TU Delft

Delft University of Technology

A strategy for resilience. Alamar, Havana

Caso, Olindo; Verhoeven, Wesley

Publication date
2018

Document Version
Final published version

Published in
Reactive Proactive Architecture

Citation (APA)
Caso, O., & Verhoeven, W. (2018). A strategy for resilience. Alamar, Havana. In I. Cabrera i Fausto, E. Fenollosa Forner, Á. Mas Tomás, J. M. Barrera Puigdollers, L. Bosch Roig, J. L. Higón Calvet, A. Llorca Ponce, M. T. Palomares Figueres, A. Portalés Mañanós, & J. M. Songel González (Eds.), *Reactive Proactive Architecture* (pp. 182-189). Editorial Universitat Politecnica de Valencia.

Important note
To cite this publication, please use the final published version (if applicable).
Please check the document version above.

Copyright
Other than for strictly personal use, it is not permitted to download, forward or distribute the text or part of it, without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license such as Creative Commons.

Takedown policy
Please contact us and provide details if you believe this document breaches copyrights.
We will remove access to the work immediately and investigate your claim.

This work is downloaded from Delft University of Technology.
For technical reasons the number of authors shown on this cover page is limited to a maximum of 10.

reactive proactive architecture

reactive proactive architecture

UNIVERSITAT POLITÈCNICA DE VALÈNCIA
ESCOLA TÈCNICA SUPERIOR D'ARQUITECTURA
Editorial Universitat Politècnica de València

reactive
proactive
architecture

UNIVERSITAT POLITÈCNICA DE VALÈNCIA

ESCOLA TÈCNICA SUPERIOR D'ARQUITECTURA

Editorial Committee:

Ivan Cabrera i Fausto
Ernesto Fenollosa Forner
Ángeles Mas Tomás
José Manuel Barrera Puigdollers
Lluís Bosch Roig
José Luis Higón Calvet
Alicia Llorca Ponce
María Teresa Palomares Figueres
Ana Portalés Mañanós
Juan María Songel González

Coordination and design:

Mariví Monfort Marí
Marcos Lizondo Chardí

Publisher:

Editorial Universitat Politècnica de València,2018
http://www.lalibreria.upv.es
ISBN 978-84-9048-713-6

All rights reserved:

© of the images, their authors
© of the drawings, their authors
© of the texts, their authors
© of this edition

The contents of this publication have been evaluated by this **Scientific Committee:**

Fernando Agrasar Quiroga
Universidade da Coruña

Ana Almerich Chuliá
Universitat Politècnica de València

Miguel Alonso del Val
Universidad de Navarra

Juan José Arrizabalaga Echevarría
Euskal Herriko Unibertsitatea

Oya Atalay Franck
Zurich University of Applied Sciences

Marilda Azulay Tapiero
Universitat Politècnica de València

Berta Bardí i Milà
Universitat Politècnica de Catalunya

José Manuel Barrera Puigdollers
Universitat Politècnica de València

Manuel Blanco Lage
Universidad Politécnica de Madrid

Lluís Bosch Roig
Universitat Politècnica de València

Óscar Brito González
Central Saint Martins, University of the Arts London

Ivan Cabrera i Fausto
Universitat Politècnica de València

Juan Calatrava Escobar
Universidad de Granada

Romina Canna
IE University

Pepa Cassinello
Universidad Politécnica de Madrid

Pilar Chías Navarro
Universidad de Alcalá

Helena Coch Roura
Universitat Politècnica de Catalunya

Vicente Colomer Sendra
Universitat Politècnica de València

Beatriz Colomina
Princeton University

Manuel Couceiro da Costa
Universidade de Lisboa

Nur Çaglar
TOBB University of Economics and Technology at Ankara

Pau de Solà-Morales Serra
Universitat Rovira i Virgili

Adalberto Del Bo
Politecnico di Milano

Carmen Diez Medina
Universidad de Zaragoza

Inmaculada Esteban Maluenda
Universidad Europea de Madrid

Emilio Faroldi
Politecnico di Milano

Juliana Felkner
The University of Texas at Austin

Ernesto Fenollosa Forner
Universitat Politècnica de València

José María Fran Bretones
Universitat Politècnica de València

Jordi Franquesa Sánchez
Universitat Politècnica de Catalunya

Inés García Clariana
Universidad Europea de Valencia

Ángela García Codoñer
Universitat Politècnica de València

Daniel García Escudero
Universitat Politècnica de Catalunya

Carlos Gómez Alfonso
Universitat Politècnica de València

Geoffrey Grulois
Université Libre de Bruxelles

José Luis Higón Calvet
Universitat Politècnica de València

Carmen Jordá Such
Universitat Politècnica de València

Ignacio Juan Ferruses
Universidad CEU Cardenal Herrera

Francisco Juan Vidal
Universitat Politècnica de València

Susanne Komossa
Technische Universiteit Delft

Susana Landrove
Fundación DOCOMOMO Ibérico

Laura Lizondo Sevilla
Universitat Politècnica de València

Concha López González
Universitat Politècnica de València

Blanca Lleó Fernández
Universidad Politécnica de Madrid

Mari Carmen Llinares Millán
Universitat Politècnica de València

Alicia Llorca Ponce
Universitat Politècnica de València

Antonio Macià Mateu
Universitat d'Alacant

Arturo Martínez Boquera
Universitat Politècnica de València

Ángeles Mas Tomás
Universitat Politècnica de València

Thomas McQuillan
Oslo School of Architecture and Design

Saverio Mecca
Università degli Studi di Firenze

Anne Mette Boye
Arkitektskolen Aarhus

Camilla Mileto
Universitat Politècnica de València

Javier Monclús Fraga
Universidad de Zaragoza

Francisco Montero Fernández
Universidad de Sevilla

Pablo Navarro Esteve
Universitat Politècnica de València

Lucyna Nyka
Gdańsk University of Technology

Leticia Ortega Madrigal
Institut Valencià de l'Edificació

Maite Palomares Figueres
Universitat Politècnica de València

Víctor Pérez Escolano
Universidad de Sevilla

Javier Pérez Igualada
Universitat Politècnica de València

Marios C. Phocas
University of Cyprus

Àngel Pitarch Roig
Universitat Jaume I

Çiğdem Polatoğlu
Yıldız Teknik Üniversitesi

Ana Portalés Mañanós
Universitat Politècnica de València

Javier Poyatos Sebastián
Universitat Politècnica de València

Hazem Rashed-Ali
The University of Texas at San Antonio

Donna V. Robertson
College of Architecture, Illinois Institute of Technology

Krešimir Rogina
University American College Skopje

Marcos Ros Sempere
Universidad Politécnica de Cartagena

Filipa Roseta
Universidade de Lisboa

Alberto Rubio Garrido
Universidad Politécnica de Madrid

Felipe Samarán Saló
Universidad Francisco de Vitoria

Veronika Schröpfer
Architects' Council of Europe

Marina Sender Contell
Universitat Politècnica de València

Begoña Serrano Lanzarote
Universitat Politècnica de València

Félix Solaguren-Beascoa de Corral
Universitat Politècnica de Catalunya

Enrique Solana Suárez
Universidad de Las Palmas de Gran Canaria

Juan María Songel González
Universitat Politècnica de València

Cristina Soriano Cuesta
Universidad de Sevilla

Laura Soto Francés
Institut Valencià de l'Edificació

Constantin Spiridonidis
Aristotle University of Thessaloniki

Alexandra Staub
Pennsylvania State University

Peter Staub
University of Liechtenstein

Sally Stewart
Mackintosh School of Architecture, Glasgow School of Art

Judit Taberna Torres
Universitat Politècnica de Catalunya

Vasilia Trova
University of Thessaly

Macarena Trujillo
Universitat Politècnica de València

Judith Urbano
Universitat Internacional de Catalunya

Mónica Val Fiel
Universitat Politècnica de València

Koenraad Van Cleempoel
Universiteit Hasselt

José Antonio Vázquez Rodríguez
Universidade da Coruña

Fernando Vegas López-Manzanares
Universitat Politècnica de València

Marisol Vidal
Graz University of Technology

María José Viñals Blasco
Universitat Politècnica de València

Maria Voyatzaki
Aristotle University of Thessaloniki

Tadeja Zupančič
Univerza v Ljubljani

INDEX

017_0. INTRODUCTION
Ivan Cabrera i Fausto

023_BLOCK 1: RESEARCH BY DESIGN IN ARCHITECTURE

024_Introduction: (Re)Searching Architectural Design.
Constantin-Viktor Spiridonidis

032_Chapter #1.01: Lessons learned in the passive design of social housing representative of the Mediterranean vernacular architecture.
Begoña Serrano Lanzarote; Leticia Ortega Madrigal; Lucía Ramírez Pareja; Laura Soto Francés

038_Chapter #1.02: Systematization and architecture.
Paolo De Marco; Fran Silvestre; Pablo Camarasa

044_Chapter #1.03: The control of subjectivity in architectural design-based research: the problem of style.
Sergio Castelló Fos

050_Chapter #1.04: Teaching practice as research. The case of the 'Dutch Academy' in the 1960's and 1970's.
Berta Bardí-Milà; Daniel García-Escudero; Joan Moreno Sanz

056_Chapter #1.05: The Education of the Architect: Learning from the Black Mountain College Experience.
Ana Gilsanz Díaz; María Elia Gutiérrez Mozo; José Parra Martínez

062_Chapter #1.06: The emergence of a new aesthetic.
José Manuel Barrera Puigdollers; Luis Miguel Ramada Peiró

069_BLOCK 2: ETHICS, CRITICAL THINKING AND NARRATIVE IN ARCHITECTURE

070_Introduction: Network theory: The personal is political
Alexandra Staub

076_Chapter #2.01: History as a design element: dialogue between existing and contemporary architecture.
Emilio Faroldi; Maria Pilar Vettori

082_Chapter #2.02: Rethinking the historiography of the nineteenth-century Ottoman architecture: Encounters with the "west".
Sibel Acar

088_Chapter #2.03: Design and interpret the place of present.
Antonino Margagliotta

096_Chapter #2.04: Cities without limits.
Alberto Rubio Garrido

102_Chapter #2.05: Fake architecture.
José Manuel Barrera Puigdollers; Luis Miguel Ramada Peiró

109_BLOCK 3: IDEATION AND REPRESENTATION IN ARCHITECTURE

110_Introduction: Research and innovation in the field of conception and representation of architecture.
Pilar Chías Navarro

114_Chapter #3.01: Reflections about the computer means with which we produce architecture to maintain control over the entire process.
Marina Sender Contell; Manuel Giménez Ribera; Juan Serra Lluch

120_Chapter #3.02: The church of *Nuestra Señora de El Puig* (Valencia), a sample of typological variety of cross vaults.
Esther Capilla Tamborero; Patricia Alemany Pereira; Saúl Aroca Tévar; Javier Magán Cortinas; Adrián Pastor Climent; Javier Plaza Montesinos; Mª José Sanchis Casabán

126_Chapter #3.03: Architectures for the Improvement of Living Conditions in the Third Age.
Ana Torres Barchino; Juan Serra Lluch; Jorge Llopis Verdú; Anna Delcampo Carda

133_BLOCK 4: CITY, TERRITORY AND LANDSCAPE

134_Introduction: City, territory and landscape. A journey through the contemporary urban discipline
Borja Ruíz-Apilánez Corrochano; Ana Portalés Mañanós; David Urios Mondéjar

140_Chapter #4.01: Habitat evolution in Iberian Eastern façade, from Neolithic to the Bronze Age.
Joaquín Jiménez-Puerto; Joan Bernabeu Aubán; Teresa Orozco Köhler

146_Chapter #4.02: Designing in the landscapes of archeology.
Luigi Savio Margagliotta

154_Chapter #4.03: Territorial Protection applied to Cultural Heritage: Challenges and Opportunities. The case of the Cultural Park of Valltorta-Gassulla (Castellón, Spain).
María Emilia Casar; María José Viñals; Luís Orts

160_Chapter #4.04: Searching spatio-temporal patterns in urban areas, using Artificial Neural Networks.
Juan Pedro Romera Giner; José Durán Fernández

164_Chapter #4.05: Physical and social attributes in the urban identity. Analysis of the residents' perception of València (Spain).
María José Viñals; Pau Alonso-Monasterio

170_Chapter #4.06: Demographic and socioeconomic dynamics in the city of Valencia. An analysis by neighbourhoods.
Alicia Llorca Ponce; Andrés Cózar Lizandra

176_Chapter #4.07: Influence of external features on housing price. A study in the city of Valencia.
Andrés Cózar Lizandra; Alicia Llorca Ponce; Soledad Valero Cubas

182_Chapter #4.08: A strategy for resilience. Alamar, Havana.
Olindo Caso; Wesley Verhoeven

190_Chapter #4.09: The project of cohabitation.
Claudio Zanirato

198_Chapter #4.10: Urban regeneration of peripheric landscapes. Basis for a research by design approach to the recomposition of public space in social housing estates of Valencia.
Javier Pérez-Igualada

204_Chapter #4.11: The next mobility adventure.
Claudio Zanirato

211_BLOCK 5: BUILDING TECHNOLOGY AND ADVANCED MATERIALS

212_Introduction: (Re)...Towards non-standard Curricula in Architectural Education: The impact of a new materiality on architecture and its education
Maria Voyatzaki

220_Chapter #5.01: The particular stereotomy at the 'Obra Nova' of the Valencia`s Cathedral.
Vicente Blasco; Ángeles Mas; Carlos Lerma; Enrique Gil; Mª Eugenia Tornes

226_Chapter #5.02: Evolution in shell concrete structures in Valencia Region (Spain).
Fernando Arnau; Ernesto Fenollosa; Begoña Serrano

232_Chapter #5.03: Usage of bamboo powder as an additive in adobe bricks and bamboo canes frame for the reinforcement of adobe structure.
Michele Paradiso; Francesca Bizzeti; Antonio Farigu; Olimpia Lotti

240_Chapter #5.04: The cross laminated timber as an energetic alternative in low structural energy systems.
Mario Fernández; Adolfo Alonso; Verónica Llopis

246_Chapter #5.05: Life Cycle Assessment as a Project Decision-Making Tool.
A. Quintana; I. Guillén-Guillamón

252_Chapter #5.06: Study of the potential for cost-effective energy savings in the public school sector in Valencia through the optimal cost methodology.
Esther Liébana; Begoña Serrano; Leticia Ortega

260_Chapter #5.07: Mathematical modelling and experimental verification of the thermal insulation properties of coating solutions. Applications for Buildings.
Frank Florez; Jose Luis Higón; Pedro Fernandez de Córdoba

266_Chapter #5.08: Experimental determination approximation of the stage opening absorption spectrum in theatres by using the response surface methodology. Case study.
Blanca Pérez; Ignacio Guillén; Vicente Gómez; Ana Llopis

272_Chapter #5.09: Affective evaluation of lighting in parks and gardens.
Nuria Castillo; Carmen Llinares; Natalia Cardona; Vicente Blanca-Gimenez

278_Chapter #5.10: Adaptable Building Envelopes.
M. Ioannou; M.C. Phocas

284_Chapter #5.11: Problems in the adoption of BIM for structural rehabilitation.
Víctor Fernández-Mora; Víctor Yepes

290_Chapter #5.12: Introduction to digital fabrication and parametric design as project strategy for architecture teaching: workshop experience at the Polytechnic University of Valencia.
Amanda Ramón; Santiago Sánchez; Jose Gamón; Francisco Jose Catalán; Javier Bono; Jose Martínez

296_Chapter #5.13: Influence in the modeling of boundary conditions between analysis models and real structures.
Enrique Gil; Jose Vercher; Carlos Lerma; Ángeles Mas; Xavier Navarro; Antonio López

304_Chapter #5.14: Decoding Natural Kinematics for Structural Applications.
N.I. Georgiou; M.C. Phocas

311_BLOCK 6: THEORY AND CRITICISM IN ARCHITECTURE

312_Introduction: Theory and criticism in architecture. Are they still relevant today?
Plácido González Martínez; Juan María Songel González

314_Chapter #6.01: The problem of the tribunal in the Basilica of Fano.
Federico Iborra Bernad; José Luis Baró Zarzo

320_Chapter #6.02: Ecochard's housing grid, the rebirth of modern architecture in Casablanca.
Nezha Alaoui

326_Chapter #6.03: Learning from *L'Architecture d'aujourd'hui*: A way of designing a modern for the 1950s' Ankara.
Selda Bancı

332_Chapter #6.04: Human behaviour and urban form. A study from Alexander's patterns.
Javier Poyatos Sebastián; José Luis Baró Zarzo; Guillermo Guimaraens Igual; Lidia García Soriano; Yolanda Yolanda Hernández Navarro

338_Chapter #6.05: Towards a Humble Architecture: Ambiguity, Inevitability, and the Search for a Unified Form.
Isben Onen

344_Chapter #6.06: The inverse canon.
Salvatore Rugino

350_Chapter #6.07: Framing gender: windows through which femininity crosses over.
Thays Guimarães; Sabrina Fontenele

356_Chapter #6.08: Hiding architecture:Three strategies to erase the architectural object in XXIst century.
Marco Enia

364_Chapter #6.09: The sublimation of the ordinary. A phenomenological analysis of the Gugalun house. Peter Zumthor (1990-1994).
Jaime Aparicio Fraga; Cristina Ruiz Muñoz

373_BLOCK 7: ARCHITECTURAL HERITAGE AND CONSERVATION

374_Introduction: Architectural inheritance conservation: protection, transmission and future-making
Loughlin kealy; Lluís Bosch Roig

378_Chapter #7.01: The Roman Baths of Mura in Llíria (Valencia). Study applied to the thermal functionality of the Roman Thermal Complex
Santiago Tormo-Esteve

384_Chapter #7.02: A war minister, two idle amateur builders and an eccentric designer: the true story of the tile vaults in the north of France.
Federico Iborra Bernad

390_Chapter #7.03: Heritage in between "Patrimonialisation" & Sustainability: The case of the Moroccan Medina.
Mouna Sedreddine; Siham El Rharbi

396_Chapter #7.04: La Granja de Sinyent: A Medieval Architecture Surrounded by Enigmas.
Paula Server Llorca

402_Chapter #7.05: Royal Garrison Church. Constructive and structural analysis.
Ester Vera-García; Adolfo Alonso Durá; Verónica Llopis-Pulido; Ana Almerich-Chulia

408_Chapter #7.06: Diapperared heritage. The Monastery of La Murta.
Marina Sender Contell; Ricardo Perelló Roso

414_Chapter #7.07: Historical and constructive analysis of "Los Santos Juanes" church in Valencia.
Jose Miguel Molines Cano; A.I. Almerich Chulia

420_Chapter #7.08: Developing a System of Correlational Data Organization and Assessment for the Preservation of the Spanish Colonial Churches of the Philippines.
Caryn Paredes-Santillan; Michael Manalo

428_Chapter #7.09: Piranesi and his School. The invention of ancient.
Valerio Tolve

434_Chapter #7.10: Sardinian civil architecture in the second half of the 18th century.
Jose Miguel Molines Cano; Antonio López Amores

440_Chapter #7.11: Laws of water and land on the industrial setup of river Molinar.
Ciro Vidal Climent; Ivo Vidal Climent

446_Chapter #7.12: Édouard André and the Horticole Magazine. some reflexions about two parks in paris: trocadero and monceau.
Maite Palomares Figueres; Ciro Vidal Climent; Ivo Vidal Climent

452_Chapter #7.13: The illumination of architectural heritage: particular cases of study.
Gracia López Patiño; Alicia Martínez Antón; Salvador Silvestre Martinez; Andrea Gallego Belda

458_Chapter #7.14: Creating a residential building database: sources, contents and reliability.
Arianna Guardiola-Víllora; Luisa Basset-Salom; Agustín Pérez-García

464_Chapter #7.15: Research experiences in cooperation and sustainable development. The case of Baasneeré (Burkina Faso).
Camilla Mileto; Fernando Vegas López-Manzanares; Lidia García-Soriano; F. Javier Gómez-Patrocinio

470_Chapter #7.16: Cultural heritage: an opportunity to connect university and society.
Francisca Roger Espinosa

476_Chapter #7.17: RE-ARCH or how to survive as a modern school building.
Amaya Martínez Marcos

484_Chapter #7.18: Functional obsolescence in modern architecture. The demolition of Valencia's German School's Kindergarten.
Irene Benet Morera

491_8. CONCLUSIONS
Ivan Cabrera i Fausto

CHAPTER #4.08

A STRATEGY FOR RESILIENCE. ALAMAR, HAVANA

Olindo Caso[a]; Wesley Verhoeven[b]

[a]Faculty of Architecture and the Built Environment, Delft University of Technology, The Netherlands.

[b]Architect at FABRICations, The Netherlands.

1. Complex Projects (CP) Studio Havana

The CP Chair at the Department of Architecture of the TU Delft, the Netherlands, offers a master specialization in architectural design that typically addresses areas in transformation that are in need of grasping their possible futures (Kaan 2015). In doing this *"students and teachers are encouraged to look critically at their surroundings; to gather, organize and question the complex forces that ultimately manifest themselves into our built environment […] The architect must […] see the world through different lenses: as a planner, organizer, politician, economist, philosopher, strategist, humanitarian, and visionary"* (CP 2018).

In the academic year 2016-2017 the Complex Project design studio addressed the city of Havana, Cuba, in the wake of a changing political climate that is creating expectations of development and modernization. These perspectives of resurgence interact with a socio-spatial system that for different reasons remained as 'frozen' in the past, like a time-capsule from the '50s suffering from strong physical and ideological decadence. Here the unavoidable liberalizations will unlock a cherry-picking process in which exploitation-ready assets will be the priorities in the political and economic agendas. A territorial polarization of favoured versus backward areas is therefore lurking, creating inequalities that definitively undermine the revolution's *raison d'être* of socio-spatial equity. What contributions give architects and planners to these dynamics? What are the possible design assignments? The field for complex urban interventions that unfolds for the designer in contemporary Havana is inhabited by complex combinations of assets, contradictions and polar relationships for which multi-layered considerations are necessary.

2. Alamar

Differently from Vieja (the UNESCO world heritage city centre) or Vedado (the touristic pole of the '50s) which showcase ready-made opportunities, Alamar presents socio-spatial conditions constraining a quick valorization. Alamar has been realized during the '70s and hosts today 100.000 inhabitants, but was never fully completed as an urban entity. Here the impact of the Special Period[1] has been particularly hard. It accelerated social and spatial decay and it emphasized the burdens of the physical distance from Havana. Today Alamar enjoys little appeal among *Habaneros* in spite of the cheap prices and future possibilities[2]. It is a forgotten neighbourhood suffering from negative territorial polarization, even more when confronted with the expected growth in Havana's value areas.

The chronicles of the development of Alamar, the changing conditions behind its urbanization in time and its social, economic and spatial present have been described earlier and are by now notorious among scholars (e.g. Provoost 2017). Key-moments in Alamar's development give form to a narrative of ambitions and compromises, of ideology and opportunisms, resulting in the clash of opposite socio-spatial models.

[1]The *Periodo Especial* is a period of harsh economic depression that followed the 1989 dissolution of the communist block and COMECON depriving Cuba of its economic and commercial partners. It originated forced autarchy and necessary self-reliance.

[2]Due to privileged position along the seacoast between city centre and eastern beaches, and the availability of cheap space. Nevertheless Alamar is not yet ready to exploit its potential in the short term, as this would require extensive investments.

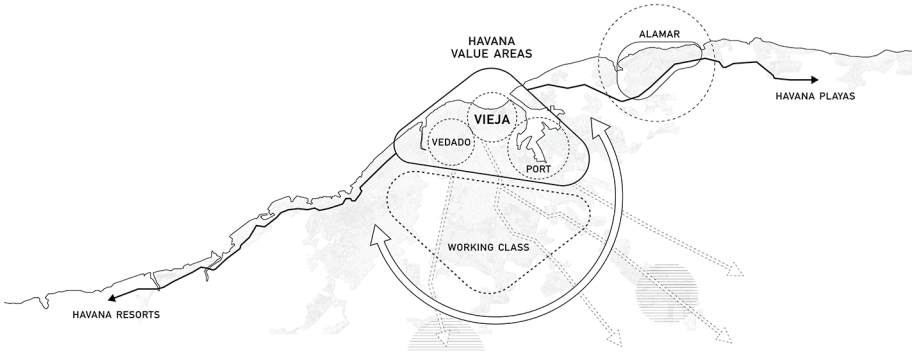

Figure 1: Alamar's position in Havana's region.

In 1955, Sert's *plan piloto* for a modern Havana proposed expansion to the east (Scarpaci et al. 2002). Among the planned settlements Alamar was to host a speculative suburb made of single-family dwellings along the coral seacoast, conceived for the affluent (American) client. A typical meandering street pattern was laid down, served by a new highway leading in few minutes to downtown[3] Havana at west or to the beaches at east (Pacheco del Monte 2015). After the revolution it was decided to stop developments in Havana aiming to a better territorial balancing across Cuba. In doing this, East-Havana areas were given different scopes. Alamar's single-family plots were turned into plots for multi-storey flat apartments, densifying the area but not the serving infrastructures.

Alamar is Havana's only new town and was to become the ideal living place for *el hombre nuevo*, the new man of the revolution. Prefabricated building technologies were imported from the Eastern European allies: Yugoslavia, Czechoslovakia, USSR (Kilmartin & Singh 1992). Because the building for the 'new man' had to be built by himself, *microbrigadas* were set up: groups formed by 33 workers with often no experience in construction (Mathey 1989) that realized Alamar as well as many other Cuban settlements[4]. Regardless of the final building quality, the *microbrigadas* have been very important in the becoming of socio-spatial Alamar for introducing the associationism's DNA in the neighbourhood.

3. Methodology, Hypotheses, Narrative

The methodology adopted by the CP studio to unfold design assignments for Alamar included a sequence of interconnected steps that make use of abductive forms of reasoning (Dew 2007; Hougaard 2015) informing conditional hypotheses. These construct the leading narrative, a framework that unravels contextual complexity to envision design assignments.

1.'Journalistic' inquire including a broad orientation on and separation (anatomy) of the context's layers in order to expose/reveal spatial, social, cultural, political, and economic conditions: mapping, physical models, interviews, site explorations, sources.

2.Establish conditional relationships through the layers: speculative hypotheses based on educated guesses. In this crucial phase findings are selected and organized with the aim to formulate plausible (= inference to the best explanation) hypotheses explicitly anchored into the inquired: questions, visualization of 'initial suspicions', collages.

3.Define a leading narrative that combines the

[3]Driving distance between Havana Vieja and Alamar is about 14 km.

[4]Before being employed in Alamar *microbrigadas* were already experimented in other locations. Also watch: Zeyfang et al. 2013. After building the members of a *microbrigada* could claim an apartment for their own living.

initial 'suspicions' into a strategy, not avoiding contradictions and personal fascinations: urban diagrams, (annotated) maps.

4.Proposal of architectural topics informed by 'state-of-the-art' typological explorations: concepts, program requirements, conditions for building and siting, massing studies.

5.Design of the individual proposals in the given plot, iterative prototyping cycles: the architectural and construction elaborates, models, details, visualizations, final reports.

Step 1 highlighted the transformation of physical distances into disconnections and pointed out that the disconnections are manifold and go deeper, also implying disconnections from opportunities of city development and from Havana's cultural, social and economic dynamics, jeopardizing the area's ability to meet chances. The students also discovered the presence of an unique set of autonomous microcultures constructed through the diverse background of the inhabitants and modelled by the isolation of disconnections: music, art, ingenuity[5] , production. The successful Alamar's urban farming Organoponico Vivero (Cifuentes et al. 2016) worked here as a powerful inspiration, like a *microbrigada* for urban agriculture originated by the necessary self-sufficiency of the Special Period. In step 2 (conditional hypotheses) the students extended this conceptual construction to the other mapped qualities envisioning associations to support e.g. Alamar's dynamic art and music scene, the inhabitants' ingenuity, the microeconomy of markets. Although considering the evident criticalities, the students reverted the common negative reading of disconnections by recognizing their positive role for generating microcultures and identities, now offering opportunities for value-building in the medium term. Elaborating on these found assets, the narrative (step 3) approached Alamar as an autonomous ecology of interconnected micro-cultures (an independent town). It proposes an architectural agenda of social, programmatic and spatial priorities to enforce a new geography of relationships for bridging the socialist-globalist divide and prepare to modernization and investments in the medium term.

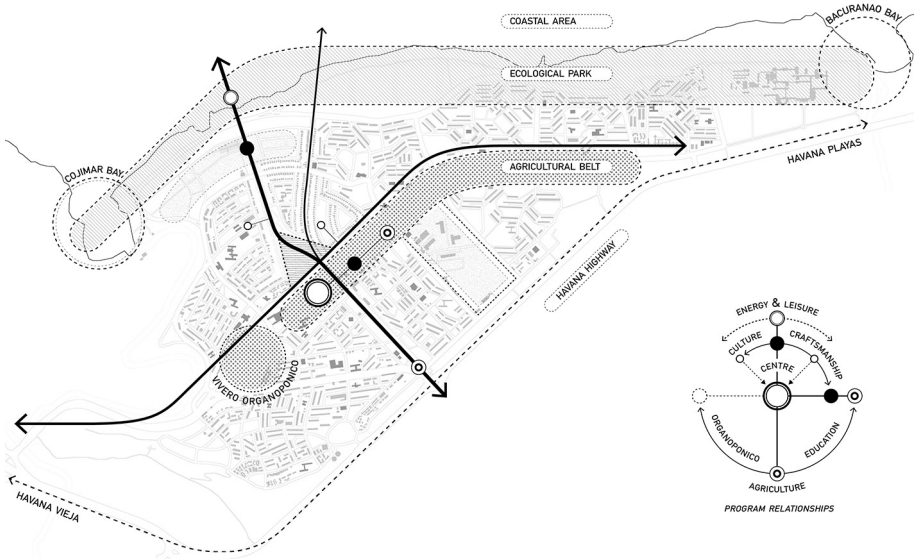

Figure 2: Diagrammatic representations of the strategy.

[5]Following on Special Period constraints, Cubans were invited to: 'build your own machinery'. Handbooks about recycle, reuse, repair, upcycle were distributed by the government. Ingenuity became an 'act of technological disobedience' (Oroza 2012).

4. A Strategy for Resilience

This position forms a conditional frame of reference for envisioning a progressive future for Alamar through a strategy that aims to generate resilient value and belief. In order to achieve this goal four programmatic priorities were defined: 1) tackle the infrastructural deficit; 2) provide opportunities for local assets; 3) educate young and elderly population to the opportunities; 4) build upon cultural values for local identity.
The related design interventions were positioned in order to: 1) induce hierarchy and centrality for a recognizable geography; 2) clarify public and private, urban form, orientation; 3) materializes local identity: 'fitting landmarks'; 4) inspire a process of requalification and retrofitting of the existing. The strategy realizes urban hierarchy by emphasizing the crossing of the two main axis of the neighbourhood: the EW agricultural belt (area reserved for productive and educational functions – including Organoponico) and the NS axis connecting the highway to the seacoast, providing a new gate to Alamar and a destination point at the coast. At the crossing a new multifunctional centre establishes relationships with adjacent cultural programs and reactivates the derelict amusement park. In the strategy the unbuilt waterside strip becomes an ecological park with a similar public role than Burnham's Chicago waterfront, with emphasis on sport and recreation.

4.1. Individual Designs

Accordingly, the locations for the individual design projects are key to the desired socio-spatial geography. They address the crossing axis or engage the spaces between the housing blocks aiming to establish guidelines. At the same time the architectural interventions connect the design sites with 'fitting' programs. The added value pursued by the strategy is the creation of a socio-economic ecology, a circular microsystem of interventions connected to the existing assets. The architectural designs initiate the strategy acting as catalysts for developments in key locations and for the definition of the public space.
In particular: the Whole-Sale Market (4) works as a hinge between Alamar and Havana's farmland creating economic opportunities, while the Agricultural School (1) addresses the main asset of the area (the urban farming) and is a help-desk for inhabitants. Both interventions refer to Organoponico as guiding asset. Similarly the Craftsmanship Centre (2) offers a shared workshop platform to local ingenuity, that finds a centre for self-employment in the

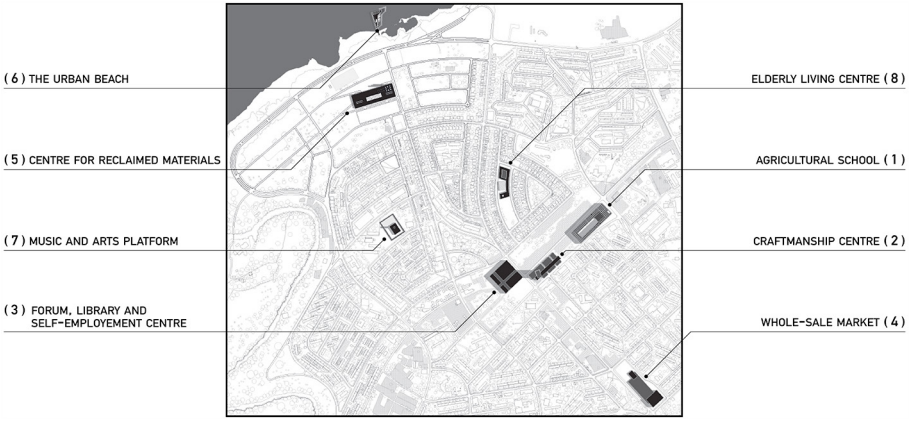

Figure 3: The 8 design interventions in Alamar.

central Forum (3, retail, living), supported by a public library. The Forum marks the new centre of Alamar, it revitalizes the derelict amusement park and creates a cultural pole. The materials for the Craftsmanship Centre are supplied by the Centre for Reclaimed Materials (5, built itself from recycled materials) which addresses recycling and upcycling in Alamar. Here the instruments and tools are made or repaired which can be used at the Music and Art Platform (7). This last includes broadcasting facilities for Alamar radio and gives form to vacant spaces in-between housing blocks. Also the Elderly Living Centre (8) establishes direct relationships with its surrounding housing, being as well a centre for the neighbourhood. The Urban Beach (6) provides a way to access the ocean stimulating leisure economy, and gives the NS axis a destination point. The project also operates as a Storm Farm by employing the power of storms to produce energy in order to keep the vital centres of Alamar working after hurricanes.

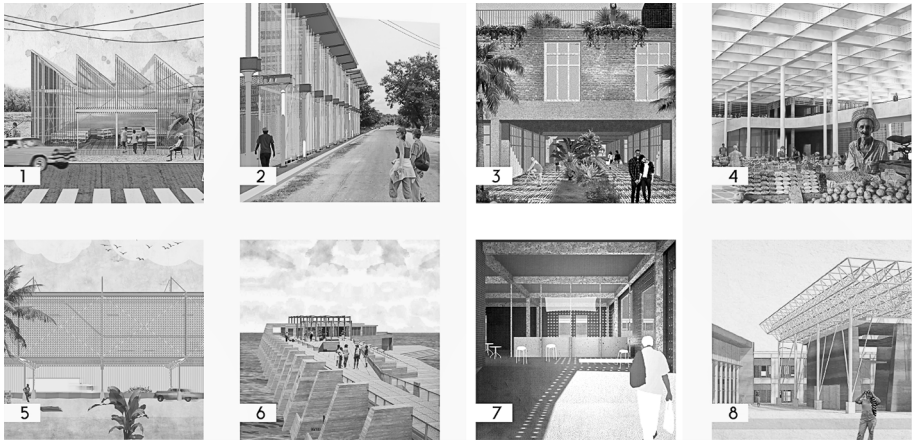

Figure 4: Pitch images from the 8 designs.

5. Considerations

The Alamar studio generated design proposals that are well-embedded in the inquired context. Few considerations upon academic logic and presumed 'objectivity' follow below.

CP aims to increase the synergy between academic positions and architectural design practice. Notwithstanding the extensive investigation and the close understanding of the local dynamics the position of the students necessarily remains an academic position. Stakeholders like investors, government (decisive in Cuba), and influential personalities manoeuvring consensus will very much affect the design field. How realistic is thus plausibility in academia? Is this project 'probable' or just 'possible'? The oscillation range in politics, society and economy is by definition unknown. In this project the students' narrative aims to produce consensus as means to strengthen a shared belief to resist critical changes. They do this by transforming criticalities in opportunities through the concrete example of evidences like Organoponico, plausibly an efficient way to engage many.

In CP design studio the close relationship between inquiry and narrative is the central mechanism for creativity. The shared narrative is the conditional framework ('what if…?') that creates shared images and frames the development of design proposals. The design of complex assignments cannot be inferred by relationships of causality proper of 'traditional' science (deduction, induction) but by relationships of conditionality proper of the investigation of possible futures (De Jong 1992). This includes an iterative process of reflection and (design) decisions in which the made choices and the modalities of thought are documented and made explicit – in this case documented through the combined of collages, inquiry and design books and physical models.

What did students learn from the case-study Alamar? The main discovery in this project was the connection of diffused 'ingenuity' with 'associationism' as plausibly resilient asset for place-bound socio-spatial development. It might be therefore expected students' designs to address minimalism and self-construction. This was not the case. Although modelled on low-budget hypotheses and on 'fitting' technics / materials, the proposed interventions are all designed with an architectural ambition for which an (institutional) investor would be needed. In this, the students conferred a pro-active role to architecture as value-bearer and content-materializer, a visual symbol of Alamar potentialities for the future.

References

Cifuentes, M., Leitgeb, F., & Vogl, C. R. (2016). *UBPC Vivero Organopónico Alamar (Havanna, Cuba) - Learning with and learning from the members of a unique orgánic farming project in Cuba - The Vivero Alamar.* DOI: 10.13140/RG.2.1.1339.9921.

CP(2018).https://www.tudelft.nl/en/architecture-and-the-built-environment/about-the-faculty/departments/architecture/organisation/chairs/complex-projects/

De Jong, T. (1992). *Kleine methodologie voor ontwerpend onderzoek*. Meppel, NL: Boom.

Dew, N. (2007). Abduction: a pre-condition for the intelligent design of strategy. *Journal of Business Strategy*, 28(4), 38-45. http://dx.doi.org/10.1108/02756660710760935

Hougaard, A.K. (2015). Architectural Practice in Research. Framed by Abduction. Ellefsen, K.O., Cleempoel, K. van, & Harder E. (Eds.), *Research by Design*. EAAE 2015 (62-77). Diepenbeek, BE: EAAE.

Kaan, K. (2015). Complex Projects. *Domus*, 992, 6-9.

Kilmartin, L., Singh, H. (1992). *Housing in the Third World. Analyses and Solutions* (251-267). New Delhi: Concept Publishers.

Mathéy, K. (1989). Microbrigadas in Cuba. A collective form of self-help-housing. *The Netherlands Journal of Housing and Environmental Research*, 4(1), 67-83.

Oroza, E. (2012). Technological Disobedience. Makeshift - *A Journal of Hidden Creativity, 3(1)*, 50-53. http://mkshft.org/technological-disobedience/

Pacheco del Monte, A. (2015). Alamar: An Oblique Approach. *E-flux journal*, 68. https://www.e-flux.com/journal/68/60675/alamar-an-oblique-approach/

Provoost, M. (Ed.) (2017). *Alamar. The New Town Travel Guides*. Rotterdam: INTI. http://www.newtowninstitute.org/pdf/TravelGuide-Alamar-2016-screen.pdf

Scarpaci, J., Segre, R. & Coyula, M. (2002). *Havana; Two Faces of the Antillean Metropolis.* Chapel Hill, NC: UNC Press.

Zeyfang, F., Schmoeger, A., Schmidt-Colinet, L. (2013). *Microbrigades – Variations of a story.* http://www.florian-zeyfang.de/microbrigades-variations/movie/