SEBASTIAN CONTRERAS RODRIGUEZ

ARCHITECT - MASTER ARCH

+021 08939517

www.estacionespacialarquitectos.com

6 Durham Crescent,
Aro Valley, Wellington 6021

sebastianscr@gmail.com

ABOUT ME

SEBASTIAN'S RESEARCH CENTERS ON RESIDENTIAL HABITAT, WITH A COMMITMENT TO RECOGNIZING INDIGENOUS CULTURAL AND ECOLOGICAL VALUES, UNDERPINNED BY THE CONCEPTUAL TRILOGY OF: COMMUNITY, MATERIAL AND ENVIRONMENT.

PUBLICATIONS

- "ARCHITECTURAL MEMOIRS ONE TO ONE - REAL SCALE" — 2018
  EDITOR REVISTA DE ARQUITECTURA MAGAZINE, FACULTY OF ARCHITECTURE UNIVERSIDAD JAVERIANA
- "A ROOF IS MORE THAN THE STRUCTURE OF A HOUSE" — 2012
  BIENNIAL BOOK OF ARCHITECTURE AND URBANISM, CHILE
- "THOUGHT WITHOUT OIL" — 2011
  DU&DESIGN MAGAZINE, URBANISM AND LANDSCAPE, CENTRAL UNIVERSITY OF CHILE

RESEARCH

- "VERNACULAR ARCHITECTURE, PALAFITO HOUSING" — 2017
  CIENAGA DE SANTA MARTA, JAVERIANA UNIVERSITY COLOMBIA
- RURAL HOUSING — 2015-2017
  MORPHOLOGICAL APPROACHES FOR A PRODUCTIVE RURAL HABITAT, ESTACION ESPACIAL ARCHITECTS GLOBAL

EDUCATION

- CATHOLIC UNIVERSITY OF CHILE — 2009-2010
  DIPLOMA IN INTEGRAL URBAN PLANNING AND MANAGEMENT
- CATHOLIC UNIVERSITY OF CHILE — 2005-2005
  MASTER DEGREE IN SUSTAINABLE ARCHITECTURE
- POLYTECHNIC OF MILANO, ITALY — 2000-2002
  EXCHANGE STUDIO IN ARCHITECTURE
- CATHOLIC UNIVERSITY OF CHILE — 1996-2003
  STUDIO IN ARCHITECTURE

EXPERIENCE

- VICTORIA UNIVERSITY, NEW ZEALAND — 2021
  "COMMUNITY BY NATURE"
  FINAL YEAR THESIS
- JAVERIANA UNIVERSITY, COLOMBIA — 2021-2018
  TEACHER AND DIRECTOR OF THE FIRST CYCLE (FIRST TWO YEARS)
- CENTRAL UNIVERSITY OF CHILE — 2011-2013
  TEACHER OF THEORY, CRITIQUE OF ARCHITECTURE AND URBANISM
- CATHOLIC UNIVERSITY OF CHILE — 2011-2013
  TEACHER INSTRUCTOR, FINAL YEAR THESIS

English 85% Italian 90% Spanish100%

COVER LETTER

Sebastian Contreras Rodriguez
Address: 6 Durham Crescent
6021 Wellington, Aro valley
Email: sebastianscr@gmail.com
Phone: 021 089 395 17

Kia ora,

Re: Expression of Interest for Architect in Residence Position

I am writing to express my deep enthusiasm for the Architect in Residence position within Te Tari Pūhanga Metarahi, Rawa Taiao at the Department of Civil and Natural Resources Engineering, located in Ōtautahi, Aotearoa, New Zealand.

As a Chilean national and an architect committed to the intersection of traditional indigenous building knowledge and cutting-edge technology, I am eager to contribute to the rich cultural and academic tapestry at your esteemed institution.

My academic background, which began with graduation from the Catholic University of Chile in 2003 and culminated with a Master of Architecture in 2005, has provided me with a solid foundation. However, it was my specialisation in Integrated Urban Planning and Management in 2010, with a focus on housing issues, and the parallel work I do as an architect that ignited my passion for combining traditional wisdom with contemporary architectural practices.

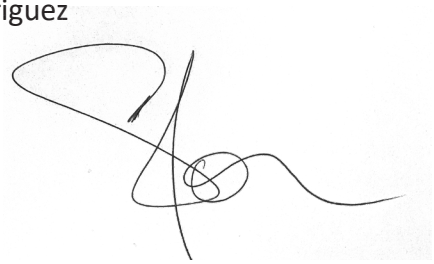
For the past 15 years I have been active in working with indigenous communities, which led me to work on the design and construction of an indigenous cultural centre and in work with the United Nations. This experience not only allowed me to integrate traditional building practices, but also fostered a deep appreciation of the cultural and ecological values inherent in indigenous architecture.

My engagement with indigenous communities goes beyond physical construction; it involves an effort to combine traditional knowledge with modern advances. My architectural projects in Chile, Colombia, New Zealand and Thailand attest to this approach, where I have tried to integrate architectural 3D printing technology and prefabricated wooden elements with indigenous design principles.

As architect-in-residence, I am excited by the prospect of fostering collaborative initiatives between architects and engineers, especially in the context of indigenous-informed building design. My proposed programme of work aims to explore the synergy between traditional building knowledge and more advanced technologies, including potential topics such as the application of 3D printing in indigenous architecture, the sustainable integration of prefabricated timber elements, and human factors in design within communities in relation to nature.

In conclusion, I am passionate about contributing to the vibrant academic environment by bringing my unique perspective on the convergence of indigenous building knowledge and cutting-edge technology. I appreciate your consideration and look forward to the opportunity to discuss how my experiences and skills can enrich the Architect.

Ngā mihi nui,
Sebastian Contreras Rodriguez



01/2024, Wellington, New Zealand

A WORK BASED ON THE TRILOGY:

- ENVIRONMENT

- COMMUNITY

- MATERIAL

Sebastian Contreras Rodriguez
Chilian Architect
Master Degree in Architecture
Diploma in Urban Planning and Management

work developed in the Colombian Amazon. 2019

Sebastián Contreras Rodríguez, a Chilean architect, earned his degree from the Catholic University of Chile in 2003 and completed his Master's in Architecture in 2005. In 2010, he specialized in Integrated Urban Planning and Management at the Catholic University, focusing on housing issues.

His research focuses on residential habitat, with a commitment to recognizing indigenous cultural and ecological values, underpinned by the conceptual trilogy of Community, Material, and environment.

Sebastián's architectural endeavors span across Chile, Colombia, New Zealand and Thailand. Over the past 15 years, he has shared his expertise through lectures and university classes at various institutions in Latin America, Spain, Italy, and New Zealand. His architectural articles have been published in notable journals in Chile, Colombia and Italy.

Currently, Sebastián Contreras Rodríguez serves as the director of MTspace_Studio and is actively engaged as a university lecturer.

The following pages are a summary of fifteen years as university professor of architecture.
Presented are four architecture courses (three of them in Colombia and one in New Zealand), my work as coordinator of the project area of the first cycle of architecture at the Javeriana university (Colombia), the coordination of the architecture centre, the summary of a research in architecture, as well as four publications.
Furthermore presented are ideas for architectural courses, the first related to the design of social housing communities in wood and the second, which is the most current project I've been working on, 3d printed social housing.
The last two projects also hold the potential to be transformed into research articles or papers.

I hope that this summary of my work as an architectural lecturer shows my interest in collaborating with you.

INDEX

UNIVERSITY PROFESSOR

RESEARCH

ADMINISTRATION

PUBLICATIONS

POTENTIAL TO BE RESEARCH ARTICLES OR PAPERS

First semester students Colombia

SPACE LABORATORY

1. Summary course description
2. Student work
3. Real Scale - Architecture project realised with the students at the Javeriana university

The question in space laboratory is framed within "the objective in architecture", understanding objectivity as the possibility of understanding an architectural fact, as an object of understanding in its way of manifesting itself, of becoming visible. Architecture appears as an expression of a subjective action called "creative act". The possibility of understanding and evaluating an architectural project lies in its internal coherence, in the correspondence between the idea that sustains it and its formal development. Acquiring the ability to evaluate the internal coherence of architectural projects is essential for the student to become autonomous and self-critical.

The purpose of the project is to enthuse the student with architecture, showing the broad spectrum of fields of intervention ranging from single-family housing to urban equipment and problems, with emphasis on technical and spatial resolution. The aim is to form an autonomous student, questioning them repeatedly about their position with respect to the problems of the constructed space; only in this way can they construct his own criteria and generate belonging on his proposals.

What are the Criteria for Evaluation?

- Coherence in the process of research and analysis for its application in architectural design.
- Depth in the analysis and permanent construction of conclusions that give account of the sharpness in the handling of the knowledge.
- Relevance in the application of acquired concepts to the design process.
- Rigour, in the handling of the proposal fields and in the solution. Quality in the comprehension and in the pertinent spatial proposal.

Forms of measurement of the process:
All students who register for the architectural project are considered as a single pedagogical group who several teachers are in charge of.

The task of each teacher is twofold; on the one hand, it forms part of a thinking group that makes the effort to develop knowledge and achieve the objectives of the subject and for this it establishes a continuous and transparent dialogue with the group of teachers and students, in order to avoid the isolation of the teacher with “their” students; and on the other hand, having the responsibility for more personal follow-ups with a certain number of students.
In this way, evaluation is a collective product that is developed by consensus of all the teachers of the subject; these evaluations are carried out every 21 days on average.

- Portfolio: in the portfolio each of the graphic exercises, that account for the composition and design process, as well as the evaluation for the internal coherence of the proposals, must be recorded.

- Models: through the building of models the students will experiment and exercise for the comprehension and proposal of the projects in three dimensions. The models, understood as abstractions of the project, must be worked on and must be a permanent resource for both analysis and design.

First semester students Colombia

SPACE LABORATORY

1. Summary course description
2. Student work
3. Real Scale - Architecture project realised with the students at the Javeriana university

First semester students Colombia

SPACE LABORATORY

1. Summary course description
2. Student work
3. Real Scale - Architecture project realised with the students at the Javeriana university Javeriana university

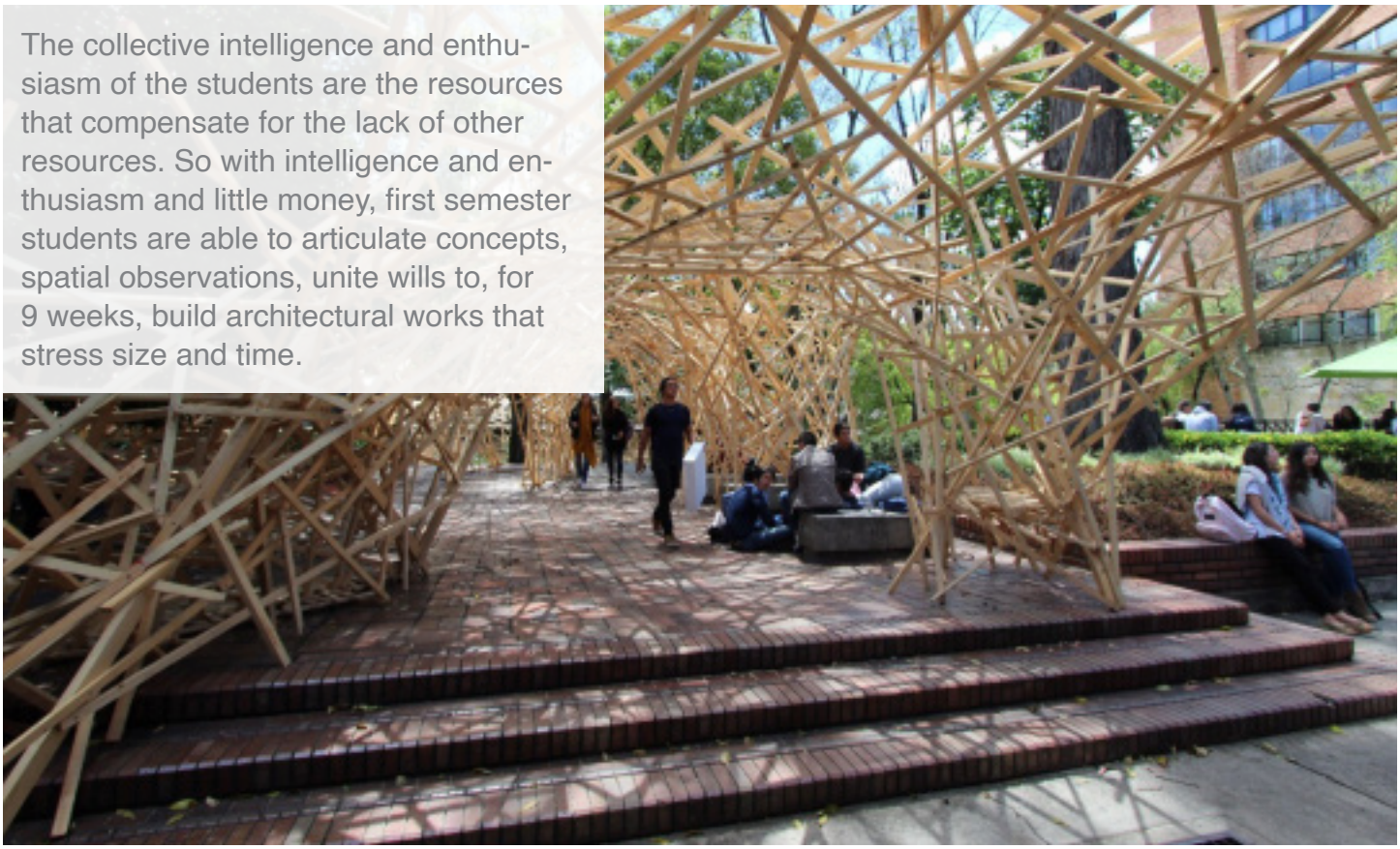
Real Scale is an academic practice that aims to understand the complexity involved in a constructed work, that is not a construction course or a social work. it is a work of architecture that seeks to link the properties of matter, the meaning of place in terms of its inhabitants.

The project Real Scale is constructed with economic, light materials, of easy access, its search passes by detecting is spatial observation, that pertinent question, that allows to be materialized

.

Consequently, the 1:1 project pendulum between a scarcity of elements and materials, and the ingenuity and intelligence of the students.

The collective intelligence and enthusiasm of the students are the resources that compensate for the lack of other resources. So with intelligence and enthusiasm and little money, first semester students are able to articulate concepts, spatial observations, unite wills to, for 9 weeks, build architectural works that stress size and time.



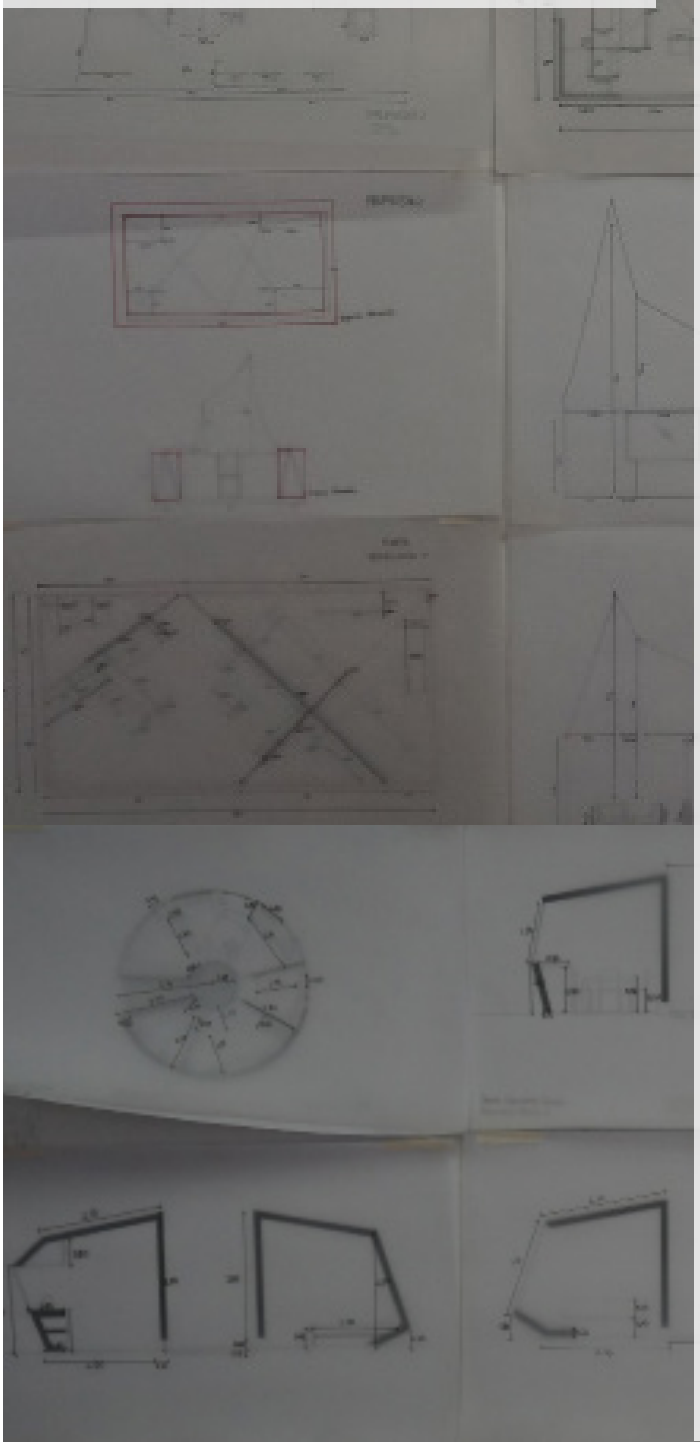
After observing the performance of the students in the Real Scale project, I can say that doubt makes you move forward, while certainties make you stop.

Excerpted from the publication memoirs of architecture page 109

Second semester students Colombia

RESIDENTIAL HABITAT

1. Summary course description
2. Student work
3. Final works exhibited in emergency shelter



ABSTRACT COURSE PROGRAM

The house is understood not only as a container object of physical origin, but also as a content subject of metaphysical origin, is a complexity that needs to be studied from its different edges. Although we need to study it in its morphological structures, we also try to recognize it in its sociological structures. This analysis opens up questions such as, What is the form and space of contemporary housing? But also, who is the man who inhabits and occupies these forms and these spaces? What are the bearing and deep structures of their forms and of their inhabitants?

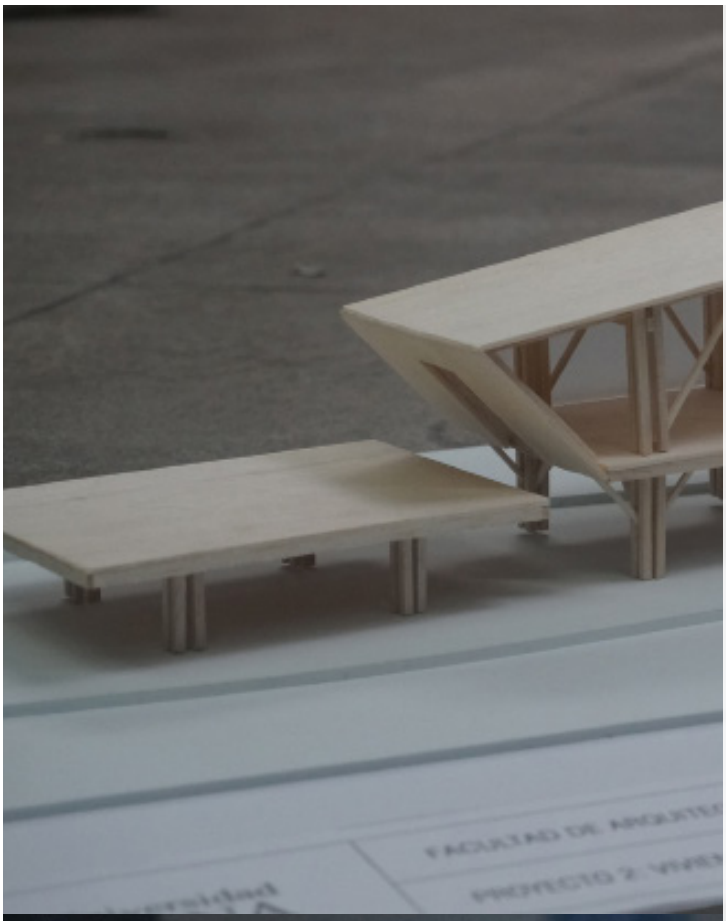
From another vertex, we understand the House not only as an exclusively internal experience, but also as the relationship of that interior with the events of daily life outside. In this way, the "Text", the architectural fact (the set of the object and the subject), needs to be closely linked to the "Context", the place where the text is implanted. We also understand that insofar as the architect needs to consider concepts, within the creative process of the project there exists the input of the "Pretext", as the position of the architect in front of the studied problematic.

Beyond if the link of the building in the place is by mimesis or contrast, we suppose that the student must ask for the communicative action between: Pretext, Text and Context.

For this second training course in architecture, it is proposed to delimit the phenomenon of housing, in an individual fact within a non-urban context (at first purely abstract and then within a natural rural landscape). We suppose that in other higher courses the problem of housing as a whole will be raised within urban contexts.

1. Own housing, for private residential use.
2. Minimum Rural Housing in non-consolidated areas.
3. Collective Minimum Rural Housing productivity.

The examination of the course corresponds to the deepening of this last case.



SPECIFIC OBJECTIVES

1. To learn the measurements of the objects and spaces that make up their use within the dwelling. This, not only attending to functional and normative requirements, but also to the architectural language that allows to articulate more integrated spaces to the new ways of life of people.

2. Learning to organize and arrange these spaces from the laws of contemporary architectural order, by means of a Structural and Spatial exploration.

3. To explore the alternatives of relating the place and the building with productive activity. The information of the context that is defined as raw material for the articulation of the project; and the affectation that the project will generate in its next environment.

4. To reflect on the acts and uses that constitute a continuity in the itinerary that the user carries out from the public productive natural exterior of the project, to the domestic private interior; which are the continuities and which are the fractions.

5. Reflect on which are the built forms of mediation that allow to define levels of intimacy and encounter, and how they act in the regulation of the public-private binomial in the productive rural world.

6. The materialization of housing through its structural and enveloping systems.

METHODOLOGY

It is understood that in project activity, development is not something linear, and at least three possible inputs can be identified: from the natural productive context (1:200);
from the configuration of the general party, the uses and activities of rural life. (1:100-1:50);

Second semester students Colombia

RESIDENTIAL HABITAT

1. Summary course description
2. Student work
3. Final works exhibited in emergency shelter

and from the architectural detail (1:20-1:10). Independent of the order, any of these three entrances can be a detonator of the “ideas-force” in an architectural project. Therefore each exercise of the workshop aims to enhance the development of projecting from these three entrances or scales.

THE COURSE IS DIVIDED INTO TWO DYNAMICS

1. Formal deliveries. They correspond to the hand delivery, and/or printed hanging, plus the models, of the orders. These will be subject to open evaluation by the teacher. Scheduled, for the most part, on Tuesdays at the beginning of the session, 13:00 hrs.
2. Classroom work sessions. On Thursdays each student must bring work supplies (paper, pencils, computer, etc.). Work will be done in the classroom, during half of the project schedule, with the advice of the teacher, who will make correction rounds during the session. The corrections will be in groups and on the board. The corrections aim to provide the necessary knowledge for the mastery of the three scales of project approach, allowing each student group to develop its own methodology to address the assignment.

EVALUATION

Order 1: 25%.
Order 2: 35%.
Order 3: 40%.

WILL BE EVALUATED ON A CROSS-SECTIONAL BASIS FOR EACH ASSIGNMENT:

1. The mastery of the required contents and a clear critical and propositive vision.
2. The level of conceptual and technical depth reached as a result.
3. The handling and proposition of graphic representation codes (antecedents, ideas and projects).

BIBLIOGRAPHY

Castro, M. (2014). Housing model for populations in areas at risk of flooding Honda-Tolima.

Charris F; Manjarrés, C;Olave O; Reales A and Vilori. (1992). Daily relations of the inhabitants of the palafitos of the Ciénaga Grande de Santa Marta. Research and Development. Universidad del Norte, 2:149-158.

Time. (February 6, 2017). The Senate will follow the recovery of Cienaga Grande. page 10.

Fonseca Martínez, L and Saldarriaga Roa A. (1992). Popular Architecture in Colombia: Inheritances and Traditions. Bogotá: Ediciones Altamir.

Fonseca, Lorenzo and Saldarriaga, Alberto. (1985). San Andrés and Providencia wood housing. Bogotá: Proa Notebooks.

Gómez, J. (2014). Housing in lake habitats. Bogotá, Colombia: National University of Colombia.
Manjarrés Freyle, A. (November 24, 2016). Los pueblos palafiticos de la Cienaga Grande: entre la desolación y la esperanza. Retrieved from https://annabellmf.wordpress.com/2016/11/21/los-pueblos-palafiticos-de-la-cienaga-grande-entre-la-desolacion-y-la-esperanza/

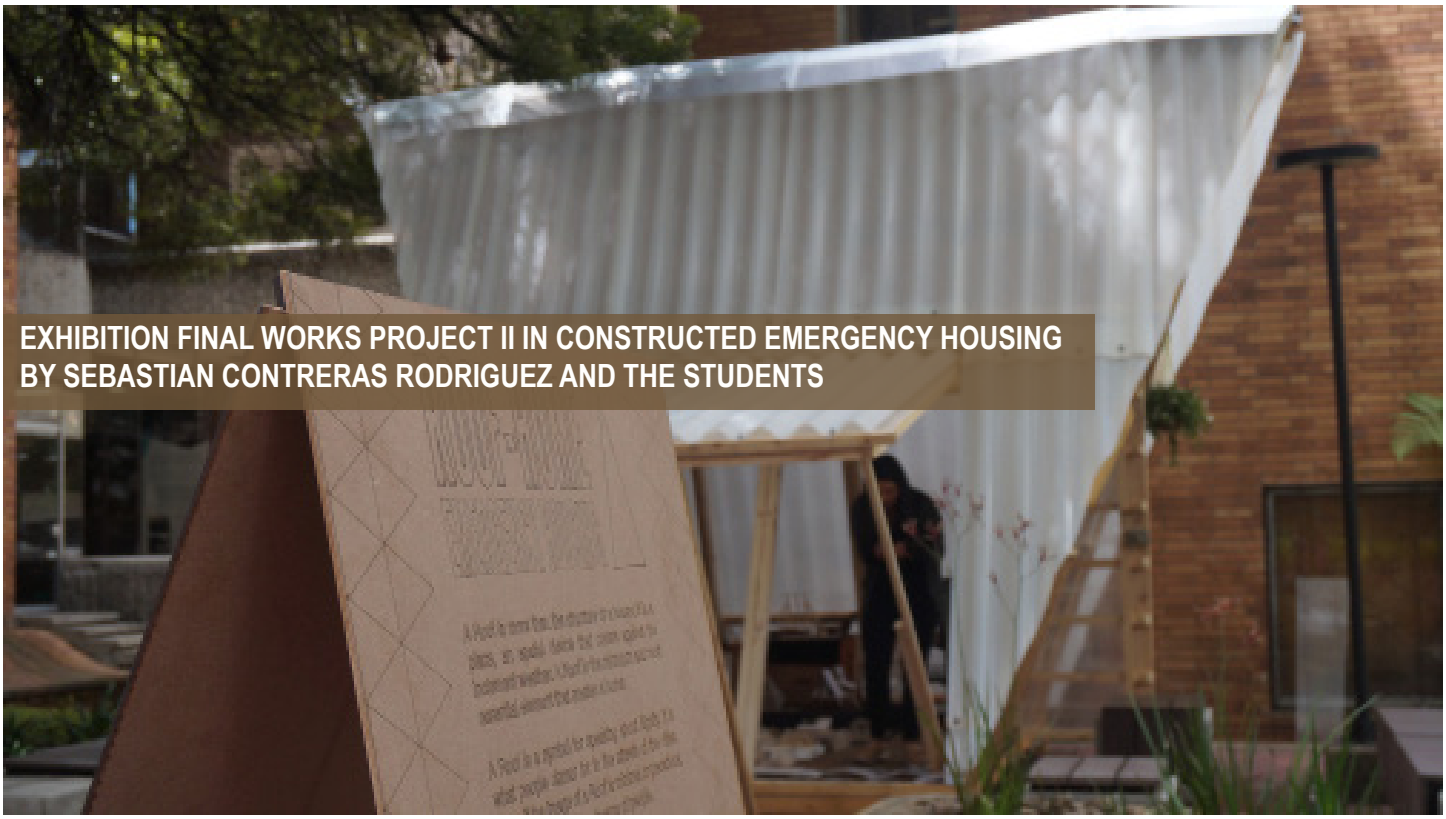
National Geographic. (2010, March). Sea level rise.

Osorio Mejía, N. (2016). Traditional housing for the Wounaan reservation, Unión Balsalito, Chocó.

Second semester students Colombia

RESIDENTIAL HABITAT

1. Summary course description
2. Student work
3. Final works exhibited in emergency shelter

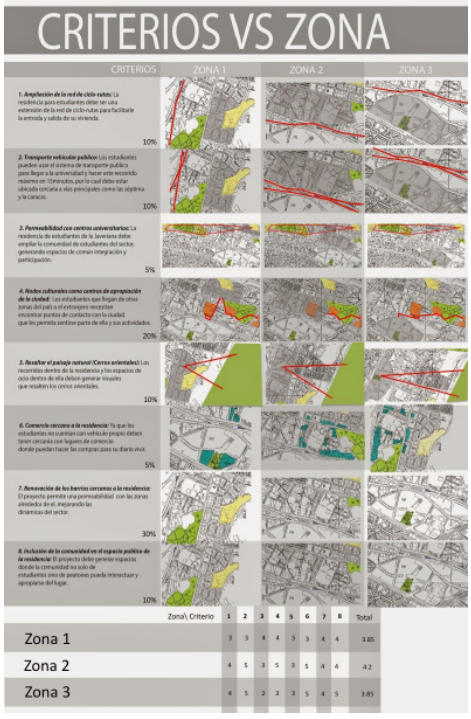


EXHIBITION FINAL WORKS PROJECT II IN CONSTRUCTED EMERGENCY HOUSING BY SEBASTIAN CONTRERAS RODRIGUEZ AND THE STUDENTS

Third semester students Colombia

ARCHITECTURE AND PLACE

1. Summary course description
2. Student work

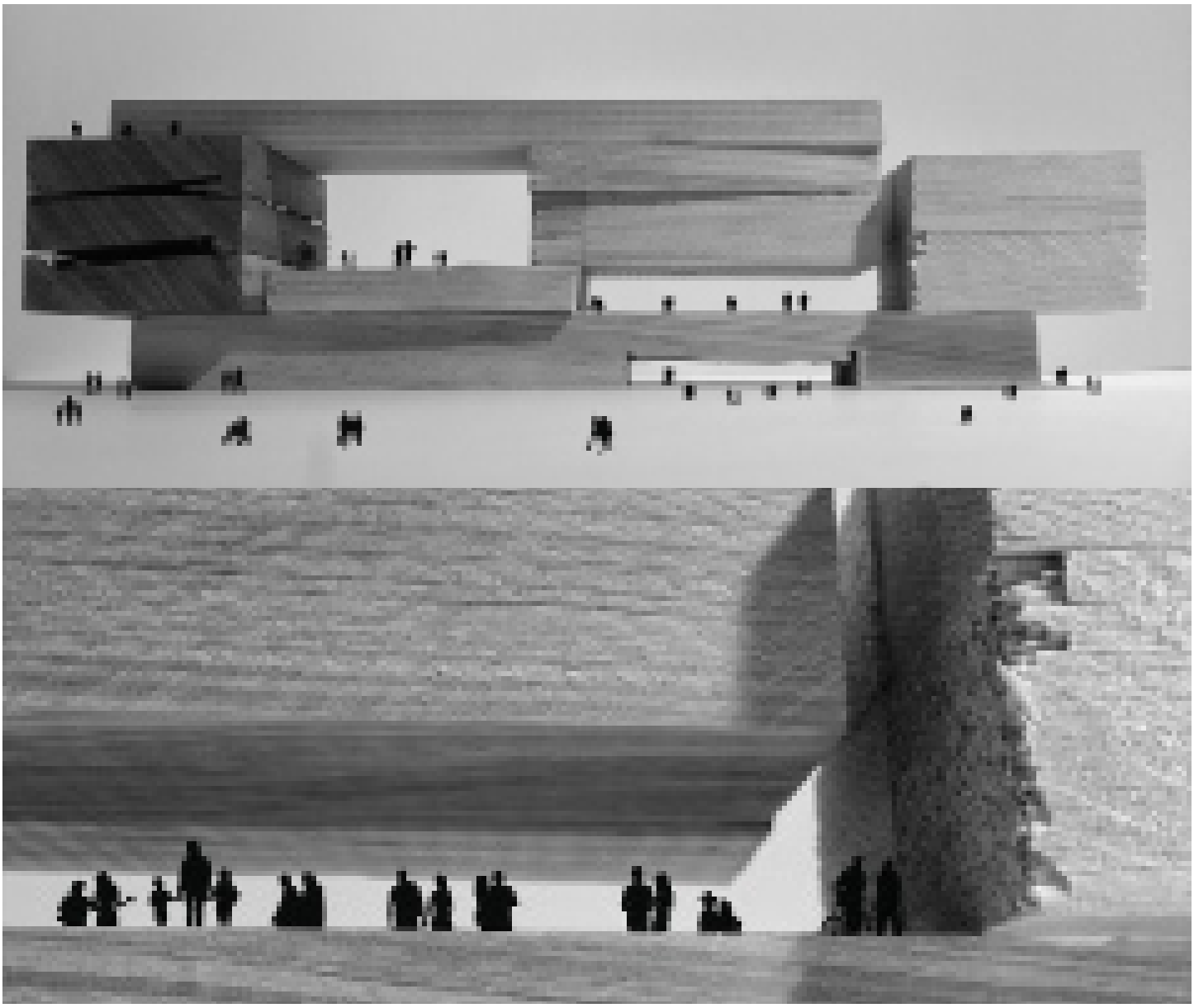


Objective	Formalise public architectural design projects based on the proposal of urban neighbourhood strategies.				
CRITERIA dimension to be evaluated	%	nueva propuesta	Applies	Moderately applicable	not applicable
1.- BASIS OF THE INTERVENTION (Project discourse)	20	1.1.comprehensive urban diagnosis (different scales and areas)	It presents a complete and exhaustive urban-neighbourhood diagnosis (individual proposal), which includes the valuation of the urban pre-existence of different scales, with explicit recognition of the following areas: physical-environmental, economic-productive and socio-cultural-heritage.	It presents a relatively complete urban-neighbourhood diagnosis that includes the valuation of the urban pre-existence of different scales (individual proposal), with explicit recognition of some of the areas: physical-environmental, economic-productive and socio-cultural-heritage.	It presents an incomplete urban-neighbourhood diagnosis that does not include the valuation of pre-existing urban development. It does not recognise scales or areas of urban development.
		1.2.-fundamentals of the architectural programme	The programmatic building proposal is coherent with the general urbanistic purposes, responds to real demands and to general criteria of social and/or private profitability.	The programmatic building proposal is coherent with the general urbanistic purposes, although its correspondence with real demands and with social and/or economic profitability criteria is not made explicit.	The proposal for the programmatic building is coherent with the general urbanistic purposes, its correspondence with real demands and with criteria of social and/or economic profitability is not made explicit.
		1.3.-fundamentals of spatial precision	The building proposal is coherent with the general urbanistic purposes, and responds in a precise way to the dimension of an architectural space. The proposal introduces innovative aspects in relation to the programme and the size of its architectural spaces.	The building proposal is coherent with the general urbanistic purposes, yet it is not clear how the programme and the size of its architectural spaces relate to each other.	The building proposal is not coherent with the general urbanistic purposes, and does not respond in a precise way to the dimension of an architectural space. The proposal does not introduce innovative aspects in relation to the programme and the size of its architectural spaces.
		1.4.-Fundamentals of structural material	The proposal of the building is coherent with the general urbanistic purposes, and proposes a clear and propositive reading of the structure in relation to the proposed programme. The relationship of this with the dimension of the architectural space is a contribution to the project.	The proposal of the building is coherent with the general urbanistic purposes, and proposes a clear and propositive reading of the structure in relation to the proposed programme. Even so, the relationship of this with the dimension of the architectural space is not a clear contribution to the project.	The proposal of the building is not coherent with the general urbanistic purposes, and does not propose a clear and propositive reading of the structure in relation to the proposed programme. The relationship of this with the dimension of the architectural space is not clear.
		1.5.-objectives, transformative sense of space	The specific objectives of the volumetric, structural and programme strategy are clearly stated. Its relevance, pertinence and transformative sense are pointed out and substantiated.	The specific objectives of the volumetric, structural and programmatic strategy are clearly spelled out, but their relevance, pertinence and transformative meaning are not noted and understood.	The specific objectives of the volumetric, structural and programmatic strategy are not clearly spelled out, nor are their relevance, pertinence and transformative meaning.
2.- SPATIAL STRATEGY OF THE PROJECT.	40	2.1.-master plan	The urban-neighbourhood strategy of the proposed intervention is clearly indicated and substantiated. There is a good general match, clear, interesting and capable of organising the proposal physically and functionally.	The urban-neighbourhood strategy of the proposed intervention is clearly indicated and substantiated. There is a general match.	The urban-neighbourhood strategy of the proposed intervention is not clearly stated and substantiated. There is no clear overall match, or the one that is presented does not correspond to the diagnosis and the stated urbanistic purposes..
		2.2.public space design and architectural tectonics of the building	There is a proposal for a public space consistent with the diagnosis, developed on an appropriate scale and with the necessary detail. Its constituent elements are precisely identified. Moreover, the tectonic guidelines (programme, dimension, structure) of the building are defined at the architectural level. The proposal correctly addresses the public-private interface.	There is a proposal for a public space consistent with the diagnosis, developed on an appropriate scale and with the necessary detail. However, the tectonic guidelines (programme, dimension, structure) of the building are not defined at the architectural level. The proposal confuses the relationship and the public-private interface.	There is no public space proposal coherent with the diagnosis, developed on an adequate scale and with the necessary detail. Its constituent elements are not precisely identified. Moreover, the tectonic guidelines (programme, dimension, structure) of the building are not defined at the architectural level. The proposal does not correctly address the public-private interface.
		2.3.-architectural language and public image	An architectural language coherent with the urban planning objectives is proposed and a public building image of great interest is achieved, which adds value to the surroundings of the proposal.	The architectural language proposed is coherent with the urban planning objectives set out, but even so, a public building image of interest is not achieved, which adds value to the surroundings of the proposal.	There is no architectural language coherent with the stated urban planning objectives and there is no public building image of interest that adds value to the surroundings of the proposal.
3.- URBAN MANAGEMENT	20	3.1.-regulation	It understands the existing urban regulations and, if necessary, proposes coherent and possible regulatory changes, clearly identifying the normative and regulatory framework and its specific instruments (laws, IPT, others).	Understands existing urban regulations and, if necessary, proposes coherent and possible regulatory changes, although it does not clearly identify the policy and regulatory framework and its specific instruments (laws, IPT, others).	It does not understand existing urban regulations and does not propose, where necessary, coherent and feasible regulatory changes.
4. COMMUNICATION AND REPRESENTATION	20	4.1.-graphics and planimetry	The graphic and planimetric representation adds value to the project, it is at the level of the complexity of the proposal and the situation in the students' educational pathway.	The graphic and planimetric representation is correct although it does not add value to the project. It is at a lower level than would correspond to the complexity of the proposal and the situation of the students' educational pathway.	The graphic and planimetric representation is not at the level that would correspond to the values of the proposal.
		4.2.-general presentation	Organise a presentation effectively using all the necessary resources to communicate your ideas intentionally.	Organises a presentation using a variety of resources. Is able to communicate his/her ideas moderately well	Organises a presentation that fails to intentionally communicate its ideas
		4.3.-verbal communication, attitude and disposition	Can express him/herself clearly, fluently and precisely in the presentation and defence of his/her urban design project. Shows confidence and enthusiasm.	He expresses himself clearly and precisely in the presentation and defence of his urban design project. He is confident.	He expresses himself with a lack of clarity and precision in the presentation and defence of his urban design project. He is insecure and unmotivated.

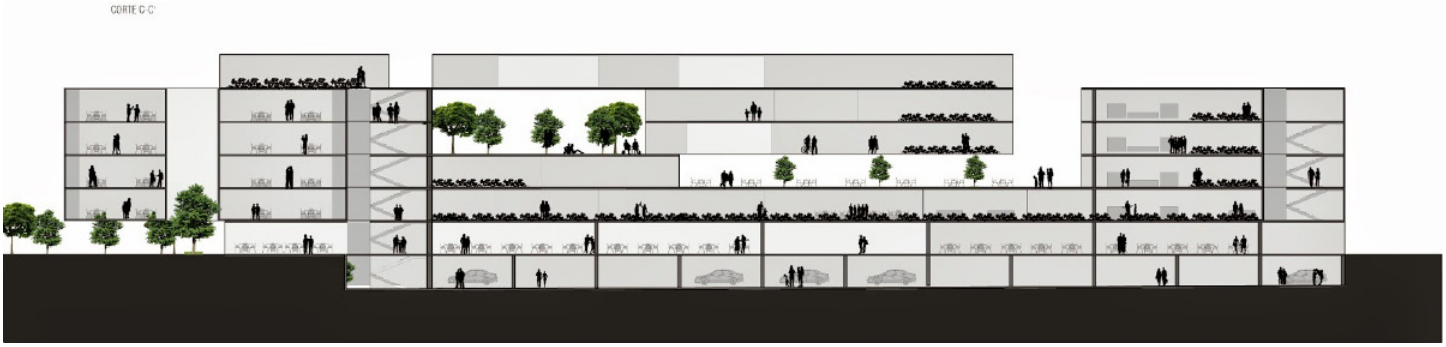
Third semester students Colombia

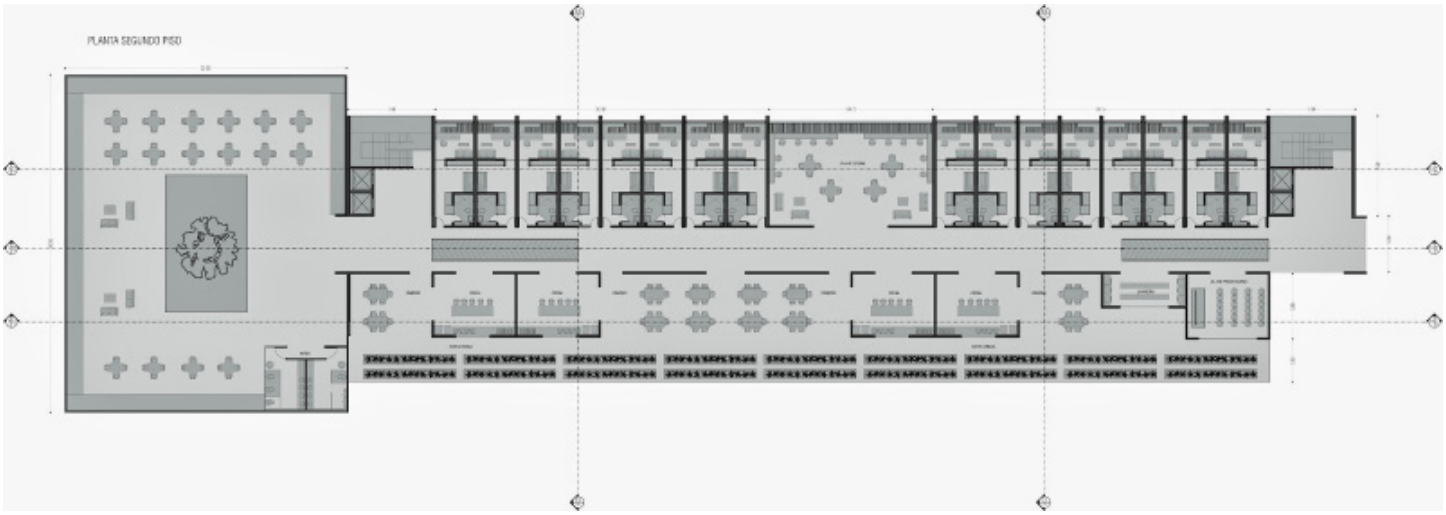
ARCHITECTURE AND PLACE

1. Summary course description
2. Student work




CORTE A-A'


CORTE C-C'


PLANTA SEGUNDO PISO

Final year thesis New Zealand

COMMUNITY BY NATURE

1. Summary course description
2. Student work

VICTORIA UNIVERSITY OF WELLINGTON TE HERENGA WAKA

13 May 2021

Letter of engagement: Sebastian Contreras Rodriguez, Chilean Architect

To whom it may concern.

This letter is to confirm that Sebastian Contreras Rodriguez has been invited to a programme at the School of Architecture, Victoria University of Wellington, Te Herenga Waka. We have a five year professional Programme, culminating in a master's degree in architecture, the MArch(Prof) which is accredited by the NZIA (New Zealand Institute of Architects) and NZRAB (the Architects Board) Sebastian would be teaching into a key 4th year course: ARC412 Architecture Design Capstone Project / Te Tikanga-Tūtohu o Te Whakarākei Whare. The intention of the course is to provide students with knowledge in architectural design, to a professional level, before they pursue individual design research in their final year. As such it is a fundamentally important course and we only engage very experienced architects and academics to teach into it. We feel Sebastian's practice and teaching experience would be of great benefit to the course.

ARC412 is taught in six streams with approximately 18 students per stream. Each stream is led by an experienced stream leader who defines the thematic direction of the stream and provides a detailed brief. Sebastian would take one of these streams. The course is studio taught in two four hour tutorial a week, beginning July 15 and running until October 24. Sebastian's duties would be to run these studio tutorials, mark his students work (three phases) and assist in moderation of the marks across all six streams.

The course is in three phases: *Research and Analysis, Concept Design and Developed Design*. These are designed to support a rich architectural design process and achieve a building design that is resolved and described to a professional standard. The first phase, *Research and Analysis*, involves the collection of material to support the design project, such as conceptual experimentation, the collection of precedents from architectural case studies, site analysis and explorations of the theoretical context. In the second phase, *Concept Design*, students develop concepts that explore architectural responses to the stream briefs. In the third phase, *Developed Design*, a single concept design is refined as a technically resolved yet experimental piece of architecture, represented to a professional level.

The timing of these three phases is as follows:

Course begins: 15 July

Milestone 1 *Research and Analysis*: completed 19 July, 10% of final grade

Milestone 2 *Concept Design*: completed 1 September, 40% of final grade

Milestone 3 *Developed Design*: completed 14 October, 50% of final grade

The project that would be the focus of the teaching is a particular importance in the broader context. We aim to have courses that reflect a particular key issue at the moment. The course Stream talk to my Sebastian would reflect the 50th anniversary of the Chilean Embassy in New Zealand. It offers an exciting and appropriate international context and challenge as part of the education of our architects of the future. Sebastian's engagement for this project enables a productive sharing of cultures and ideas related to architecture and the broader context. We very much look forward to the benefits that will accrue from this.

Yours sincerely,

Professor Andre Brown Head of the Wellington School of Architecture

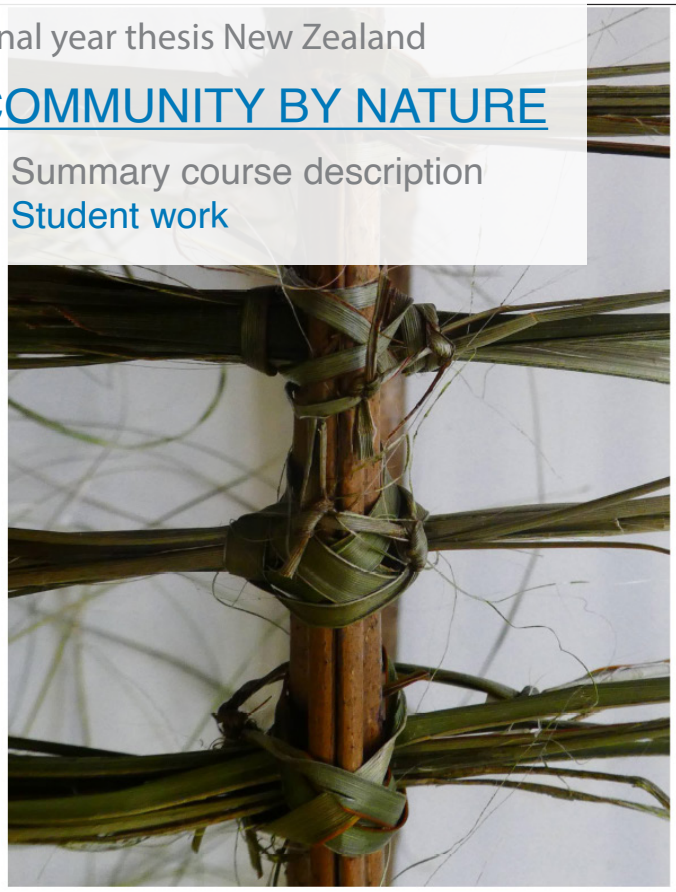
ARCI 412 is intended to complete students' knowledge acquisition in architectural design, in preparation for their final year thesis and their entry to the world of practice. The course involves research through the medium of architecture. Students need to be fluent in the fundamentals of their medium, such as: form, structure, services, tectonics, materials, construction systems, site, external and internal environments and occupation – in order to pursue an architecture design-based research topic.
They should also have fluency in representing architecture to a professional standard. In this course, students create a polished set of drawings and design documentation, something they can show to practices and include in their portfolios. They also develop skills in design research applicable to master's thesis research in final year.

The course is in three phases: Research and Analysis, Concept Design and Developed Design.These are designed to support a rich architectural design process and achieve a building design that is resolved and described to a professional standard. In the first phase, Milestone 1, Art and architecture precedent case studies are researched as well as possible programmes and sites in natural and urban landscapes. Students also develop initial conceptual approaches. In Milestone 2, students
choose a site and programme and iteratively develop a concept design for a PRODUCTIVE COMMUNITY HOUSING complex. In the third phase, Milestone 3, one building in the PRODUCTIVE COMMUNITY HOUSING complex is developed and represented as a technically resolved yet experimental piece of architecture.

Final year thesis New Zealand

COMMUNITY BY NATURE

1. Summary course description
2. Student work



71,300
Receive an Income-Related Rent Subsidy

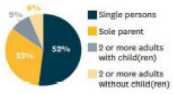
$2,500
Cost allocation per m²

749
pay market rent

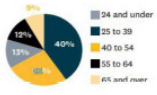
55m²
Maximum area of a home (Can sneak in a few more because of the shared structure)

6.6
Years in Social Housing

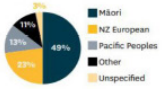
$137,500
Per Home



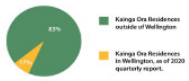
Household Composition



Age of Main Applicant



Ethnicity



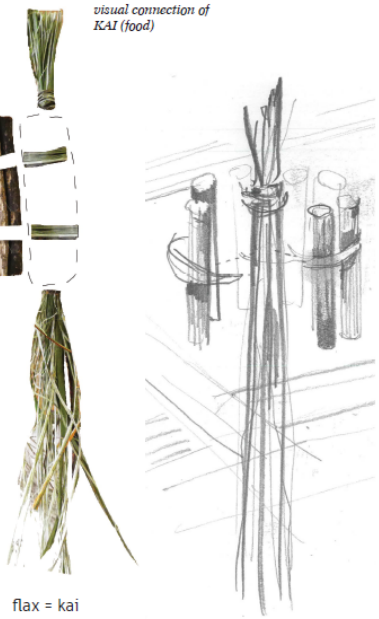
Kainga Ora Housing in Wellington

key idea one:

KAI PRODUCTION

branches = buildings

visual connection of KAI (food)



The branches represent building program: housing, shared spaces, community centre

The flax represents kai: growing beneath ground, harvesting, storing, preparing, sharing, selling & eating

flax = kai

The woven mat holding the long branch/flax strips represents kai growth, harvest & selling - the structure and framework for the social housing site.

Held within this flax mat (kai production framework) are the branches that hold long flax strips. The branches represent building and the flax represents kai within the buildings (housing, community spaces) - the continuing growth of kai, preparation and consumption.

elevation: above & below ground

above ground: harvesting, preparing, selling & consuming kai

connections of guests in the community

ground: transition space: exchange of kai & acceptance into the community

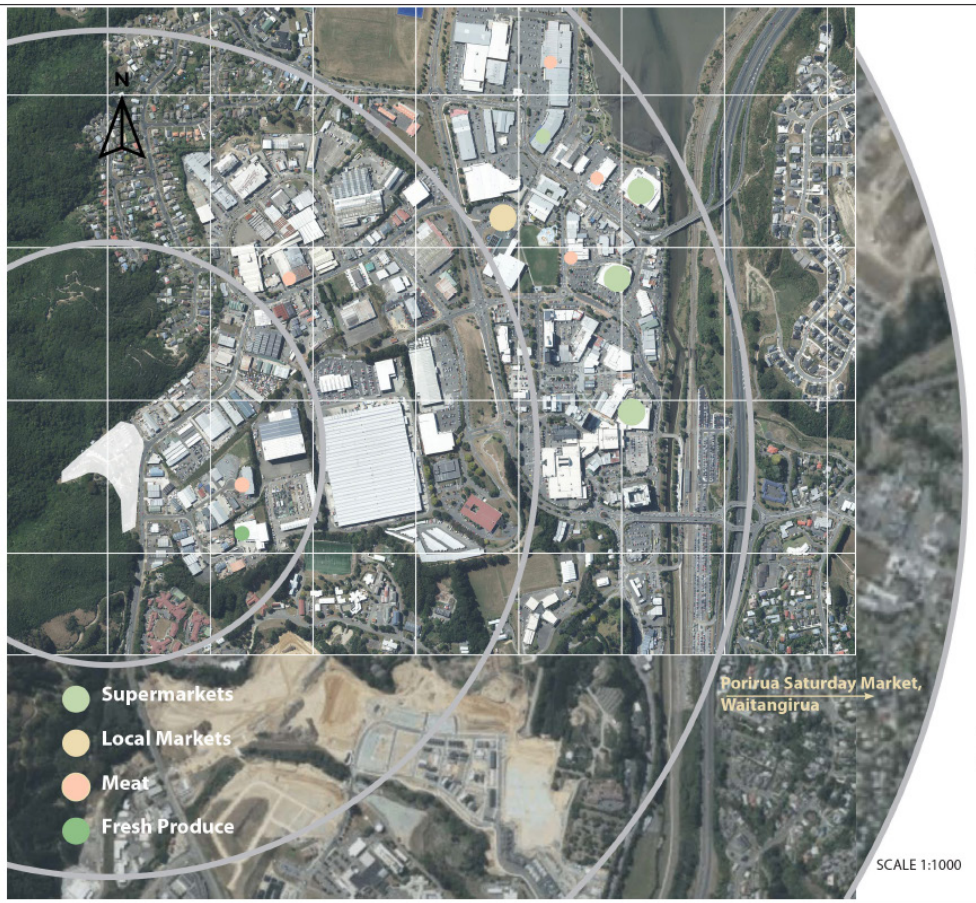
below ground: growth, re-generation of kai (cycles of recycling)

connections between live-in residents of the community

The transition point of the flax divides between above and below ground. The notion of over ground & under ground in indigenous Māori housing-building into the earth.

WHAKAWHANAUNGATANGA:
making strangers into family.
Connecting in people who don't live in the community - through kai & community spaces. Emphasis on nodes (spaces of compression) the tying of flax or node of branches to intentionally acknowledge the presence of another person to foster belonging.

Martin, Josiah. (1800). Sophia's whare, Te Wairoa. Photograph.



Food Distribution Porirua

0m²
Public/Community farming

14,455 m2 *(approx)*
Main supermarket distribution area

900 m2
Pataka Market

3,300 m2
Porirua Saturday market

1,750 m2
Bid food (fresh produce) Delivery service

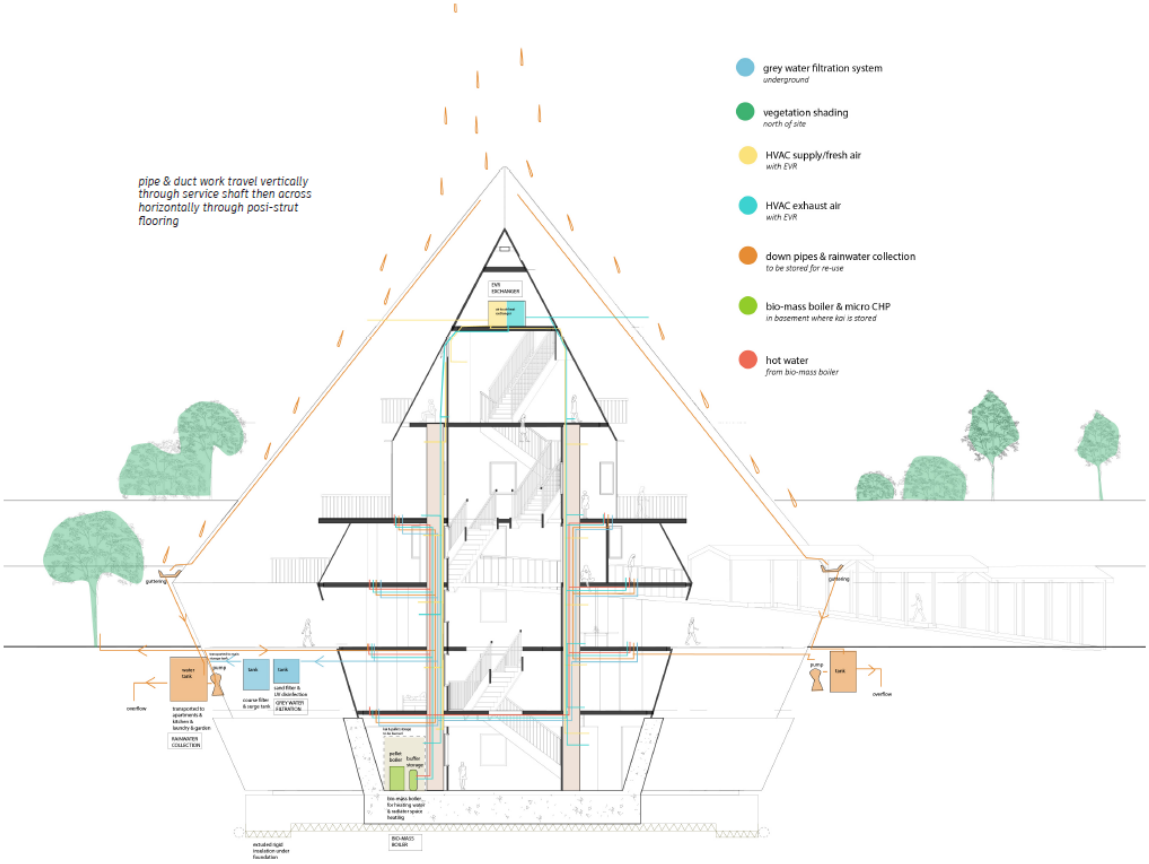
There is a lack of food production in Porirua, but there is an abundance of distribution outlets

passive ECMs

CORE
The centralized core and shared spaces optimize the floor plan, minimising circulation area, kitchen and living areas to decrease appliance energy usage and heating. As floor area gets smaller higher in the building, heat rises and is extracted by convection and passive door opening. Apartment occupancy and higher heating demand is at higher levels.

THERMAL ZONING
Kai storage is below ground, requiring lower temperatures within thermally controlled zones depending on optimum temperature of specific kai, to reduce cooling requirements. The stack effect has been applied, like-programs are aligned to create air currents and pressure differentials to flow between floors. This is dependent on the buoyancy of warm air, which requires the large core opening to flow.

WATER HARVESTING
A Rain water harvesting & distribution system is integrated into the facade pockets, through guttering connected to rāupo, and downpipes leading to a storage tank. Fresh water harvest gets used for operations requiring fresh water- basins and showers, then piped into a surge tank, put through an irrigation system to be diverted by a pump to secondary water operations- toilets, washing, gardens and kai irrigation.



Research project:

THE HOUSE IN THE WATER

CIENAGA OF SANTAMARTA

Colombia

STUDY ON THE PALAFITICAL VERNACULAR HOUSING OF THE CIÉNAGA GRANDE DE SANTA MARTA COLOMBIA.

Brief description of the project:

On the north coast of Colombia, is the Ciénaga Grande de Santa Marta, which is a delta that was isolated from the Caribbean Sea, where the rivers that flow down from the Sierra Nevada de Santa Marta and the streams that flow from the Magdalena River. The exchange of salty and fresh waters allows it to have the conditions to be a natural habitat for native and migratory birds, aquatic vegetation, trees and halophytes, especially the mangrove. The correct oxygenation of the mangrove favors the reproduction of a great diversity of fish, oysters and shrimp. Because of its great biodiversity, it was declared a Ramsar wetland in 1998 and a biosphere reserve by UNESCO in 2000. (The weather, 2017)

The Swamp is home to three palaetic populations: Trojas de Catajaca, Buena Vista and Nueva Venecia. Their particular way of being built on piles in the middle of the water, makes them considered unique in their kind, since they are the result of the adaptation of their inhabitants to their environment using constructive technology that seeks a respectful relationship with the surrounding environment.

The site has about 300 wooden houses, in which approximately 2,000 inhabitants live. (Señal Colombia TV, 2016) The swamp and its inhabitants have been affected by various factors that have endangered the area. The first was the construction of two roads, the Santa Marta - Barranquilla and Palermo - Sitio Nuevo, which blocked several natural channels through which water was exchanged between the marsh and the sea. The second is the irrational felling of the mangrove for construction and as firewood. The third is the deposit of wastewater in the Cienaga and finally the dumping of chemical waste used in the cultivation of banana and palm. (Charris F; Manjarrés, C;Olave O; Reales A and Vilori, 1992)

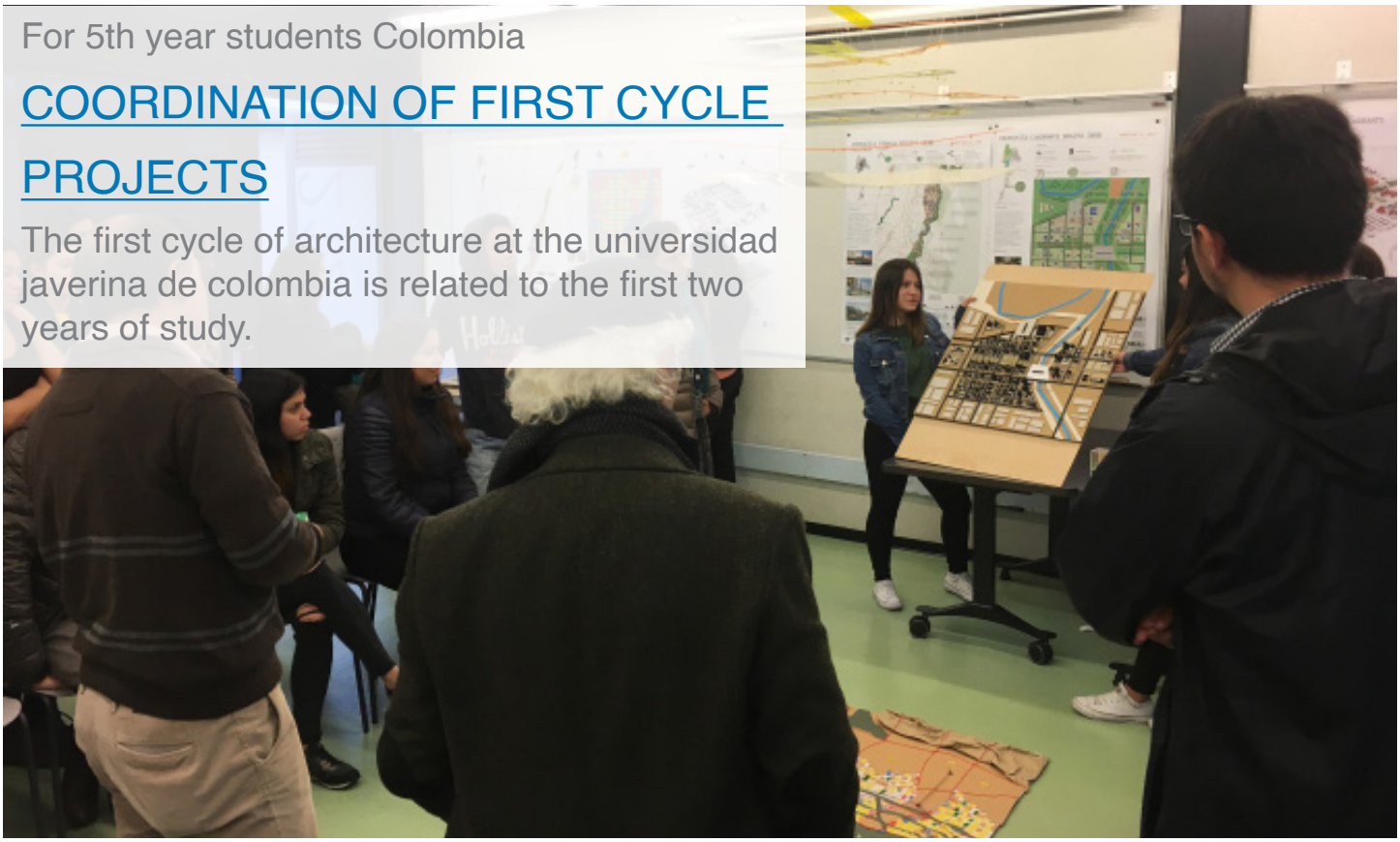
This area is considered one of the poorest in the Department of Magdalena, which is why in 2009 the Government designed a comprehensive strategy to eradicate extreme poverty among the inhabitants of the Palafíticos villages. They proposed two actions: recovering the ecosystem and proposing the site as an exclusive tourist destination so that the populations would benefit from the activity. This implies changes in space, functionality and materiality to adapt to the comfort requirements of tourists. (Manjarrés Freyle, 2016)

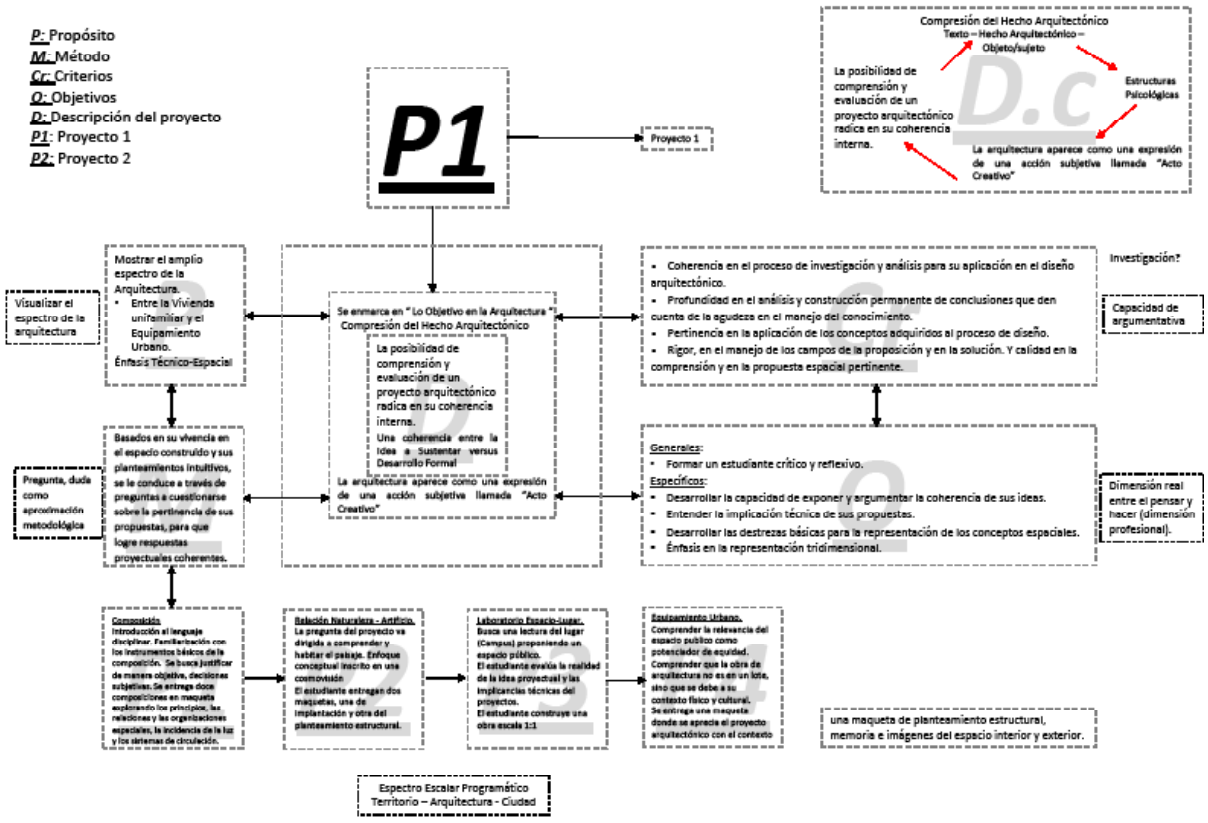
For architecture it represents a loss of ancestral knowledge and knowledge of vernacular housing that it is important to document before this Colombian architectural heritage is intervened. This proposal seeks to document the state of this singular architecture that serves as a basis for academic work, as a document for community work and public intervention in the area.

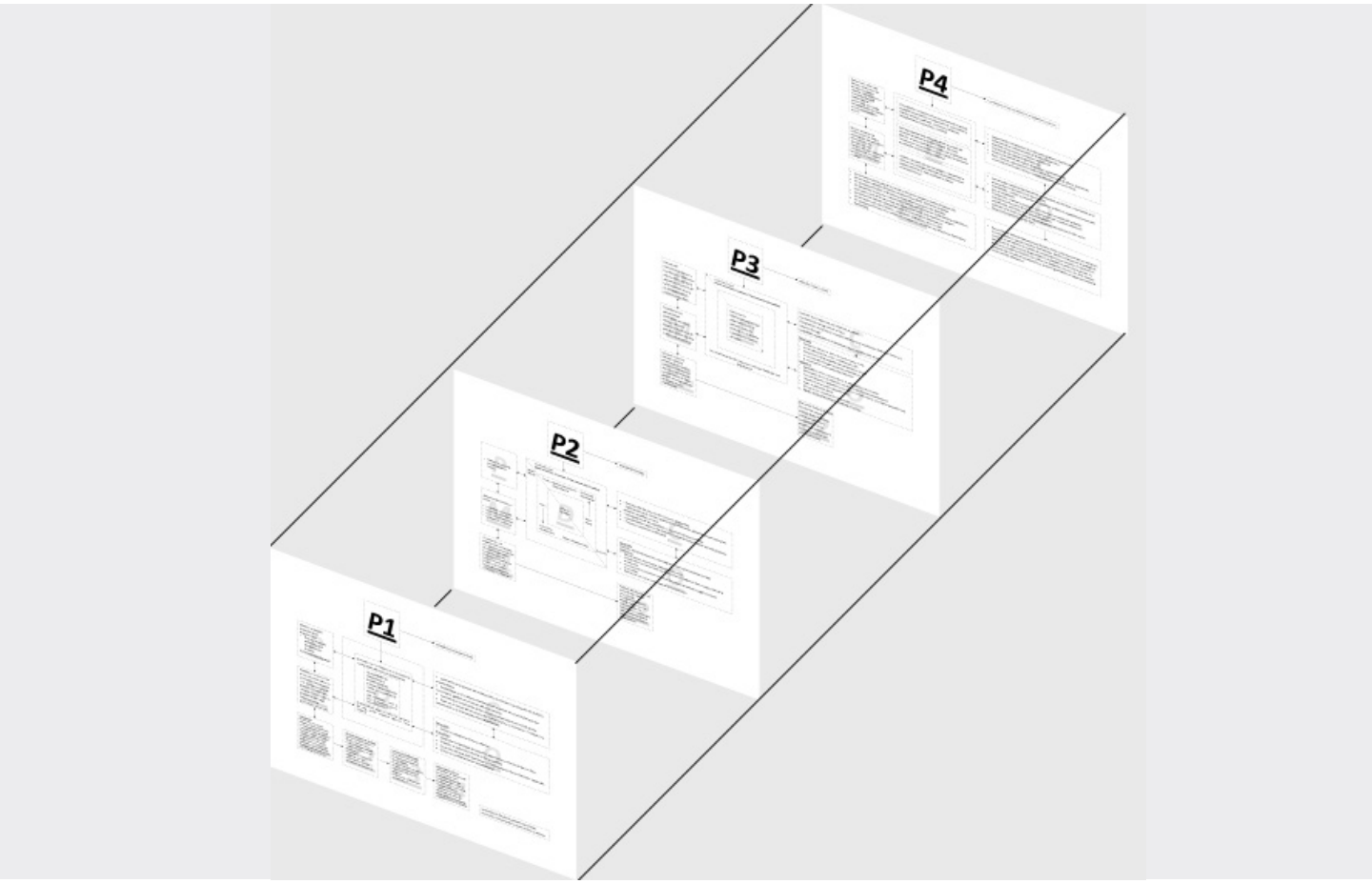
For 5th year students Colombia

COORDINATION OF FIRST CYCLE PROJECTS

The first cycle of architecture at the universidad javerina de colombia is related to the first two years of study.




P: Propósito
M: Método
Cr: Criterios
O: Objetivos
D: Descripción del proyecto
P1: Proyecto 1
P2: Proyecto 2
P1
Proyecto 1
Compresión del Hecho Arquitectónico
Texto – Hecho Arquitectónico – Objeto/sujeto
La posibilidad de comprensión y evaluación de un proyecto arquitectónico radica en su coherencia interna.
Estructuras Psicológicas
La arquitectura aparece como una expresión de una acción subjetiva llamada "Acto Creativo"
D.c
Visualizar el espectro de la arquitectura
Mostrar el amplio espectro de la Arquitectura.
• Entre la Vivienda unifamiliar y el Equipamiento Urbano.
Énfasis Técnico-Espacial
Se enmarca en " Lo Objetivo en la Arquitectura "
Compresión del Hecho Arquitectónico
La posibilidad de comprensión y evaluación de un proyecto arquitectónico radica en su coherencia interna.
Una coherencia entre la Idea a Sustentar versus Desarrollo Formal
La arquitectura aparece como una expresión de una acción subjetiva llamada "Acto Creativo"
• Coherencia en el proceso de investigación y análisis para su aplicación en el diseño arquitectónico.
• Profundidad en el análisis y construcción permanente de conclusiones que den cuenta de la agudeza en el manejo del conocimiento.
• Pertinencia en la aplicación de los conceptos adquiridos al proceso de diseño.
• Rigor, en el manejo de los campos de la proposición y en la solución. Y calidad en la comprensión y en la propuesta espacial pertinente.
Investigación?
Capacidad de argumentativa
Pregunta, duda como aproximación metodológica
Basados en su vivencia en el espacio construido y sus planteamientos intuitivos, se le conduce a través de preguntas a cuestionarse sobre la pertinencia de sus propuestas, para que logre respuestas proyectuales coherentes.
Generales:
• Formar un estudiante crítico y reflexivo.
Específicos:
• Desarrollar la capacidad de exponer y argumentar la coherencia de sus ideas.
• Entender la implicación técnica de sus propuestas.
• Desarrollar las destrezas básicas para la representación de los conceptos espaciales.
• Énfasis en la representación tridimensional.
Dimensión real entre el pensar y hacer (dimensión profesional).
Composición
Introducción el lenguaje disciplinar. Familiarización con los instrumentos básicos de la composición. Se busca justificar de manera objetiva, decisiones subjetivas. Se entrega doce composiciones en maqueta explorando los principios, las relaciones y las organizaciones especiales, la incidencia de la luz y los sistemas de circulación.
Relación Naturaleza - Artificio.
La pregunta del proyecto va dirigida a comprender y habitar el paisaje. Enfoque conceptual inscrito en una cosmovisión
El estudiante entregan dos maquetas, una de implantación y otra del planteamiento estructural.
Laboratorio Espacio-Lugar.
Busca una lectura del lugar (Campus) proponiendo un espacio público.
El estudiante evalúa la realidad de la idea proyectual y las implicancias técnicas del proyectos.
El estudiante construye una obra escala 1:1
Equipamiento Urbano.
Comprender la relevancia del espacio público como potenciador de equidad.
Comprender que la obra de arquitectura no es en un lote, sino que se debe a su contexto físico y cultural.
Se entrega una maqueta donde se aprecia el proyecto arquitectónico con el contexto
una maqueta de planteamiento estructural, memoria e imágenes del espacio interior y exterior.
Espectro Escalar Programático
Territorio – Arquitectura - Ciudad


P4
P3
P2
P1

Work examples of my 3 year stint as

DIRECTOR OF THE CENTRE FOR ARCHITECTURAL STUDIES

A space for conversion and exhibition on contingency issues in South American architecture.

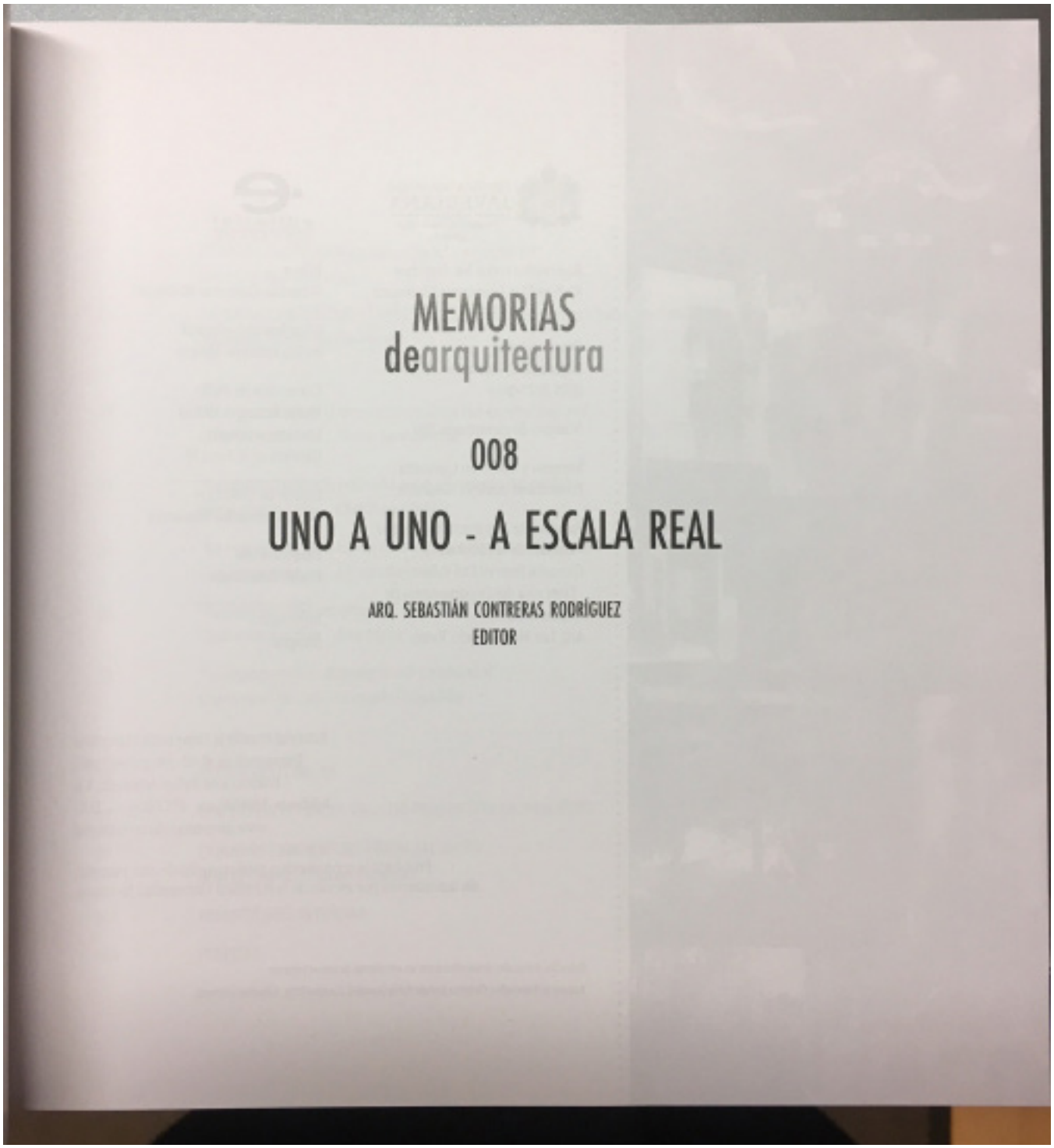

cea
CENTRO DE ESTUDIOS DE ARQUITECTURA
PLANIFICACIÓN, URBANISMO Y ARQUITECTURA; LA EDUCACIÓN EN DIFERENTES DISCIPLINAS, PRÁCTICAS Y PROFESIONES
Juan Yunda Lozano
JUEVES 08 MARZO
EDIF 15 - 210
16:00 HORAS
INVITA A LOS PROFESORES Y ESTUDIANTES A PARTICIPAR EN SUS
DIÁLOGOS
Organizan:
fernando.contreras@javeriana.edu.co
alayon.j@javeriana.edu.co
Facultad de Arquitectura y Diseño
Departamento de Arquitectura
Pontificia Universidad JAVERIANA


cea
CENTRO DE ESTUDIOS DE ARQUITECTURA
ENTRABE ARQUITECTOS INQUIETUDES TEORICAS
Arq Gerardo Olave
JUEVES 12 ABRIL
EDIF 15 - 210
16:00 HORAS
INVITA A LOS PROFESORES Y ESTUDIANTES A PARTICIPAR EN SUS
DIÁLOGOS
Organizan:
fernando.contreras@javeriana.edu.co
alayon.j@javeriana.edu.co
Facultad de Arquitectura y Diseño
Departamento de Arquitectura
Pontificia Universidad JAVERIANA

Publications Colombia

PUBLISHER MAGAZINE ARCHITECTURAL MEMORIES

Magazine editor of the faculty of architecture


MEMORIAS
dearquitectura
008
UNO A UNO - A ESCALA REAL
ARQ. SEBASTIÁN CONTRERAS RODRÍGUEZ
EDITOR

THE IDEA BUILT OR BUILD THE IDEA.
From simultaneous thinking and doing

The constructed idea or to construct the idea, is similar to say to be thought when doing, the game of translation of the one that dominates the world of the ideas to the one that dominates the world of the construction, has polarized to great part of our intellectual schools of architecture distributed by the planet. to solve the duality if first it is thought and then it is done, or on the contrary, it becomes watertight the own flow of the man, that from always I manipulate his to do with his mind and his thoughts with his action.

The Cartesian duality of naming this conceptual pair separately becomes real in our architectural office. Thought is no longer empirical, the proof and error of the manhandled scientific method is no longer so clear. Today we must think at one moment and do at another, this is how the curriculum of our academy is designed. It is precisely there, in that modern separation what does not allow complex systems in architecture.

Where do the ideas come from? J. cruz asked himself in his chair dictated in the beaches of concón, in the Catholic university of Valparaíso. Of his capacity to transform observation into action, to observe the flow of a living space, and to be lived in space, to understand that architecture is not a noun but a verb, commented G. Iommi.

No matter how much one thinks and says, I doubt that our world today is more complex than that of our ancestors. Today, more than ever, the ways of living have been simplified and the spaces that should shelter them have been generalized.

To inhabit in its most literal and heideggerian sense, is a fact parallel to building, consequently we inhabit in the measure that we build or we build in the measure that we inhabit, that we do to ourselves in space. From territory to detail. It is in our nature to think and do in simultaneous states.

We do not inhabit because we have built, but we build to the extent that we inhabit, that is, to the extent that we are what we inhabit.

Our cultures have expressed it through craftsmanship, which by definition is the art of making thought as defined by Richart Sennett.

In his book The Craftsman writes, describes and prescribes the importance of doing and places this doing with the hands in a relevant place in the acquisition and creation of knowledge.

Since before Aristotle, the theory of doing (praxis) has been differentiated. The theory is the capacity to intellectualize, to see beyond and illuminates the praxis that has always been understood later, since it is the application of the theory. The theory is from a platonic point of view the reality, the praxis is the application of that reality.

According to Aristotle, our way of being and being in the world has these two dimensions, theoretical and practical. The interesting thing happens when we understand that the practical dimension contains two meanings: praxis -from Greek: practice- and poiesis -from Greek: to make, to fabricate-. The first relates the action of working, but does not leave in the world a visible, assible or perceptible product, while the second takes place in manufacturing, elaborating, offering as a result an appreciable, concrete, plausible and lasting product in time.

If theory is the intellectual observation to understand reality and practice is the application of this, poiesis refers to creation. It is not just any doing, it is a creative doing, consequently theoretical-practical.

Richard Sennett defends in his book that to do is to think. He defends that it is possible to think with the hands and that a special intellectual learning takes place through the repetition of an activity, especially the physical activity and that more physical than to construct an architectural space.

He defends that the craftsman distinguishes himself because he does his work well by the simple fact of doing it well. For the author, such a craftsman is a carpenter, a writer, an architect or a parent, provided that he feels a special interest in doing well once and better the next job entrusted.

It seems pertinent this reflection today in the academies of architecture where knowledge has been divided into pieces to be able to be digested by students apparently in an easier way.

Is it pretinen to reflect in academia on a knowledge that is built on the simultaneity of theory and practice?

What is the method of approach that allows students to think and do architecture?

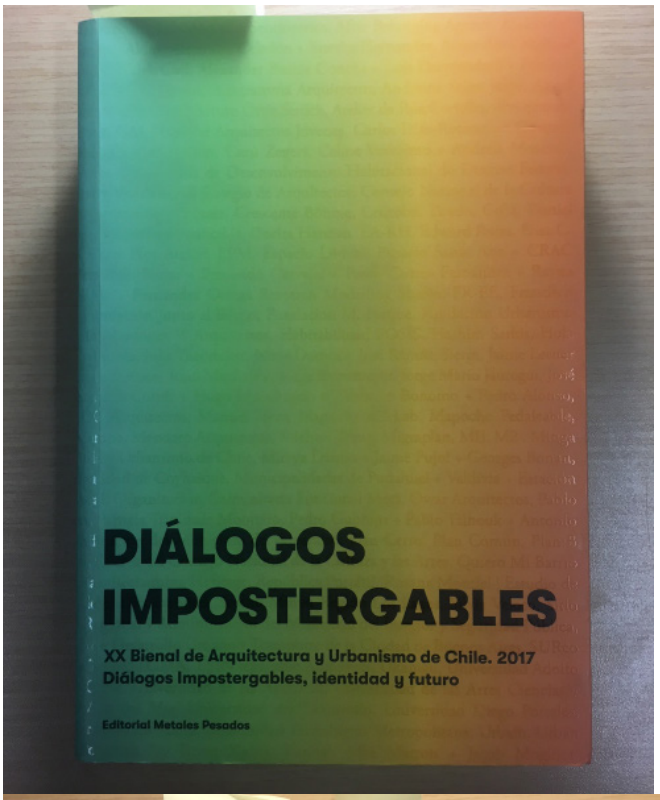
Is work 1:1 constructed the one that allows a simultaneous approach in architecture?

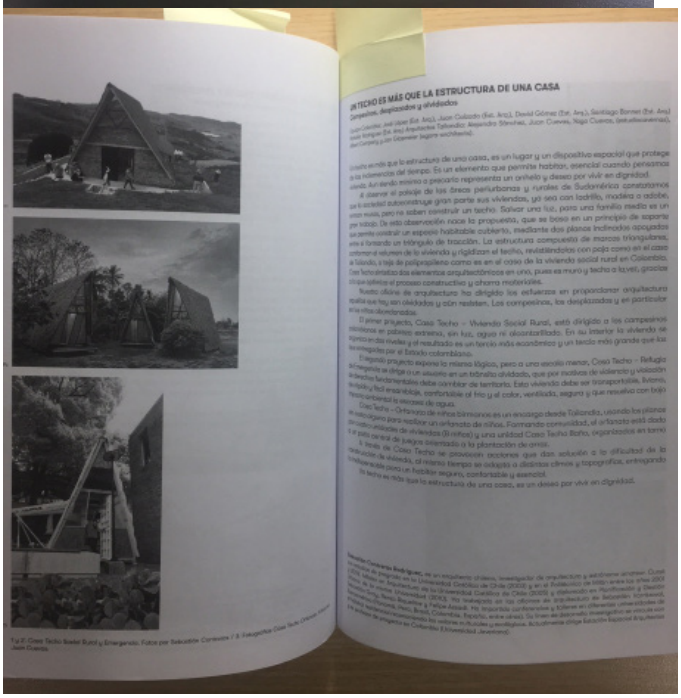
These are some of the questions that open the reflection to this new issue of the magazine Memoria of the Faculty of Architecture of the Javeriana University.

Publications Chile

XX BIENNIAL ARCHITECTURE AND URBANISM CHILE

“A roof is more than the structure of a house”





A ROOF IS MORE THAN THE STRUCTURE OF A HOUSE
FARMERS, DISPLACED AND FORGOTTEN
One Provocation, Three Projects

ABSTRACT

A Roof is more than the structure of a house, it is a place, a spatial device that covers the inclemency of the weather. A Roof is a primitive and elemental element that allows to inhabit, an essential architectural element when we think of a house. A Roof is a symbol to speak of dignity. It is what people claim in the streets of cities. Even if the image of a Roof is minimal or precarious, a Roof represents people's longings and dreams.

Allow us to include in the definition of the word roof, the symbolic variable proper to the desire of our society. Proper insofar as it is essential to our living. A roof is more than the structure of a house; it is a desire to live in dignity.

If we look at the landscape of the periurban and rural areas of our territory, we can see that our society self-constructs a large part of its homes, its trade as it is called is suitable for building a wall, people can already with brick, wood or adobe build a wall, but does not know how to build a roof, and does not have to know. Saving a light, something so everyday in architecture, for an average family is a great job.

If people know how to build a wall, they know how to build a wall. Why not design a roof that is a house, and that gives people what is most difficult for them to do? From this constructive spatial observation of our territory is born the question that gives the argument of the three projects to expose.

Casa Techo synthesizes two architectural elements in one because it is wall and ceiling at the same time. Thanks to this, the construction process is optimized and materials are saved.

Our proposal is based on a support principle that allows the construction of a covered living space by means of two inclined planes supported by each other forming a traction triangle. The structure is composed of triangular frames that make up the volume of the dwelling, a second structure of interior cladding in the opposite direction, which stiffens the roof allowing the roof to be mounted on it, which can either be made of straw as in the case of Thailand, or polypropylene tile as in the case of the peasant dwelling built in Colombia.

Three projects

Our architecture office has led efforts in providing architecture to those who are forgotten today and still resist. The peasants, the displaced and in particular the abandoned children.

The first project is aimed at Colombian peasants, as they are the ones who have experienced war directly during the 50 years of armed conflict. Today it is 25% of Colombian society, around 12 million people, and 85% of them live in extreme poverty, which for the United Nations means living in emergency housing without electricity, water and sewage. Almost 9,000,000 Colombians are in rural territory without the minimum conditions to live in. These people cannot be put off any longer, to relegate them is to forget our roots, it is to ignore that thanks to them the cities are still standing.

Casa Techo - Social Rural Housing is located in the municipality of Boyacá, four hours from Bogotá to the north. At 2500 meters above sea level, which generates an average temperature that fluctuates between 12 and 20 degrees Celsius.

Inspired by the indigenous architecture of much of the Colombian Amazon, the house is designed for a farming family. In its interior we can observe a house that is organized in two levels. In the first we find two bedrooms, a bathroom, a dining room and a double height kitchen (6 meters high).

Also in the first level, but with an independent access you reach the warehouse of materials and the storage of food, space of daily use in a rural home.

On the second level we find the master bedroom plus a private bathroom. This room balconies over the social area of the house.

The house is built with three materials mainly, two of them of universal use as they are the Wood and the Tile of polypropylene that structure the roof of the housing covering more than 60% of the house. To this is added a brick masonry own Boyacá area for the two side coves, but can be replaced by other materials, either stone, wood, palm, fabric, etc., depending on the temperature of the area and the culture where the house was installed.

The second project exposes the same design logic but on a smaller scale and for a user in a forgotten transit. The history of our territory has been nurtured by the continuous movement of people, who for various reasons have seen the need to change territory. From 1997 to 1 December 2013 in Colombia, 5,185,406 internally displaced persons have been officially registered with a disproportionate impact on the Afro-Colombian population and indigenous communities. Colombia is the second most externally dis-

placed country in the world and the first with the largest number of internally displaced persons.

Casa Techo - Emergency Shelter has been developed as a low-cost minimum housing, which differentiates its interior areas and good thermal insulation. It is composed of a translucent ground floor that allows for a kitchen and dining space, a second habitable level for sleeping and a structural cover of thermal protection that surrounds the entire house.

With the idea of reducing weight and size and enhancing portability, the volume dimension is determined based on the length of the standardized sawn wood and the size of the wood planks, in order to reduce the number of processes in construction, reduce the number of cuts and loss of material, optimizing construction costs and execution time.

The fundamental criteria that we used for the proposal are precisely that the house was transportable, light, fast and easy to assemble, comfortable in front of cold or heat, ventilated, safe and that solved with low environmental impact the scarcity of water.

This house was donated to Daira Elsa Quiñonez who is displaced by the armed conflict from the city of Tumaco, in southern Colombia.

The third project comes after the emergency shelter by questioning the need for people to have a roof versus the architectural fees for the design. Can we donate the design of the Casa Techo so that anyone who needs a roof can use the plans and build their house?

Casa Techo - Birman Children's Orphanage. Still under construction is a commission that comes from Thailand where we are asked to use the original design of Casa Techo in a Burmese Children's Orphanage. Under the policy of not benefiting with the most needy is that we send our design of the Roof House to be modified in relation to the demands of the place and has this new program.

Working directly with the offices of architects studio cavernas and agora architects, located in Thailand, we began to adapt the Roof House this time to a displaced inhabitant of his country, minor, and without family. The idea of building community from the house to the group is the foundation that guided all the decisions of the project. This allowed us to grow the original home so that two children could live, each with their bedroom on the upper level and their own social area on the first level. This new unit of two children per house rises from the 80 cm floor since the area where the project is located is a flood zone due to the presence of a rice plan.

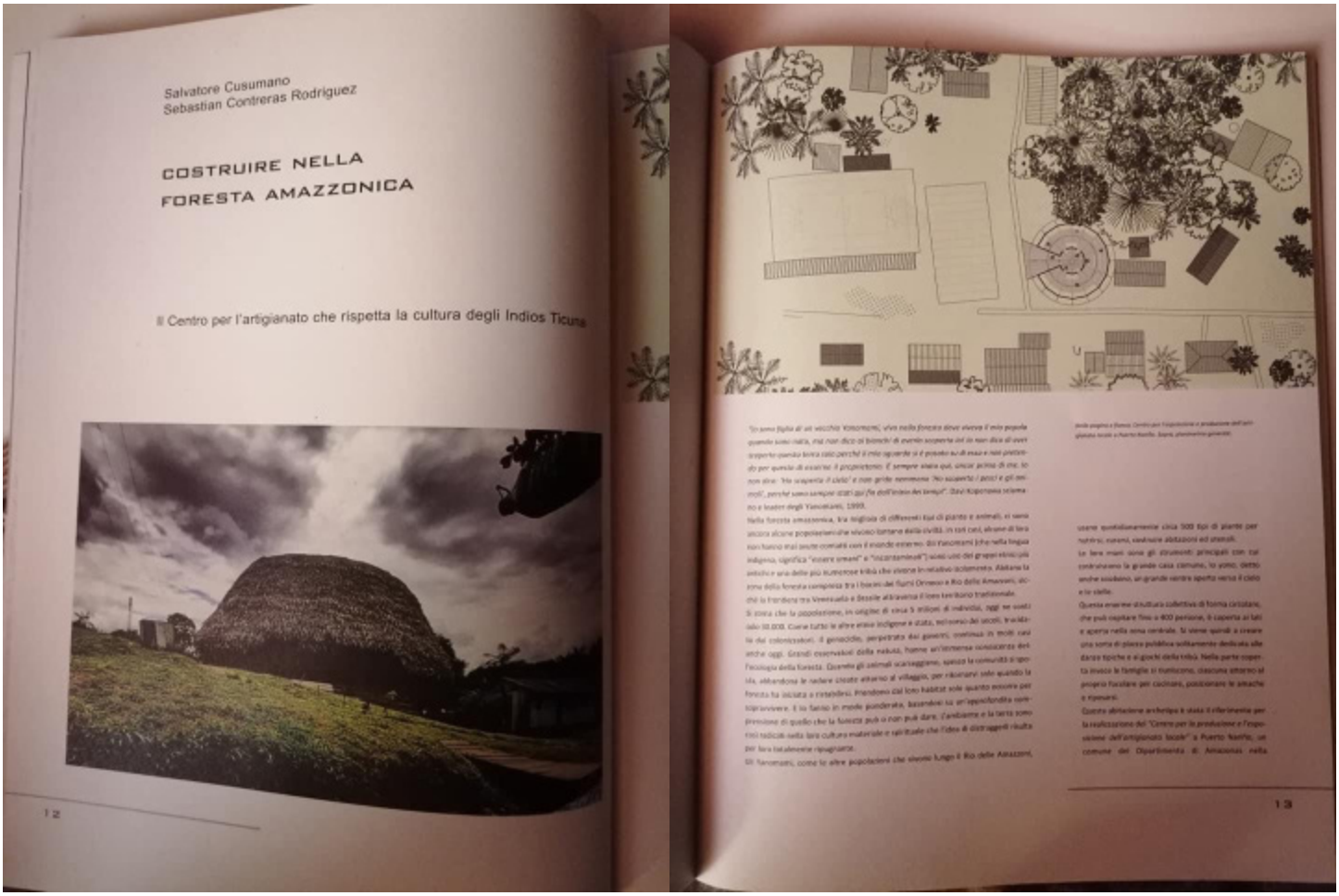
The group is the sum of 4 housing units (8 children) and a bathroom unit, which are articulated by rest areas between the houses, around a central playground that complements the system of this new orphanage.

These three projects clearly set out the initial argument for this provocation. We are convinced that if only one roof is resolved in an architectural way, we are solving the most difficult to build a house, at the same time the most useful of it for various cultures, climates and topographies, and we are delivering the essential for a safe and comfortable dwelling.
We propose a habitable roof logic.

Publications Italy

BIO ARCHITETTURA ABITARE LA TERRA #126

"Construire nella foresta Amazzonica"
- Construction in the Amazon rainforest



Sopra: Jose delle Lajarca costruisce con una tecnica di fogli di Chambira

14

Nella pagina a fianco, diversi modelli e schizzi della copertura del Centro per l'artigianato della comunità Tikuna. Lo studio del progetto è stato realizzato principalmente attraverso modelli per favorire la comprensione della costruzione alla comunità.

Al centro, Humberto Ariza alcuni membri della comunità Tikuna e l'architetto Mario Sebastian Contreras Rodriguez in cui si presentano i dettagliati del progetto.

Sapere ancestrale e modernità costruttiva

Cosa hanno in comune la temperatura, l'umidità, la geografia, la cultura indigena, gli insetti, i materiali, i trasporti, un budget limitato, i sistemi di edificazione vernacolari, la manodopera locale, il tempo e la realizzazione di manufatti? Queste sono alcune delle variabili in gioco che è stata necessario affrontare durante i mesi di lavoro assieme alla comunità Tikuna. Per definire i criteri di uno spazio architettonico siamo partiti dall'evidenza dei fatti, ognuno dei quali è stato analizzato fino a diventare uno dei temi del processo di elaborazione spaziale e poi costruttivo.

Possiamo dire con certezza che tutti i problemi architettonici che incontriamo quotidianamente nel nostro lavoro si amplificano enormemente in Amazzonia: la lotta contro il caldo, l'afa e l'umidità - che penetrano nelle ossa e all'interno degli spazi - quella contro gli insetti che ti attaccano senza compassione e ti vessano a lavoro finito tutto il giorno perché il sudore è l'unico modo di respingerli e poter dormire la notte; il contatto con una tradizione costruttiva ancestrale e la sua traduzione nel mondo attuale attraverso i saperi delle comunità; la scelta e la ricchezza di utilizzo dei materiali all'interno di un habitat estremamente interessante e complesso; il trasporto dei materiali attraverso geografie complesse; l'organizzazione di una comunità al fine di una costruzione partecipata dell'edificio; le difficoltà di comunicazione sia verbale che gestuale con una popolazione che riesce ad esprimere tutto, anche solo attraverso un movimento impercettibile dei muscoli del viso; la scarsità d'acqua, l'elettricità ad intermittenza e in molti casi il cattivo segnale telefonico.

Di ogni architettonico cosciente ed essere la grande sfida della tua vita.

Tutto questo aggiungiamo che l'opera è costruita da una comunità che non sa leggere i disegni e con cui è possibile comunicare solo attraverso modelli... allora il

I modelli inoltre rimanevano essere piuttosto grandi e dettagliati, per cui sono stati re-

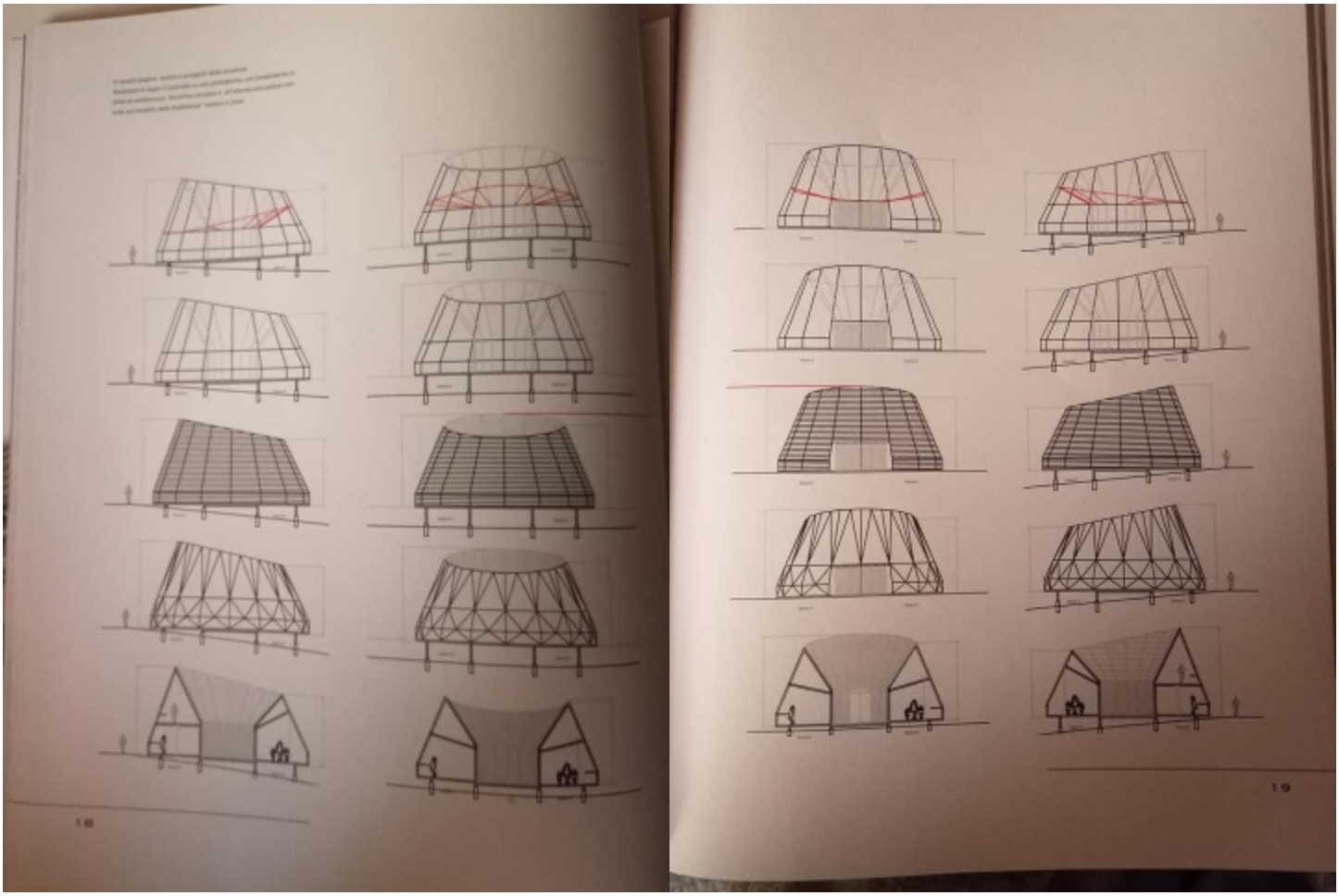
Scott in scala 1:25. Per arrivare al villaggio è necessario intraprendere un viaggio piuttosto lungo. Dopo essere atterrati a Leticia, una dei capoluoghi dell'Amazzonia colombiana, il viaggio prosegue lungo il Rio delle Amazoni su una barca che può trasportare al massimo 20 persone. Si raggiunge così la bella città di Puerto Nariño. Da qui occorre camminare per un'ora e mezza nella giungla prima di giungere al villaggio, composto da 40 case, in cui abitano circa, progettato e costruito il Centro.

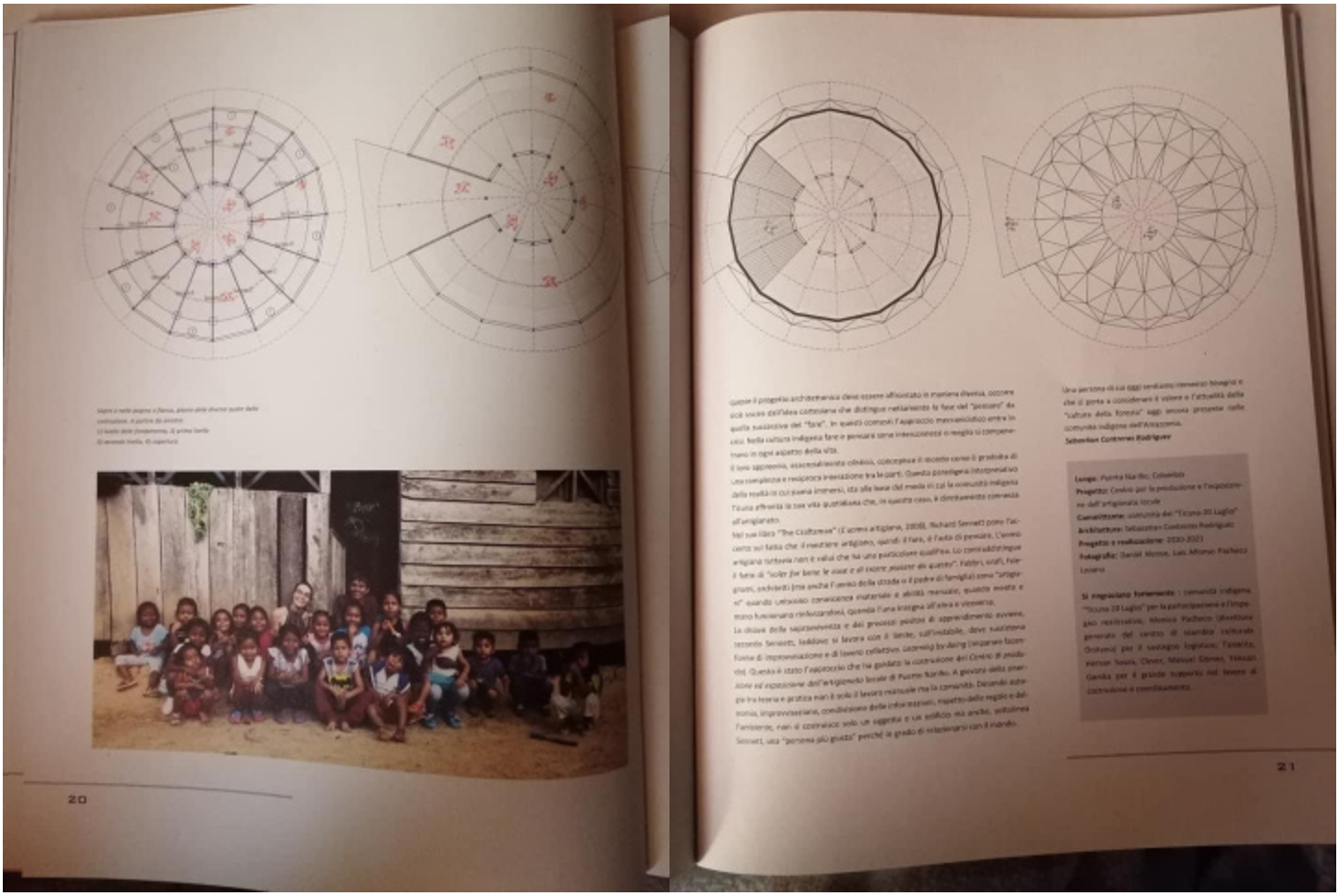
Il reperimento dei materiali è stata una dei problemi maggiori da risolvere. Il legno Mata-Mata, per realizzare i modelli e la struttura dell'edificio, è stato trasportato anch'esso con barche. Prima essere rapello in un solo luogo, definito dalla comunità, e solo dopo una cerimonia che di fatto "consente" all'essere umano di tagliare una pianta e di utilizzare un altro essere, in questo caso l'albero, per la propria sopravvivenza.

La copertura, realizzata con una tessitura di foglie di chambapa, è stata fornita dalla comunità Yagua, una popolazione localizzata nelle vicinanze.

Per realizzare le fondazioni su pilotti si è deciso ingaggiare il trasporto della quantità minima necessaria di ferro e cemento. Tutti i materiali hanno dovuto poi, prima di essere utilizzati, sottostare a una procedura di disinfezione contro il Covid-19. In circostanze come

17





Publications Chile

PUBLISHER MAGAZINE AOA #43

Architecture magazine AOA, makes an article in relation to my work as an architect.

SEBASTIÁN CONTRERAS RODRÍGUEZ

Desde hace ocho años que Sebastián Contreras ha versado su ejercicio profesional en la arquitectura rural y el trabajo con las comunidades. Su serie Casa Techo ha sido replicada en diferentes contextos, siempre destinados a zonas no urbanas y a los más vulnerables. Hoy reside en Nueva Zelanda donde se ha involucrado en el desarrollo de viviendas sociales para maorís, además de dirigir desde allá su estudio Estación Espacial Arquitectos.

For the last eight years, Sebastian Contreras has focused his professional practice on rural architecture and working with communities. His "Casa Techo" series has been replicated in different contexts, always focused on non-urban areas and the most vulnerable. Today he resides in New Zealand where he has been involved in the development of social housing for the Māori people, in addition to running his studio Estación Espacial Arquitectos from there.

↦
Para este orfanato en Tailandia se usaron y adaptaron los planos gratuitos del refugio de emergencia Casa Techo.

For this orphanage in Thailand, they used and adapted the free plans from the Casa Techo emergency housing.

Durante 10 años Sebastián Contreras se dedicó a la docencia en Chile. Tras egresar de arquitectura en la Universidad Católica, hizo una maestría y una especialización en Desarrollo Urbano, y colaboró en proyectos con arquitectos como Sebastián Gray, Sebastián Irarrázaval, y Felipe Assadi. En 2013 lo llamaron de la Universidad Javierana en Bogotá para que formara parte de su equipo docente y de investigación.

En Colombia el tema de la pobreza, la desigualdad y el campo llamó su atención y comenzó a centrar su investigación y ejercicio profesional en la arquitectura rural. Desde entonces su línea investigativa ha estado vinculada al hábitat residencial y sus obras buscan reflejar la diversidad cultural y al mismo tiempo la armonía con la naturaleza.

En 2016 desarrolló un proyecto de casas de emergencia con las que ganó el concurso y expuso en el congreso Contingencia y Praxis, en Barcelona. Además desarrolló viviendas para gente necesitada en el campo, levantó un centro cultural indígena en la amazona colombiana, colaboró con víctimas de las FARC y con la comunidad afro en la localidad Agua de Dios. "Trabajar con comunidades es lo más difícil de la arquitectura rural. Se debe entender cómo opera cada grupo social, aprender a generar confianzas, dejar el ego de lado y saber escuchar. La obra se construye gracias a muchos agentes y uno pasa a ser un director de orquesta", cuenta. Según su experiencia, la arquitectura rural es abierta al cambio, el proyecto inicial va mutando a medida de que se va construyendo y se involucran las comunidades. Se trata de una arquitectura del servicio donde los autores son las personas y todos son dueños de la obra final. "Uno como arquitecto debiera siempre armar comunidad, tanto con los vecinos, como con el área a la que se vincula, con el paisaje, con las zonas aledañas. No concibo la arquitectura desde la obra individual. Para mí se es arquitecto solo en relación a otros", comenta .

En 2019 viajó a Nueva Zelanda a trabajar con la comunidad maorí donde se ha involucrado en la vivienda social para esta etnia aprendiendo de los procesos de Housing New Zealand. Desde allá dirige su oficina Estación Espacial Arquitectos y es profesor de proyectos de la Universidad de Proyecto en Colombia.

«Uno como arquitecto debiera siempre armar comunidad, tanto con los vecinos, como con el área a la que se vincula, con el paisaje, con las zonas aledañas. No concibo la arquitectura desde la obra individual. Para mí se es arquitecto solo en relación a otros».

For 10 years. Sebastian Contreras used to be dedicated to teaching in Chile. After graduating from architecture from Universidad Católica, he did a master´s and a specialization in Urban Development and collaborated on projects with architects such as Sebastian Gray, Sebastian Irarrázaval, and Felipe Assadi. In 2013 he was contacted by the University Javierana in Bogotá to become part of its faculty and research team.

In Colombia, the issue of poverty, inequality, and the countryside caught his attention and he started to focus his research and professional practice on rural architecture. Since then, his line of research has been linked to the residential habitat and his work aims to reflect cultural diversity and at the same time harmony with nature. In 2016 he developed a project of emergency houses with which he won and exhibited at the Contingency and Praxis congress contest, in Barcelona in 2016. He also developed housing for people in need in the countryside, built an indigenous cultural center in the Colombian Amazon, collaborated with victims of the FARC, and the local Afro community at Agua de Dios. "Working with communities is the most difficult part of rural architecture. You must understand how each social group operates, learn to create confidence, leave your ego aside, and know how to listen. The work is built thanks to many actors and one becomes a director of the orchestra", he says. According to his experience, rural architecture is open to change, the initial project is changing as it is being built and communities are becoming involved. It is about architecture as a service where the authors are the people and everyone owns the finished product. "As an architect, one should always build community, with neighbors as well as with the area one is connected to, with the landscape, with the surrounding areas. I do not conceive architecture from individual work. For me, one is an architect only in relation to others", he says.

In 2019, he went to New Zealand to work with the Māori community where he has become involved in social housing for this ethnic group, learning from the processes of ¨Housing New Zealand¨. From there he runs his office Estación Espacial Arquitectos and is a professor of projects at the Universidad de Proyecto in Colombia.

«As an architect, one should always build community, with neighbors as well as with the area one is connected to, with the landscape, with the surrounding areas. I do not conceive architecture from individual work. For me, one is an architect only in relation to others».

Serie Casa Techo: un Techo es más que la estructura de una casa.
Esta investigación proyectual parte de la observación de la manera en que la gente de las áreas periurbanas y rurales autoconstruye sus viviendas. Se constató que para ellos levantar los muros es una tarea para la que tienen habilidades y que les resulta relativamente sencilla, sin embrago construir un techo, o salvar una luz les significa un gran trabajo. A la vez un techo es un elemento primitivo propio de las culturas ancestrales; la maloca, la ruca, la choza, son espacios construidos mayoritariamente con una cubierta. Desde acá nació la pregunta: ¿por qué no diseñar un techo que sea una vivienda, y que le entregue a las personas lo que le es más difícil de hacer y construir? Así nace la Casa Techo, que sintetiza dos elementos arquitectónicos en uno, optimizando el proceso constructivo y el ahorro de materiales. Para lograr esto, se propone construir un espacio habitable cubierto mediante dos planos estructurales inclinados apoyados entre sí que forman un triángulo de tracción. Con esta lógica, se ha desarrollado una serie de cinco intervenciones arquitectónicas.

Casa Techo – Refugio de emergencia –Opensource.
Este refugio se dirige a un usuario en tránsito, y que por motivos de violencia y violación de derechos fundamentales debe cambiar de territorio. Esta vivienda debe ser transportable, liviana, de rápido y fácil ensamblaje, cómoda al frio y al calor, ventilada, segura y que resuelva con un bajo impacto ambiental la escasez de agua.

Casa Techo – Orfanato – Opensource.
Para este proyecto se usaron y adaptaron los planos gratuitos del refugio de emergencia para construir un orfanato en Tailandia. El conjunto lo conforman cinco unidades de las Casas Techo: cuatro como viviendas para ocho niños, y una para el baño, todas organizadas alrededor de un espacio central.

Casa Techo – Invernadero.
Se diseño una vivienda como una cubierta térmica que da cobijo a la relación entre la vida productiva y la cotidiana del campesino de hoy. Un Invernadero es un patio cubierto para épocas de lluvia, un lugar para producir y cuidar de las heladas los alimentos, un espacio de encuentro familiar y comunitario, y un dispositivo térmico que calefacciona la vivienda de forma segura y eficiente.

Arquitectura artesanal.
Esta vivienda está dirigida a los campesinos colombianos en pobreza extrema. En su interior el espacio se organiza en dos niveles lo que alcanza una altura de seis metros. Se entrega con 70 metros^2 construidos con la posibilidad de crecer interiormente 15 metros^2 más.

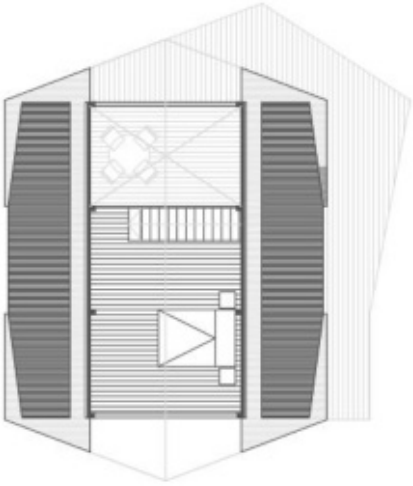
Casa Techo prefabricada – Vivienda social rural
En conjunto con la Sociedad Colombiana de Arquitectos, se desarrolló este prototipo de vivienda rural prefabricada. El principio constructivo se basa en apoyar dos planos estructurales inclinados que trabajan con la tracción, formado un triángulo que arma el 70 por ciento de la vivienda. La estructura de acero compuesta de marcos triangulares, conforman el volumen rígido total de la Casa Techo. Las piezas prefabricadas de acero seriado se ensamblan en la locación, tras una fase de montaje simple y limpio. Las paredes interiores son una estructura liviana independiente al techo y pueden redistribuirse fácilmente, permitiendo una planta flexible y adaptable. /

¿Por qué no diseñar un techo que sea una vivienda, y que le entregue a las personas lo que le es más difícil de hacer y construir? Así nace la Casa Techo, que sintetiza dos elementos arquitectónicos en uno, optimizando el proceso constructivo y el ahorro de materiales.

↤
El principio constructivo para esta Casa Techo prefabricada se basa en apoyar dos planos estructurales inclinados que trabajan con la tracción, formado un triángulo que arma el 70 por ciento de la vivienda.

The construction principle for this Prefabricated Casa Techo is based on supporting two structural inclined planes that create tension and form a triangle that constitutes 70 percent of the house.

Planta primer nivel 0.50 / First floor plan 0.50



Planta segundo nivel 2.5 / Second floor plan 2.5

Why not design a roof that is a home, and that gives people what is the most difficult for them to make and build? This is how Casa Techo was born, it synthesizes two architectural elements in one, optimizing the construction process and saving materials.

Casa Techo Series: A roof is more than the structure of a house.
This project research is based on the observation of how people in the peri-urban and rural areas self-build their housing. It was observed that for them to raise walls is a task that they have skills for and that it is relatively easy for them, but to build roof or solve a roof span is a complicated job for them. At the same time, a roof is a primitive element from ancestral cultures; the maloca, the ruca, the hut, are spaces built mostly with a cover. From here, the question was posed: why not design a roof that is a home, and that gives people what is the most difficult for them to make and build? This is how Casa Techo was born, it synthesizes two architectural elements in one, optimizing the construction process and saving materials. To achieve this, they propose to build a covered living space using two inclined structural planes supported by each other that form a tension triangle. With this concept, a series of five architectural interventions have been developed.

Casa Techo - Emergency shelter – Opensource.
This shelter is aimed at a user in transit, who for reasons of violence and fundamental rights abuse must change locations. This housing must be transportable, lightweight, quick, and easy to assemble, comfortable in hot and cold weather, ventilated, safe, and with a low environmental impact to address the water shortage.

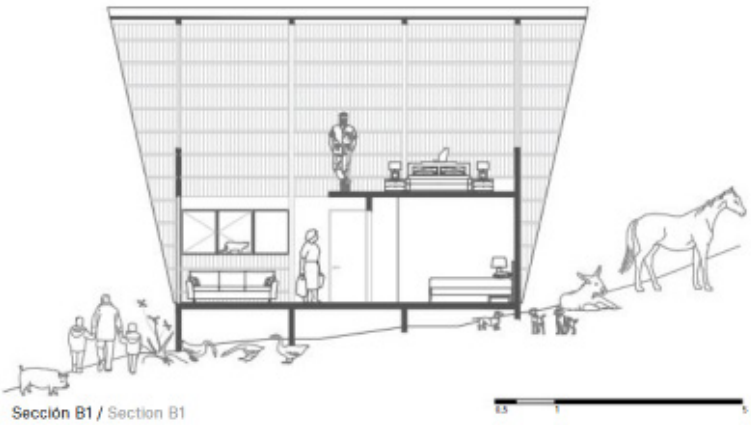
Casa Techo – Orphanage – Opensource.
For this project, the emergency shelter´s free plans were used and adapted to build an orphanage in Thailand. The whole construction is made up of five units of Casas Techo: four as housing for eight children, and one for the bathroom, all distributed around a central space.

Casa Techo – Greenhouse.
A house was designed as a thermal cover, which protects the relationship between the productive and daily life of today's farmer. A Greenhouse is a covered patio for rainy seasons, a place to grow and care for food, a space for family and community meetings, and a thermal device that heats safe and efficient housing.

Artisanal architecture.
This housing is aimed at Colombian farmers in extreme poverty. Inside, the space is organized in two levels, reaching a height of six meters. It is delivered built with 70 square meters and with the possibility to increase it 15 square meters internally.

Prefabricated Casa Techo – Rural social housing
In cooperation with the Colombian Society of Architects, this rural prefabricated housing prototype was developed. The construction principle is based on supporting two structural inclined planes that create tension and form a triangle that makes up 70 percent of the housing. The Steel structure formed by triangular frames constitutes the total rigid volume of the Casa Techo. Prefabricated serial steel pieces are assembled on-site, after a simple and clean assembly phase. The interior walls are a lightweight structure independent from the roof and can be easily redistributed, allowing for a flexible and adaptable plan. /

Sección A1 / Section A1



Sección B1 / Section B1

COMMUNITY BY NATURE.

PRODUCTIVE COMMUNITY HOUSING
AOTEAROA

QUESTION

“New Zealand’s housing crisis has been a long time coming and will take time to reverse. The last thing our economy and homeowners need is a dangerous housing bubble, but several indicators point to that risk,” said Prime Minister Jacinda Ardern.

New Zealand’s housing crisis, now some ten years old, has worsened dramatically since the pandemic. New Zealand’s social housing waiting list has more than tripled to 21,415 since the 2017 election. In Auckland and Wellington, the median price is now $1,100,000, up 35% in the capital. But even smaller cities are feeling the heat. The national median house price in 2021 rose almost 23% year-on-year to $780,000.

The New Zealand government will allocate $3.8 billion to accelerate the pace of new housing construction and introduce a series of policies aimed at curbing property speculation in New Zealand’s housing market, which has become the least affordable of the 36 wealthy OECD countries.

The question “How are we going to live together?” is as much a social and political question as it is a spatial one. Lately, rapidly changing social norms, increasing political polarization, climate change, pandemics and huge global inequalities mean that we are asking this question with more urgency and at different scales. We must analyze how architecture shapes inhabitation by answering the question of how we can live together.

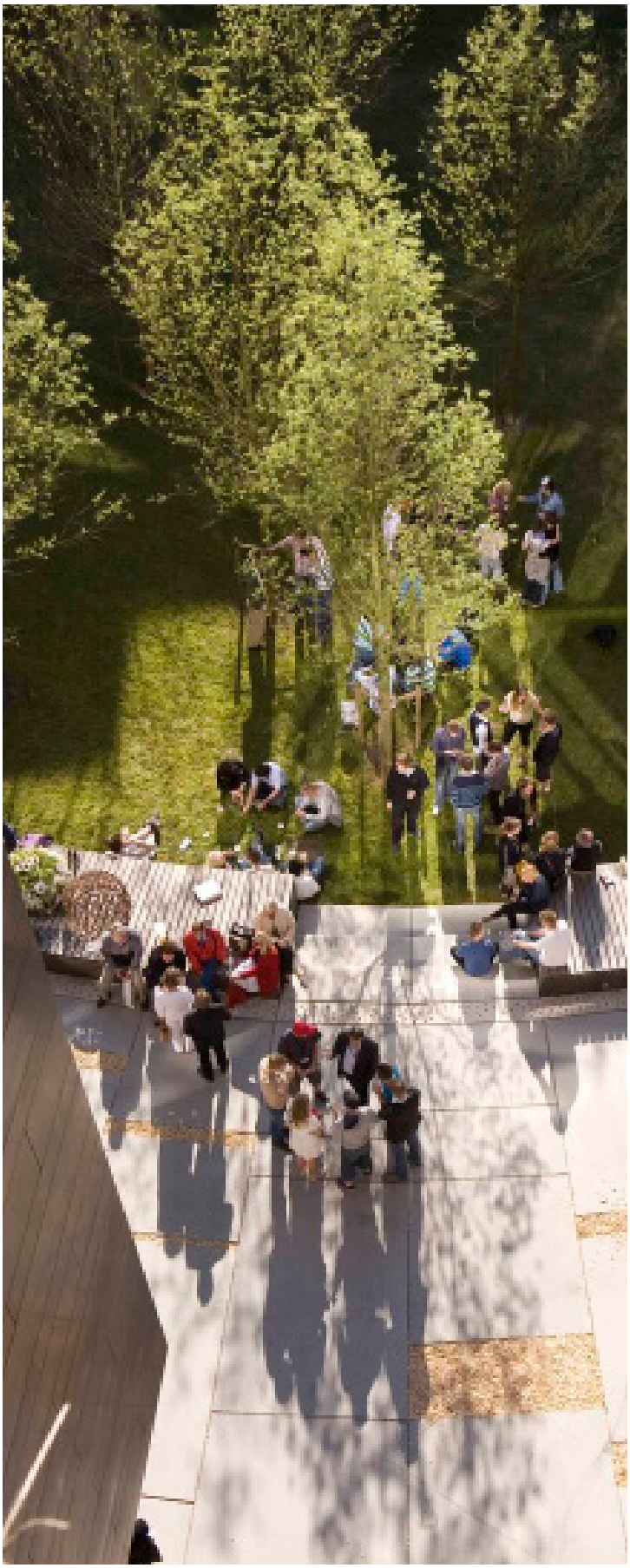
HYPOTHESIS

SHARING - COLLABORATING

A phenomenon is taking place that can be collectively referred to as ecological, in terms of the way people interact with their natural environment. Economic and social forms are occurring that transcend previous modes of production and social organization. Pushed by increasingly complex communication technologies, society is configured as a rhizome dominated by “liquid” relationships that generate a political system called “sociocracy” characterized by its sophisticated level of self-organization, not far removed from the way our indigenous cultures lived.

One of the new forms of coexistence is manifested in housing cooperatives, also called “cohousing, collaborative housing, productive housing, communities” that are characterized by their participatory organization, their social and solidarity contribution, and their ecological performance. We must stop thinking about the unit and start thinking about the group.

Students in this stream will be designing a multi-family productive community housing project in Porirua using timber technologies. This group of 50 to 60 families will live in community in a building between the center of Porirua and the Porirua Scenic Reserve.



THIS STREAM IS BASED ON THE TRILOGY COMMUNITY - MATERIAL - LANDSCAPE.

CONCEPT 1. COMMUNITY

What motivates this course is the question: How can we live together? Or how to live together?

“Man is a social being by nature” is a phrase of the philosopher Aristotle (384-322, B.C.) to state that we are born with the social characteristic and we develop it throughout our life, as we need others to survive.

According to Aristotle, one “is” insofar as one “co-is”. This means that each person possesses an individual dimension that develops his or her personality or “being”, and that this dimension is integrated into the social dimension of persons, giving birth to co-existence.

The individual dimension of people are the qualities they possess, recognize, explore and use to live together in community peacefully and mutually benefit each other. The individual dimension, where the self resides, must learn to come into agreement with the social dimension in order to live together in society. This learning is called the socialization process.

The socialization process is the set of learning that people need in order to relate with autonomy, self-realization and self-regulation within a society. For example, the incorporation of behavioral norms, language, culture, etc.

Essential present

“You don’t know what you have until you lose it.” Never before in our lives have we missed so much the simple everyday moments of playing with the children in the park or getting together with the family.

People all over the world withdrew from urban

life to adopt different measures of physical isolation, so far considered the best way to prevent the spread of the global COVID19 pandemic. These measures ranged from mobility restrictions to partial or total closure of cities. One fact: during the month of April 2020 alone, 20% of the world's population will be under total lockdown. Meanwhile, the planet's public spaces are depopulated, reminiscent of ghost cities.

How to build community in a world with social distancing? This paradox opens the current.

CONCEPT 2. MATERIAL – WOOD

It is estimated that 30% of CO2 emissions - the main cause of climate change - come from buildings, which consume 40% of total energy. In several countries, the "brick" has left a large stock of low-quality housing, the construction of which has omitted sustainability criteria.

It is estimated that if steel was the material of architecture in the 19th century and concrete in the 20th century, wood is the material of the 21st century. As a natural, renewable, reusable and biodegradable resource, optimal in a circular economy, wood has a set of environmental benefits that differentiate it from the rest and make it unique.

Climate change warns that we cannot continue with a pernicious building system that is so energy demanding and emits greenhouse gases. In this sense, wood requires less energy in the transformation process - from raw material to building material - than steel or concrete.

It is estimated that the CO2 emissions resulting from the manufacture of a wood structure are five times lower than if it had been made of concrete, and eight times lower than if it had been made of steel.

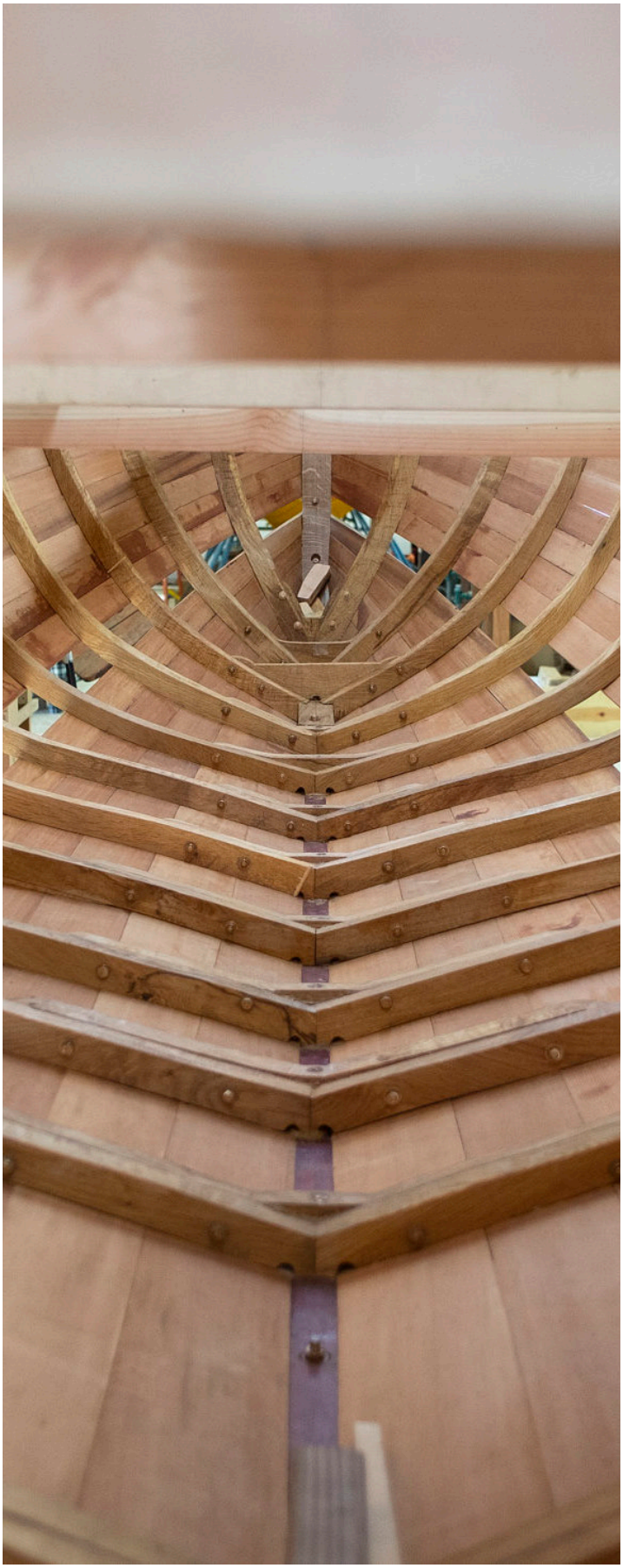
In addition, wood is the only building material that continues to absorb and store CO2 from the atmosphere throughout the life of a building. This is especially important in urban environments, where the concentration of emissions is high. Therefore, of the two ways that exist to reduce CO2 from the atmosphere: avoiding emissions and storing it, wood is the only material that combines both capabilities.

Young trees - planted for timber - absorb more CO2 than mature trees, which eventually die and rot, returning the stored CO2 to the atmosphere; while most of the CO2 from trees cut in a well-managed forest remains stored throughout the life of the resulting wood product.

Wood is also one of the best insulating building materials, both from cold in winter and heat in summer. It is an ideal material for meeting the stringent low energy demand standards for passive or near-zero energy buildings (nZEB). If energy consumption is lower, the environment is less polluted.

The use of wood for construction also ensures, through responsible, controlled and economically viable management, the conservation of forests, natural carbon dioxide sinks.

The main environmental organizations, such as FSC and PEFC, affirm that the sustainable use of forest resources is the only guarantee of survival.



CONCEPT 3. MATERIAL AS A LAND-SCAPE.

Forests are vital to the survival and well-being of humankind. They are home to two-thirds of the planet's plant and animal species. They provide us with food, oxygen, shelter, recreation and spiritual support. They also provide the raw material for more than 5,000 commercially valuable products, ranging from pharmaceuticals to fuelwood and clothing. The biological diversity of forests - the variety of genes, species and forest ecosystems - underpins the production of these goods and services and is the basis for the long-term integrity and stability of forests.

The use of reduced impact logging practices can provide both economic and environmental benefits. It has been scientifically demonstrated that such practices can reduce carbon emissions by up to 40 tons per hectare of forest compared to conventional logging techniques (Putz et al. 2008). This, combined with the preservation of higher levels of biodiversity through selective logging, makes a strong case for sustainable forest management and against standard timber harvesting techniques.

In addition to the environmental benefits it brings, reduced impact logging has been shown to decrease the percentage of "lost" timber (trees felled but not harvested because they are overlooked by machine operators), thus reducing the volume of wasted wood.

The objective is to observe the forest landscape from a tangible perspective, seeking to build an analogy between the concepts of landscape and material, since both are constituted as a cultural system of meanings that always develops with tangible experience. We start from the hypothesis that the material landscape of a given territory can provide relevant and differential knowledge for the development of architecture.

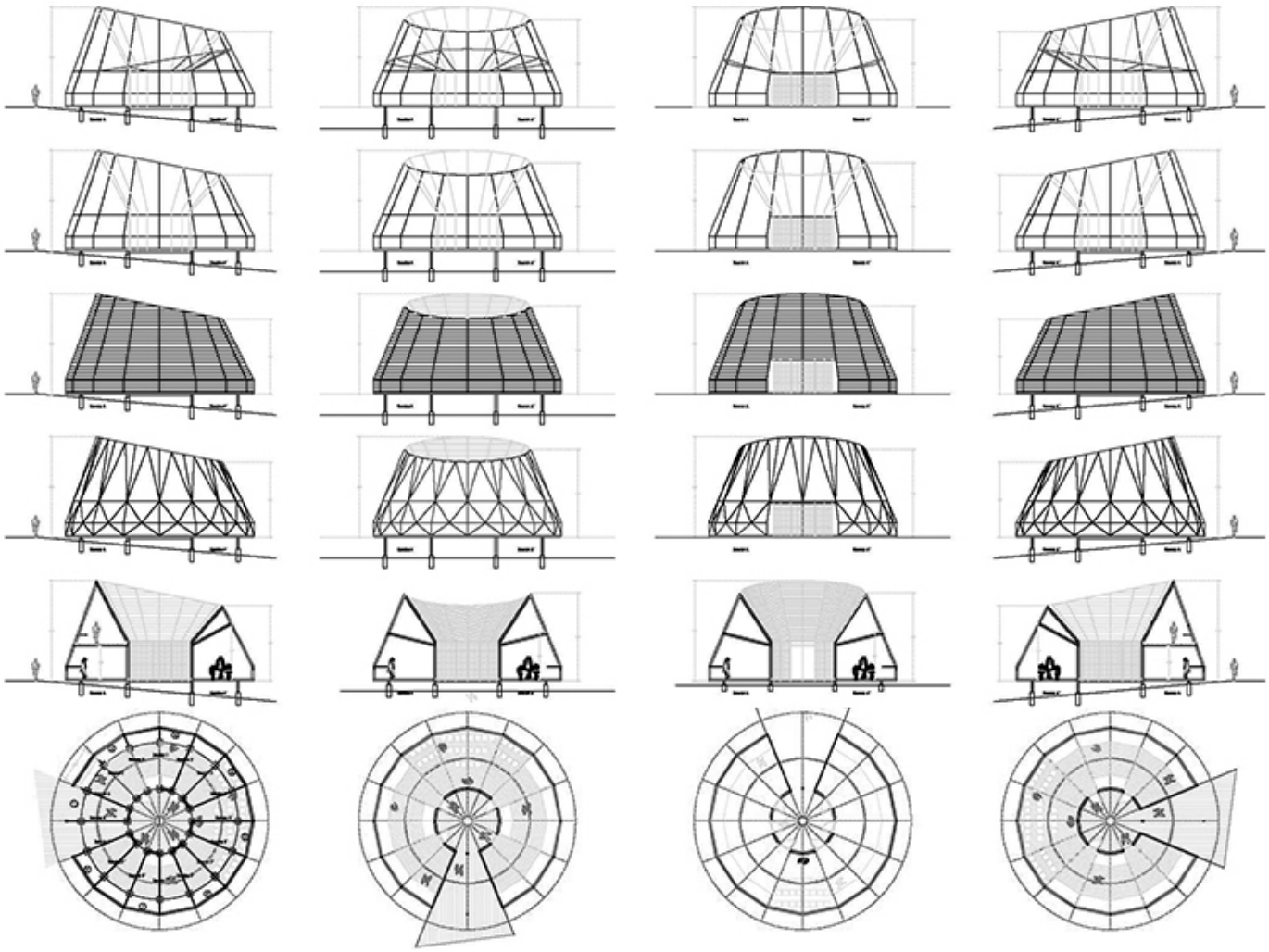
COURSE STRUCTURE:

The course is in three phases: Research and Analysis, Concept Design and Developed Design. These are designed to support a rich architectural design process and achieve a building design that is resolved and described to a professional standard.

In the first phase, Milestone 1, Art and architecture precedent case studies are researched as well as possible programmes and sites in natural and urban landscapes. Students also develop initial conceptual approaches.

In Milestone 2, students choose a site and programme and iteratively develop a concept design for a PRODUCTIVE COMMUNITY HOUSING complex.

In the third phase, Milestone 3, one building in the PRODUCTIVE COMMUNITY HOUSING complex is developed and represented as a technically resolved yet experimental piece of architecture.



MILESTONE 1. RESEARCH AND ANALYSIS

The first phase consists of intensive background research. Students will work in teams of three or four to research the key components of the PRODUCTIVE COMMUNITY HOUSING (social-indigenous-references) project as part of a shared collection of resources. This will serve as background material for the concept design phase for the entire group. Teams co-author a research paper that informs their topic. The topics will be discussed in the first group tutorial. The other task for this phase is for each group to explore a research proposal in relation to LANDSCAPE MATERIAL WOOD, through concept sketches and/or concept sketch models. The LANSCAPE MATERIAL model reflects the conceptual analysis on PRODUCTIVE COMMUNITY HOUSING. A pdf of these is presented as an appendix to the research paper. It is expected that approximately half of the time will be spent on the co-authored paper and the other half on the individual part of the project.

Output: an illustrated research report such as: site, case studies, theoretical, conceptual or other research that provides design source material. It should include schematic drawings and simple diagrams of the cases studied that are necessary to convey the results of their research and a physical model that explores in an abstract spatial manner the proposed community hypothesis. Hours students will work on this project outside of class: 20 hours.

Research and Analysis Deliverables:

• 1 x Research paper reporting on an assigned topic (PRODUCTIVE COMMUNITY HOUSING), in pdf format, prepared jointly by teams of 3 or 4 people. This is to compile, analyze and succinctly order the textual and graphic information on the particular topic assigned to the team. This study should contain a spatial analysis of SOCIAL HOUSING (6 cases), MAORI INDIGENOUS HOUSIGN (3 cases) and a STUDY OF REFERENCE according to the chosen theme (1 case). Include simple diagrams and relevant precedents as necessary to convey the results of your research clearly. Make accurate APA references. The research will be made available to all groups. Each group will submit a pdf document in A4 format, presented on Blackboard. Embedded video is acceptable, but make sure the file size is less than 50 megs. A minimum of 10 and a maximum of 30 pages is expected. Use double page spreads for larger drawings/images.

- One conceptual physical model (50 cm X 50 cm cube) per group, built with materials from the site such as branches, stones, leaves, string, etc. It is not possible to use glue. It is a model that seeks a certain artisanal logic. This model represents the conceptual genesis of the project. Photographs of the site and drawings exploring a research proposal in relation to the LANSCAPE WOOD material, in pdf format and presented as an appendix to each student's copy of the research paper.

Each student must submit a personal written document of how they understand the idea developed by the group (explanation of the model). This document should not exceed two pages in length and should be accompanied by diagrams, photographs and drawings.
Each student must submit a copy of the research paper and appendix in Blackboard.

Assessment Criteria:

Milestone 1. Context Analysis / Design Research three equally weighted assessment criteria:

1. Content: Clarity and coherency; Comprehensiveness and scope; Range and reliability of sources
2. Relevance: Currency; Significance and emphasis; Applicability to your ARCI 412 design project
3. Analysis: Structure of material; Comparison of sources & information; Interpretation and critique.

MILESTONE 2. CONCEPT DESIGN

This phase consists of a conceptual design for its PRODUCTIVE COMMUNITY HOUSING complex at the chosen site (PORIRUA), and the identification of a building of the complex for further development. This building is shown at a conceptual level of detail, that is, it is shown as a sketch proposal that is under development, but that takes into account the fundamental elements: evidence of clear conceptual, formal, structural, material, tectonic and programmatic thinking. This proposal has as its DNA the material landscape model generated in the first milestone.

The conceptual design building will be the basis of the work in ARCI421 construction. As such, it is considered to be “frozen” to allow it to develop the structural, services and construction details in the 421 course. However, it is not frozen in terms of its design work in ARCI 412, which will continue to

be developed. Integration with ARCI 421 gives you the opportunity to incorporate knowledge of structures, services and building components into your design. This is a 30-point capstone course so a high level of technology integration is expected.

Outcome: An architectural conceptual design will be shown through a complete set of professionally described drawings and reduced scale physical conceptual models showing the volumetric and tectonic exploration process of the proposal. these two inputs help to expose an architectural idea. The document should be a single pdf. Hours the student is expected to work on this project outside of class: 82 hours.

Results of the conceptual design:
Research Report:
1 research paper/workbook that captures an edited record of your design research process. Include relevant conceptual diagrams, sketches, images, and images of physical model iterations. Include drawings/documents (as indicated below). Include concise text, as needed, to clearly explain your research, process, and results. Include relevant case studies, evaluated as to how they support your design. The document should be a single pdf. It can be in any logical format. It is acceptable to include a video, but make sure the file size is less than 20 megabytes. It is expected to be a growing document that is progressively refined and edited to reflect your design process.

Site Context:
Description of the site context and the location of the conceptual buildings on the site:
- Urban site plan.
- Site plan including height contours and access for pedestrian, vehicle and/or as required.
- Topographical information (digital landscape model and urban landforms)
- Physical model of the site.
- Key views or other 3D images of the site.

Architectural concept:
Description of the building form, materials, technological approaches and construction system. This is a competition-like presentation, with each student designing their presentation of the conceptual design to showcase it in the most informative and compelling way. The following is a suggested list of information typically included in conceptual design proposals:

Drawings:
- Structural concept diagrams (moment frame, exoskeleton, or other system supporting the concept).
- Program diagrams/circulation/access/service diagrams
- Tectonic strategy diagrams (how construction is approached, e.g., whether exposed or concealed, hierarchy of elements from structure to substructure to building skin).
- Diagrams of the productive community proposal. These should explain the logic of the productive community spaces in relation to the houses.
- Plans of all levels. First floor plans should show the context around the building, upper plans should have the context progressively faded out (scale 1:100, or depending on the scale of the report, 1:50, 1:200).
- Contextual section(s) including relationship to site.
- Sections of the building (at least 2, to scale of the plans).
- 3D images conveying qualities of atmosphere, materiality and occupancy.
- Presentation drawings for public review
- Animations of the proposal
- Digital or physical sketch/model drawings depending on each student's design process.

Physical models:
- Each student must build physical models during the process. These volumetric modules, details and parts of the proposal will be made with recyclable materials (cardboard, paper, wood remains, physical material of the place such as branches, stones, leaves, etc.) and

must transmit the community idea of the project.

Submission is to Blackboard. Assessment Criteria:
Milestone 2. Concept Design three equally weighted assessment criteria:
1. Design approach: Proposition or question; Mode of representation; Iterative decision-making process
2. Form making strategy: Siting; Volumetric composition; Tectonics and materiality
3. Occupation and use: Experience of different building occupants and observers; spatial organisation in response to functional and/or symbolic programme; Envelope and inside/outside relationship.

MILESTONE 3. DEVELOPED DESIGN

This stage involves professional documentation of a developed PRODUCTIVE COMMUNITY HOUSING proposal, along with a research report capturing the design research. The developed design proposals are documented in detail, incorporating technological aspects to a professional level, such as materiality, construction systems, services and structure. The building needs to be shown as a resolved piece of architecture that engages meaningfully with technologies of building, as well as meeting the design research framework of this stream.

Outcome: A developed architectural proposal for one building in the PRODUCTIVE COMMUNITY HOUSING complex, documented and described to a professional level through a full set of drawings. Hours student are expected to work on this project outside of class 102.

Developed Design Deliverables:
Research Report:

1 x Research document/ workbook curating an edited record of your design research process up to Developed Design stage. Include the drawings/ documents (as listed below). This is

expected to be a growing document that is progressively fine-tuned and edited to reflect your design process.

Developed Architectural Concept:
Detailed description of building, showing technical resolution and described to a professional level.
Each student will fine-tune their list of drawings, models and digital material, to show the technical resolution of their building to best advantage. Below is a suggested list of information that is commonly bound in to developed design proposals. This can be considered a baseline for submission:

Drawings:
- Developed Site and context plans
- Plans of all levels, scale 1:50 and partial plans 1:20. (or depending on scale of brief, 1:20, 100)
- Building elevations (at least 2, scale to match plans). Contextual section/s including the relation to the site
- Building sections (at least 2, scale to match plans)
- Partial sections (at least 2, showing aspects such as envelope/ façade, scale 1:20)
- Material/ product research and textual references
- 3D imagery conveying qualities of atmosphere, materiality, occupation
- Model or animation of proposal.

Physical models:
- Each student must present all the models developed during their milestone 2 process. These models will serve to support the idea and contextualize the final project.

Submission is to Blackboard.
Assessment Criteria:
Milestone 3. Developed Design three equally weighted assessment criteria:

1. Critical insight: Engagement with disciplinary and/or contextual issue(s); Adaptation and application of principles/ precedents/ strategies; Articulation of design objectives, criteria and parameters
2. Design quality: Realisation of design concept (including adaptation of idea to fit context and programme); Consistency and effectiveness of design decision making (including multiple scales); Creativity and potential for further development
3. Technical mastery: Representation of architectural ideas and experiences; Resolution of technical complexity (including multiple building systems); Use of materials, components and tectonic ‘constructed-ness’ to reinforce a particular idea and/or experience.

BIBLIOGRAPHY

1.- BUILT BY ANIMALS.
THE NATURAL HISTORY OF ANIMAL ARCHITECTURE.
Mike Hansell.

2.- LANDSCAPE AND ENERGY.
Dirk Sijmons, Jasper Hugtenburg, Anton van Hoorn.

3.- THE TRANSITION HANDBOOK.
FROM OIL DEPENDENCY TO LOCAL RESILIENCE.
Robert Hopkins.

4.- WARM & SNUG.
THE HISTORY OF THE BED (SUTTON HISTORY CLASSICS).
Lawrence Wright.

5.- LO-TEK.
DESIGN BY RADICAL INDIGENISM.
Julia Watson.

6.- THE ARCHITECTURE OF TREES.
Cesare Leonardi

7.- COHOUSING FOR LIFE.
A PRACTICAL AND PERSONAL STORY OF EARTHSONG ECO-NEIGHBOURHOOD.
Robin Allison.

8- COUNTRYSIDE.
A REPORT.
Rem Koolhaas.

9.- THE HANDBOOK OF CONTEMPORARY INDIGENOUS ARCHITECTURE.
Elizabeth Grant (Editor), Kelly Greenop (Editor), Albert L. Refiti (Editor), Daniel J. Glenn (Editor)

10.- HABITAT.
VERNACULAR ARCHITECTURE FOR A CHANGING PLANET.
Sandra Piesik

11.- THE STORY OF STUFF.
THE IMPACT OF OVERCONSUMPTION ON THE PLANET, OUR COMMUNITIES, AND OUR HEALTH--AND HOW WE CAN MAKE IT BETTER.
Annie Leonard.

12.- MAORI ARCHITECTURE.
FROM FALE TO WHARENUI AND BEYOND.
Deidre Brown.

WAI HOME

In Māori, “WΛI“ means “Water”.
Water is a significant and revered element in Māori culture, with deep spiritual and cultural connections.

The construction industry, deeply rooted in age-old practices, is experiencing stagnation that spans over a century. Recognizing the critical need for innovation, WAI-HOME advocates for a paradigm shift, introducing 3D printing technology to reshape residential construction.
This transformative approach not only aligns with contemporary societal needs but also addresses pressing environmental concerns on a global scale.

In the face of climate change and the dual challenges of water scarcity and a dire need for social housing, WAI-HOME proposes a groundbreaking solution – social housing construction in flood-prone areas. Focusing on Auckland, a city grappling with both flood risks and a shortage of social housing, our project aims to create a resilient and sustainable community.

Designed to meet the specific needs of individuals aged 25 and above, living independently or with a child, WAI-HOME is positioned to significantly impact society’s overall resilience in the face of housing shortages. Our innovative approach envisions the construction of eight optimized homes in a designated print area, each priced affordably at or below $99,000.

These 387 sf homes prioritize space optimization, offering a cost-effective and comfortable living solution. Each residence includes a well-designed living room/kitchen, a cozy bedroom, a spacious bathroom, and a loft space for a child’s bedroom or additional storage. To seamlessly connect indoor and outdoor spaces, each home features a deck fostering community interaction within the neighborhood.

WAI-HOME’s design operations can be distilled into three key elements:

1. Elevating Houses on Pillars: A fundamental feature of our design, elevating homes on pillars in flood zones strategically mitigates flood risks, enhancing overall house protection. This measure is crucial in vulnerable areas, contributing to wider sustainable development objectives by minimizing direct flooding.

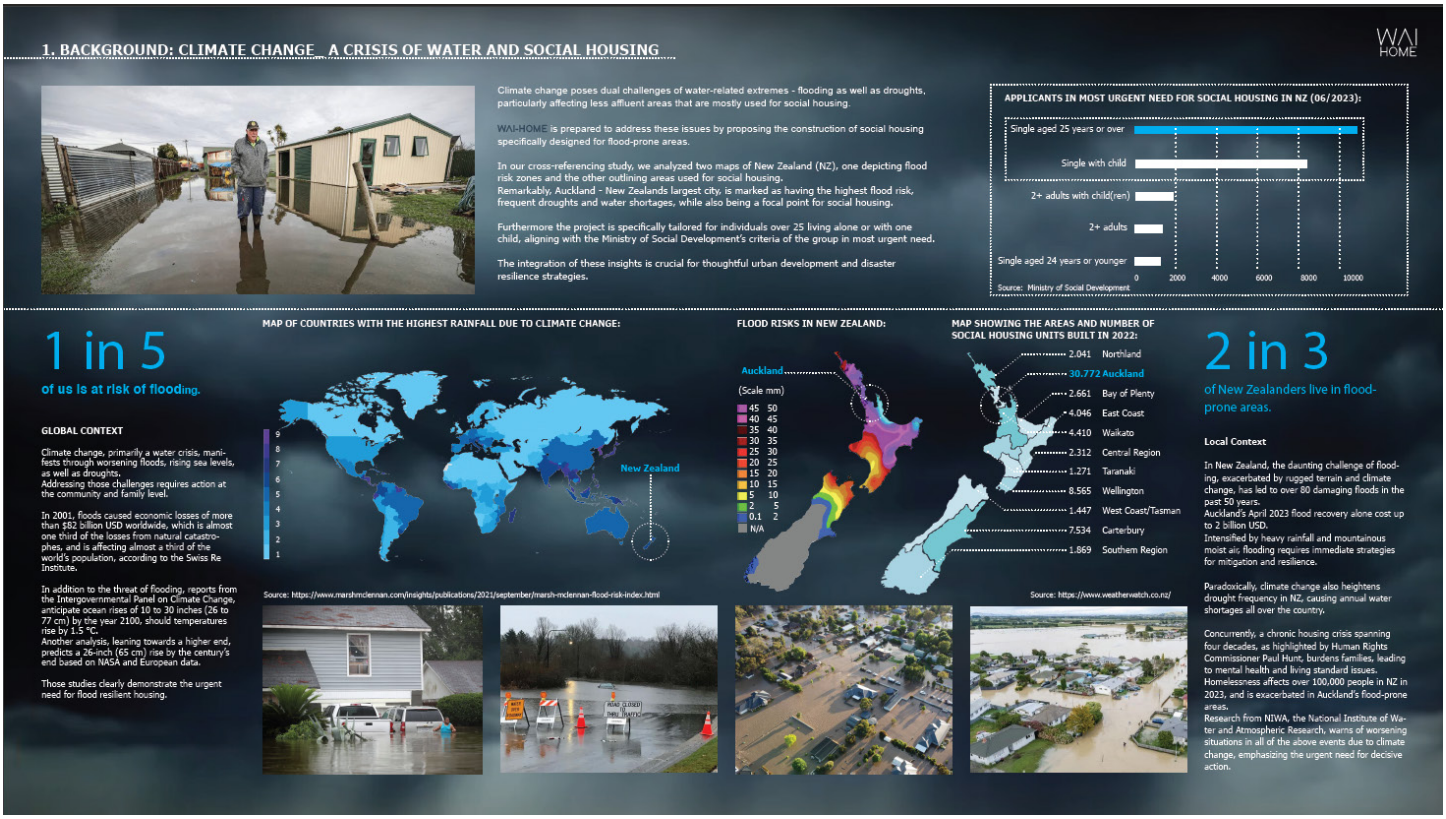
2. Incorporating Decks: Serving a dual function, decks in flood zones act as resilient, elevated platforms for flood risk mitigation while also extending living spaces outdoors. These areas foster community connection and interaction with nature.

3. Innovative Roof Design: The intentional elevation of the front edges of the roof allows for the inclusion of a loft inside the house, meeting the specific needs of state housing in New Zealand. Moreover, the pitched roof serves as a formal resource for rainwater harvesting and solar panel placement, contributing to sustainable water usage and energy generation.

WAI-HOME transcends traditional housing standards, offering an innovative and sustainable solution to the challenges posed by flood-prone areas. By integrating elevated housing, terraces, and cutting-edge roof design for water harvesting, we aim to provide safe and affordable housing while contributing to the long-term resilience and well-being of communities and the environment.

Mona Peters & Sebastian Contreras Rodriguez, heads of team MTspace_studio


WAI
HOME
In Maori, the indigenous culture of Aotearoa New Zealand, "WAI" means "Water", it is a significant and revered element in this culture, with a deep spiritual and cultural connection.
WAY HOME DESIGN CONCEPT CONSIDERATIONS:
Elevation for Flood Zones:
Elevating the house on pillars ensures resilience in flood-prone areas, protecting the structure from potential damage.
Rainwater Harvesting Design:
The house incorporates a rainwater harvesting system, capturing and utilizing rainwater for sustainable water supply within the dwelling.
Social Housing Design:
Aligned with housing NZ statistics, our design caters to the needs of one person or a single parent with a child, contributing to the most urgent social housing needs in NZ.
Cost-Effective Construction:
The construction cost is optimized based on the square meter per house, with each house valued at an affordable US$99,000.
Continuous Printing Process:
The concrete structure is specifically designed to be printed without interruption, optimizing the efficiency of the printing machine.
Optimized Area for Community Living:
We maximize the area of impression to propose a community of 8 houses, fostering a collective and interconnected living environment.
Intermediate Community Area:
All homes feature an outdoor area, fostering community interactions between neighbors. This intentional connection between private and public spaces enhances the sense of community and shared living experience within the city.
Facade for Directed Rainwater Flow:
The facade is strategically designed to channel rainwater toward the garden, contributing to efficient landscaping, the cultivation of edible plants and water conservation.


1. BACKGROUND: CLIMATE CHANGE_ A CRISIS OF WATER AND SOCIAL HOUSING
WAI HOME
Climate change poses dual challenges of water-related extremes - flooding as well as droughts, particularly affecting less affluent areas that are mostly used for social housing.
WAI-HOME is prepared to address these issues by proposing the construction of social housing specifically designed for flood-prone areas.
In our cross-referencing study, we analyzed two maps of New Zealand (NZ), one depicting flood risk zones and the other outlining areas used for social housing.
Remarkably, Auckland - New Zealands largest city, is marked as having the highest flood risk, frequent droughts and water shortages, while also being a focal point for social housing.
Furthermore the project is specifically tailored for individuals over 25 living alone or with one child, aligning with the Ministry of Social Development's criteria of the group in most urgent need.
The integration of these insights is crucial for thoughtful urban development and disaster resilience strategies.
APPLICANTS IN MOST URGENT NEED FOR SOCIAL HOUSING IN NZ (06/2023):
Single aged 25 years or over
Single with child
2+ adults with child(ren)
2+ adults
Single aged 24 years or younger
0
2000
4000
6000
8000
10000
Source: Ministry of Social Development
1 in 5
of us is at risk of flooding.
GLOBAL CONTEXT
Climate change, primarily a water crisis, manifests through worsening floods, rising sea levels, as well as droughts.
Addressing those challenges requires action at the community and family level.
In 2001, floods caused economic losses of more than $82 billion USD worldwide, which is almost one third of the losses from natural catastrophes, and is affecting almost a third of the world's population, according to the Swiss Re Institute.
In addition to the threat of flooding, reports from the Intergovernmental Panel on Climate Change, anticipate ocean rises of 10 to 30 inches (26 to 77 cm) by the year 2100, should temperatures rise by 1.5 °C.
Another analysis, leaning towards a higher end, predicts a 26-inch (65 cm) rise by the century's end based on NASA and European data.
Those studies clearly demonstrate the urgent need for flood resilient housing.
MAP OF COUNTRIES WITH THE HIGHEST RAINFALL DUE TO CLIMATE CHANGE:
New Zealand
Source: https://www.marshmclennan.com/insights/publications/2021/september/marsh-mclennan-flood-risk-index.html
FLOOD RISKS IN NEW ZEALAND:
Auckland
(Scale mm)
45 50
40 45
35 40
30 35
25 30
20 25
15 20
10 15
5 10
2 5
0.1 2
N/A
MAP SHOWING THE AREAS AND NUMBER OF SOCIAL HOUSING UNITS BUILT IN 2022:
2.041 Northland
30.772 Auckland
2.661 Bay of Plenty
4.046 East Coast
4.410 Waikato
2.312 Central Region
1.271 Taranaki
8.565 Wellington
1.447 West Coast/Tasman
7.534 Carterbury
1.869 Southern Region
Source: https://www.weatherwatch.co.nz/
2 in 3
of New Zealanders live in flood-prone areas.
Local Context
In New Zealand, the daunting challenge of flooding, exacerbated by rugged terrain and climate change, has led to over 80 damaging floods in the past 50 years.
Auckland's April 2023 flood recovery alone cost up to 2 billion USD.
Intensified by heavy rainfall and mountainous moist air, flooding requires immediate strategies for mitigation and resilience.
Paradoxically, climate change also heightens drought frequency in NZ, causing annual water shortages all over the country.
Concurrently, a chronic housing crisis spanning four decades, as highlighted by Human Rights Commissioner Paul Hunt, burdens families, leading to mental health and living standard issues.
Homelessness affects over 100,000 people in NZ in 2023, and is exacerbated in Auckland's flood-prone areas.
Research from NIWA, the National Institute of Water and Atmospheric Research, warns of worsening situations in all of the above events due to climate change, emphasizing the urgent need for decisive action.

2. DESIGN CONCEPT DEVELOPMENT

WAI HOME

1. Maximizing Vulcan print bed use for cost efficiency. Dividing space into 8 units for affordability.

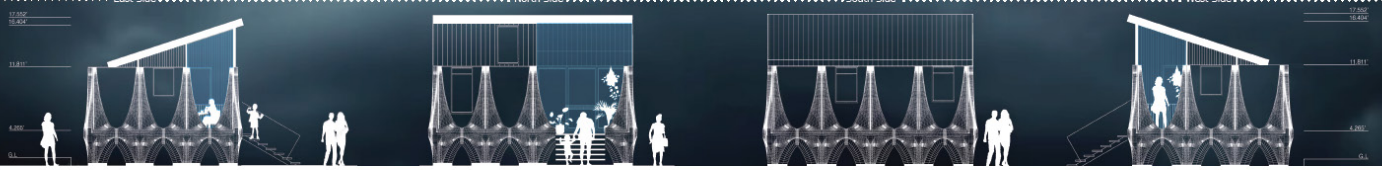
2. Elevating houses on pillars mitigates flood risks, protecting lives and property while fostering sustainable development in vulnerable areas. Furthermore the lower level allows for storage of all utilities.

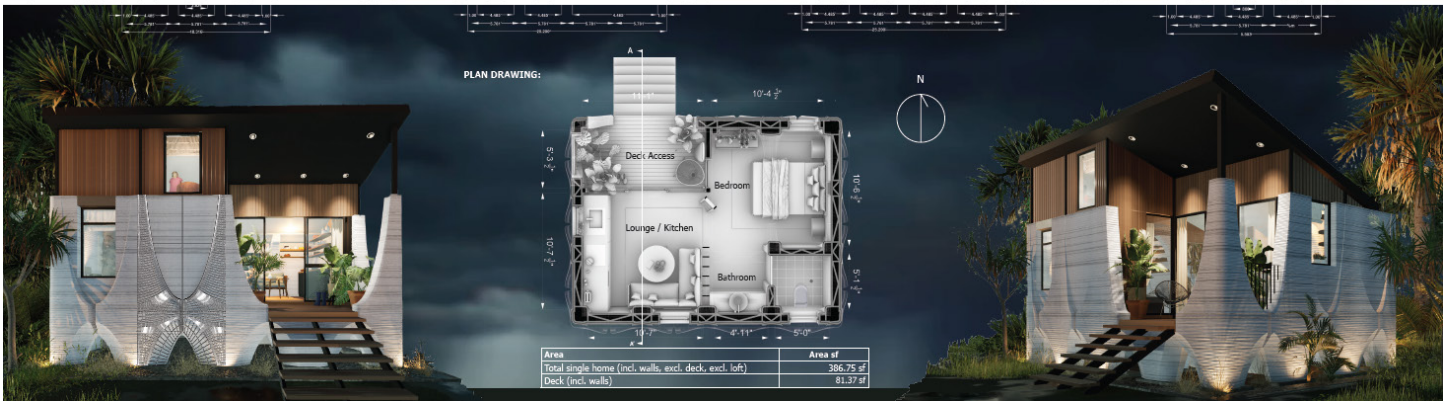
3. Recessing areas for outdoor and communal spaces, providing safety, minimizing damage in storm events, and offering residents a resilient and adaptable living environment amidst challenging conditions.

4. Raising the front edges of the roof enables the creating of loft spaces, able to serve as a bedroom or storage. This design optimizes the interior space and responds to the needs of state housing in NZ.

5. Raising the front edges of the roof also enables the harvesting of rainwate, promoting water conservation and aligning with eco-friendly practices.

East Side · North Side · South Side · West Side





Area	Area sf
Total single home (incl. walls, excl. deck, excl. loft)	386.75 sf
Deck (incl. walls)	81.37 sf

3. WATER SUSTAINABILITY

WAI HOME

The home incorporates an innovative rainwater system, supplying 40% of yearly water needs based on NZ rainfall and occupant targets. This system captures, stores, and utilizes rainwater, reducing reliance on external sources and addressing frequent NZ water shortages. Effectively designed for various household needs, it prioritizes rainwater harvesting, promoting self-sufficiency and demonstrating a commitment to environmentally responsible living. Aligned with contemporary principles of sustainable architecture, this approach contributes to environmental conservation, offering a solution to water scarcity while harmonizing with modern ideals of water efficiency.

THE WATER SYSTEM CONSISTS OF SEVERAL KEY ELEMENTS:

1. Collection System:
The rainwater harvesting system begins with gutters and downspouts attached to the roof, directing rainwater into the storage system.

2. Filtration System:
Filters play a crucial role in removing contaminants from collected rainwater, ensuring it's pre-cleaned before entering the storage tank.

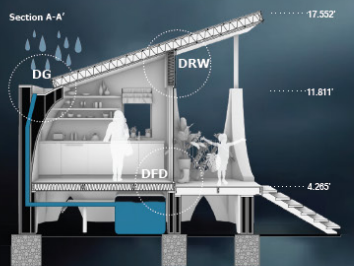
3. Storage Tank:
Rainwater is stored in two under-house tanks with a 3000-liter capacity, expandable if needed. Tanks are crafted from materials preventing water contamination.

4. Heating cylinder:
An integrated cylinder can harness the collected rainwater to supplement conventional water heating systems, offering an eco-friendly alternative and further enhancing the system's overall sustainability

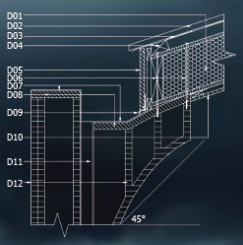
5. Pump System:
A pump pressurizes and distributes rainwater throughout the building for bathrooms and kitchens. The system includes an efficient pump controller.

6. Distribution System:
Pipes carry the stored water to bathrooms and kitchen, if required topped up by water from the public water system.

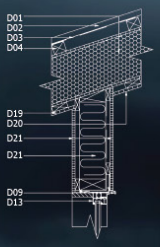
4. DETAIL WATER SYSTEM AND CONSTRUCTION



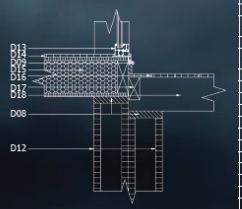
DG=Detail Gutter



DRW=Detail Roof Wall



DFD=Detail Floor Deck

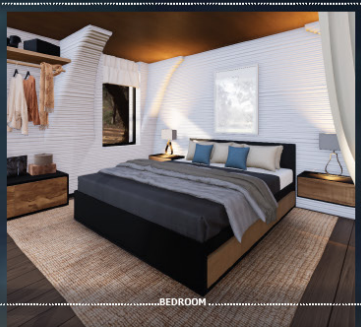


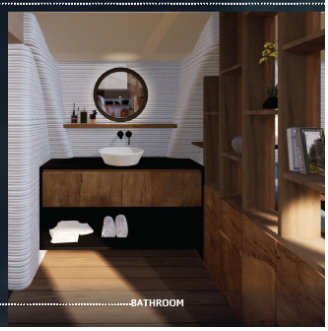
	Material Detail
D01	SIP Panel Roof 215mm (R5.7)
D02	Metalcraft MC760
D03	Underlay Roof - Thermakraft Covertek 407
D04	Purlin, 70X45, purlins to SIP 's panel over underlay via 4mm dia.
D05	Barge board (Painting Black)
D06	Formance SIP Screw 300mm max c/c UNO D640mm min embedment in top plate.
D07	Flashing
D08	Timber 45mm top plate
D09	Flashing
D10	Gib board Standard - 13mm
D11	3m Down Pipe
D12	Concrete 3D Printing Wall
D13	Double-Glazed
D14	Timber Floor
D15	SIP Panel Floor 165mm (R4.3)
D16	Timber Deck 100x15mm
D17	Timber Bean 100x50mm
D18	Structural timber bean 150x50mm
D19	Soffit
D20	Timber Cladding Interior & exterior 13mm
D21	Timber Frame wool isolation

5. INTERIOR RENDERS


DECK / ACCESS


LOUNGE AND KITCHEN


BEDROOM


BATHROOM

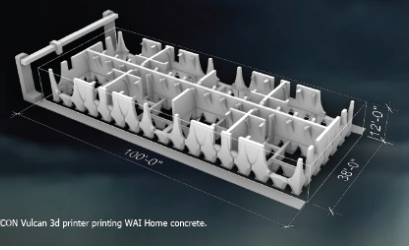
6. CONSTRUCTION SYSTEM AND COST ESTIMATE

WAI HOME

CONCRETE ELEMENTS	SIP PANEL FLOORING / WOODEN DECK	TIMBERFRAME STRUCTURE / TIMBER CLADDING WITH WOOL ISOLATION	SIP PANEL ROOF WITH METAL CLADDING	PVC JOINERY / DOUBLE GLASS WINDOWS AND DOORS	PLUMBING / WATER SYSTEM
3d printed Lavacrete.....US $ TBC The 3D printer, guided by the digital model, moves along pre-defined X,Y and Z axes. The extrusion system controls the flow of material, gradually depositing layers to build the structure. Each layer adhering to the previous one. With a layer thickness of approximately 1 inch (25 mm) and in case of WAI home, a total of approx. 140 layers, the entire concrete construction is generated. **Foundation .....US $ TBC**	**SIP Panel.....US $3,419.66** "Formance" 7 inch (175 mm) (R4.3) Floor SIP panels plus consumables. SIP Panels for flooring serve as the structural framing, insulation and air barrier for the floor. The framing gives the flooring strength, the insulation helps to soundproof and supports energy efficiency. **Timber deck..... US $4,569.92** **Flooring .....US $2,196.00** Vinyl Plank Flooring "Regent 1200". Manufactured with quality and environmental certification and complying with ISO 9001 and ISO 14001 by an accredited certification body.	**Carpentry .....US $ 12,962.50** A timber-stud-framed wall, 1.5x5.5 inches, integrates sustainable insulation like recycled denim or sheep's wool, promoting energy efficiency. A vapor barrier controls moisture, ensuring a comfortable indoor environment. Exterior cladding shields the structure, and timber interiors enhance a warm aesthetic. This holistic, eco-friendly design aligns with sustainability and energy-efficient housing. **Timber Loft .....US $ 6,429.40**	**SIP Panel .....US$ 4,636.00** "Formance"8.5 inch (215 mm) (R5.7) Roof SIP panels plus consumables. SIP Panels for flooring serve as the structural framing, insulation and air barrier for the floor. The framing gives the flooring strength, the insulation helps to soundproof and supports energy efficiency. **Roof cladding.....US $ 554.00** Metal Roofing - ESPAN 340 "Espan340" has been designed with style and performance in mind and is "Metalcraft Roofing's" new standing seam roof profile. The high ribs create strong defined shadow lines and combined with concealed fixings provide for superior weather performance.	**Double-Glazed.....US $ 6,590.29** A typical clear, double-glazed unit has two layers of glass with the inner and outer layers of glass separated by an air gap. Double glazing, compared to single glazing, cuts heat loss in half due to the insulating air space between the glass layers further increasing the homes sustainability. Glass thickness : 1/8" / 3.175mm Frame thickness : 1-1/2" / 40mm	**Plumbing Bathroom/Kitchen..... US $ 5,377.44** **Water System.....US $ 8,283.80** See more detail on Page 4 under point 3. Water Sustainability
Rough estimate ≤ US $ 43,980.99	**Price US $ 10,185.58**	**Price US $ 19,391.90**	**Price US $ 5,190.00**	**Price US $ 6,590.29**	**Price US $ 13,661.24**

Total Price estimate per WAI home: ≤ US $ 99,000.-

7. PRINTABILITY



ICON Vulcan 3d printer printing WAI Home concrete.

Continuous Printing Process:

Our design focuses on a continuous printing process, ensuring uninterrupted fabrication of the house for a seamless construction experience. This approach optimizes efficiency, streamlining the timeline and minimizing potential disruptions. By eliminating pauses in the printing process, not only is speed enhanced, but overall efficiency in bringing the design to life is maximized. To guarantee a smooth printing process, all overhangs of the 3D model are ≤ 45°, as detailed on page 3 under point (4. detail_water system and construction). Tests were conducted at a 1:40 scale printed in ABS material, confirming there is no need for support of the arches (refer to images on the right). This commitment to uninterrupted printing underscores our dedication to advanced construction methodologies, prioritizing efficiency and precision in realizing each dwelling.

Cost-Effective Construction:

Our commitment to cost-effective construction is evident in meticulous optimization, balancing spatial comfort and square footage per dwelling at an efficient 387 sf. Priced affordably at ≤ US $99.000 per home, we ensure affordability without compromising quality. This approach mirrors our dedication to providing economically viable and comfortable housing solutions, aiming to redefine affordable housing and make quality living spaces accessible to social housing occupants.

Photographs of 3d print test in ABS material, ensuring geometry is printable without support material.

8. URBAN COMMUNITY

Two-bedroom configuration

SCALABILITY FOR COMMUNITY LIVING:

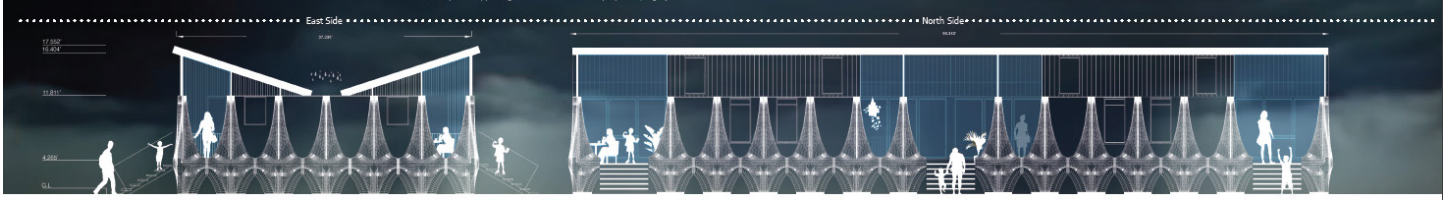
Our design maximizes printable space, establishing a vibrant community of eight homes with a total of 3408 sf living area for an interconnected living environment. This approach prioritizes communal living, fostering social connections and a shared identity. By strategically configuring housing within the print bed, we create a harmonious community that thrives on shared spaces and collaborative living. This deliberate approach enhances the quality of life for each resident, fostering a strong sense of community throughout the neighborhood.
A larger vision consists of entire community neighbourhoods of up to 15 buildings, encompassing up to 150 residents in line with "Dunbar's number", the maximum community size supporting stable social relationships (see top right).

INTERMEDIATE COMMUNITY AREA:

In the WAI home design, each dwelling features an intermediate space strategically placed to foster community interactions. This deliberate distinction between private and public areas is crucial, deepening the sense of community within the urban landscape. The intermediate zone acts as a communal space, fostering social connections and striking a harmonious balance between individual privacy and collective engagement. This intentional integration elevates urban living, turning each residence into a node within a connected network, enabling residents to build meaningful relationships and contribute to the vibrant tapestry of community life.

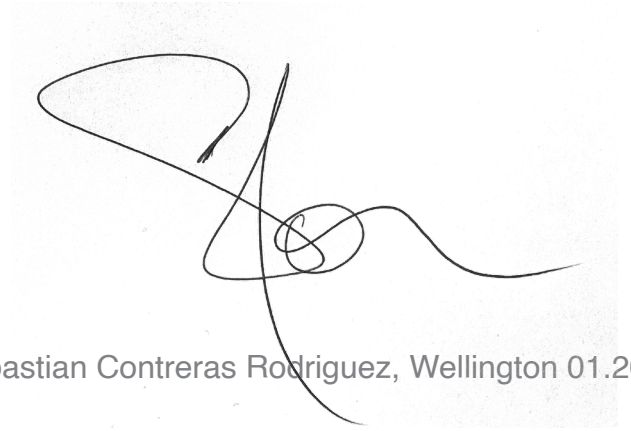
FLEXIBILITY FOR TWO-BEDROOM CONFIGURATIONS:

The intrinsic flexibility of our design allows for the integration of two or more homes, for example offering the option of two-bedroom, two-bathroom home configurations. This intentional adaptability caters to diverse living needs, offering greater versatility and accommodation options. By allowing for the seamless joining of structures, our design recognizes the dynamic nature of homes, accommodating families of varying sizes or lifestyle preferences. This approach enhances the adaptability of our homes and reflects our commitment to providing customized housing solutions. The design's ability to switch effortlessly between one- or more bedroom layouts ensures residents have a versatile and adaptable living space.



THANK YOU

Thank you for taking the time to review my portfolio. I appreciate the opportunity to share my work and would be honored to discuss any further questions.



Sebastian Contreras Rodriguez, Wellington 01.2024