

a kreol coastal confluence

in Mahebourg, Mauritius

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design dissertation

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acknowledgements

Mauritian family

Sheena Auckloo
Dharmawtee Auckloo
Rita Auckloo
Raj Auckloo
Premraj Auckloo
Kavita Auckloo
Ginger + Garlic + tortoises
Mossai family
Heerah family
Nana + Nani + family
Varesh
JFA team
SB

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the artisanal fishers of Mahebourg

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Nosipho
Nabeelah
Shabs
Palesa
Chanderpaul
Liam
Ashara
Iqra
Khumalo
The Studio Boys
Marrianah + Andy
Kaamilah
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2023-10-26

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bonzour Moris!

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bonzour Moris¹!

moris_[mauritiuS]
20.3484° S, 57.5522° E.



creolization

process of mixing of cultures from different geographic locations into a singularity



dichotomy

1
'Hello Mauritius' written in the local language, Kreol Morisien.

Figure 01
contextualisation collage.

Collage by Author
Photo by Patrick Laverdant

culture fade

imminent extinction of mauritian artisanal cultures due to industrialisation



'development'

questioning this word due to conflicting domains of development. [economic - human - nature]

project entrée

It is the chromatic essence of the Mauritian culture that directs my inquiry here - it emerges from a personal connection to place and the cosmopolitan nature of my home. Creolisation - the hybridisation of geographically convergent cultures better frames the condition in which I have forged interests in a tropical architecture. This uniquely positive residual entity, born from coloniality, sees a merged layer of the contemporary and traditional. This phenomenon includes a [trans-scalar] exchange of knowledge through the movement of ideas and skills from different cultures to an emergent singularity. However, there is an asymmetrical power relation between global and local cultures in the contemporary context of the island, with traditional cultures slowly fading. The patterns of modernisation have had an effect on the perception of development to the contemporary Mauritian. Although modernisation and globalisation catalyse the economic development, emergent countries, including Mauritius, have potential to combine contemporary technologies and methods to amplify their embedded identity and culture, instead of adopting a globalized culture.

Through the collage [fig.01], the author introduces Mauritius to the reader through his eye. The graphic representation interprets the island as a mirrored landscape illustrating two juxtaposing frames of the same context. The photomontage questions contemporary Mauritian 'development' as divergent from the local cultures and identities. The top frame of the collage delineates the qualities of the Mauritian socio-spatial milieu intended to be enhanced.

The personal interest of the author and Mauritian cultural dissolution centre in this architectural research - in the celebration of a Kreol Coastal Confluence. This design inquiry presents an architecture of mediation as key, which focalises the divergent spheres into the same space - artisanal fishing as the vernacular culture and the contemporary 'development'. The paper delineates the author's perspective to this topic with a subsequent architectural translation through contextual and explorative research/thinking in relation to other theorists' and architects' approaches. The intent of this paper includes locating itself [socially, geographically, spatially] within the broader Mauritian context, investigating the different coastal

bonzour Moris!

elements and stimulating a subsequent architectural ideation within this matrix. The research framework unearths as a continuum - comprising of rhythmic theoretical research topics which complement and intermittently intersect with each other. It initiates with the locale of the inquiry which refracts into the first theoretical concept - Creolisation. Non-architectural, but closely related to the cultural fabric of the site, this theoretical stance transcends throughout the paper into more focused [architectural] theoretical streams of research, namely, finding a Kreol architecture, fishing for a tectonic + material palette and an architecture of threshold. The technological component of the paper exudes through infographics and case studies, emanant from, and supporting the theories.

The architectural stance manifests as a re-imagination of an existing artisanal fish landing station in Mahebourg [debarcader]. The proposition is to demolish the current building footprint, retaining vertical structural elements where necessary, crafting a scheme spatially more efficient and tailored for the existing process stages of artisanal fishing. To draw focus and enrichment into the localized fishing sphere and facilitate a contemporary growth of the community, the intersection of design and making spaces aim to extend the reach of practical, embodied skills and knowledge from the local cohort through to the younger generation. This frames a concentrated incentivised condition that has the capacity to rejuvenate the site's praxis and socio-spatial character. Proposed, is an architectural continuation of this [fishing-design] intersection - the integration of the community's analogue practices of netting, boat building and processing, serve to influence the tectonic language and making of the building - seeking to prompt a sense of belonging between architecture and people.

This architectural proposal is a system that operates between land and sea. The author seeks for a threshold, a new line between land and water amplifying the landscape with the ebb and flow of the ocean - inserting program amidst this change. This broadening of the threshold provides those on land with a smooth transition into the fishing waters, and provides those within, a phased and gradual disembarkment to land.

the context

'La pes artizanal' [artisanal fishing] has always been one of the important components of the Mauritian culture. Despite contributing to the economy of coastal villages and the food security of the entire population, this micro-economy is fading due of fishing industrialisation which began 2 decades ago (Azie & Beeharry Panray, 2022). As proof, a paradox: artisanal fisherfolks are the main suppliers of fresh fish to the local market, but are simultaneously, the most deprived economic group of the country. With catches having decreased by about 35% between 2011 and 2017,

Figure 02
accurate mapping of the oil
spill in the south-eastern
lagoons of Mauritius

by Author

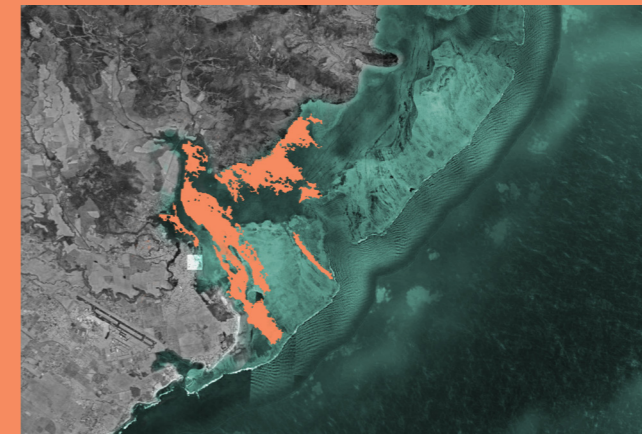
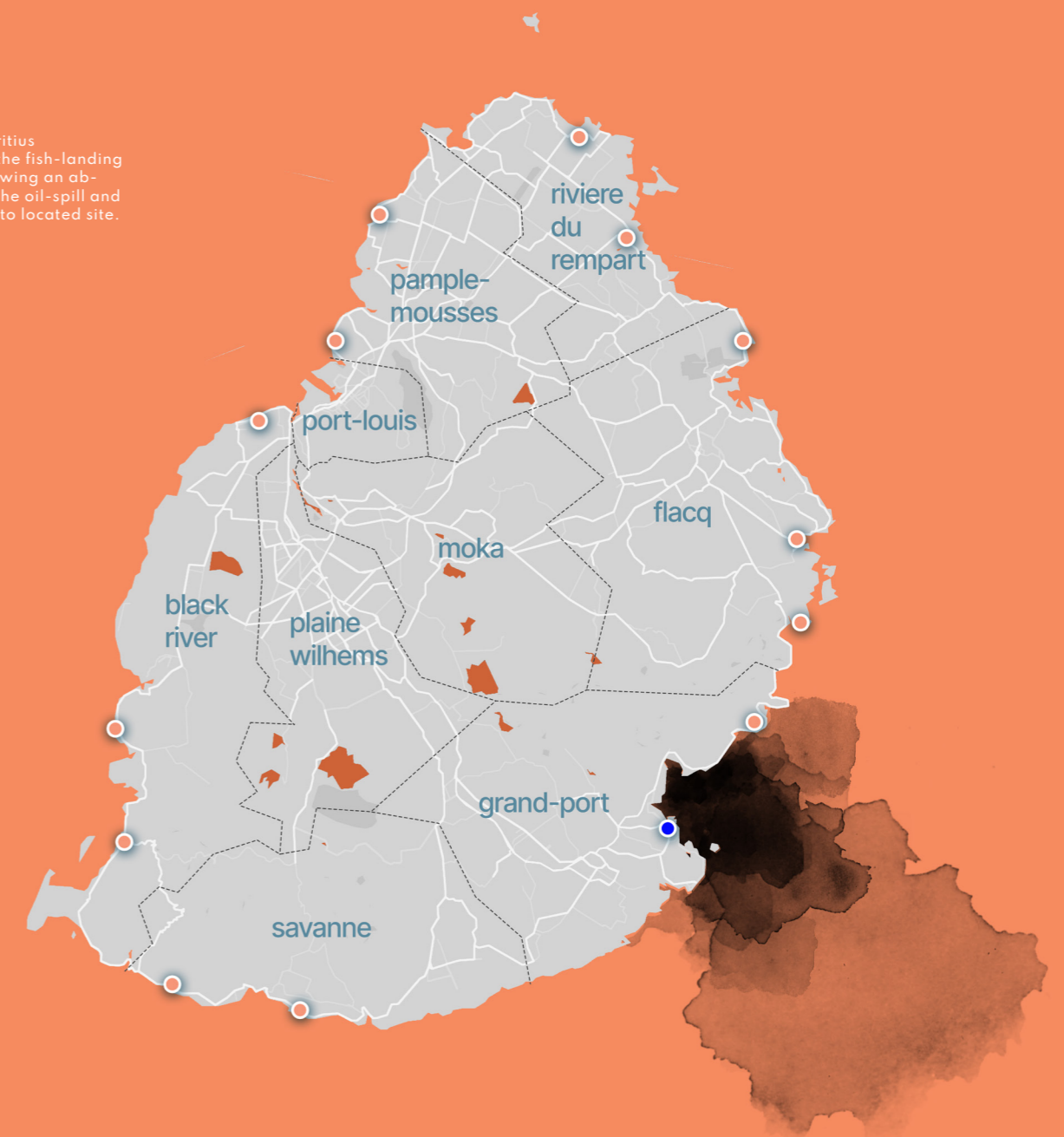


Figure 03
map of Mauritius
showing all the fish-landing
stations, showing an ab-
straction of the oil-spill and
highlighting to located site.

by Author



bonzour Moris!



Figure 04
the context
of the project

Collage by Author

traditional lagoon fishers have faced great challenges (Bellerose, et al., 2021). The majority of artisanal fisherfolks who fish in or near lagoon territories are from de-emphasized communities who are at the forefront of climate change and are at risk from tropical cyclones, increasing sea levels, and coastal erosion. Moreover, due to human activities including overfishing, agricultural runoff, and urban pollution, local coastal landscapes in, have deteriorated considerably recently. Therefore, despite a growing local demand for fish over the past ten years, artisanal fishing production has been continuously declining (Naggea, et al., 2021). The young generation is proportionately reluctant toward this culture because of this profession being low-incomed and perceived as not 'desirable' – creating a generational fade of artisanal fishing.

Moreover, the south-eastern coastal edge of Mauritius was scarred by a disastrous ecological incident, the oil-spill of MV Wakashio, which occurred in the middle of Covid pandemic in 2020. The Japanese-owned ship crashed into the coral reefs, and subsequently the oil inked the pristine water of the

Figure 05
Volunteers stitched and stuffed netting with cane straw, human hair and other material to produce the booms local fishermen deployed around areas affected by the oil spill.

Photo by Umar Timol



lagoons, causing a dent to the coastal landscape. The mutilation of the natural fabric instantly translated into a social problem to an [already de-emphasized] local coastal community who were oceanic dependent. However, in limiting the scope to social collectiveness, Mahebourg, the coastal village, experienced something that expresses the locals' attachment and love for the natural and cultural heritage. The inability of the administration to act quickly made locals from around the island converge to this contextual cicatrice to protect their coast – it felt like the birth of a new movement.

This collage [fig.04] introduces the context of the inquiry through a continuative narrative of the first collage [fig.01], limiting the visuals to more focused elements which orientated the author to the specific site. The mirrored landscapes re-surface unfolding the artisanal culture of fishing with its evocative dimensional realm on one side, and the scene of a local helper in the inked seascape with the shipwreck in the background.

Local fisherfolks, residents, and community organizations came together to form a self-organized grassroots campaign that designed, built and rolled out miles of oil protection booms. Booms were crafted out of everything they could find, including human hair, single-use plastic bottles as well as fibrous sugar cane bagasse (Rungoo, 2021). Primarily through social media, the DIY initiative rose to momentum. Within an hour, hundreds of islanders arrived at the "people's factory zone" to help in any way they could. Early in the morning, they were abetted by fisherfolks and were taught more efficient stitching techniques from artisanal fishing. The expanding crew created and tested an 80-foot boom in a matter of hours. A rising army of islanders laboured nonstop for weeks on end, some even shaving off their own hair to add to the growing lengths of handmade booms. At present, the ecological state of the coast has undergone substantial regeneration, per contra to the state of its social fabric.

bonzour Moris!

The small-scale fisheries sector was particularly affected due to the discontinuation of [both commercial and subsistence] fishing activities during 2020 lockdown, exacerbated by the restrictions on fishing from August to December 2020 due to the oil spill. According to a survey presented in a 2021 social impact assessment, oil spilled-impacted sites indicate a 51% reduction in fishing income due to 2020 COVID-19 lockdown which protracted to 72%, post the oil-spill incident (de Rosnay, et al., 2021). Fish-folks were impacted by a subsequent culmination of factors: a forced unemployment period, a reduction in revenue and increase in household debt, a drastic change in their diet composition, health issues and damage to fishing equipment.



Figure 06
local fisherfolks in action,
disembarking their boat.

Photo by Author



Figure 07
view from Mahebourg
fish landing station

Photo by Author



Of the groups that are disproportionately impacted by COVID-19 and the oil spill, women are one of the hardest hits, with impacts that could potentially aggravate inequalities between men and women. The difficulties that women in this micro-industry face comes to light. Only 35 of the 1,902 fisherman that are registered in Mauritius are women. And of these 35, over half of them reside in the area impacted by the oil spill (de Rosnay, et al., 2021). Even when the strenuous attempts are made to include them, their contributions to fisheries and conservation policy in Mauritius are frequently disregarded, as they are in other parts of the world. Women who fish either do so for subsistence, to sell to restaurants, or to support their husbands' artisanal fishing ventures. The neglect of women in fisheries could have detrimental impacts on not just women but also children and the family, when everyone in the household depends on marine resources for a living. Much more than just a source of income, fishing has been defined as a "way of life" with significant cultural dimensions that go beyond revenue or even sustenance (Santos, 2015). In Mauritius, women may play varied roles in the artisanal fishing micro-economy, choosing jobs that do not necessitate them to spend a lot of time at sea in order to balance several household duties, such as looking after young children or elderly family members (Ferrant, et al., 2014). Instead, substantial numbers of women rely on the tides for shallow water fishing or gleaning.

bonzour Moris!

Today, to stay afloat, a new approach, focused on innovation, sustainability, and the added value of artisanal fishery products, needs to surface. The United Nations Development Programme (UNDP) has begun implementing the project "Supporting the Economic Empowerment of the Artisanal Fishing Community of the Republic of Mauritius" program in order to preserve the cultural heritage of artisanal fishers in Mauritius (Bellerose, et al., 2021). Their ambit of response evinces as a 3 componential framework: the rethinking of [1] the actual fishing practice, [2] pre- & post-harvesting infrastructure, and [3] post-harvest processing (United Nations Development Programme, 2020). Didactic, component 1 focalises on the exchange of knowledge between the authorities and the artisanal fishers, specially through better understanding of sustainable fishing practices. This includes the sensitisation of the fishers on its ecological aspect, but also exposing them to new technologies to improve fishing efficiency and reduce overexploitation of lagoons. The next component emanates as an infrastructural improvement of the existing facilities of the fish landing station, where the fish is landed and stored. Through their brief, the UNDP shows their ecological vision through the outlined installation of passive design strategies in the existing and any new additions. Improving the inland station, also suggests the enhancement of the space of preparation for existing pre-fishing and post-harvesting activities. This intersects to the last component of their scope - revising the post-harvesting process. Through an increased participation of women and young people, this initiative propounds to apply EU-norms to this process to augment the commercial reach of this micro-economy within the island and beyond.

This research section of architectural paper emerges as the author's complement of the UNDP's project response plan. The aim is to uncover paths to rejuvenating the cultural fade of the Mauritian artisanal fishery through a distilled confluence of the multiple theories and technologies, which also converses with UNDP's response brief. This conversation is illustrated through a numerical label to each section, connecting them to the 3 existing components of UNDP.

Figure 08

Mahebourg artisanal fishers in caught action - disembarking their equipments from the boat on the jetty

Photo taken and edited by Author



a Kreol² architecture

Creolisation³

This terminology emerges from the linguistics, where the creation of a native language unfolds by mixing two or more languages - the grammar of a vernacular language and the lexicon of a trade language, particularly a language brought by oppressive corps in the process of colonialism. This terminology transpires itself in the anthropological milieu as the mixing and intermingling of more than one culture from different convergent geographical origins which Ulf Hannerz refers as cultural creolisation (Hannerz, 1992).

Albeit the variations, some significant parallels emanate through distinct conceptualisations of 'the creole' which echoes with the theoretical concept of creolisation. In contrast to what is conservative, profound and constant, creoles are the product of a form of hybridisation and belong to the contemporary (Eriksen, 1999). Initially uninhabited, the island's population are descendants of immigrants who have arrived during the last three centuries - from France, China, India and different parts of Africa. Specifically, people of African descent were initially referred to as the "Creole" community. Per contra, the coeval concept of 'Kreolité [creole-ness]' have evolved definitions beyond just the boundaries of ethnicity and African lineage. The palimpsestic cultural context of Mauritius emerges as a product of creolisation - relating both to the local language and people. Through shifting ideas of national identity and blurring of boundaries between ethnic groups, the country is ergo moving toward a situation in which the Mauritian Zilwa [islander] is not African, Asian or European, per contra, is of a cultural coalescent identity - Kreol. Our lingua franca mirrors as the mediator of culture as its praxis transcends ethnic boundaries.

Kreolising Architecture

Manifesting an architecture in the contemporary, chronologically, expressing a traditional fragment of the Mauritian culture [artisanal fishing], already suggests the creation of a kreolized architecture - an architecture of mediation between binaries. The architectural history of Mauritius identifies Kreolité in its lineage from the colonial era [18th century] as products of the Kreol architectural translation - the process whereby slaves applied contrasting forms of non-European knowledge in the techne of colonial structures. The process of architectural creolisation emanates as the convergence of divergent specificities [such as global+local tectonics] into an integrated singularity. This phenomenon includes a [trans-scalar] exchange of knowledge through the movement of ideas and skills from global north to local [Mauritius], but also includes the northward deliberation of knowledge from the artisans to the colonials.

2
'Kreol' is creole written as in the actual local language.

The author prefers the use of the one starting with a 'K' after the introductory paragraph to remain as truthful to the local language and culture.

3
Creolisation

linguistics
(of a pidgin language) the process of becoming a creole

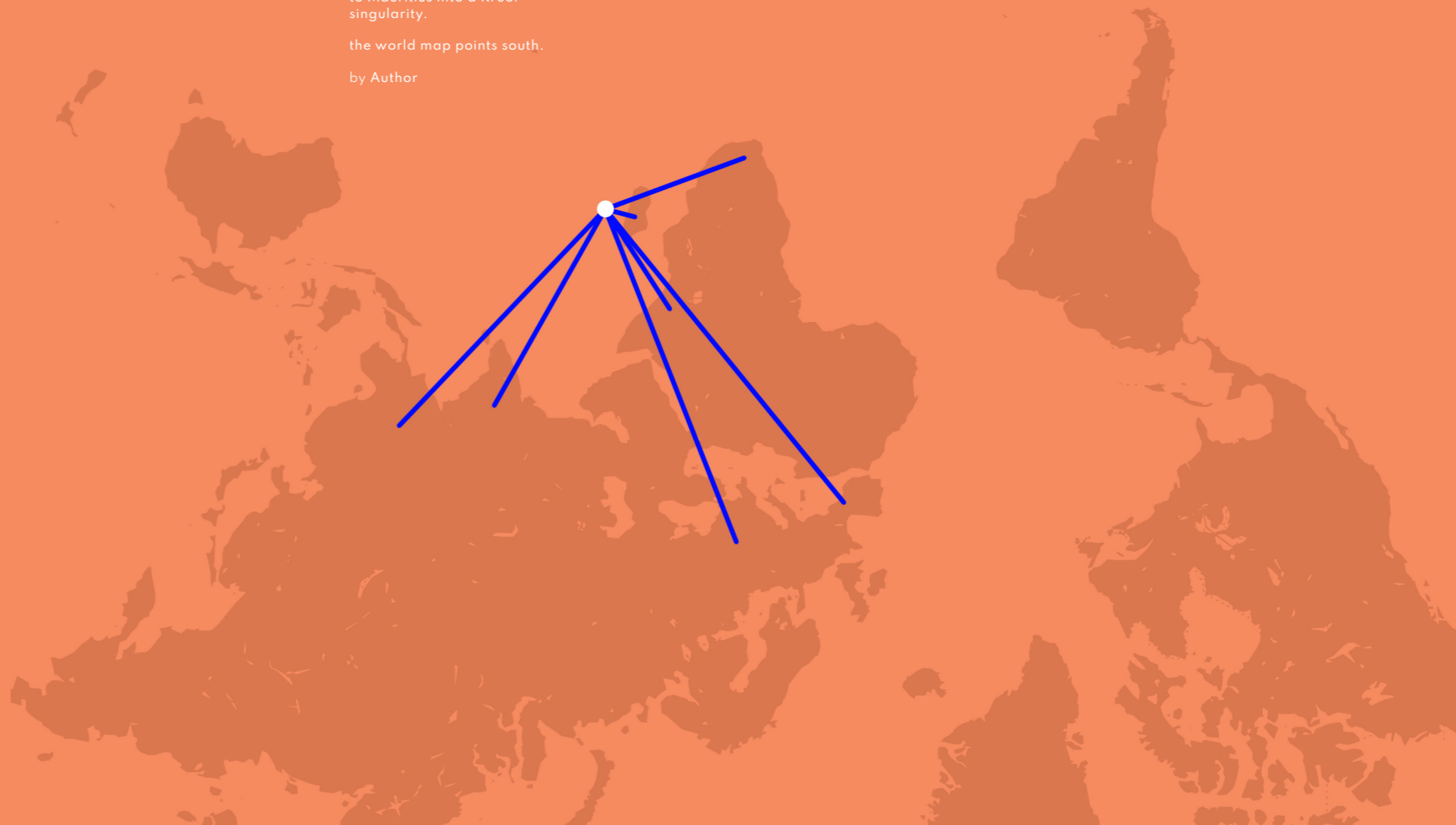
sociology
the process of assimilation in which neighbouring cultures share certain features to form a new distinct culture

In order to think about a Kreol architecture, one needs to create a balance between architecture as a work made by trained, professional, technical practitioners and architecture that is based on real, day-to-day scenarios or needs of a particular context [in this instance, the artisanal fishing community]. The intention is a palimpsestic incorporation of vernacular techniques into contemporary architecture and vice-versa - making the architecture not only suitable to the needs of the users but is also climatically attuned to the place where it is has been established. This concept resonates with Atelier Bow-wow's methodology of design. Atelier's Behaviourology aims to position architecture in a locale where these three categories [behaviour of natural elements, human beings and buildings] converge into a cognoscente synthesis. This approach emanates as an encompassing interpretation that concentrates foci on the study of 'functional relations between behaviour and its independent variables in the behaviour-determining environment' (Mulla and Loo, 2011). Scrupulous, this modus operandi localises each and every one of its stakeholders to reflect their individualities which connects the two different subjectivities in architecture, the eye of the architect and the eye of the perceiver.

Figure 09
abstracted mapping of the convergence of knowledge to Mauritius into a Kreol singularity.

the world map points south.

by Author



a Kreol architecture

A Behavioural Eye

Atelier B-W's architectural behaviouralology parallels to Henri Lefebvre's Spatial Practice [perceived space] that appeared between Representational Space [lived space] and Representation of Space [conceived space] in his book *Production of Space*. The perceived space emerges as an architectural antidote capable of solving the conflict between the two binaries of conceived space [purely objective] and lived space [purely subjective]. The third term of perceived space emerges as the space that evinces both theories without being reductive to either. It is the [resultant] space emerged through the behaviours of the stakeholders.

Conceived space, lived space and perceived space could be equated to three oculars concurrently projecting onto any organisational scenario. The **first** eye allows us to read mathematical data, the dimensional information about the space and users; the **second** eye is the human's inner subjectivity, such as how he feels about a doorknob that would not turn and the **third** eye enables us to observe the behaviours of the stakeholders which is resultant to both previous perceptions. Through a behavioural methodology, spatial practice surfaces as an imperative spatial approach to understand and explore the existing behaviours of the users and elements to the specific context. This approach necessitates an inverse approach by the architect, who 'conventionally' take on a purely objective approach [conceived space], to respond to the contemporary dynamism in the 'Production of the imagined Kreol Space'.

Diagrammatically, Lefebvre's perspective of the 'Production of Space' can be expressed as a triadic relationship between these three ideas of space. The three concepts of space have a dialectical relationship with each other depicted through the two-headed arrows in the triangular diagram [fig.10]. The graphic representation also attempts to relate Atelier B-W's concept to Lefebvre's Production of Space through emergent parallel terms [from the Architectural Behaviourology lexicon] for each concept at the vertices of the Lefebvre's Spatial triad. Representation of space [conceived space] is refracted to 'form' as this space is occupied by architect and Representational space [lived space] is refracted to 'use' as this one relates to the users' subjectivity. Then, Behaviour is introduced into the picture as the element that is situated in between form and use. In that sense, behaviour emerges as analogous to Lefebvre's Spatial Practice.

The inversed approach involves integrating architectural design thought into current circumstances, which refers to the everyday interactions between things and people in architecture. In this context, Atelier Bow-wow has zeroed in not only on the revitalization of the physical environment but also on working with local people to harness its resources, including techniques, materials, and skills, in order to preserve and execute what they refer to as "ecology of livelihood." The goal of Yoshiharu Tsukamoto and

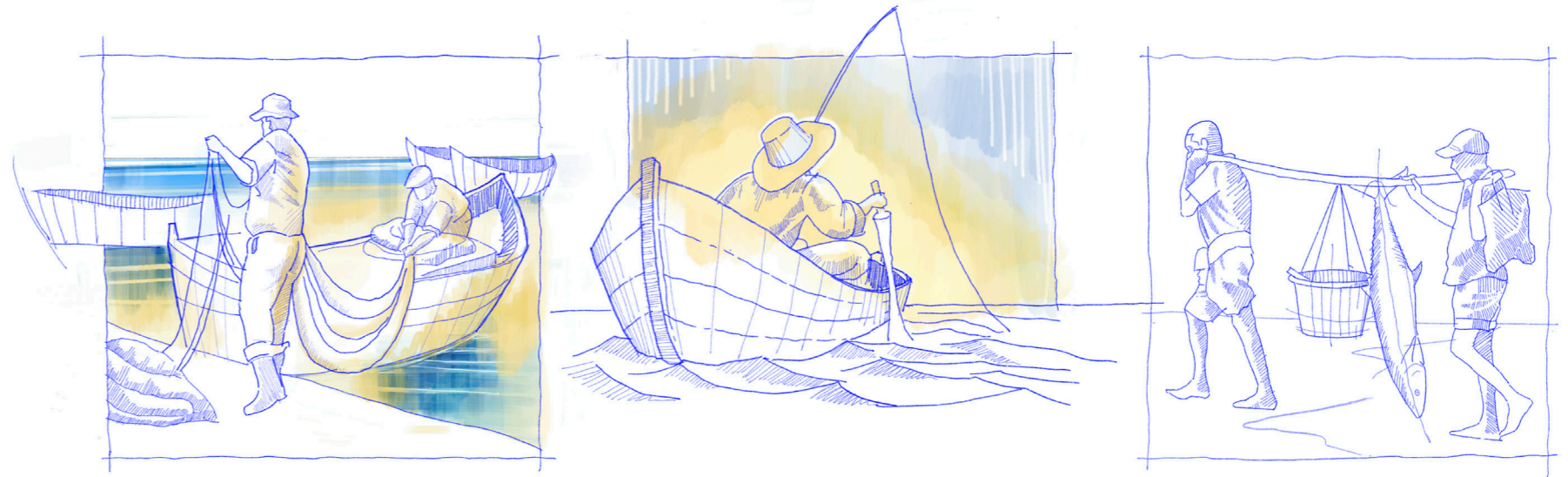


Figure 10
illustrative study of the day-to-day behaviours of the local fisherfolks
Drawing by Author

Momoyo Kaijima's work at Atelier Bow-Wow has always been to capture contemporary behaviors as they are developing, to foresee new urban realities, and to subsequently translate those realities dimensionally and programmatically. In order to make architecture intervene in the topic of behaviour, form must be reconsidered as a complement to behaviours already in effect'. This essence of Atelier resonates with the rhythm of this project as the envisioned architecture is to manifest the existing contextual [social + physical] behaviours dimensionally through its form, materiality and tectonics.

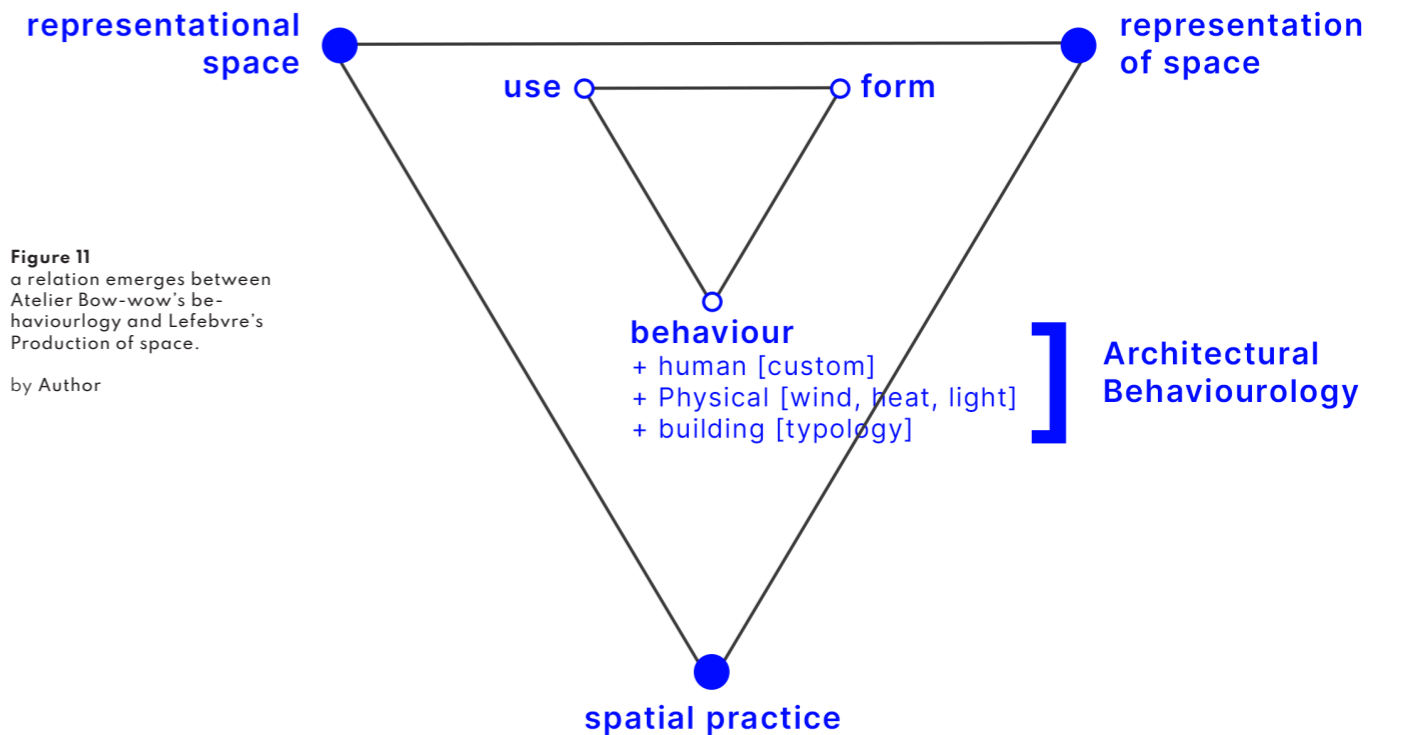
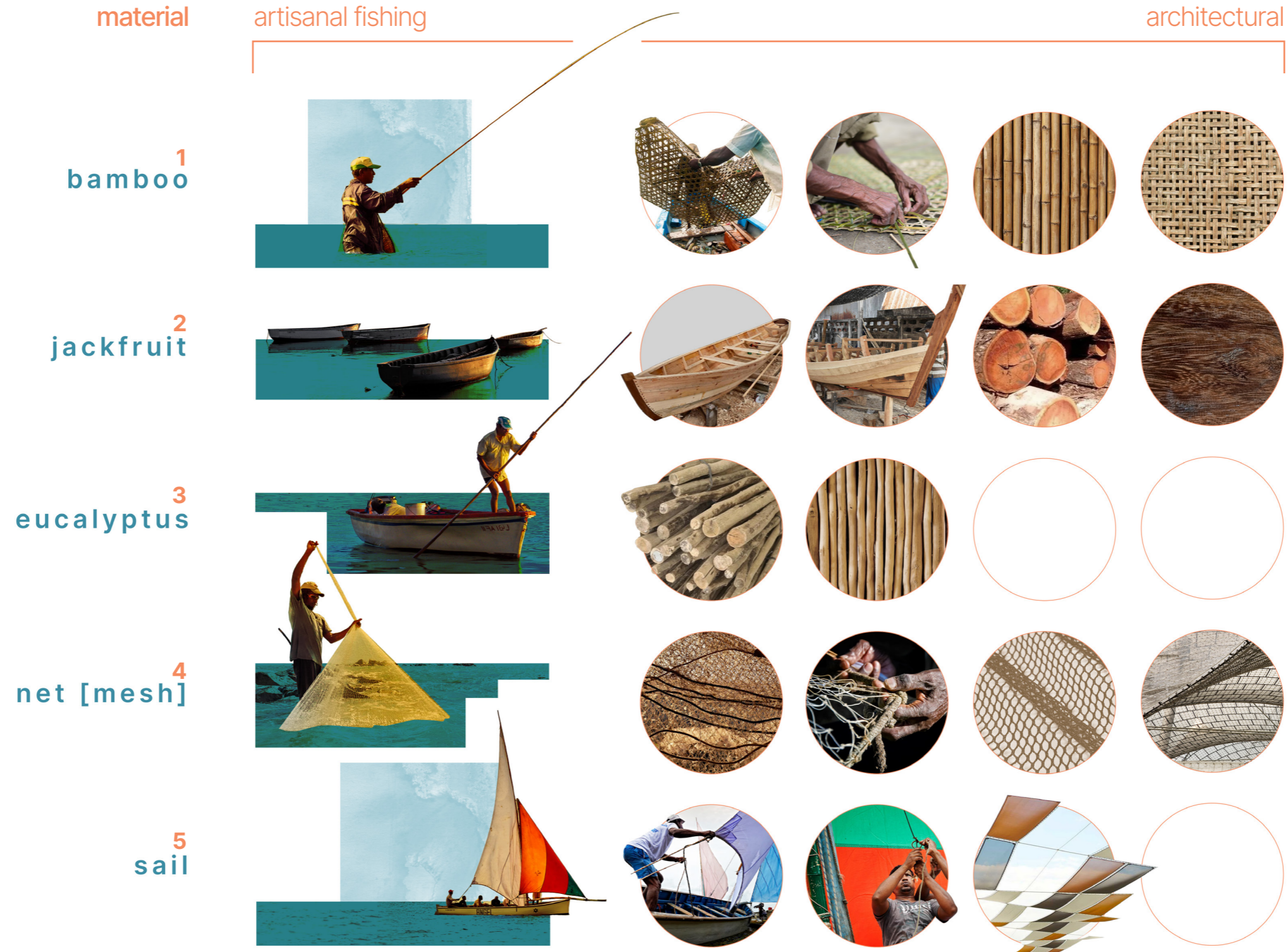


Figure 11
a relation emerges between Atelier Bow-wow's behaviouralology and Lefebvre's Production of space.
by Author

fishing for a tectonic + materiality palette

Figure 12
locating a rooted
material + techne palette
through [de]construction.
by Author



fishing for a tectonic + materiality palette

artisanal fishing as tectonic + materiality tributary

Behaviour of the local fisherfolks consists of a layer of crafting, a techné in itself, which they utilize to make their fishing tools and equipment, including their boats. Through behavioural dissection, a lexicon of existing material + tectonics evinces from the local artisanal fishing. A graphic inventory of the local materials was emergent through this exercise [fig.11]. A sense of time adds another dimension to this visual tabulation - hinting how many levels of process each raw [fishing] material need to refract into an architectural element. The levels of process were dissected through a visual [de]constructive analysis of the different tectonics. The notion of interdisciplinary transfusion of techné surfaces a sense of affinity from the fishers to the architecture, especially through sensorial [visual + haptic] engagement. Architectural application of the materials from the inventory is explored through this sectional cerebration also depicting, dimensionally, the envisioned sensorial interaction between topography, liquid territories, tectonics and people.

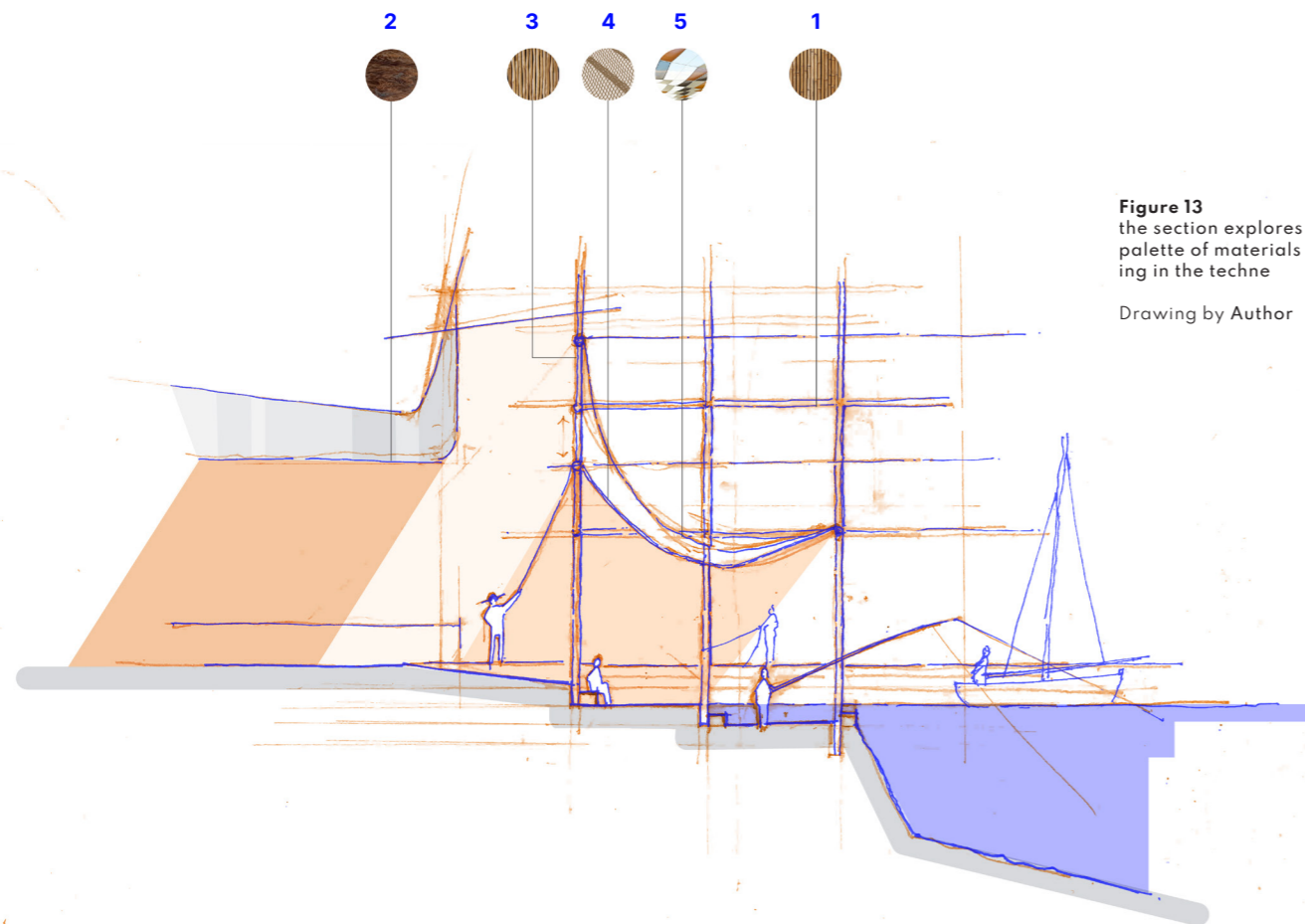
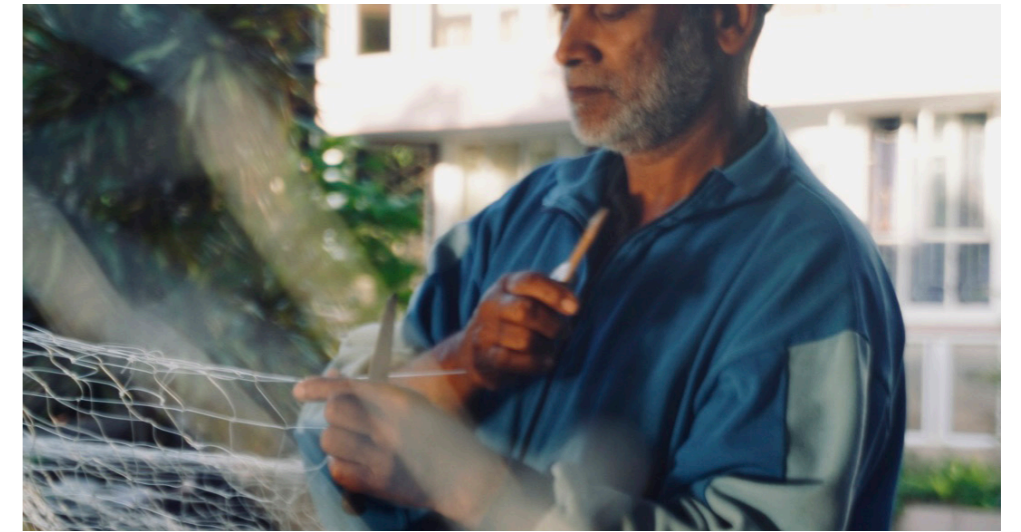


Figure 13
the section explores the
palette of materials emerg-
ing in the techné

Drawing by Author

Figure 14
artisanal fisher in action in
the pre-harvesting process -
the making of the net

by Author



a [g]local interaction

In a technological ocular, this integration moreover emanates a global-local tectonic encounter - the use of materials with local genesis, hybridised by the new technological constructional processes. This hybrid techné adds another layer of mediation in the technical eye between artisanal [fishing] and contemporary [architectural] techniques. This architectural overture to building emanates as a counter to what Frampton expresses as an architecture of placelessness and relates itself to this fragment of Critical Regionalism. This envisioned architecture of hybridity through different lenses resonates with the stylings of critical regionalism and seeks to provide an architecture rooted in coeval praxis but coupled to the geographical and cultural fabric of the context. Contrary to regionalism, which is the re-implementation of vernacular architecture, critical regionalism is a progressive approach to design that seeks to mediate between the global and the local languages of architecture. This exchange of knowledge from local to global and contra, brackets with the idea of Kreolized architecture through a Kreol techné.

This architectural approach also resonates with the idea of contemporary vernacular architecture. Protracting vernacular architecture to the present, a new generation of architects are trying to establish the character of contemporary African architecture and demonstrate that it is possible to improve people's lives through culture-inclusive design solutions in Africa. In the book, *Afritecture*, by Andres Lepik, a catalogue of contemporary vernacular buildings was curated focusing on this specific development in Africa - the realization of buildings which exemplify sustainable approaches to the social, economic, and cultural conditions that exist locally (Lepik, 2013). Michael Louw depicts this phenomenon as a hybridisation of local and global tectonics in his thesis and adds that it offers a probable direction for contemporary architectural praxis in Africa (Louw, 2021). Concretely applied to the architectural field, this 'Kreol' approach is ergo not a substitution of western architectural standards and modern technologies but going towards a 'glocal' [reciprocal] coalescence of knowledge.

4 glocal

'The concept of glocalization captures the dynamic, contingent, and two-way dialectic between the global and the local'

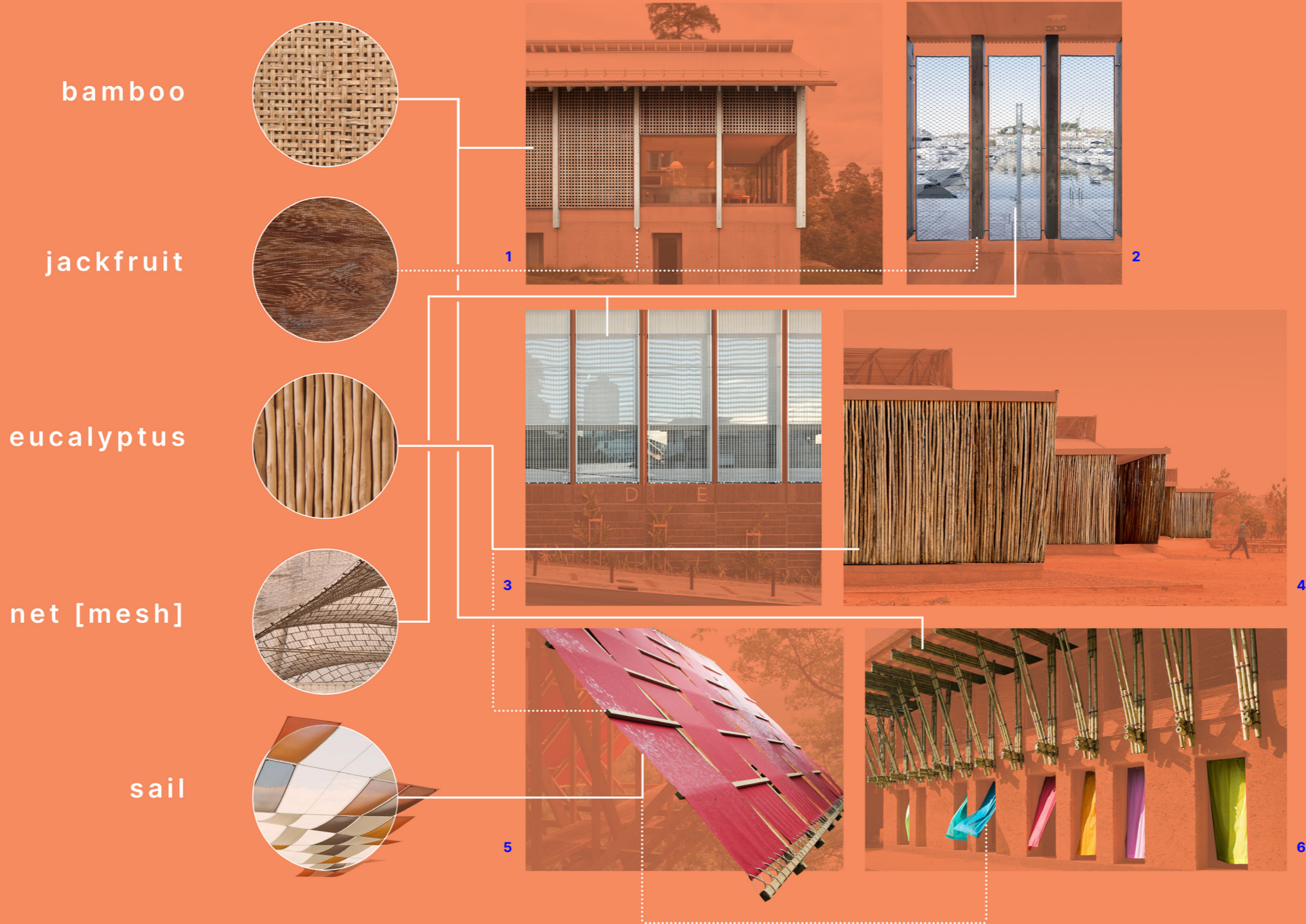
fishing for a tectonic + materiality palette

Figure 15
 1. Villa Solveien, 2022
 Architect[s]: R21 Arkitekter
 3. Pointe à Pitre Palace of Justice, 2018
 Architect[s]: Ignacio Prego Architectures
 5. Pavilion for a Patagonian shadow, Festival des Cabanes, 2023
 Architect[s]: DRAA

2. New Services For Boaters On The Port Of Cannes, 2018
 Architect[s]: Heams et Michel
 4. Burkina Institute of Technology, 2020
 Architect: Francis Kéré
 6. METI school, 2006
 Architects: Anna Heringer, Eike Roswag

material

architectural application

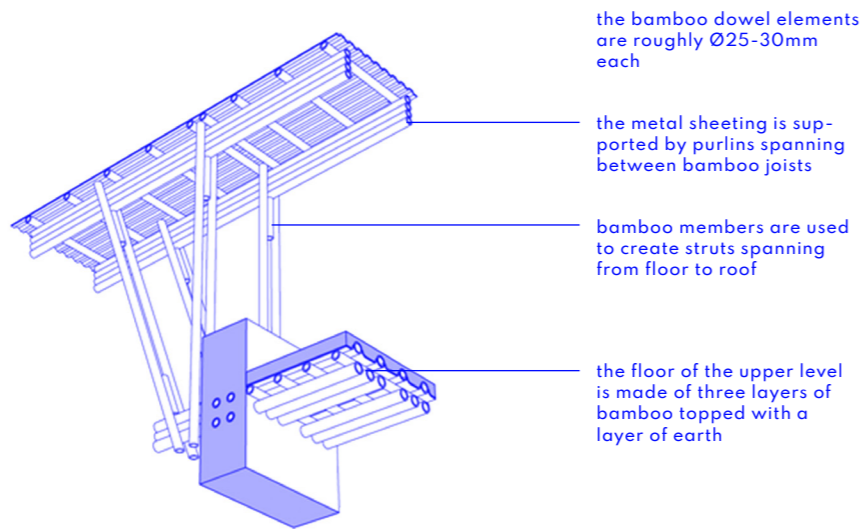


fishing for a tectonic + materiality palette

tracing a lexicon of architectural work

The technological study continues through this graphic lexicon of architectural works [fig.14]. It traces the architectural application of the materials and tectonics emerged from the previous tabulated palette. Portions of the buildings are highlighted through a graphic deconstructive technique which are linked with each material elements. These works could potentially start to inform the architectural language through this, particularly the process of tracing them.

The first material, **bamboo**, emanates through two buildings [01,06] in the table. Being light-weight, the material is used in the facade, as the brise-soleil in visual 01. Designing for the coastal, screens evinces as a prominent architectural element in the design thinking, to manipulate with and soften the direct sunlight and specular reflection⁵. However, in visual 06, it is utilised as structural elements for the METI Handmade School. The interesting thing about this one, is how the elements were assembled together with jute rope lashing technique - here a direct tectonic link to artisanal fishing is drawn.



5 specular reflection

technical word expressing the mirror-like reflection of waves, such as light, from a surface.

Figure 16
axonometric drawing depicting the bamboo structure of METI school

By Author

Figure 17
METI school, 2006 illustrating the jute rope lashing joint

Photo by ZRS Architekten

Figure 18
the construction of artisanal boats with jackfruit wood in Mauritius

Photo by Author [2023]



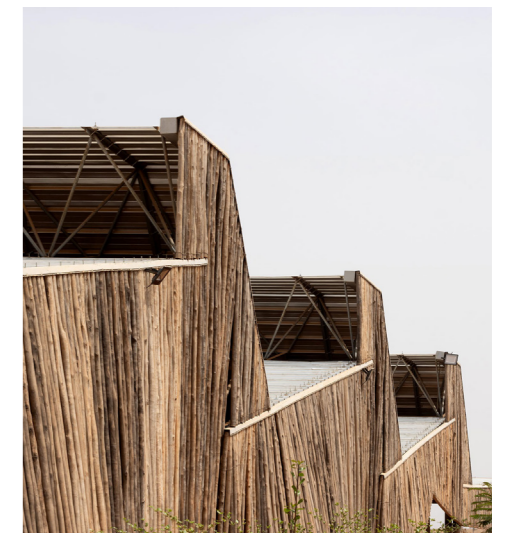
Used for the making of artisanal fishing boats, **jackfruit** timber is known for its utilisation for furnishings and residential construction, in South and South East Asia [mainly India and Sri Lanka]. This timber is termite-resistant and has less prone to cracking and warping - thus making this material ideal for boats. The buildings chosen in visuals 01 and 02 do not make the use of jackfruit wood specifically, but the table illustrates a potential inclusion of this material as a structural element and conjunction with the other materials, through the dotted line.

The structural capacity of **eucalyptus** wood, the third tabulated material, has been investigated and explored as a contemporary architectural element in the past decade, specially by Kéré architecture. One of their buildings, Burkina Institute of Technology, has been illustrated in visual 04. eucalyptus poles has been used as cladding of the facade fixed to a steel structure - emerging as the main visual element of the artefact. The Kéré Foundation describe this timber as remarkably resistant which takes on an attractive silvery sheen with time.

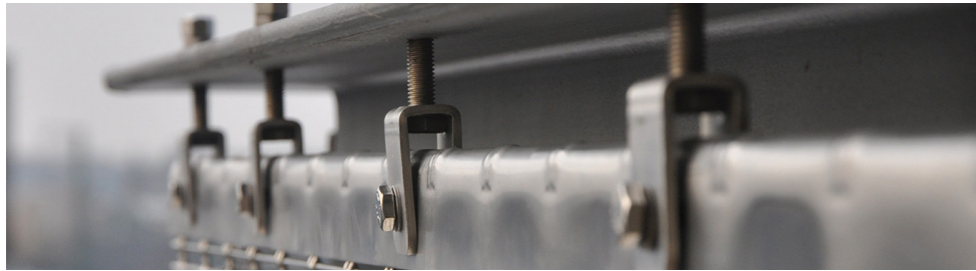
Figures 19 & 20
eucalyptus poles utilised as cladding for the facade, supported by steel structure

[Both]
Burkina Institute of Technology [2022]

Photo by Kéré Architecture



fishing for a tectonic + materiality palette



The **mesh** emerges as the next architectural element, manifesting as an architectural partition. The linked projects [02, 03] utilise the mesh in the facade to allow for passive ventilation and visual access. Continuous ventilation emanates as a crucial aspect for the fisherfolks' need for post-harvesting process - handling fresh fish and its storage. The architectural wire mesh consists of 5 components - substructure, clevis hardware, flat tension profile, pressure spring, the intermediate tube, and wire mesh panels.

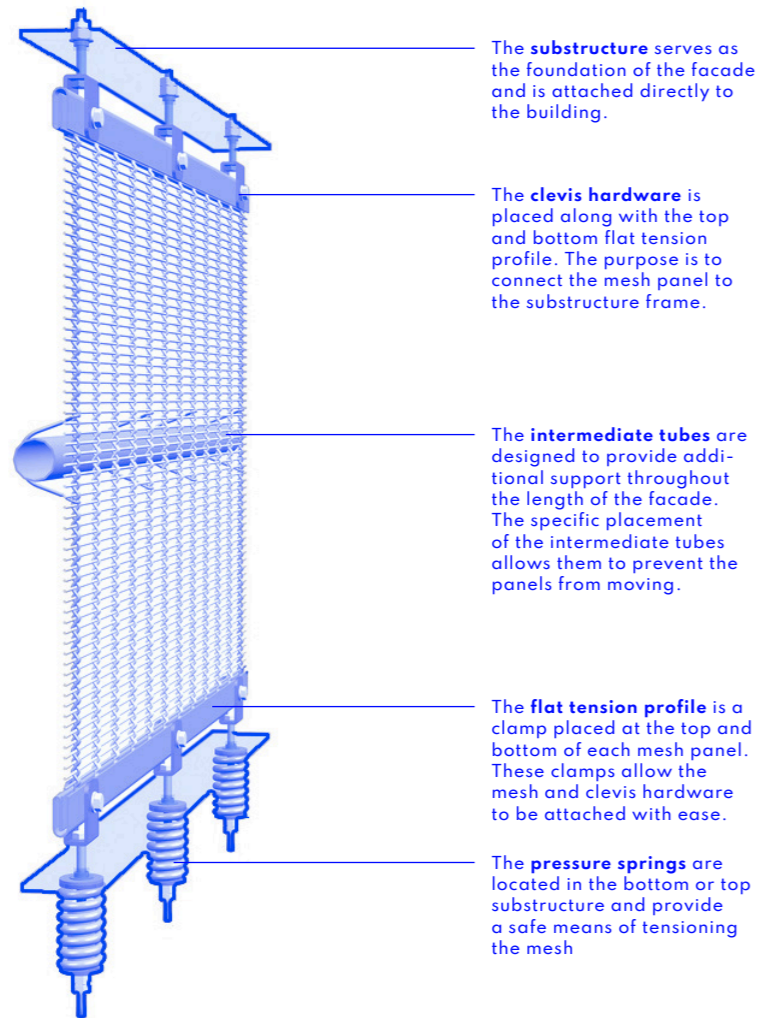


Figure 21
flat tension attachment consisting of flat tension profile, clevis screws and pressure springs

Photo by Haver & Boecker

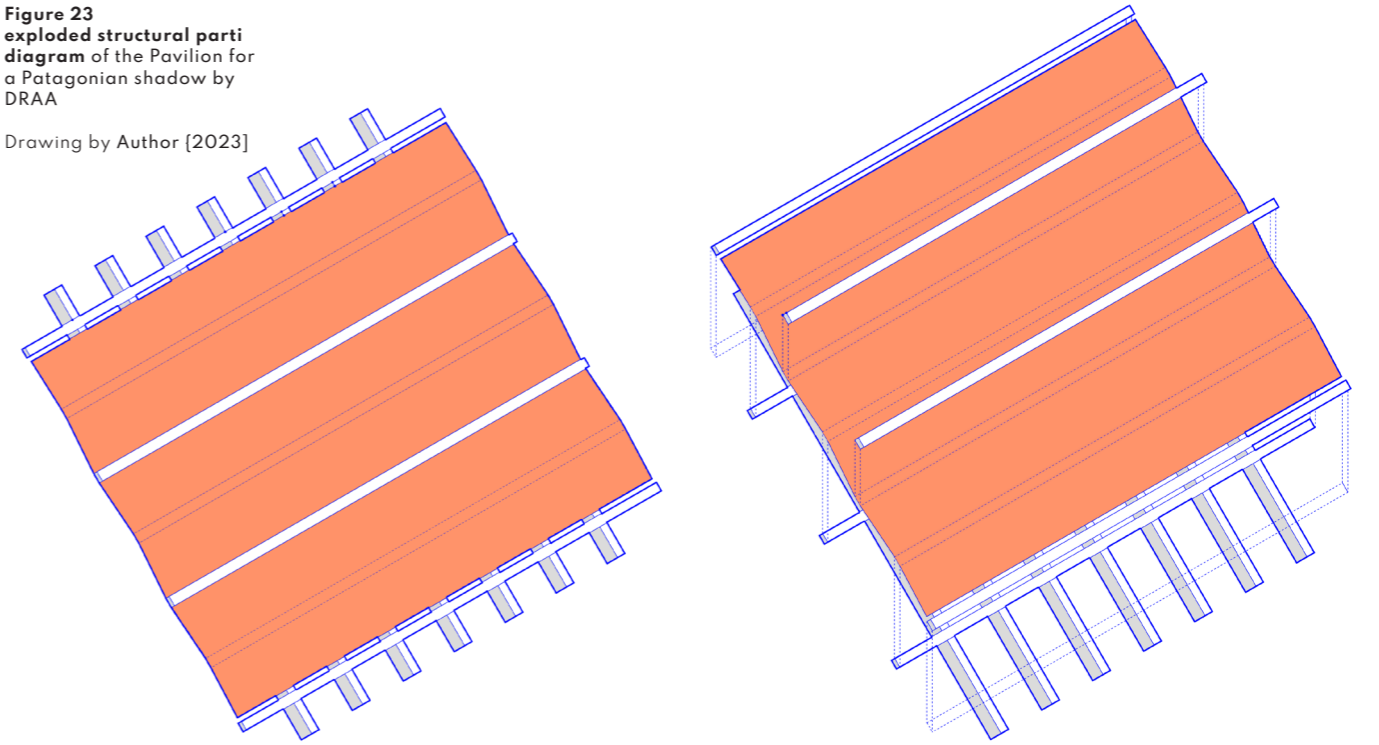
Figure 22
illustrating the componential diagram of the architectural mesh

Drawing from Haver & Boecker

Adapted by Author

Figure 23
exploded structural part diagram of the Pavilion for a Patagonian shadow by DRAA

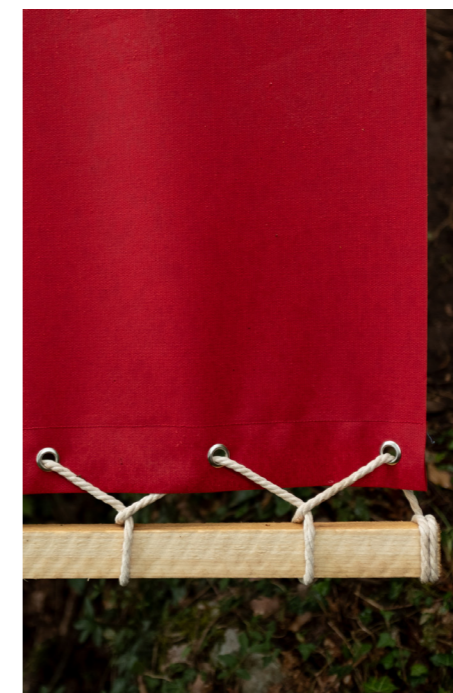
Drawing by Author [2023]



Sail is translated into a tensile structure forming the roof of the Pavilion for a Patagonian shadow in visual 05. The fabric is stretched and fixed through lashing and knots to the beneath timber structure. The making of artefact evinces as complementary to the use of sails in artisanal fishery through the lashing and the poetic conjunction of this two material elements [timber + canvas]. Moreover, there is an essence of artisanal fishing techné through the alternately positioned timber battens used to stretch the canvas as shown in the exploded isometric diagram. Another subsequent tectonic coupling surfaces between this pavilion and METI handmade school through the use of lashing and knots as connective systems [05, 06].

Figure 24
the lashing details

Photo by DRAA



fishing for a tectonic + materiality palette

transitional change

The inception of this contemporary Kreol architecture emerges as a practice which is indicative of a different [sustainable] way of making architecture in Mauritius which expresses local identity. This approach also rethinks the notion of resilient development which echoes with Swilling & Annecke's second scenario for the next long-term development cycle, which they described as "...a more radical transformation driven by grassroots social movements, millions of niche innovations in more sustainable living at the community level, and accelerated investments in the new technologies of decarbonisation, resource productivity and ecological restoration" (2012, p. 79). This echoes Heidegger, who asserts that individuals should be cognizant of how technology evolves in order to articulate their own identity. He contends that technology is what is fostering the unfolding of the "saving power", and that this growth may be seen "Here and Now in Little Things." (2011, p. 236). His published works involve parallels to more sustainable ways of production that are more localised, human-centred, and planet-centred, even if there is nuance to his phrase "saving power".

Being a transitional agent of change, the Kreolised approach stimulates dialogue between binaries [global-local, contemporary-vernacular]. The notion seems to support Heidegger's call for a fostering of incremental change, which complements to the suggested scenario for community-based innovation and the use of supporting technologies, provided by Swilling & Annecke (Swilling & Annecke, 2012). Instead of revolutionary approach, they advocate for sustainable transitions. Swilling echoes for a theory of change that is transitional, focuses on incrementality, is grounded in environmental sustainability, and emerges from the social to offer a glimpse of further sustainable futures. Instead of merely emphasizing conversation as a change agent, he aims for this theory of change, or "radical incrementalism," to be a method of considering initiatives that promote discourse and enable change. This type of dialogue would commence in the act of making or the techné of the architecture and subsequently, create engagement to the community and also between different disciplines [artisanal fishing, architecture, design/creative industry], ergo emerging an interdisciplinary interaction.

the socio-tectonic

The involvement of the fishing community in the making of the building parallels MASS Design Group's tectonic strategies which are based on a social justice overture that seeks to generate broader benefits by employing local populations and catalysing the exchange of skills, but also contextually adapted in terms of climate, materiality, culture and financial constraints, among others. During an interview with Louw, Christian Benimana, from MASS, posits the emphasis on the significance of the interaction between the social and the tectonic, as he references Giancarlo de Carlo who argues that nothing should be created that is degrading to the labour that built it. He believes that when it comes to material inception, the notion of "the local" ought to be carefully evaluated, and he points out how it can sometimes be applied in reference to a certain village, area, or country (2019, cited in Louw 2021:162). He claims that the term is fluid and that localising the act of making is more important than the actual materiality. This can be perceived as an amalgamation of local-global tectonics depending on their aptitude to the specific locale, and the challenge is to make the architecture transpire as an equilibrium between an ecological response and the socio-economic requirements.

Moreover, this approach initiates a new building technique and allows for the social efflux of an interest in making structures. This poetic juncture between techné and artisanal fishing becomes intriguing as it creates upskilling programmatic possibilities to the architecture. The culture of artisanal fishing is fading through generations, mainly because of its dissolution to the modern lifestyle and financial development creating this contemporary-traditional binary. Architecture in itself is an interdisciplinary space, conventionally involving interactions with engineers, interior designers, contractors and more. This context-specific collaboration induces a socio-cultural dimension from artisanal fishery to the architecture. Per contra, most importantly in this instance, is the reverse transfer of knowledge and opportunities. Creating a threshold between the two antonyms [contemporary-traditional], coalesces this micro-economy to the building/design industry, and ergo to the macro-economy of Mauritius. The people of the sea are well attuned to the coastal climatic conditions and have the potential to develop imaginative building methods with their existing plethora of techniques along with a more specialised technical input from the architectural milieu. Protracting artisanal fishery to the contemporary through new programmatic realm[s], presents as a Kreol continuum of the culture. This architectural praxis is not only attempting to rejuvenate the vernacular culture by itself but is also retrofitting other coeval cultures into it to make it more resilient in the present dimension.

fishing for a tectonic + materiality palette

“Design needs to be embedded in the reality: the reality is the climate, the reality is the people.”

Francis Kéré

a cultural retrofit

The retrofitted aspect of the imagined architecture intersects with Francis Kéré design principles. The architecture of Kéré hybridises contemporary innovative technological approaches with traditional [local] materials and knowledge. His practical approach “celebrates the locale” by integrating local resources with coeval technology to produce poetic and durable buildings that interact with the regional climatic conditions. Being a protagonist of the contemporary African vernacular architectural movement, he has rekindled local pride and empowered and strengthened the community through interactions with its people, in Burkina Faso, his home country. “People say, ‘We did it, it’s ours, it’s modern and we love it’, expressed Kéré in the conversation with WIPO magazine (2013). In this approach, he thought, architects might endorse the reaffirmation of cultural connections and identity. Implementing Kreolité in Mauritian architecture parallels the 2022 Pritzker laureate’s intention in this instance. Every Mauritian on the island has Kreol language as a communicative commonality which metaphorically infuses an instinctive sense of cultural belonging from locals to the architecture. The author’s envisioned architectural gesture to the community reflects to Kéré’s methodology – the socio-tectonic. There is an awareness through his voice elucidating that architecture is about process rather than outcome, it is not about the object but the objective. The entire body of work of Francis Kéré demonstrates the localised gravitas of materiality. His structures, designed for and in collaboration with communities, directly reflect their identity in the techné, choice of materials, use of space, and distinctive features. The architect’s focus to guiding local artisans is also generating new job prospects in the area, allowing them to expand their knowledge and make money on nearby construction projects.



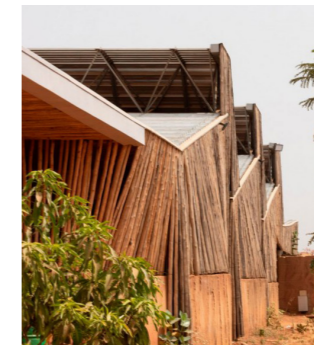
the socio-tectonic.

Figure 25 [Left] Burkinabe woman sanding eucalyptus wood

Photo by Kéré Architecture

Figure 26 [Right] Traditional clay plastering by local women

Photo by Francis Kéré



different glocal socio-tectonic scenarios in Kéré’s portfolio of works

Figure 27 [Left] Gando School Library [2018]

Photo by Kéré Architecture

Figure 28 [Middle] Burkina Institute of Technology [2021]

Photo by Jaime Herraiz, Metalocus

Figure 29 [Right] Lycée Schorge [2016]

Photo by Iwan Baan

Gando, being the home village of the architect, has been a place of focus and exploration for Kéré Architecture. Using the multitude of local resources present in Gando and its vicinity is an essential component of the firm. To them [and to the author’s ideology], local expertise is considered as an inestimable resource considering locals adhere to the contextual climate and have developed skills through many generations utilising materials that are easily accessible, like building with clay in Gando or the use of jackfruit wood to make boats in Mauritius. Implementing this grasp, a number of contemporary methods were developed by the designers when interacting with clay that increases its durability and enabling its use for larger-scale structures. A localised socio-tectonic overture is not only more ecologically amiable, but they help dynamize the local economy and amplify the identity of the place architectural fabric. This paper, as mentioned

material

artisanal craft

architectural

clay pots



Figure 30 recreated visual tabulation for the Kéré’s architectural integration of the clay pots.

by Author

6 Gesamtkunstwerk

German terminology that translate to “total work of art” were originally meant to imply that all forms of art, such as paintings, music, literature, and performances, could be combined into a single, interconnected subject, project, or study that would cover all the components of a creation. (Martin, no date).

before, explores how the materiality and techniques from another discipline [artisanal fishery] can be architecturalised and incorporated into the tectonics of the building through the subsequent [hybridised] creation of a new techné. Different context, different discipline, yet Kéré ideates a similar approach through the support and endorsement of local craft practices in the making of their buildings. The context-specific inclusion of traditional artisanship is clearly reflected through their projects and Kéré Foundation, with the vision of creating a form of *Gesamtkunstwerk*⁶ through the literal and metaphorical embedding of traditional artisanship to architecture. One of the scenarios is the incorporation of ceramic pots which are locally made for generations in Gando, as building elements in imaginative ways. The process of architecturalisation involved cutting in half the pots, and a concrete slab was cast over them for the roof of the Gando Primary School Library. The architectural resultant emerged as circular apertures, diffusing natural light and projecting a dynamic pattern on the ground.

fishing for a tectonic + materiality palette

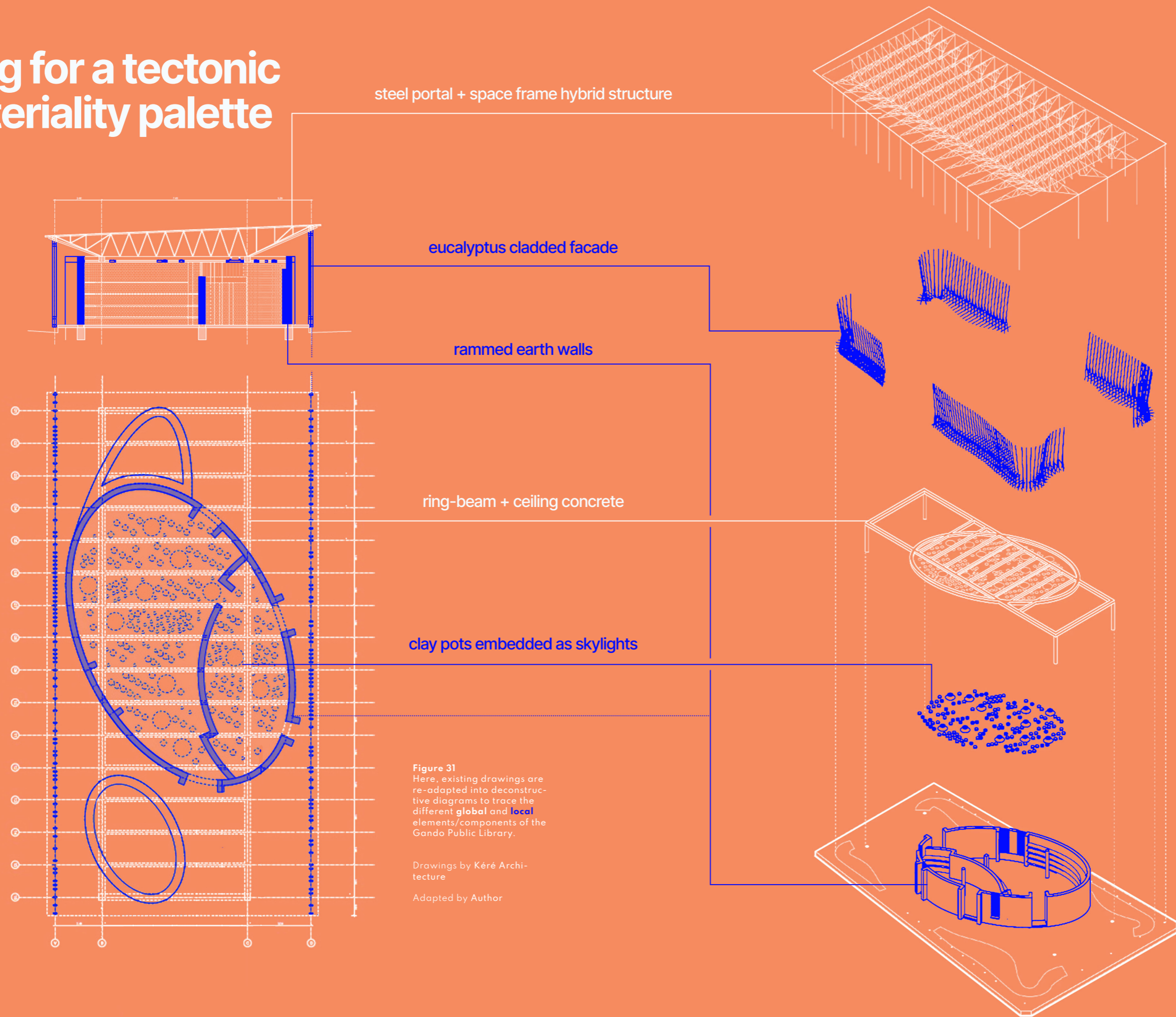


Figure 31
 Here, existing drawings are re-adapted into deconstructive diagrams to trace the different **global** and **local** elements/components of the Gando Public Library.

Drawings by Kéré Architecture
 Adapted by Author

architecture of threshold

contemporary
static
macro
land

vernacular
temporal
micro
water

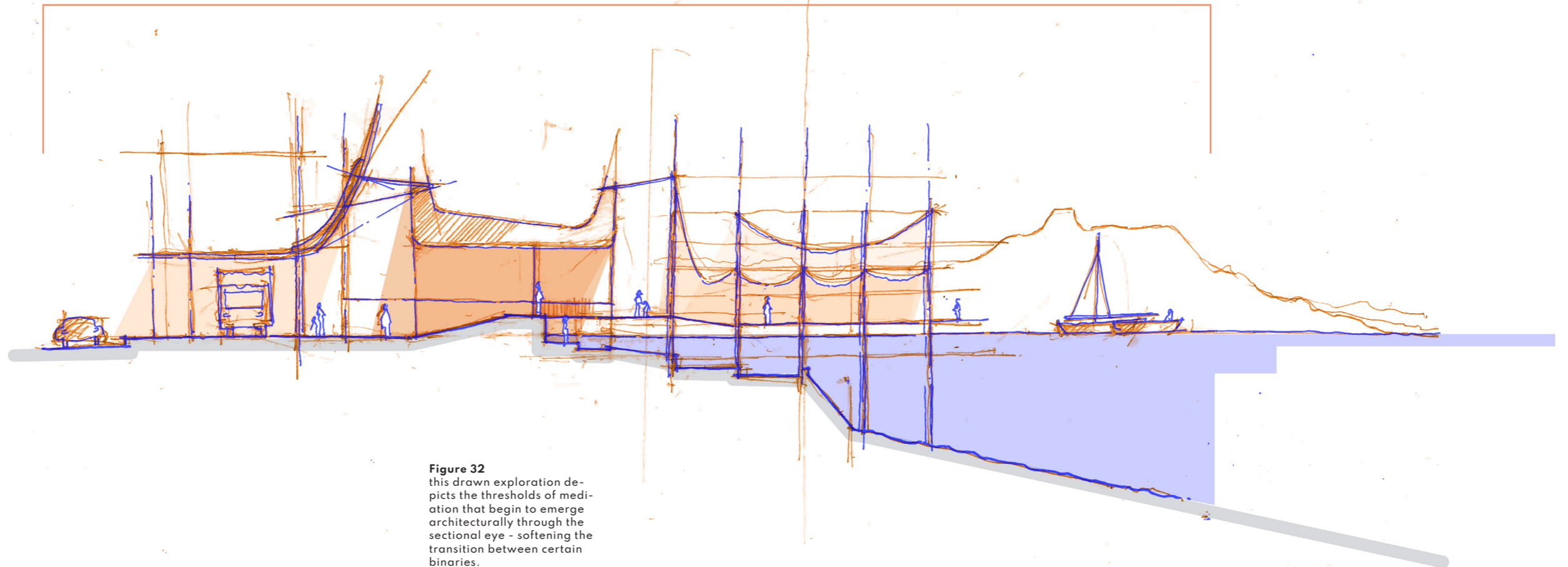


Figure 32
this drawn exploration depicts the thresholds of mediation that begin to emerge architecturally through the sectional eye - softening the transition between certain binaries.

by Author

the threshold

The architectural etymology of 'threshold' is understood and represented as the revealing and hidden space that defines the intersecting relations of the limit, the separation, and the union between spatial singularities such as rooms or buildings. Limen, the root term of liminality, is a Latin word that literally means "to be on a threshold." The term "liminality" has been interpreted in an array of contexts, including social, cultural and the spatial - where it designates an intermediate or in-between state. Although often being a singularity in itself, the liminal entity, or the threshold space, has the basic qualities of being in-between, acting as a connector, separator or both simultaneously, functioning as a mediator. In a spatial sense the threshold operates on a consciousness and unconsciousness level, framing the liminal point.

Here I draw links to the article "Transparency: Literal and Phenomenal" (1963) by Rowe and Slutzky, which elucidates both literal and metaphorical transparency. Architectural theorist, Tom Avermaete, uses windows as transparent elements to parallel his thoughts to the previous article. He posits how windows frame the ways in which people view the city - not only through as a physical threshold, but also as an image they have in their minds, and the relationship they have with the city (Avermaete, 2018). This paper also parallels Rowe and Slutzky's subjectivity in relation to the foreseen architecture. In this instance, the architecture emerges as the transparency, or the threshold, between two spaces in a physical sense [land | sea, local | global tectonics], but metaphorically it connects us to the Kreol culture and language [contemporary | vernacular culture, discursive | non-discursive].

architecture of threshold

a dialectical approach

The essence of de Certeau's strategic use of binary terms permeates through this architecture of threshold (1984). In the first volume of his book, *The Practice of Everyday Life*, frames the use of binary terms as a means to question the structure of binary thought. Deeply intricate, this theory erases the very ground that would separate the binary terms, but not in an act making them mutually inclusive entities. This method of analysis enables one to perceive the terms as non-oppositional, retaining their intricates. It is a method for opening up a dialogue that surfaces complementary connections and disconnections that cannot always be deduced rationally at face value. This interaction between the binary is what Ben Highmore extracts as the 'relational logic' (Highmore, 2002, p. 155). He posits that the success of De Certeau's theory is dependent upon this relation. Practising this theory in the design inquiry - architecture echoes as a praxis of the relational logic, a making of thresholds between layers of binaries. The clearest binary that relates to this theory is the contemporary vernacular which can be viewed as the oppositional proponents. This inquiry is premised in finding the middle ground between the two streams of thought - without losing the functional and effective essence of both.

Rewinding back to the introductory pages of the paper, the collages illustrate the dichotomous nature of the context through the different layers. The fade of vernacular culture and the biased [Mauritian] meaning of 'development' are all contextual issues involving polarities. Those contextual problems are products of disconnect within the socio-political fabric. The dialectical praxis of the relational logic emerges as a key aspect in the architectural thinking and approach to bridge polar instances. Implementing Kreol as architectural informant initiates the first dialectic conversation in the inquiry. The term "language" refers to more than just grammar or a specific set of linguistically defined conventions that work together to convey or generate meaning. In this same perspective, Suzanne Langer dissects the term 'language' into two forms: discursive and non-discursive. Extracting Kreolité, and translating its crux into architectural expression, which does not fit the written and spoken lexicon, generates a non-discursive symbolisation of it and bridges this binary. In fact, de Certeau asserts that non-discursive language has a generating function that is more effective to that of discursive language. He posits that the language that is expressive without words allows "everyone to speak" because consciousness encounters the "other" through non-discursive language (de Certeau, 2000). Paralleling this concept, the Kreol architecture creates an inclusive platform of communication and interaction to Kreolité, even to people not familiar to the culture or language.

In developing the design thought and process, a dialectical way of reasoning emanates in choreographing differing architectural elements. The threshold between land and water emerges as one of the non-oppositional binaries in this project. Programmatically the architecture serves to create spatial devices for the fishing community that stimulate and complement their existing sea-related activities. These prototypes emerge as the threshold spaces - liminalities to the terrestrial and oceanic realms.

Other dialectical binaries emerge through the process of making the architecture. In a socio-tectonic scope, contemporary and vernacular cultures converge through the use of a hybrid tectonic palette of 'glocal' methods and materiality. Through the techné of the building and its potential provision for upskilling, an intersection of economic bearing is drawn, between the micro-economy of artisanal fishing and macro-economy of the island - outputting a contemporary artisanal design/creative or construction industry. The architecture evinces as a liminal entity, a space of mediation where these tangible and intangible binaries intersect. The notion of threshold has been applied to the design inquiry at a building scale through this paper - the building as a singularity, and permeable entity, facilitates an osmosis of natural elements and defines a reinvigorated, kinetic artisanal fishing edge. Threshold as a concept transpires as a key architectural instigator to the design development and the spatial organisation of the building.

architecture of threshold

a technological mediation

This liminal parameter transcends into the envisioned structural character of the architecture. Emerging like a mirror, an architectural translation of the ground condition, the building manifests as a [solid] structure of gravitas embedded in land which transforms into lightweight as it meets the ocean. In between this binary emanates a space of technological transition, mediating the heavyweight and the lightweight. This mediation of materiality develops through the expression of curvilinear forms in the heavyweight in the sectional drawing [fig.31]. This liminal technicality elucidates through the replication of the morphological softness of the fabric or sail to the solid part of the building.

Here, **Maison Bordeaux Le Pecq** evinces as a case study through its form, materiality, effect and making. The building is an architectural expression of Claude Parent, the architect and his design theory - '*Fonction Oblique*'. This idea declared that buildings should be all ramps, slopes, angles and wall-free where possible; that space should predominate over surface (O'Kelly, 2022). The architectural application of this theory surfaces in the swooping oblique roofs of Maison Bordeaux. This design theory parallels as the liminal technology to the paper and architectural inquiry - softening the technological binaries.

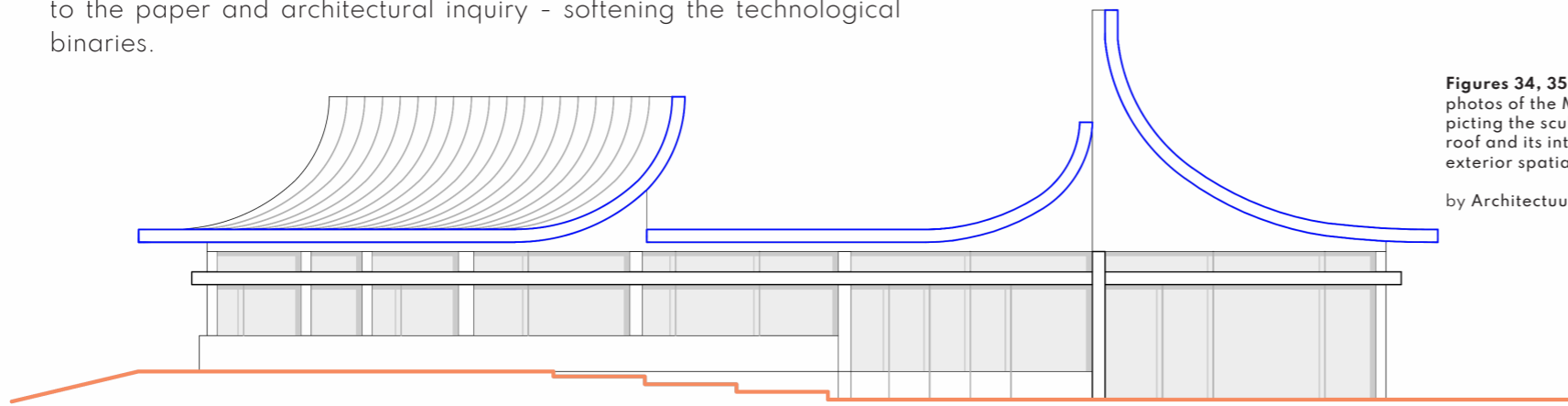


Figure 33
an elevational drawing of
the Maison Bordeaux Le
Pecq, drawn at scale 1:100,
as explorative study of the
curvilinear forms of the
roof.

by Author

Despite minimal information and resources about this private home in France's Bois-le-Roi, the visuals narrate the technicality and its possible ways of construction. The sculptural curved effect of the roof is achieved with re-inforced concrete. The bare concrete texture on the inside reveals the ghosted - the constructional process. Curved formwork made with successive timber planks potentiates as the making process though this study. Steel panels clad the top of concrete, potentially for insulating purposes. This metallic element texturally adds smoothness and also the embracing of weathering through its patina.



Figures 34, 35 & 36
photos of the Maison de-
picting the sculptural curved
roof and its interior and
exterior spatial effect

by Architectuul

architecture of threshold



The making of the curvilinear forms is executed through concrete casting in formwork which replicates the intended form. The formwork is conventionally made from timber, creating a mould for the steel reinforcement and the final concrete cast. This method is shown through these two construction process figures.

Artist and architect, Mark West, on the other hand, brings another dimension to the construction of concrete curvatures. He proposes the method of casting concrete using flexible moulds. Labelled as a biomimetic construction, this technique uses the mould's flexibility to produce castings that follow more efficient, naturally curved, structural force-paths, producing highly efficient structural shapes, as well as complex curvatures as exhibit pieces (Design Raid, 2020). Concrete is completely transformed from the hard, rigid material we know it to a soft, gracious material that retains its original wetness and fluidity by substituting the traditional hard mould materials with light, flexible fabrics. Relating this back to the liminal technology, heavyweight and lightweight conjunction does not only happen in the result but also evinces in the constructional process.

The search for ways that matter may be coerced into acts of self-formation, directed by human artifice but actualized by natural forces, events, and material qualities, runs through all of his design thinking and techniques. West's technological discoveries are applicable to low-tech and high-tech construction economies and cultures because of his emphasis on the simplicity of methods. The simplicity is not only about pragmatism though. His decision to set stringent technical limitations stimulates a certain type of constructive metabolism that can result in complexity from uncomplicated origins. What results is a hybrid type of "design" where intentional planning and submission to inevitable natural circumstances take place concurrently in the same space.

Figures 37 & 38
illustrating the making of
formwork for the casting of
a curved concrete element.

Photo by Yancheng Liang-
gong Formwork

Figure 39
concrete textures replicated
from the flexible formwork

Exhibition from 2013 3 mm
Project Exhibition, Tokyo
Designers Week, Tokyo
(International)

Photo by Fabric Form

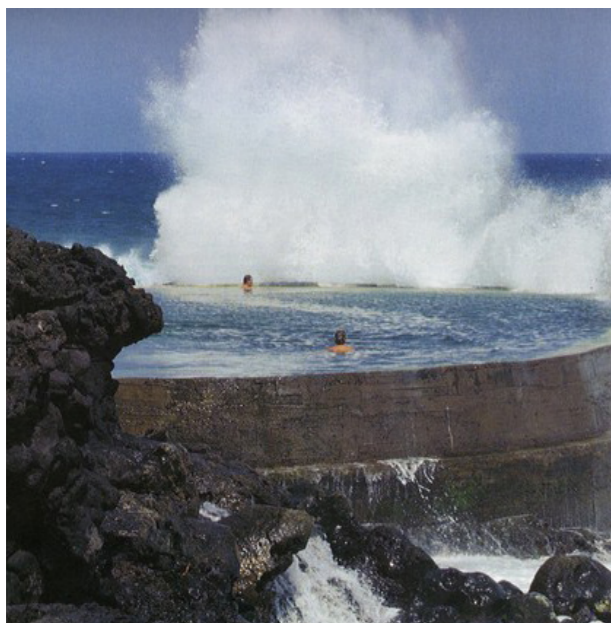


Figure 40
Mark West, artist and
architect, with his casted
artifact.

by Fabric form



aqua-architectural interaction



water [feat. architecture]

In architectural manifestations interacting with water, the latter is often translated as an aesthetic accoutrement which emerges an unequal relationship with the built - making architecture dominant to water. This led to the unfolding of 'water feature' as an architectural terminology.

Focusing on coastal areas, this research comes with a different approach, one which seeks to create a relationship of deliberation and reciprocity between water and architecture but also, architecture and the marginalized people/landscapes [namely, artisanal fishers of rural coastal geographies]. Ergo, the attention to the physical characters of the site does not limit itself to taking into consideration of just the static nature of the site [topography], but also extends to the dynamic agents and their flux [water and tides]. A comparable position emerges through Artengo, Menis and Pastrana's research on the construction of the natural pool of San Miguel el Guincho [1992] and the subsequent project for the Las Americas pool [1996] which gravitates toward the significant affect of scaping the natural threshold between water and earth. Through his book, *Architectural*

Natural pool of San Miguel el Guincho

Figure 41 [Left] architecture in act with water in flux

Photo by Fernando Menis

Fondazione Querini Stampalia

Figure 42 & 43 [Middle, Right] architecture accepts the presence of water flux, and instead of treating it as an obstacle to entry, it welcomes the liquid.

Photos by Ricardo de Cal, Hidden Architecture

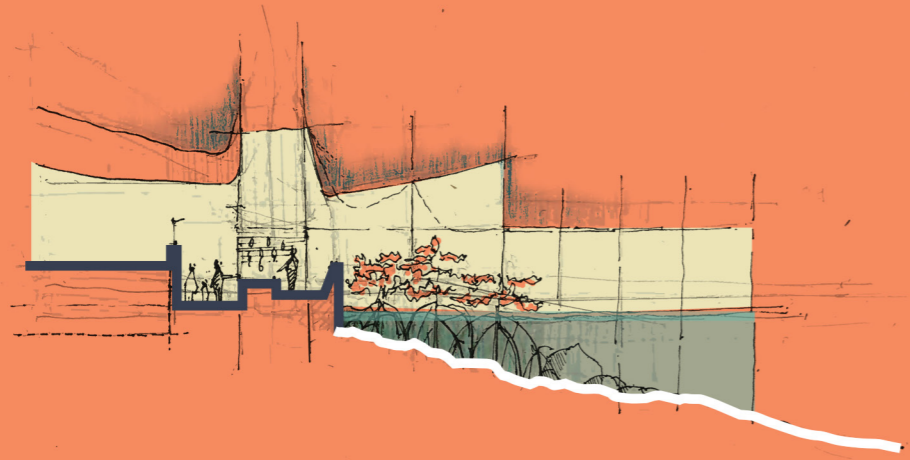
Topographies, Tomà Berlanda reacts to how the tidal pool interplays with water effortlessly (2014), with its reinforced concrete line, without altering the rock and coastline and simultaneously, how the scope of maintaining the wave cycles permeated within its design process.

The edge condition between land and sea evinces as a space of constant transition and mediation between the static and fluid/kinetic dimensions. Depending on different scenarios, weathering happens at varying speed and at different times allowing a dialogue between this binary. The land is subject to erosion, sediment deposition and accretion of new life. Along with the oceanic flux, the edge alters through time by both human and non-human agents occupying this space. Submerged in water at high tide and exposed in low tide, this intermediate space creates an ecology - the intertidal zone. The continual volatility condition of this stretch of the ocean creates a habitat to species that Sarika Cullis-Suzuki, marine biologist, described as 'Masters of adaptation' (Cullis-Suzuki, 2020). There is a constant push and pull of sand by the waves, making the space kinetic. The life and growth intertidal organisms remain intertwined to the physical environment. They adapt to altering space and form new life off weathering cicatrices, allowing new possibilities despite shifts and decay. A parallel of dynamic behaviours emanates above, beneath and on the meniscus of the sea - human interactions [fisherfolks] on land, boats afloat and marine/intertidal organisms underwater. This alludes to what an architectural threshold should manifest as - a multitude of [land-sea] scenarios and subsequent design solutions should converge into an architectural singularity to adapt and interact to the dynamism of this aqua-terrestrial realm and its agents.

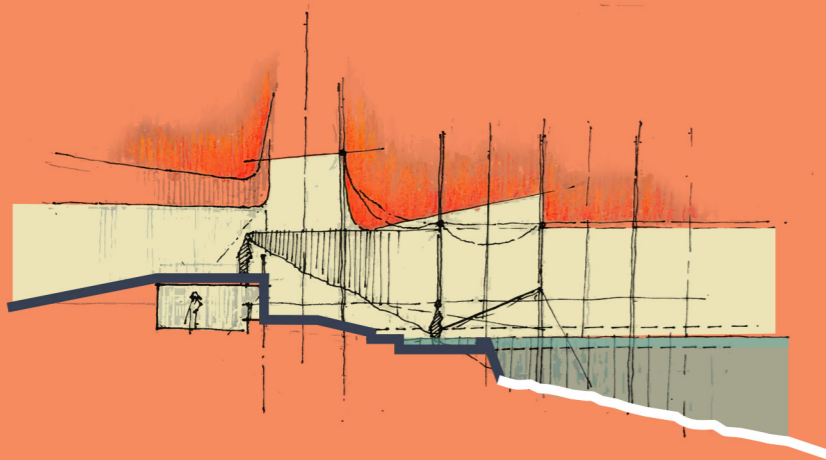
Sectional explorations through the existing site [illustrated in the next page, fig. 43-45] emanated as an initiatory momentous step in this design research. This exercise incepted from the development of a graphic lexicon exploring the intertidal zone tensions - the existing/natural ground line [white line] and the new/built ground line [charcoal line] and how this ambivalent duality would interact with the liquid and its flux. The socio-ecological dimension was layered subsequently to illustrate how each ground condition is spatialised through architecture.

Multiple drawings of different scenarios were made through this exercise to acknowledge and understand the dynamic spatial behaviour of both fishers and natural elements [mainly water and tides]. The requirements of the stakeholders differ spatially at different points in time or for varied programmes in relation to the liquid territories. The intersection of interactions between water, time and programmes starts to narrate an architecture through a sectional ocular. Concatenating this matrix of water-people-time through section, started to manifest some simple but, effective [socio-] and [eco-]spatial opportunities. Despite dealing with plethoric

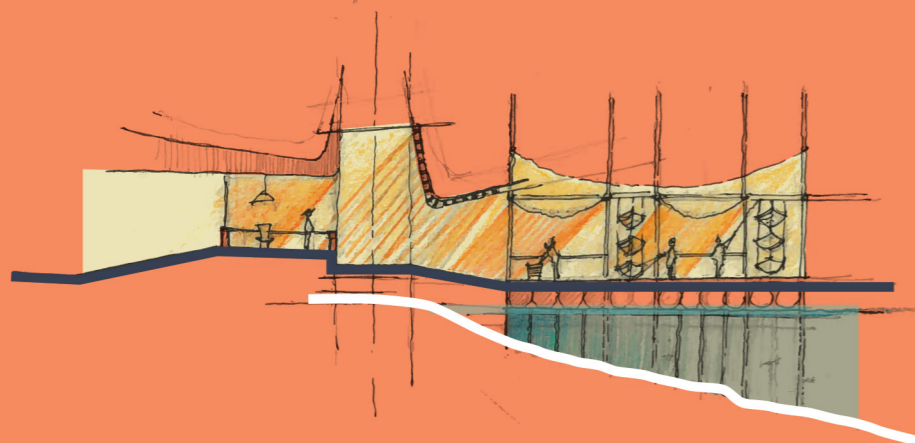
aqua-architectural interaction



1
Figure 44
Retaining line - to shelter
users, restrict boat access
and create space for man-
groves.



2
Figure 45
Stepped or terraced line
- initiating aqua-[socio-]
spatial interaction.



3
Figure 46
Floating line - dynamic
structure interacting with
the liquid flux.

design elements through the drawings - a common thread that dictates the threshold is the sculpting of the architectural [new] and natural [existing] ground line.

In tracing this process, a mediation of the built edge and its relational abutment to the water assumed a pertinence. Intricate spatial pockets emerged in these connective scenarios, between the built and liquid. The sections anticipate and designs mediating scenarios for aqua-terrestrial spaces, both socio-spatially and ecologically. The three sectional scenarios illustrate the creation of kinetic and static spaces to make the building act as shelter to the people, as a continuation of the oceans tidal flux and as a spatial binary of the adjacent ecologies. The following ground conditions delineate this techno-fluid expression - these will be used as a prompt for further design conversations dependant on the research trajectory.

1. the retaining line [Fig.43]

This scenario involves a contradictory built encounter to the natural ground. Informed by a [mainly] social scope, the retaining line provide shield the architecture and the social interactions from the adjacent liquid and other imminent climatic calamities. In a geo-spatial eye, fishing communities are the most exposed social group to climatic influences and disasters, specially, on a tropical island. Shelter to these occurrences emerges as a social priority, and a major fragment of the architecture as expressed in this sectional scenario. However, the section also expresses how space restricts boat access and is created for the proliferation of the existing ecology. The 'hard' morphology of the retaining line is 'softened' with vegetation and space for both water and aquatic life through coastal softening. Coastal softening is an approach mitigating the sea level through the creation of natural barriers between open sea and the coast-line. Echoing the design principles of wetlands of absorbing wave action

before getting to the shoreline, growth of vegetation can be promoted through coastal softening. Per contra to hard lines that destruct the intertidal zone, natural lines of shelter are created between us and the storm. This strategy creates a dialogue with areas of hard and soft edges - combining nature and infrastructure for the proliferation of the local ecology and absorption of currents instead of blocking them.

In the Mauritian context, mangroves could be used as the vegetation for coastal softening. Found in the vicinity of the area of focus, *Rhizophora mucronata* and *Bruguiera gymnorhiza* are the two species that grows on the island with



aqua-architectural interaction

heights ranging from 2 to 7m (Sauer, 1962). Mangrove ecosystems are made up of mangrove trees which have adapted to anaerobic soils and brackish, saltwater environments. Mangrove habitats allow for crucial breeding and nursery grounds for a multitude of commercially important marine species: these include fish such as barracuda, shrimp, crabs and other crustaceans. About 70% of commercial fishes depend on mangrove sites during their juvenile stages, so healthy mangroves habitats are crucial to the locals dependent on the sea for a living like fisherfolks [fishing, crab catching] (Ministry of Ocean Economy, 2020). These aquatic species shelter as juveniles in the maze of mangrove roots, and then migrate to the reef and open ocean as adults. Along with the protection that the tree's roots provide, the leaves that fall from the tree decompose into nutrients that feed invertebrates and algae, laying the groundwork for a very productive food web. The trees also are also known for its stabilising abilities of the coastlines against erosion and protecting the shore against extreme climatic conditions. Ergo, the implementation of mangroves evinces not only beneficial for the ecology but also to the social fabric of the context by fostering larger number of fish into the lagoons.

2. the stepped or terraced line [fig.44]

This scenario engages tangible interaction between the human, architecture and liquid territories. Embracing the water, tides and its flux, the architecture exposes itself to different layers of change through the transitional revealing and veiling of the building. The terracing line allows the water to constantly morph the architecture in a multitude of ways; phenomenologically, spatially, programmatically, [...], all those and by adding a sense of time to those. This cyclic symphony, between architecture and the sea, also expresses change through architectural poetics of the inevitable material erosion, accretion and deposition. Through architecture that embraces the eventual ruin and thorough site analysis over a long period of time, the antiquity and weathering of the materials are highlighted. By accepting these modifications to the material and encouraging its evolution, natural forces may work in harmony with them. Architecture may become a medium of experimentation that illustrates the effects of nature on constructed form and evolves together with the earth itself by taking these components of metamorphosis and moments within the material's life cycle into consideration while planning.

Anticipating weathering and its architectural [+ general] affect is informative to the technological scope of the design inquiry. Carlo Scarpa's architectural compositions make use of the notion of weathering in a way that not only emphasizes the materials' degressive evolution but also incorporates it into their forms. By intentionally choreographing where the water would flow and gradually influence the walls, Scarpa's Fondazione



Figure 47
illustrating the underwater mangrove habitats

by Author

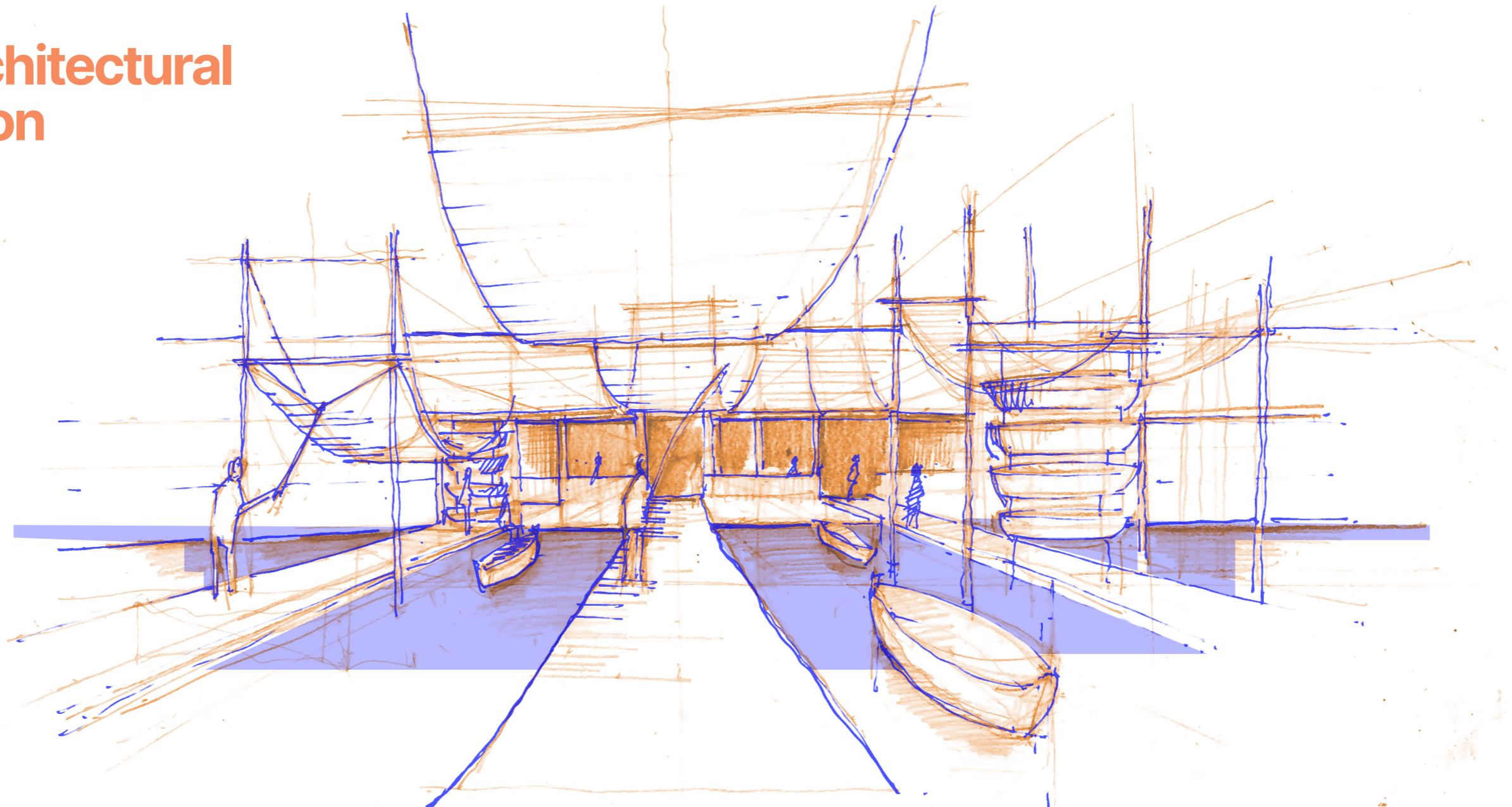
7
Acqua alta
Common Venetian term for the time at which the tide or other water (eg a river) is at its highest point

Querini Stampalia makes use of the concept of life and death via material in an effort to design where nature effects the space through time. What intrigues the author about Scarpa's architecture is how he perceives water as a disturbing force, a medium locked between the stability of the soil and the ephemerality of the sky. Water enters through water gates around the inner walls of Fondazione Querini Stampalia from the canal that the Palace overlooks. The effect is an unexpected sense of disorientation that culminates in a logical yet perplexing dénouement at the canal-front gate, where a set of cascading stairs and planters lead directly into the water. It then becomes clear that the entire space is a semi-submersible indoor landscape that can take on water whenever the "acqua alta" strikes, collaborating with Venice's unpredictable elements to create an interplay of nature and artifice. To him, "marking reveals, through weather, [shows] nature's temporality; the beginning of the end of things" is an essential principle which reflects his portfolio of works (Leatherbarrow, 2021).

Paralleling this approach to the project's locale emerges the idea of design for growth – an architecture with complexities to stimulate the growth of aquatic life and, over time, have an impact on sediment motion. The fragments of the architecture would act as canvas for the aqua-architectural interaction and erosion. In this conversation, water emanates as an instigator of change, eroding the material to allow for complexity – creating 'negative' space for accumulation and growth of new life. The key to understanding the writers' hypothesis on how buildings decay is perhaps an inversion through which "finishing ends construction, weathering constructs finishes." A double reading is produced by the eroded structure. Weathering is a "minus" in one sense – literally and materially – per contra, it may also be a "plus" in terms of its scope of meaning.

This aqua-choreography also translates as a crucial aspect of the socio-spatial by catering for shallow water fishing and gleaning activities, mostly practiced by women in the fishing community. The stepped line allows for spatial platform[s] for these fishers to practice their practices, through this aqua-[socio-]spatial interaction. These interactions start to manifest through the sectional drawing[s].

aqua-architectural interaction



3. the floating line [Fig. 45]

The floating line employs water as an elevational informant for the architecture as it prompts vertical structural movement per the liquid flux, creating a kinetic condition. This scenario illustrates how the tectonics of the building would be choreographed by cyclic behaviour of seawater and tides. Adopting with the motion of the liquid, this floating fragment allows for fluid human [mainly fishers] interaction between land and sea. The sectional drawing also depicts the fishers' behaviours with boats and how spatial interaction between boat and architecture starts to emerge rhythmically. The architecture stimulates simple, day-to-day interactions such as, hanging of the boats to the structure for storage or embarking – disembarking of the boats.

This fragment of the architecture emanates as structurally 'lightweight' as it approaches on the sea, and brackets encore the socio-tectonics. The palette of global materiality and techné emerged from through the research exploration will be put into practice mainly in this portion of the building.

Figure 48
[behavioural tectonics]
the drawing illustrates the
envisioned interaction be-
tween the fishing community
to the architecture and its
tectonics.

by Author

The envisioned manifestation of this parti involves temporality. Being lightweight, dynamic and the most exposed to climatic agents, a reductive lifespan is anticipated for this portion of the building. In a social eye, the idea is that the portion will constantly be maintained and re-built [in case of calamities by the collective effort of the local fishing community, promoting self-sustainability and coastal resilience. An essence of nautical engineering which is the floating dock technology evinces as an imminent [global] notion to the tectonics of this dynamic part. As Barker & Coutts described, "the basic design typology consists of a lightweight structure that rests on a buoyant base or foundation designed to rise and fall with the level of the water (2016)". Ergo, for this to operate, the buoyancy of the platform must exceed the weight of the building. Planted to the seabed, vertical supports are also critical to act as guides and allow the platform to glide up and down in accordance with the water level, while restricting lateral movements of the structure. This nautical system creates framework which could be explored through the Kreolised techné.

translating into design

concept

kreol architecture
 [link to linguistics + culture + behaviours]
 architecture of threshold
 cultural rejuvenation [cultural retrofitting]

site

Mahebourg, Mauritius [Moris]
 coastal condition - water
 fishing community
 local techniques + skills

realisation strategy

cultural retrofit [contemporary vernacular]
 technological mediation [heavyweight - lightweight]
 hybrid tectonics + socio-tectonic
 fishing for a materiality + tectonic palette [socio-tectonic]
 aqua-architectural interaction [materialising flow?]

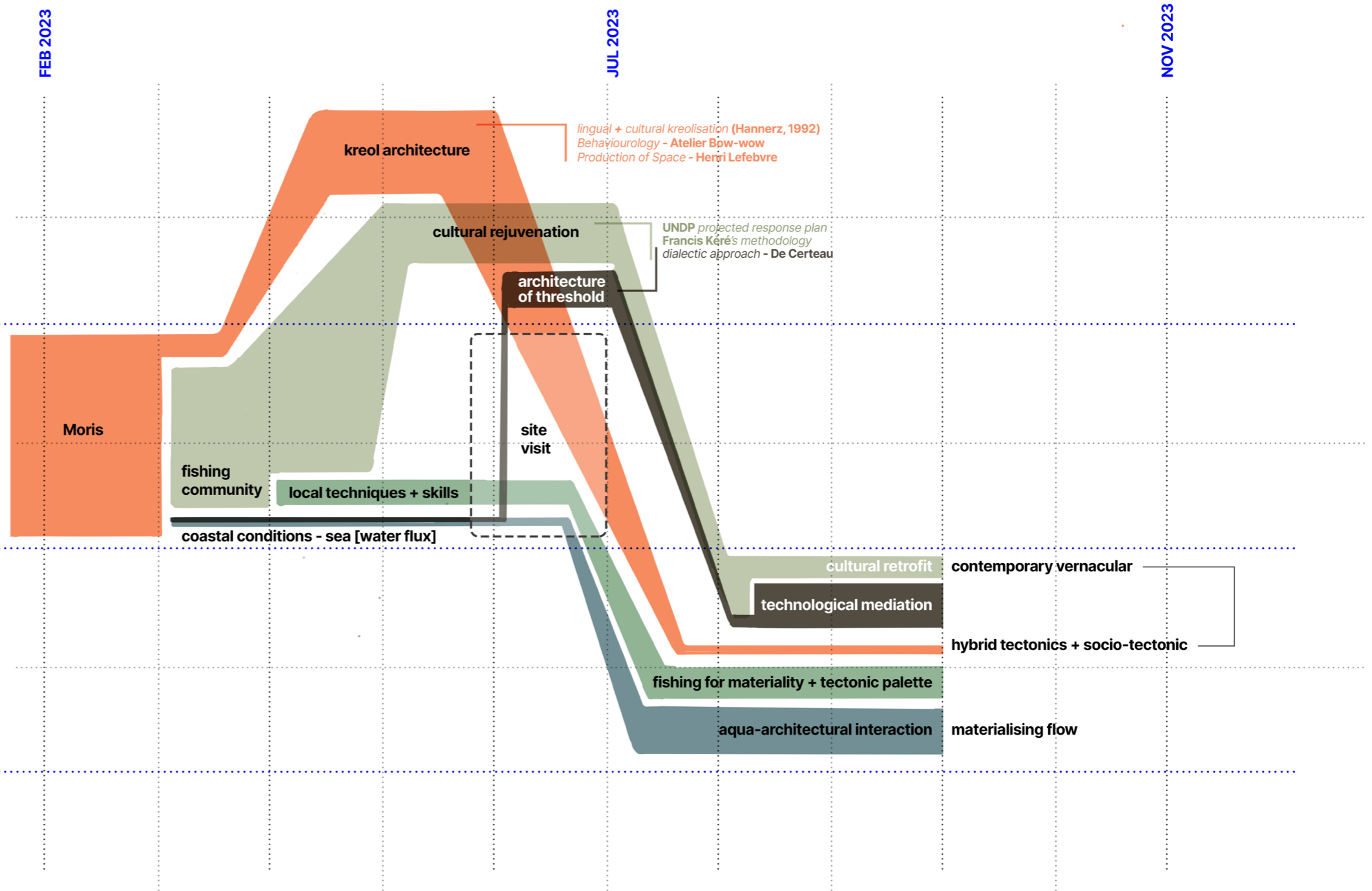


Figure 49
 graph illustrating the realisation strategy model

On the way forward to design exploration, the design research and thinking process is tracked through this graph illustrating the design realisation model. The realisation strategy is concentrated, but not restricted, to these design lenses - **1 cultural retrofit** - **2 [technological mediation - hybrid tectonic]** - **3 [socio-tectonics - fishing for a material]** - **4 aqua-architectural interaction**.

The cultural intersection of fishing [vernacular] and design and making [contemporary] emerges both in programmatic and tectonic of the project. This retrofit of contemporary mechanisms into the analogue socio-cultural realm is what the author labels as cultural retrofit. The palette of artisanal techniques and materiality draws this idea further in the technological aspect of the project. Through the use of existing creative/crafting techniques

from the localised industry to the building, a potential sense of belonging incepts through the actual making of the architecture [socio-tectonics]. An inevitable hybridity in the tectonics manifests itself in the design through the existing structure and the new. Dually through a poetic, structural eye, mediation transcends the technological crafting of the project through the play of new and old materials and techniques. Water emerges as an architectural device in creating the expansion and contraction of the threshold between land and sea. The ebb and flow of the ocean begins to define the spatial choreography of the project.

mapping moris + locating site

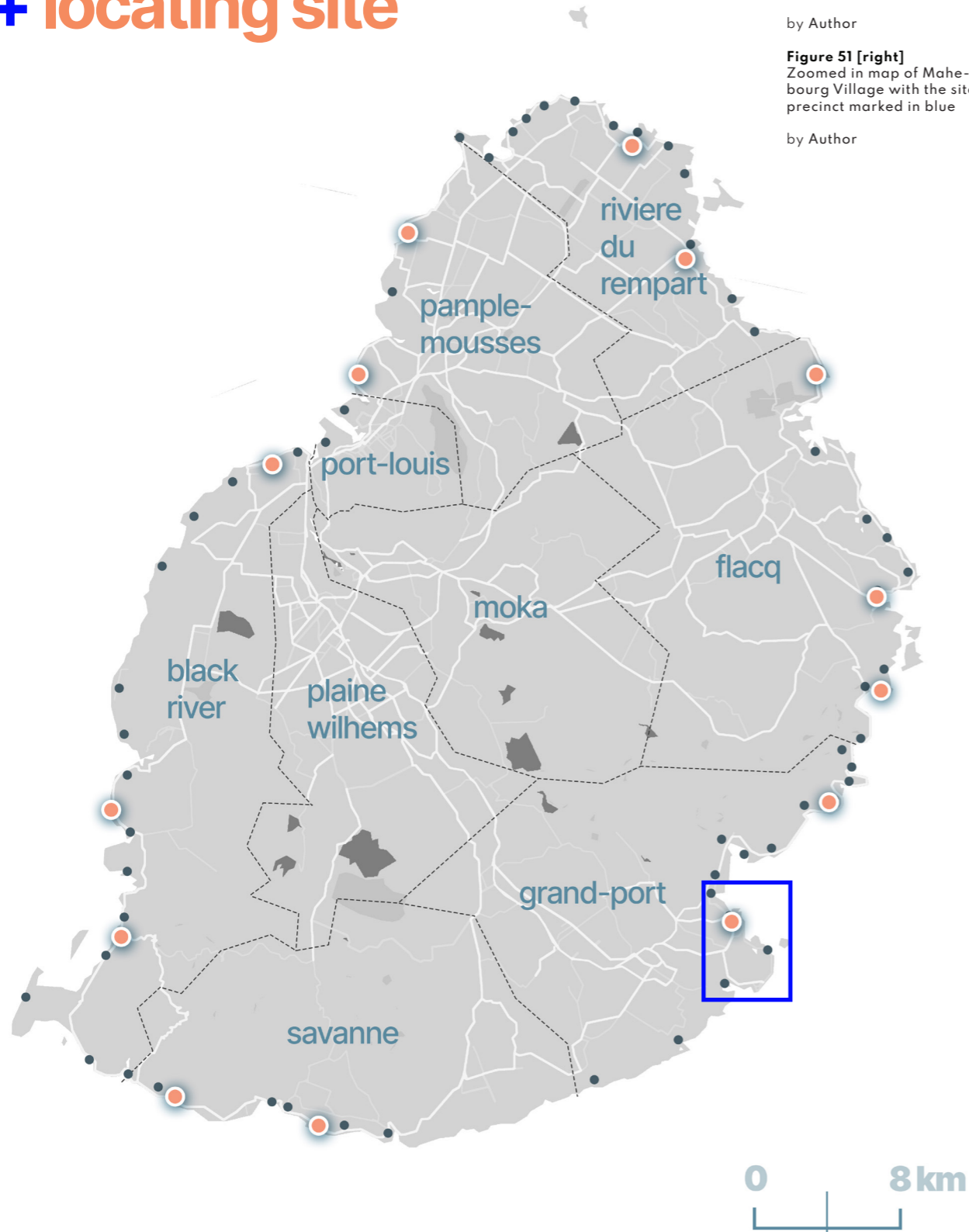
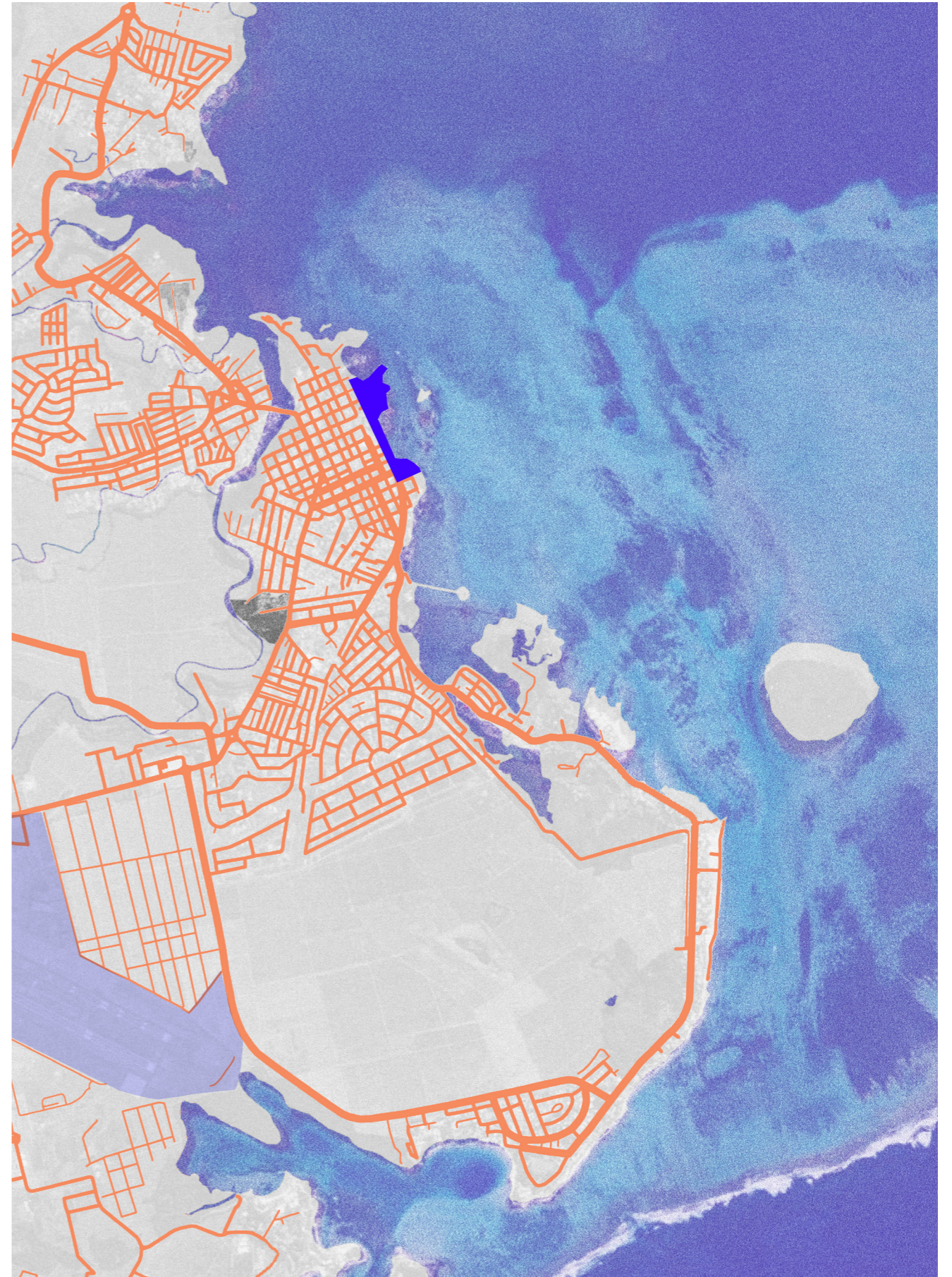


Figure 50 [left]
contextualising Mauritius' geography

by Author

Figure 51 [right]
Zoomed in map of Mahebourg Village with the site precinct marked in blue

by Author



site exploration

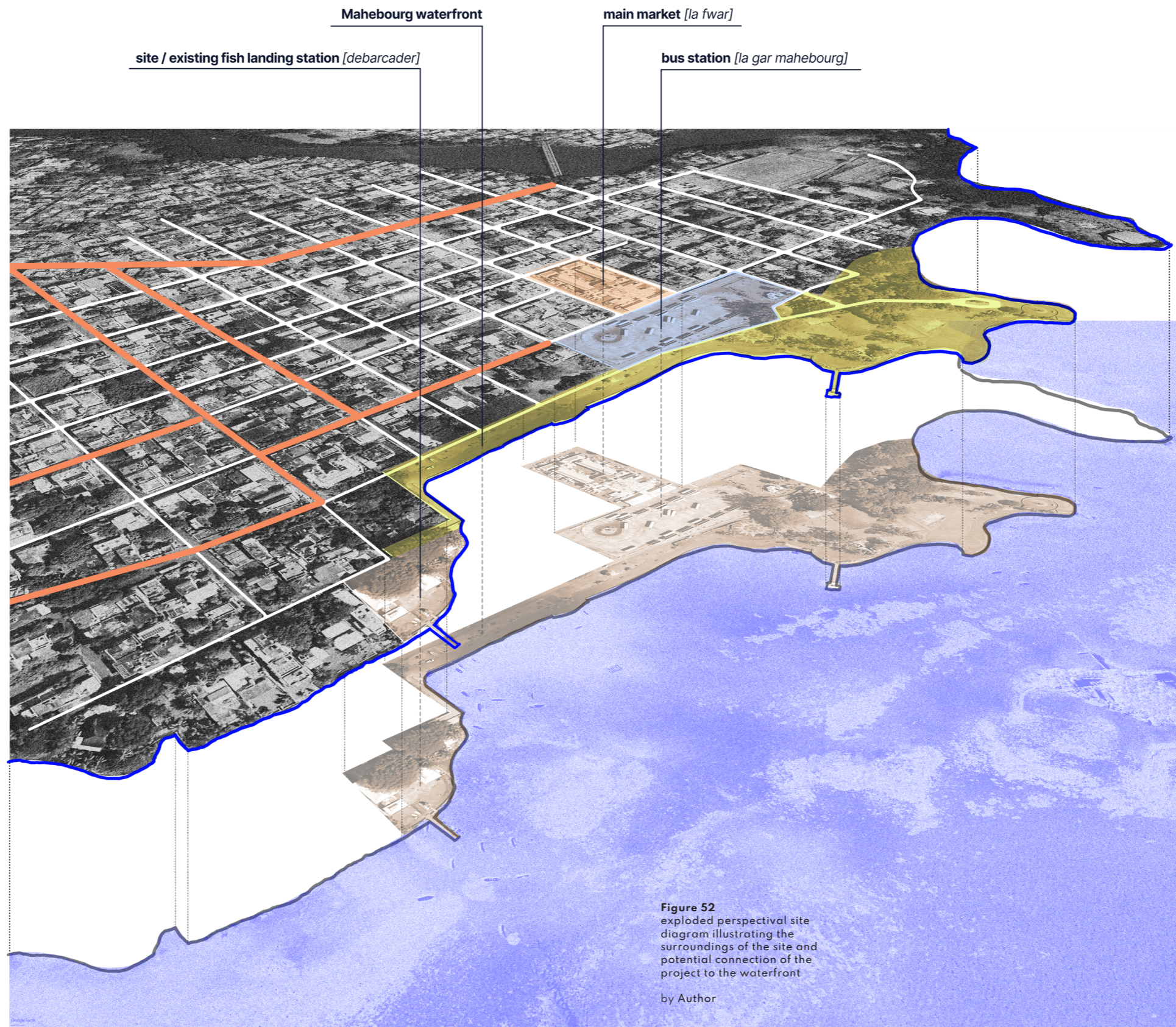
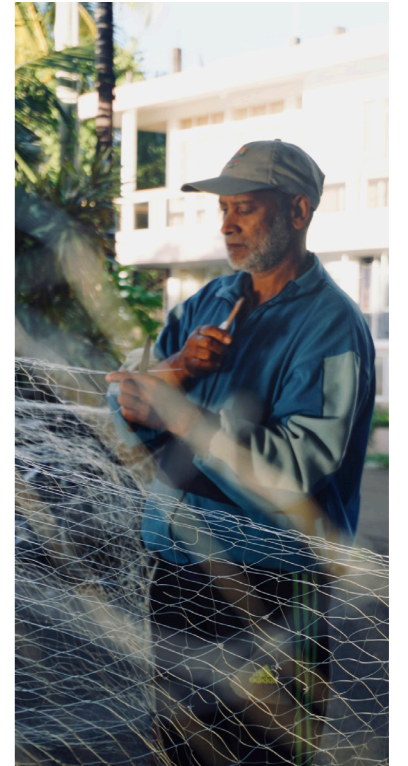


Figure 52
 exploded perspectival site
 diagram illustrating the
 surroundings of the site and
 potential connection of the
 project to the waterfront
 by Author

tactile site encounter

Figures 53-59
photos of the site and exist-
ing building during the first
tactile encounter.

by Author



reflective contextual model

Figures 60-65 through drone footage and photogrammetry, a mould was 3D printed, this site model was crafted through the process of casting.

specific materials were chosen to parallel elemental aspects of the site.

by Author



existing building

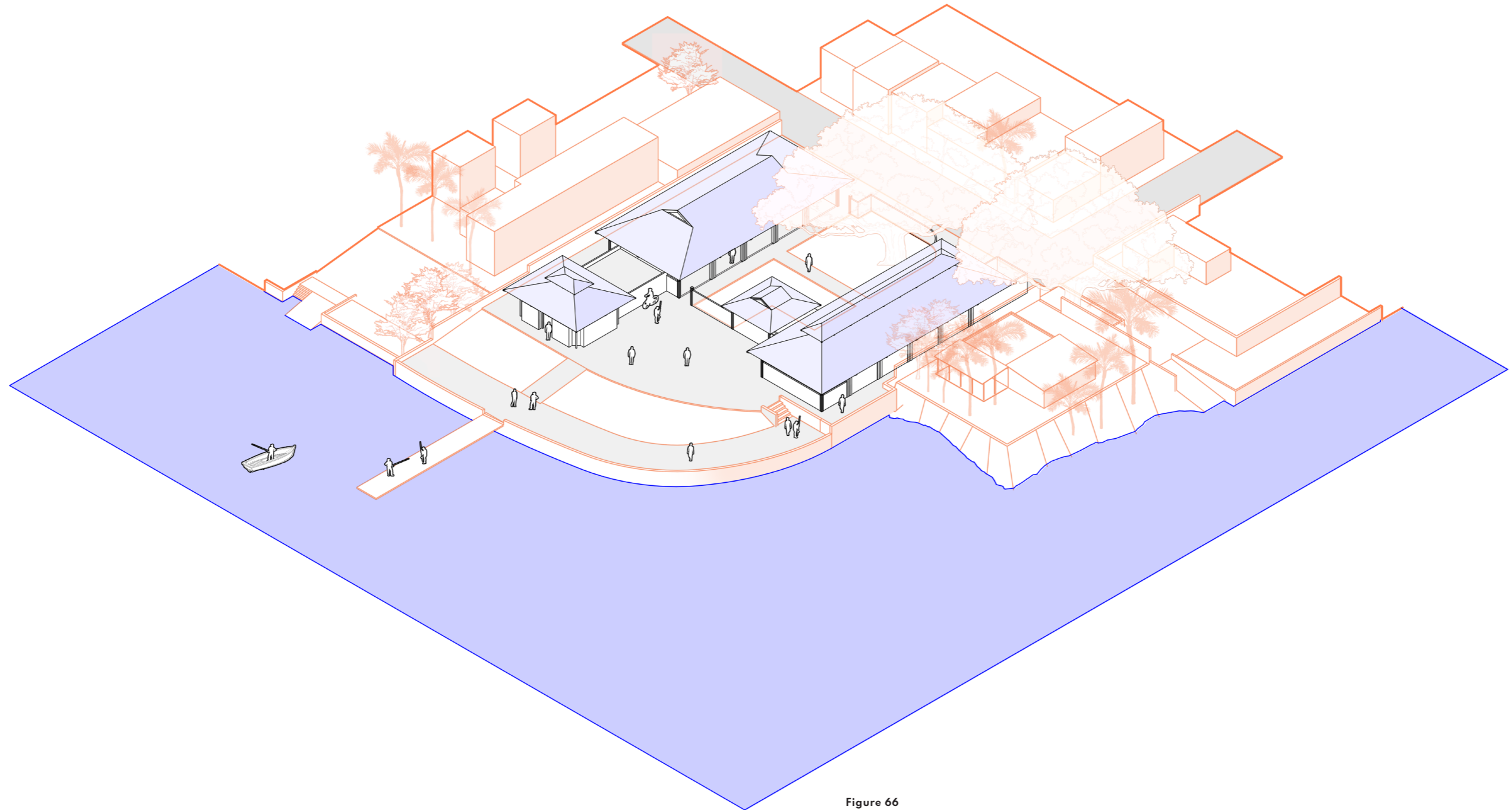


Figure 66
isometric view of the exist-
ing building
by Author

existing structure

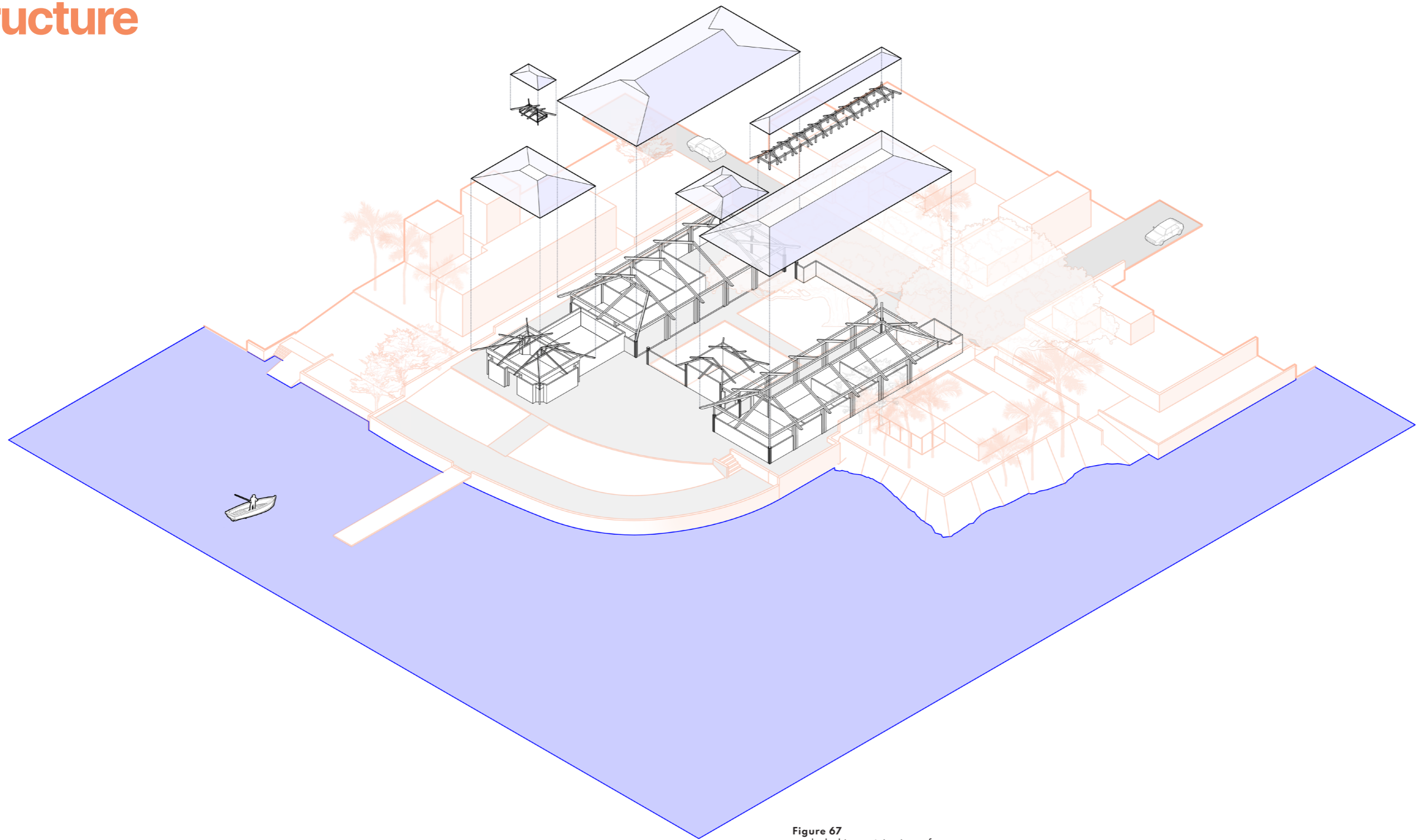


Figure 67
exploded isometric view of
the existing

deconstructing and un-
derstanding the structural
framework

by Author

existing programme

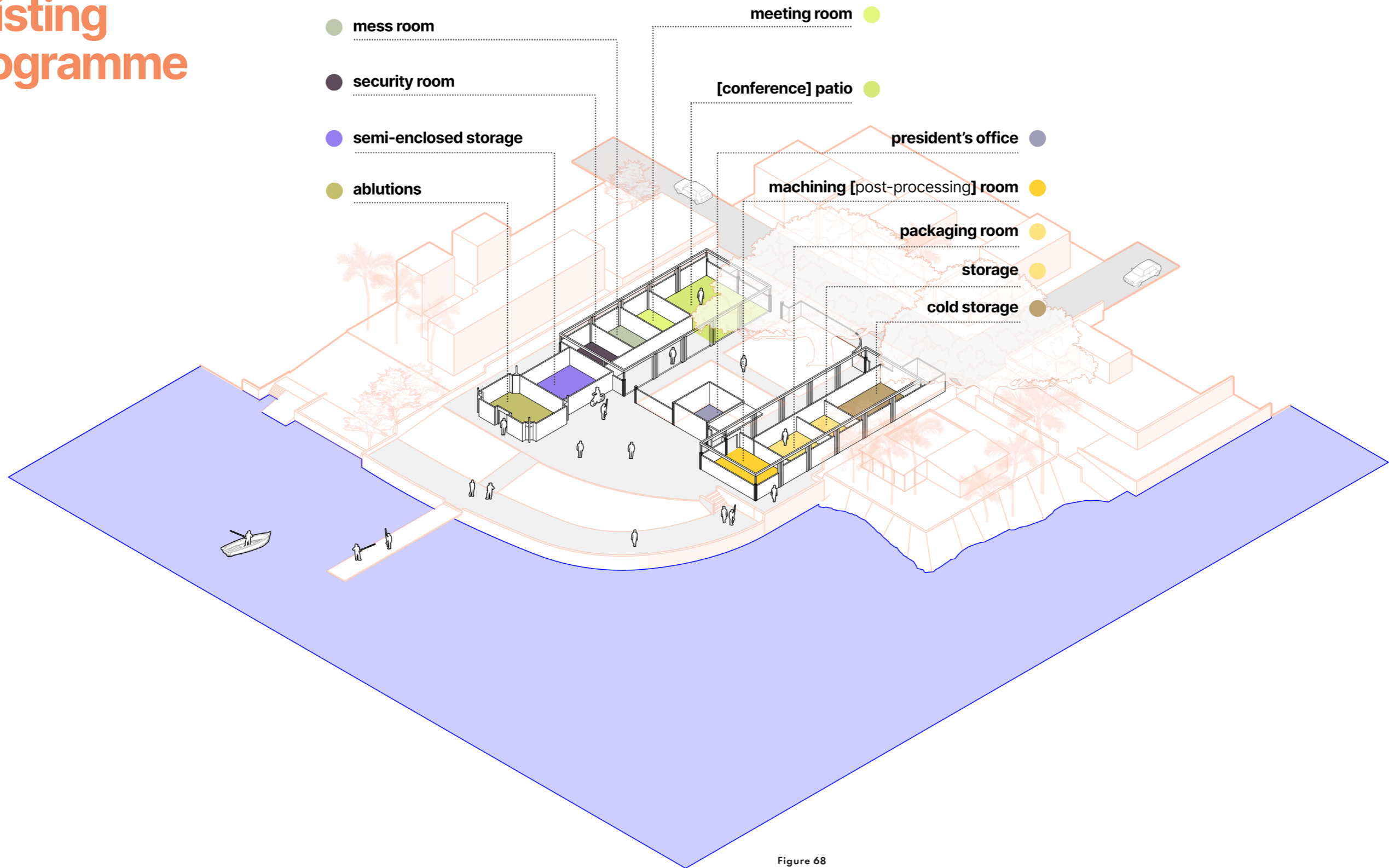


Figure 68
 isometric view of the
 existing building without
 roof illustrating the existing
 programmatic organisation
 of the building

by Author

fisherfolk's daily spatiality



- 1** preparing tools [repairing gear - nets, rods]
- 2** preparing boat [maintenance]
- 3** embark depart catch fresh fish moor disembark
- 4** handling on shore washing dressing sorting
- 5** preservation chilling
- sanitation freezing
- storage
- distribution

Figure 69
abstracting the fisherfolk's daily spatiality through a sectional eye in terms of fishing process stages, level changes and time

by Author

site plan with existing building

Figure 70

the site plan depicts the existing structure which are located on site

by Author

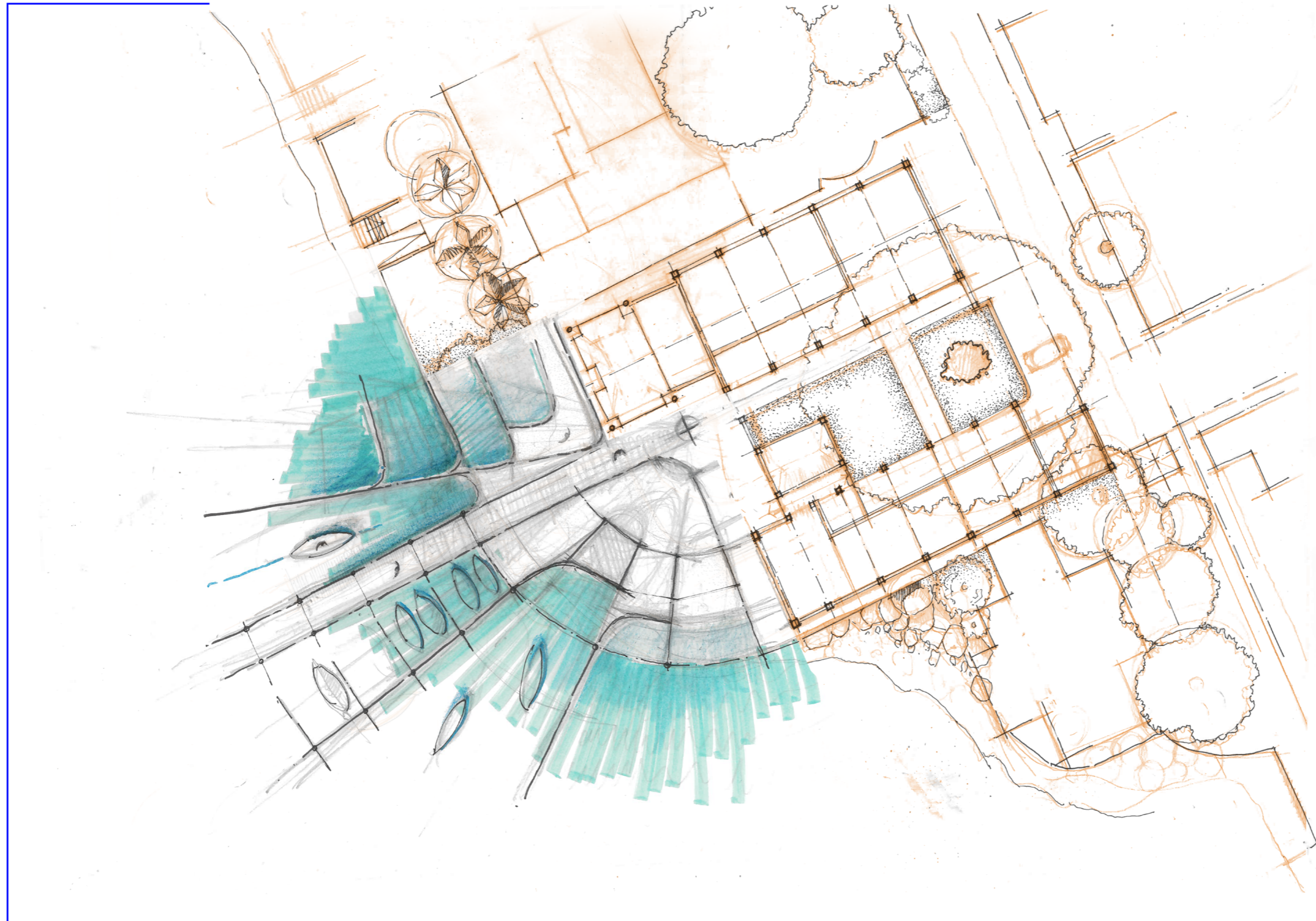


plan explorations

Figure 71

the plan explores the possibility of aqua-architectural interaction
view - axis - opening to sea

by Author

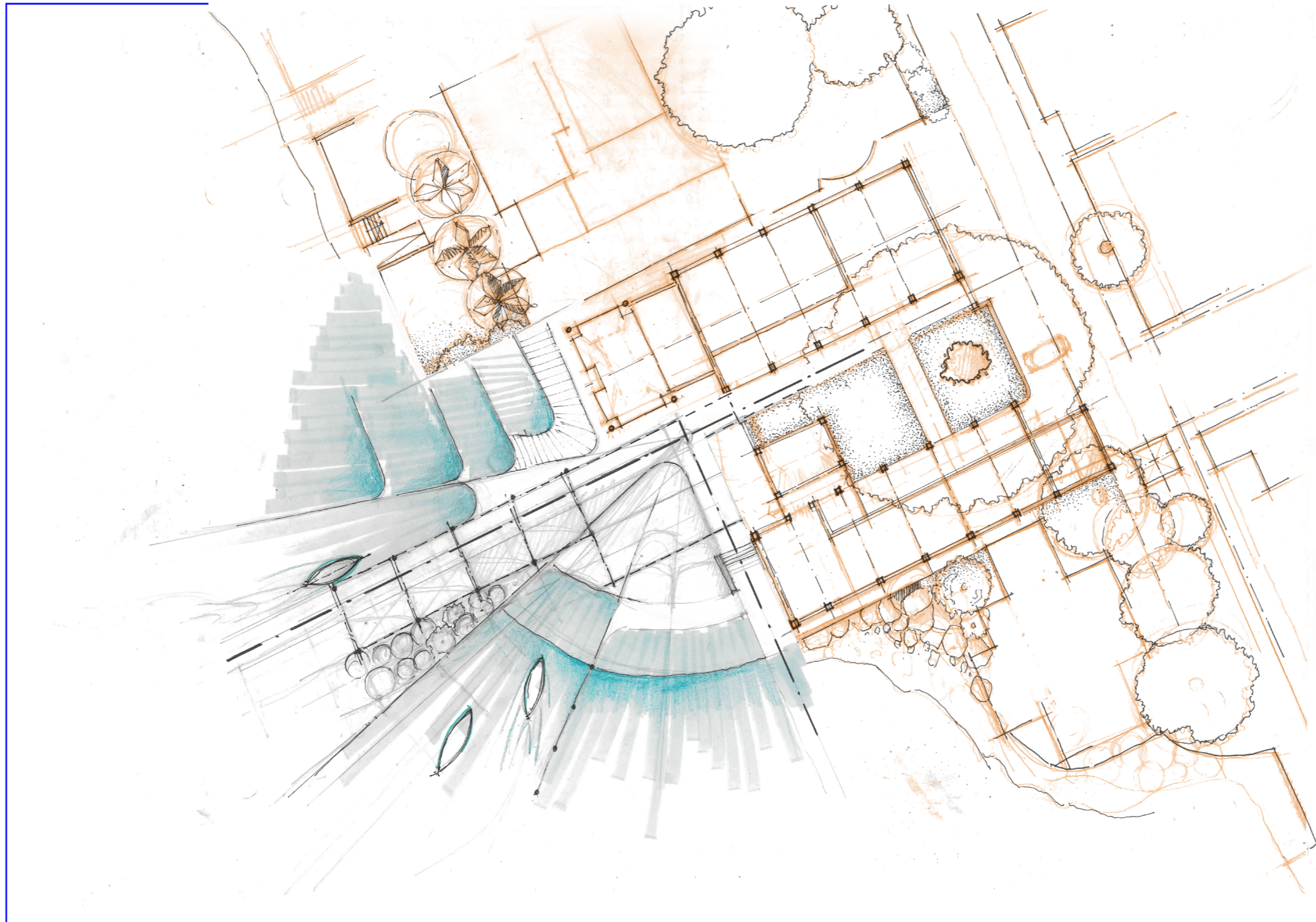


plan explorations

Figure 72

part of the building gets revealed and hidden as per the flux of the tides - architecture as aspect of fluidity

by Author



architecturalising graphic lexicon [Pg. 48]

Figure 73
elevation of the existing building
by Author

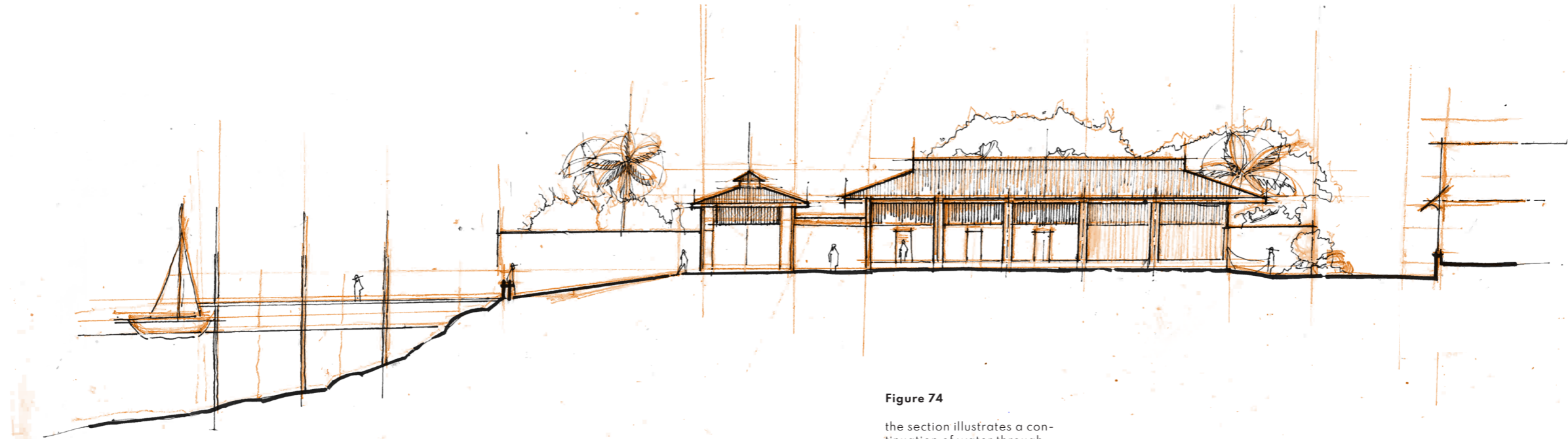
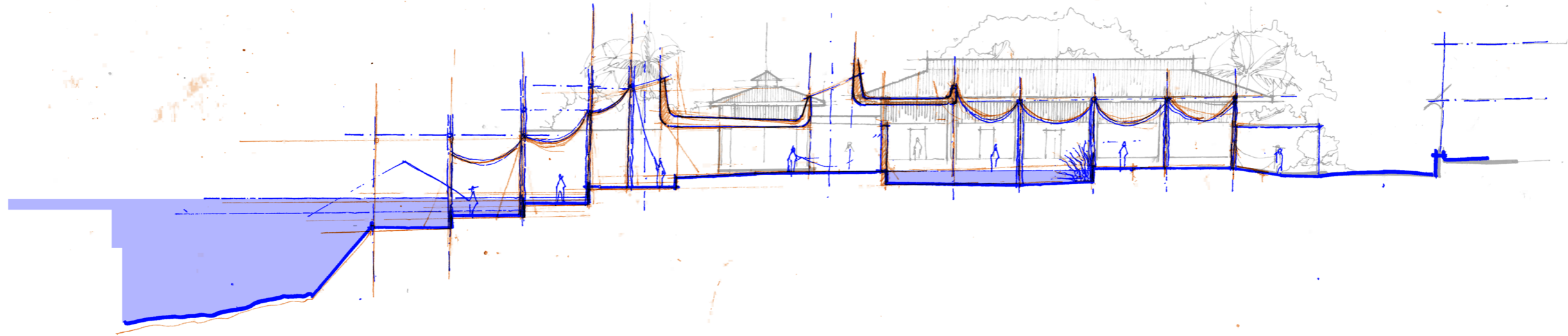
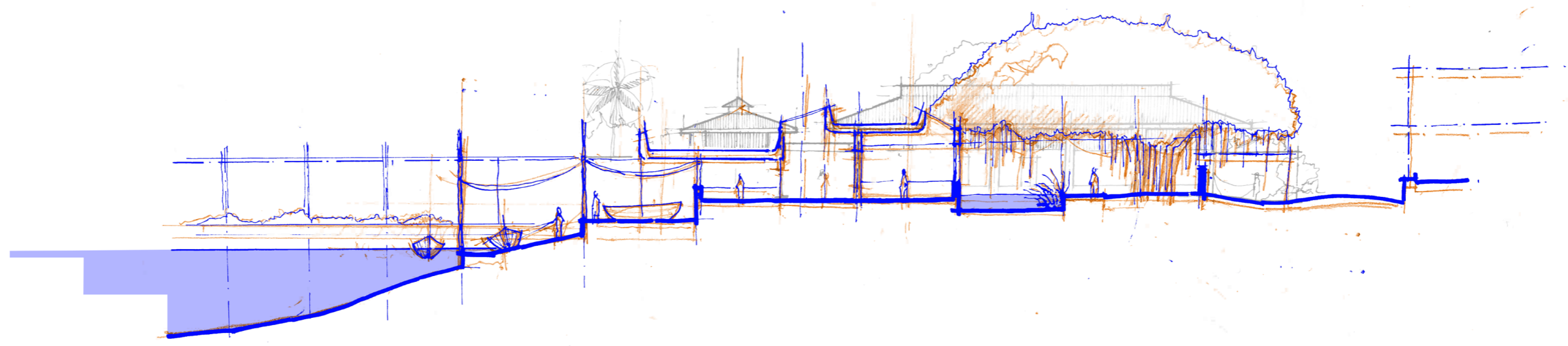
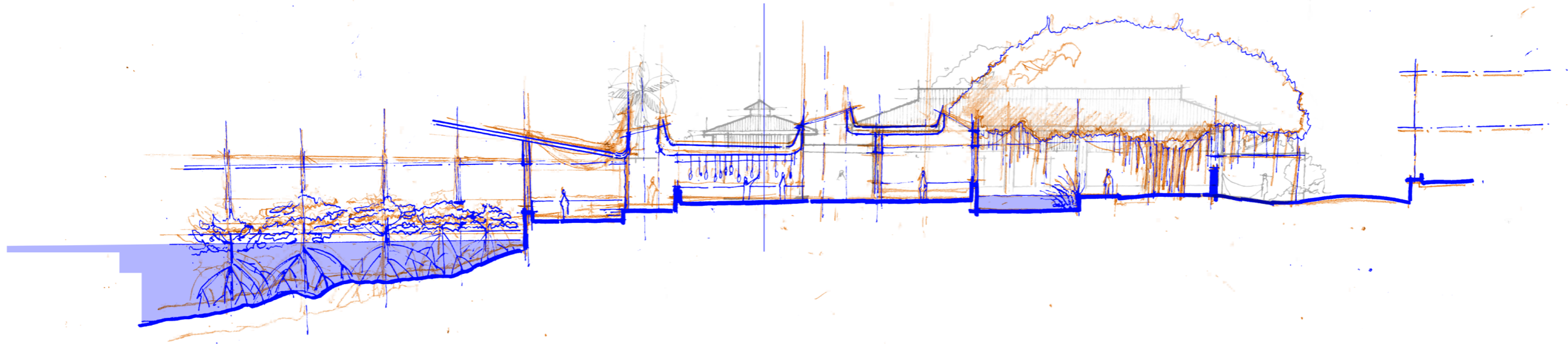


Figure 74
the section illustrates a continuation of water through the building
by Author



architecturalising graphic lexicon [Pg. 48]

Figures 75, 76
exploring different ground condition scenarios and their inhabitation
by Author

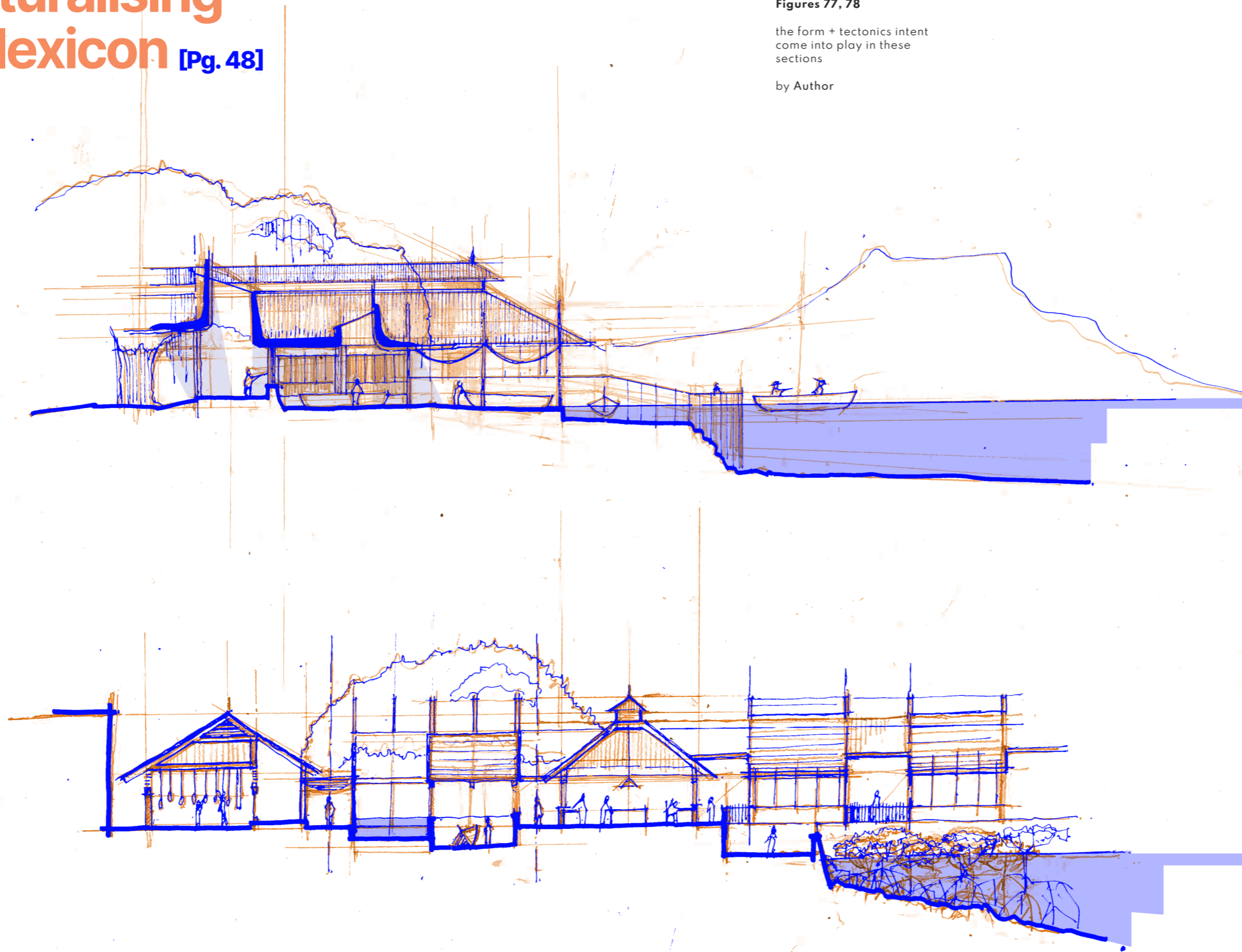


architecturalising graphic lexicon [Pg. 48]

Figures 77, 78

the form + tectonics intent come into play in these sections

by Author



investigating boats' forms + tectonics

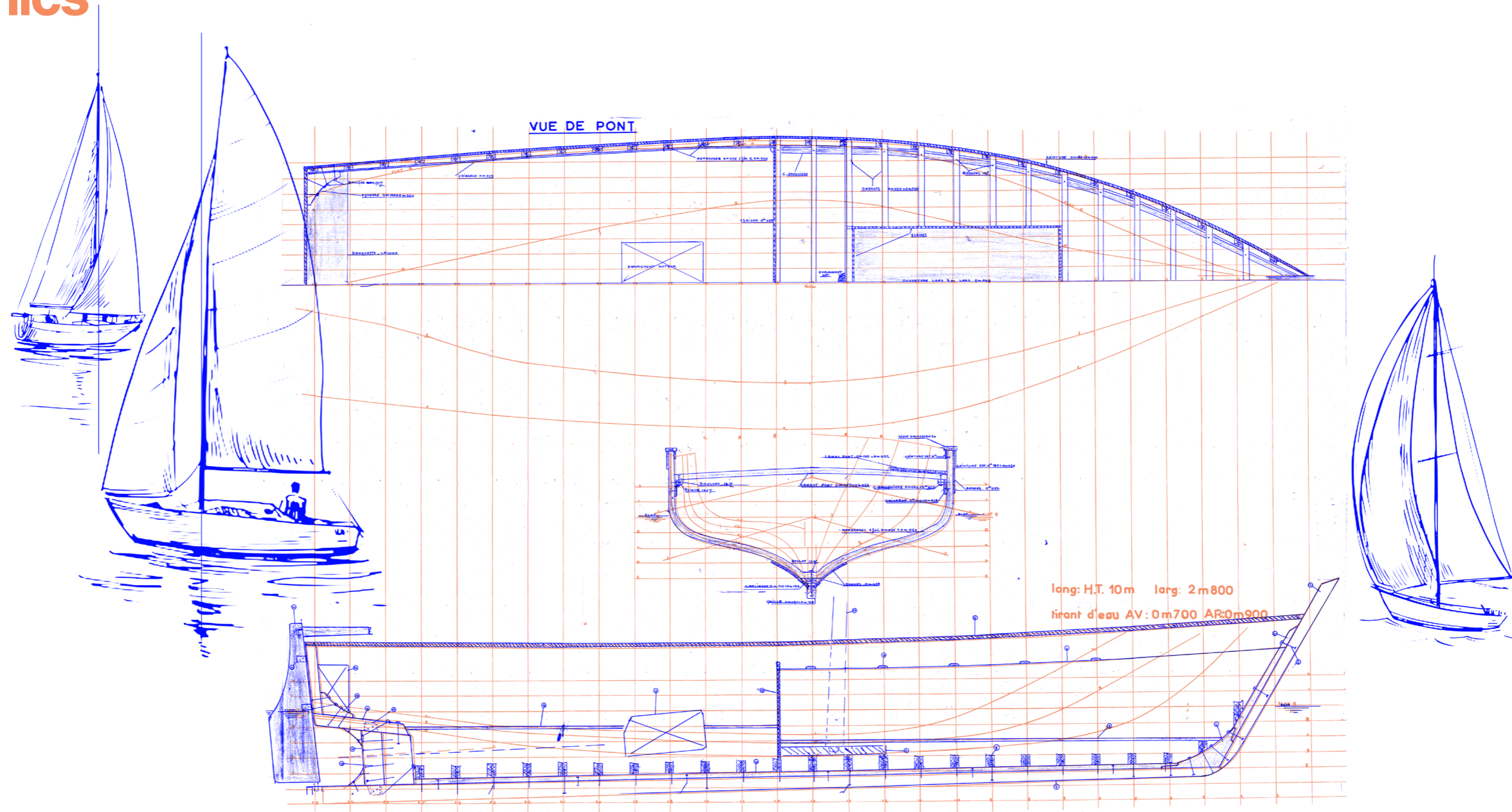


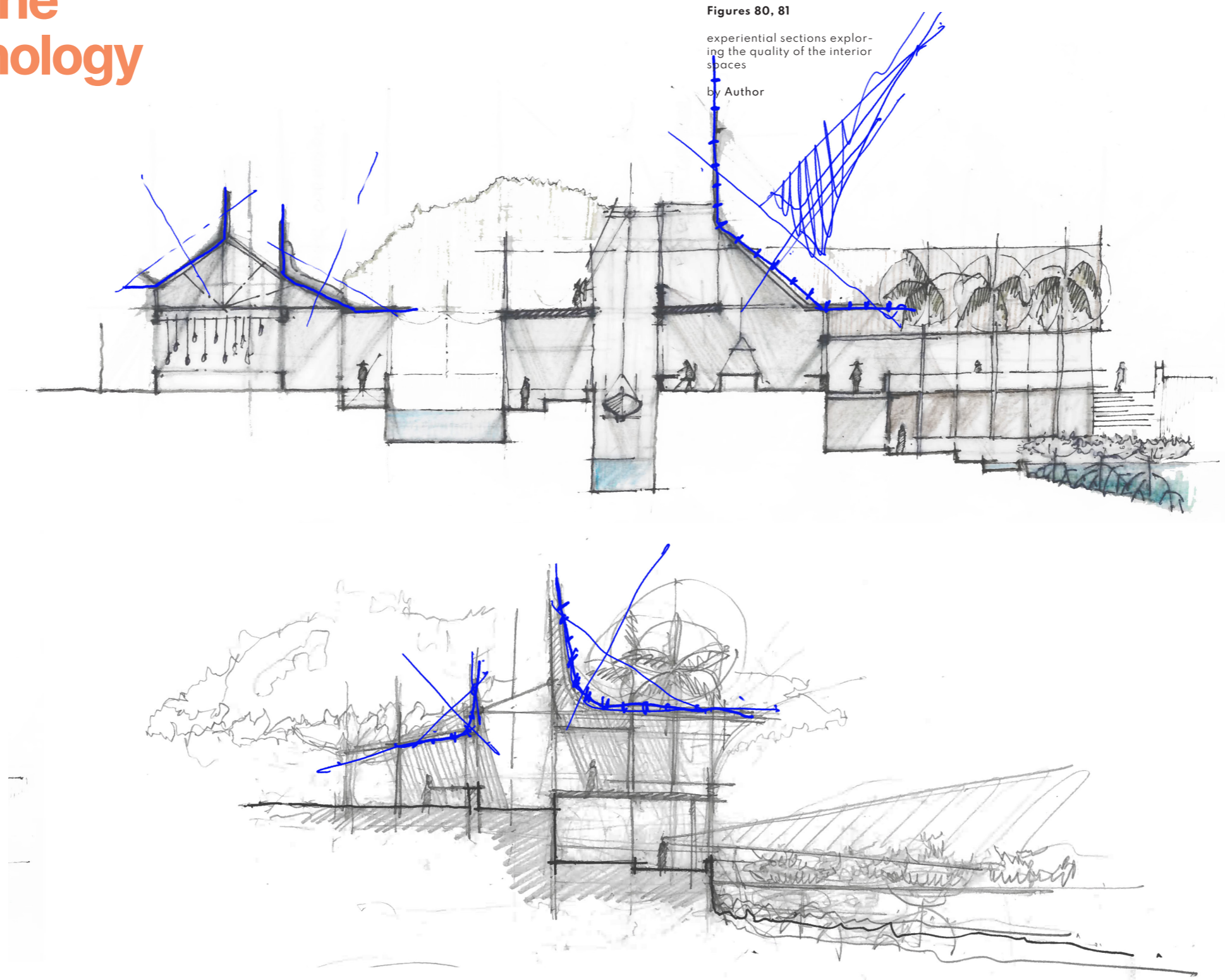
Figure 79

deconstructing the morphology + tectonics of a typical Mauritian artisanal fishing boat.

by Author

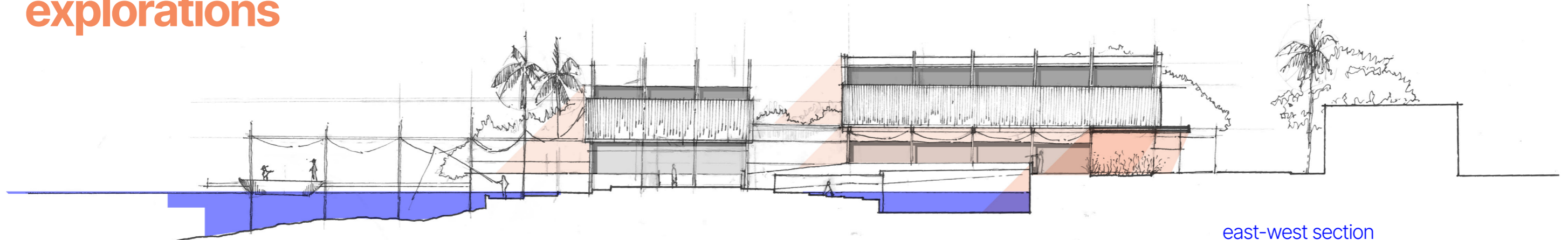
exploring the roof morphology

Figures 80, 81
experiential sections exploring the quality of the interior spaces
by Author

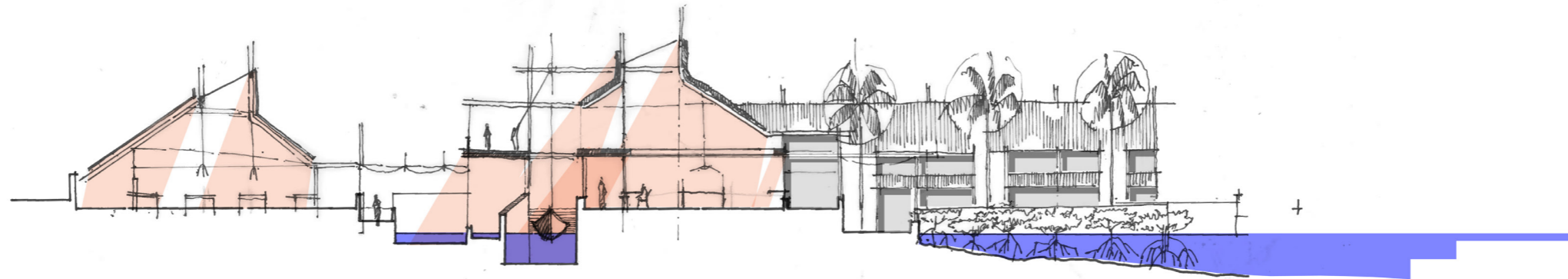


sections
drawn at **scale 1:200**

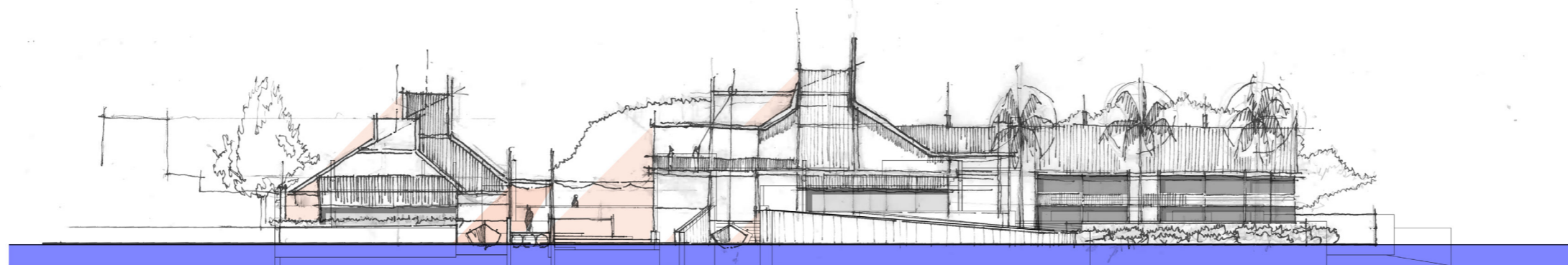
sectional explorations



east-west section
drawn at **scale 1:200**



north-south section
drawn at **scale 1:200**



sea elevation
drawn at **scale 1:200**

Figures 82-84
by Author

existing structure

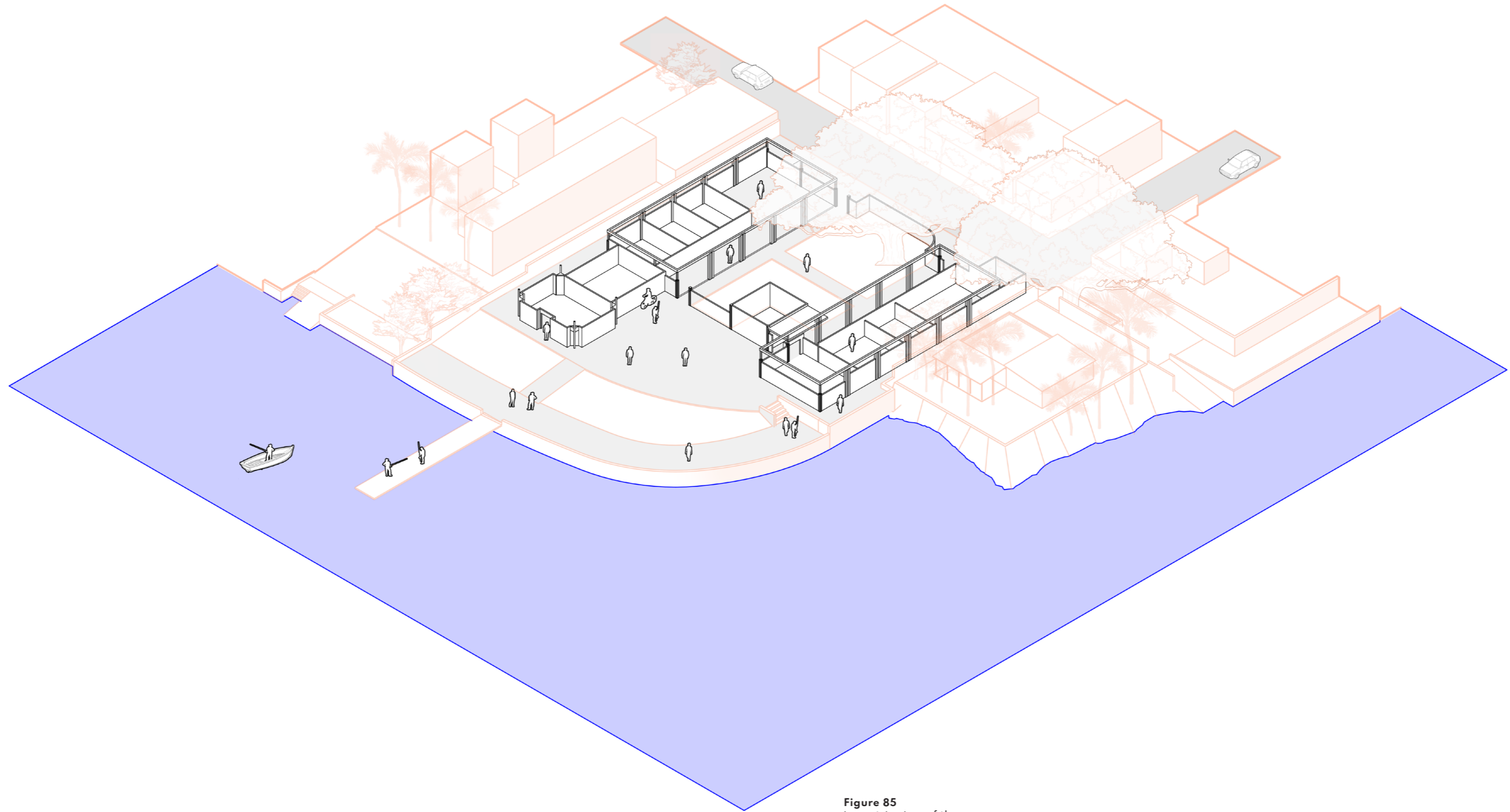


Figure 85
isometric view of the
existing building without
roof illustrating the existing
footprint of the building

by Author

structural strategy

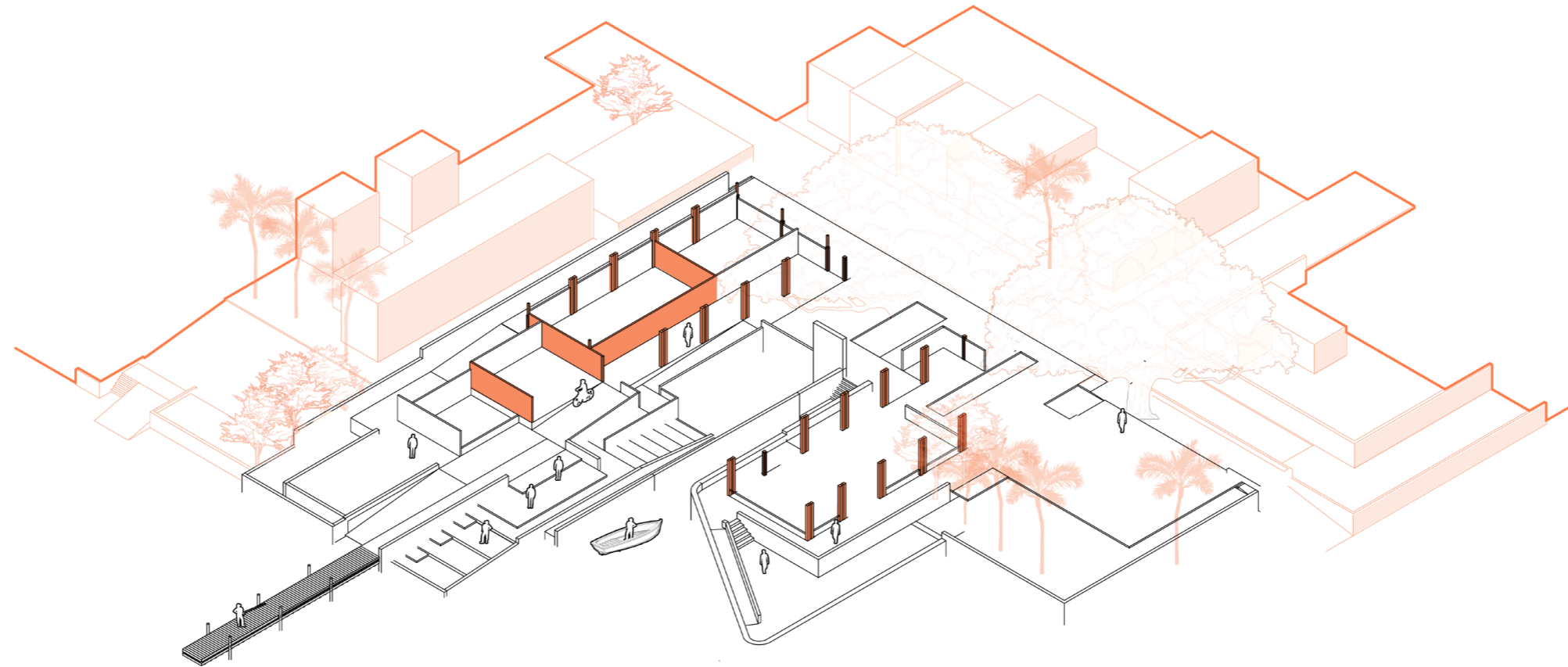


Figure 86

this isometric view of the landscaping illustrating the new building - highlighting the retained existing structural framework

by Author

mediating threshold

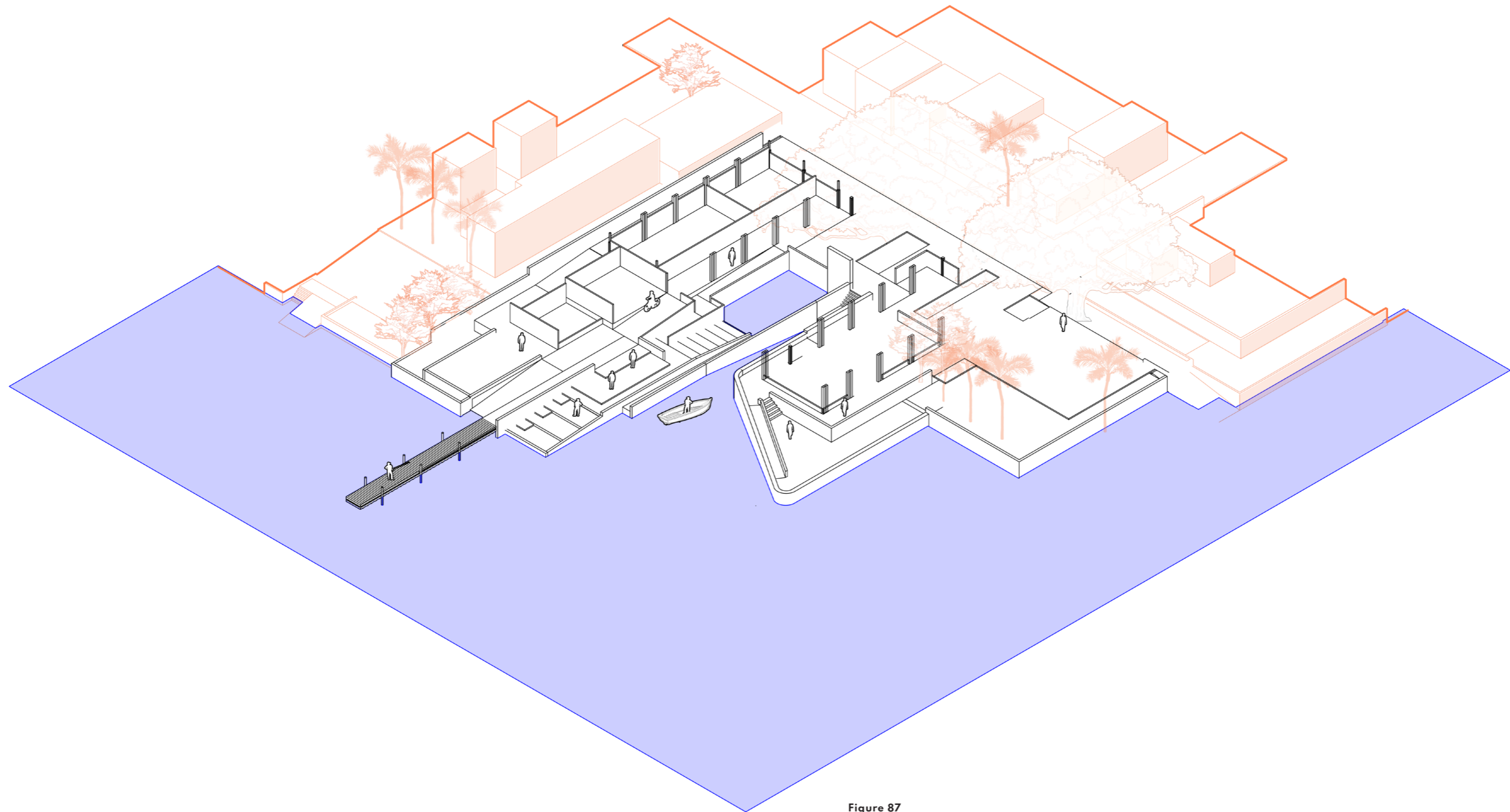


Figure 87

this isometric view of the landscaping illustrating the carving of the ground and materialisation of flow

by Author

proposed plan



ground floor plan
drawn at **scale 1:200**



Figure 88
by Author

proposed plan



first floor plan
 drawn at **scale 1:200**



Figure 89
 by Author

spatial organisation

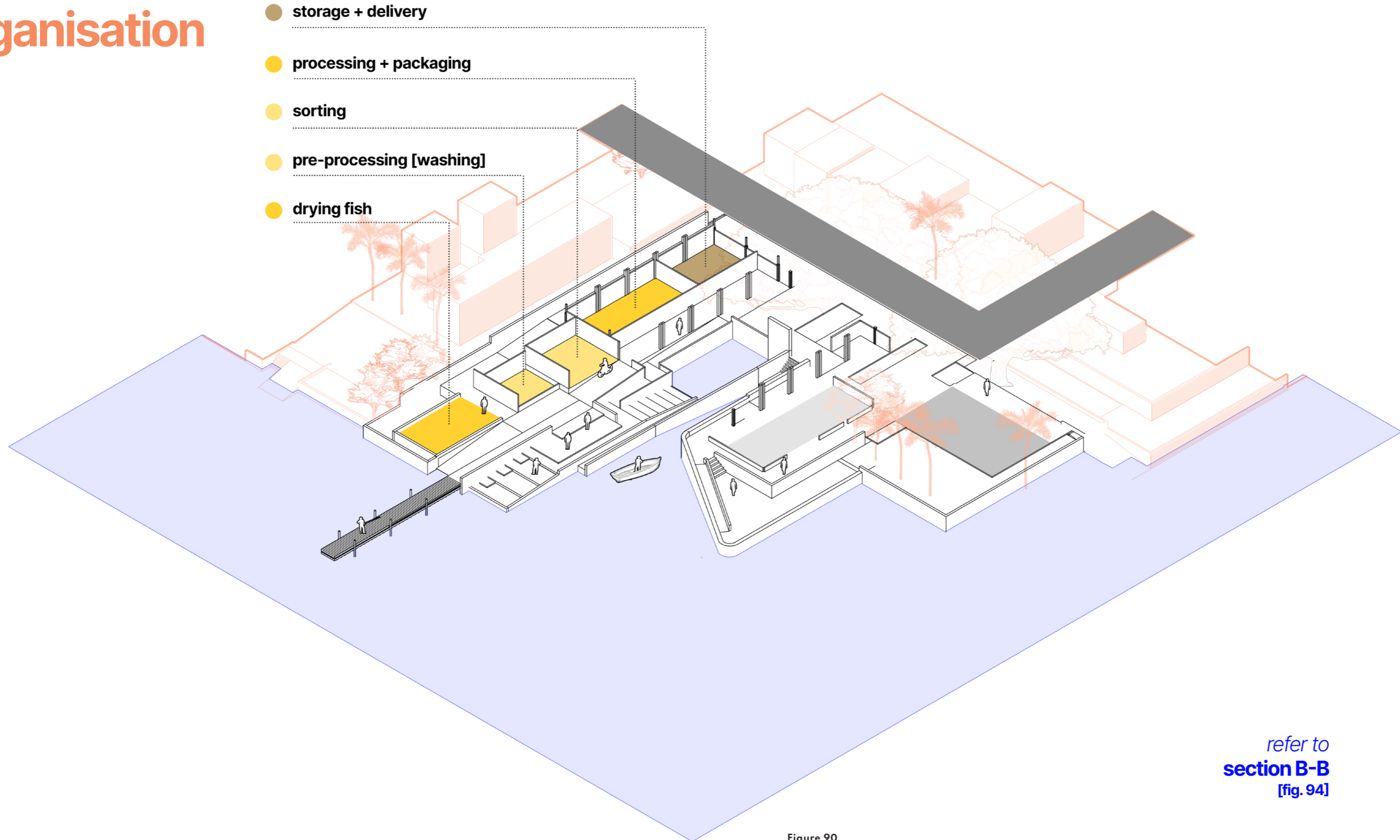
● storage + delivery

● processing + packaging

● sorting

● pre-processing [washing]

● drying fish



refer to
section B-B
[fig. 94]

Figure 90

existing fishing practices
concentrated on the southern
side of the site proposed

by Author

spatial organisation



refer to
section C-C
[fig. 95]

Figure 91
this isometric visual highlights the mediatory spaces designed between existing and new/retro-fitted programmes.
by Author

spatial organisation

design lenses 1 2 3 4

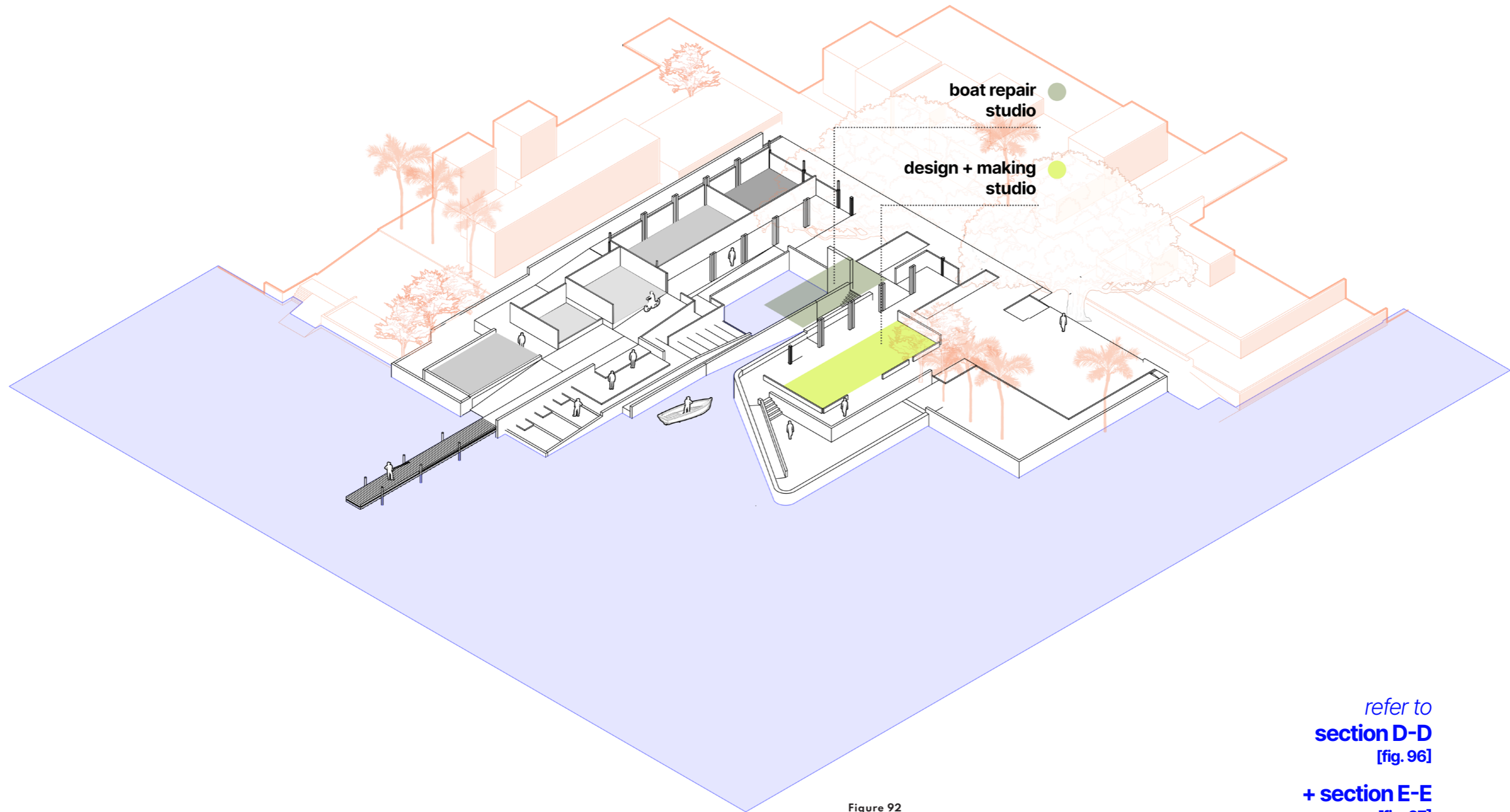
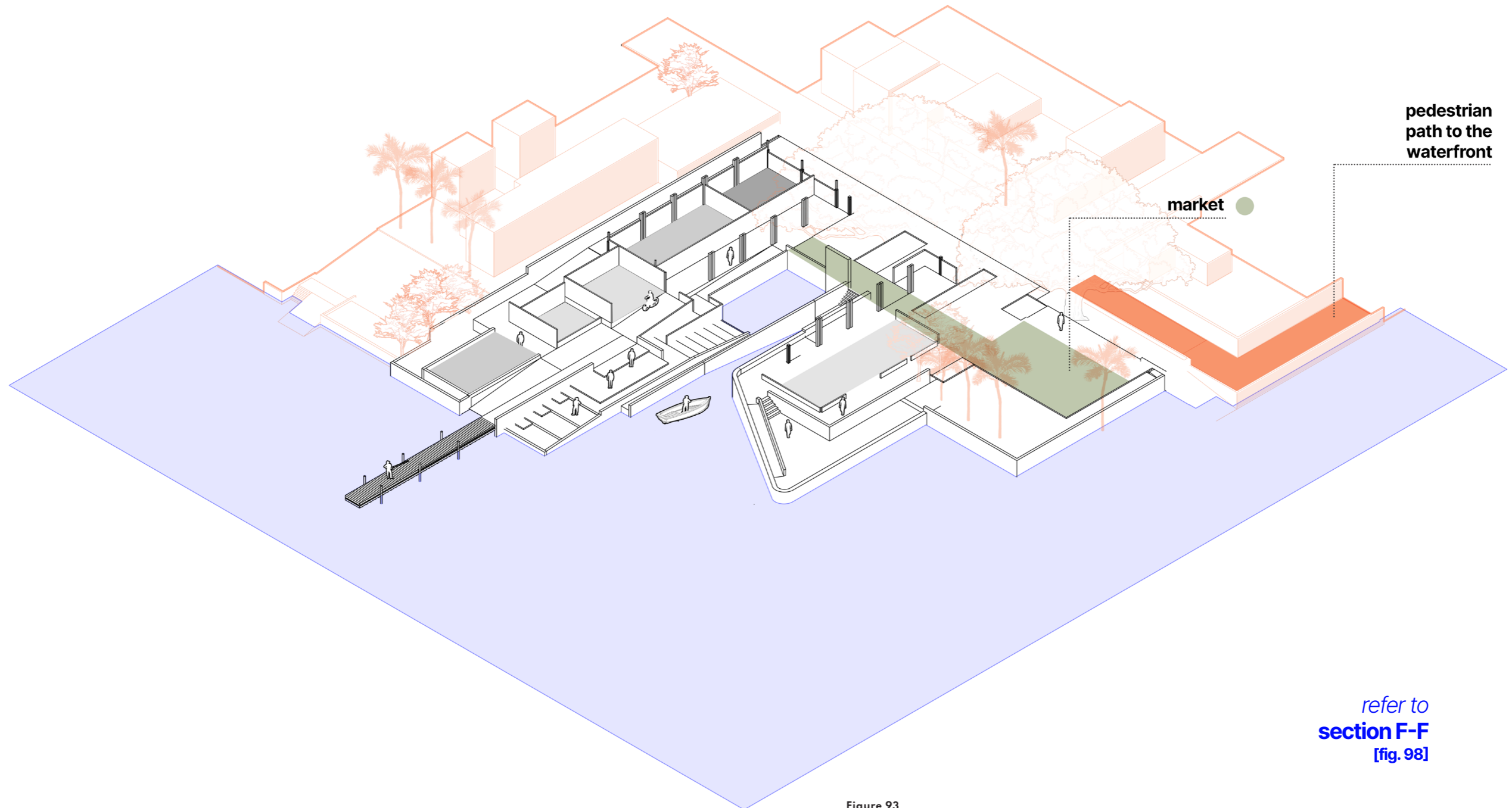


Figure 92
 the programmatic retrofit
 with new pedagogical and
 design studios on the north-
 ern side.
 by Author

refer to
section D-D
 [fig. 96]
+ section E-E
 [fig. 97]

spatial organisation



refer to
section F-F
[fig. 98]

Figure 93

the market section of the building is highlighted in this diagram illustrating its connection to the exterior pedestrian path and to the interior pre/post harvesting section.

by Author

sections

Figure 94

section B-B illustrating how the process stages informed the pre/post-harvesting section of the project

by Author

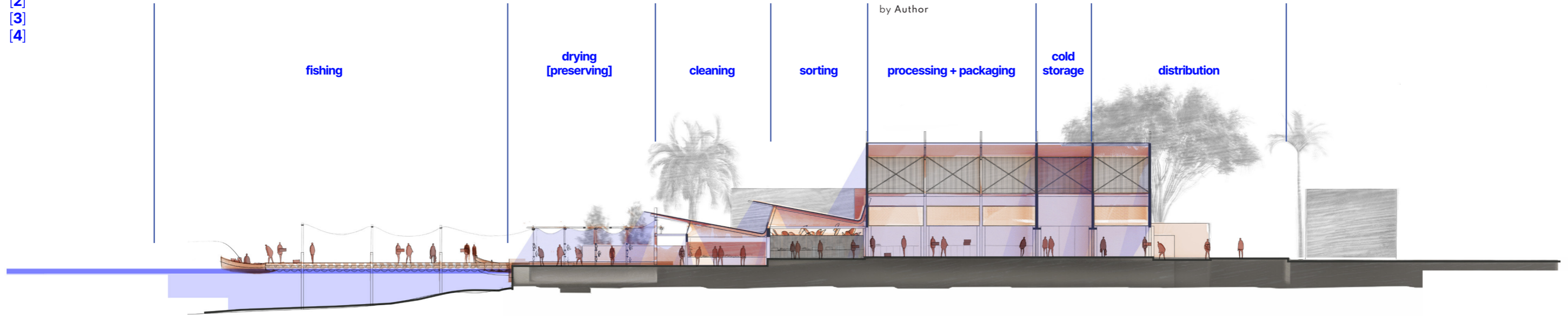
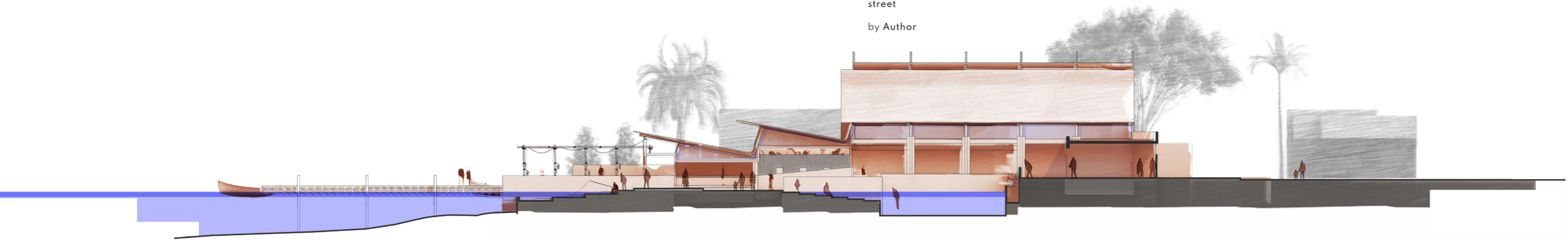


Figure 95

section C-C sea - recreational/casual fishing area - tidal pool - street

by Author



sections

Figure 96

section D-D
street - entrance - boat
studio - sea

by Author

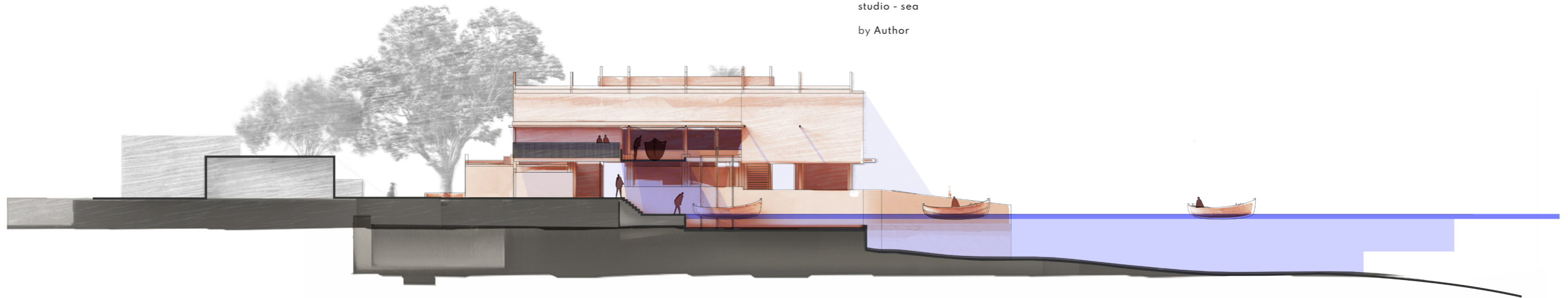


Figure 97

section E-E
sea - design studio - design
workshop - courtyard -
street

by Author



sections

Figure 98

section F-F
sea - flexible conference/
classrooms - market -
pedestrian path

by Author

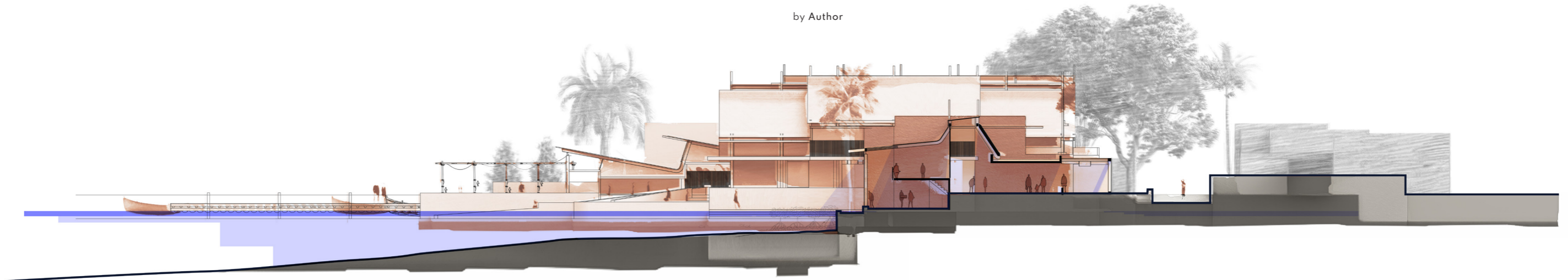
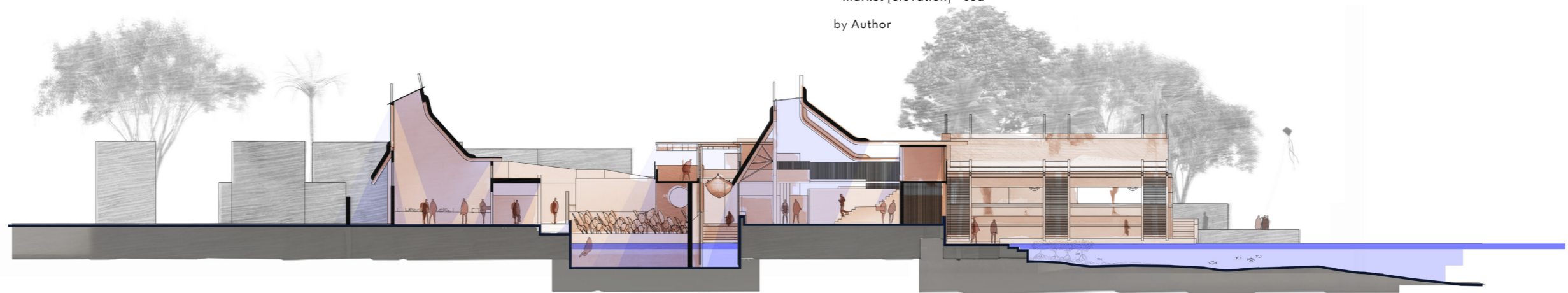


Figure 99

cross section A-A
processing room - tidal pool
- boat studio - design studio
- market [elevation] - sea

by Author



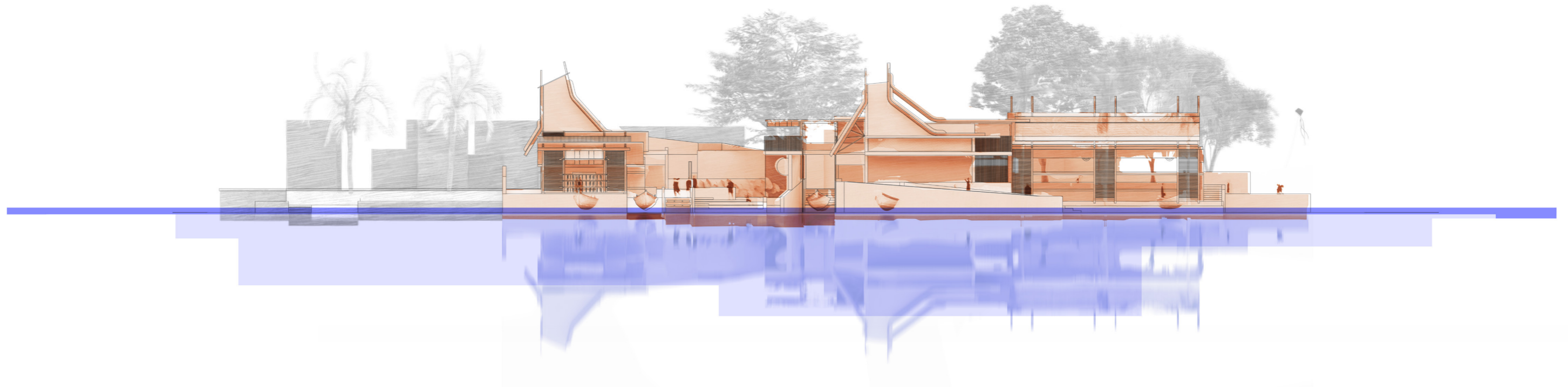
elevations

Figure 100

sea elevation

visualising the façade seen by fishers approaching the architecture from the ocean

by Author



elevations

Figure 101

side elevation

visualising the façade seen from the sea and the waterfront - manifesting as the threshold between land and sea

by Author



Figure 102

street elevation

visualising the façade seen from the pedestrian on land

by Author

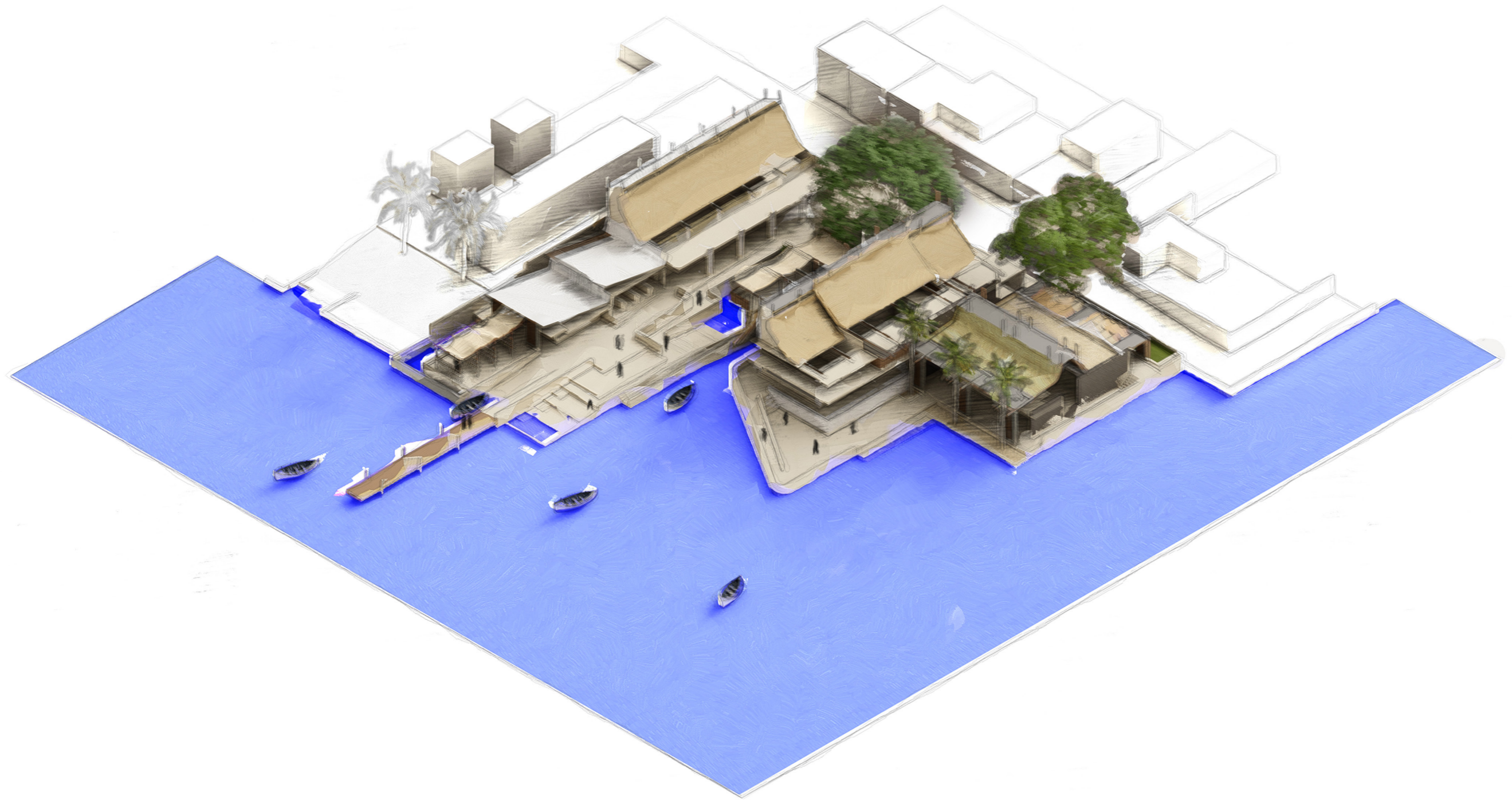


isometric visualisations

Figure 103

isometric view illustrating
how the groundscape and
roofscape work together as
a singularity

by Author

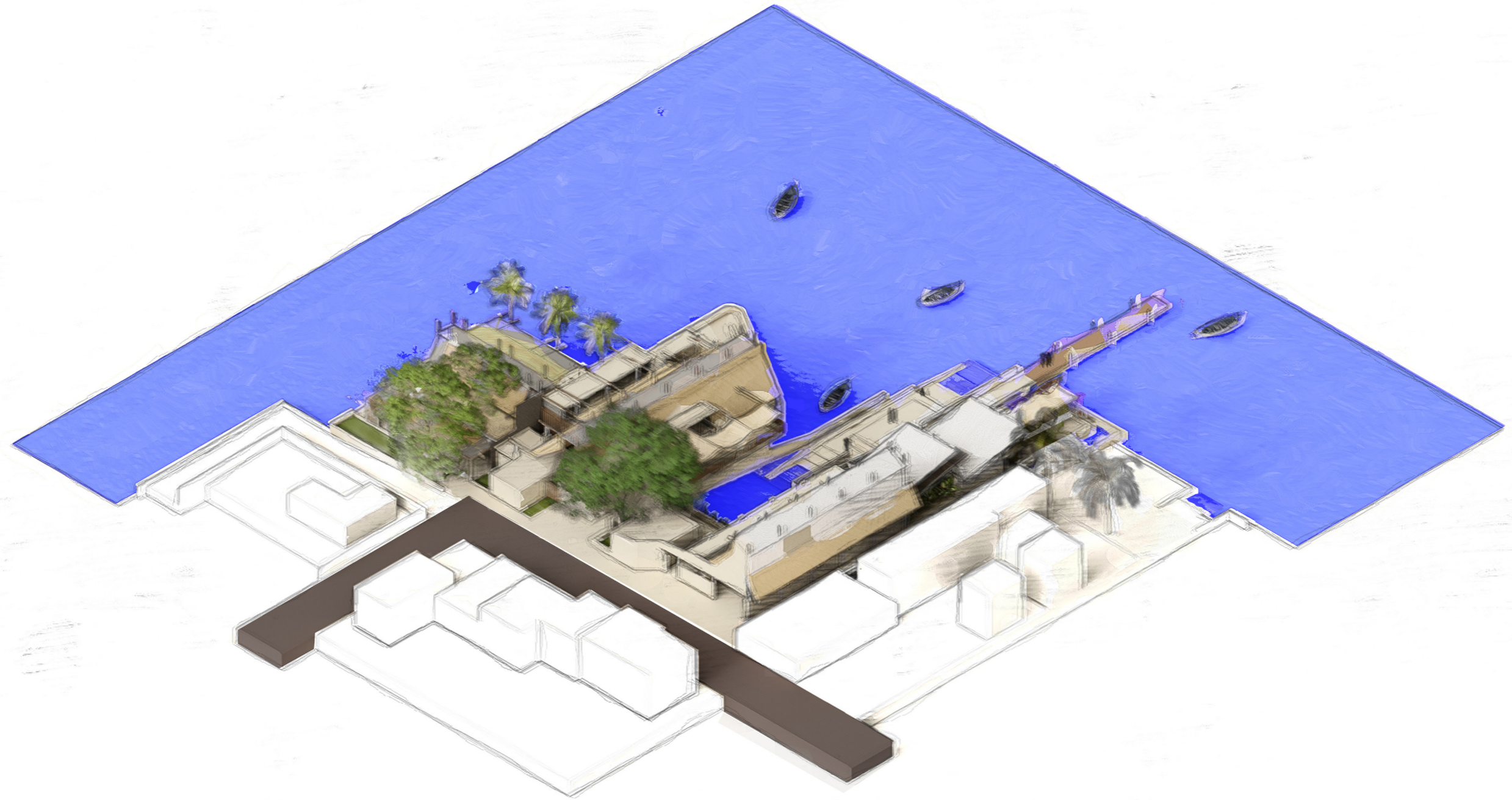


isometric visualisations

Figure 104

an isometric view of the project from the mirrored side

by Author



expressing techne

bamboo



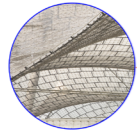
jackfruit



eucalyptus



net [mesh]



sail

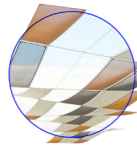
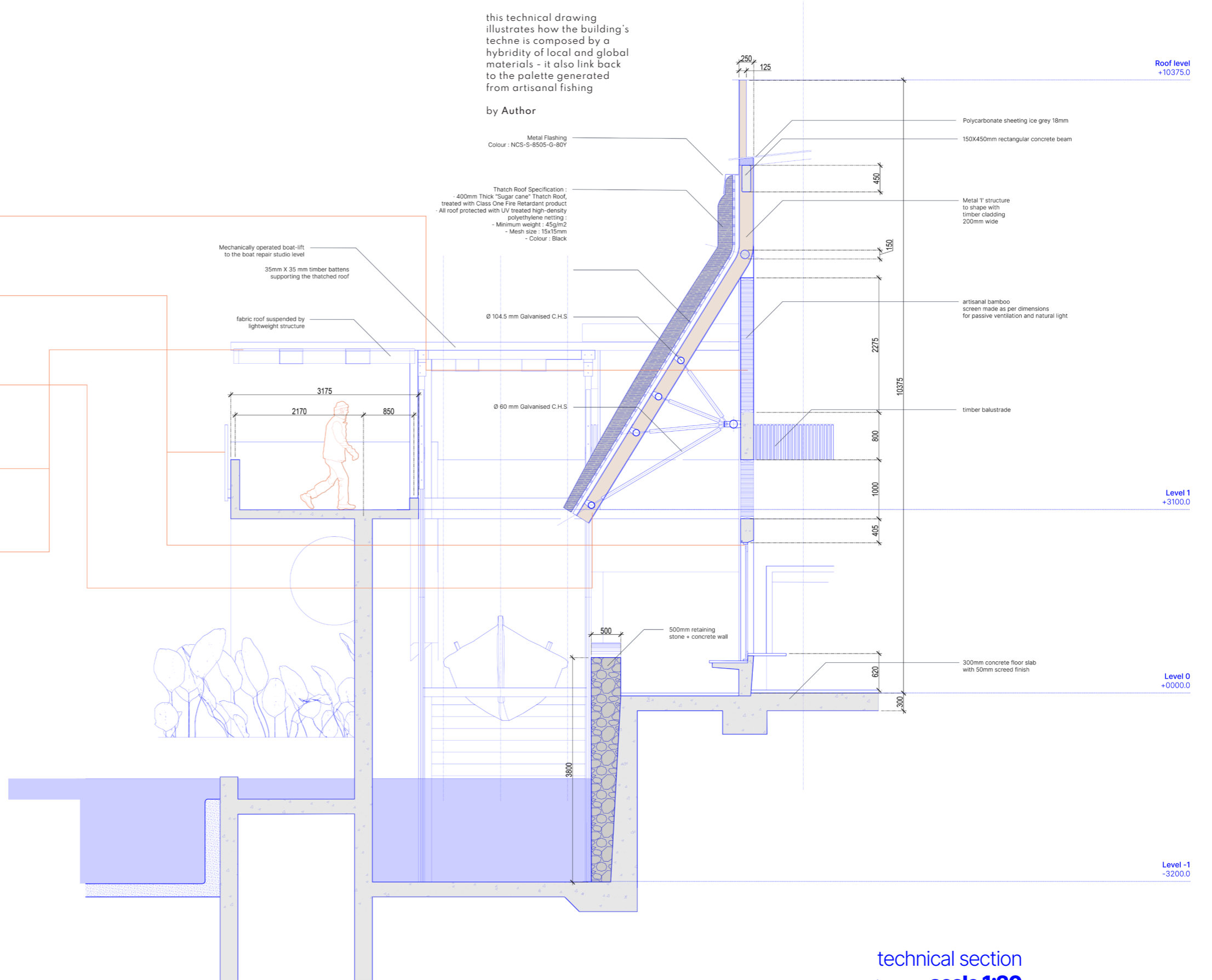


Figure 105

this technical drawing illustrates how the building's techne is composed by a hybridity of local and global materials - it also link back to the palette generated from artisanal fishing

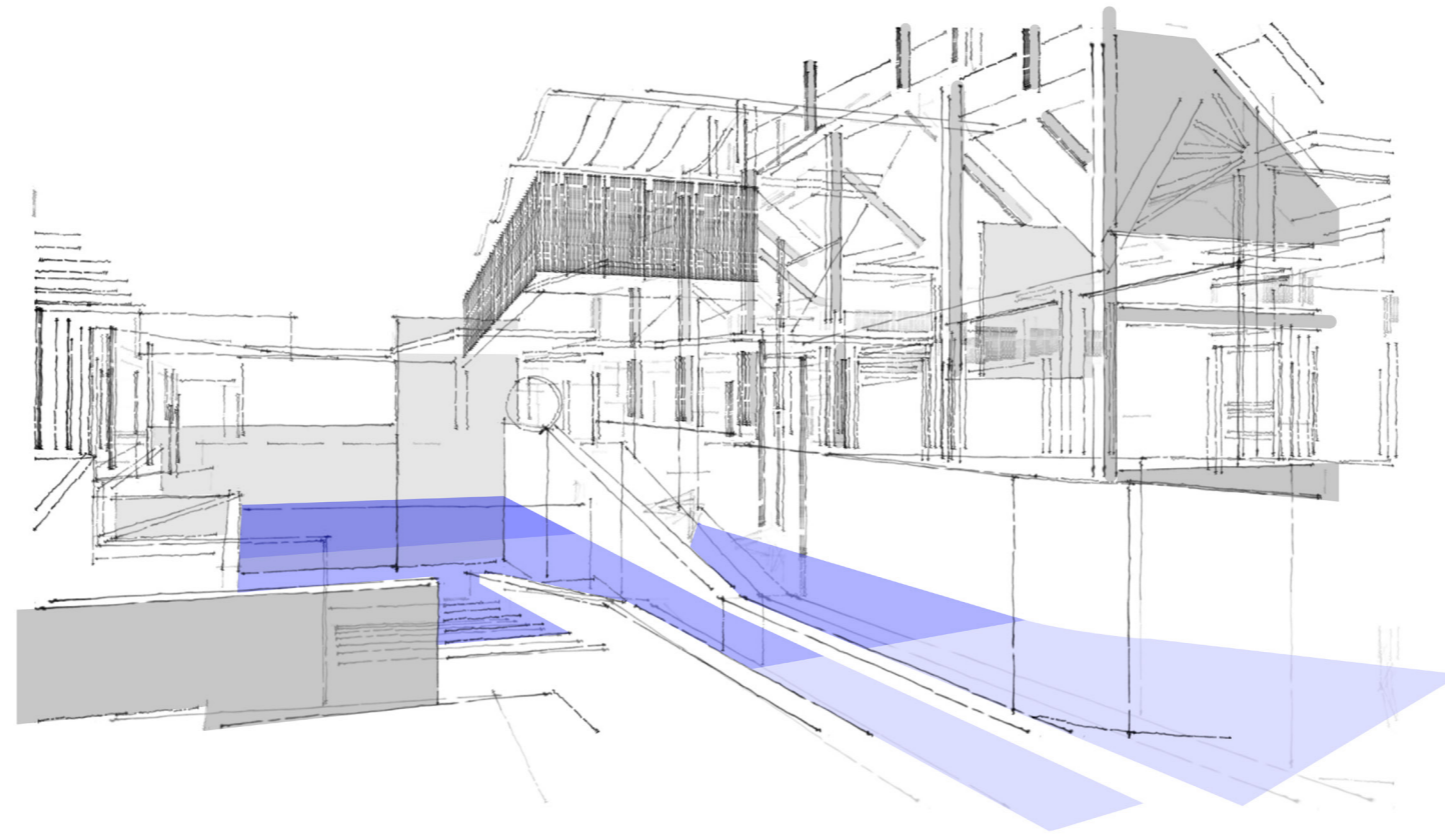
by Author



technical section
drawn at **scale 1:20**

perspectival visualisations

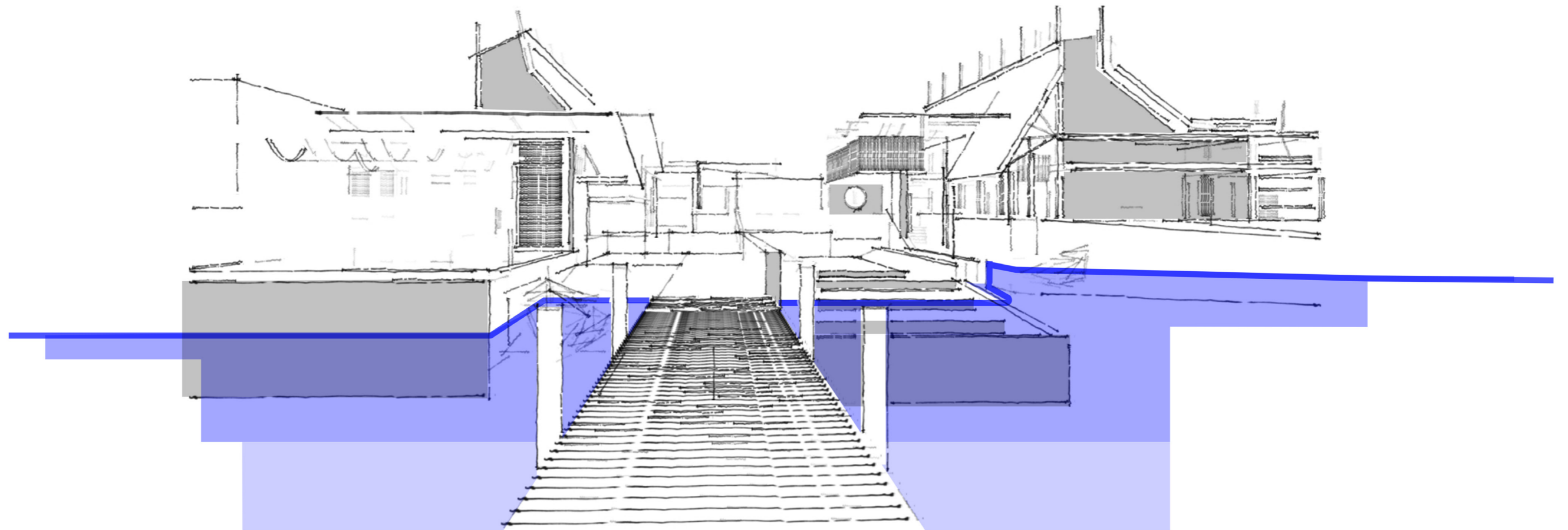
design lenses 1 2 3 4



Figures 106, 107
by Author

illustrating
water entering
the architecture through
the tidal pool and
the boat repair wharf

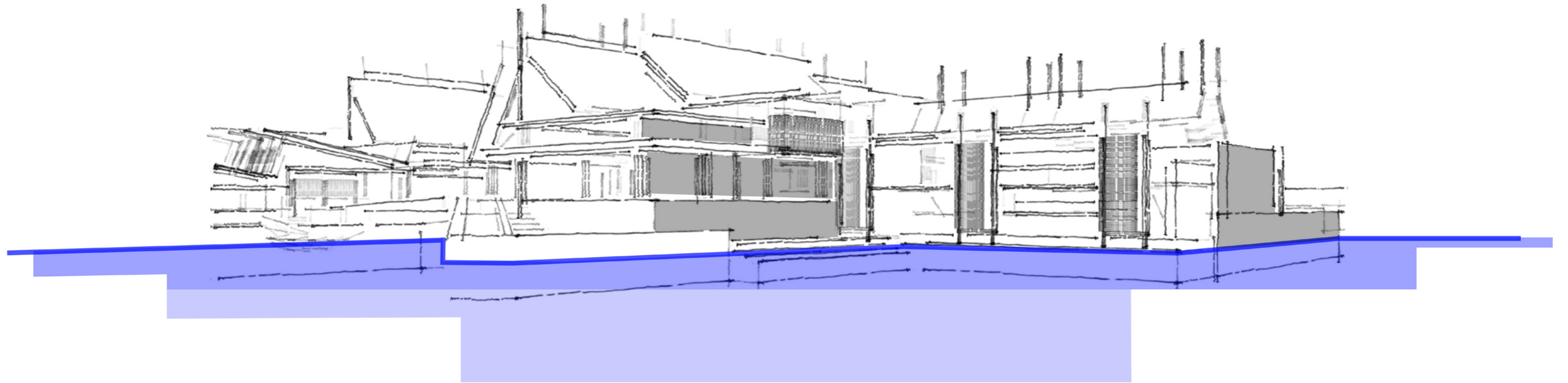
view from
the jetty to land



perspectival visualisations

Figure 109
by Author

view from
the oceanic territories



physical manifestation

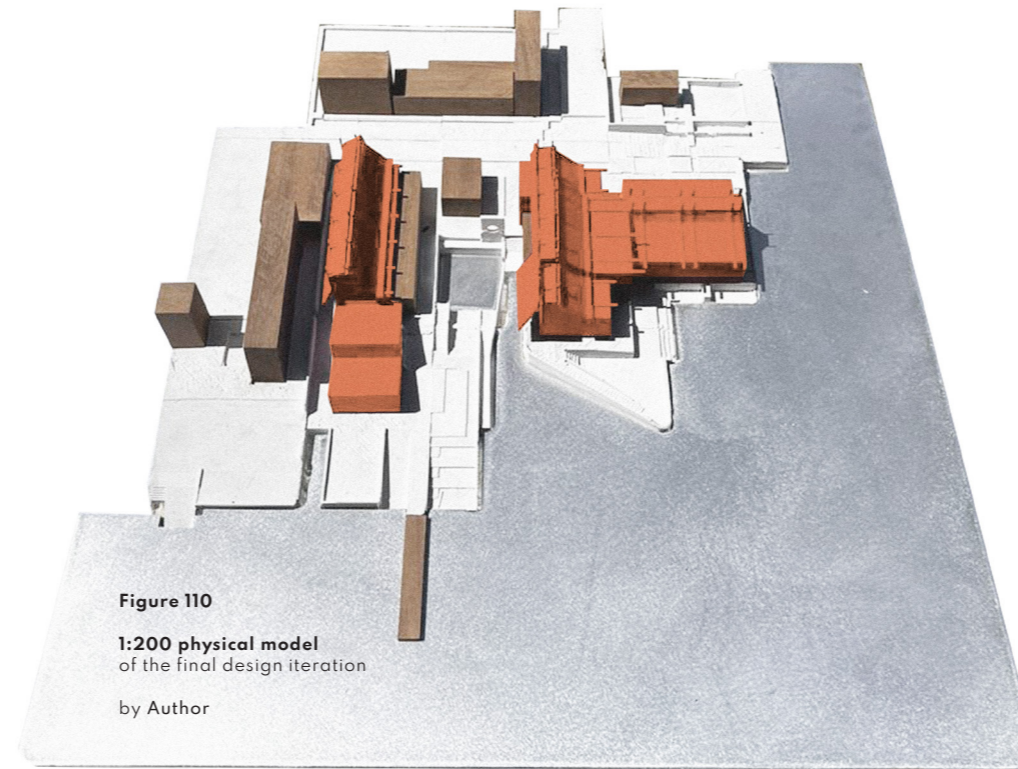


Figure 110
 1:200 physical model
 of the final design iteration
 by Author

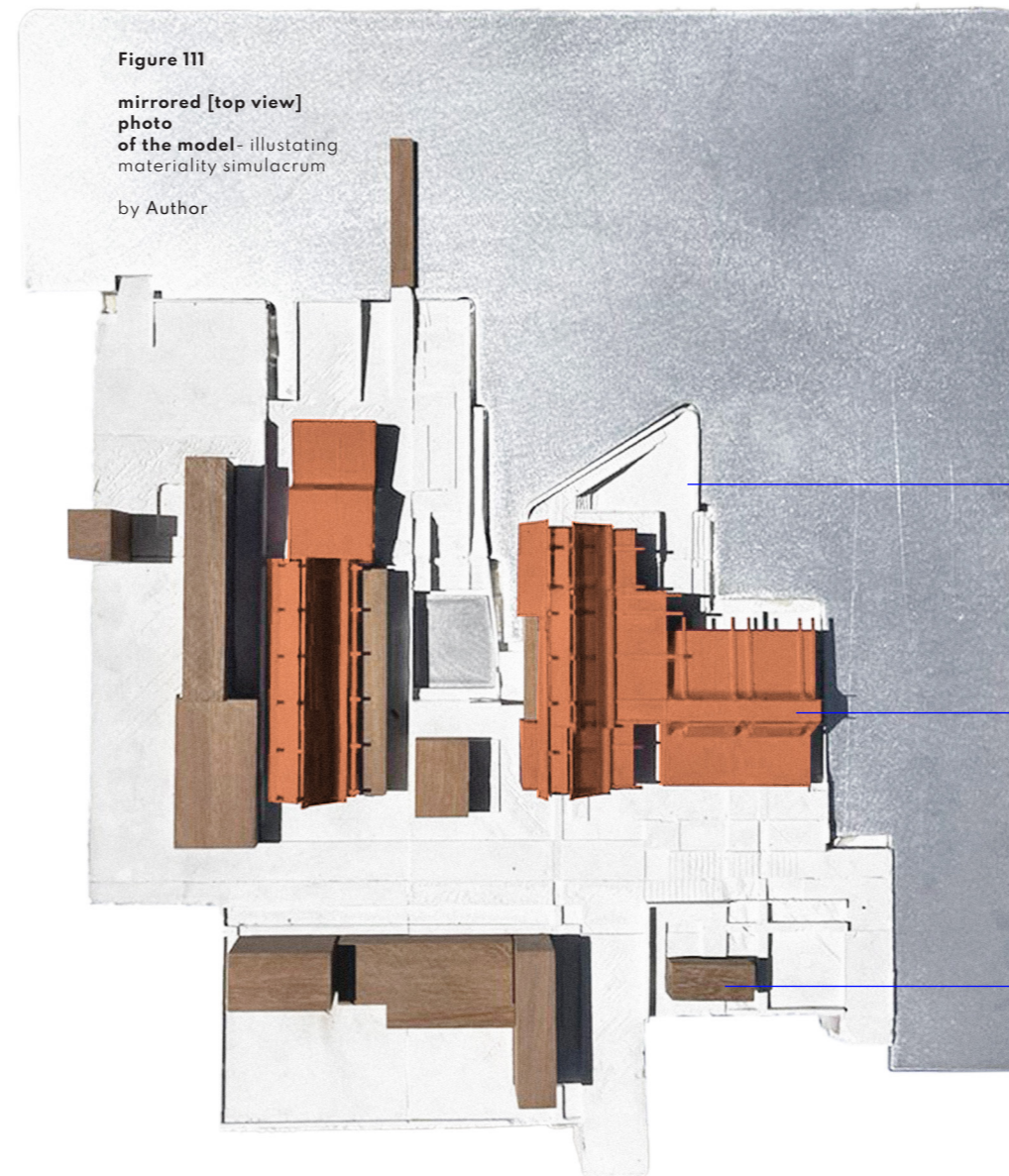


Figure 111
 mirrored [top view]
 photo
 of the model - illustrating
 materiality simulacrum
 by Author

6mm aluminium sheet
 reflecting the water and its flow.

[PUDLO] plaster of paris
 casted groundscape / 3D printed mold

3D printed masses [PLA]
 + balsa wood roof members
 building + roofscape

iroko timber blocks cut to dimension
 context building masses

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ethics clearance



2023/06/23

EBE/00228/2023

RE: Research Ethics Committee Project Approval Letter

Dear Rahul Raj Auckloo,

Your application for ethics review of your project titled

A Kreol Coastal Confluence: Hydrokinetic thresholds as a response to resurgence

has been reviewed and evaluated by the

Engineering & Built Environment Committee.

You may proceed with your research project titled:

A Kreol Coastal Confluence: Hydrokinetic thresholds as a response to resurgence

Please note that should:

- (i) any serious or adverse effects to participants occur and/or,
- (ii) aspect(s) of your current project change and/or
- (iii) any unforeseen events that might affect continued ethical acceptability of the project occur then you should immediately report this to the approving REC. You may be required to submit an amendment to this application, in order to determine whether the changed aspects increase the ethical risks of your project.

Based on the information supplied your application has been successful and is approved.

Please note the following additional conditions associated with this approval:

- (i) All good from an ethics standpoint. The reviewer commented: The research is very interesting, and the research methodology is qualitative and rich. This might be more time consuming than the applicant is anticipating. The applicant needs to consider timelines for the completion of the research project carefully.

Regards,

Engineering & Built Environment Committee.