

Chong Keng Hua

# SOCIAL ARCHITECTURE

Theory and Practice 2021



# Social Architecture

↳ Theory and Practice

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Social Architecture: Theory and Practice

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# Introduction

## about the course

**Social Architecture — Theory and Practice** aims to equip the students with theoretical/historical knowledge of ‘Social Architecture’ as well as practical skills for practicing it. Students are exposed to key concepts, methods and goals developed in social architecture, an umbrella term that includes community architecture and planning, community design, social design, democratic design, community development, etc. which share a common approach of environmental design that encourages social behaviors leading towards public interests and common good.

As the COVID-19 pandemic continued into its second year, most of the lessons were conducted online. While we were not able to have physical interactions, hands-on workshops, role-play sessions and field visits like in the previous years, the extensive use of various virtual platforms offered us new opportunities to experiment with participatory process and to engage external guests – academics and practitioners from around the world.

This year we were fortunate to tap on a relatively new global network, **Design for the Common Good (DCG)**, to invite external guests to join our class and share their experience with us. Launched in 2017, DCG is actually a network of networks that is currently composed of five independent networks: *Social Economic Environmental Design (SEED) Network*, *DesignBuildXchange Network*, *Live Projects Network*, *Pacific Rim Community Design Network*, and *Curry Stone Foundation*. While each network was established independently with slightly different focus in terms of geographical region, engagement platform or mission, DCG aims to connect and pool together international resources and expertise relating to the practice of design for the common good

As this network of networks is still in the process of forming/making/evolving, students were tasked to conduct case studies of exemplary design projects under each of the member network, and to identify how these projects help to strengthen the uniqueness of each network, while at the same time contribute to the common mission of DCG, by applying theories and methods learnt from the class. The studies are compiled in this report, which we hope will contribute to the on-going discussion, exploration, and experimentation on how students, academics, practitioners and local communities could collaborate across geographical boundaries and cultures.

CHONG Keng Hua, September 2021

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4.1 Gaw La Heh Primary  
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1.2 Wind and Rain Bridge

Fujian Province, China

HKU Faculty of  
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2.6 Center for Culture and  
Ecology Chamanga

San Jose de  
Chamanga, Ecuador  
Atarraya Taller de  
Arquitectura

4.2 Anandaloy

Rudrapur Village, Dina-  
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Architecture

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Chihuahua, Mexico

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and Design Chihuahua

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Villa Rica, Colombia

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Ash Sakula Architects

3.2 Owe'neh Bupingeh  
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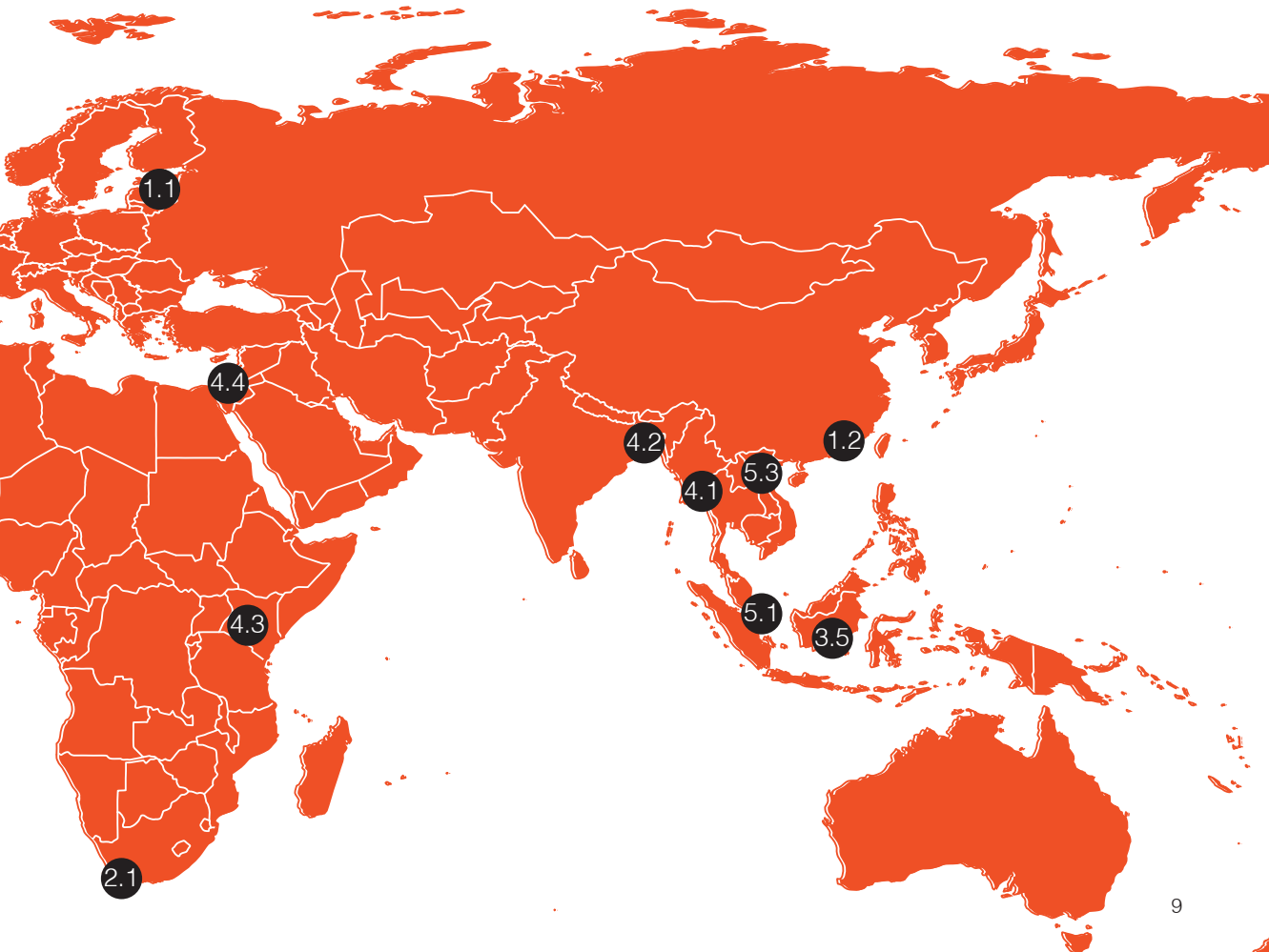
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# Live Projects Network

Also known as “Design Build Projects”, “Live Build Projects”, “Real Projects” and “Service Learning”, Live Projects Network is structured around education and community participation. Ensuring mutual benefit, projects under this network not only bring contributions to society but also allow for students to learn beyond the boundaries of their educational institution by taking part in real-life community projects. This grants them the chance to experience professional training, take part in hands-on construction, as well as work directly with external collaborators to hone their collaborative and social skills.

With the experience and relationships built from projects over the years, Live Projects Network has become an online resource connecting students, educators, and various partners and collaborators, creating and encouraging more dialogues within the community and beyond.



Co-Founders: Jane Anderson, Colin Priest

Key Members: Jonathan Shmulevitch, James Barrell, Theo Jones

Location: Online platform with global projects

Year Started: 2008

Website: <https://liveprojectsnetwork.org/>



Jane Anderson  
Co-founder



Colin Priest  
Co-founder

# Genesis of Network

Live projects network was first started as part of a programme (OB1 LIVE) by Jane Anderson and Colin Priest in 2008 with the aims of exposing their year one architecture students to local community clients and real-life projects. The two analyzed past live projects, looking for common factors and came up with their definition of a “live project”. They believe that a live project “comprises the negotiation of a brief, timescale, budget and product between an educational organization and an external collaborator for their mutual benefit. The project must be structured to ensure that students gain learning that is relevant to their educational development”. The network has slowly expanded and had projects and clients across six continents over the years. Till this today, there are 262 projects recorded on the online archive.






## Core values and Principles

Through LPN, the two founders defined “educational institution”. LPN is education-focused and adopts a flexible yet pedagogical methodology for all live projects. The projects are usually between an educational institution and an external collaborator where both parties can enjoy mutual benefits. As the network first started to provide opportunities for year one architecture students to real-life projects, it is continuously devoted to the educational development of the students, which is never compromised.

Live projects offer a hybrid between a studio and real-life project; this lies in the realm between theory and practice, together with mainstream and disciplinary cultures. It gives the students exposure to a wide variety of people involved in the architectural processes, including those outside an architect’s normal sphere, and take part in stages beyond design such as defining briefs, costing projects and the assembly process.

Depending on the project context and availability of resources, the project outcomes and final products vary, highlighting the diversity present in the design. The process of project submission is usually organic and fluid, and the relationship between educational institutions and external collaborators are on a case-by-case basis and are constantly evolving. Despite each project having different characteristics and constraints, LPN has a spectrum that can help identify and categorize

the projects based on their properties. There are no set rules and strict regulations of how each project should turn out, but the online archive of past projects has presented useful precedent studies and demonstrated different strategies employed to work with opportunities and constraints.

 Client	 Organization	 Budget	 Timescale	 Product
Initiated by institution Collaboration Commissioned	Curricular Extra-curricular Student-initiated Student only Student with tutor Foundation Undergraduate Postgraduate Group size	Self-funded Sponsorship Client funded	Days Months Years	Analytical Propositional Temporary Semi-permanent Permanent

Support, timing and critique are also three areas that emerge from its pedagogical methodologies and structures (Harriss & Widder, 2014). Firstly, support comes in various forms, most frequently provided by the tutors who manage the process at varying degrees to ensure positive outcomes for both the students and clients. For timing, despite having occasions where live projects do not fit easily into the curriculum structure and are not suitable for an undergraduate student level, the institution and tutors have the flexibility to structure the brief in a way that not only fits the curriculum but also brings positive outcomes of the projects. Critique and assessment towards the end of each project are also crucial for understanding the shortfalls and inadequacies so that future live projects can be better structured, and students’ creative practice can be better sustained. The institution thus plays a critical role as part of the LPN framework.

## Membership and Enrollment

As education is a vital component of the LPN, most live projects are organised by educational institutions and independent organisations seeking collaboration with the school. Thus, schools with disciplines in architecture, construction, design, engineering, history and sociology are usually the more involved members of LPN.

LPN strives to be as inclusive as possible in the various approaches utilised to tackle a particular community issue. Therefore, anyone can join, initiate or submit a live project as long as it meets the network aim - ensuring education and collaboration is prominent in the project. The database of resources and past projects available on the platform also serves as a reference for those who wish to initiate a project.

## Operation, Platform and Resources

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The network operates on an online basis. Anyone interested in submitting their project to the online archive may do so through a form found on the Live Projects Network website. The person submitting also has to tag it with searchable filters relating to client, organization, academic level, brief, group size, budget, timescale, and product for the project to be easily searchable on the main page. Live Projects Network are accommodating, such that they also invite discussions and collaborations if anyone has any input on how the network should be run, or how the definition should be adjusted if need be.

As a digital resource, Live Project Network presents a curated set of case studies that anyone can refer to. The curation can be accessed in two browsing methods on their 'Projects' page: The first would be to scroll down and view the project thumbnails arranged in a grid format, the second would be to filter the search according to the pre-set filters. For example, if I am a professor from an engineering school, looking to find similar project references, I can adjust the filter to match my requirements and find inspiration from prior projects in the curation with a similar amount of resources.

On their 'Projects Map' page, as part of an initial mapping under Design for the Common Good (DCG), Live Projects Network has collaborated with Design Build Exchange (DBX) and Social Economic Environmental Design Network (SEED) to showcase their projects on an interactive map that leads to the various project pages. This helps to widen one's perspectives on the type of projects that can be carried out within the same region and increases the number of project contacts that one can reach out to.

Besides reading up on the case studies, one may also visit the 'Links' page to reach out to the Live Project Programmes and Offices, conferences and associations to learn more about these respective groups and their involvement. Hence, promoting a more collaborative design process that is value-added through reaching out to the groups involved.



Photo showing students directly involved in the construction process for The Story Tower  
Photo credits: Thomes-Randall page



# Contributions to DCG Network

↳ Insights drawn from case studies and interview

## 0.1 ARCHIVE OF IDEAS

LPN is an online platform that connects students, educators, collaborators, practitioners, and researchers working on real-world initiatives. The goals are to promote the use of live projects in education, exchange best practices, foster discussion, and contribute to the development of a theoretical foundation for live project research. These goals align closely with the ones of Design for the Common Good, which seeks to bring together the same group of students, educators, collaborators, practitioners, and researchers with similar interests to share best practices, as well as encourage and sustain discussion. Furthermore, by providing an archival index of real-world initiatives, designers who are currently/aspiring to join the network have a reference for precedence should they wish to partake in real-world initiatives. It also serves as an excellent representation of the real-life, physical projects that contribute to and are aligned with the values of the DCG network.

## 0.2 VALUE OF COLLABORATION

Everyone has something to bring to the table. Although there is a heavy involvement of students in many of the live projects who may not have had prior experience in real-life projects, their inexperience is an experience in a certain way. While gaining exposure to the professional world, the students are also able to give fresh ideas to tackle common problems. By involving the community in live projects, the questions raised by them also allows designers to understand problems on a macro scale and rethink the common way of doing things. Through the dialogues, conversations and collaboration with different parties, LPN thus allows for a constant state of learning.

The projects map as well as the online project archival is a major contribution which can extend its reaches across the DCG network. The role of designers can potentially be further investigated through analysing the data across projects from the multiple categories, before having the results shared with the DCG network. The collaboration network then could be further expanded to become a

matching platform to connect students to communities and/or practitioners and vice versa.

## 0.3 ROLE OF DESIGNERS

Live projects have momentum, force and energy where everybody is contributing to something. As designers, there is a responsibility to collaborate with other professions and communities to understand the project from various perspectives. The multiple layers of dynamic movement and conversation lead to the understanding of power, which then drives the project to take on the problems on a deeper, less superficial level. The extensive coverage of projects in the LPN can help many to understand and investigate the underlying factors behind certain projects and the community it serves. This is further aided by the link to the live webpage/Facebook page of the project that provides live updates and on-the-ground information about the projects.

## REFERENCES

- Live Projects Network. (n.d.). *Live Projects Network Information*. <https://liveprojectsnetwork.org/>
- Harriss, H., & Widder, L. (2014). *Architecture Live Projects: Pedagogy into Practice* (1st ed.) [E-book]. Routledge
- Randall, T. (n.d.). *Story Tower*. Thomas Randall-Page. <http://www.thomasrandallpage.com/Story-Tower>
- Howarth, D. (2013, August 31). *Story Tower library by RTU International Architecture Summer School*. Dezeen. <https://www.dezeen.com/2013/08/31/story-tower-library-by-rtu-international-architecture-summer-school/>
- ArchDaily. (2016, July 7). *Wind and Rain Bridge / Donn Holohan - The University of Hong Kong*. ArchDaily. <https://www.archdaily.com/790993/wind-and-rain-bridge-donn-holohan-the-university-of-hong-kong>
- Mairs, J. (2016, July 11). *Huge timber steps form bridge built by students in rural China*. Dezeen. <https://www.dezeen.com/2016/07/11/wind-rain-timber-stepped-bridge-students-university-hong-kong-peltian-southern-china/>
- ISAD. (n.d.). *Instituto Superior de Arquitectura y Diseño Information*. <https://www.isad.edu.mx/>
- PKMN (PAC-MAN). (2015, August 27). *Taller Del Desierto / Urban Spa*. Divisare. <https://divisare.com/projects/296796-pkmm-pac-man-taller-del-desierto-urban-spa>
- Santos, S. (2015, August 21). *ISAD Students Revitalize Broken Water Source in Mexico with Urban SPA*. ArchDaily. <https://www.archdaily.com/772216/isad-students-revitalize-broken-water-source-with-urban-spa>
- Tucker, E. (2015, August 19). *ISAD Chihuahua students use scaffolding to build urban spa*. Dezeen. <https://www.dezeen.com/2015/08/19/institute-architecture-design-chihuahua-students-scaffolding-build-temporary-urban-spa-urrueta-park-disused-fountain-mexico/>
- Ash Sakula Architects. (n.d.). *Canning Town Caravansera*. Ash Sakula Architects. <https://www.ashsak.com/projects/canning-town-caravansera/>
- Canning Town Caravansera. (n.d.). *Canning Town Caravansera*. <https://caravansera.org.uk>
- Wood, H. (2012, September 20). *A Tour of Ash Sakula's Canning Town Caravansera*. The Architects' Journal. <https://www.architectsjournal.co.uk/archive/a-tour-of-ash-sakulas-canning-town-caravansera>
- Mallett, L. (n.d.). *Meanwhile London competition: Opportunity Docks*. Property Week. <https://www.propertyweek.com/features/meanwhile-london-competition-opportunity-docks/5008941.article>
- Back, A., & Sears, H. (2014). *Voices of the Caravansera*. Issuu. [https://issuu.com/ctcaravansera/docs/voices\\_of\\_the\\_caravansera](https://issuu.com/ctcaravansera/docs/voices_of_the_caravansera)

# 1.1

## Riga Technical University International Architecture Summer School

### Building Works Unit



#### About the summer school

Every year, Riga Technical University holds a design and build workshop as part of its international summer school program. Students are tasked to look into community issues and how architecture can bring new insights on how these issues can be resolved.

From 2013 to 2016, the workshop was held under the 'Building Works Unit' where timber has been a key material used and looked into due to its environmental and economical benefits. From 2017, this unit had then developed to become "Riga- The Pearl of Latvian Wooden Architecture" Summer School, where Latvian craftsmen knowledge of timber as a construction material ties into the history of Riga's architecture. The focus of the summer school has thus then shifted to the use and properties of wood.

#### case study: The story Tower

Project Name: The story Tower

Location: Cesis, Latvia

Date Designed: 2013

Date Completed: 2013

Size: ~ 6 sqm

Client: Cesis City Council and Cesis Library

Student Designers: Arturs Tols, Christof Nichterlein, Dumitru Eremciuc, Natascha Häutle, Ruta Austrina, Signe Pelne, Tanja Diesterhof, Ulkar Orujova, Zoe Katsamani

Tutors: Theodore Molloy, Niklavs Paegle, Thomas Randall-Page

#### Project Overview

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Designed and built by students from Riga Technical University International Architecture Summer School as part of their Building Works Unit, the Story Tower is a temporary library and book exchange shelter that sat in the town square of Cesis while the main library was undergoing refurbishment. The structure was built entirely using locally sourced soft timber and recycled Tetra-Pak milk cartons.

This project was designed, planned and completed within two weeks.



Photo credits: Thomas Randall-Page

## Social and cultural context

The Story Tower is strategically situated in the heart of a small city, in a busy square between a bus station, the Cesis train station, as well as the Cesis civic library. Being the threshold to the rest of the city, this square is where local shifts happening in the city are most visible and well reflects the life of the people of Cesis. With the civic library undergoing refurbishment, the Story Tower becomes the hub that not only puts a pause to one's busy lives but also brings people together through stories.

construction provides the team first-hand experience in understanding the implications of their actions in design.

Guided by their tutors, the student design team sought to build a shelter where people could borrow and exchange books, and more importantly use the locally established notion of a free book exchange to promote conversation and dialogue between the diverse groups of people within the town.

## Genesis of Project

The project was part of a 2-week workshop that guides students through an accelerated production process within which included local research, brief development, conceptualising, designing, detailing, fabrication, as well as construction. Being part of the entire process of the project from planning to

## stakeholders and Design Process

The form of the Story Tower was modelled after a wooden lamp, providing light and a place where people were able to read. It consists of 3 main elements: a raised wooden platform which acts as a floor and entrance, the mainframe which also acts as a bookshelf, and a roof that provides shelter and light.

Soft timber used to construct the structure and platform

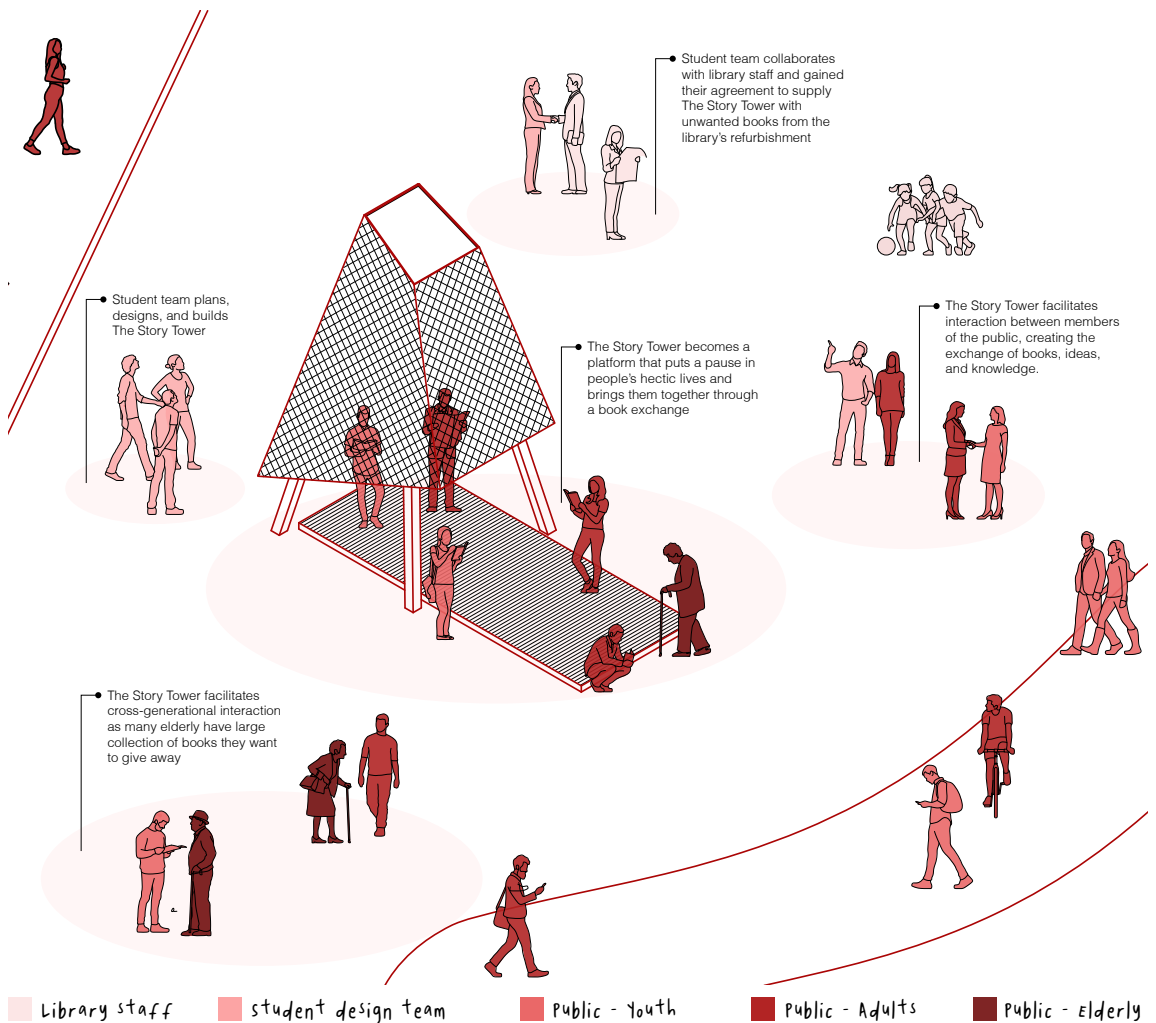


Diagram by Author

floor was locally sourced, while the roof claddings were made from Tetra-Pak shingles - a material commonly used to make milk cartons. These were obtained from a roll of Tetra-Pak which were damaged and thus unsuitable to make cartons. Given the waterproof nature of Tetra Pak as well as the ease for it to be easily cut and folded, the design team saw the potential for it to be used as material for the roof.

The structure was prefabricated before final installation on site. The platform extends out from underneath the shelter to welcome people in, where shelves can be seen on the walls integrated within the timber frames and kept at an easily accessible height for visitors.

A total of 2250 shingles were mounted on the frame to form the roof, where a skylight opens at the tip allowing light to filter through. The reflective materiality of the

Tetra-Pak cartons results in an illuminated tower inside-out. Particularly in the winter when daylight is short, the Story Tower acts as a lamp to serve as an external reading room.



## Impact on Community

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Aside from supporting and contributing to the local community and environment by using locally sourced and recycled materials respectively, this project has also resulted in the activation of many relationships and interactions within the community.

During the planning process alone, conversations were held with the local library and the student design team got their agreement to stock the book exchange with any unwanted books from their overhaul and refurbishment process. This creates a new relationship between students and the public and kick-starts the process of sharing and giving back to the community.

The Story Tower puts a pause in this otherwise fast-paced and digital lifestyle, physically bringing people together and creating opportunities for interactions. Through his platform, aside from the exchange of books, there is also an exchange of hobbies, interests, ideas, and knowledge. It also especially facilitates cross-generational interactions as many of the older generations have a large collection of books they no longer want.

This thus meets the design team's intention of using the Story Tower to celebrate the idea of sharing and exchange (Tols, Nichterlein, Eremciuc, Hautle, Austrina, Pelne, Diesterhof, Orujova, Katasamani, 2013) which brings about possibilities for new friendship and relationships - something incredibly rare with the age of technology.

## Contributions to Social Architecture

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The Story Tower sparks insights towards how we can engage and build relationships between different members of the community through architecture. Although temporary, the Story Tower also serves as a place-maker by reestablishing the traditional activity of reading which ties in with the city of Cesis as an old town rich in cultural and historical heritage. By placing a more traditional activity in the heart of the city where the more current and local shifts take place, it encourages participation between different generations, especially the elderly, who might otherwise be more uninvolved in these activities.

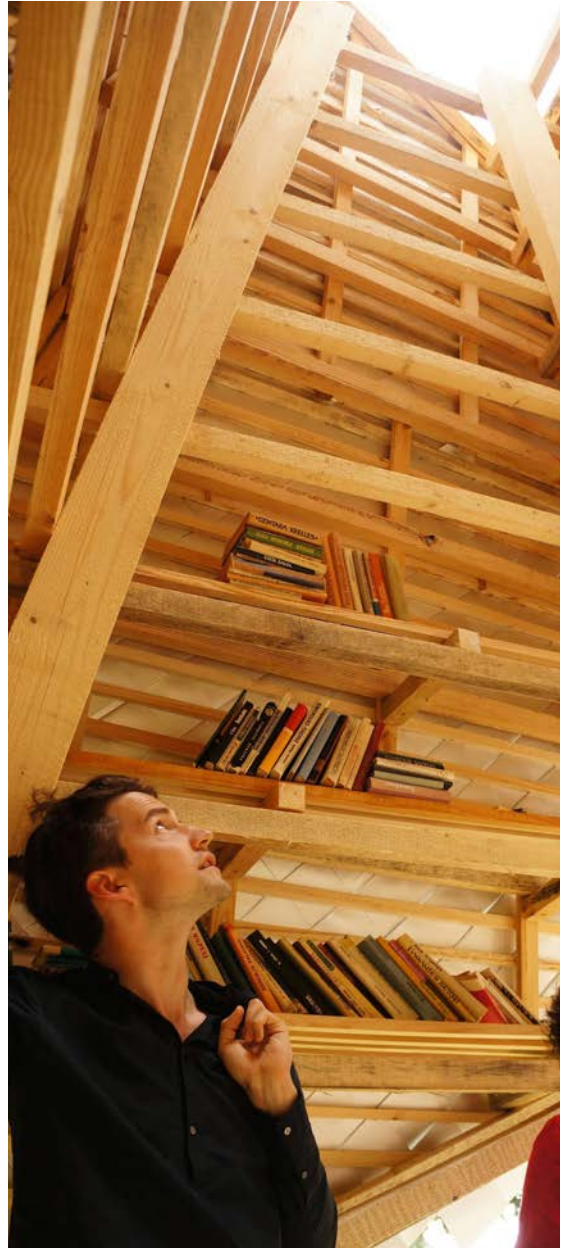


Photo credits: Thomas Randall-Page

# 1.2

## Gallant Ho Experiential Learning Center



### About Gallant Ho Experiential Learning Center:

This project is part of the Introduction to Architecture Design Course at Hong Kong University, led by tutor Donn Holohan and supported by Gallant Ho Experiential Learning Centre. The Gallant Ho Experiential Learning Centre (GHELC) was founded in March 2012 to collaborate with a wide network of local and overseas partners including Live Projects Network for the benefit of students and community members. The GHELC supports at least 1,000 students from all 10 Faculties to complete their experiential learning projects annually. The GHELC aims to facilitate and promote experience-oriented learning at HKU and work with community partners both in and outside Hong Kong to identify projects for HKU students of different disciplines.

### case study: wind and rain bridge

Project Name: Wind and Rain Bridge

Location: Peitian Village, Fujian Province, China

Date Designed: 2016

Date Completed: 2016

Size: 20m<sup>2</sup>

Client: The residents of Peitian Village

Donor: University of Hong Kong Faculty of Architecture and the Gallant Ho Experiential Learning Centre

Aim of the studio:

The project gives students the opportunity to investigate timber design and construction in a real-world scenario. It also seeks to offer an alternative mode of community redevelopment that references local crafts and traditions and utilizes sustainable materials and methods, to create both social and physical infrastructure.

### Project Overview

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Wind and rain bridge, or 风雨桥 in Mandarin, is one of the unique bridge typologies in China. It is often seen in Southern China, uniquely to Tong and Miao minorities. The bridge is usually constructed using stones as the base foundation and interlocking wooden structure. It is sheltered with pavilions to protect people away from the wind and the rain. That is how the name came about. Despite being typically regarded as a utilitarian piece of infrastructure in modern society, the bridges are the principal monuments in Southern China. This project is part of the post-flood relief in the region. The design draws inspiration from the traditional covered bridge typology, in hopes of engaging local craftsmen aided by technology for structural analysis to revive this traditional yet unique bridge type. The project utilizes a mix of both traditional craftsmanship and modern technology.

"Designed solely in wood joinery inspired by traditional Chinese techniques, the bridge is a reinterpretation of the traditional covered bridge, which functions as a public space and a pedestrian connector," said the team.



Photo credits: HKU

## Social and cultural context

The bridge was built on the outskirts of Peitian Village, Fujian Province, China. The village is one of the many remote rural villages across the mountainous regions of southern China. Many infrastructure linkages were destroyed following severe flooding in early 2014, leaving rural settlements more isolated from each other. Due to the inaccessibility of the site and the tradition of passing on craftsmanship skills, many locals are equipped with timber crafts.

rural areas of Peitian Village. The bridge is an interlocking wooden structure. Under the guidance of a local carpenter, 70 students from the University of Hong Kong assembled the bridge from 265 wooden components. The bridge, situated in the heart of the village's fertile farmland, in between two banks of a river, hopes to create a communal space where locals can socialize. The students also get a certain level of exposure to traditional timber craftsmanship besides typical usage of computer-aided design tools that are common in most design schools.

## Genesis of Project

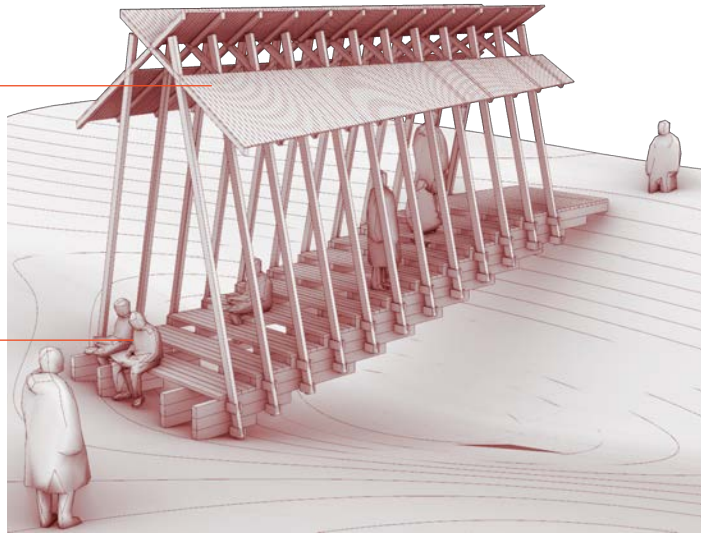
The Wind and Rain Bridge was part of the Introduction to Architectural Design Course conducted by the Faculty of Architecture of HKU and was funded by the Gallant Ho Learning Experiential Centre. It is part of the post-flood reconstruction efforts in the area in hopes to revitalize the infrastructure networks of the isolated settlements in the

## stakeholders and Design Process

The design studio consisted of 70 architecture students led by Tutor Donn Holohan and a few other facilitators from the University of Hong Kong, under the guidance of local carpenters who were involved at the very beginning of the design process.

Double roofs to shelter people away from rain and direct sun exposure

Steps connecting two riverbanks also act as seats to provide spaces to locals to rest



Site credits: HKU



Diagram by Author

The purpose of the studio was for the students to recognize the significance of traditional modes of working through studies of methodology, material intelligence and inherent sustainability. As technology continued to advance, cultural practices could still evolve to meet the demand of modern life while maintaining a link to the past and the wider ecology. The workmanship and the wisdom should not be forgotten.

As the bridge had to be constructed using solely one material which was locally sourced timber, students had to overcome the sectional and structural limitations of wood as well as to take inspiration from the vernacular architecture. The studio has integrated the use of modern digital design tools with traditional construction techniques.

Building Information Modelling (BIM) and Computer-aided Design (CAD) tools allowed for planning and testing of complex assemblies before any handwork took place. Computerized Numerical Control (CNC) technologies were used to create jigs and tools – enabling rapid construction with unskilled labour and basic hand tools.

After the design was finalized with the aid of the aforementioned digital tools, the entire studio travelled to Peitian Village and assembled the bridge under the supervision of traditional carpenters. Once the bridge is assembled, the expansion of the timber elements in reaction to its environment further tightens each of the dovetailed joints which make up its superstructure. There is a slight shift in levels and the narrowing of the path as



the bridge climbs leads residents towards the mountain paths in a measured and poetic way.

## Impact on Community

Firstly, the sole material – timber, was locally and sustainably sourced and fabricated in-situ without any need for the transport of energy-intensive elements to the site. No carbon footprint was created. The bridge was constructed using a complete sustainable methodology.

Secondly, the local community was empowered as the project activated local trades and engaged local carpenters, which were slowly being eroded as a prefabricated and centralised construction system.

Thirdly, as the bridge is at the heart of the farmland linking two riverbanks, it provides a sheltered social gathering space and rest stop for locals who mainly engage in agricultural work.

This project seeks to offer an alternative mode of community redevelopment that references local crafts and traditions and utilizes sustainable materials and methods, to create both social and physical infrastructure.

## Contributions to Social Architecture

On one hand, it is beneficial for the design students, who will soon become architects and urban planners, to broaden their horizons and learn about unique local cultures. In this case, traditional timber craftsmanship as well as upgrading communication skills to learn and understand the needs of the people, ultimately coming up with people-centric designs at different scales.

There is also intensive citizen participation in this project; the local carpenters with valuable assets involving their skills and knowledge were engaged in the very beginning of the design process. Constant conversations between the local carpenters and the design institution



Photo credits: HKU

gave residents a voice in the final design. However, it is hard to evaluate the significance the bridge brings in the long term as there seems to be no follow-up after the studio ends. As social architecture requires constant maintenance and possible adaptation as time changes, it is hard to know the condition of the bridge after a few years and how well it is serving the local community currently.

# 1.3

## ISAD

### About Instituto Superior de Arquitectura de Chihuahua:

ISAD is a Chihuahua, Mexico-based architectural school. It has established itself as a mandatory reference point for Architecture and Design in northern Mexico over the past 28 years.

ISAD's pedagogy cultivates a learning culture in which form and matter, beauty and harmony, inspiration and invention have no bounds or fears. As a result, they create an educational environment that encourages their students to push the frontiers of what is possible and explore the terrain of utopias in architecture and design.

They produce inventive professionals that are creative, ethical, decisive, able to take advantage of technology advancements and give unique solutions in a world that is continuously reinventing itself.

### case study: Urban Spa

Project Name: Urban Spa

Location: Parque Urueta, Chihuahua

Date Designed: 2015

Date Completed: 2015

Size: ~530 sqm

Client: Parque Urueta

Donor: Self-Funded

Stakeholders: ISAD, PKMN Architectures, Memela, Juan Castillo, Miguel Heredia, Miguel Garcia, Impulsados Capacidades, A+bien, City of Chihuahua

Participants: Local Residents, Students of ISAD

### Project Overview

Urban Spa is a participatory project located in Parque Urueta, a park located in the city centre of Chihuahua. It was built as a temporary amenity based on the recreational use of water, to provoke consideration as an alternative for the reactivation of unused water sources in the city of Chihuahua.

Urban Spa is formed of a circle of nine towers constructed from metal scaffolding bars with a wooden canopy each. A series of surfaces built out of wood surrounds the fountain pool made from a decrepit water source, transforming it into a bathing deck. This bathing deck is replete with resting areas, steps, sunbeds, small garden areas and a ramp to ensure greater accessibility for all visitors. Scaffolding units are used as the structural base for a small shelter made of wood and textile mesh, and these scaffoldings also hold a series of hammocks, creating small viewpoints and resting platforms.

The water source vessel is then utilized as an improvised pool, transforming the entire area by creating a micro-climate from the mix of newly formed shaded areas and flowing water from the freshly reactivated source.



Photo credits: PKMN Architectures

## Social and cultural context

Even though the project site takes up approximately 530 sqm, the full area of the Park is 70,000 sqm. It is an integral part of the Obrera neighbourhood in Chihuahua, Mexico. It functions as a public park with sports facilities for the surrounding community, so the site receives plenty of public circulation and is home to many community activities, like Zumba and Yoga classes, as well as local food vendors.

## Genesis of Project

Urban Spa is the result of an annual summer workshop organised by ISAD [Instituto Superior de Arquitectura de Chihuahua], known as Taller del Desierto. In 2015, PKMN Architecture was tasked to lead a new edition of the workshop together with Memela, local architects Juan Castillo and Miguel Heredia and designer Miguel García. That year's workshop aimed to build a small public infrastructure at Parque Urueta, located in the city centre of Chihuahua.

## Stakeholders and Design Process

Apart from the design team consisting of PKMN architectures, Memela, local architects Juan Castillo and Miguel Heredia and designer Miguel García, the university also engaged with active agents of the city: namely Impulsados Capacidades, a civil association that has undertaken social work for several years at the workers' estate in which the park is located, and materials sponsor A+bien.

In an effort to create "a collective imaginary for the future," the summer workshop began with initial ideas, like shaded areas for parents to drop off children for school, steps to link resting and sports areas, and bench maintenance actions. However, after an initial round of research and design proposals, the students discovered that many locals wanted to fix the public water fountain at the centre of the park, which had been out of commission for years. Thus, the workshop's focus shifted towards the Urban SPA concept, focusing mainly on the reactivation of the public water fountain to create a community space.

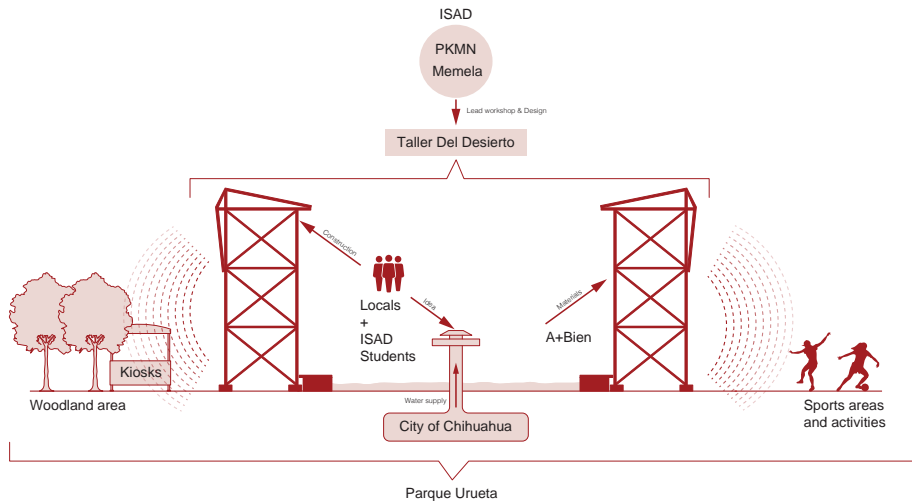


Diagram by Author, Photo credits: PKMN Architectures

After a week of designing, the students spent another week collaborating with the residents and volunteers to construct the project out of “40 scaffolding units, several dozens of pallets, some remnants of shading mesh, and a few gallons of paint.” The existing pumped was then fixed and filled with water with support from the city, allowing the project to come to life.

## Impact on Community

Urban SPA takes advantage of the water source's condition, making use of the big shadow cast by an existing huge tree to create a shaded, cooling area for the public to gather and play.

It also sits between the woodland area and the sports zone of the park, where visitors would frequently circulate, bringing about vibrancy to an otherwise liminal space.

On the other side, it boosts the energy of existing activities that usually occur around it, such as Zumba and yoga classes in the afternoon. By drawing more public attention and encouraging the use of the site, Urban Spa also



naturally attracts and empowers small businesses such as the ice cream food kiosks and the elotes and paletas stalls.

With the installation of Urban SPA, the two separate sides of the park have once again been reconnected, and a previously neglected infrastructure has once again become the centre of attention of the local community, spurring local engagement and bonding by including residents in the placemaking process to create livelier community spaces for themselves.

### contributions to social architecture —

Although Urban Spa is a unique proposal born out of specific conditions of the site, it has stirred the city to reconsider it as a permanent alternative for the reactivation of many unused water sources in the city of Chihuahua, and perhaps also in many other cities too. This goes to show that although social architecture is usually built on a bottom-up structure, its impact and success can grab the attention of governing bodies and spur them to rethink the way we design and plan our neighbourhoods. If something as small as a decrepit water source can be transformed into a popular public space through participatory processes and collaborative design, what more can we do with other unused infrastructure and plots of land?



Photos credits: PKMN Architectures



# 1.4

## Ash Sakula Architects



### About Ash Sakula Architects:

Ash Sakula Architects (ASA) is a design studio based in central London. Since its inception in 1994, it has been heavily involved in master planning, urban design, and architecture projects, with a unique interest in challenging briefs. Cary Ash, one of its founder-partners, has vast experience in various public and academic institutions and is invested in engaging with the younger demographic and community groups.

The firm believes in user-centric design, and the use of experimental methods such as co-design, films, and experience design as part of its projects. 'The rough and the handmade' are preferred over smooth and clean-looking materials, with a heavy focus on collaborative fabrication.

### case study: Canning Town Caravanserai

Project Name: Canning Town Caravanserai

Location: East London, United Kingdom

Date Designed: 2011

Date Completed: 2012

Size: 2015 sqm

Client: London Borough of Newham

### Project Overview

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Canning Town Caravanserai was a five-year run project on a brownfield site in East London. Since the 2012 London Olympics was around the corner, the Mayor of London directed the revitalization of less-attractive sites such as this one. In terms of planning, this site was designated as a potential investment site in the future and was to be given a 'meanwhile use' in the build-up to the redevelopment.

What started as a competition entry by Ash Sakula Architects, in the 'Meanwhile London' competition turned into a very successful and localized revitalization of the site, drawing out the local culture and acting as a viable platform for various marginalized groups within the community. The project was overseen by an extensive group of volunteers hailing from all walks of life: architects, musicians, students, business owners, and other unique individuals. The growth of the space was strategically planned and organic at the same time, as more and more organizations got involved throughout the entire process. Regular programs such as gardening, cooking and performances were bolstered by other one-off programs that were pitched by members of the community.

Despite being torn down in 2015, it still left a meaningful legacy for residents of Canning Town and empowered them to create more of such community spaces in other parts of their constantly evolving neighbourhood.



Photo credits: Canning Town Caravanserai

## Social and cultural context

'Caravanserai' refers to temporary settlements where people could rest and recoup when they travel across extensive trade routes within Asia, North Africa, and Southeast Europe. Due to its transient nature, its speciality lies in its ability to rally a community together in makeshift places that were built using local materials.

This project acted as a social venue outside of homes, schools, and workplaces. Unlike other redevelopment projects that typically transform residential sites to commercial ones, this case was unique as it was slated for yet another residential redevelopment. Hence, it was even more important to maintain local identities, instead of an artificial replication of the previous neighbourhood.

## Genesis of Project

'Meanwhile London' was a design competition held in 2011 where entrants submitted ideas to positively regenerate certain sites that were along the journey from central London to the Olympic Park in Stratford. Such projects were targeted at stimulating local micro-

economies and attract potential multinational investors within each town. This project was chosen for its extensive engagement with the local communities and enthusiastic plans for locally sourced construction materials. After the announcement in March, the volunteer team came together and started discussions on the ground in the following weeks.

## Stakeholders and Design Process

The team is comprised of many unique individuals such as carpenters, business owners, educators, and many others. Cany Ash acts as the principal architect and the team is further subdivided into two groups – the Flitched team and the team on-site. The Flitched team were tasked with erecting a covered multi-purpose shed that will host the bulk of Caravanserai's community activities. On the other hand, the team on-site is lead by site supervisors who oversaw a larger group of volunteers as they ideated, pitched, facilitated, and built several smaller structures on site. From 2011 to 2015, the project saw the group evolve as they saw interns and community volunteers come and go. However, this did not dampen their spirits and a large pool of community

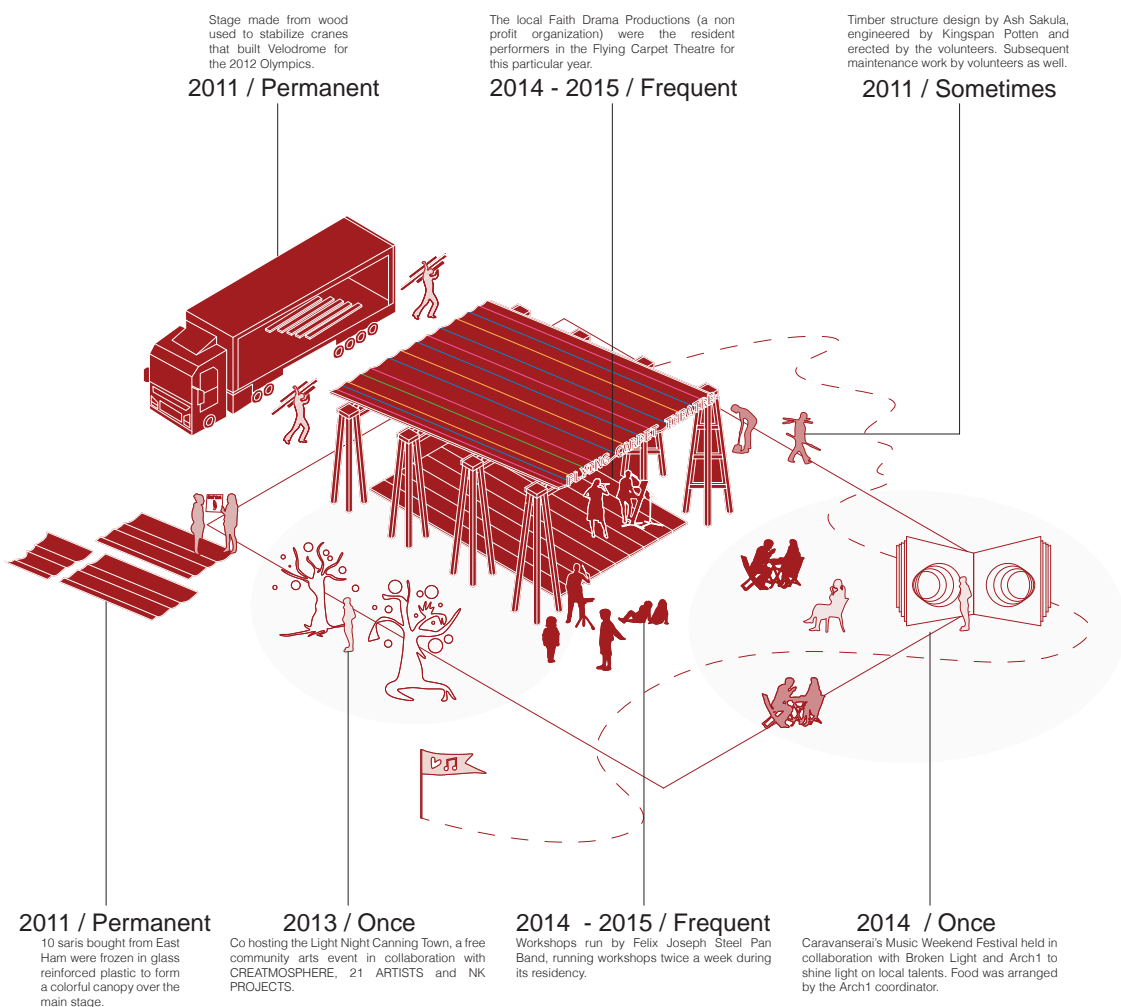


Diagram by Author

resources were always readily available to assist in the Caravansera's daily operations.

For its grand opening in September 2012, the team constructed their first pallet of furniture with repurposed materials that have met their commercial deaths but are still in good condition for upcycling. The simple chairs, stools and coffee tables greeted the first crowd during an April Fools Weekend following its opening day.

Subsequently, the volunteers on site were organized (by the site supervisor) into Press, Plant and Pitch guilds. The Press volunteers were tasked with documenting everyday activities and publicizing upcoming events. One notable mention was the documentation by the 'Design and Build' interns in the Press guild, in the

form of a collated Issuu booklet. The booklet consists of journal entries, design sketches and all group discussions that occurred throughout the construction.

The Plant guild focused its efforts on building the community garden. First, the guild identified acacia, cherry and plum trees that were remnants of the original site pre-demolition. To kickstart the garden, Chris, one of the volunteers from Core Landscapes, brought up the need for lightweight and transportable planters due to the temporal nature of the site. After several rounds of design and iteration, triangular planters and trapezoidal allotments were fabricated. Saplings and seeds were then donated to this new nursery, and a bi-weekly gardening club took over the garden maintenance as the project ran its course.



Lastly, the Pitch volunteers oversaw the 'Dragon Kiosk' competition whereby small local business owners could pitch their trade and commerce ideas, in hopes of attaining a rent-free and highly sought-after location amongst the eight enterprise kiosks within Caravanseraï. This guild then looked after the needs of these businesses and constantly brainstormed ways to promote micro economies and community engagement.

## Impact on Community

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On the individual scale, Caravanseraï nurtured the growth of small businesses, empowered individuals by teaching them new skills, built confidence for the locals through inclusive events and combats loneliness in elderly residents through the music workshops and weekly performances.

On the community level, it served as a safe playground for children within the community and provided holistic programs to educate the younger generation on the assets within their community. Besides building camaraderie through collaborations and volunteer programs, Caravanseraï promotes a sense of ownership and pride within the local area and this adds to the resilience of the community, in response to future disruptions or displacements within the neighbourhood.

The temporality of Caravanseraï gelled their community spirit, as legacy walks and online discussions persisted even after the project was discontinued. The lasting impact is the network of relationships built and the continually expanding knowledge pool.

## Contributions to Social Architecture

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Typically, governing bodies tend to be sceptical and untrustworthy of handing over such derelict sites to the community itself, for fears of being the festering site of crimes and other undesirable activities.

Caravanseraï is a prime example of a well-organized community-building project, both in literal and metaphorical forms. The short span of five years saw multiple donors, collaborators and contributors weave themselves into this site and the result was a crowd-sourced design, reflecting the community values.



Photo credits: Canning Town Caravanseraï

It was also symbolic, as an alternative means of placemaking. A culture tends to be gradually inculcated through common activities, over long periods. In Caravanseraï's case, the culture would have already been instilled even before the construction of the new residential development.

# DesignBuild XChange

DesignBuild XChange is a platform that connects professional education with practice, scientific research and social engagement, with the intention to have members actively involved in improving society through design, while enriching educational practice.

The network provides tools for communication, collaboration and knowledge sharing among its members, namely students, professionals, teachers, organisations, clients, and many more.

In addition to promoting international cooperation and fostering research on DesignBuild activities, the network fosters scientific, sustainable, practice-related and interdisciplinary education, in a bid to continue growing and amplifying its overall intention of encouraging students and other participating members to acknowledge and address the different nuances or challenges in creating and realising built environments.



## Co-Founders:

Prof. Ursula Hartig  
Bernadette Heiermann  
Nina Pawlicki  
Prof. Judith Reitz  
Simon Colwill  
Prof. Dr. Peter Fattinger  
Matthias Kestl

## Key Members:

Prof. Ursula Hartig (Chairwoman)  
Bernadette Heiermann (Chairwoman)  
Nina Pawlicki (Chairwoman)

Location: Germany

Year Started: 2013

Website: <https://www.dbxchange.eu/>



Prof. Ursula Hartig



Bernadette Heiermann



Nina Pawlicki

## Genesis of Network

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The idea to create a network was conceived from a 3-day symposium in 2012. By coincidence, the founders came across a funding program by the European Union and were successful in their application for it. These funds, coupled with a passion for change, saw the genesis for dbXchange. Since then, the dbXchange Platform has become a tool developed within the framework of a research project which ran from 2013 to 2016 by the European DesignBuild Knowledge Network (EDBKN), a consortium of five academic partners dedicated to introducing real-world building projects to academia. From 2016 to 2017, the platform was administered by CoCoon-Studio. Today, the dbXchange Platform is managed by dbXchange.e.V., a non-profit association under German law, registered in Berlin, Germany. It promotes the implementation, distribution, and sustainability of the “DesignBuild” methodology.

## Core values and Principles

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The core values and principles of dbXchange are sustainability, interdisciplinarity, and the “DesignBuild” methodology.

**Sustainability:** dbXchange projects aim to be sustainable in the long run, as such they encourage students to form close relationships with the clients to understand their needs. In her paper “Learning from Failures”, founder Ursula Hartig emphasised the importance of having a deep understanding of the client and their community. She attributes the failure of the project (Stage of the Music School Rodolfo Morales) to overlook the ability of the client to manage and sustain the building, and also a lack of consideration for the climate. Hartig takes these mistakes seriously and has established criteria to evaluate the success of DesignBuild projects that will help to ensure sustainability in the long run.

**Interdisciplinarity:** all dbXchange projects are interdisciplinary in nature, they encompass all related disciplines within architecture such as landscape, engineering, construction, and also non-architecture related fields such as sociology and graphic design. In universities such as TU Berlin, where more than 6 years of dbXchange projects have been organised, the curriculum modules have been modified with reasonable academic credit, in relation to the workload

of architecture students, to better facilitate cross-discipline collaboration.

**“DesignBuild” Methodology:** dbXchange projects pride themselves on being hands-on. Unlike standard architecture education, dbxchange projects encourage students to be involved in the building project from start to end. Students oversee both the design and construction of their projects. As such students are exposed to the complexities of the real world when realising their designs in the built environment - they learn to engage with their clients, discuss requirements and budget, source for materials and cooperate/ coordinate with expert builders and craftsmen. Successful projects such as the jam manufactory for Naxxi (located in Mexico) for instance saw students considering the factors such as the climate, slope, and even long term financial sustainability strategy.

## Membership and Enrollment

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The dbXchange network welcomes all individuals and organisations in both academic and non-academic fields who share their core values and vision to join as members: ranging from students, teachers, researchers, craftsmen, collaborating consultants, on-site experts, members of Non-Governmental Organizations and other related individuals. Organisations registered on the platform can be DesignBuild studios at institutions of Higher Education, research entities, collaborating interdisciplinary institutes and professional associations, local professional partners, clients and user organisations, funding organisations and others supporting DesignBuild initiatives.

A fully registered member is able to post projects, register their organisation, upload DesignBuild related research papers, design and construction plans, bibliographic references and other related material and utilize the networking tool. Members can apply their projects for evaluation to be featured on the platform, their eligibility as DesignBuild projects will be accessed by dbXchange’s partner - SEED Network through the “SEED evaluator”.

The network’s current enrollment covers a vast range of social and geographical conditions. With a total of 172 members and 86 organisations predominantly from Europe and America, the network is also gradually extending its influence to Asia, Africa and Oceania.

## Operation, Platform and Resources

### Operations:

The network aims to bridge the gap between theoretical studio projects and real-life project briefs where students get the chance to be involved in a proper real project from the conceptual stage to the built stage. This is done by setting a few criteria for designbuild projects. They should be based in higher education, have a brief, budget and timeframe, be built, have students involved in the design AND construction of the project and be of architectural, social, cultural, scientific, technical or artistic relevance. This allows studio masters to choose holistic studio projects for students to work on, hence ensuring that the hands-on projects that they accept from the designbuildxchange network are able to successfully take the students out of the bounds of their desks and of their socio-cultural backgrounds into the physical world of construction. Students are therefore given the chance to experience some of the greatest challenges of creating and realising built environments.

### Platform:

The dbXchange network has a networking tool that serves as a platform where users can offer services or seek support for DesignBuild activities. Users can search for or offer collaboration opportunities, knowledge, expertise or project funding and also seek support from various stakeholders. DesignBuild Studios can seek clients or NGOs with project requests, students to join the project team, other DesignBuild Studios for participation, or local experts to support project implementation. Client-organisations or NGOs can seek the assistance of DesignBuild Studios, search or offer project funding, or find expert knowledge.

### Resources:

The dbXchange network has a wide range of resources such as the DesignBuild library, discussion forum and search tool accessible for members. Members can post information for direct download or as bibliography information onto the DesignBuild library. The library database contains research papers, books, articles and project documentation, as well as plans, videos and other useful material. The discussion forum offers thematic forums for exchanging information on current issues and looking for quick solutions. Project forums are available to discuss and facilitate ongoing DesignBuild project processes.



Photo credit: Design.Develop.Build - GA Tech, PBSA, RWTH  
Project: Guga S'Thebe Theatre

The search tool offers a full-text search that searches the complete content of the website including text documents whereas the guided search will support users in discovering the right information according to predefined classification criteria.

# Contributions to DCG Network

↳ *Insights drawn from case studies and interview*

## 0.1 COLLABORATION

The projects compiled on the Platform are embedded in a teaching and research environment that encourages multidisciplinary and intercultural collaboration between students and professionals during design and execution. The close working collaborations of students, teachers, local experts, clients, and other stakeholders involved in each project triggers the gain of technical and social expertise of the parties involved through the network-based platform. The Platform can serve as a basis for connecting users with other members of a community to create mutually beneficial opportunities where both international participants, as well as local communities in the process learn from one another.

## 0.2 POOLING OF KNOWLEDGE AND RESOURCES

The DesignBuild teaching methodology includes the creation of an online platform to facilitate global collaboration between stakeholders of different disciplines. The meaningful exchanges of knowledge during symposiums and research project sharing help the different networks to understand and learn from the successes and failures of completed projects. This does not only enhance the quality of project implementation for all the member networks but also provide teaching and design resources for the DCG network.

## 0.3 STUDENTS LEARNING

Involving students in the DesignBuild process is a core belief of the network. For the participating students, a more hands-on approach to the DesignBuild process gives them first-hand experience and exposure to the realism of the built environment. In addition to the provision of online resources such as DBX for students to browse and learn from existing projects, the platform also encourages previous batches of students to impart knowledge and guidance to the current participating students. The Platform can serve as a knowledge bank that not only allows students to gain much deeper insight into the challenges of fully realising a project but also equips them with better strategies when starting or initiating their projects.

## 0.4 PROVIDING SUSTAINABLE SOLUTIONS

DesignBuild projects strongly reflect the network's commitment to providing sustainable design solutions to the local communities in terms of the built environment, as well as the long term empowerment of the locals. Members of the project strive to innovate and develop designs that are ingenious, environmentally responsible, and economically efficient for the locals to maintain and further develop in the long run, or even use the project as a prototypical solution that can be applied to other areas within the beneficiary countries. In other words, DesignBuild projects contribute with providing knowledge of sustainable practises for DCG.

## REFERENCES

- Agriculture & Natural Resource Marketing. (n.d.). Get involved. Community Garden. <https://communitygarden.msstate.edu/get-involved>
- Archdaily.(2020).Chamanga Cultural Center / Munich University of Applied Sciences + Portland State University + Atarraya Taller de Arquitectura + Opción Más. <https://www.archdaily.com/953017/chamanga-cultural-center-designbuild-studio-plus-portland-state-university-plus-atarraya-taller-de-arquitectura>
- Architizer. (2016). Guga S'Thebe Children's Theatre. Architizer. <https://architizer.com/projects/guga-s-thebe-childrens-theatre/>
- ASLA Student Awards. (2019). Cultivating the future: Designing and constructing a didactic garden. [https://www.asla.org/2019studentawards/684208\\_Cultivating\\_The\\_Future\\_Designing\\_And\\_Constructing\\_A\\_Didactic\\_Garden.html](https://www.asla.org/2019studentawards/684208_Cultivating_The_Future_Designing_And_Constructing_A_Didactic_Garden.html)
- BC Architects and Studies (2014) Preschool of Aknaibich Bio-climatic construction. [https://issuu.com/bc-as/docs/preschoolofaknaibich\\_mediumres](https://issuu.com/bc-as/docs/preschoolofaknaibich_mediumres)
- Cocoon Studio. (2019). Studio Chamanga Research Design Build. [https://issuu.com/cocoon-studio/docs/studio\\_chamanga\\_\\_issuu\\_komplett](https://issuu.com/cocoon-studio/docs/studio_chamanga__issuu_komplett)
- Daniel Baerlecken. (2014). Guga S'Thebe Theatre 2014. <https://www.youtube.com/watch?v=uiCV-NgNZcA>.
- Design.Develop.Build. (2016). Guga S'Thebe Theatre. DesignBuildXChange. <https://www.dbxchange.eu/node/1025>.
- Livin Spaces. (2018). Guga S'Thebe Children's Theatre in Cape Town South Africa is made from re-purposed shipping containers and recyclable materials. Livin Spaces. <https://livinspaces.net/projects/architecture/guga-s-thebe-childrens-theatre-in-cape-town-south-africa-is-made-from-re-purposed-shipping-containers-and-recyclable-materials/>.
- Mississippi State University. (2019). Community food garden demonstration site at Mississippi State University. DesignBuildXChange. <https://www.dbxchange.eu/node/1574>
- Mississippi State University. (2020) Department of Landscape Architecture. Mississippi State University. <https://www.lalc.msstate.edu/>
- Ursala Hartig. (2019). Learning from Failures. <https://www.ingentaconnect.com/contentone/arched/char/2019/00000005/00000002/art00004?crawler=true&mimetype=application/pdf>



## 2.1

# Design.Develop. Build. Studio



### About Design.Develop.Build.:

Design.Develop.Build. at RWTH Aachen University was established in 2006 with the aim to inculcate responsible thinking and behaviour into students, and to validate the social relevance of their architecture profession. Many of their projects have been realised within South Africa, where European architecture students collaborate with South African students, local craftspeople, and volunteers from other schools to create a cooperative architectural practice. These design-build projects go beyond what the academic setting of school can offer. Participating students gain much deeper insight into the relationship between design, materialisation and construction. All projects are developed with the goal of environmental sustainability and fully executed as self-built projects. The main principles are to develop innovative strategies that adapt local traditional, low-cost and recycled materials to be used in tandem with contemporary construction methods. The basis for all projects is the intensive research of the climatic and cultural context, as well as participation and social engagement. Cooperation with local unskilled helpers and the development of small craft businesses are always encouraged.

### case study: : Guga S'Thebe Theatre

Project Name: Guga S'Thebe Theatre

Location: Langa, Cape Town, South Africa

Project Duration: 2013 - 2016

Size: 600 sqm

Initiative / Fundraising: AIT-ArchitekturSalon, Hamburg/  
Köln, Kristina Bacht

Client: Department of Arts and Culture, Cape Town

Design / Realisation: Peter Behrens School of Arts, Faculty of Architecture; RWTH Aachen University, Faculty of Architecture; Georgia Tech, School of Architecture; CS Studio Architects, Cape Town

### Project Overview

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Located in Langa, Cape Town, Guga S'Thebe Theatre serves as a multipurpose theatre and performance space, attracting local children, artists and international tourists alike. The new space brings the city's art and cultural scene to life, housing various local theatrical productions, exhibitions, lectures, concerts, dance performances and festivals. The central theatre is surrounded by a system of loosely stacked shipping containers. The interior spaces of the containers incorporate programmatic elements such as backstage areas, food and dining amenities, music training spaces, a recording studio and sanitary facilities.

Overall, this design-build project was larger than just creating a much-needed space—its construction creates a dialogue about innovative sustainable building methods through participation, social integration and implementation of recycled materials.

### Social and cultural context

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Guga S'Thebe is an expression for “handing something over” in the Xhosa language, which can be translated to mean “making something available to the community”. The location and form of the building are guided by an existing footpath that informally originated during the Apartheid period. Linking the former living quarters with the post office, it was an important space for casual encounters and remains so today.



Photo Credit: PBSA / RWTH / GATECH

## Genesis of Project

In the 1990s, the Guga S'Thebe Cultural Centre was built in Langa, one of the oldest townships of South Africa. Since its construction, the centre has become the heart of the urban township; a hub for local artists, children and international tourists. However, it lacked a crucial venue for theatre, dance, concerts, exhibitions and classrooms for working with children. As such, the Guga S'Thebe Theatre was conceived as a south-side extension of the existing Guga S'Thebe Cultural Centre out of the necessity of a public space for the local community, especially for the local children and arts scene.

## stakeholders and Design Process

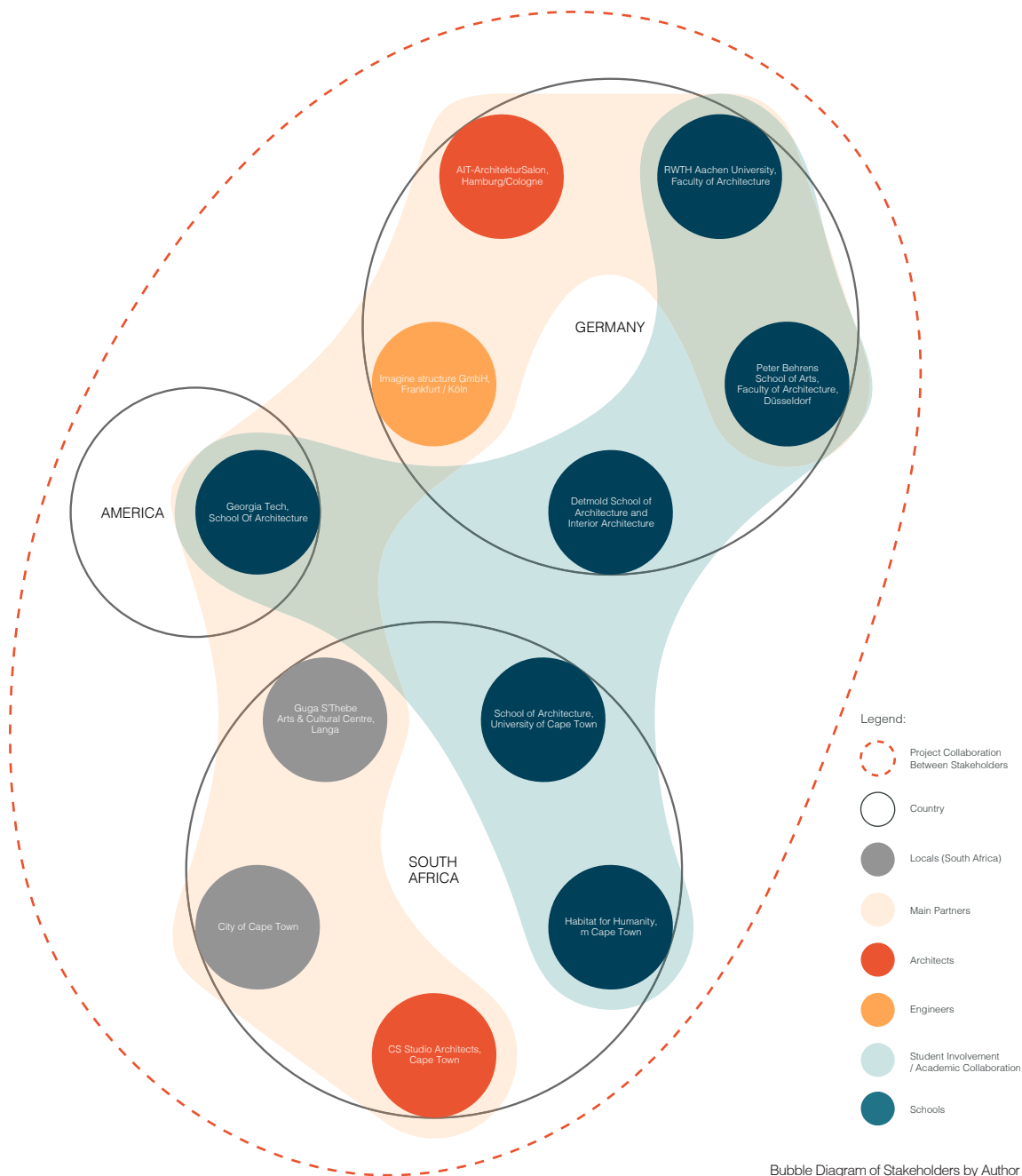
The design and the construction focuses on the use of local, traditional and recycled materials combined with innovative low-tech construction methods for a sustainable, lower-cost building.

The expansive harbor of Cape Town opens the opportunity to repurpose the abundant supply of shipping containers as safe and inexpensive shelters.

By staggering and stacking 11 used shipping containers, a two-level high boundary is created, defining the interior enclosure of the multifunctional theatre that seats up to 200 people. The theatre boasts of a reconfigurable stage and exterior spaces, namely an outdoor stage, children play areas, and a garden.

Double-storey steel columns line the interior of the container wall, supporting V-shaped wood trusses and a metal roof that hovers above and extends past the container wall. This design illuminates the building naturally, eliminating the need for artificial light during the day. Thick theatre curtains and art installations from reclaimed materials absorb sound, while the shipping container ridges act as diffusers.

To improve the building's interior climate, the container walls are insulated with a mixture of light clay and straw pressed onto the exterior surfaces with recycled wooden fruit crates. The façade's unique pattern is inspired by traditional Xhosa beadwork and was designed to speak the same design language of the historic footpath's brickwork.



Bubble Diagram of Stakeholders by Author

As a whole, the project involved numerous partners and collaborators that participated in the design, planning, and execution of the project. This included architecture students, architects, engineers and builders hailing from America, Germany, and South Africa.

The multitude of people involved resulted in an interdisciplinary and intercultural exchange that blurred boundaries between the roles of participants. The informal process allowed individuals of different

expertise to intermingle, share ideas, learn and contribute to aspects of the project that may have otherwise been outside the scope of their assigned role.

## Impact on Community

Overall, the project was a fruitful collaboration that benefits both the international participants as well as the local community.



For the international participants, the exchange and interaction between intercultural participants of different skill sets and levels allowed them to learn from each other and built connections. Participants experience the design-build process firsthand and gain much deeper insight into the challenges of fully realising a project.

For the locals, the Guga S'Thebe Theatre has served the community both functionally and didactically. Since its completion, the local township community, local artists and the Department for Arts and Culture of Cape Town have made diverse use of the theatre as a social space. Furthermore, this project has created affordable and transferable building prototypes that can be easily adapted to other building typologies and reconstructed by unskilled labourers. These innovative construction techniques can be passed on and further implemented in local architecture, which already makes use of the same material palette.

## contributions to social architecture —

We learn that through collaboration, designs and processes can be altered and developed based on shared input and recognising the varying abilities of participants. By having the architects and students work closely with the local community, the resulting project reflects a real understanding of the community's way of life.

In Langa and the Township, locals build and modify their houses and homes in their own fashion regardless of the intervention of architects. We must recognise that the role of the architect is not to provide the endgame solution, but rather, to utilise the process as an opportunity to work together and involve the community in all possible ways. Architects should aim to provide a far-sighted solution that benefits the community long after the project is completed.

To conclude, this is the success story of a project that embraces community-centric design. It thoroughly embodies the heart of that social architecture ought to be. We can definitely learn from how it has united and empowered the community with a common cause, encouraged participation, provided sustainable methods to be independent, advanced community development and inspired ownership of the place.



Photo Credit: PBSA / RWTH / GATECH



Photo Credit: PBSA / RWTH / GATECH

## 2.2

# Design.Develop. Build Studio

### About Design.Develop.Build studio:

Design.Develop.Build. at RWTH Aachen University was established in 2006 with the aim to inculcate responsible thinking and behaviour into students, and to validate the social relevance of their architecture profession. Many of their projects have been realised within South Africa, where European architecture students collaborate with South African students, local craftspeople, and volunteers from other schools to create a cooperative architectural practice. These design-build projects go beyond what the academic setting of school can offer. Participating students gain much deeper insight into the relationship between design, materialisation and construction. All projects are developed with the goal of environmental sustainability and fully executed as self-built projects. The main principles are to develop innovative strategies that adapt local traditional, low-cost and recycled materials to be used in tandem with contemporary construction methods. The basis for all projects is the intensive research of the climatic and cultural context, as well as participation and social engagement. Cooperation with local unskilled helpers and the development of small craft businesses are always encouraged.

### case study: Ecole Primaire Santiguyah

Project Name: Ecole Primaire Santiguyah

Location: Guinea, West Africa

Date Designed: 2017

Date Completed: 2020

Size: 450 sqm

Client: Ministry of Education and Alphabetisation,  
M-ENA Guinee

Donor: Karl Bröcker Foundation, Sto Foundation

### Project Overview

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Primary school Santiguyah is a project built by students of RWTH Aachen University, Peter Behrens School of Architecture, Düsseldorf, and Institut Supérieur d'Architecture et d'Urbanisme ISAU Conakry Guinea.

With a built enclosed space of 450 sqm, the compound consists of six classes, two toilet blocks, a director's house for the headmaster and teachers' housing for educators, a well and a sports and assembly area. The classes are divided between two school buildings, with each class having an additional outdoor learning space.

Although this project is of a small-medium scale, the designers of this project planned not only for a mere school to be built, but also a sustainable concept for the school and the people involved. The ambition was to improve children's access to education while ensuring that the community involved have enough means for subsistence.

### Social and cultural context

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The Republic of Guinea, located on the west coast of Africa, is one of the poorest countries in the world despite its wealth of raw materials.

A decisive obstacle to Guinea's economic development is the low level of education. Universal access to education is amongst the many implications of the high poverty levels.



Fig 1. Santiguyah Primary School Photo credit: Design Build XChange)

## Social and cultural context

Public school infrastructures are often unreliable due to an insufficient number of teachers, a lack of educational resources, and inadequate access to water and sanitation in school facilities.

Additionally, the network of private schools in the country increases the socio-economic inequalities among children.

This is further worsened by the presence of gender-based inequalities, as education for young women is considered unnecessary and a burden to their families.

## Genesis of Project

The need for primary schools is immense, especially in rural areas. In close coordination with the Guinean Ministry of Basic Education, the German Development Cooperation is financing the construction of many schools and teachers' houses in the Faranah region in central Guinea.

Within the framework of this program, the construction and architectural design were improved and assessed based on functionality, life cycle, solidity, robustness, construction quality, cost efficiency, ease of maintenance,

and optimal adaptation to local climatic conditions. In a further step, a prototype for a primary school was developed and realized such that it could potentially be applied to other parts of Guinea. The elements to be applied consist of not only design but also construction methods and materials, as well as the participatory construction process.

## Stakeholders and Design Process

In the first construction phase, a classroom building with 3 classrooms and outdoor areas for informal learning, a head office building and 2 latrines were built, and a well was drilled.

It was done so that the project could start functioning amidst the construction process. After which, the rest of the components of the compound were completed progressively. Refer to the following diagram (Fig. 2) on the structures built for phase 1.

A major focus of this research was regarding the use of locally available building materials, familiar constructions methods to the locals, appropriateness to local climate



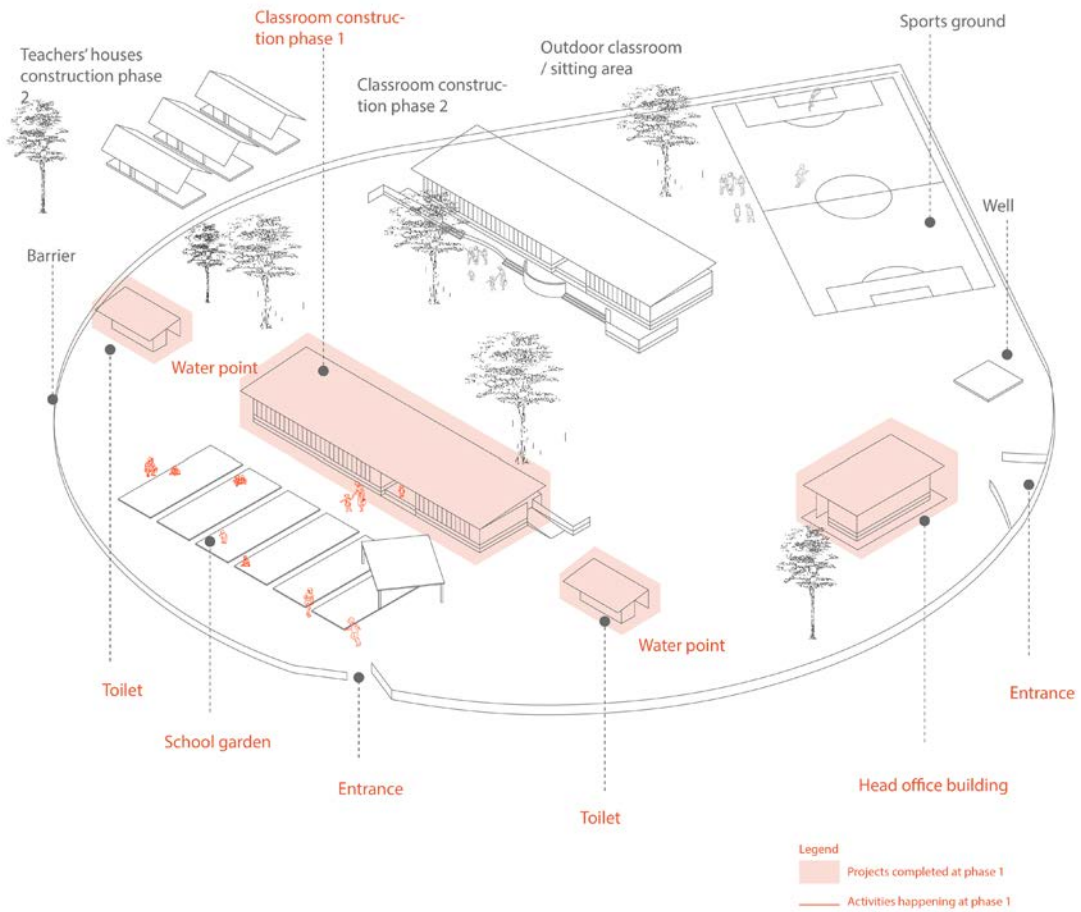


Fig 2. Elements and activities of the school compound (self drawn with some reference)

context, as well as convenience for maintenance.

The chosen construction consists of masonry walls built over a concrete floor slab. The walls consist of 22 cm thick stabilized interlock earth bricks, which were pressed on-site under great pressure from laterite, sand and cement. Laterite and sand come from the immediate vicinity of the building site.

The roofs are designed as a 2-layer construction: Trusses welded together from locally common profiles support the space-enclosing level of the cap vaults on the lower bars and an aluminium roof for rain protection on the upper bars. Between these levels, the hot air is carried through by natural thermals. The cap vaults were also made of stabilized earth bricks produced on site.

The masonry was given a hydrophobic coating, and the floor slabs were covered with a screed.

Furthermore, it is an important premise to obtain the building materials from the surrounding area as far as possible to minimize transport costs, to promote the local economy and to teach the inhabitants to handle their available resources independently in the future.

## Impact on community

The communities involved in this project are the local stakeholders, namely the children, administrators of the schools, teachers and parents. Whereas the communities involved in the design and construction of the school are the local artisans, and students who were directly involved in building the school.

To the designers and students who were involved in the construction of this school, not only did they gain knowledge on designing and constructing a project that is very grounded to the local context, in terms of materiality, design, and construction methods, but they also learn about how to design the ecosystem of a school such that it is sustainable. Sustainable not only in terms of building performance but for the ecosystem of the school itself. With this, they learned to develop a design that addresses a prototypical condition, such as the condition in guinea, which people can then apply to other parts of the country with a similar condition. In a sense, they are looking at this school not as a school on its own, but as part of a network of schools with such intentions and agendas. Furthermore, of course, this is an opportunity for them to open their hearts and bond with the locals. It's not an everyday occasion where people willingly let foreigners come and build something on their land. This project was a meaningful experience to the students, and it taught the design students involved gratitude and empathy. They also shared meaningful friendship with the local artisans that were involved in the construction as well.

To the teachers and administrators of the school, they are incentivized and motivated to work in the school as there are means of subsistence, such as a garden where they can plant crops with the help of their students. The school fees of the students also guarantee that the children will get lunch in school every day, which in turn motivates the parents to send their children to school and pay the school fees. With a sustainable concept of running this school, to the children of Santiguyah and the children of the surrounding villages, this will then mean better access to education.

## contributions to social architecture —

This project offers a unique experience to students, where they gain exposure to different phases of building design and construction. Especially since this is a real-life project, the technical drawings produced must be of high accuracy.

The design methodology that they applied to this project could be derived and applied to future projects by other students in other places. Take for instance, how they studied and designed construction methods that respond to the local weather needs or how they studied the locals' behaviours and customs to generate the design and program of the project. Additionally, there was a lot of emphasis on social



Fig 3. Group photo of the construction team  
Photo credit: Jacob Lekkie via Instagram



Fig 4. Construction team left friendship marks on the earth bricks  
Photo credit: Jacob Lekkie via Instagram

engagement throughout the project. This reflects the intention of the network, which is to have the students involved being more sensitive to social and cultural contexts and understand the implication of their work in the locals' socio-economic and cultural scene. This merge between the real-world tasks to the academic world also sets a good example for other projects to adopt.

## 2.3

# Mississippi State University



### About Mississippi State University (MSU):

Fulfilling the three purposes of Learning, Research and Service - is the primary goal of the educational units that make up the university, including the Department of Landscape Architecture and College of Architecture, Art, and Design. MSU gives students a wide range of opportunities and challenges to explore subjects such as stormwater design, energy flow, native landscapes and plant materials, green infrastructure, sustainability, community planning and regional planning. The resulting university programs ensure that students achieve the professional goals of a Landscape Architect: To strive to connect art, culture and the environment to provide society with places that people love and that are cognizant of a holistic and ecological model of design.

One of the university programmes where students engage in hands-on learning is the Design + Build module, where they gain direct experience with the design process, planning and decision-making process, building materials, equipment and construction process through collaborations. Past projects include the Gold Course Restroom Shelter Plaza and Landscape Architecture Rain Garden, both housed in the university itself; the Green Infrastructure Demonstration Gardens and Green Technology Demonstration Pavilion which were part of the refurbishment of the Oktibbeha County Heritage Museum; and the READ Garden which has become a beloved addition to Starkville Public Library by the Starkville community.

### The Living Room, a Prototype Outdoor Classroom

Project Name: The Living Room, a Prototype Outdoor Classroom

Location: Jackson, Mississippi

Date Designed: 2019

Date Completed: 2020

Size: ~100 sqm

Client: Galloway Elementary School/ The Partnership School

Collaborators: The Fertile Ground Project, J, H, & H Architects, PIKUS Concrete

Faculty Advisors: Hans Herrmann, Suzanne Powney

### Project Overview

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The Living Room, a Prototype Outdoor Classroom is a collaborative design project involving architecture students, landscape design students, graphic design students, educators, small-scale farmers, and elementary school children. The outcome of the project was a hybrid design that incorporated elements of a community garden, playground and classroom.

The project was initially designed for Galloway Elementary School, but there are currently plans to build a second classroom on a larger scale as a collaboration with The Partnership School is also in the works. The project aims to educate children on growing their food, basic food nutrition, and elementary school topics such as colour, math, time, seasons and biology. In addition, it also serves as an additional food source for the school which is located in a food scarce area.

Overall this project is in line with DesignBuildXchange's mission of encouraging cross-disciplinary collaboration, working with limited resources, and using architecture to educate people/ spread awareness - The project is built with modest material and has brought together architecture students, landscape design students, graphic students, teachers, farmers, students. It has helped to educate children more about the importance of eating healthy, growing their food, and spread awareness of obesity and childhood diabetes.





Photo Credit: MsState Design/Build Studio

## Social and cultural context

The project is situated in a food scarce area, in Jackson, Mississippi where there is poor food nutrition, high rates of obesity and childhood diabetes. Located in a designated USDA food desert, the Galloway Elementary school is surrounded mostly by fast-food chains and has a lack of food options.

## Genesis of Project

The project team wanted to provide healthier options to the school children, to alleviate the problem of obesity and childhood diabetes which is extremely prevalent in Mississippi (Mississippi has the highest obesity rates among school students in the US (25.4%) and is ranked 3rd highest in the rate of childhood diabetes (14.3%). The existing school was also extremely limited in funding and resources, and badly in need of an upgrade, an abandoned asphalt playground served as the perfect opportunity for both parties to collaborate and to redesign a space that would help improve the lives of students.

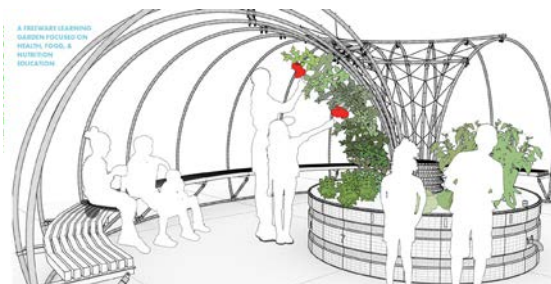


Photo Credit: MsState Design/Build Studio

## stakeholders and Design Process

Overall, the project was a collaboration between educators, farmers, grade school students, and architecture students. The architecture student team consisted of 10 landscape architecture students, 10 architecture students, and 1 graphic design student.

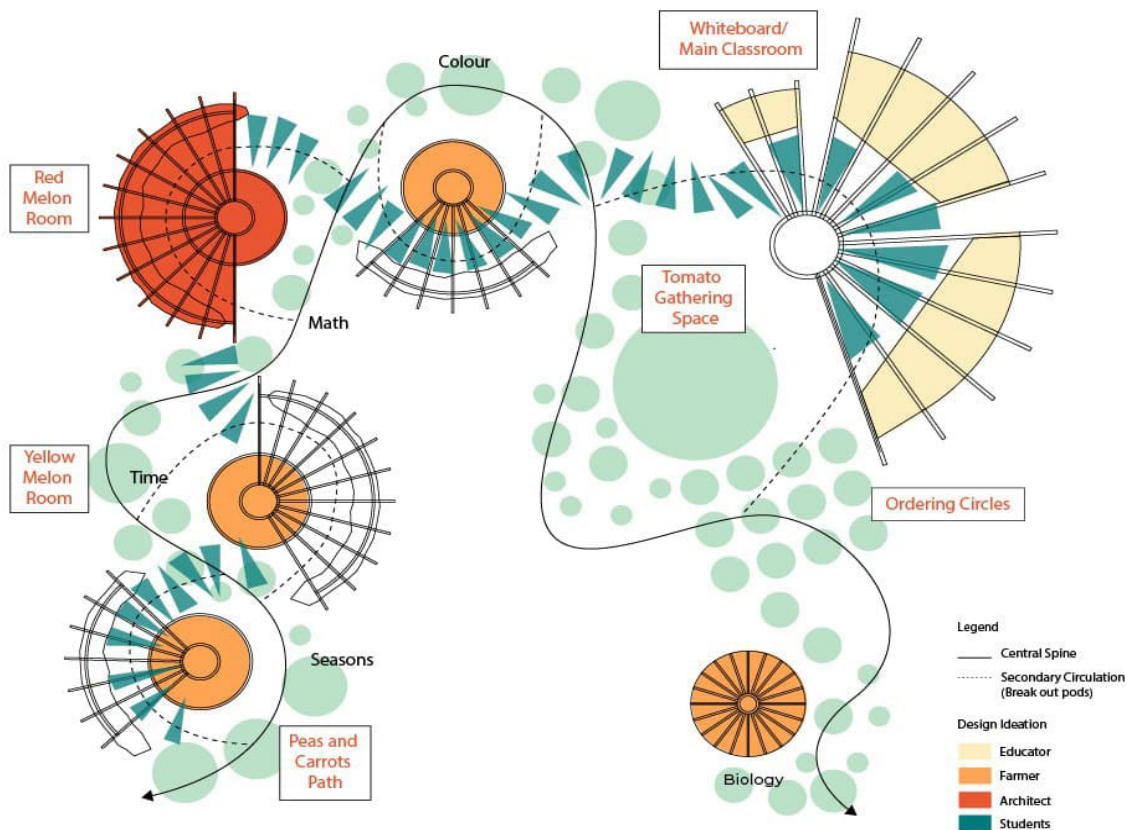


Diagram by Author

The designing process started with meeting educators and farmers to understand how much space is required to teach about food and grow food. The team then had to understand what were the locally available, off the shelf resources they could use so that they work within the budget given. The team also worked with teachers and jointly created a unique curriculum that was integrated with the design of the garden.

For the design of the garden itself, the team held a workshop with school district teachers, administrators, and the professional design team for the school. Using scaled models on bases, multiple alternatives were developed to create four separate garden pods with six garden typologies each. A preferred, formal plan was chosen by the school district and then turned over to the architecture students who designed the learning pods based on teaching preferences and spatial guidelines.

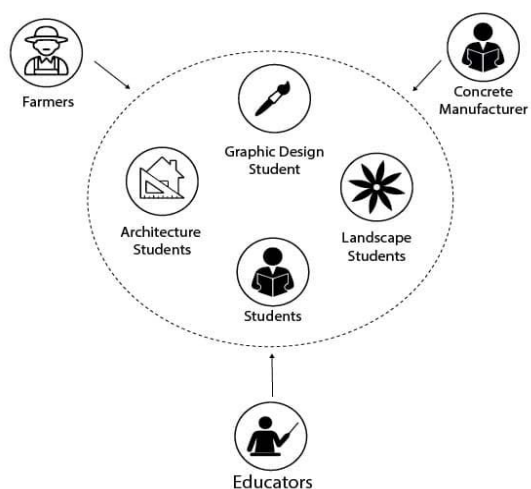


Diagram by Author



## Impact on Community

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The project has been of great benefit to Galloway Elementary school which was extremely limited in funding and resources. Although the school had funding of \$25,000 from an arts grant, the design team was able to maintain a budget of \$1500 for the project by sourcing cheap, readily available materials. The new garden not only serves as a classroom but also helps to provide children with healthier meal options.

The project has also helped educators in coming up with a new curriculum for children and creating new classroom space. Working with educators, the team created 12 teaching stations, and lesson plans that were developed around 5 unique themes: time, colour, math, biology and the seasons. These themes allow for teachers to use the garden for almost every subject and ensure that the gardens will be used for not just food education, but as an integral part of the classroom.

Overall, the garden is multi-purpose, flexible and adaptable which is important for the elementary school considering its limited resources. It has not only provided an extra food source for the school but also created a fun, lively classroom environment for both teachers and students.

## Contributions to Social Architecture

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This project improves the community garden typology, creating a new hybrid classroom-garden-playground design. The project team has critically looked at existing gardens in other schools and rightly observed that the maintenance of these gardens is more challenging than the actual creation of the garden. Their unique approach of educating children on the farming procedures through their curriculum and emphasising a hands-on approach will help to ensure the sustainability of the project and strengthen its impact on the community.

From a more technical standpoint, the team has also pushed the application of 3D concrete printing in social architecture projects. Together with a concrete manufacturer developing a new, rapid concrete printing technology, the team is one of the first projects in the US to employ the unprecedented flexibility of this new



Photo Credit: MsState Design/Build Studio

technology to make organic surfaces such as flower-shaped planters that allow students to sit on.

With the current pandemic, the team has also tapped into the potential of using digital tools for documentation purposes so that this new typology can be shared with any school looking to create a dynamic learning garden. The team has developed construction drawings, diagrams, material lists, and a brochure which will eventually be hosted on an extension website for download. This is a step beyond traditional social architecture projects where the building process often involves physical collaboration between the designer and the community.

## 2.4

# Mississippi State University



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### case study: Community Food Garden Demonstration Site

Project Name: Cultivating Food Garden: Designing and Constructing a Didactic Garden

Location: Starkville, Mississippi, USA

Date Designed: 2015

Date Completed: 2019

Size: 8000 sqft

Client: Mississippi State University, Department of Landscape Architecture

Financing: Mississippi State University, Student Association

Collaborators: MSU - Department of Landscape Architecture; School of Architecture; Department of Art; Facility Services; Construction Science Program

### Project Overview

The community garden serves as a laboratory for learning about urban agriculture and provides a sustainable space supporting teaching, research and outreach towards localised food production. Designed and built in a collaborative studio as part of the Design + Build course with students of landscape architecture, architecture and graphic design, the garden captures the essence of education through interdisciplinary design, highlighting how each of the discipline's strengths and contributions is integrated into a collaborative design process.

The garden is strategically located on the edge of the university campus, with adjacent parking lots and a nearby transit route making it easily accessible to people within and outside the MSU community. The garden is designed for people to learn about methods to grow their food using stormwater for irrigation, with educational elements including Farmbots, a classroom space, and educational graphics. Technologies are also incorporated to minimize potable water consumption and maximize efficiency through an automated water recovery, collection, filtration, and distribution system. Overall, the didactic garden serves as a model of the future of urban agriculture as an intentional integration into the community.



## Social and cultural context

About 2 in 5 adults and 1 in 5 children and adolescents in the United States have obesity, Mississippi being the state with the highest adult obesity rate of 40.8% according to the 2020 Behavioral Risk Factor Surveillance System data. Obesity has detrimental impacts on one's physical, mental and psychological health. People with obesity not only have a decreased quality of life but suffer a higher risk of contracting severe illnesses such as hypertension, Type 2 diabetes, heart disease and cancer. Depression and anxiety can also stem from the discrimination and stereotyping of society due to weight stigma, a leading risk factor in the development of eating disorders that have counterproductive effects. There is an urgent need for public health interventions that can make it easier for people to eat and have access to nutritious food to reduce the proportion of adults with obesity.

MSU forms a cohesive higher education-municipal community with Starkville, a growing agricultural-commercial-industrial city of nearly 26, 000 people. With agricultural research already being actively accomplished on the farms, greenhouses and experimental stations located on the grounds of MSU, the integration of urban agriculture is an essential contribution to the health of the Starkville community.

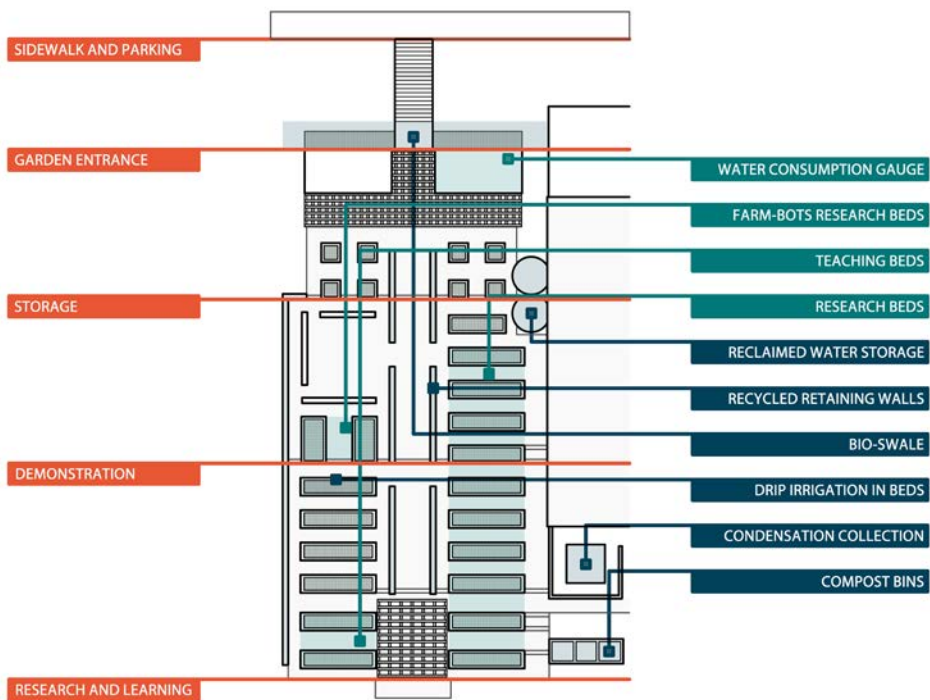
The garden is a unique tool developed by MSU to combat these serious issues related to food, nutrition and health in the region.

## Genesis of Project

Three primary goals were established during the genesis of the project: To create a space for students and staff to grow healthy food on campus; To serve as an outdoor laboratory for sustainable and healthy food courses on campus and; To provide a platform for research endeavours that would stretch across the university.

The garden starts small by strengthening the MSU community and supporting on-campus research on regional issues related to urban agriculture. As the project gradually garners the interest of the community outside of MSU, the model of the didactic garden and acquired knowledge can be extended to Starkville and other cities and towns throughout the state to help promote a healthier Mississippi.





Engagement in interdisciplinary collaborations to design and construct the garden



Provision of technologies and conducive spaces for the research of urban agriculture



sustainable strategies to reduce consumption and minimize wastage of natural resources

Diagram by Author

## stakeholders and Design Process

The project was designed around three primary considerations: Educational purposes, Sustainability strategies, Research opportunities - where students were responsible for the design, refinement, costing, material acquisition and construction of the individual design elements.

Landscape architecture students led the design of the garden layout, beds, seating, walks, retaining walls, plaza and farm bots. Architecture students led the design of the garden sheds and worked with landscape architecture students to design the entry stairs. Graphic Design students worked with landscape architecture students to develop the colour pallet, murals, numbering system and informational graphics for the garden. Beyond the primary project group, organised service days were organised where additional MSU students and community members volunteered and contributed to the construction process of the garden.

Several sustainable strategies were implemented within the garden, including water treatment and energy-efficient fixtures. To reduce the usually high volumes of water vegetable gardens tend to consume, cisterns are used to capture rainwater and greywater from the adjacent buildings which are treated through the designed system to use for irrigation. The lighting design within the entire garden also incorporates low-voltage LED lighting to reduce energy usage compared to traditional fixtures.

Environmentally responsible materials were chosen for the project, such as locally grown and harvested cedar for the entry stairs and local limestone and reclaimed paver used for walking surfaces.

The fabrication and installation methods utilized for the flat-pack entry stairs and kit-of-parts potager sheds, are designed to be economically efficient and ready-to-assemble.

## Impact on Community

The project's success can be measured from the over 300 community members who were engaged and active in the garden in its first full year. It is currently managed by MSU's student garden club, actively used for research, classroom education and public outreach.

Classes use the community garden as a working laboratory, where students can learn about basic home garden designs and maintenance, as well as explore local community food systems including sustainable growing practices. Beds are also rented out to students, faculty, staff and community groups, all fees going towards funding tools, materials and maintenance for the garden. The volunteer program is the primary mechanism that drives the garden's continuous development and upkeep. The community is encouraged to play their part by signing up for scheduled volunteer days, without the pressure of having to make the heavy commitment of renting a bed for a whole year.



Photo Credit: Megan Bean

## Contributions to Social Architecture

Through place-making, the resultant rejuvenated public spaces contribute positively to the local community, these benefits inducing large-scale budget and timeframe invested on the planning and design processes. On the other hand, little traction is seen in place-keeping once place-making has occurred. However, the didactic garden proves itself successful in ensuring its long-term management and maintenance.

The project was able to tackle the root issues of the lack of resources and understanding of the complex concept of place-keeping - a combination of both physical and non-physical dimensions through the establishment of a learning ecosystem model. A learning ecosystem is learner-centred, where learners need to take the initiative to be more self-directed. The foundation is the knowledge-based support systems within the garden enabling easily accessible knowledge, and the driving force being the community where knowledge is articulated when people come together to learn.

The didactic garden serves as a model of a sustainable learning ecosystem to spur community members to actively engage in place-keeping, to take ownership and contribute to the continued purpose of a social architecture project.



# BC Architects & Studies



## About BC Architects and studies

BC (Brussel Cooperation) is BC architects and BC studies and BC materials. They operate through 3 legal entities registered in Belgium: BC architects (architecture company), BC studies (non-profit), BC materials (material production cooperative).

BC is a hybrid practice, designing and undertaking “acts of building” towards systemic change in the construction sector. They strive for bioregional, low-tech, circular, beautiful and inclusive design. They work with their minds and hands, undertaking activities such as community organisation, material production, contracting, teaching, prototyping. They aim to impact positively on people's ideas and planet, acting with sustainability and the future generations in mind.

Started in between 2009 and 2012, their team currently consists of 4 co-founders and around 15 collaborators, working from Brussels on projects on the European and African continent.

<http://architects.bc-as.org/about-us>

## Preschool of Aknaibich

Project Name: Preschool of Aknaibich

Location: Akanibich, Morocco

Date Designed: 2014

Date Completed: 2014

Size: 55 sqm

Client: Town of Aknaibich

Donor: Goodplanet Foundation

## Project Overview

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The Preschool of Aknaibich is built in a village in Morocco. It is only 1 classroom, but a holistic architectural design, incorporating community dynamics, bioclimatic and a new vernacular style.

The build is not a new standalone infrastructure by itself, but rather, an extension onto an existing concrete primary school that has three classrooms. After a workshop with the Aknaibich community, it was seen fit to be inspired by the old town, and hence to create a dialogue with the existing modern school infrastructure. Its style could be called a new vernacular, inspired by local typologies, materials and techniques, while at the same time having a contemporary look, performant bioclimatic functioning and earthquake-proof design. New materials such as cement would be added as layers in the foundation and the base of the roof to increase its resistance against earthquake effects. The new vernacular preschool serves to the contrast between the old and new, while also generating a ‘school complex’, showing the importance of education in the community.



Photo credit: Frank Stabel

## Social and cultural context

Aknaibich is a 'dour' or village of the commune of Draga, situated on the banks of Oued Souss, 30km from the centre of Agadir, a city in Morocco. In 2004, the population was 1266 inhabitants, which decrease to 634 in 2013. The majority were adults between 30 and 60 years. There is also a high rural-urban migration of the age category 6 to 30, with young students going to the centre of Agadir to study and build up their lives. Compared to other remote villages which suffer true exodus to the city, the rural-urban dynamics in Aknaibich are quite contained. Geographically, Aknaibich is in transition: the eastern old town is a dense settlement of farmhouses and residential houses, made of earthen constructions, sinusoid roads and narrow alleys, while the western part exists of modern, plot-based concrete houses built by rural-urban migrants.

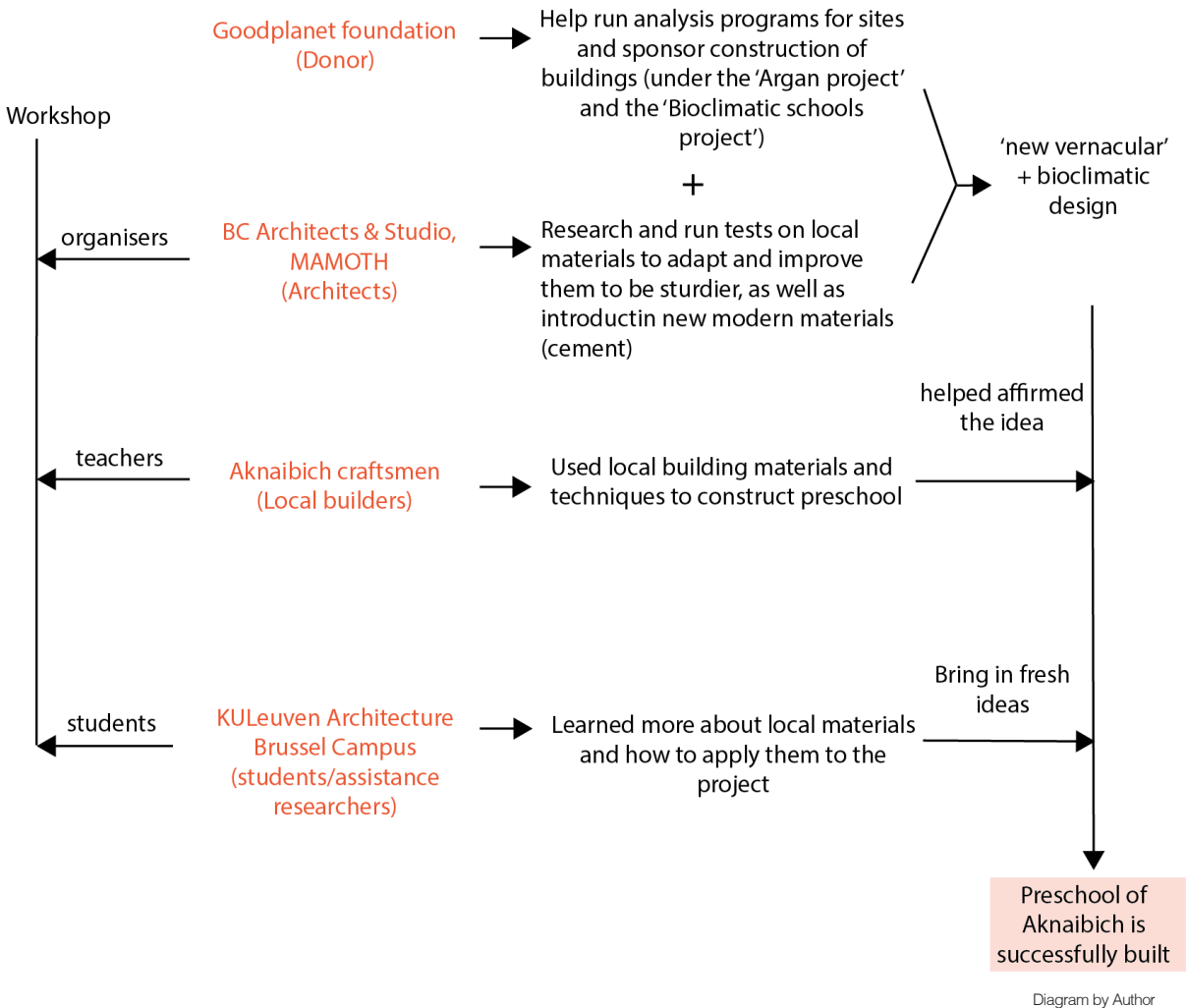
## Genesis of Project

From the age categories mentioned in the context, there would also be an age category of fewer than 6 years, which is made up of 50 boys and 26 girls. This would

require a preschool for children of 3-6 years to have early education in the village. This project was realised by the programs run by the Goodplanet Foundation around Agadir, the "Argan project" and the "Bioclimatic Schools' program. The "Argan Project" program was the first research into the area mainly focused on the production of Argan and its potential for uplifting local economics. The "Bioclimatic schools" program would be to construct buildings with thermal comfort using environmental resources.

## stakeholders and Design Process

From outside the village, the stakeholders would include the Goodplanet Foundation, presided by French photographer Yann-Arthus Bertrand, which aims to install the preschool as an extension to the existing concrete school building in the modern part of the town. The architects of this project would include BC Architects & studies, students from the KU Leuven Faculty of architecture and MAMOTH. The architects helped to conduct analysis that is needed such that appropriate modifications would be made to ensure materials are up to contemporary standards. On-site and lab tests



were conducted for the materials, such as permeability test, flexion test, sieve test, as well as density test. Using the data collected, the site soil was modified with other soil types and sometimes stabilisers, to become performant materials that meet standards in terms of structural stability, quality of finishing, thermal inertia etc.

For the village, the Aknaibich community was involved in a five-day workshop with 25 students, with the aim of developing hands-on and practical experience of vernacular building techniques and to apply this knowledge in collaboration with local community members on several punctual designs for the sustainable development of the village of Aknaibich. The teachers of the existing primary school also helped in the study of daily use, such that the design would be

based on the future daily usage of the school.

The students tried to understand the logic and strength of traditional earthen materials as well as their possible contribution to the challenges of contemporary architecture. The first part of the workshop involved hands-on experience where they work with local materials, discovering the potential of vernacular techniques. The second part was the application of this experience on a site-specific project where the student had to creatively and instinctively work out a feasible project for the Aknaibich community.

## Impact on Community

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As an architectural project situated in Aknainich in the “newer and more modern” part of the village, the project innovates on the traditional methods of construction with mostly local materials. Although some changes are made and some modern materials such as cement are used, this helps to support the local economy and instil pride in the construction of a contemporary preschool with traditional techniques. One example would be adobe bricks, or sun-dried soil blocks, one of the most ancient construction methods available. With one block maker in the whole village, using this method helps to generate revenue within the community.

As for the introduction of a ‘new vernacular design’, the craftsmen would gain new knowledge on using newer materials that could complement their traditional methods to create sturdier infrastructures.

The preschoolers also get to enjoy a comfortable place to receive education and play, with a bio-climatic school to keep cool, as well as having their own courtyard instead of sharing with the older children in the existing primary school. They would be able to grow and learn in an optimised local environment.

## Contributions to Social Architecture

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The project placed an emphasis on participatory design in the village, with a close level of partnership between the community and the architects. The community is involved in the workshop with the students for them to learn about the traditional building techniques and also giving input for the kind of vernacular design intended for the preschool. The craftsmen who used traditional building materials and techniques to construct the preschool were viewed as an asset, imparting their knowledge and using their skills to ensure the intended vernacular part of the designs were not lost.

The local craftsmen's expertise is needed for the sourcing and preparation of construction materials, such as locating clayey soil from the banks of Oued Souss, 2km from the site. Another material that relied on the craftsmen would be ratan. As they did not have wooden plates on an industrial scale, ratan is used instead to

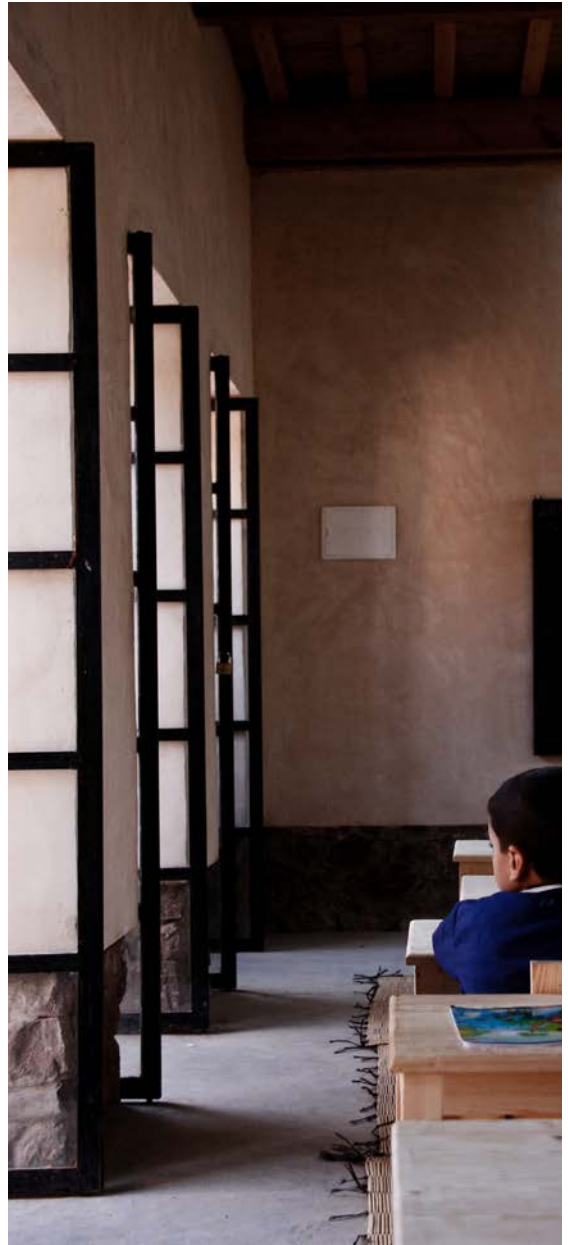


Photo credit: Frank Stabel

weave amongst wooden beams to create flat roofs. These panels would need to be meticulously woven and be replaced once every two years.

With the juxtaposition of the ‘new vernacular’ next to the ‘existing modern’ the preschool of Aknaibich created, it could maybe inspire the way forward for future constructions within the community of Aknaibich, which would include active community discussions and making use of the local craftsmen's expertise.

## 2.6

# Atarraya Taller de Arquitectura



### About Atarraya Taller de Arquitectura:

The firm is co-founded by two architects, Sebastian Oviedo and Lorena Burbano.

Sebastian Oviedo is an architect committed to processes that provide opportunities to and are shaped by everyone. His experience includes designing and advocating for permanent supportive housing in Seattle, where he practised before returning to Ecuador. While earning his B.Arch at the University of Oregon, he researched the housing-urban design intersection and provided key leadership in multiple design-build projects aimed at strengthening local organisations. He is a co-founder of Atarraya Taller de Arquitectura (Atarraya Studio), an architecture and research studio based in Quito, Ecuador.

Lorena Burbano gained her experience as an architecture student and intern in Ecuador where she also received her Bachelor of Architecture at the University of Oregon, where she participated in several design-build projects working with under-served members of her community. Before returning to Ecuador, she worked on multiple mixed-income housing and historic preservation projects in the state of Washington. She co-founded Atarraya Taller de Arquitectura (Atarraya Studio), an architecture and research studio based in Quito, Ecuador.

### case study: chamanga cultural centre

Project Name: Chamanga Cultural Centre

Location: San Jose de Chamanga, Ecuador

Date Designed: 2016

Date Completed: 2018

Size: 180 sqm

Architects: Atarraya Architects in collaboration with PSU, UT and HM

Client: Opción Más-Alberto Lopez "Baltyn"

Donor: Center for Public Design Interest (CPID)

### Project Overview

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The new Chamanga Cultural Center is a building that comprises two storeys with different materials used to distinguish both levels distinctively. The first level is built with a reinforced concrete structure comprising bricks, while the second level involves the usage of lightweight bamboo construction. The placement of the entrance and the stage is such that the entrance acts as an inviting gesture that makes the stage the centre of all activities. The backstage is made of clay and bamboo while the structure used is made of pre-cut bamboo pieces, which served both as a structural element and to bring light into the building. The facade is made of air-permeable bamboo mats and is attached to the supporting wooden and bamboo structure. The roof is covered with recycled tetra packages that support bamboo structures that act as the building's pillars that extend from the roof to the benches. The roof's overhang protects the bamboo facade from harsh weather conditions. The usage of bamboo for the roof and the facade ensures a comfortable climate for its users.





Photo credit: Santiago Oviedo

## Social and cultural context

The centre for culture and ecology built-in Chamanga is a cultural centre built for the citizens of Chamanga. The cultural centre has many multi-usage spaces and modifiable spaces which provides its citizens opportunities such as theatre, sports, music, dance, art, cinema presentations and performances. The cultural centre is in San Jose de Chamanga, near the coast of Ecuador. For context, San Jose de Chamanga is located within a context of mangrove ecosystems and is part of a greater regional population of about five thousand inhabitants has an area of 117km<sup>2</sup>. In terms of services supporting its economy, 80% of its people work in shellfish collecting industries, shrimping and fishing; 10% are self-employed and runs their own local business while the remaining 10% work in transportation and tourism sectors. The average income generated by these sectors amounts to about \$8.3K per annum. For many years, the village of Chamanga has been plagued by environmental degradation which was a result of nearby human activities such as aquatic farming that resulted in the eradication of over 85% of the mangrove ecosystems in the coastal region. The aftermath of the destruction of these mangroves resulted in a build-up of

sedimentation and an increased risk of flooding. These impacts ultimately resulted in health issues such as malnutrition of its citizens and a shrinking economy

## Genesis of Project

The lack of educational institutions crippled by its shrinking economy results in children leaving to earn income for their families. This ultimately causes young people to be unemployed and uneducated, leading to rising social issues such as drug trafficking, drug abuse, high unemployment rates, high poverty rates and low literacy rates. Furthermore, due to the recent earthquake that destroyed its village by 80% in Spring 2016, its people faced more financial and social hardships. Local organisation Opción Más has been running cultural programs for children and youth that focuses on strengthening Afro-Ecuadorian and Montubio cultural identity and heritage in music, dance, and poetry since 2009. However, the earthquake destroyed the house that the organization has been running its programmes in. Therefore, the idea to rebuild the cultural centre to continue these programmes were catalysed by the local players: Opción Más, then supported by

## Project Process

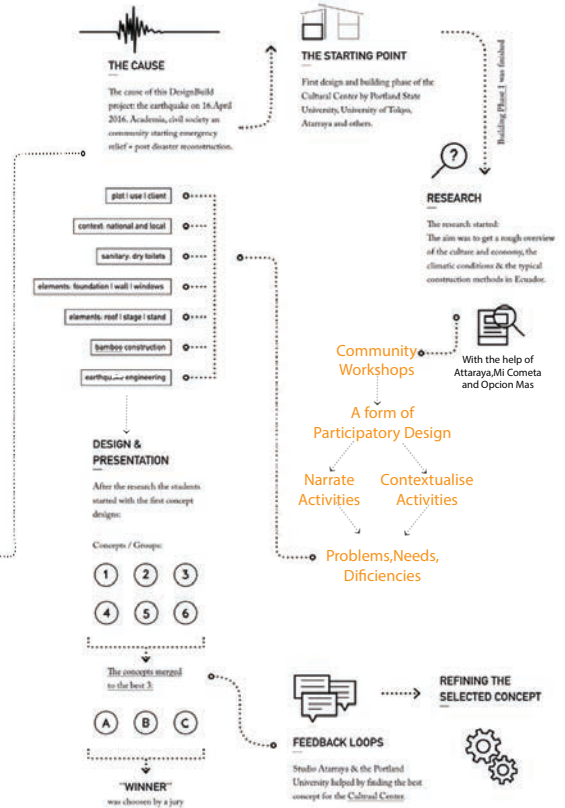
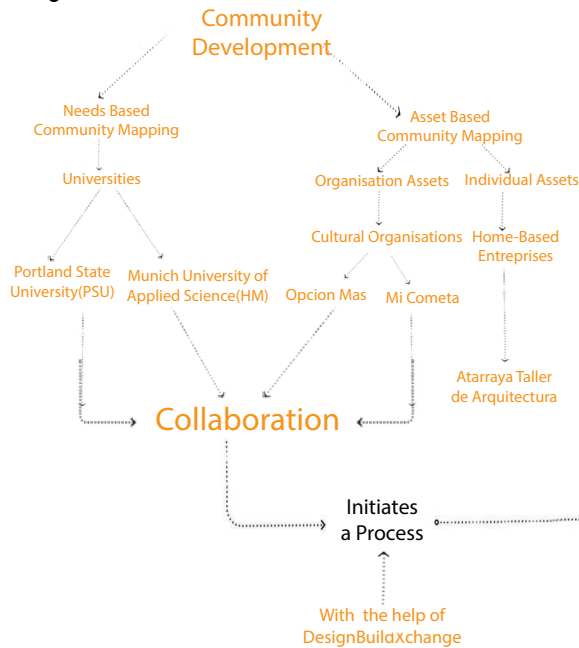


Diagram by Author

other Chamagueñ groups, Movimiento Mi Cometa, Atarraya Taller de Arquitectura, as well as different universities for design and labour support.

## stakeholders and Design Process

The key stakeholders involved in the design and construction of the Chamanga Cultural Center were Portland State University (PSU), Munich University of Applied Sciences (HM), Atarraya Studio, Mi Cometa and Opción Más.

The project was structured in two stages within a design/build scheme, where students orchestrate the construction life cycle of the project from conceptualisation to making it a reality. Throughout the process, the design evolved through the organic process of feedback loops between internal and external collaborators, where students worked closely with the community, professionals and professors.

In the first phase of construction, students from PSU began the design process. Guided by the Center

for Public Interest Design (CPID), PSU students collaborated with people of different disciplines: structural engineers from the University of Tokyo, the community of Chamanga, Atarraya Studio, students and professors from HM. With the help of Mi Cometa and Opción Más, Atarraya Studio updates students with detailed information on the post-disaster situation in Chamanga, Ecuadorian context and an appreciation of the local environmental, social and political conditions. This allows PSU students to meticulously design, plan and carry out the first phase of construction by September without hindering the design and creativity processes that students from HM might have for the second phase of construction. The students from PSU were also involved in the preparation of organizational requirements and logistics such as catering, material procurement, transport, and accommodation.

In the second phase, students from HM focused on the project management of the construction phase. Their role was to tackle technical issues arising from bamboo fabrication and composting toilets. They also kept track of budget expenditure, logistics delivery and manpower

allocation. They also documented the construction progress through reflection and journal writing, photos and film.



Photo credit: Santiago Oviedo

## Impact on Community

The new Chamanga Cultural Centre serves as a hub for activities including workshops on community filmmaking, marimba and mangrove-ecosystem preservation, art courses, and neighbourhood assemblies. The centre supports Opción Más and other local actors in their push to make recreational and cultural opportunities accessible and advancing broader social agendas. The centre helps local organisations re-establish the community's cultural ties to their history and the bay while providing a place for community-run skill-building and technical training.

As the community of Chamanga face severe sanitation issues and lack of water, two design aspects of the Cultural Centre respond to these issues. Firstly, rainwater is harvested in tanks located on the rooftop, providing users with access to running water. The tanks are located such that it is convenient to refill the water tank with tank trucks when there is a lack of rainfall. Secondly, the design of the dry-toilet system separates the faeces and urine, where faeces gets converted into compost used in improving soil conditions.

The design and construction process of the project strengthen the pre-existing social fabric and activate local community assets. This centre is currently a place for the youth to learn and collaborate with their peers to do something meaningful. Both youths and adult Chamangueñx organisations typically use the environment, constructed via traditional building

systems, to relate with their cultural roots and transform local conditions.

## Contributions to Social Architecture

The collaboration between the different actors and stakeholders, the students from PSU and HM, local studio Atarraya and local cultural organizations Mi Cometa and Opción Más, showcases the asset-based community mapping theory, that was explored by John McKnight and John Kretzmann published in 1990, was utilized in streamlining the design process of the Chamanga Cultural Centre. Applying to the context of Chamanga, these groups that focus on asset-based community development are the students of PSU and HM, where they identify the problems, needs and deficiencies with the help of Atarraya Studio during the design process. Some of these needs and flaws raised are the need for a large roof to shield from the harsh climate, the need for programme spaces such as a library, practice hall, multi-purpose room, recording studios, a proper sanitation system and a continuous supply of freshwater. Through their design, students from PSU and HM educate the children of Chamanga on the importance of culture, the impact of pollution and the importance of a good sanitation system. Furthermore, asset-based community developments are supported by home-based enterprises (Atarraya Studio) and cultural organisations (Mi Cometa and Opción Más): they consolidated the community's input regarding the design of the cultural centre. This resulted in the success of creating a building that supports the needs and wants of the community. The feedback gathered by Atarraya Studio, Mi Cometa and Opción Más was via video calls, reports and community workshops where they ask the community of Chamanga about their needs and wants. These community workshops are a form of participatory design as their needs and wants are made known to Atarraya Studio, Mi Cometa and Opción Más via participatory activities. Local contributors like Fabian Burbano, an eco-activist and bamboo expert, gave his opinion on the usage of bamboo as a material for the cultural centre. Another example was a local locksmith Schlosser who also help with the steelwork. These social skills and lessons eventually lead to the exchange of knowledge and the build-up of a strong social network system that correlates to the aims of every DesignBuild project.

# SEED Network

SEED® is a principle-based network of individuals and organizations dedicated to building and supporting a culture of civic responsibility and engagement in the built environment and the public realm. The SEED Network connects similarly-minded members of the general public with designers from the fields of Architecture, Communication Design, Industrial Design, Landscape Architecture, Urban Design, and Urban Planning. The SEED Network is a global movement to create a system of support through sharing best practices and ideas, creating a community of knowledge for professionals and the public based on a set of shared principles. The SEED Network members promote and celebrate the idea that all people can shape their world for the better through design, where design can support a community from the ground up. SEED facilitates action by providing tools such as the SEED Evaluator, which provides guidelines for pursuing a design process informed by inclusivity and participation.



Co-Founders: Bryan Bell, Lisa Abendroth

Key Members: Eric Field, Heather Ferrell,  
Barbara Sarvis

Location: United States of America

Year Started: 2005

Website: <https://seednetwork.org/>



Bryan Bell  
Co-founder



Lisa M. Abendroth  
Co-founder and SEED  
Education Director



Eric Field  
Co-Founder



## Genesis of Network

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The formation of the SEED Network began in October 2005 when diverse groups involving architects, designers, and specialists in the public interest design movement assembled for a discussion at the Harvard Graduate School of Design. The purpose was to appraise the current social, economic, and environmental roles of architecture and design and to reinforce these positions in low-wealth communities that have difficulties coping with multitudes of social challenges where they are essentially needed. Through subsequent follow-up meetings involving hundreds of more participants, the network managed to create an appraisal methodology of holistic architecture design into a working tool that architects, designers and the people involved can reference.

## Core values and Principles

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Public Serving Projects reinforce the mission and principles of the SEED Network. To pursue public interest design, it is important to construct structures that involve learning through engagement.

The SEED Network's mission is "To advance the right of every person to live in a socially, economically, and environmentally healthy community." The SEED Network promotes activism, inclusion, equity, capacity building, and conservation.

The SEED Network has 5 key principles:

1. Advocate with those who have a limited voice in public life
2. Build structures for inclusion that engage stakeholders and allow communities to make decisions
3. Promote social equality through discourse that reflects a range of values and social identities
4. Generate ideas that grow from place and build local capacity
5. Design to help conserve resources and minimize waste

The mission and principles are defined to further social, economic, and environmental justice through all the design fields: architecture, industrial design, communication design, landscape architecture, and urban planning.

## Membership and Enrollment

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The membership application for the SEED Network is through a web account, which allows designers to upload their projects for evaluation. The initial project application requires designers to input detailed information about the project and process. From there designers are able to send the project for evaluation in three parts which correspond to three stages of the project's life cycle – conception, iterative development, and outcomes, and aims to acknowledge how the project evokes positive change in the community, address its long and short-term goals through ethical and sustainable design, and engages stakeholder groups throughout the process. There are plans in the future to make the evaluator more accessible by turning it into a mobile app, for better use in the field.

The SEED Network's evaluations are prerequisites for the five different certifications they offer. Three are internal: The SEED Publication, the SEED Evaluation, intended for designers who want to document and critically analyse their project, and the SEED Certification, which is aimed at projects that have produced community-centric results which can be corroborated by stakeholder groups. The SEED Certification also involves a formal review of the project by experienced third-party SEED Network reviewers. The remaining two certifications involve external groups. The NOMA-NAACP-SEED Design Awards for Justice, Equity, Diversity and Inclusion (JEDI) in design is awarded to six projects annually at the NOMA Conference. The LEED Social Equity Pilot Credit recognises projects which promote equity amongst the community surrounding it.

SEED hosts a number of events for public outreach and recruitment. Their JEDI case study Online Webinars are open to the public, and expound on the importance of design for social justice, showcasing case studies that revolve around architecture for communities with no voice. Key members of the SEED Network speak at external conferences, sharing on the SEED Evaluator and discussing strategies that advocate community-centric design. Through the Public Design Institute, SEED runs webinars and training programmes to educate professionals. Additionally, the SEED network has published books based on their research findings, consolidating learning points drawn from their catalog of projects into a publicly-accessible medium.



## Operation, Platform and Resources

### Operation

The founding concepts of SEED are defined in the SEED Mission and Principles, which aims to uphold social, economic, and environmental concerns. As a means to address the shifting definition of the client amidst changing socio-economic conditions, the SEED Methodology was created. It provides clear professional standards of practice that translates the SEED Mission and Principles into a methodology dubbed as 'Nine Steps of the SEED Process': participatory decision making, identifying critical issues, defining goals, research and data collection, benchmark setting, measuring performances, developing timelines, proper documentation, evaluation and reflection.

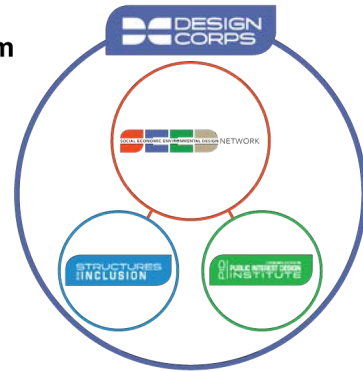
As a framework, the SEED Methodology takes input from members and serves to guide members. Members of the network are afforded with professional training courses to equip them with new protocols, procedures, and economic models to successfully implement a public interest design project. In doing so, SEED Network hopes to set a reliable standard that can be upheld across all public interest design projects. Members are encouraged to adopt the strategies, which are created to promote communication between parties and advocate for sustainable ground-up initiatives through the various project stages.

### Platform

As an established network, it has various accreditation channels to lend credibility and recognition to projects which may be in need of funding for project sustainability and wider community engagement. There are five forms of accreditation that applicants can apply for: SEED Publications, SEED Evaluation, SEED Certification, LEED Social Equity Pilot Credit, and NOMA-NACCP-SEED Awards. In general, the SEED Evaluation and SEED Certification act as a mechanism for applicants to adopt the SEED Methodology, through which a third-party review will reaffirm a project of their effective social, economic, and environmental impacts. True to the founding principles, community organisations and students can request for free SEED evaluations.

The extensive SEED member network bridges across individuals, groups, and organisations, promoting

### Entity Diagram



SEED Network is an entity of Design Corps. Diagram by Author

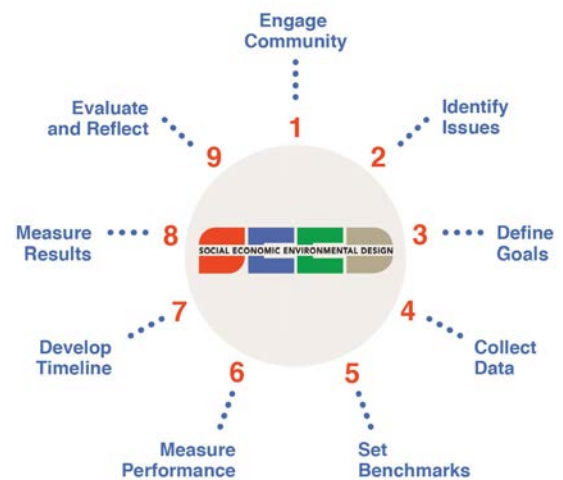


Image credit: SEED Network

the sharing of knowledge, principles, practices, and ideas. This facilitates conversations that may lead to partnerships between members, which is especially important for social projects, which usually require multi-party coordination and resources.

### Resources

The network has also published a series of guidebooks for Practice and Education in Public Interest Design, a multi-disciplinary domain of design that SEED maintains as growing in pertinence. The books feature an index of critical issues and an appendix of engagement methods among others. All of which serve as empowering guides and advocates for community-centered design, regardless of discipline. Most of the funding for the network is managed by Design Corps, which also receives and manages donations from the public for both SEED Network and SEED programs.

# Contributions to DCG Network

↳ Insights drawn from case studies and interview

## 0.1 EXTENSIVE NETWORK TO FOSTER PARTICIPATORY DESIGN

SEED Network's projects are able to involve the local community as well as various other stakeholders in the design phase to gain raw insights of their wants and needs, as well as cultural sensitivity and understanding towards the groups of people who will be the main users of the place. This is because of the extensive network and various accreditation channels already established. This can contribute to DCG by providing other networks with the contacts and links necessary for a successful project.

## 0.2 UPSKILLING NETWORK MEMBERS

SEED also holds JEDI (Justice, Equity, Diversity and Inclusion) courses for network members to discuss case studies and engage experts about the social values and public benefits of good design. These case studies are selected by a jury panel that consists of recognized activists and educators and showcase good design collaborations in underrepresented populations. These can act as a good platform to spark future works and collaborations for the DCG network.

## 0.3 REPERTOIRE OF CASE STUDIES AND EXPERIENCES

Throughout the development of each project, there are many priceless experiences and lessons encountered. This can take multiple forms - building technologies and materials, post-occupancy or even simply the design. The huge collection of information and past projects helps the DCG network learn from past mistakes as trends can be identified across different contexts over time, serving as a guide for future works.

## 0.4 SEED EVALUATOR

The SEED Evaluator is a tool aimed at ensuring key benchmarks regarding social, economic and environmental considerations are made in the stages of a project. This process of meeting multiple requirements also serves as a guide for future projects to work towards. The evaluator is iterative and constantly evolving based on past experiences to better serve the needs of the community. This tool could be made accessible for the DCG network to help designers and stakeholders build successful future projects.

## REFERENCES

- Abendroth, L. M., & Bell, B. (2016). *Social Economic Environmental Design Methodology: Public Interest Design Practice Guidebook* (pp. 93-97). Routledge.
- Abendroth, L. M., & Bell, B. (2016). *The SEED Evaluator and SEED Certification: Public Interest Design Practice Guidebook* (pp. 99-103). Routledge.
- SEED Network. (n.d.). *Social economic Environmental Design*. Retrieved from <https://seednetwork.org/>.
- Abendroth, L. M., & Bell, B. (2019). *Public Interest Design Education Guidebook*. New York: Routledge. Retrieved from: <http://universaldesignaustralia.net.au/wp-content/uploads/2018/08/Public-Interest-Design-Ed-Guide.pdf>.
- SEED Network. (2015). *EI Guadual Center - SEED Network*. Retrieved from: <https://seednetwork.org/2015-ei-guadual/>.
- ArchDaily. (2014, August 6). *EI Guadual Children Center/Daniel Joseph Feldman Mowman + Iván Darío Quiriones Sanchez*. ISSN 0719-8884. Retrieved from: <https://www.archdaily.com/534059/centro-de-desarrollo-infantil-ei-guadual-daniel-joseph-feldman-mowman-ivan-dario-quiriones-sanchez>.
- Sykes, K. (2015, March 5). *EI Guadual Early Childhood Development Center: Contract Design Network - Education*. Retrieved from: <https://www.contractdesign.com/projects/education/EI-Guadual-Early-Childhood-Development-Center/>.
- Agbogboshie Makerspace Platform. (2015). *About*. Retrieved from <https://qamp.net/about/>.
- Weidner, K. (2020, September 15). *Return and get it: Making, unmaking and remaking in a West African scrapyard*. Retrieved from PennState: <https://news.psu.edu/story/615015/2020/09/15/research/return-and-get-it-making-unmaking-and-remaking-west-african>.
- CoCoon-Studio. (2012, July 5). *Eine Marmeladenmanufaktur für Naxi | A Jam Manufactory for Naxi*. Issuu. [https://issuu.com/cocoon-studio/docs/120704\\_buch\\_small](https://issuu.com/cocoon-studio/docs/120704_buch_small).
- Hartig, U. (n.d.). *A Jam Manufactory for Naxi*. Designbuild Xchange. June 18 from <http://edbnk.service.tu-berlin.de/edbnk/?q=node%2F399>.
- SEED Network. (n.d.). *A Jam Manufactory for NAXI | 2015 SEED Award Winner*. SEED Network. <https://seednetwork.org/2015-jam-manufactory/>.
- Hartig, U. (n.d.). *Learning from Failures*. Architectural Educators Charette. <https://www.ingentaconnect.com/contentone/arched/char/2019/00000005/00000002/art00004?crawler=true&mimetype=application/pdf>.
- About us. Kota Kita. (n.d.). <http://www.kotakita.org/about-us>.
- Kennedy, S., Shay, A., & Haggerty, M. (2013). *Firm Foundation: Social Design Field Guide*.
- Architizer. (2020, December 13). *Urban SOS: Firm foundation by AECOM*. <https://architizer.com/projects/urban-sos-firm-foundation/>.
- Blosser, J., Corum, N., Glenn, D., Kunkel, J., & Rosenthal, E. (2014, November). *Best Practices in Tribal Housing: Case Studies 2013*. SSRN. <https://ssrn.com/abstract=2563139>.
- SEED Network (2012). *SEEDocs - Oweneh Bupingeh Preservation Project - SEED Network: SEEDocs*. <https://seednetwork.org/seedocs-oweneh-bupingeh-preservation-project/>.
- Our organization. (n.d.). *Environmental Works*. <https://www.e-works.org/our-organization>.
- Ecotope. (2016, November 19). *Place of hidden waters*. <http://ecotope.com/project/place-of-hidden-waters/>.

# 3.1

## Daniel Joseph Feldman Mowerman



### About Daniel Feldman

Daniel Feldman is a native Colombian who finished an Architecture for Humanity (AfH) fellowship in 2010, Brazil. This was when he designed the Homeless World Cup Legacy Centre, a mock-up premise that utilises soccer to empower the disadvantaged.

When Feldman returned to Colombia, he was introduced to the Instituto Colombiano de Bienestar Familiar (ICBF), which stands for the Colombian Institute for Family Welfare, through his friend cum practising architect for ICBF, Ivan Dario Quiñones. Feldman then volunteered with ICBF as a lead design architect and advisor for ICBF.

After the completion of this case study project, Feldman went on to study Master of Architecture in Urban Design at Harvard University Graduate School of Design, on a Fullbright Scholarship and co-directs DESINE-Lab at Rhode Island School of Design, where he educates others.

Photographs courtesy of Daniel Feldman

### case study: El Guadual Early Childhood Development center

Project Name: El Guadual

Early Childhood Development Center

Location: Villa Rica, Cauca, Colombia

Date Designed: 2011

Date Completed: 2013

Size: 16,145 sqft

Client: Colombian Family Welfare Institute

Cost/sqft: \$93

Team: Daniel Feldman; Ivan Dario Quiñones Sanchez; Sandra Pineda; Gabriel Cano; Andres Ortega; Eugenio Ortiz; Alta Consejería Presidencial Para Programas Especiales – Maria Cristina Trujillo; Instituto Colombiano de Bienestar Familiar; Fundacion Plan – Maria Alejandra Montoya; Fundacion Comaprtir – Leonardo Sanchez; Villa Rica Town Hall

### Project Overview

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The objective is to design spaces that encourage young children to make decisions influenced by their built environment, training them from a young age to become competent. It aims to nurture a generation that can realise the beneficial opportunities open to them despite the war-torn hostile environment. Feldman and Quiñones worked together with the Villa Rica townspeople for three years and attempted to integrate the needs of the community through utilising the available assets within the community, with the vision the architects have for the project. By designing an environment that encourages play through learning, with an open system of complementary rooms consisting of different physical obstacles, spurs the children physically and cognitively.

### Social and cultural context

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The Villa Rica population, comprising about 14,000 people of majority Afro-Colombian descent, had been trapped amid the decades-long conflict because of its location and environment. The accessibility to the ocean and mountains promote illegal trafficking activities. With the absence of governmental oversight and severe poverty, the place becomes a haven within a disputed region for a slew of illegitimate operatives.



Children Playing along the Classroom Corridors and Exploring their Learning Environment  
Photo Credits: Daniel Feldman

## Genesis of Project

The project is a prototype project under ICBF's pilot program for early childhood development centres for the country's young. ICBF, headed previously by the nation's First Lady, María Clemencia Rodríguez Múnera, spearheaded ICBF's initiative to construct an experimental program, within war-torn vicinities, for developing early childhood development centres customised to the climatic and communal needs. The purpose is to keep the detrimental impacts of the war on the children minimised, allowing them to grow to become independent adults capable of thinking and understanding the world around them. With Feldman's AfH experience and Quinones' position as an architect for ICBF, both headed the process of building the El Guadual through active engagements with the community and activating the innate assets available to the community to support the entire life-cycle of the project: from place-making to place-keeping.

For Villa Rica, this project aims to become a crucial element towards becoming a prosperous cultural node: locals of different backgrounds willing to come down to

the town and interact in a safe and secular public space while providing opportunities for young children to learn about the different cultures.

## stakeholders and Design Process

Feldman and Quiñones developed this development centre in Villa Rica in collaboration with ICBF, the main stakeholder driving the project with the desire to empower young children with an optimistic future. There was also a strong support of Villa Rica's mayor, proposing a location for the centre, previously an improvised soccer field that many Villa Rica townspeople used as a place to gather. Feldman and Quiñones then organised workshops and conducted design charettes with the representatives of the various groups, who would eventually be the key users of the centre consisting of children from age six - nine, teens, mothers, and people who are not duly employed. More than 60 local builders were hired and educated on accredited construction skills. 30 local women were also educated to be qualified and then employed to be the centre's early youth educators.



## Inputs from Community

we want a movie theatre to watch shows!  
- Teenage Boys

we want to have a catwalk for our hairdressing pageants!  
- Teenage Girls

we envision a classroom is full of fun and a place to play and learn!  
- early childhood educators



we want a pool in this place!  
- children aged 6-9

we want lots of trees and butterflies!  
- children aged 6-9



### Reggio Emilia Classroom Design

Private  
Recreational  
courtyard

Complementary  
classroom

Another ground  
mound from an  
adjacent  
classroom

Inner  
courtyard

Series of obstacles for children  
to play with

Diagrammatic Collage translating takeaways from Design Charettes by Author

## Impact on Community

The centre currently serves the community with the “de Cero a Siempre” mission at its core: focusing on the all-rounded nurturing of Colombian children: providing communal education to children and young mothers to create a safe environment for the young children to grow and establish their identity. The architects intentionally created the classroom learning environment that empowers children to self-explore and curate obstacle courses and options to develop their soft skills through play and interaction. This design strategy resonates with the Reggio Emilia approach, providing open spaces, obstacles, and a multitude of changing features. The exploration of the labyrinth-like centre is a place for

children to learn through having fun. The placement of slides, stairs, bridges and soil mounds that connects the different rooms catalyses decision-making, problem-solving and risk assessment, allowing the environment to nurture the children to become more independent and mentally equipped to interact with the real world. As it triangulates functions to serve as a community hub, it encourages a wholesome environment for the nurturing of young children. Children can learn through interactive exploration and interact with the community: reinforcing social and cognitive skills, critical to the child's development.

As a communal node, the participatory design workshops and engaging the locals to play an integral role in creating the centre, whether as a construction



worker or an educator, empowers the community to manage their own built environment. The training in construction methods and education can be passed down to newer generations in the community to continue maintaining the educational standards and building capabilities with accessible local materials, upskilling the locals. The centre hence also serves to educate the adults to further gain skills to contribute to the society, enabling them to be part of the productive workforce. The youths and community were also able to provide input as to the amenities provided at the centre. Teenagers requested to have an outdoor catwalk for hairstyle competitions, the water feature strongly requested by those aged six - nine, was implemented: a water stream that recirculates the water used, allowing children to interact with the water. Being actively engaged in contributing to the project life-cycle at any stage reinforces the strong ownership of the communal space run by locals that serves the community.

### contributions to social architecture —

Feldman and Quiñones three-year participatory project show that significantly avant-garde thinking applies to the architecture as a whole: from the design of the architecture, ingenious approaches towards sustainable construction methods using local materials, to having the cultural sensitivity and understanding towards the groups of people who will be the main users of the place. With the active participation of the community, the outcome of the design fully resonates with the community's needs, while in the process educating the community's able-bodied workforce on building and teaching skills and passing it down to future generations, enabling the community to keep the place running sustainably by themselves. The project is an exemplary case that involved the community not just at place-making, but also for place-keeping.

There is potential in future human-centric community projects to organise extensive design charrettes with communities from all walks of life within the neighbourhood to design a place that triangulates with other functions, redefining the infrastructure of typical building types to be a community node. Using asset mapping to identify the community's capacity, the community can then play an integral role in the place-making and place-keeping aspects of the project.

## Engagement Phases:

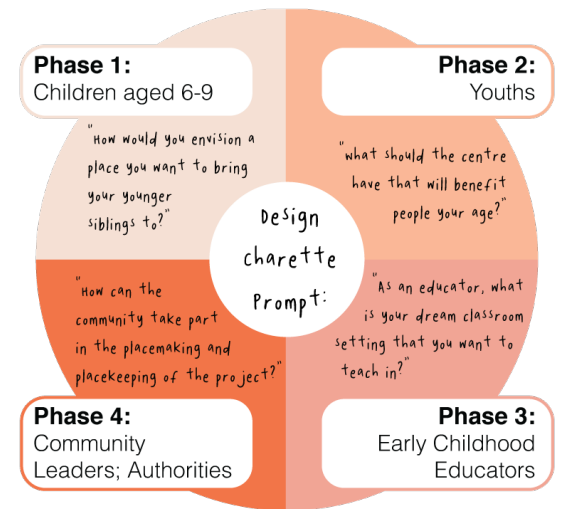


Diagram by Author



Community Engagement Design Processes in Action  
Photo Credits: Daniel Feldman

## 3.2

# DK Osseo-Asare & Dr. Yasmin Abbas



### About Them:

DK Osseo-Asare is the Co-founding Principal of Low Design Office (LOWDO), an architecture and integrative design studio based in Austin, Texas, and Terna, Ghana. As a practice, the focus is placed on exploring the links between sustainability, technology, and geopolitics. He is also Assistant Professor of Architecture and Engineering Design and leads the Humanitarian Materials Lab (HuMatLab) at Penn State University's Stuckerman School. His research includes design innovation, open-source urbanism, digital fabrication, and architecture robots.

Dr. Yasmin Abbas is the Founding Director of Panurban Intelligence, a global strategic design consultancy for business intelligence and urban innovation. She is Professeur Associé at the Ecole Spéciale d'Architecture (ESA) in Paris, as well as Assistant Teaching Professor of Architecture at Penn State University's Stuckerman School. Her design research spans the fields of art and architecture, business ethnography, and sustainability.

### case study: Agboglobloshie Makerspace Platform

Project Name: Agboglobloshie Makerspace Platform (AMP)

Location: Accra, Ghana

Date Designed: 2012

Date Completed: Ongoing

Size: 20 acre

Founders: : DK Osseo-Asare (LOWDO) + Dr. Yasmin Abbas (Panurban Intelligence)

Project Stakeholders: Agboglobloshie Scrap Dealers' Association, National Youth Authority, Accra Timber Market, Agboglobloshie maker community

### Project Overview

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The Agboglobloshie Makerspace Platform (AMP) is a transnational participatory project that aims to sustain African maker ecosystems via grassroots youth collaboration and recycling electronic waste (e-waste). The maker collective taps on the existing materials extraction economy of scrapyards and the practical knowledge of urban miners, and combines them with the technical expertise of young professionals in STEAM fields. The result: Spacecraft – an open-source hybrid digital-physical platform for recycling and shared learning amongst youths of different social and cultural backgrounds.

### Social and cultural context

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Agboglobloshie is a commercial district near Ghana's capital city of Accra. Its infamous scrapyard is located near the "Old Fadama" slum and is largely known for being a digital dumping ground – a term AMP refutes as a misnomer – for Western industrialised nations. Over the years, there have been disputed claims about the amount of waste disposed to Agboglobloshie annually, with some going into the millions of tons.

The area has a population of about 40,000 people, the majority of whom are young unemployed migrants from rural areas. Many rely on scrap metal collection and processing for income, where the weight of usable scrap retrieved is akin to a form of currency. In 2020, an estimated 7,000 people are in this trade, dismantling, sorting, and processing a range of scrap types –



Photo credit: AMP

namely metals, glass, and plastics. These sorted scraps are then transferred to the relevant refineries and local workshops for a second lease of life.

Despite being regarded as West Africa's nexus of urban mining, the scrapyard is often negatively portrayed in global media due to the toxic methods employed in waste processing – especially burning.

## Genesis of Project

Instead of buying the media's portrayal, Osseo-Asare and Abbas saw Agbogbloshie as “an urban-scale open-air manufactory”. They noticed that the urban miners and makers in Agbogbloshie had no formal technical training, yet had practical knowledge of how electronics worked. They saw the potential in connecting technical practitioners with these local makers. As such, the AMP has officially paved into Agbogbloshie scrapyard through a four-pronged approach:

- i. Activation  
Engaging makers with community leaders and public health/environmental experts.
- ii. Training  
Educating makers of material sciences, environmental hazards, and public health.
- iii. Research  
Encouraging makers to share interests and knowledge.

- iv. Development  
Enabling makers to develop and innovate.

## Stakeholders and Design Process

In general, the stakeholders are modelled after the lifecycle of a re-made product – the Scrap and Recycling dealers, Makers, Sellers, and End Users. The established scrap upcycling economy in Agbogbloshie scrapyard inspired AMP to launch *Spacecraft*, a digital network that connects all stakeholders via recycling with digital fabrication and distributed manufacturing. The modular and mobile system is designed to provide the tools required to craft space for making. Intended to be replicable in any community, making spaces can thus multiply across Africa. There are three components that function together as a *Spacecraft*:

- i. Makerspace Kiosk  
With construction materials that are locally sourced, it takes just two hours to assemble one module. These modular workstations are small-scale and low-cost, making them incremental and portable. Equipped with openly sourced tools and parts, local urban miners and makers can test new methodologies in dismantling and recreating scrap materials.
- ii. Maker Toolkits  
Customisable to accommodate the maker's equipment needs, the toolkits are expandable and locally manufactured from recycled scraps.

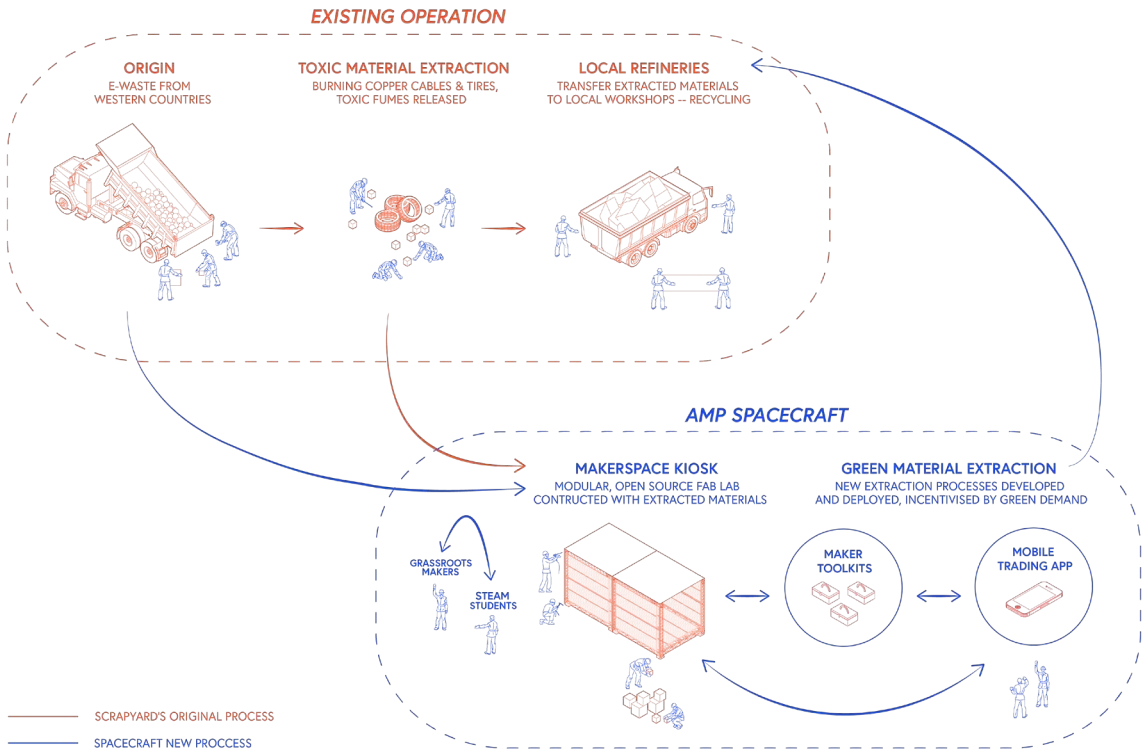


Diagram by author

### iii. Mobile Trading App

To finish off, a digital buy/sell platform is created to connect green buyers with local scrap dealers. This amplifies the grassroots makers' capacity for making and trading with recycled materials. Enable emerging makers to gather the resources and tools.

In sum, *Spacecraft* enables makers resource gathering and shared learning, while producing more and better items, trade for a steady income, and amplify maker potential. Cleaner material extraction methods are developed and revised within the *Spacecraft*, in a bid to reduce the toxic waste. It echoes the "make, re-make, un-make" continuity. The above diagram outlines the existing scrap upcycling process and the AMP implemented *Spacecraft* process.

## Impact on Community

The AMP created a 'grassroots circular economy' through an intervention that tapped on existing assets in the scrapyards rather than from tabula rasa. As such, the benefits to the Agbogbloshie scrap community can be categorised into three fronts: Education, Tooling, and Design.

### i. Education

Local urban miners and makers are able to develop and deploy greener methods of e-waste processing, reducing environmental damage and protecting their personal health. These methods are also sustained and incentivised via the growing demand for properly extracted materials. With a deepened understanding of material sciences, makers have the potential to explore partnerships with local and global Research & Development agencies.

### ii. Tooling

Through *Spacecraft*, low-cost and modular maker space kiosks are manufactured, including locally fabricated tools for digital fabrication. With that and the technical expertise afforded by STEAM professionals, local makers are able to upcycle e-waste and digitally fabricate value-added products for sale.

### iii. Design

The shared knowledge ecosystem promotes a democratic and horizontal engagement of local users, who can have primary control over their physical and digital spaces. Additionally, the cross-domain interactions between locals and global STEAM



practitioners foster organic inputs from the ground up. This injects a sense of purpose and ignites a positive chain of network innovation in Africa that taps on the existing capacity of makers at the grassroots level.

#### iv. Continuation

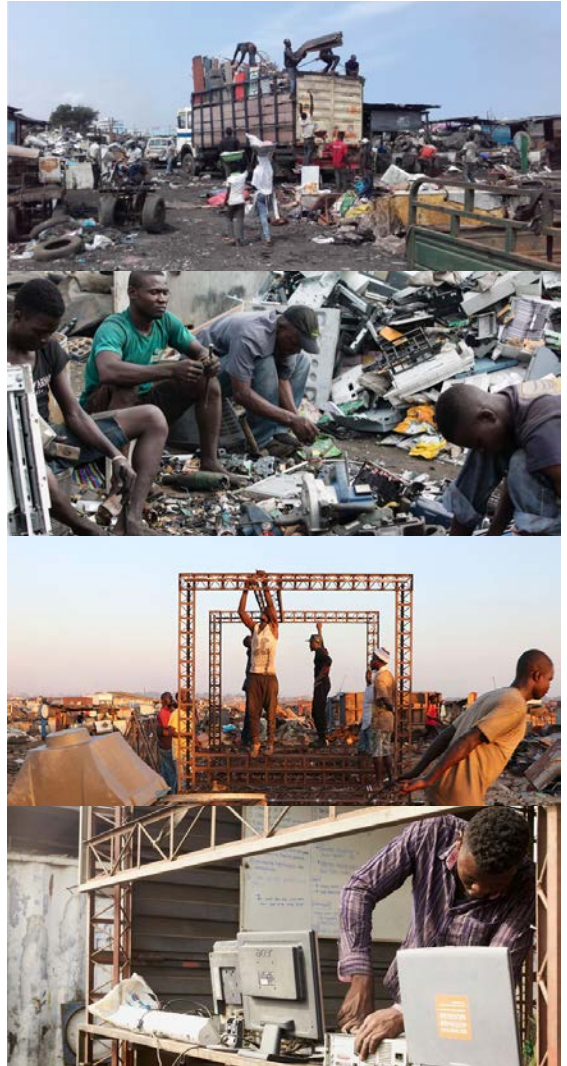
From its inception till 2020, AMP had been steadily conducting workshops and participating in events. With the advent of the COVID-19 pandemic, activities have seemingly drawn to a halt with little press coverage or updates. The only mentions of AMP in the past year have been from Penn State University's journal, which indicates that the project hasn't been entirely given up.

### contributions to social architecture —

By and large, it can be said that the AMP project is an example of participatory design where an operations framework is introduced to encourage asset-based community development for Agbogbloshie. This operational framework is informed by the existing socioeconomic conditions of the locale, complemented by the burgeoning rise of digital networks and the economic potential of recycling e-waste. It sets a precedence that highlights the positives and potential of such scrapyards, rather than succumbing to the typical media imagery of a desolate wasteland.

In many ways, the AMP project harkens back to Dak Kopec's integral theories on environmental psychology. Rather than just acting as the middlemen in breaking down scrap materials, AMP provides an avenue for learning and reinforces the element of re-creation for the Agbogbloshie urban miners. This is crucial to their wellbeing by providing a sense of individual control over their place, which was infiltrated with the wastes of foreign lands – legally or otherwise. Needless to say, such a framework is not limited to just Agbogbloshie, but in similar communities with the potential to become creators rather than simply enablers.

Beyond Agbogbloshie, the *Spacecraft* platform achievements have been exhibited in academic and design circles. This has brought further public awareness to AMP, turning the tides on media impression of Agbogbloshie as a toxic wasteland. Such media features also act as a promotional ground for networking, which is exceptionally important for any social campaigns in developing countries such as AMP.



Photos credit: AMP

On a more personal note, there are a few takeaways that can be applied to my studio project, which is coincidentally a maker space for youths in Phnom Penh, Cambodia. As a country, Cambodia's technology has been lagging behind her regional peers. With the growing maker culture in Phnom Penh, the process of "make, re-make, un-make" echoed in AMP's *Spacecraft* has great potential to be a complementary education to youths.

Youths are at their most explorative stages of their lives, thus a maker space for them ought to embrace the same open-source nature and collaboration of AMP's *Spacecraft*. Additionally, it can also serve as an opportunity to leapfrog creative technology available to the youths.



## 3.3

# CoCoon Studio



### About CoCoon Studio

CoCoon Studio is a sector at TU Berlin for contextual planning and construction. It was founded in 2004, by architect Ursula Hartig. CoCoon Studio also directs the development of the interactive dbXchange.eu network.

As part of the Mexiko Praktikumseminar module, students at TU Berlin are offered the chance to experience architecture on the field for a semester, bridging the gap between theory and reality. Students receive an intercultural exchange and learn while helping communities at the same time.

### case study: Jam Manufactory for Naxii

Project Name: Jam Manufactory for Naxii

Location: San Jeronimo Tecoaatl, Oaxaca, Mexico

Date Designed: 2010

Date Completed: 2012

Size: 200 sqm

Client: Naxii (now Sabores Mazatecos)

Other Stakeholders: TU Berlin, National Autonomous University of Mexico, C.A.M.P.O, local villagers

### Project Overview

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The Jam Manufactory for Naxii is a project that involves the local community at multiple scales - a local women's cooperative, a local NGO, local craftsmen and various villagers.

The client, Naxii, was interested in having a new facility to expand on their operations in jam productions as well as serve as an educational space. The budget for the project was extremely limited and there were also geological constraints present that would end up influencing the design.

Much of the design team was comprised of students, both from TU Berlin and UNAM. This was done as part of a module where they would have to design and build for a community in need, living together with them and working intensely on the ground for a period of time.

The end result was a project that helped create a common identity for the women of this rural village, as well as benefit the local economy. People of many different backgrounds and organisations came together to realise the vision that Naxii put forth, and it was a success due to the client investing a lot of effort into collaborating with other stakeholders and addressing the needs of the local community.



The new Naxii facility  
Photo Credits: DesignBuild Studio Naxii, TU Berlin

## Social and cultural context

San Jeronimo Tecoaatl is a small town in Oaxaca, Mexico. There are only 1606 inhabitants in the town and a large part of them speak the indigenous Mazatec language. Agriculture is the main source of income for the villagers. Naxii helps to empower the local women and forge a sense of identity, while trying to preserve the culture of the region and pass it on to future generations, largely through agriculture-related means.

## Genesis of Project

Naxii is a women's production cooperative in San Jeronimo Tecoaatl, Oaxaca, Mexico that has been operating since 1998 to promote empowerment and participation amongst women in the local community. They were founded around the initiatives of agriculture and conservation of food, gaining credibility over the years within the community.

At the time, the cooperative was seeking to expand their existing building. However, the structure of the current development did not allow for much expansion,

especially of the vertical nature, given the potential for seismic activity in the region.

With the purchase of another plot of land outside the village, a new plan was put in motion to develop a jam manufactory there for the local women.

There were two buildings planned, with one function as the main kitchen and another for educational purposes and workshops. This proposed facility was to help Naxii expand their operations and also assist the local villagers in dealing with excess agricultural harvests, reducing food wastage.

## stakeholders and Design Process

Naxii was the client for this project. It was realised in collaboration with students at Technische Universitat Berlin and National Autonomous University of Mexico (UNAM) as well as other stakeholders such as CAMPO (a non-profit organisation that is experienced in sustainable development for indigenous regions), local craftsmen and families.

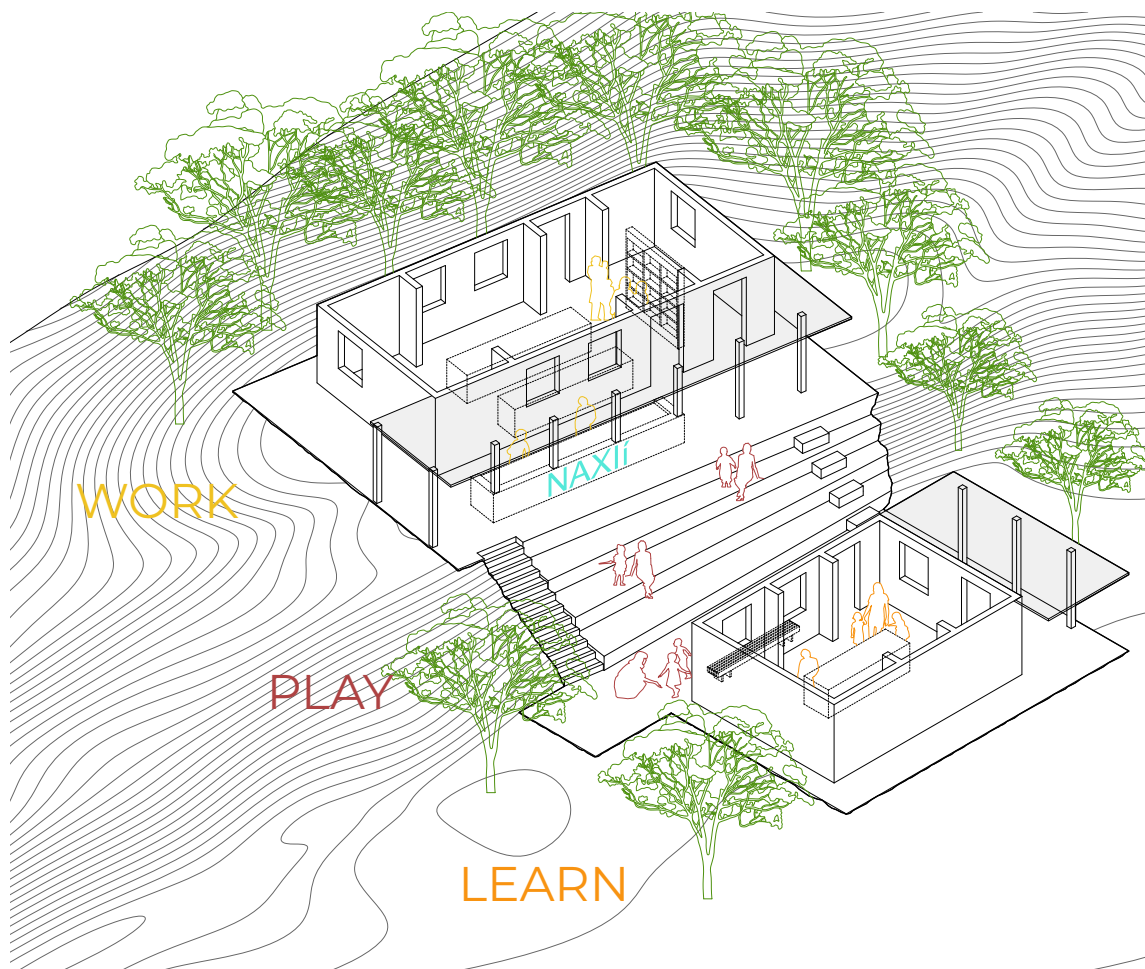


Diagram showing spaces within the compound by Author

The clarity in the vision for the project extended all the way down to some of the smaller details. The client defined the use of adobe masonry as the main building material, which could draw on the vernacular resources available and were made directly on-site. To circumvent the weakness of adobe masonry, the whole project was planned and implemented together with a team of landscape architecture and civil engineering students and professionals. Furthermore, students from a UNAM design class helped in developing new labels for the manufactured products.

The journey to completion was not smooth sailing though. There were conflicts among the steering team, burglaries, and a lack of financial support beyond the income generated from the cooperative's production. The internal conflicts even resulted in a part of the steering team leaving with majority of the equipment.

Even right upon arrival, the team found out that the slope of the ground was quite different from expected. Due to the tight timeframe of the project, they had to adapt and redesign within 2 days.

From foundation works and drainage to lighting and planting trees, this work was done by a group of 25 students from Europe and Mexico. Living together with the local community for the duration of the project, the students gained a better understanding of the project's context and the users' needs.

The project was realised and met all objectives such as budget and university credits for the participating students, all within the span of 7 weeks.



Finished building exterior and interior  
Photo Credits: DesignBuild Studio Naxii, TU Berlin

## Impact on Community

The new facility gave Naxii the opportunity to grow and extend their product portfolio beyond agriculture and jam. Over the five years that followed the project completion, the cooperative held courses and invited experts to conduct teaching sessions for other villagers.

The completion of this project also gave many villagers a sense of ownership. The organisational structure of the cooperative permeated through the local community, allowing many villagers the opportunity to contribute even for the task of building maintenance.

The resilience in the face of difficulties highlights the Naxii goals of educating women and fostering a tight-knit community of like-minded individuals. From design to execution, the Jam Manufactory embodies the principles of dbXchange in engaging with the built environment meaningfully and cultivating civic responsibility for the betterment of society.

Today, the Jam Manufactory stands as a testament to the collective power of the women's cooperative in San Jeronimo, while Naxii is now rebranded as "Sabores Mazatecos" but remains a community for women's empowerment and participation.

## Contributions to Social Architecture

As a whole, CoCoon Studio seeks out opportunities to support people with no (or limited) resources. At the same time, the students involved receive exposure to design-build projects and pick up hands-on training that is highly valuable. This project saw a multi-cultural exchange between TU Berlin students and UNAM students, as well as the local community where these students had to stay with for the duration of the project.

This project overcame many obstacles and has evolved over time to host a larger range of workshops and activities. Serving as a platform for these knowledge-sharing activities helps to retain the local Mazatecan culture of San Jeronimo Tecoatl from generation to generation.

As an unexpected but pleasant side-effect, some local families even referred to the project's construction as a model for their own house, building it out of similar materials and techniques.

It is the hope of Naxii to be able to empower the local community, and especially the women in it. This project has shown that a proper dialogue between clients and designers can lead to good results, with the added opportunity for unexpected positive externalities to arise from it.



## 3.4

# Environmental Works

### About Environmental Works Community Design Center:

Environmental Works Community Design Center is a nonprofit community-based architectural firm founded to provide professional architectural, landscape architecture, and planning services to nonprofit organizations, municipal agencies, and under-represented communities throughout Washington State. With experience in both the public and private sectors, the staff of Environmental Works prioritize community involvement and optimizing limited resources through quality architecture and landscape architecture that sustain communities. Their proven strategies are socially and environmentally sustainable.

Founded as a community design centre, their design empowers end-users and creates culturally responsive spaces. It builds community among neighbours and peers, strengthening relationships and building bridges between all – especially valuable during these divisive times.

The office is organized into four studios: housing, community facilities, landscape, and special projects. Each studio is headed by an experienced architect with more than twenty years of experience.

<https://www.eworks.org/>

### case study: Puyallup Longhouse Project

Project Name: Place of Hidden Waters

Location: Tacoma, Washington

Date Designed: 2009

Date Completed: 2012

Size: 1,473 sqm

Client/ Developer: Puyallup Tribal Housing Authority

Funding Sources: Native American Housing Block Grant, tribal funds

Design Architect: Daniel Glenn, AIA, NCARB

Architecture firm: Environmental Works

### Project Overview

The Puyallup Longhouse was designed with the goal of creating a community centre and beautiful, relevant and affordable housing for members of the Puyallup Tribe struggling with the challenges of increased urbanization, high unemployment, and low income. The design embraces the tribe's culture and follows the concept of traditional longhouses where family, friends, and community members interacted to perform daily activities such as singing, dancing, weaving, and carving. Modern technologies supplemented the natural design strategy and led to homes that are much more energy-efficient than the current Washington State energy code.



Puyallup Community  
Photo Credits: Elaine Thompson



Place of Hidden Waters, Townhouses  
Photo Credits: Tucker English

## Social and cultural context

The Puyallup are a federally recognized Coast Salish Native American tribe from western Washington state, United States. They were relocated onto reservation lands in what is today Tacoma, Washington, in late 1854, after signing the Treaty of Medicine Creek with the United States. They remained deeply involved in fishing, which constituted such an important part of their culture that it is surrounded by ritual and spirituality and traditionally live in longhouses.

## Genesis of Project

The design evolved from concept through construction, integrating a community process in which the vision for the project came from engagement with the client and the community, with careful study of historic precedents and culture and with analysis of the site and its challenging opportunities.

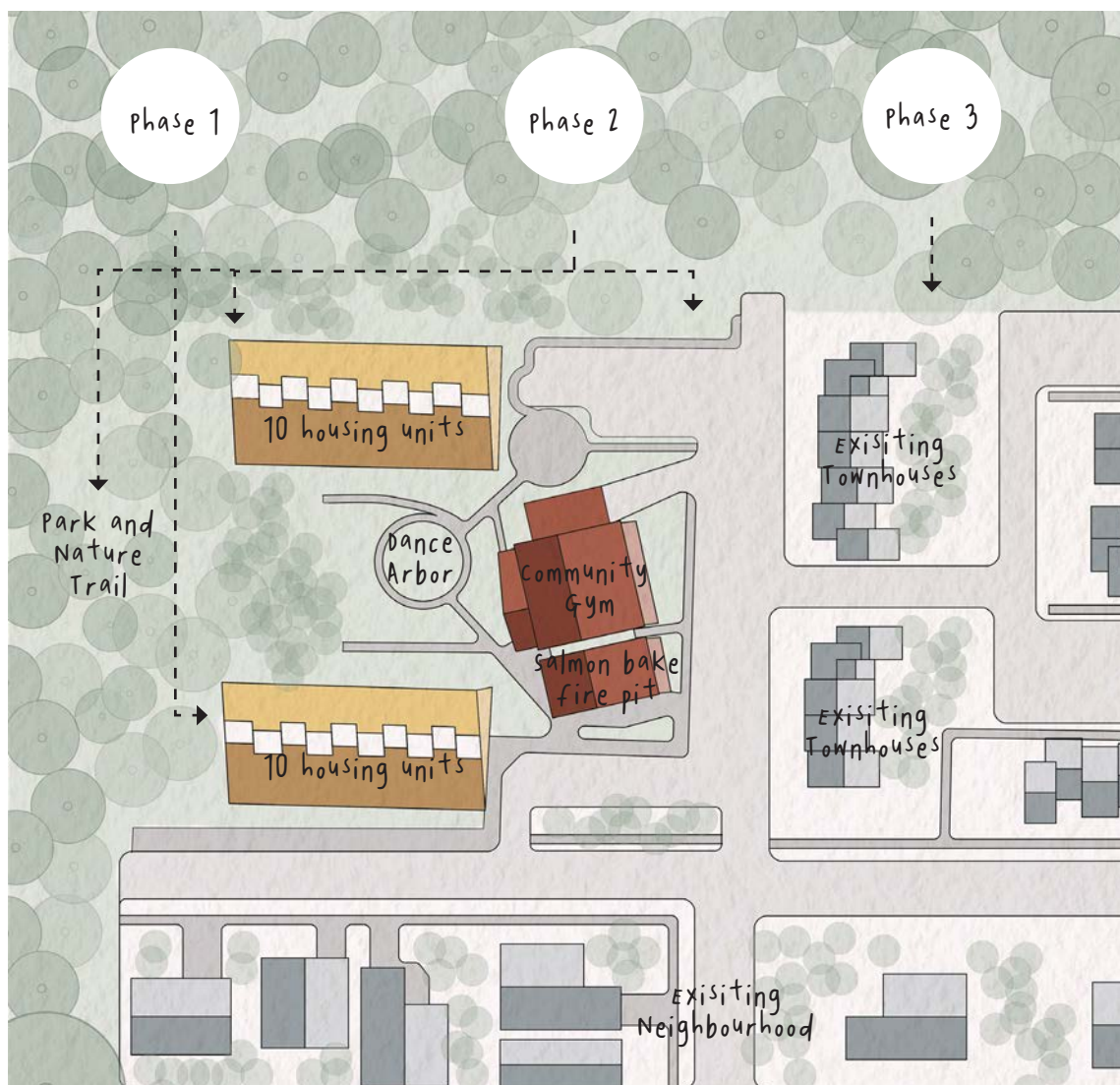
## Stakeholders and Design Process

The Puyallup community faces a high drop out and unemployment rate, impacting their overall self esteem. The Place of Hidden Waters aims to revitalise the linear

community and by using the existing tribe culture and tradition to design a space to give them a sense of belonging.

At the start of the project, the architects and planners involved would often visit the tribe to learn more about the community. They felt that it was important to gain raw insights and understanding towards the groups of people who will be the main users of the place. However, there were difficulties in getting the community involved to voice their opinions. The project soon saw a huge shift in the attitude of the tribe once they shifted the process to the community gym as the community become more curious and wanted to be more engaged. Hence, the community gym became a safe space that was familiar to the community for them to participate in the design.

The project was built in phases to test the feasibility of the housing prototype while taking into account the community's response. The first phase began with the first 10 modular housing units that were inspired by the traditional Coastal Salish "longhouse" in which multiple families shared a single long building and a shared



Diagrammatic Study on phases of the project and analysis of the site by Author

gathering space. The housing units are sited along an east-west axis to allow for prevailing summer breezes and for passive solar heating/cooling. The community was involved in the assembly of the housing units on-site under the supervision of skilled builders who would teach them hard skills to increase their employability in the workforce. This in turn gives the community a sense of pride and ownership towards the project, enabling them to take over and upkeep the project after its completion.

Phase 2 comprises another 10 housing units, a dance arbour for community gathering, a park and nature trail, renovation of the existing gym and a salmon bake fire pit. The new housing cluster together with the housing cluster from phase 1 now forms a central, partially

covered courtyard, with an orientation that maximizes natural light, views, and cross-ventilation in every room. The newly renovated and expanded gymnasium building is located between the two developments, with new community rooms, a kitchen, and office space. A “community living room” with a gas fireplace serves as an informal meeting space for story-telling and conversation. Lastly, phase 3 will be the renovation of the 27 existing housing units on the site.



## Environmental

## Social

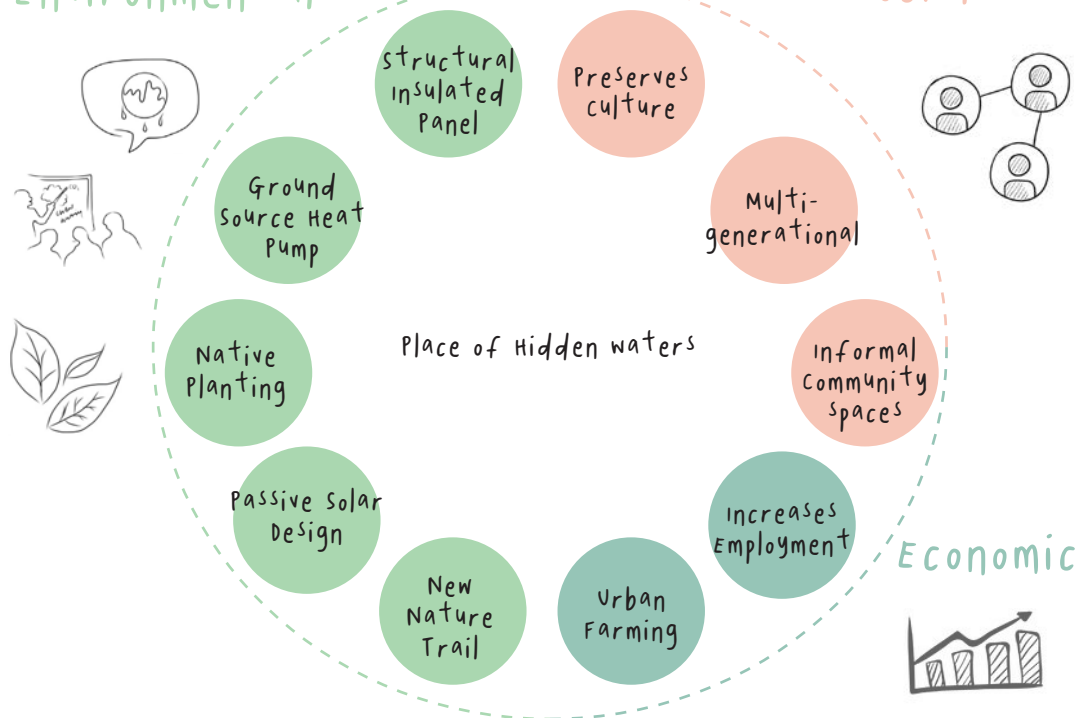


Diagram showcasing the Social, Economic and Environmental impacts of the project by Author

## Impact on Community

The design of the project encourages community interaction and preservation of the Puyallup culture through multi-generations as they live alongside one another. The curation of informal community spaces throughout the site has allowed tenants to garden, cook, learn, pray, and live together as they have been doing for generations.

Furthermore, the use of culture as a tool for design in this project increases the self-esteem of the community and spark a sense of belonging in them as they take ownership of their heritage and pass it down to future generations.

Lastly, the project utilizes sustainable building strategies that are prominent in the built environment industry. The involvement of able-bodied members of the community in the building process is important as it empowers them with knowledge in building technologies and skills that give them an edge to enter the workforce and contribute to the local economy.



Place of Hidden Waters, Salmon Bake Fire Pit  
Photo Credits: Tucker English

## Contributions to Social Architecture

This project provides a strong example of sustainable and culturally responsive housing by demonstrating how affordable housing can also achieve LEED Platinum certification and be a national housing model. This can be done by carefully studying historic precedents and apply them as inspirations for modern living.

The participation of residents and staff was a critical ingredient to the project's success as they could take ownership and feel more connected to the space. Hence, it is important to provide a safe space where the community can voice their opinions and partake in the design process.



## 3.5

# Yayasan Kota Kita



### About Yayasan Kota Kita:

Kota Kita, or Yayasan Kota Kita (Our City Foundation) is an NPO founded in 2010. It has projects in more than 20 cities in Indonesia, on a diverse range of projects from small scale urban interventions, city-wide assessments to large-scale strategic planning and visioning.

Their vision is A City For All – shaped and shared by informed and empowered citizens. Their mission is to help people make thoughtful and inclusive decisions about the development of their cities – by facilitating citizen participation and collective action, aiming to empower a generation of people by promoting democratic and participatory approaches to improve urban areas.

Apart from numerous projects addressing participatory design as well as urban and climatic conditions in Indonesia, Kota Kita has published many case studies, reports and analyses in these domains.

[www.kotakita.org](http://www.kotakita.org)

### case study: Firm Foundation

Project Name: Firm Foundation

Location: Banjarmasin, Indonesia

Date Designed: 2011

Date Completed: 2013

Size: ~98 sqm

Donor: AECOM

### Project Overview

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Firm Foundation is a public space that serves the 273 residents of RT 14 in Banjarmasin. Because of its location, the dock not only acts as an access point from the water to the neighbourhood but also a gateway to the city, elevating the neighbourhood's visibility.

Residents use it as a communal space – a place where vegetable vendors can dock, where the women can come to communally peel vegetables, and where the children can play.

Structurally, the project was designed such that it could be built by the locals, with construction materials they had on hand and techniques they were familiar with. This resulted in an architecture that fits effortlessly into the context around it. By playing with different levels and the strategic placement of planters and a shelter, the otherwise typical 7m x15m wooden dock is divided into a variety of spaces of different scales, allowing it to cater to different groups of residents at once.



Photo Credits: Kota Kita

## Social and cultural context

The project is located in Banjarmasin, a city on the island of Kalimantan. Many of its inhabitants live in homes built over the city's many rivers, canals and tributaries. Much of the land is prone to flooding. Because of this, the structures are built on stilts and are designed to drain water under heavy rain. The Sungai Jingah neighbourhood particularly runs along the Martapura River, and the residents' lives remain intertwined with it. With development over the years, the amount of river traffic has decreased greatly, as motorcycles and trucks are cheaper and faster, and this has affected the local economy. Some areas, however, still practice the river culture, using the river for gardening and buying from vendors who operate out of boats.

Climate change, hence, with its rising sea levels, poses a looming threat to the dwellings. A more immediate threat would be pollution, due to the bad habit of throwing rubbish into the river.

## Genesis of Project

Firm Foundation was conceived by four students working with Sola Kota Kita, a project of Kota Kita which collects data on urban issues and develops

participatory design tools for neighbourhoods in Surakarta.

It was entered into AECOM's Urban SOS: Water, an international design competition, and won first place. Their proposal was aimed at reducing water-related vulnerability in Banjarmasin with improved infrastructure and public spaces. A key element of this proposal was involving residents in the design process, through a community competition. Upon winning the prize, AECOM agreed to support the project's implementation.

## Stakeholders and Design Process

The main stakeholders involved in this project were the local government—including the Indonesian government, the municipal government, and neighbourhood (Rukun Tetangga, or RTs) leaders, as well as the residents of the neighbourhood. The Indonesian government has a program aimed at small-scale improvements for impoverished neighbourhoods. The Municipal government, have two departments involving such urban interventions: the budgeting department and the department concerned with infrastructure/space planning. Kota Kita first contacted the budgeting department, to find out if there were sites with existing investments that the project could support. They were pointed in the direction of Sungai Jingah.

# Participatory Design campaign

	day 1	day 2	day 3
Educational	<b>Topic</b> City development goals, environmental issues and design principles	Programs and activities	Design proposals
	<b>Objective</b> Educate the participants on stakeholders goals Tools: <i>Gallery Walk</i>	Educate the participants on how infrastructure, programs and sites combine to form a desirable neighbourhood Tools: <i>Gallery Walk</i>	Evaluating the participants' design proposals Tools: <i>Jury review</i>
Participatory	<b>Topic</b> Analyzing the problems in the neighbourhood	Pairing site and programs	Formulating a proposal
	<b>Objective</b> Identifying problems, their causes and effects, and how they're connected Tools: <i>Problem Tree</i>	Identifying locations in the neighbourhood and programs, evaluating combinations Tools: <i>Card Game</i>	Creating a physical representation of their idea and using this to understand its relation to the site Tools: <i>Model-making</i>

## Tools



### Problem Tree

Participants list out problems in the neighbourhood. Each problem is written on a sheet of paper, and the causes and effects are written on either side.



### Card Game

A deck of cards with pictures of programs is used. Participants take turns placing cards on a site model, and a few sites are identified and evaluated.



### Model-making

Simple materials like paper, beads and string are used to construct models of proposals and placed on the site, facilitating discussion on circulation and adjacencies.



### Gallery walk

Large posters are used to explain concepts. Facilitators walk the participants through different posters, and given questions to ponder after.



### Jury Review

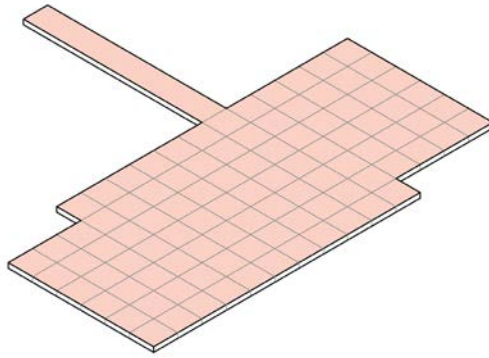
Participants discuss and decide on a set of criteria by which their proposals will be evaluated. A panel evaluates the projects and picks one.

Diagram by Author  
Photo Credits: Kota Kita

A designer was sent to Sungai Jingah to survey the area. He stayed there for a month, living in the centre of the neighbourhood, interacting with residents, and meeting with all the RT leaders. From there discussions about the project were held between Kota Kita and the leaders. A campaign to involve the locals in the design project was planned out.

It was a three-day affair and attended by individuals who were able to be present for the full duration of the campaign, from three different RTs. Each day played a specific role in educating the participants on the design process, drawing out issues their community faced and formulating solutions for them. Kota Kita used participatory design tools to achieve this. Day One focused on the environmental and governmental

aspects of the city. Through a Gallery Walk, participants learned about the city's development goals and the environmental issues that affected their neighbourhood. A Problem Tree was used to identify problems within the neighbourhood, and critically analyze them based on their causes and effects. On Day Two, participants identified areas in their neighbourhoods that needed improvement. Learning about how different programs and infrastructure come together to form a space, a Card Game facilitated the evaluation of potential programs at the site in the neighbourhoods. Day Three was proposal day. Participants collectively decided on the criteria by which their designs would be evaluated, and made models to express their proposals and understand their relation to site and circulation. A jury was brought in to evaluate the three resulting proposals.



Social Density →

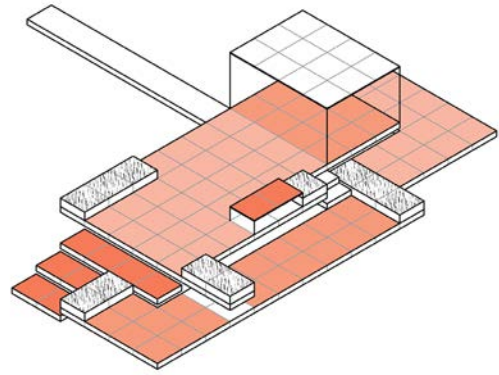


Diagram by Author

The winning idea exists as the Firm Foundation we see today! The design was further developed by Kota Kita, along with designers from AECOM, and with their understanding of the site context; its significance as a dock, the social requirements of the programs, and local construction methods.

The constructed design followed a basic grid structure and was something residents were familiar with. Kota Kita's design is elevated by the introduction of different levels, planter boxes and a shelter, which divides up the basic dock into more usable pockets of spaces. Different areas allow different user groups to enjoy the space together, creating a vibrant public space.

## Impact on Community

Apart from creating a new public space for the community, supporting activities like children playing, communal vegetable peeling and merchants operating by boat, the dock was constructed by local craftsmen, temporarily creating jobs. The intangible impacts have to be noted as well; in accordance with their mission, Kota Kita educated a group of residents on key design thinking strategies, as well as the environmental and governmental context of their neighbourhood. This further empowers the residents, should they decide to undertake future community projects.

## Contributions to Social Architecture

Kota Kita's dedication to community-based participatory design is evident throughout the project. The tools and design processes behind Firm Foundation have been meticulously documented in a booklet that is available to the public. It is a useful case study for social architects all over, not only because of the documentation of the campaign but also because of the reflections of the team on the different aspects of the campaign. These personal reflections evaluate the tools and techniques and give insight into the role of architects as facilitators of participatory design.



## 3.6

# Atkin Olshin Schade Architects



### About Atkin Olshin Schade Architects:

Atkin Olshin Schade Architects is an award-winning architecture, interiors, and planning firm that designs vibrant and sustainable places.

Founded in 1979, the firm has worked with academic, religious, and cultural institutions, as well as communities and individuals to create significant new buildings and transformative renovations.

Website:

<https://www.aosarchitects.com/>

## Owe'neh Bupingeh Preservation Project

Location: Ohkay Owingeh, New Mexico, USA

Project Start: 2005

Project Status:

Phase 1 & 2 – Completed in May 2012

Size:

Phase 1 & 2 – 27202 square feet

Developer: Ohkay Owingeh Housing Authority

Architect: Atkin Olshin Schade Architects

Major Funders: Department of Housing and Urban

Development; New Mexico Mortgage Finance

Authority; Ohkay Owingeh Native American Community

Development Finance Institution

### Project Overview

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The project aims to balance the preservation of dwellings and plazas with functional renovations of the homes, permitting contemporary life and cultural traditions to comfortably co-exist.

Quality housing will be created within restored and new buildings while the area is being returned to its traditional form. At the same time, the project will also provide meaningful education and workforce adaptation for the residents.

### Social and cultural context

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Ohkway Owingeh, a 2700-member tribe, is one of the federally recognised Native American Pueblo tribes in New Mexico that have lived and inhabited the area for at least 600 years. Across history, daily life revolved around the series of plazas loosely delineated by attached adobe houses. The connected house blocks of the village supported a social structure that knitted clans and families together. Due to the deterioration of conditions, many have chosen to leave their traditional homes in favour of new manufactured housing subsidized by the government.

Owe'neh Bupingeh is the spiritual and cultural centre of Ohkay Owingeh. The village centres act as a backdrop for celebrations and ritual observances.



Photo Credit: Minesh Bacrania

## Genesis of Project

The project aims to rebuild the cultural traditions of the tribe by bringing families back to the historic and cultural core of the Pueblo. The traditional use and character of the historic Pueblo core will be restored through the form and appearance of the dwellings.

## Stakeholders and Design Process

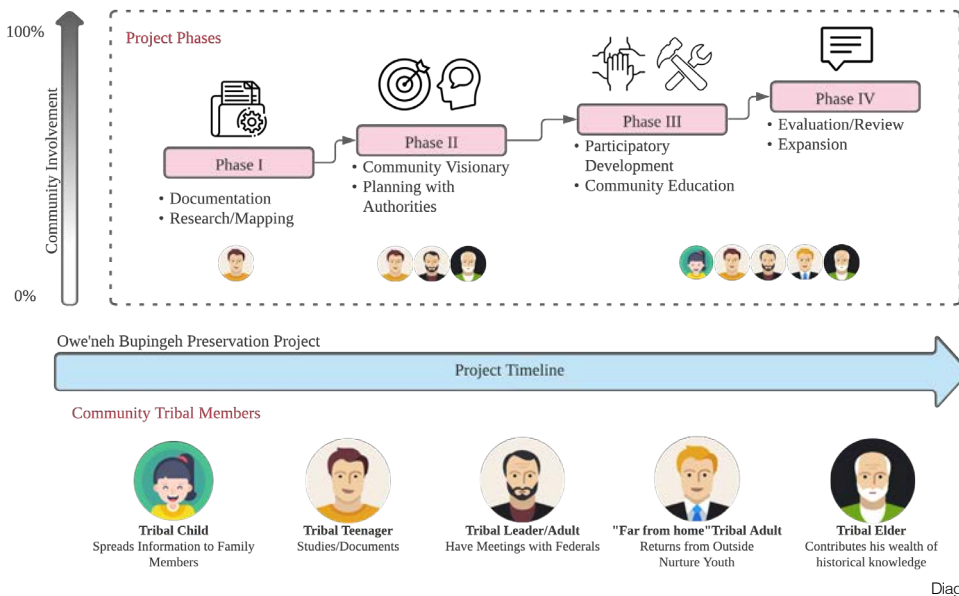
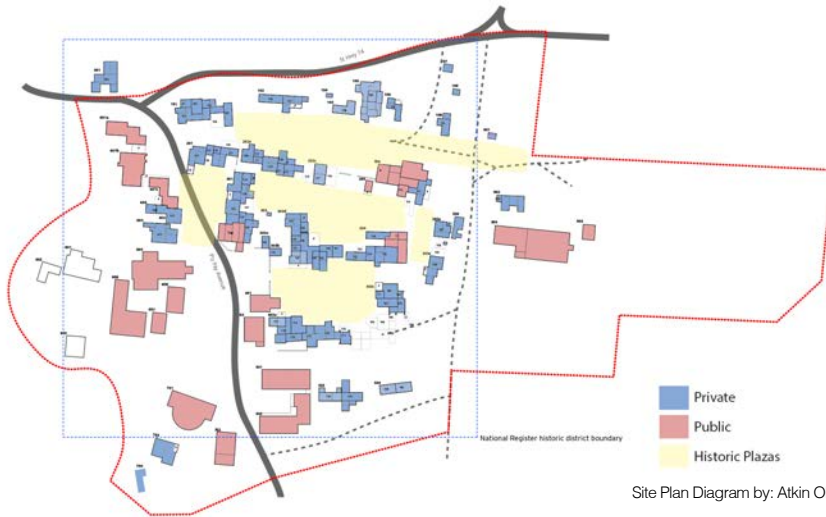
Community participation was the foundation of the project. The project began with a \$7500 grant that allowed the involvement of six tribal youths that were taught to perform research and documentation of existing buildings. Tribal Elders played a part as cultural advisors whereby they contributed their knowledge on buildings that were no longer present and stories of their past about the plazas.

2 different teams were formed for discussion. Firstly, is the tribal Council containing tribal officials, elders and homeowners, was established to ensure that beliefs and needs were respected. Secondly, a cultural advisory

team that consisted of the tribe's highest spiritual leaders, was established to determine how artefacts would be treated. To gather feedback, numerous community meetings were held, and the preservation plan was developed with discussions made between the Tribal Council and the Cultural Advisory Team. Since rehabilitation principles that evolved are sometimes in conflict with federal preservation standards, there was a need for the tribe to develop a process for balancing traditional building elements with contemporary amenities.

To ensure that the whole community was well informed, public meetings were timely conducted. High school students even played a role to spread the news to their own families.

In the process of construction, community members were trained in traditional building techniques and played a key role in rebuilding the houses and community spaces. 43 per cent of the construction crew were made up of members from Ohkay Owingeh. In summary, the community contributed significantly to the development of the project.



## Impact on Community

Through self-determined preservation goals and close collaboration, the Ohkay Owingeh tribe is restoring life to their own community. The rehabilitated houses provided a chance for tribal members to return home ever since their displacement due to poor deteriorating housing conditions.

The project has also strengthened the connection between residents and their dwellings. The homes are rehabilitated to incorporate energy conservation features, using local, indigenous materials. Since the local contractor was committed to hiring and training tribal members, traditional construction practices have been restored to the community which has encouraged

cultural rehabilitation. Multiple times in a year, community members from all age groups will come together to plaster and maintain their homes. These training of construction practices can be passed down to newer generations and has acted as an opportunity to upskill the locals, allowing them to be part of the workforce.

By actively engaging the community, it has allowed the community to develop a sense of ownership and belonging. Endangered traditions are slowly restored within the community that comes together to pool in their own efforts in recognising their own need to do so. It has given the members an identity that they will constantly return to.

## story:

Cruz, a cultural preservationist moved away earlier in his adult life and had never reconciled himself to being gone. "My body was there...but my soul was here (in Ohkay Owingeh)". Due to financial reasons, he could not return, and his tribal home was slowly deteriorating.

Today, he lives again in his original home, and he returns to the community by teaching native Tewa language to the children, hoping that they will feel connected to the traditions.



Developing the local pool talent has also spurred local contractors to rehire locals for the workforce. In terms of contributing to the economy, this has served as an economical development effort to generate more than \$600,000 in salaries that circulate and stay within the Pueblo.

On a macro scale, the project has been successful and has been heralded as a model planning effort for Native American communities in historic settings. It represents a comprehensive effort that uses sustainable community development practices to balance cultural values with the usual preservation strategies.



In Terms of Preservation Practices, the use of local materials to maintain the dwellings has also helped to conserve resources which encourage minimal wastage. The community is educated to actively maintain their dwellings with simple resources and it has encouraged active preservation without the need for external parties or external resources.



Photo Credit: Tannia Hammidi

## contributions to social architecture —

The success of the project contributes towards what SEED advocates for: the engagement of the community, building possibilities for communities to make decisions. This project has demonstrated that it is possible for communities to come together and develop their own strong sense of ownership and identity in preserving and protecting their own homes. Community members take charge of not only designing their built environment but also maintaining their built environment. It has served as an inspiration and guide for future participatory design.

"Where does the vision actually come from for the community? It should come from the members from that community, where members always have input." – Joe Garcia



# Curry Stone Foundation

Grounded by its mission to empower the practice of community-driven social impact design, the Curry Stone Foundation (CSF) actively advocates for design to be the main driver for social change, and strongly encourages the need for designers and communities to work in close collaboration. To encourage such endeavours, CSF provides supports to groups and individuals who are building healthier and more vital communities through design. They believe that such interventions have the power to improve lives, strengthen communities and create sustainable impacts. The foundation primarily focuses on shelter, community building, health care, environmental issues, education, and peace. Embedded within these areas of interest is also the belief that the benefits of social impact design should be accessible to those in greatest need.



#### Co-Founders:

Clifford Curry  
Delight Stone

#### Key Members:

Gary Feuerstein  
Andre Gustavo Guarienti de Almeida Ferreira  
Terrie L. Kolodziej  
Eric Cesal  
Sandhya Naidu Janardhan

Location: Bend, Oregon

Year Started: 2007

Website: [www.currystonefoundation.org](http://www.currystonefoundation.org)



clifford curry  
Co-Founder and Co-Director



delight stone  
Co-Founder and Co-Director



sandhya janardhan  
Managing Director CSDF

## Genesis of Network

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Curry Stone Foundation was the brainchild of Clifford Curry and Delight Stone, who together, sought to amplify the voices of social design practices around the world. This vision was shaped through their experience as an architect and historical archaeologist respectively. Accordingly, the programmatic work of the foundation is organised into three main areas - Collaborative practice, education and design practice network. All of which stems from the desire to empower and inspire design as a tool to create social change.

For education, the foundation supports and develops initiatives relating to the teaching of public interest design. One such initiative is the Social Design Insights podcast which discusses innovative projects and addresses social justice issues through design. For the design practice network, there is the introduction of the design prize which recognises practices that strive for the greater good of communities through their profession. Apart from recognition, the prize also came with publicity. This sets up a stage for organisations to share their experience and the process they have adopted, allowing for mutual learning between organisations, as well increased visibility of such practices of social architecture.

Eventually, with the advent of social media, and a burgeoning number of similar design prizes, the foundation has sought to pivot their focus from the initial aim of rewarding and highlighting outstanding social architecture projects to being the actual vessels of such work. Hence, in 2016, in line with its last pillar of collaborative practice, the Curry Stone Design Collaborative (CSDC) was launched to work alongside diverse communities to address inequalities in the built environment through the provision of dignified places. Emphasis was placed on empowering underserved and marginalised communities by means of active participation and collaboration in the design and improvement of infrastructure. One of the initiatives rolled out in 2017, is the Community Design Agency (CDA), launched in Mumbai, India, with the vision of creating an inclusive world where every human enjoys access to vibrant, safe and healthy spaces to live, work and play.

## Core values and Principles

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The one key principle underpinning the foundation and its associated projects is the idea of “empowering community-driven social impact design”. To put it simply, the foundation aims to give people the opportunities to initiate and lead changes in their living environment through design, especially within groups that are often neglected. This is due to pre-existing solutions by organisations being too theoretical or not having a way to sustain themselves in the long term.

Accordingly, as part of CSF works based upon its principle, the Curry Stone Design Prize, alongside the Social Design Circle nomination, and the Vision Award honours organisations or individuals based on the work that has been done to bring about change in local communities. However, the basis for honouring the projects is neither by the amount of recognition or publicity that it originally has, nor the excellent track record that they have accumulated, as in the long term several of the projects have been noted to eventually turn out differently than intended. Instead, the projects were awarded based on testimonials and personal interactions with the stakeholders that have been involved in the projects, which has allowed for a deeper understanding of the project.

This process of fostering social impact design in communities is exemplified in its CSDC initiative, which is guided by four secondary principles in its operations in India. These are building trust, steering participatory planning, encouraging community-led action, and employing human-centric design. The agency hopes to move away from being funds driven by placing less emphasis on the absolute numbers of the project and focusing instead on the intangible impacts on the lives of the communities.

## Membership and Enrollment

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Due to the nature and genesis of CSF as a prize-awarding body, beyond the conferment of the prize, there is no active work or deeper network in connecting these prize winners. Instead, CSF works through CSDC to embed themselves more deeply in the social architecture scene and work directly with the marginalised communities. Eventually, CSF hopes that the work of CSDC can be shared and exchanged with other practices by leveraging upon the DCG network.

## Operation, Platform and Resources

Curry Stone Foundation (CSF)

### Platform

Beyond the Curry Stone Design Prize money (ranging between \$10,000 to \$100,000), the award provides extended publicity and support to winning practices and honorees via formal and informal gatherings and regular dialogues.

In terms of education outreach, there is firstly the Social Design Insights Podcast, which is a since discontinued weekly podcast available on many streaming platforms. Through conversation with leading designers, it provides insights into innovative projects and practices from around the world that use design to address pressing social justice issues. The podcasts however still remain on their webpage for listeners to enjoy. Secondly, CSF supports a wide variety of initiatives related to the teaching of public interest design. At a deeper level, CSF works with academic partners to expand and develop public interest design curricula.

### Operation

Nominees were chosen anonymously via a network of around 200 international design professionals. The ultimate winners were determined by a jury composed of CSF members and invited international experts. However, since 2017, CSF chose to direct all of its resources to CSDC, forwarding slum development projects in India and to their educational initiative.

Community Design Agency (CDA)

### Operation

Before the start of any project, a social problem in need of tackling is identified. CDA has identified vertical slums in Mumbai to be a problem that has not been adequately addressed. They believe that it is essential for the community to be addressed at this scale, and have started to design for a community space to aid in the building of a new social system.

On the ground, data collected is vital to understanding the demographic and often, social and photo mapping is employed to paint a picture on how existing spaces are utilised. Concurrently, gaining the people's trust and building a relationship for collaboration, often over meals and drinks, is the basis of any successful intervention.

It is strategic to identify key stakeholders as entry points into the community, to get the local people interested



Large turnout at community engagement with locals



Locals understanding and taking part in waste segregation initiative



Locals enjoying community space done in collaboration with CDA  
Photos credit: Curry Stone Foundation

and invested. This is with the understanding that financial stability is a strong motivator. Often times, there will be rounds of conflict that reveals a deeper issue that needs priority in resolution for progression at the larger scale. It is important for the designers to dwell deeper to identify the cause of hindrance in project advancement.

### Resources

CDA currently adopts a model of blended finances to fund their projects. Design services are often provided pro-bono, with private funding from donors and strong social partners used to sustain the project in its initial stages. Larger infrastructural changes are only achievable by funding from local government bodies. Hence, the sustainability of the project and the level of impact largely hinges on the level of change that is achieved. If the community can prove that they can take care of themselves, larger stakeholder groups will grant them to further the project and widen the outreach.

# Contributions to DCG Network

↳ Insights drawn from case studies and interview

## 0.1 CURRENT CONTRIBUTIONS

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Through active sharing and exchange of relevant projects, particularly the work of the CSDC - CDA, whether via website archive of projects, curated podcasts or specially organised sharing sessions, the foundation seeks to support and facilitate DCG Network growth by providing an accessible library of content and empowering through information.

Furthermore, the foundation is also the main driver of the DCG Network online platform formation and maintenance.

## 0.2 BUILDING REPUTABILITY

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CSF is well known for its design prize. They are also characterised by the firms to whom the prize is awarded to. Member networks stand to learn from how this credibility, visibility and presence is carefully created.

## 0.3 COALITION FOR ACADEMIA

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Beyond the organisation of conferences and sharing sessions, the foundation works with academic partners to create and educate the public about the type of work they engage in. Potentially, a coalition of academic partners can be formed between the members of the DCG network. By leveraging on emerging online media, interest and fundamentals can be fostered in aspiring practitioners earlier on. The students stand to gain a more nuanced, complete and global view of social architecture in practice.

## 0.4 NETWORK FOR VOLUNTEERS

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The CDA has worked extensively in Mumbai. As an extension of the CSF, the CDA can kick start a local volunteer network of youths in the slums who are hungry for change. This can potentially expand to become an even larger network of volunteers all around the world that can be tapped upon for manpower and information by member firms, transcending physical barriers and the current reliance on individual contact points.

## 0.5 CONNECTION FOR RESOURCES

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Collaborators, designers and students from other parts of the world can glean an India specific perspective based on the work being done by CDA and shared via the DCG Network. This would be exceedingly helpful for other Indian based practices that stand to tap on the pre-established connections of local contact, existing social partners, methods and resources to further their work. Alternatively, practices based in other countries with a similar profile to that of India can begin to learn and extrapolate from the shared work of CDA. This is in line with the belief of the foundation that despite the different starting points and contexts of different countries, the DCG platform can serve as an equaliser, connecting anyone to everyone.

## 0.6 FEEDBACK LOOP

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By virtue of all the work that CSF has done, its potential contributions to the network (as mentioned in earlier points) and its legacy as one of the earlier social design prizes, the profile, reach and support provided by the DCG network to its members can be raised by association with CSF. This opens up the potential for a feedback loop whereas more firms get to know of and join the DCG network, whatever existing work can be enlarged in scope, impact and audience. Funders will then be attracted, and firms can subsequently be disbursed a greater sum to further their work, growing the network more and more successively.

## REFERENCES

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- CDA. (2021). About Us Community Design Agency. <https://communitydesignagency.com/about-us/>
- CPD. (2021). Design for the Common Good: A Network of Networks. <https://www.centerforpublicinter-estdesign.org/design-for-the-common-good>
- CSF. (2018, November 28). Kounkuey design Initiative. <https://currystonefoundation.org/practice/kounkuey-design-initiative/>
- CSF. (2019). Curry Stone Design Collaborative. <https://currystonefoundation.org/curry-stone-design-collaborative/>
- CSF. (2020). About Curry Stone Foundation. <https://currystonefoundation.org/about/>
- Gaw la heh Primary school classrooms and dormitories. Gyaw Gyaw. (n.d.). <http://gyaw.org/portfolio-items/gaw-la-heh-primaryschool/>
- Gyaw Gyaw. Curry Stone Foundation. (2020, October 8). <https://currystonefoundation.org/practice/gyaw-gyaw/>
- Heringer, A. (n.d.). Anandaloy: Centre for People with disabilities + Dipdii Textiles studio. Anna Heringer | Architecture: Anandaloy. <https://www.anna-heringer.com/projects/anandaloy/>
- Jeffrey Hou, Benjamin Spencer, Thaisa Way and Ken Yeom. (2015). Now Urbanism. Routledge.
- KDI. (2021). The Kibera public space project. [https://www.kounkuey.org/projects/kibera\\_public\\_space\\_project\\_network](https://www.kounkuey.org/projects/kibera_public_space_project_network)
- RIWAQ. (2021). Birzeit | Riwaq. <https://www.riwaq.org/node/451>
- The rice project. PlayOnside. (2018, May 23). <https://www.playonside.org/the-rice-project>



# 4.1

## Gyaw Gyaw



### About Gyaw Gyaw:

Founded in 2009 by Norwegian architect Line Ramstad, and local ethnic Karen counterparts, Gyaw Gyaw is based in Noh Bo Village, Northwest Thailand, close to the Burmese border, where many Karen refugees have set up base. Due to the ongoing Karen conflict, villages in Karen State are often destroyed by the Burmese military, and the lives of its villagers disrupted, some even being driven to seek refuge in Thailand. These villagers are acutely marginalized, with little access to amenities and stability.

Gyaw Gyaw seeks to provide local Karen villagers with well-adjusted, economically, environmentally, and socially sustainable infrastructure that can aid in the long-term development of the locals. They work in tandem with the locals, who are project initiators, collaborators, and builders. The Gyaw Gyaw team views themselves only as a 'tool' to translate the intentions of the locals using their technical know-how. In so doing, (local) ownership and longevity of the project is fostered.

### case study: Gaw La Heh Primary School

Project Name: Gaw La Heh Primary School

Location: Je Po Kee Village, Myanmar

Date Designed: 2016

Date Completed: 2018

Size: 220 sqm - classrooms 6x35 sqm + toilets 5x2sqm

Client: Karen Education Department

Programme: School, classrooms, split gender dormitories, toilets, and kitchen

### Project Overview

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Gaw La Heh Primary School is located in Je Po Kee Village, a Karen village in Myanmar. The school was rebuilt with the intention to better house its pupils and to provide them with a safe, conducive environment to live and study in. Through active dialogue with the school administrators, and the local villagers, Gyaw Gyaw distilled a simple design that would respond objectively to the needs put forth by school administrators, climatic factors, materials present in the locale, and the labour that the villagers could provide.

### Social and cultural context

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Throughout the longstanding history of Karen settlement in Burma, the relationship between the ethnic majority and minority has always been fraught with tension and conflict by nature of their differences.

Karen villages are often targeted by the Burmese military. Their homes and rice stocks are burned down, leaving them no choice but to escape to the forest where malaria and malnourishment are rampant.

When the coast is seemingly clear, the villagers often venture back to their villages and pick up where they left off, rebuilding their lives. This constant disruption and uprooting has led to economic difficulty, and low levels of literacy.



Gaw La Heh Primary School, first two classrooms , 2016

Photo credit: Vincenzo Florano

## Genesis of Project

In 2008, some villagers decided to move back to Je Po Kee village after peace talks were conducted, and the situation in the village had calmed down. The headmistress of Gaw La Heh Primary School was one of them. She started the school in 2009 to serve the local community, and with support from the Karen Education Department (KED), it quickly expanded to 200 students across 7 levels, from kindergarten to level 6, all sharing a single classroom.

The school was built at the edge of the village, overlooking a valley making it susceptible to strong winds. Due to the precarious siting of the school, and the overcrowding, Gyaw Gyaw was approached by the KED, and Je Po Kee Village to aid in the design and construction of a more conducive school compound.

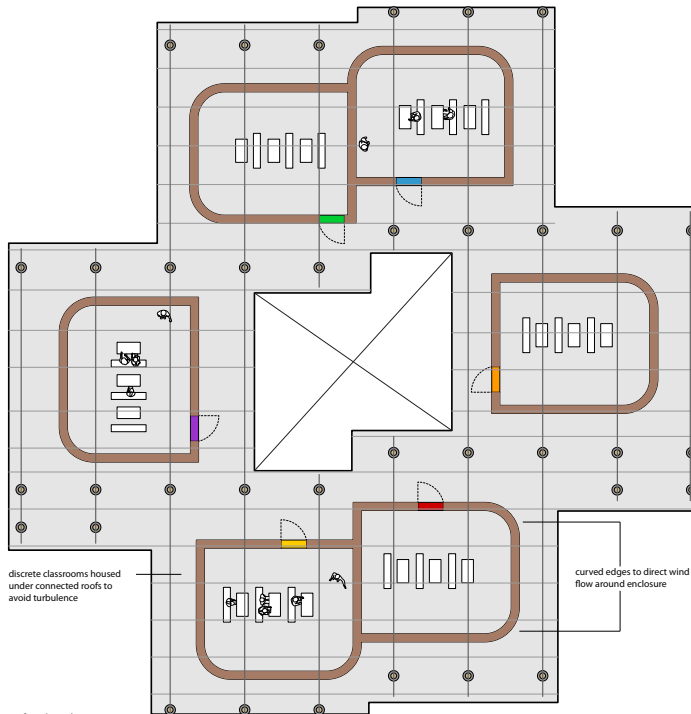
Prior to accepting the project, however, Gaw La Heh Primary School had been on the radar of the Gyaw Gyaw team.

Having followed the school for years, the team was impressed by and confident in how well the school was being run. Thus, with the Gyaw Gyaw mission of developing local communities in mind, the team took on the project with the assurance of its quality and potential.

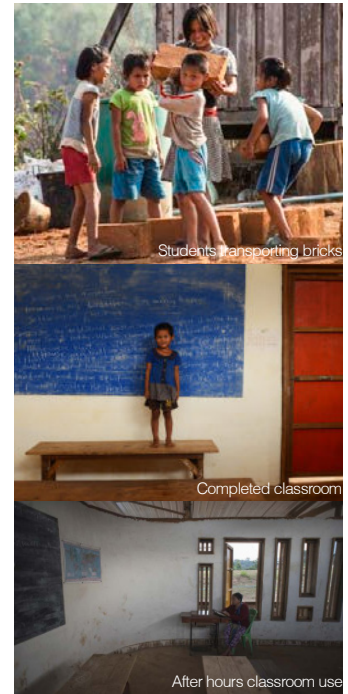
## stakeholders and Design Process

Gyaw Gyaw is very mindful of the unique relationship that they have established with the Karens. Central to the work they do is mutual trust and respect for one another. This is evident in the large role that the Karens play in all steps of the design process. This involvement is not limited only to those who initiated the project but the entire village- students, parents, neighbours, school administrators etc.

The design process begins first with planning. A ground-up approach is taken. Having the locals heavily involved helps create ownership and pride in the buildings being designed, encouraging persistent use.



Floorplan of school  
Diagram by author



Photos credit (from top to bottom):  
Line Ramstad, Vincenzo Floramo, Gyaw Gyaw

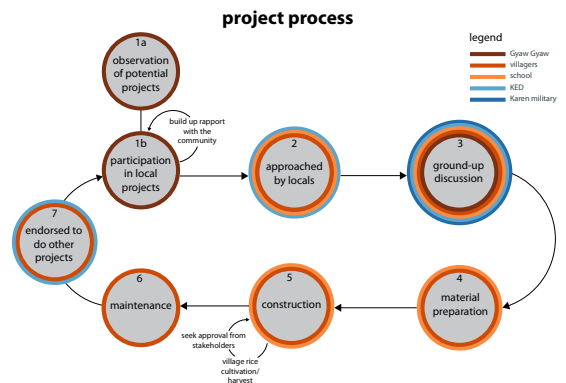
In these design meetings, the design team are sensitive to local power structures which are the anchor of the village. There is a tacit understanding that Gyaw Gyaw should defer to the village head as required.

To accommodate the 7 levels of students, 6 classrooms were built around a central courtyard. Caution was taken against strong winds by rounding the outer edges of each rectilinear classroom to direct wind flow around it.

Economic and environmental sustainability are key drivers in decision making. Hence, local materials and methods were chosen. This way, local villagers can easily complete repair works. By hiring local labour, villagers are entitled to wages or free meals, which helps to alleviate some financial burden.

Adobe is used to make bricks for masonry walls, while locally cut timber posts support the zinc roof brought in from nearby Mae Sot village. Timber posts are first erected so that the roof can be placed upon it. This roof can then provide shelter for the locals as they build the walls.

As the locals are mostly rice farmers, they live according to their crop cycles. The school had to be built in phases, 2 classrooms a year, across 3 years, to deconflict between construction and rice harvesting/cultivating. Before the commencement of each phase, the headmistress, KED, village leaders, and local Karen military need to be consulted.



Process diagram  
Diagram by author

## Impact on Community

Upon completion of the school, the children now have a more conducive environment to learn, play and grow in. The dormitories built also allow students from neighbouring Karen villages to pursue an education without the hassle of an arduous daily commute through the steep, hilly terrain.

In the evenings, when school is done for the day, the school is inhabited by parents and other villagers as a social/ communal space.

Beyond the school context, by participation in the construction process, villagers have gleaned tools, methods, and knowledge to construct more buildings as required. The Karens of Je Poe Kee and its surrounding villages can now develop independently.

The establishment and rebuilding of the school have also invited opportunities for collaboration with external welfare organisations. PlayOnSide brings rice and footballs to the school monthly.

The provision and sponsorship of rice allow the school to provide meals, attracting parents to enrol their children in school to alleviate the burden of providing that extra meal. In this way, children can get the necessary nutrition for growth, and education at the same time.

It is clear to see that constructing a school is not merely about the opportunity to provide education. In fact, the bigger picture is the feedback loop system that the initial action sparks off. Architecture is only the vessel for said system.



Monthly rice distribution

Photo credit: PlayOnSide

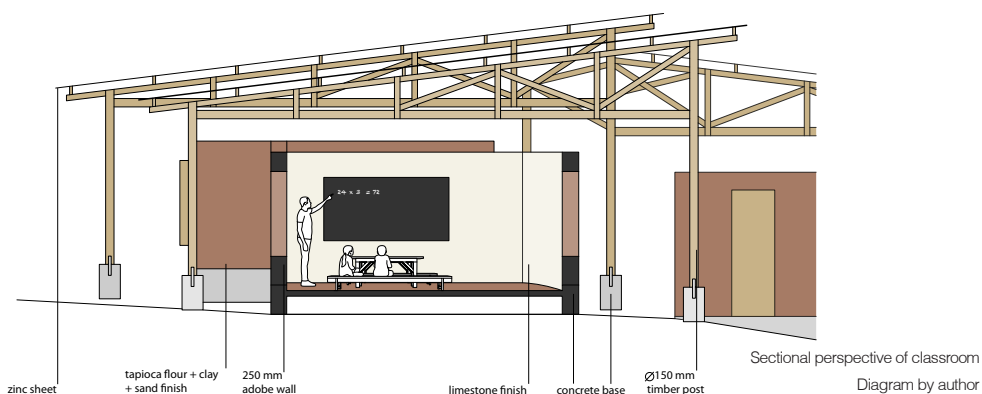
## Contributions to Social Architecture

Architecture is both a vessel to trigger indirect impacts and to serve a greater cause than simply providing well-designed spaces.

Other social architecture projects can take care to carefully consider their approach/ process and its potential opportunities as opposed to looking myopically at the end result. This allows for a greater, more long-lasting and valuable impact.

Additionally, every aspect of the project has been carefully tailored to suit Je Po Kee village. The exact same design and process cannot be transplanted haphazardly on any other project which is a testament to the strength of the intervention.

More social architecture projects should seek to emulate this uniqueness, and take it to be a marker of fulfilling the aspirations and goals of social architecture. Gyaw Gyaw through its process and design has provided an example framework towards being purpose-built.





## 4.2

# Anna Heringer Architecture



### About Anna Heringer Architecture:

Architecture as a tool to improving lives is the basis of Studio Anna Heringer. Anna Heringer, the German architect spearheading the firm, is a strong advocate for the betterment of the local community first and foremost. Beyond just her own skills as an architect, Anna's approach to architecture is always to leverage local materials and energy (human labour) and combining those resources with the global know-how of experts to create a solution that is truly for the people.

On the same note, Anna's interest in the human condition has seen her projects heavily featuring participatory building. The involvement of the local community as a key stakeholder fosters community pride and ownership.

She champions the use of sustainable materials and has a particular interest in mud as a high-quality building material. While generally regarded as primitive and inferior, Anna believes the capacity of mud is only limited by the user's creative abilities to manipulate it to suit contemporary needs. Her projects see that taking on the obligation of environmental protection can be done both responsively and responsibly.

### case study: Anandaloy

Project Name: Anandaloy

Location: Rudrapur Village, Dinajpur, Bangladesh

Timeline: 2017-2020

Size: 253 sqm

Lead Architect: Stefano Mori

Concept And Design: Anna Heringer

Client: Dipshikha Bangladesh

Sponsor: Kadoorie Foundation, Lutz & Hedda Franz  
Charitable Trust

Contractor: Montu Ram Shaw

### Project Overview

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Amidst the lush paddy fields in northern Bangladesh, Anandaloy stands a two-storey building made of bamboo and mud. Unlike other local buildings erected in a rectangular layout, Anandaloy dances in curves, with the only ramp in the area seen winding playfully around its inner structure. Beneath the ramps, children find joy and wonderment in exploring the cavernous spaces. The villagers have never seen something quite like Anandaloy before.

Referred to as The Place of Deep Joy in the local Bangladeshi dialect, Anandaloy hosts a therapy centre for people with disabilities on the ground floor and a small studio stuffed by local female tailors producing fair trade textiles (Dipdii Textiles) on the second.

Beyond just a spatial solution to mending social injustice and segregation, Anandaloy also exhibits Anna Heringer's dedication to environmental sustainability with locally sourced materials. She challenges the possibilities of mud as a resource for contemporary architectural use. With the know-how of local craftsmanship and the collaborative efforts of the ordinary villagers with Studio Anna Heringer, Anandaloy has been realised as a cleverly interwoven solution balancing social, environmental and architectural design in response to the challenge of mending.



Photo credit: Studio Anna Heringer

## Social and cultural context

In Bangladesh, disabilities are hidden, perceived as a punishment for sinful behaviour and thought to be contagious. Disabled individuals are isolated and shunned, limiting their access to adequate care and participation in society.

Furthermore, rural areas in Bangladesh often grapple with poverty and urban-rural migration due to the lack of opportunities. In work scarce environments, the only option for the woman is usually to seek employment in the cities. They often end up working in hazardous and inhuman conditions in factories. Not only are the effects of parental migration lasting on the children left behind, but these women, too, are also truly vulnerable being away from their families and losing their freedom.

Thus, with a need, Anandaloy provides a chance at social integration for the disabled. With Dipdii Textiles introducing fair work opportunities at home, women are empowered and their families' well-being safeguarded.

## Genesis of Project

Anandaloy is conceived as part of a collaboration with NGO Dipshikha for rural development. It is one of the six projects in Rudrapur that addresses rural challenges. This project responds to the specific needs to tackle social injustice as well as supporting local textile traditions and improve work opportunities in the village.

The project is the accumulation of the learning process of all the five previous projects in Rudrapur. It shares the use of mud and bamboo as the primary building material and taps on the foreign expertise of industry experts in improving the buildings' structural integrity. The project is a testament to the transfer of acquired knowledge on architectural representation and construction methods introduced by Heringer and her team of experts.

## Stakeholders and Design Process

Like that of other projects, Anandaloy's employs a hands-on participatory approach to bolster community involvement. Clay is relatively simpler to manage, and this allowed for everyone to work together on-site, even

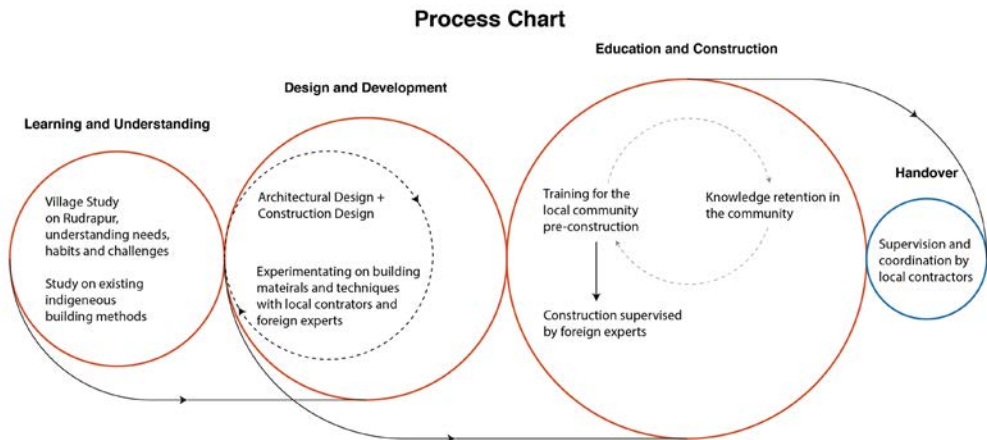
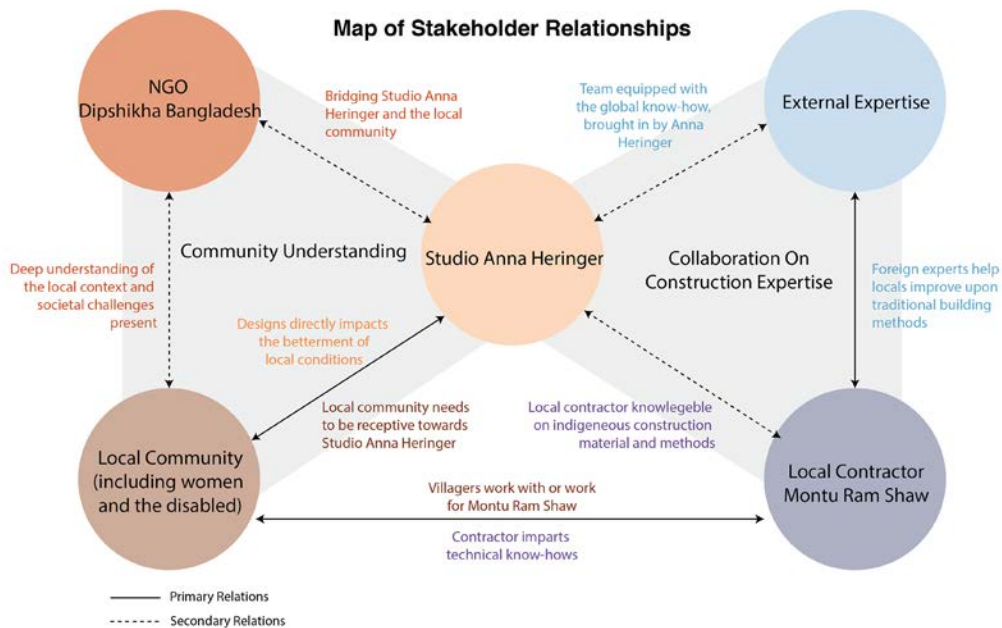


Diagram by author

the young and the disabled were involved. Training for the locals on construction methods and architectural representation had been done in previous projects with a similar design principle.

Participatory building has allowed the initiative of the local community to shine through. According to Anna Heringer, the formerly passive villagers had been very much engaged in the construction process. Investment in the structure was so immense that locals working on the project took charge of working out solutions in overcoming challenges arising from the geometrically daunting building without the help of external expertise. When shown around the site, she could feel the happiness and pride which radiated off those involved. Their ownership of the project and their strive to work

independently is indicative of community support. To Anna, the biggest reward is when "the architect is no longer needed, and the techniques and know-how are embedded locally".

## Impact on Community

Since the construction of Anandaloy is mainly built out of mud and bamboo from local farmers, the largest portion of the budget was invested in the local craftspeople. Beyond just support for local businesses and individuals in the financial aspect, what is pertinent is that the construction of Anandaloy and the other projects in Rudrapur have imparted valuable skillsets in the local community which can be continually transferred. Unlike the other projects that were under German supervision,



the site was entirely managed by the Bangladeshi contractor and a team of local workers. With the knowledge and the construction materials readily at hand, similar building types may be replicated and possibly further adapted to house other needs. Thus, the building is much more than just a structure, it became a real catalyst for sustained local development.

## contributions to social architecture —

The most predominant feature of Anandaloy is the ramp winding up to the first level of the building. Since it is the only ramp in the area, it sparks a lot of curiosity within the local community. In that way, the architecture becomes the start of a conversation on the misconceptions of disabilities and can become the catalyst to promoting understanding of diversity. The ramp as a symbol of inclusion is also a form of empowerment for the disabled beyond its practical functionalities because, for the first time, they are represented. According to Anna Heringer, having a place where they can go and can call their own, yet not separate from the day-to-day functions in the village, provides a lot of dignity for the disabled.

To Anna, the project is special also because, together with Veronika Lang and NGO Dipshikha, her job scope goes beyond designing a vessel that houses a programme. With Anandaloy and Dipdii Textiles, she co-chairs and oversees the improvement of work opportunities for women in the village. With the chances of securing employment where they live, the vulnerability of these women is reduced and the effects of parental migration on otherwise left-behind children will be mitigated and the next generation of people will have a better shot at life.

Seeing with fresh eyes, the key takeaways transferable to my capstone project from this case study are:

- 1) Empowerment through new skills or skills upgrading
- 2) The providing of space in the community that the marginalised may call their own

For some context, my capstone is working on improving the architectural design of foreign worker dormitories to address the issue of overcrowding, poor hygiene practices and the need to improve pandemic readiness.

Besides adhering to the new pandemic specifications, the project seeks to explore migrant worker dormitories

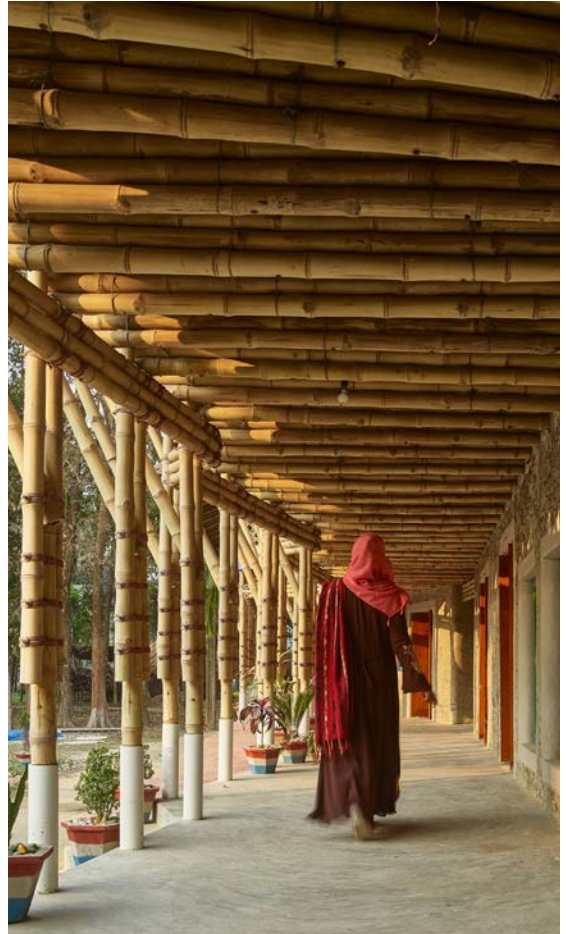


Photo credit: Studio Anna Heringer

as a new typology that integrates into residential estates through common shared facilities. To promote interaction between the locals and the migrant workers, we have pushed for art as a unifying factor. Beyond social integration, art programmes and education for the migrant workers may allow them to pick up new skills. For instance, photography as an interest may become a new business opportunity back home.

As for spaces, migrant workers may call their own, we have looked into it on two levels. Firstly, on a larger scale, for communal spaces, our capstone have discovered that migrant workers miss green spaces particularly. This is because the natural environment is a familiar element back home for many. As such, we have incorporated garden spaces that provide a place of socialisation and refuge for a more comfortable living environment. On a microscale, the lack of privacy is addressed with convertible furniture that gives migrant workers the freedom to choose how they configure their space to their preferences or for different needs.



## 4.3

# Kounkuey Design Initiative

### About Kounkuey Design Initiative:

Kounkuey Design Initiative is a multidisciplinary, non-profit design practice that has been working to generate radical alternatives to slum conditions. Started out as a group of six Harvard Design School students, Kounkuey Design Initiative (KDI) seeks to put their skills in architecture for use in social justice. Having identified the power of public spaces in revitalising communities, their works revolve around the creation of productive public spaces as a means to activate the unrealised potentials in neighbourhoods. To further enhance the integration and sustainability of these public spaces, KDI also advocates community-led planning which strives to exploit the assets already present within their community to build business strategies and community capacity. Lastly, KDI also believes in co-producing and sees themselves as one that comes in to fill the gaps in areas of inadequacies within the community, rather than imposing their own knowledge. Ultimately, what they hope to achieve is a self-sustainable cycle that brings life to these productive public spaces for years to come.

### case study: Kibera Public Space Project

Project Name: Kibera Public Space

Location: Kibera, Nairobi, Kenya

Date Designed: 2006

Date Completed: Ongoing

Size: 2.38 sqkm

Client: Kibera residents

### Project Overview

The Kibera public space project is a community-driven project, conducted in close collaboration with Kounkuey Design Initiative (KDI) group. The project develops individual nodes of productive public spaces that cumulates into a network of support that enables residents to take charge of the growth of their neighbourhood. The main driver of this project is the collaborative process involved in developing these public spaces. The developments at each productive public space are intentionally customised according to the physical, social and/or economic assets and needs, identified solely through close collaboration with the residents within the site. The build process, as well as the post-build management of these sites, are also carried out by the residents themselves, equipped with the skills through workshops catered by KDI. The involvement of the residents at every stage of the development process gives them a sense of ownership towards the project and helps set the foundation for the maintenance of the public space in the long run. Spanning across a site of 2.38sqkm, these 10 nodes of productive public space serves as starting points of economic growth for future expansion and development. What this aims to achieve is a community empowered to the point of self-sufficiency, where KDI is no longer necessary.

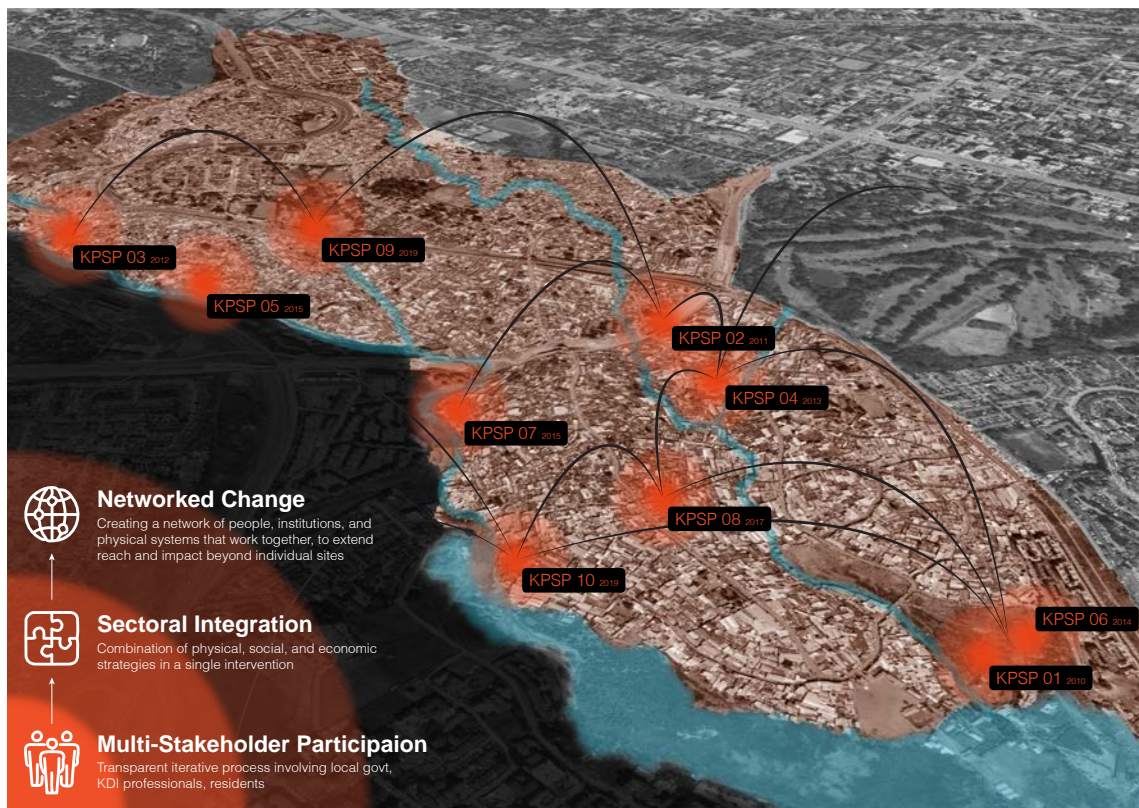


Diagram by author, Photo credit: Google Maps

## Social and cultural context

Supporting a total population of about 200,000 people, Kibera is characterised by crowded conditions, a lack of waste disposal and sanitation services, high unemployment and severe flooding. Most families also live on around a dollar per day. Inevitably, corruption and crime rates persist within the region. Yet despite these economic, social and environmental challenges, it is not without potentials. As identified by KDI, Kibera's assets include entrepreneurship, ingenuity, a strong social fabric, and extensive community activism.

## Genesis of Project

KDI began by questioning the persistence of slum conditions despite significant investments and upgrading efforts. This journey towards a response elicited the need for a closer examination of the past. Through studying the successes and failures of previous approaches, three key strategies were derived - "multi-stakeholder participation," "sectoral integration," and "networked change" (Fig 1). These strategies were used to guide the development of the revitalisation work in Kibera. Apart from these strategies, KDI also

recognises that Kibera was not their community and that the complexities of the issues they face and the viable solutions are best understood by the residents themselves. Hence they established that their goal was to collaborate with Kibera through seeking guidance from the local community rather than to impose their assistance on them. Through the informal conversations and in-depth collaborations with the residents, the Kibera Public Space Project (KPSP) network was drawn up.

## FIVE PHASES OF PARTICIPATION



Diagram by author, Photos credit: Now Urbanism: The Future City is Here

## stakeholders and Design Process

The design process begins with participation, which is further broken down into five overlapping phases: request for proposals, stakeholder alignment, planning and design, implementation, and operations (Fig 2). Once the site is fully operational, the project is formally inaugurated and handed over to the management committee and the wider community. KDI's role now shifts from a facilitator to an advisor, monitoring the community partners for at least a year to ensure the physical and financial sustainability of the project. After which, the project is left to the independent ownership of the community partner to influence further developments in the wider community.

## Impact on Community

The KPSP network currently consists of 10 Productive Public Spaces (PPS) located within Kibera, each comprising design interventions layered with **physical** and environmental improvements, **social** empowerment initiatives, and **economic** opportunities.

Each PPS was rolled out progressively, starting with KPSP01, which eventually set the basis for the others. The development of KPSP01 is outlined as follow.

Context: Located along the border of a village, adjacent to a small but highly polluted river that passes through Kibera, the site was initially used as a dumping ground for human and solid waste. Coupled with frequent floods

and criminal activities, the site posed a major social and environmental safety hazard for residents.

Process: The community partner set up the New Nairobi Dam Community (NNDC) Group that represented 50 households living in the immediate area. The process begins by reclaiming and remediating the site to ensure its viability for physical development. This includes the construction of flood control infrastructures, a pedestrian bridge for accessibility, soil rotation and tree-planting programs to control soil erosion. Natural assets of the area were then mapped out and explored on ways to utilise for economic opportunities. Once the foundation of the site was laid, residents move on to build landscapes, structures, and facilities, based on the collective vision developed in the design workshops (Fig 3).

Micro Impact: Apart from the predominantly physical interventions that build circulation, sanitation, safety, and recreation infrastructure, social and economic programs were also made possible which ultimately improve the quality of life and sustainability of the project. What emerged is a financially self-sustaining PPS made possible by the physical infrastructures created. The site has since been an independent operation and has established new businesses without assistance from KDI. It currently serves between 1000-2000 beneficiaries per week.

Macro impact: KPSP 01 enabled the ability to demonstrate a replicable process for the other KPSP sites, forming the network of spaces throughout Kibera. The community partners from early KPSP projects were also involved in the delivery of training and capacity building to subsequent community partners, effecting a community network of interdependent shared knowledge and skills.

KPSP now serves as the centre of community engagement efforts, setting the foundation for future developments to be built upon.



Diagram by author, Photos credit: Now Urbanism: The Future City is Here

### contributions to social architecture —

What is apparent in KPSP is the genuineness and enduring dedication of KDI to the project since its genesis up till the final stages where it is only when the residents are believed to be fully self-sufficient that they exit. While the strategies of participation, integration and networked change are not novel, they dutifully engaged all three through a lengthy process that calls for intense coordination and patience. William Cobbett of The Cities Alliance also points out “Few projects make adequate provisions for all three components, and an almost exclusive focus on infrastructure and housing is still the norm. As a result, the effects and sustainability of slum upgrading projects are frequently jeopardised.” (The Cities Alliance 2008: 4) This highlights the importance of provision for all 3 strategies for a successful social project to be established.

Moreover, KPSP also sought to utilise material and people assets already present within the site and community to inform design decisions. This further contributes to the long term sustainability of the project as the community will already be self-sufficient at the implementation phase in terms of physical needs. Should KDI have taken the easy path of just merely satisfying the community's immediate physical needs, none of these successful implementations would have been able to stand the test of time.



## 4.4

# RIWAQ Centre for Architectural Conservation

### About RIWAQ centre for Architectural Conservation:

RIWAQ Centre for Architectural Conservation is a non-profit, non-governmental organisation (NGO) that works towards the architectural preservation of cultural and historical buildings within the rural areas of the Palestine territories, which include the West Bank and Gaza. It was established in 1991 and is based in Ramallah. RIWAQ was established with the aim of detailing and restoring houses, schools, heritage, and community places that are at risk of destruction due to conflict and negligence. The renewal of these spaces has been able to serve as safe places for living and working. Through conservation works, RIWAQ not only creates employment opportunities for residents but also contribute to the creation of the much-needed collective Palestinian identity, which can serve as a basis for change in Palestine. Works by RIWAQ have won numerous awards including the Curry Stone Designer Prize in 2012 and the Aga Khan Award for Architecture in 2013.

Website: <https://www.riswaq.org/>

### case study: Bir Zeit Revitalisation Project

Project Name: Bir Zeit Revitalisation Project  
Location: Bir Zeit, Ramallah, Palestine  
Date Designed: 2002  
Date Completed: 2012  
Area Size: ~40,000m<sup>2</sup>  
Partner: Bir Zeit Municipality  
Other Major Stakeholders: Rozana Association  
UN-Habitat  
Budget: \$1,450,000  
Historic Building Restored: 80

### Project Overview

Bir Zeit is a town located about ten kilometres north of Ramallah, the de facto capital of Palestine. Due to war and changing urban landscape, the historic centre of the town was depopulated and many of the 108 historic buildings were largely abandoned.

The restoration works in the town was started in 2002 as part of the adaptive reuse of a restored building to become the Children's Library project. This has since grown into the Bir Zeit Revitalisation Project which has since restored 80 of the town's buildings, most notably the Bir Zeit University and the Sama Bir Zeit Garden and Children's Playground.

The restoration works are guided by the town's Conservation Master Plan which aims for community spaces that are suitable for all types of activities. Various improvements to the physicality of the town and the injection of life through cultural activities (including the annual heritage week) were undertaken during the restoration of the town. The fundamental of the project, which remains constant across RIWAQ's other projects, is the continual engagement of the local community and the municipal government to make change possible.



Before Restoration



After Restoration



Before Restoration



After Restoration

Photos credit: RIWAQ

## Social and cultural context

Historically, the etymology of Bir Zeit is derived from the many olive oil wells that were the main produce of the area. The demographics of the town included a sizeable Christian, Jewish and Muslim community till the outbreak of the Six-Day War. As a result, 76% and 24% of the town are under partial Palestinian Area B and full Israeli Area C control respectively. The population in the town subsequently dwindled as the Bir Zeit University campus and many Palestinians moved to an increasingly urbanised Ramallah, in search of better livelihood. The buildings within Bir Zeit, which were mostly built during the Ottoman Empire, except for several that pre-dated by several more centuries, eventually fell into disuse.

## Genesis of Project

In the face of increasing uncertainty over the question of Palestine's existence, RIWAQ has chosen to step in to document the disappearing towns and attempt to preserve them for future generations. On the broader level, the preservation of these towns is an acknowledgement that together they form an indispensable part of the Palestine, which rejects the disintegration and subsequent annexation of its territories. On a community level, it reflects the aspirations of the locals. While on a personal level, it provides an improved environment for Palestinians that have a say over and can identify with.

## Stakeholders and Design Process

The success of the Bir Zeit revitalisation project primarily hinges upon the cooperation between the community and the local Municipal Council that is facilitated through RIWAQ. At the start of the project, the wishes of the various stakeholders were gathered through preliminary engagements and studies, to which a guiding principle was conceptualised. For Bir Zeit, the focus of "a lively

# Bir Zeit Historic Centre Placemaking Map

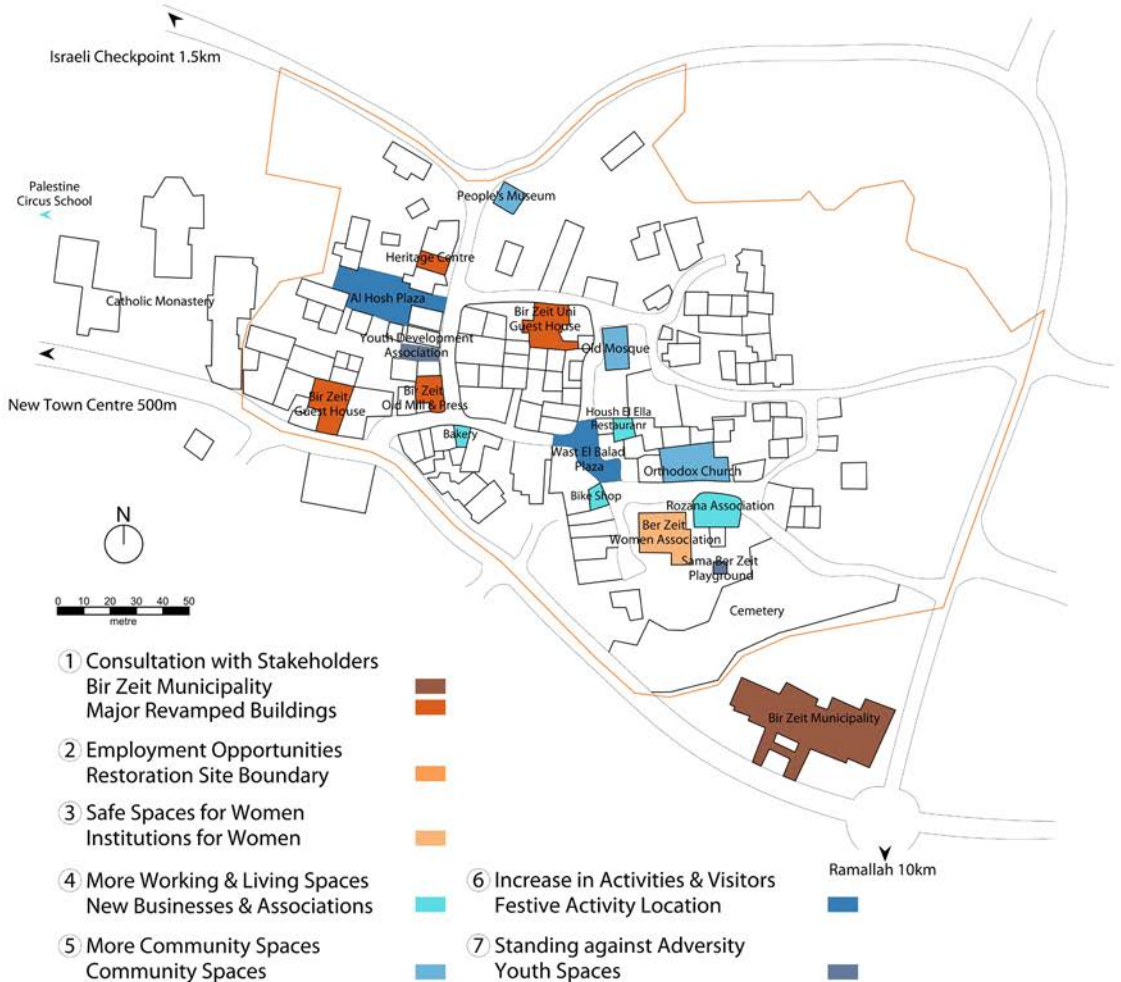


Diagram by author

centre, attractive to its residents, investors, and visitors, for mixed land use, respectful of its identity and cultural heritage” was adopted. This then led to the initiation of the project, with “dynamic planning, strategic physical interventions, and cultural activities” undertaken to reconstruct the historic centre such that it harmonises with its surroundings and the Palestine as a whole.

These interventions ultimately sought to improve the local lives through the provision of options. At the same time key to the project is its emphasis on long-term development, and this is evident in the inclusion of consideration for future residents and visitors that have yet to come, but whose number and presence is not guaranteed.

## Impact on Community

Through the Bir Zeit revitalisation project, a ripple effect was created when the local community was provided with the opportunity to restore a neighbourhood that is aligned to their aspirations. This effect was felt even before the project began when the local communities and other stakeholders were consulted to determine the direction of the project. This consultation gave the much-needed affirmation to the locals that they have the power to impact their locality, something not often felt due to the constant threat of forced evictions and uncertainty in the political climate.



# Placemaking Timeline

- ① Consultation with Stakeholders  
▼ 2002 - 2009 Strategic Planning



- Employment Opportunities ② ▲  
2008 - 2011 Renovating Key Buildings

- ③ Safe Spaces for Women  
▼ 2008 - 2010 Women Empowered to Work



- More Working & Living Spaces ④ ▲  
2009 - 2010 Professional Development Programs

- ⑤ More Community Spaces  
▼ 2010 Naming of Buildings & Public Spaces



- Increase in Activities & Visitors ⑥ ▲  
2008 - Present day Bir Zeit Annual Heritage Week

- ⑦ Standing against Adversity  
▼ Present day Community Continuing to Thrive



Photos credit: RIWAQ & Rozana Association

When the project first began, jobs were created during the physical documentation and reconstruction process of the area. This was helpful to the locals who may have had decided to leave the town in search of employment opportunities elsewhere, especially because of the high unemployment rate, as there were restrictions imposed on Palestinians working in Israel since 2000. The restored buildings were then able to provide locals with more accommodation or spaces for working and playing in a safe environment.

For women in Palestine, this safe environment for studying and working would bring about their empowerment, since they can now contribute more constructively towards the community.

Additionally, with more conducive community spaces for relaxation or social activities to take place, social life can flourish – similar to how the Greek's Agora was the centre of the social stage. In the long term, with recurring activities to bring in visitors to continue to stimulate the local economy, there would be lesser reasons to have to leave the town, and the town would not only be restored physically but also 'spiritually'.

The increased cultural awareness and appreciation by the locals through the restoration works and from the arrival of visitors, would also provide an incentive for the community to continue upkeeping the town and give a sense of ownership over these spaces. Ultimately, the survival of many of these otherwise neglected towns that have stood out against adversity to continue to thrive and prosper is the antithesis to the fact that they were almost erased from their existence.

## contributions to social architecture —

Due to the successful implementation of the Bir Zeit revitalisation project, the concept of reviving long term growth via timely community-driven initiatives was to serve as a guide for RIWAQ's subsequent "50 Villages Rehabilitation Project" which aims to restore 50 of the most historic centres across Palestine, as mentioned by the jury when the project won the Aga Khan Award for Architecture.

This know-how and expertise to revitalise declining cultural spaces can also be taught to NGOs that are struggling to operate in other war-torn and marginalised communities worldwide and has served as a model that has been studied by UNESCO. Across the Curry Stone member network, which all aim for locally-led social impact design, this project stands as an alternative to merely preserving cultural spaces by transforming them into museum pieces, but instead, it rejuvenates them into liveable spaces again, as cited when the project won the Curry Stone Designer Prize.



# Pacific Rim Community Design Network

Pacific Rim Community Design Network (PRCDN) is a widespread network consisting of individuals from all around the Pacific Rim region. The PRCDN is a space for like-minded individuals in the participatory design field to gather, inspire, collaborate with each other about the little known knowledge and design methods of community design. With the bulk of the members with background stemming from academia, PRCDN fosters collaboration by organising conferences and field trips to projects done by members. The pool of collective knowledge gathered through discussions at conferences aims to help individuals advance at a faster pace in the field with their own practice and research.

PACIFIC RIM  
**COMMUNITY DESIGN**  
NETWORK

Co-Founders: Jeff Hou, Chao-Ching Yu

Key Members: Hendrik Tieben, Ben Spencer, Jacques Abelman, Dan Abramson, Shin Aiba, Graeme Bristol, Im Sik Cho, Keng Hua Chong, Rex Curry, Mayumi Hayashi, Margarita Hill, Tan Beng Kiang, Kyung-Jin Zoh

Location: Around Pacific Rim

(Australia, Canada, China, Ecuador, Indonesia, Japan, New Zealand, Philippines, Singapore, South Korea, Taiwan, Thailand, and the United States)

Year started: 1998

Website: <http://prcdnet.org/>

<https://www.facebook.com/prcdnet/>

\*key members and locations are not exhaustive



**Jeff Hou**

Co-Founder, Professor of Landscape Architecture (University of Washington, Seattle)



**Hendrik Tieben**

Associate Professor of Architecture (The Chinese University of Hong Kong)



**Ben Spencer**

Professor of Landscape Architecture and Global Health (University of Washington)

## Genesis of Network

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The Pacific Rim Community Design Network (PRCDN) was established to provide a platform for individuals involved in the community design field, as participatory design becomes an increasingly prominent part of urban planning. The formation of this network was an outcome of a conference held in 1998, which brought scholars and practitioners from Japan, Taiwan and the United States together for a discussion on Democratic Design. This came at an essential time for the emerging participatory design field in both Japan and Taiwan and brought a fresh perspective to practitioners from the United States. Through sharing of ideas, knowledge and experiences, a community was formed where individuals can learn more, collaborate together on projects, and provide mutual support. Building on collective knowledge through a network was a necessity as practitioners are a minority in each country.

## Core values and Principles

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**Engagement** - One core value that the PRCDN has is their engagement. Engagement consists of getting the locals involved in the projects that they are doing. With more involvement, it eventually leads to capacity-building. Capacity building is the process of developing the necessary skills and resources in order to adapt and thrive in their environment. The PRCDN aims to create these learning opportunities in all their projects.

**Impact** - The PRCDN also aims to make a positive impact with all its projects. This impact is usually specific to the issue and challenges that the environment has. Depending on the social, political or economic issues that an area faces, the PRCDN has projects to make a difference in the community there. The focus of projects is not on the end result, but rather the process, which may make favourable differences to the challenges that the locals face.

**Design** - Design is an important part of the projects in the PRCDN. In each project, it serves as a vehicle for social transformation within its given context. Additionally, good design is able to incorporate and express the identities and characteristics of the community. As such, it remains a core value that each of its projects aims to achieve.

**Location** - As its name shows, the Pacific Rim Community Design Network aims to showcase the achievements within the region. To celebrate the work done in the Pacific Rim region, specifically Asia, Australia/New Zealand, Pacific Islands, and the Americas.

## Membership and Enrollment

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Membership with the network is done through participating in conferences and receiving awards, and interested parties may join the PRCDN mailing list on their official website to get first-hand information on the latest news and updates. The network has branched out through the Pacific region and volunteer members provide essential contributions in various ways. Many of the volunteer members work on-site as language translators, guides, acting as the middle man between the other members of the network and the locals. While they may not be 'official' members of the network, they are a pivotal addition to any project that takes place within the local community. With them acting as the bridge between cultures, they are able to help the project stay culturally sensitive to its environment. Additionally, locals might also be more comfortable with sharing ideas and hence a deeper understanding of the community can be reached.



Founding of the network

Photo credit: PRCDN



Fieldtrip with members

Photo credit: PRCDN

## Operation, Platform and Resources

**Gather** - Organising conferences as a way to bring individuals together, creating opportunities to work together face to face.

**Inspire** - When like-minded people gather together to learn from each other, it acts as an inspiration for others when they get to learn what is being done in other countries.

**Collaborate** - Collaboration plays a big part in the PRCDN. After getting to know each other from conferences, collaborations between different countries become a possibility. For example, there was a long collaboration between National Taiwan University and Berkeley University. It included students from both schools going over to the opposite country (Seattle and Japan), attending different workshops in each city. This collaboration evolved organically between like-minded people, who were ready to consult each other and exchange ideas for community-driven projects.

**Disseminate** - Sharing is caring. In the PRCDN, they too like to share their thoughts and ideas with the world. As such, they try to publish as much as they can, which was made possible with the multitude of scholars in the Network.

**Nurture** - Creating a nurturing environment is also part of the PRCDN core values. This would mean creating opportunities for students to start involving themselves directly in some projects. With the first-hand experience that they get, it engages them directly, which can then spark a more meaningful discussion and sharing between them and their peers. Thus it creates a platform for the younger generation to start learning more about community-driven projects.



Conference held in Singapore, 2018

Photo credit: PRCDN

# Contributions to DCG Network

↳ Insights drawn from case studies and interview

## 0.1 BUILDING IMPORTANT

### CONNECTIONS LOCALLY

Like the DCG Network, PRCDN connects people from different walks of life with their core value of embracing a democratic design process. They actively engage the community to participate in the design along with the designers at the regional and local levels. In this sense, they also help connect communities to their local government or respective stakeholders (higher-up in charge). This creates a dialogue between the two, which is a first step towards a continued collaboration between the community and governing body even after the PRCDN has left. This is one aspect that can be attributed to DCG, where the political powers are also involved, not just designers and end-users.

## 0.2 STRENGTH IN CONFERENCES

### AND ACADEMIA

PRCDN is a very academic group with plenty of in-depth research and experiences with many types of communities. Over the decades, they have built up a strong conference organisation and workshops for learning and sharing of knowledge. One of their strengths and potential contributions is the ability to organize both online and offline meetings with many other members from various countries. The level of academic and workshop experience they have can be valuable if other DCG networks also want to carry out such events or conferences.

## 0.3 DIVERSITY OF NETWORKS

The PRCDN is unique as they are geographically more focused but also manages to encompass a large diversity of contexts, cultures, environments and politics. They have experience working with both the rural and urban cities, thus there are unique variations in the knowledge they can provide from a myriad of cultures and development. They represent how important it is to celebrate diversity as much as finding a common ground in DCG.

## 0.4 SETTING UP OVERSEAS

### CONNECTION PLATFORM

PRCDN serves as a connection platform that can contribute to the DCG network as they have many network connections within the Pacific group. For example, PRCDN has also set up an online collaborative platform called Distance Collaboration Commons (disCO-commons) during the Covid crisis that supports the sharing of online resources and collaboration amongst educators. This can serve as a potential model of resource sharing in the DCG. Shared and applied locally-driven knowledge within specific communities can be shared with other networks overseas if other designers or collaborators from the DCG network are interested in extrapolating said knowledge in their own design.

## 0.5 MEMBERS AND MAILING LIST

The fact that joining the mailing list is easily accessible and completed, updates can be sent to more people around the world without having to be an actual member of PRCDN. The setup and operation of followers is informal, hence it is more nimble and adaptable especially when dealing with sudden changes. Such informality will allow DCG to spread awareness regarding the use of community design and its impacts, while empowering locals to make a difference in their own community as well.

## REFERENCES

- Pacific Rim Community Design Network. (n.d.). Home: <http://prcdnet.org/>
- Tan, B. K. (2018, June 28). *Rebuilding Ah Ma's drink stall*. NUSnews. <https://news.nus.edu.sg/highlights/rebuilding-ah-mas-drink-stall>
- Dorgan, K. (2020, February 26). *Creative Placemaking at Woonsocket Millrace*. Dorgan Architecture & Planning. <http://kdorgan.net/creative-placemaking-woonsocket-millrace/>
- San Choi. (n.d.). Home Page. Think Playgrounds!. <https://www.sanchoi.org/>
- Think Playgrounds. (n.d.). *Think Playgrounds*. Facebook. <https://www.facebook.com/thinkplaygrounds/>
- Traction Design. (n.d.). *Project Index*. Traction Design. <https://www.tractiondesign.org/quitos-peru>
- Fisher, B. (2018, June 18). *Staying afloat*. <https://www.ce.washington.edu/news/article/2019-02-06/staying-afloat>



# 5.1

## NUS Department of Architecture



### About Dr Tan Beng Kiang (supervisor):

Dr Tan Beng Kiang is an Associate Professor in NUS Department of Architecture, specialising in Housing, Sustainable Design, and Community Design. She is an advocate of participatory community design and has led community-centric Design Studio projects in many ASEAN countries, including Smile Village Children Preschool, Playground And Public Space (Cambodia), for which she received the Pacific Rim Award for Excellence in Public Interest Design in 2018.

## Friends of Ubin Network (FUN)



### About Friends of Ubin Network (FUN):

Friends of Ubin Network (FUN) was founded in 2014, to push The Ubin Project by MND in preserving the island.

Members of the group come from diverse backgrounds; nature enthusiasts, heritage specialists, Pulau Ubin residents, academics, and stakeholders.

Together, they work with other community groups to conserve and revitalise Pulau Ubin.

### case study: Ah Ma Drink stall

Location: Pulau Ubin, Singapore

Date Designed: 2018

Date Completed: 2018

Size: - sqm

Client: Mdm Ong Ang Kui (Ah Ma)

Architects: NUS Department of Architecture

Dr Tan Beng Kiang (supervisor)

Joyce Lam Ching Yan (team leader)

Ethan Chung (deputy team leader)

Tu Tung Yun (deputy team leader)

In Collaboration With:

Friends of Ubin Network (FUN)

National Parks Board (NParks)

Ministry of National Development (MND)

Singapore Heritage Society (SHS)

PH Consulting

Sea Angel

Mr Philip Lim (Pulau Ubin Resident)

### Project Overview

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Ah Ma Drink Stall was the pilot project of an initiative to revitalise Pulau Ubin as a living kampong. Being the last remaining off-shore community, it boasts timber house villages and untouched wildlife. It is hence reminiscent of life in Singapore pre-modernisation.

Along with National Parks Board (NParks), Friends of Ubin Network (FUN) collaborated with a team of NUS architecture students to design and renovate the drink stall.

The community design project refurbished the 28-year-old drink stall, initially a makeshift construction which became structurally unsafe due to site conditions. During the whole process of design and construction, there was a conscious effort to preserve the authenticity of the stall.



Photo credits: Victor from Kayakasia

## Social and cultural context

Ah Ma Drink Stall is one of seven Food and Beverage stalls in Pulau Ubin and is the only stall that exclusively sells drinks, as the stall name suggests.

Located before the Jelutong Bridge, at the intersection of both kayaking and cycling routes, it is in a prime location for visitors of Pulau Ubin to have a mid-journey respite.

The original drink stall was constructed almost 30 years ago by Mdm Ong's late husband, and family, and was intended as a temporary structure. Over time, the structure of the stall wore down and was deemed structurally unsound. The old stall was of important sentimental value to Mdm Ong and her frequent customers and can be said to be an iconic place of interest in Pulau Ubin. This stall is an indispensable part of the Pulau Ubin community.



Photo credits: NUS Department of Architecture

## Genesis of Project

The original drink stall that was built close to three decades ago was beginning to show signs of wear and tear and was deemed structurally unstable. The location of the stall being next to a mangrove swamp and the river exposed it to the surrounding natural conditions: soil erosion - caused the stall to lean unevenly, and occasional high tides - resulted in the stall being flooded, and the decay of the wood elements over time.

The restoration of the stall was necessary for Mdm Ong to remain living independently on the island.

## Stakeholders and Design Process

The restored drink stall was designed by architecture students from National University of Singapore (NUS) under the supervision of their professor Dr Tan Beng Kiang, and was constructed with a team of skilled local villagers with the students.

The design was guided through a participatory process where Mdm Ong and the other villagers were consulted. This process was vital in understanding the needs of the user (Mdm Ong and customers), as well as feedback on how to retain important sentimental aspects of the original stall.

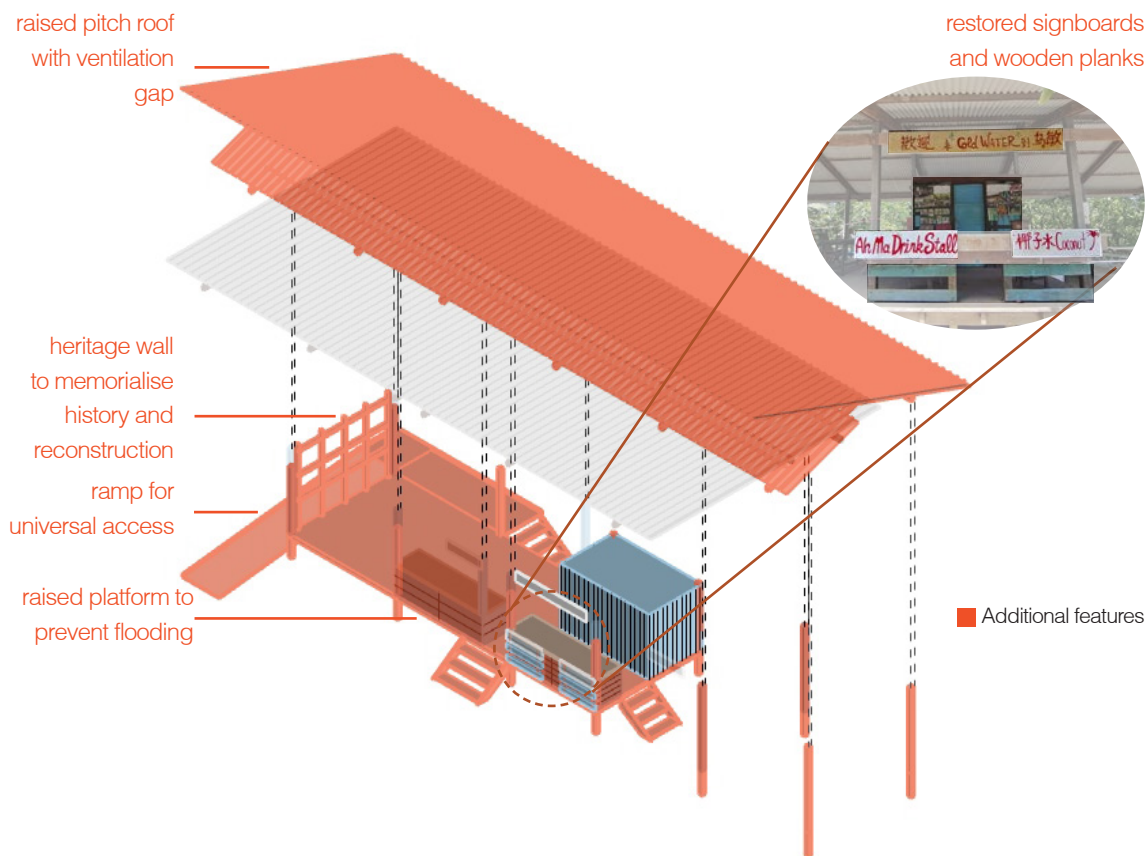


Diagram by Author

## DESIGN

The spatial arrangement and architectural elements of the original stall such as columns and pitched roof were retained and brought over to the new design of the stall.

The design recognised the importance of the sentimental value of the stall and there was a conscious effort in leaving traces of the past within the improved place. Such efforts include using materials from the original stall, as well as the same vernacular construction methods and techniques, for it to remain as authentic as possible. Some timber planks were salvaged and integrated into the new flooring, as well as signboards that were handwritten by Mdm Ong's late husband are now proudly displayed throughout the place.

## CONSTRUCTION

The main construction works were managed by NParks and coordinated the laying of new foundation along with the main structural works, while the students handled small scale timber construction works.

Supporting government agencies (MND and NParks) took care of the mandatory submissions for construction to the other government agencies. A civil and structural engineering company PH Consulting Pte Ltd provided pro bono professional engineering consultancy services.

Local resident Mr Philip Lim organised the exchange between local skilled villagers proficient in vernacular construction and student helpers to coach in timber joinery techniques, which made up the bulk of the construction methodology.

## LAYOUT

The high tide flooding issue was of paramount concern for the safety of users and the overall maintenance of the stall. The new stall was placed on a raised platform, with stairs and a ramp incorporated for easy accessibility. The raised platform also accommodated additional sitting areas, as well as a heritage wall that illustrated the history of the area and the stall rebuilding process. With a much higher ceiling constructed, the new stall is well lit and well ventilated.



## Impact on Community

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The restoration of Ah Ma Drink Stall was initiated by the community group Friends of Ubin Network (FUN), with support from various governmental agencies as well as other community groups. This project was the first structure to be built on the island in over 20 years, with the main intention to kick-start subsequent preservation and restoration works throughout the island, as the largest living kampong in Singapore. The government has declared that the island was not to be redeveloped unnecessarily, after receiving major backlash.

For the younger generation of Singaporeans, living in a kampong and feeling the 'kampong spirit' can only be imagined through stories told by elder relatives. Thus many Singaporeans feel that Pulau Ubin should be gazetted as a place of cultural significance.

Today, Pulau Ubin is home to less than 40 residents, with the youngest residents already close to retirement age. "(A kampong) is not a collection of buildings, it is the people who live there". -Dr Chua Ai Lin, executive director of the Singapore Heritage Society (SHS)  
The efforts to protect our last kampong may be in vain if there are no younger inhabitants returning to the island.

Unfortunately, there seem to be no other revitalisation works in progress, three years after this successful pilot project. The pandemic situation has hit business on Pulau Ubin harshly, as tourism is its main source of income. This drink stall, as well as some other stalls in the outskirts of Pulau Ubin, were cordoned off, with a 'No Trespassing' sign in place, signifying the seriousness of the situation. However, the stall seems to be intact, with seats still laid out, awaiting visitors. Perhaps Ah Ma still holds on to her wish to live independently on the island, patiently hoping for the pandemic situation to stabilise.

## Contributions to Social Architecture

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The community-led Participatory Design process of the drink stall ensured that the renovation of the Ah Ma Drink Stall remained as authentic as possible to the history and culture of the rural kampong.

Government agencies complemented the bottom-up initiative by providing much-needed expertise on the process. The community group FUN was formed to push The Ubin Project by MND in preserving the island. Based on the Ladder of Citizen Participation, I would speculate that this project ranked highly with the villager's active involvement to influence the design based on their needs. Their knowledge of vernacular construction methods and techniques were instrumental to the successful completion of the stall.



Photo credits: Author



## 5.2

# Dorgan Architecture and Planning



About Dorgan Architecture and  
Planning (DAP) :

"Creating sustainable communities of choice  
and justice."

Dorgan Architecture and Planning (DAP) provides participatory design services that contribute to sustainable community development. Their expertise is in participatory and green design services such as: home repair, housing counselling, streetscape improvements and green initiatives.

### case study: creative Placemaking at Woonsocket Millrace

Project Name: Woonsocket Millrace

Location: Woonsocket district, Rhode Island, USA

Date Designed: 2017

Size: Large urban scale of around 20,700 sqm

Client: District community at Woonsocket

Partnership with NeighborWorks Blackstone River Valley (NWBVRV)

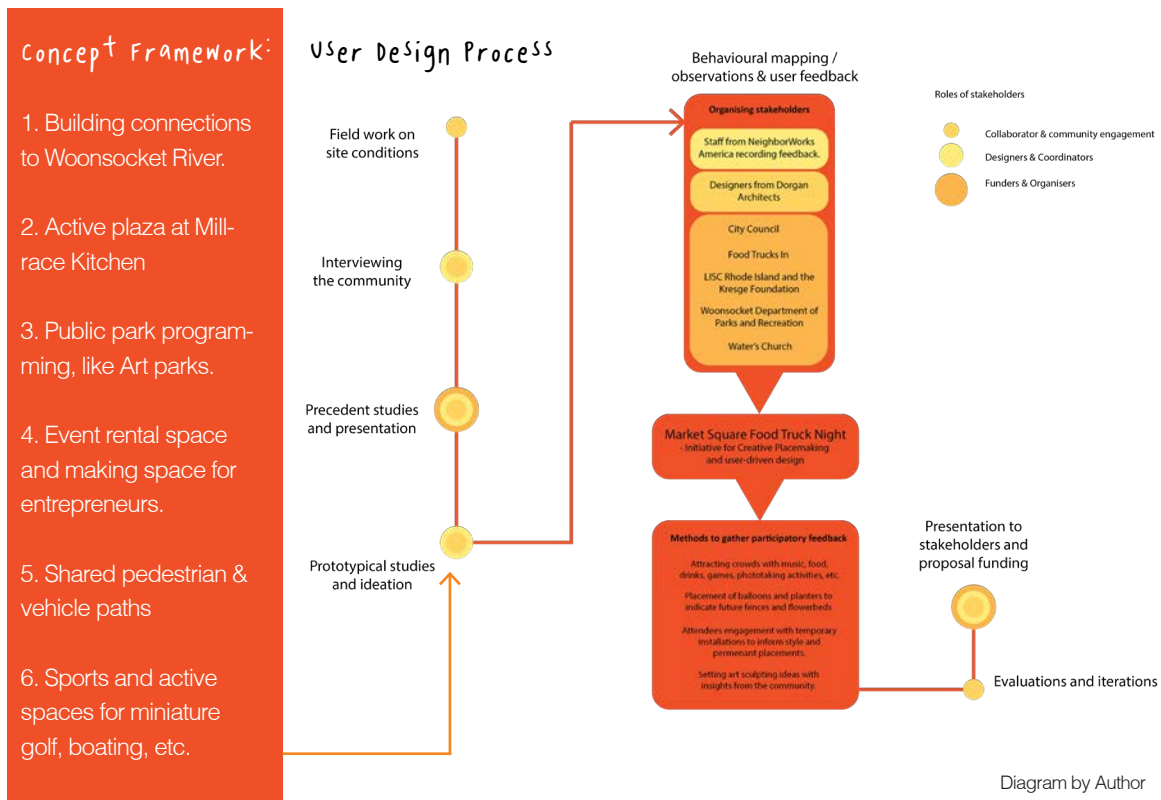
### Project Overview

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The project aims to form a strong community development, building an image of an attractive site with a river, mills, museum and park. Its vision is to build community life, empowering the next generation there and boost academic achievement in the poorest neighbourhood.

DAP plans to achieve this through a series of improvements:

1. Expanding on local arts and cultural development, and greater community participation in the arts.
2. Maintain access to the arts, targeting the low-income neighbourhoods
3. Forging more effective and vibrant school/community partnerships
4. Operating kitchen incubator for food entrepreneurs.
5. Catalyze change in local educational reform efforts to close the achievement gap with other districts.
6. Build neighbourhood pride, bridge diverse groups and forge stronger community bonds
7. Enhance neighbourhood desirability and encourage entrepreneurship, boosting marketability.



## Social and cultural context

Rhode Island has the poorest infrastructure in the whole US and Woonsocket has the highest rates of child poverty and extreme poverty in the state. Woonsocket schools are found to be badly funded and children are more likely to have behavioural problems in school and experience financial difficulties as adults.

DAP's strategy in targeting schools and family cores will improve the students' motivation in the academic fields while promoting entrepreneurship and passion in the arts.

## Genesis of Project

DAP's role is to instil Creative Placemaking & Participatory Design, Community Development. This project is in collaboration with NeighborWorks Blackstone River Valley (NWBRV), a nonprofit community development corporation that works with residents, businesses, neighbourhood institutions, partners, and communities to enrich neighbourhood life and make affordable housing opportunities available throughout Rhode Island.

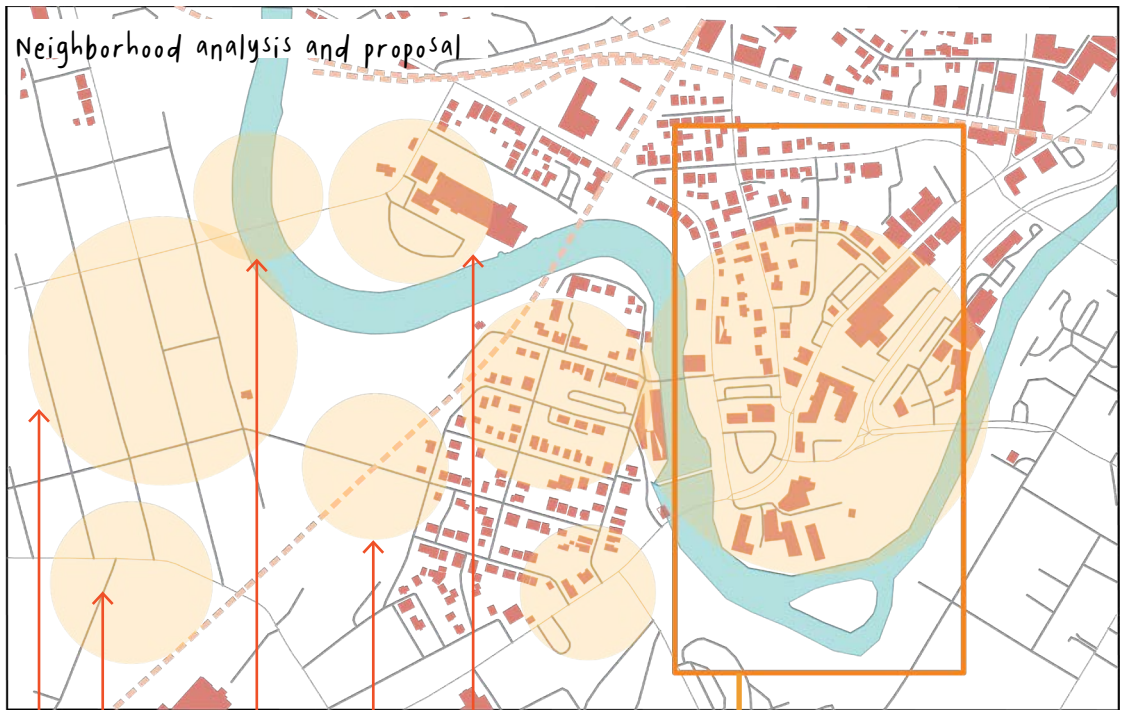
The project partially stems from the lack of activities and facilities to hold social events in Woonsocket. The people in the district often have to travel to other towns to unwind in a pleasant and relaxing atmosphere or party after a long day at work.

## stakeholders and Design Process

The design process was user-centric and the main designers were from DAP and NWBRV, working together with children, teachers and parents of schools in the district.

DAP also acted as a project coordinator to provide technical support and build connections between the designers and the community.

1. DAP identified the issues in certain sites of the district through interviews.
2. DAP analysed the site for places or opportunities through fieldwork, noting on the existing nodes to change their conditions.



Dunn Park:  
increasing  
visibility and  
use

Former mill:  
Landscape  
enhancement

Signage, landscape  
and street-scape  
program

Commercial cluster: Improving  
signage and security

Fairmount: developing revitalisation program  
like reusing vacant properties and corridor  
enhancements



Photo credit: Dorgan Architecture and Planning

Food truck night area that holds many social areas like ping pong tables, outdoor movies, music, painting faces and balloons, instaphotos.

3. DAP also has a series of precedent studies for placemaking in that social context, using reused parts and pieces from a steel mill to restore and alter existing infrastructures for example. Old shipping anchors can be integrated into the landscaping as an outstanding art piece to add history and industry reference. Revamping the old and restoring objects like shipping containers to act as shelters can show the poorer community what they can achieve with little cost, empowering them to innovate while still maintaining a cultural identity to their place.

4. Their Placemaking Lab also set up a placemaking event with temporary installations for food, socialising activities, brainstorming. The prototypical setup was employed to find out more about how the target users will use the space and source for areas of opportunity constraints.

5. DAP uses the social context of Woonsocket to inform their decision and design planning. The legacy of using the river as a defining manufacturing feature has generated tremendous opportunities and wealth in the past. Its legacy of mill structures, theatres and other high-quality buildings has inspired the current design of DAP's placemaking.

After sourcing their information from the locals and the ideation process from the prototypical studies, DAP's final proposal, Millrace Programming consists of a wide variety of events and services that will complement the Museum of Works and Culture, Woonsocket Historical Society programming and River Falls myriad offerings.

Some of them include: weekend markets, incubator kitchens, special events, food truck nights and art galleries. Their spatial planning involves the consideration of the traffic flow, placement of art that activates spaces and establishment of infrastructure for event promotion.

## Impact on Community

DAP targeted several sites and prioritised some interventions such as creating patios, building kitchens, activating quiet spaces and art installations. For instance, the proposed food truck night will encourage people to look and walk around the area, discovering spaces and activities and gain a better idea of what they could do in the day. The impact on the community is demonstrated through the increased accessibility and connectivity, presenting a comforting environment and a good image, thus enticing people to participate in more communal activities where both locals and visitors would want to visit repeatedly. Eventually, the placemaking initiative was granted funding of \$975,000 by the Rhode Island Board of Commissioners to redevelop and revitalise these mills, housing and especially targeting commercial spaces.

## Contributions to Social Architecture

This project demonstrates the process of placemaking and placekeeping and how effective it is to get input/feedback from the clients. The prototypical setup brought about community bonding while receiving helpful observations, interviews and discussions. The eventual development is also shared alongside other mill redevelopment proposals to transform brownfield sites to community assets and into place and people-driven design. This drives the reasoning of how social architecture is able to contribute to economic growth and foster social equity directly or indirectly. It can be expanded to address the root causes of an individual's sense of belonging and the urban complexities of a neighbourhood. This gives rise to a domino effect of inspiring the community and nearby regions to push for the creation of their identity, which is sometimes lost myopically when one looks at their own individual problems instead of the community as a whole. The case study shows how social architecture can greatly influence the socio-economic needs and future of a region.



Photo credit: Dorgan Architecture and Planning



Photo credit: Dorgan Architecture and Planning



## 5.3

# Think Playgrounds



### About Think Playgrounds:

Think playgrounds started as a volunteer group in 2014 before establishing itself as a social enterprise in 2016.

As of now, Think Playgrounds has over 200 playgrounds around Vietnam. As the Vietnamese government does not accept NGO's or other non-profit organizations, Think Playgrounds relies on a mix of both commercial and non-commercial projects. This allows them to solve public problems without relying on external help.

Kim Duc is the Co-founder and Director of Think Playgrounds. After studying Urban Planning in Hanoi and the History of Gardens, Heritage and Landscape in Versailles, she founded a landscape design and construction company and managed various winning projects relating to public spaces and playgrounds across Vietnam. Kim Duc combines her experience in project management and architecture in making sure that kids in Vietnam's city centres have easy access to play.

### case study: Think Playgrounds

Project Name: Think Playgrounds

Location: Hanoi, Vietnam

Date Started: 2016

Size: 200+ playgrounds

Client: Children

Type: Social enterprise

### Project Overview

---

Think Playgrounds is a social enterprise that aims to give children equal rights to play in public spaces.

Think Playgrounds does this in 2 ways:

1. Negotiation and collaboration with people
2. Advanced theories of play

Physical playgrounds that cater to individual communities are possible by involving the community itself in the design process. Other than the physical aspect of playgrounds, Think Playgrounds has also moved on to looking into the type of play needed as well as the possibility each type of play has. By testing and trying both physical and psychological aspects of play, Think Playgrounds are continuously engaging the community in new types of play.



Magic Crossbow Playground

Photo credit: TPG Facebook

## Social and cultural context

In an era of development, children living in highly developed areas lack the spaces for children to play. Hanoi, Vietnam was no different.

As opposed to the Chu Kim Duc's generation, children of the present lack the opportunity to play in their immediate surroundings, due to spaces usually reserved for businesses and other commercial activities.

to rural children and children of earlier generations. Spaces located in urban areas are usually reserved for commercial activities rather than for play. If there are such areas, users are required to pay to use them.

Rather than compete with potential commercial areas, Think Playgrounds aims to use dead spaces for its projects. This helps to reactivate the space, and simultaneously gives the children a play space to use.

## Genesis of Project

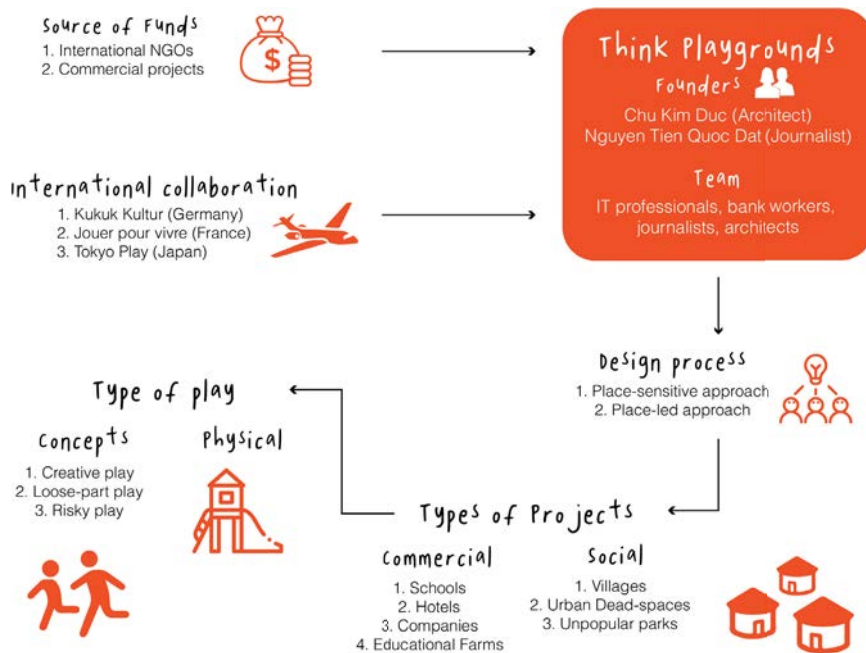
Think Playgrounds was founded in 2013 by architect Chu Kim Duc, and journalist Ngyyen Tieu Quoc Dat. This was after meeting Judith Hansen, an American Tourist who wanted to photograph playgrounds from around the world. However, she found a lack of spaces in the city and tried to fund a public playground in the city centre. Unfortunately, it did not work out in the end.

Through observation, Chu Kim Duc realized the lack of play spaces that urban children had as compared

## stakeholders and Design Process

As of March 2021, Think Playgrounds has 15 members in total. These members include journalists, bank workers, IT professionals, and experts in architecture. The common things among this group are their interest in social work, education and architecture. Other than Think Playgrounds itself, the other important stakeholder is the community it affects.

Depending on each project, the idea generation process differs. The only thing that remains common



Overview of Think Playgrounds

Diagram by Author

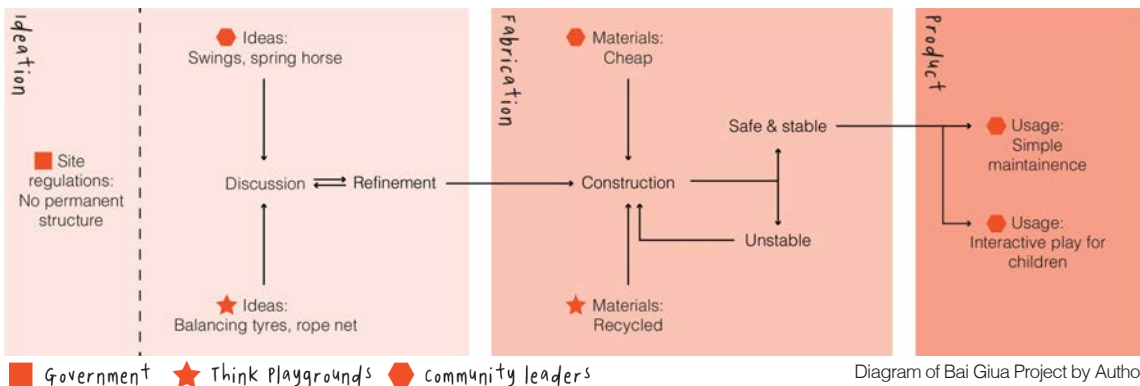


Diagram of Bai Giua Project by Author

throughout them would be the involvement of the community, and how each community has a role to play in the creation of the project.

In their first project (Bai Giua), Think Playgrounds worked closely together with the residents. Both sides brought their ideas to each other before discussing them. The back and forth discussion allowed residents of the community to give their input while Think Playgrounds was refined and gave suggestions as well.

After the ideas were compiled, the residents were also very much involved in the material sourcing and construction of the playground. Other than keeping the budget as low as possible, Think Playgrounds made sure that whatever was used was able to be

easily maintained. This allowed the residents to fix and maintain the playground on their own, without relying on external help. With such a constant involvement of the community throughout the process, the founder, Chu Kim Duc, believes that this was a successful project.

## Impact on Community

Depending on each project, Think Playgrounds manage to impact communities in different ways. 2 good examples would be the Tan Mai project (Minecraft) and the Bai Guia project (their first ever playground).

In the Bai Guia project, Think Playgrounds worked together with residents in the area to build a playground using old tires and recycled wood, using only 10 million dong. Other than just giving the community a playground at low cost, another real impact came 6 years later. As a tourist spot, Think Playgrounds were able to boost the local community with their second project. Local children who were recipients of the previous project were also now big enough to be involved in making this project as opposing to playing with it like before.

In Tan Mai, using Minecraft helped to create opportunities for intergenerational exchanges. As the younger generation is drawn in by the Minecraft design method, it generates interest among the community. However, with a large portion being the elderly, it was up to the young ones to teach them how to use this game to come up with designs. This promoted more intergenerational exchanges in a game room that was typically filled with younger people.

## Contributions to social architecture

Think Playgrounds is continuously giving back to everyone around them. Other than creating much-needed play spaces for the community, they are constantly improving themselves to better help the communities. This is done by collaborating with other organizations in the region (such as Tokyo Play, their Japanese counterpart). By exchanging different concepts with other experts, they are able to learn new things that can be implemented in Vietnam. The exchanges also help other counterparts in the region to improve themselves as well in the Pacific Rim Community Network.

Additionally, this is a good example of the 6th rung of the ladder of citizen participation, Partnership. Think Playgrounds actively engage in the community throughout the design process, giving the community a



Bai Guia Project

Photo credit: TPG Facebook



Tan Mai Project

Photo credit: TPG Facebook

lot more power to make decisions in the project. Think Playgrounds are able to successfully finish projects using a place-led approach, unifying and engaging many communities



# 5.4

## Traction



### About Traction:

Traction Design is an organisation that heavily involves with community services across borders. They engage in interdisciplinary, participatory design and operate on community-driven projects.

Most, if not all of their projects aim for long term positive impacts on the local communities. Traction champions participatory design, action and research to improve human, ecological and economic health in underserved communities.

The members are architects, landscape architects, engineers and researchers who believe in the transformative potential of trans-disciplinary collaboration.

They aim to harness the power of participatory processes to design, implement and assess the impacts of incremental, small-scale projects

Their landscapes, buildings, products, research initiatives and educational programs leverage local knowledge and create tangible, grounded change.

### case study: InterACTION Lab

Project Name: InterACTION Labs Fellows + Scholars Program

Location: Iquitos, Peru

Date Designed: 2017

Date Completed: On-going

Client: Claverito

Donor: the Centro de Investigaciones Tecnológicas Biomédicas y Medioambientales (CITBM), the Universidad Nacional Mayor de San Marcos (UNMSM), the 100,000 Strong in the Americas Innovation Fund, the Universidad Nacional de la Amazonia Peruana (UNAP), the University of Washington Global Innovation Fund, UW Center for Global Health Nursing and the UW Departments of Landscape Architecture and Global Health. The Program also connects with the GHIP, NIH Fogarty Fellowship and CGHN Scholars Programs.

### Project Overview

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The InterACTION Fellows and Scholars Program began in 2017, it aimed to enhance the living condition of the inhabitants of Claverito in terms of sanitation as well as safety during travel. Furthermore, the project aimed to educate locals outside of Claverito to eradicate existing prejudice between different social groups.

The program has supported 5 faculty, 8 PhD and DNP students, 11 graduate students and 4 recent graduates from both Peru and the U.S. in a trans-border interdisciplinary exchange to work on collaborative research projects that aid the InterACTION Labs: Iquitos program. Fellows and Scholars possess a wide range of disciplines including nursing, landscape architecture, bioinformatics, microbiology, bioengineering, One Health, anthropology, architecture, medicine, and environmental engineering.



Photo credit: Becca Neumann

## Social and cultural context

In South America, under-developed public infrastructures pose a significant threat to the local public health. In Claverito, the researchers organised a multidisciplinary effort to work with the floating community on the Amazon River in Iquitos, Peru, where community members have trouble obtaining fresh vegetables and other healthy food. From cleaning contaminated water to improving food security, the researchers are designing creative interventions to bring betterment to both the built and natural environments in the village.

The 50 houses in Claverito float for about six months each year before resting on dry ground again. Housing about 280 residents, the village is located on the banks of Iquitos, the capital of the Peruvian Amazon. Iquitos' is a very dense city in which the scarcity of space is has reached a terrible level such that people begin to inhabit makeshift houses on the water, forming small informal settlements such as Claverito. Not being recognized by the government, the community does not receive water and sewer services, which compromises the health of community members.

## Genesis of Project

The Project was proposed by Traction Design in 2017 to facilitate a cross-disciplinary collaboration that aids the floating village, Claverito.

Two lead researchers lived in Iquitos for over a year to better understand the local community before directing the full strength of the research teams to arrive on site.

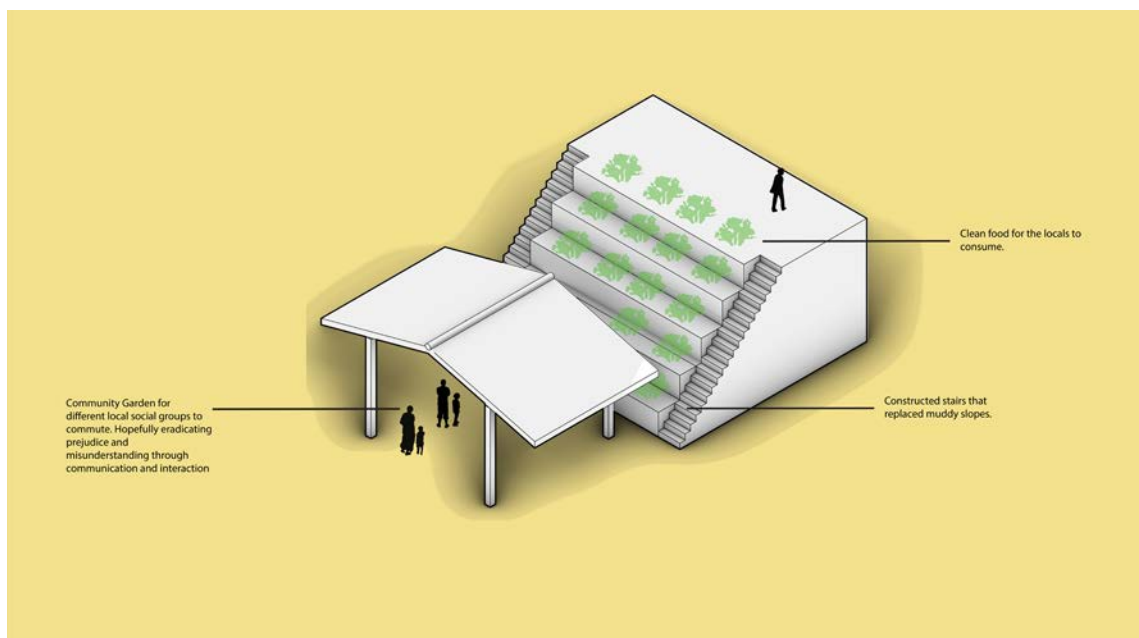


Diagram by Traction Design

## stakeholders and Design Process

Traction Design collaborated with the University of Washington to tap into their wealth of researchers and facilities.

The researchers collected data regarding water quality, especially the testing for the presence of E. Coli, before shipping them to Seattle for analysis. The locals were cooperative as they used the water for swimming and washing, many had fallen sick due to the contamination.

This method of testing water safety would be used throughout the project to examine the effectiveness of interventions.

In order to provide a safe environment for water activities, the researchers investigated the effectiveness of local aquatic plantations in removing E. Coli and other harmful bacteria. Once proven effective, these plantations would be implemented in the landscaping architecture of the region.

The community Entrance gardens serve as platforms of safe food for inhabitants, social bonding centres and even economic values.

## Impact on Community

The project had a profound impact on both the local community and the researchers involved. The local villagers enjoyed health benefits in safer water and food, as well as more developed community spaces that allowed for greater safety.

The health of residents will be used to measure the success of the project, particularly residents' exposure to harmful bacteria, parasites and metals. With emerging research indicating that poor gut health can contribute to diseases, the researchers hope to gain insight into how the microbiome is influenced by the built and natural environments. This project could be a benchmark that would one day provide insight for other similar projects across the globe.

## Contributions to social architecture

Built interventions include a hillside garden and a new pathway leading into the village. The proposed swimming area and floating community gardens are still under planning.

The new pathway will significantly improve the connectivity between the floating community and the outside world. It allows for greater convenience and safety which may have lost their association 'travelling out' as indeed it could have been a dangerous and difficult journey.

Moreover, the swimming area for children will see its rise in local popularity because of safety. As the villagers are known to enjoy water activities as their pass-times, this can adopt the role of a new community centre that sees the gathering of the locals both young and old.



Photo credit: Becca Neumann

Furthermore, the floating gardens for both agriculture and leisure will serve as a first step of integration between work and leisure, as now harvesting food has the additional benefit of visual pleasure alongside safety. When one is safe, one is able to enjoy. The health of the inhabitants will hopefully improve greatly as a result. They can enjoy healthy food without fear of parasites as well.

Lastly, these architectural interventions can be beacons for future aspirants to adapt to their own projects.



# Acknowledgements



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Design for the Common Good: <http://www.designforcommongood.net>  
SEED Network: <https://seednetwork.org/case-studies/>  
DesignBuildXchange: <https://www.dbxchange.eu/designbuild-projects>  
Live Projects Network: <https://liveprojectsnetwork.org/>  
Pacific Rim Community Design Network: <http://prcdnet.org/>  
Curry Stone Foundation: <https://currystonefoundation.org/>

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