

# Rural Urban Framework (RUF)

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Projects sample

## Contact

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## Who we are?

Rural Urban Framework is the architectural design and research platform of Joshua Bolchover and John Lin.

We are a non-for-profit organisation based at the University of Hong Kong. We collaborate with charities, NGO's and governments on rural development projects.

## What we do?

### ***1. Design architecture where there is no architecture***

We work in areas where there is only generic construction. We aim to make architecture - to make spaces that go beyond pure utility: that inspire through their experience of light; material and organization. We source funding and engage different stakeholders to create opportunities for innovative architecture.

### ***2. Propose programs that offer more than just use***

Buildings are more than just a sequence of functional spaces. We enrich our projects with other programs that are open for wider community use such as public spaces; playgrounds; reading rooms and informal gathering areas. These projects strengthen villages and pave the way for future development.

### ***3. Innovate with limited resources***

We hate excess. We revel in low budgets and minimal resources. We work in areas which have limited access to technology, materials or construction expertise. We innovate with what's available: seeking solutions for energy saving, re-use of materials and water collection and filtration.

### ***4. Strategise for the long-term***

Our projects are located in areas that are volatile and about to undergo major transformation. Through research we investigate what is there and what is happening before making a proposal. Rather than starting from scratch we believe that the future of an area is dependent on the uniqueness of its present condition. We strategically intervene to ensure that our projects and the communities in which they are located can adapt to future change.

## Objectives

To make architecture that actively contributes to the future transformation of the areas in which they are located.

To make architecture that influences policy makers in their approach to the design of schools, community facilities and other public buildings.

To find new models of rural development that enables the social, economic and spatial evolution of villages that resists the overwhelming process of urbanization.

# Biography

In 2005 the Chinese government announced its plan to urbanize half of the remaining 700 million rural citizens by 2030. At the same time, Joshua Bolchover and John Lin set up Rural Urban Framework (RUF), a research and design collaborative based at The University of Hong Kong. Conducted as a non-profit organization providing design services to charities and NGOs working in China, RUF has built or is currently engaged in various projects in diverse villages throughout China and Mongolia. The projects include schools, community centers, hospitals, village houses, bridges, and incremental planning strategies. As a result of this active engagement, RUF has been able to research the links between social, economic, political processes and the physical transformation of each village. The projects integrate local and traditional construction practices with contemporary technologies.

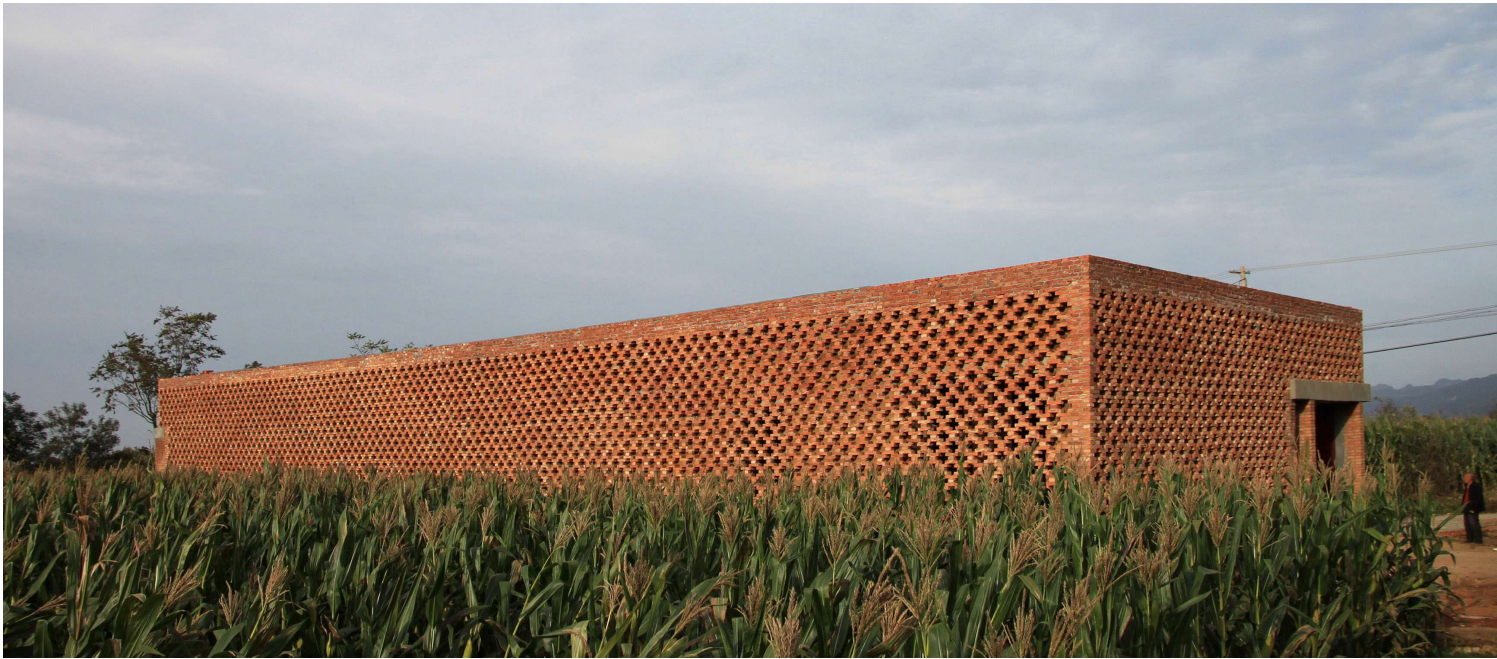
RUF is the recipient of numerous international awards including The RIBA International Emerging Architect Prize 2016, The Curry Stone Design Prize in 2015 and the Ralph Erskine 100 Years Anniversary Award 2014, given for innovation in architecture that “primarily benefits the less privileged in society”. RUF is also the winner of Architectural Records Design Vanguard and the ICON Award Emerging Architectural Practice of the Year in 2013. The “House For All Seasons”, a rural house prototype built in Shaanxi Province, China is the overall winner of the Architectural Review’s House Award in 2012, the WA Chinese Architecture Award 2012 and the Wienerberger Brick Award 2014. Other notable projects include high commendation in the AR Emerging Architecture Award for Qinmo Village School 2009, Taiping Bridge Renovation 2010 and Tongjiang Recycle Brick School 2012.

The work has been published internationally in DOMUS, MARK, Architectural Record, Architectural Review, A+U, and FRAME. A recently published book, Rural Urban Framework: Transforming the Chinese Countryside (Birkhauser, 2013), presents the research and projects of RUF in over 18 villages in China, discussing not only successful projects, but failures and speculations on the changes in rural China since 2006. A recently edited book, Homecoming: Materializing, Contextualizing and Practicing the Rural in China (Gestalten 2013), collects the work of historians, theorists, educators and practitioners to discuss the role of the rural in Chinese urban development over the past 30 years. Recent exhibitions include “Settling the Nomads”, in the arsenal of the Venice Biennale 2016, The Design Museum London 2016, at the Chicago Biennial in 2015, and the Milan Triennale International exhibition 2016, the MAK Vienna in 2013 and in “Participatory City: 100 Urban Trends” at the Guggenheim, NY in 2013.

Joshua Bolchover and John Lin are currently Associate Professors at the University of Hong Kong and have taught and lectured in numerous academic institutions including the Chinese University of Hong Kong; The Bartlett, UCL; Cambridge University and the Royal Danish Academy of Fine Arts.

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





# Shijia Village House

## Prototype:

### “House For All Seasons”

Shaanxi Province, China

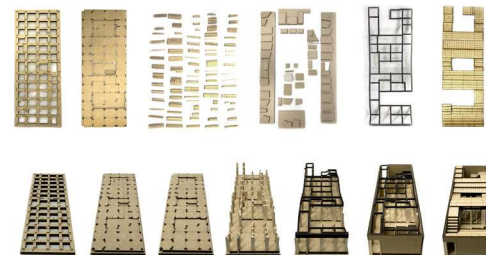
The project is a prototype for a new rammed earth house typology in northern China. China's goal to urbanize 350 million rural citizens over the next 30 years has led to a dramatic transformation in rural housing. However this typically leads to the vast destruction of traditional house types in favor of new generic housing types. This project offers a viable alternative by combining modern design and rural traditional living. Providing a show case for villagers, this project can change the preconception of a Chinese traditional courtyard house. The project promotes a more sustainable alternative by integrating rammed earth, biogas, rain water storage and reed bed cleansing systems. The final result is a house that integrates traditional technologies into a contemporary rural livelihood.



LOCATION:  
Weinan, Shaanxi Province, China

COMMISSIONING DONOR:  
Luke Him Sau Charitable Trust

PROJECT COLLABORATORS:  
Shaanxi Province Women's Federation  
Shaanxi Volunteers Association of Red Phoenix Project  
Linwei District Women's Federation  
Qiaonan Town Government  
Shijia Village Committee  
The University of Hong Kong



PROJECT DETAILS:  
Commission Date: April 2009  
Completion Date: March 2012  
Size: 380 sqm  
Cost: 53,400 USD (325,000 RMB)  
Unit Cost: 140 USD/sqm (855 RMB/sqm)



## Taiping Bridge Renovation Guizhou Province, China

The project demonstrates a way to combine historic conservation and contemporary design. It was a two-year reconstruction and surface renovation project of a historic 300 year-old bridge. The major challenge of the project was in trying to revitalize the bridge as a place of historic importance within the modern village context. The project attempted to reconcile the long history of the existing masonry construction with modern techniques using pre-cast concrete. Pre-cast concrete was used to rebuild the arch as well as pave the bridge. Bridge pavers were custom designed in collaboration with local industry in order to create planters at various scales as well as seating. Ultimately, the bridge was re-programmed as a public space through the innovation of local technology.



### LOCATION:

Ziyun County, Guizhou Province, China

### COMMISSIONING DONOR:

Wu Zhi Qiao Foundation

### PROJECT COLLABORATORS:

The University of Hong Kong, Chongqing University

### PROJECT DETAILS:

Commission Date: Sep 2007

Completion Date: Aug 2009

Size: 200 sqm

Total Cost: 25,000 USD (200,000 RMB)

Unit Cost: 125 USD/sqm (1,000 RMB/sqm)



# Qinmo Village Primary School

Guangdong Province, China

The project is aimed at the long-term sustainable development of a rural Chinese village. It is a prototype for a village school which goes beyond mere building construction by integrating educational programs and sustainable concepts. Initiated in 2006 as part of a design workshop to re-think the standard 3 story concrete buildings which are typically donated as schools in rural areas, the proposed design stressed sustainability and ecological responsibility. Designed to blend into the environment of farming terraces, the roof is also used as a community garden related to the classrooms below. The school itself takes shape through a process of cut and filled earth along an existing rice terrace. A continuous series of steps extends from the basketball court onto the roof creating a new public space in the village. The villagers participated by painting the individual bricks for the facade.

LOCATION:  
Huaiji County, Guangdong Province, China

COMMISSIONING DONOR:  
Matthew Cheng and Peggy Young / Green Hope Foundation

ADDITIONAL DONORS:  
Luke Him Sau Charitable Trust, Hope Education Foundation, Kadoorie Farm and Botanical Garden

PROJECT COLLABORATORS:  
The University of Hong Kong, Kadoorie Farm and Botanical Garden, Sacred Heart Canossian College

PROJECT DETAILS:  
Commission Date: Oct 2006  
Completion Date: Sep 2008  
Size: 1,200 sqm  
Total Cost: 150,000 USD (1,200,000 RMB)  
Unit Cost: 125 USD/sqm (1,000 RMB/sqm)





# Qinmo Village Community Center

## Guangdong Province, China

The project involves the renovation of an old courtyard school building into a community center and demonstration eco-household. The new program includes a meeting room, dormitory, large dining area, communal kitchen and office space. The center is used by villagers and as a place to host eco-workshops and volunteers. The demonstration household farm includes pigs and chickens, a greenhouse and a selection of vegetables. Expertise in setting up the farm came from staff of Kadoorie farms in Hong Kong.

**LOCATION:**  
Huaiji County, Guangdong Province, China

**COMMISSIONING DONOR:**  
Lucy Tsai / Chinese Culture Promotion Society Ltd.

**ADDITIONAL DONORS:**  
Luke Him Sau Charitable Trust, Kadoorie Farm and Botanical Garden

**PROJECT COLLABORATORS:**  
The University of Hong Kong, Kadoorie Farm and Botanical Garden, Sacred Heart Canossian College

**PROJECT DETAILS:**  
Commission Date: Sep 2008  
Completion Date: May 2009  
Size: 450 sqm  
Total Cost: 22,500 USD (180,000 RMB)  
Unit Cost: 50 USD/sqm (400 RMB/sqm)





# Tongjiang Recycled Brick School

Jiangxi Province, China

Responding to the prevalence of demolition in rural areas this project proposes a strategy for recycling old buildings into a new primary school in Tongjiang county. The project brief required replacing an existing school building with a new building and expanded program. Our proposal for the demolition of the old building was to reuse the rubble as a growing medium and insulation on the green roof. In the meantime, traditional 'green' bricks no longer manufactured were collected from demolition sites of old houses in this historic region. These bricks were used as a large screen wall and ground paving for the school. The project demonstrated a way to recycle old material into a new prototype for a sustainable school building.



**LOCATION:**  
Shicheng County, Jiangxi Province, China

**COMMISSIONING DONOR:**  
World Vision

**ADDITIONAL DONORS:**  
Luke Him Sau Charitable Trust

**PROJECT DETAILS:**  
Commission Date: October 2009  
Completion Date: April 2012  
Size: 1,000 sqm  
Cost: 170,000 USD (1,280,000 RMB)  
Unit Cost: 170 USD/sqm (1,280 RMB/sqm)





## Mulan Primary School Guangdong Province, China

Highways and high speed rail links proliferate across China enabling the vast movement of goods, labourers and raw materials to sites of production and consumption. Although connecting many isolated areas initiating urbanisation and investment opportunities, in some instances the impact of infrastructure can have detrimental local effects: farmland is bisected; villages divided; and the environment can become degraded.

In Mulan Village, the construction of the high speed rail created a huge incision into the landscape and a repository of unstable earth at the back of an existing primary school. This school was designated for expansion and our commission was to design an educational landscape involving the creation of a new school block, a toilet and a playground. Our strategy was to organise the site as a series of sequential open spaces for play and study. The loose earth was re-contoured and a toilet and reed-bed filtration system inserted to retain the slope, wrapping the basketball court and creating pocket discovery gardens.



**LOCATION:**  
Huajji County, Guangdong Province, China

**COMMISSIONING DONOR:**  
Power of Love Ltd

**ADDITIONAL DONORS:**  
Luke Him Sau Charitable Trust

**PROJECT DETAILS:**  
Commission Date: May 2010  
Completion Date: Sep 2012 (Phase 1), 2014 (Phase 2)  
Size: 500 sqm  
Total Cost: 90,000 USD (573,000 RMB)  
Unit Cost: 180 USD/sqm (1,150 RMB/sqm)

# Jian Secondary School Prototype

Jiangxi Province, China

The Jian county schools are 4 secondary schools with a total of 3,300 students and 1,800 live-in students from nearby rural areas. The design is a school prototype that can be adapted to different program requirements and different site conditions. The initial strategy is to create a perimeter building that frames a large courtyard. This wall, much like a traditional old city wall contains the inner public life of the school. Additional public and social functions of the school such as the library, the canteen, the art block and the administration building, push into this space activating the courtyard.



LOCATION:  
Jian, Jiangxi Province, China

COMMISSIONING DONOR:  
Yanai Foundation

PROJECT DETAILS:  
Commission Date: May 2010  
Completion Date: Sep 2012  
Size: 24,000 sqm  
Total Cost: 3,000,000 USD (24,000,000 RMB)  
Unit Cost: 125 USD/sqm (1,000 RMB/sqm)

# Angdong Hospital Project

## Hunan Province, China



Throughout China the urbanisation process in developing areas has led to vast amounts of construction of generic building types using standardised materials. The majority of these buildings are concrete frame structures with brick infill, clad in ceramic tiles. Houses are three to four story often with a cantilevered first floor, with flat roofs that are used for drying clothes or food. Institutions such as schools or hospitals are also standardised slab blocks, single loaded with corridor access. Variation in these typologies is slight and occurs predominantly through tiling patterns or the introduction of balcony spaces.

Alongside this construction process is the simultaneous demolition of old fabric, deemed unsuitable, in China's era of modernisation, by government bureaus and villagers alike. In this process many vernacular buildings that use traditional materials such as mud bricks, grey bricks and clay tiles are destroyed and often lie piled up by the roadside.

Rather than reverting to a nostalgia for lost craftsmanship or for a "Chinese" architectural identity, our approach is to accept modernisation yet integrate techniques and material strategies that register this as a process of continuity rather than as a schism. The Angdong Hospital Project challenges the generic architecture of the institution through programmatic and material innovation.

**LOCATION:**  
Baojing County, Hunan Province, China

**COMMISSIONING DONOR:**  
HK Institute for Integrated Rural Development

**PROJECT DETAILS:**  
Commission Date: May 2011  
Completion Date: Anticipated completion 2013  
Size: 1,450 sqm  
Total Cost: 272,000 USD (1,700,000 RMB)  
Unit Cost: 190 USD/sqm (1,170 RMB/sqm)





## Lingzidi Bridge

Shaanxi Province, China

The design of the bridge involves a singular loop linking two levels of the riverbank and an additional arm connecting across the river. This produces a wide, direct path for small trucks and motorcycles and a pedestrian path that cuts under the bridge to allow direct access to the river for washing, cleaning or fishing. Steps and shaded areas provide spaces for seating and relaxation. The river has long been an obstacle between the village settlement and the agricultural production farm. Nowadays the villagers are able to commute freely across the river and meet at the bridge for trade and commerce. The bridge has become a social hub for the village.

Despite its small scale this bridge facilitates a critical link for the local village economy. It encourages the villagers to maintain and improve their local economy rather than rely completely on sources being sent back from their children working in the factory towns.



LOCATION:  
Shangzhou, Shaanxi Province, China

COMMISSIONING DONOR:  
World Vision

ADDITIONAL DONORS:  
Luke Him Sau Charitable Trust

PROJECT DETAILS:  
Commission Date: Jun 2011  
Completion Date: Sep 2012  
Size: 65 sqm  
Total Cost: 27,000 USD (170,000 RMB)  
Unit Cost: 400 USD/sqm (2,600 RMB/sqm)



## Jintai Village Reconstruction Sichuan Province, China

This project demonstrates a socially and environmentally sustainable prototype for earthquake reconstruction. The project is located in Sichuan Province, China and is supported by local government and NGOs. 22 houses are to be rebuilt including a community center. The new houses demonstrate new use of local materials, a green roof, biogas and accommodation for pigs and chickens. It is an investigation into modern rural livelihood. The importance of the project in this context is to provide an alternative model to the hundreds of thousands of homes already built after the 2008 earthquake. This project provides a viable new alternative based on a better understanding of the limitations of both traditional housing and modern generic housing.



LOCATION:  
Nanjiang County, Sichuan Province, China

PROJECT DETAILS:  
Commission Date: April 2012  
Completion Date: Anticipated completion 2014  
Size: 4,000 sqm  
Total Cost: 600,000 USD (4,800,000 RMB)  
Unit Cost: 150 USD/sqm (1,200 RMB/sqm)



# LANTIAN TULOUS RENOVATION

Fujian Province, China

Over a 1000 years ago, large introverted earthen buildings (tulou) of the Hakka culture emerged in southern China. Today, tulou can be found surrounded by a dense clutter of structures. As the tulou do not correspond with contemporary desires of dwelling, many of them are experiencing individual transformations or are being abandoned.

These prototypes respond to the changing relationship between individual/collective and rural/urban, - finding new reasons for living together.

**The Tower** project rethinks the public space of the tulou raising up the traditional collective courtyard, connecting each floor to a circular stairway to the sky. The changing rhythm and dimension of the steps encourage people to sit, drink tea, walk on the bridges or contemplate the view from the upper balcony.

**The Plug-in** project rethinks the defensive wall by taking the tulou inside out, opening it to the new surroundings. This prototype transforms a small window in a new entrance, adding a public library to the already functioning school. The funnel staircase plugged into the opening invites people to sit, read and rest in the shadow, while serving as an open amphitheatre for activities in the courtyard.



LOCATION:  
Shizhong County, Fujian Province, China

PROJECT DETAILS:  
Date: Completion September 2019  
Total Cost: \$USD 55,000/ RMB 390,000



## Smart Collection Point Ulaanbaatar, Mongolia

The project was to design a waste collection point. For rural nomads, waste, in the form of plastic bottles, glass and cans is an unfamiliar urban phenomenon and without clear systems of collection, garbage accumulates in gulleys, roadside verges and streams. The Asia Foundation identified the worst areas for rubbish build up alongside certain neighbourhoods or Khoroos that they had forged good relationships with local leaders. The aim was to create a demonstration project that could facilitate the hygienic collection of rubbish. They named the project Smart Collection Points as the project had to engage neighbourhood participation and outreach; improve the scheduling of trucks; and influence policy from the Mayor's office to alter how they administered city-wide waste collection.

This site was located by the side of a recently constructed road on an uneven dirt slope. The scheme took advantage of the height difference of the topography to form a ramp leading from the high ground to the road and bus stop with several places for rubbish drop off along the way. A recycling station was contained under the ramp which splayed apart to create an open public space.

This project represents a step towards more embedded urban organisations that can anchor the future growth of the community.



LOCATION:  
Ulaanbaatar, Mongolia

CLIENT:  
The Asia Foundation, Mongolia and The Mayor's Office,  
Ulaanbaatar, Mongolia

PROJECT DETAILS  
Cost: 40,000 USD/ Collection Point  
Date: February 2014 - February 2015



## Ger Plug-in Ulaanbaatar, Mongolia

The prototype is designed as a thickened infrastructural wall containing water and septic tanks that the ger plugs into. Currently, each household lacks basic urban infrastructure: water is fetched from kiosks; pit latrines are dug on site; and district heating is unavailable. Air pollution is one of the worst in the world as ger residents burn coal to stay warm in double-digit negative figures in the winter months. The prototype tests new designs for low tech, affordable, environmental systems including underfloor heating, a cleaner dual fuel efficient boiler and a trombe wall. In this way, the project is conducted as a live experiment: a family will move in and we will record the temperature of different zones of the building, water usage, coal consumption and interview the inhabitants.



LOCATION:  
Ulaanbaatar, Mongolia

COMMISSIONING DONOR:  
Lorinet Foundation

ADDITIONAL DONORS:  
General Research Fund, HKSAR

PROJECT DETAILS:  
Commission Date: 2016  
Completion Date: Anticipated completion August 2017  
Size: 53 sqm  
Total Cost: 13,600 USD  
Unit Cost: 260 USD/sqm

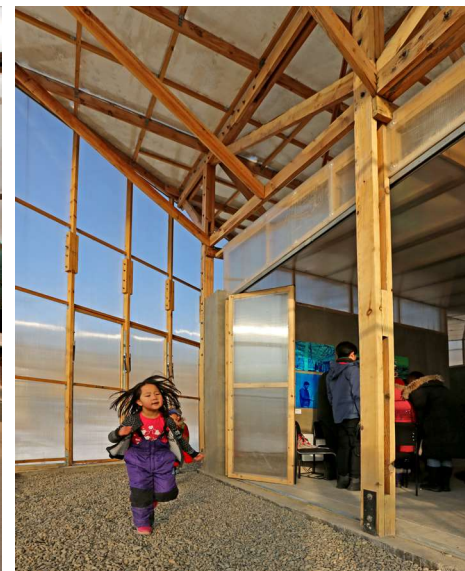




## Ger Innovation Hub Ulaanbaatar, Mongolia

The Ger Innovation Hub provides much needed community infrastructure to this impoverished population. The Hub will offer a crèche, after-school club, performance space and educational workshops for talks and vocational training. Designed as a layered structure, the inner room is surrounded by an outer layer of polycarbonate, creating a buffer space that traps radiant heat in the winter. This reduces energy consumption and serves as a model for the district to reduce coal use, which contributes to levels of air pollution in the city that are some of the worst in the world.

Construction work began when two teams of students from The University of Hong Kong and Hong Kong University School of Professional and Continuing Education, joined forces with local NGOs Ger Hub and EcoTown to assemble the trusses and raise the timber structure.



LOCATION:  
Ulaanbaatar, Mongolia

PARTNER: GerHub

COLLABORATORS: EcoTown, The University of Hong Kong, HKU SPACE, Shonest Co Ltd.

PROJECT DETAILS:  
Commencement Date: June 2018  
Completion Date: January 2020  
Inner Layer Area: 73m<sup>2</sup>, Total Area: 160m<sup>2</sup>  
Total Cost: 67,000 USD  
Unit Cost: 420 USD/sqm

