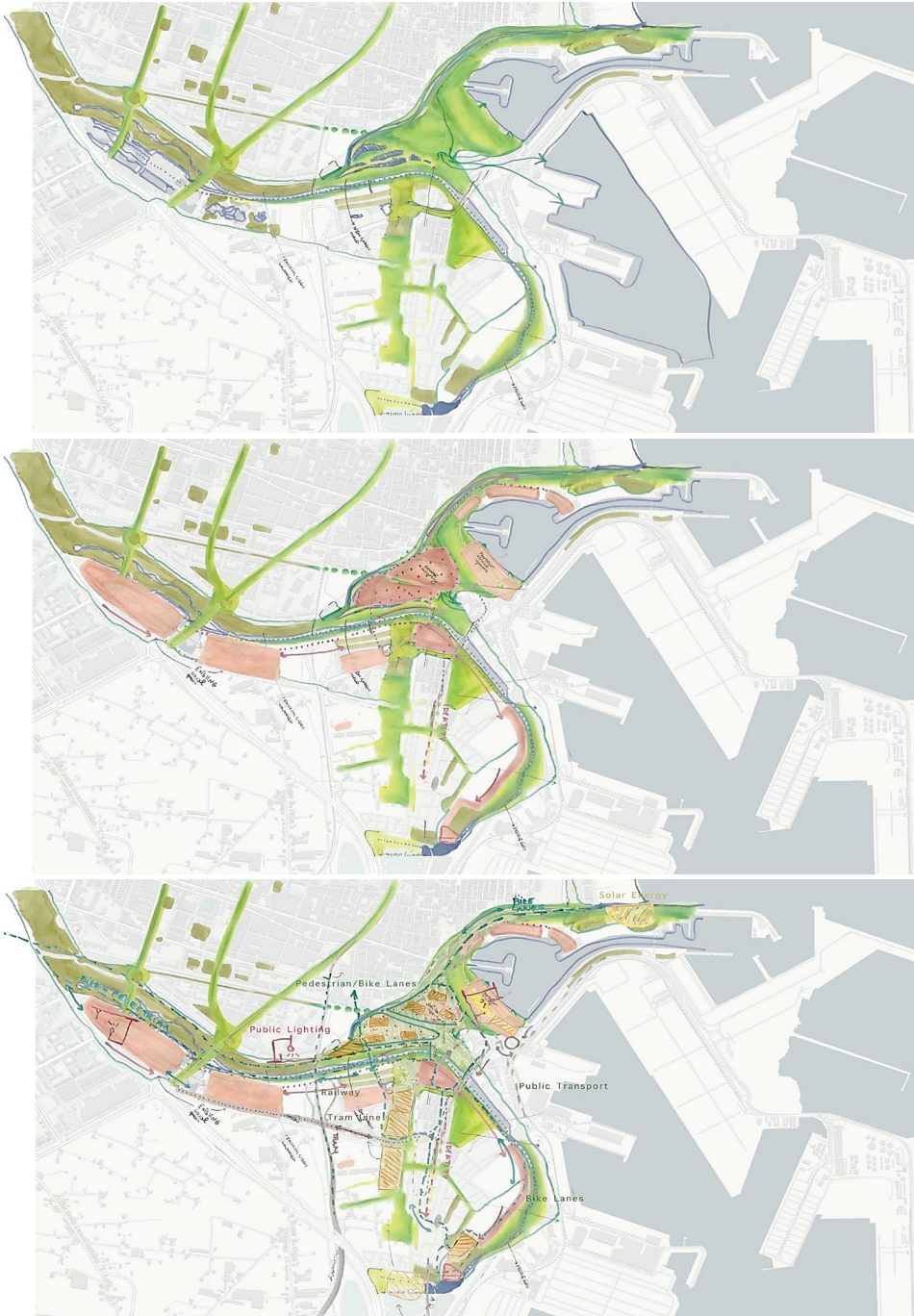


Figure 4.4.1. Sequence of conceptual framing and thinking guided by the idea of synergic infrastructures (source: Sutkowska, Farkas, Valarezo, Cubel, & Roze, 2023)

4. Synergic proposals for the VLC pilot site

4.4_TEAM 4. THE HAM OF SYNERGIES

Mrudhula Koshy



Figures 4.4.2, 4.4.3, 4.4.4 (from top to bottom). Proposed blue-green, housing-social, and mobility-energy infrastructures for the case study area (source: Sutkowska, Farkas, Valarezo, Cubel, & Roze, 2023)

The students from team 4 translated these initial concept sketches into an integrated socio-spatial plan as shown in Figure 4.4.5, indicating the potentialities for new blue-green, housing-social, and mobility-energy configurations.



Figure 4.4.5. Proposed socio-spatial plan for the case study area (source: Sutkowska, Farkas, Valarezo, Cubel, & Roze, 2023)

The students also took keen note of the perspectives provided by the various stakeholders and community members. The existing vibrant community engagement is recognised as a strength of the area which the students weaved into their socio-spatial strategy. This led them to focus on the borders between areas and to enhance the transition between the different neighbourhoods to facilitate better interaction among the residents through community centres and recreational spaces. For example, the connection between Nazaret's urban grid with the proposed park was enhanced by a

boulevard of orange trees, a key recognizable greening element in Valencia. The connection between Nazaret and La Punta was enhanced by the introduction of vegetation corridors. The existing harbour wall which is currently a barrier is weaved into the spatial strategy by turning it into a graffiti wall showcasing the work of local artists. As a larger socio-economic strategy to revive the agricultural legacy of the area, the students also proposed the restoration of neglected agricultural land and inviting young aspiring farmers to learn about local traditional agricultural practices.

As part of conventional detailing, sectional profiles and schematic collages were used to indicate the spatial quality and the new uses of the redesigned spaces as shown in Figures 4.4.6, 4.4.7 and 4.4.8.

The students' work serves as an inspiring example of how diverse, multi-cultural and multi-disciplinary perspectives can contribute to better education, research and collaboration pathways in urban planning and design.

4. Synergic proposals for the VLC pilot site
4.4_TEAM 4. THE HAM OF SYNERGIES

Mrudhula Koshy

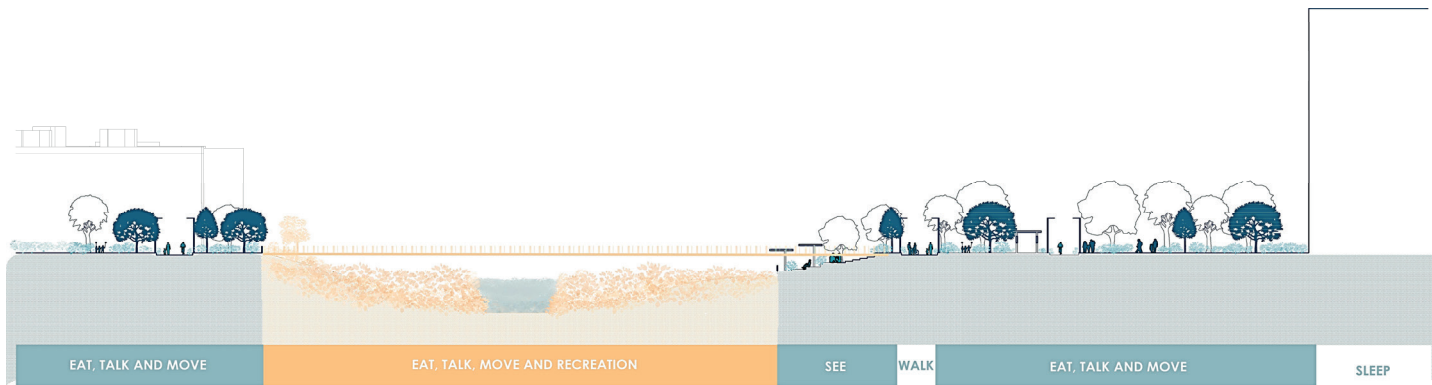
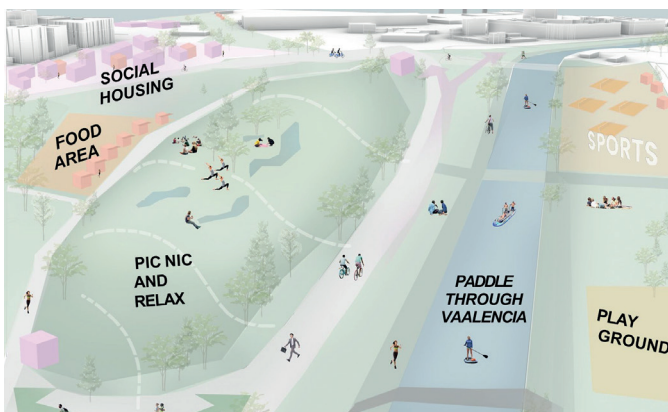


Figure 4.4.6. Profile along the park to be located in the old riverbed of the Turia (source: Sutkowska, Farkas, Valarezo, Cubel & Roze, 2023)



Figures 4.4.7 and 4.4.8. Conceptual collages of the park proposed in the old riverbed of the Turia (source: Sutkowska, Farkas, Valarezo, Cubel & Roze, 2023)

The TEAM 4 and their personal summary

Team 4 was integrated by six master and bachelor students from different ENHANCE universities: Alicja Sutkowska (Warsaw UT), Dóra Farkas (RWTH Aachen), Isabella Valarezo (POLIMI), Lilan Cubel Gamir (UPV), and Liva Roze (TU Berlin). Their work during the on-site week in Valencia was tutored by the author of this chapter, Assistant Professor Mrudhula Koshy (Norwegian University of Science and Technology, Department of Architecture and Planning).

The following lines display a short summary prepared by the members of Team4 at the end of the course.

“The Valencian district of Poblados Maritimos, situated along the picturesque Turia River and city harbor, has long been an emblem of both historical significance and contemporary urban challenges. Over the past decades, this coastal neighborhood has weathered fluctuating municipal priorities and undesirable investments. Local activists tirelessly champion justice, while residents take pride in the district’s rich fishing and agricultural heritage. This design project, borne out of the VLC Summer School, seeks to establish a new paradigm of urban development in this cherished but uncertain area.

Our concept aims to generate synergies among key urban elements, pairing the blue with the

green infrastructure, social aspects with the housing problems, and energy-mobility systems, to establish a cohesive, interconnected, and community-centric urban enclave. Our spatial strategy is designed not only to revitalize fading historical identities, exemplified by the case of Nazaret, but also to cultivate the novel ones. By fostering a relationship between these pivotal components, we aspired to embody the principles of sustainability, inclusivity, and community engagement.

Firstly, our proposal seeks to extend the green expanse of the Turia River Delta, a hub of natural beauty and recreation. This expansion involves reconnecting the Caterpillar Bridge with the El Grau blocks located across the renatured water lane, effectively dismantling the barriers that have separated the local community from the rest of the city. Additionally, we envision the reclamation of previously abandoned agricultural lands to establish a new park. Within the newly designed greenery we envision small pavilions – adaptable spaces which could become cafes, host temporary exhibitions, and facilitate local gatherings. Furthermore, sports fields, playgrounds, and outdoor gyms are strategically positioned to enhance the recreational facilities and quality of life for the district’s residents.

The design introduces low-density multipurpose buildings, carefully integrated into the fabric of the community. These structures offer flexible living spaces while minimizing environmental

impact. Nevertheless, in addition to reimagining existing spaces, we advocate for the adoption of sustainable practices for future developments, e.g. using solar energy to illuminate the newly pathed pedestrian and bicycle lanes, thereby enhancing the area’s safety.

Amidst the array of tangible transformations, we emphasize the intangible yet invaluable aspects of community engagement. The project invests in the restoration of agricultural soils, providing a platform for intergenerational knowledge exchange. Young farmers are afforded the opportunity to learn from their experienced elders, rekindling the legacy of cultivation. Furthermore, we propose adorning the unattractive harbor wall with captivating graffiti, inviting local artists to weave their creativity into the district’s tapestry. This artistic intervention serves as a distinctive landmark, attracting tourists to explore the district’s unique character.

As designers, particularly as students, we acknowledge that the realization of our visions is often unreachable. Nevertheless, it is our goal to actively seek innovative concepts and potential transformations of urban spaces, offering glimpses into their prospective forms. We derive great satisfaction from the opportunity to engage with the enchanting Valencian districts and to connect with its inhabitants. Our earnest aspiration is that their articulated needs and aspirations shall resonate and find attentive ears, thereby serving as catalysts for meaningful progress”.