



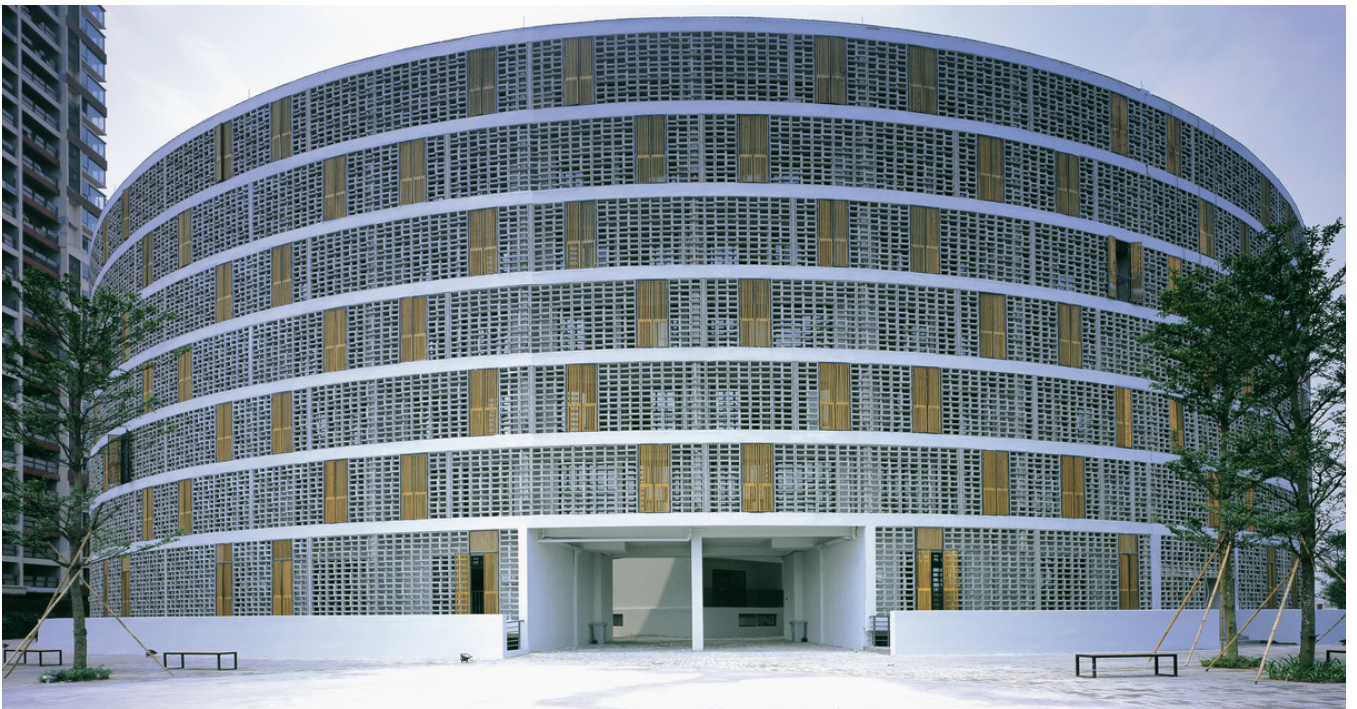
2010 On Site Review Report

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by Fuad Mallick

Tulou Collective Housing

Guangzhou, China



Architect

Urbanus Architecture & Design / Liu Xiaodu & Yan Meng

Client

Shenzhen Vanke Real Estate Company

Design

2006

Completed

2008

Tulou Collective Housing

Guangzhou, China

I. Introduction

Tulou Collective Housing, also known as Urban Tulou, is a low rise apartment block in Nanhai, on the outskirts of the large city of Guangzhou in the Guangdong province of China. Part of a larger housing complex, it has 287 units, of which 245 are apartments for rent of 40m²; 24 are used as dormitories; and 18 are hotel rooms. The units are occupied by low-income groups, many of whom are migrant workers. The project is located next to a major highway, approached by a dirt road on land that lies at one end of the entire housing scheme.

The designer, Urbanus Architecture and Design of Shenzhen, is a very successful, ten year-old practice, known for its creative approach to design. The form is inspired by the traditional, circular, fortress-like, multi-family *tulou* houses found in the rural areas of the Fujian province. The Urban Tulou consists of an outer circular block, with a rectangular block within that has a courtyard and is connected to the outer ring by bridges. Both the circular and rectangular blocks contain apartment units, and the spaces in between are for circulation and community use. The lower floors contain shops, the management office, a restaurant and community facilities. The design is a result of extensive research not only about the traditional *tulou* but also the social dynamics of current urbanisation trends in China.

Its unique shape is a pleasant visual experience among the typical high rise blocks that are around it. The porous concrete screen with wooden inserts that wraps the circular facade is visually pleasing, apart from being an effective environmental filter for the balconies and the apartments behind. The positions of the units in the blocks allow good light and ventilation and thus a comfortable living environment. The corridors and the open spaces within allow active community interaction. The use of different colours in different part of the building not only helps identification but also adds gaiety to the environment. Rents are low and car owners are not allowed to live in the Urban Tulou, which adds to the homogeneity of the community. The residents are very satisfied with their lives here, although the aspirations of most are to move to bigger apartments when their incomes allow. They are also aware that they live in a building that is unique in terms of design.

The Urban Tulou is a unique experiment in low income housing and has potential replication possibilities as an affordable, comfortable and a visually pleasant urban form.

II. Contextual Information

A. *Brief Historical Background*

Nanhai District, where the project is located, is for all practical purposes part of greater Guangzhou, which is the capital of the province and the third largest city in China, with a history dating back to the 2nd century BC. The population of greater Guangzhou is estimated to be around 20 million. It is located by the Pearl River which is navigable to the South China

Sea. Its potential as a commercial centre made it a target for invaders and settlers throughout its history.

With the reforms of the late 1970s and early 80s Guangzhou became an important contributor to China's economy with the establishment of businesses and large manufacturing concerns. As the largest city in one of the wealthiest of China's provinces, it attracts migrant workers from other parts of the country. It has constant construction activity: buildings, roads and infrastructure. This was particularly evident during my visit as the city is hosting the 2010 Asian Games.

B. Local Architectural Character

Guangzhou is representative of the urbanisation that China seeks. Highways and expressways crisscross the city, which is dotted by high rise structures. Housing blocks of concrete and steel dominate the urban landscape. Housing structures of different categories are everywhere and it is sometimes difficult to locate other building typologies. The social housing schemes of the high period of the communist era have mostly been demolished and replaced by developer-built housing.

On the periphery of the city, land that was agricultural has been converted for residential use. Former farmers have built apartment building on their lots. Given the prevalent building laws these buildings are box shaped walk ups with as little as a metre between them. As the locals say, it is possible to shake hands with the occupants of the next building. In the large scale, developer built housing schemes, rules have to be followed and provision is made for sufficient open space.

It is difficult to locate traditional structures; in fact there seem to be none that can be said to be derived from the historical traditions of the Chinese. There are old quarters of the city, dense with narrow pedestrian streets, but they are less than 100 years old. One would have expected the riverfront to be of pleasant disposition. Although there are some riverfront recreational areas for the citizens, moving away from the city centre they are replaced by manufacturing concerns.

The buildings built by the British and other foreign traders in the early part of the last century are pleasant, along arcaded streets that shade the pavements. The streets are shaded by trees. This character has however been destroyed in many parts where elevated roadways have been placed over ground-level roads.

Overall Guangzhou seems like any rapidly urbanising city of the world. There are no clues to suggest a consistent architectural character in terms of style or city planning. Housing blocks of mostly the tall type dominate the cityscape. This is all the more reason why the presence of Urban Tulou comes as a relief.

C. Climatic Conditions

Guangzhou lies just below the Tropic of Cancer and has a humid subtropical climate influenced by monsoons. Summer is from May to September the early parts of which have

high, and the rest moderate rainfall. July and August are the hottest months when average maximum temperatures are between 32 and 33°C. There are frequent thunderstorms and the occasional typhoon. September to December is cool and sunny with November and December being comfortable. The short winter is from December to March when the average lowest temperature can be 10°C. Diurnal temperature range is between 8- 10°C during the entire year. Solar radiation is quite high. Wind speeds are moderate around the year averaging 1.9m/s. The direction varies from season to season and there are occasional gales. During the winter months sometimes there are warm winds from the sea. Like many other places in the world the weather pattern seems to be changing and in late March this year during the site visit, temperatures during the day dropped to 17°C with cloudy skies which is quite a deviation from 21°C, the average high for that time.

D. *Site and Surrounding*

The building is part of a very large housing complex and accommodates less than 2% of its total population. The site of the entire complex at the outskirts of Guangzhou is fairly flat. It is not clear if the site retains some of its original vegetation since most of the trees seem to have been planted as a part of the landscaping plan of the complex. The location of the building is at one corner of the complex next to a highway. It seems that this location was chosen since nothing but low income people would be willing to live here and rents could be made affordable.

Since it is at the outskirts of the city the general area is not as built up and other parts of the city. There are empty open spaces near the complex but it seems likely they will soon become a part of the rapidly expanding urban sprawl.

E. *Topography*

The location is generally flat earth with some rocky hills around. There are no significant natural features on the land and even if there were they have been compromised by construction.

III. Programme

A. *History of the Inception of the Project*

The Chairman of Shenzhen Vanke Real Estate Company, the client for the project had seen the traditional *tulou* houses in rural China and wanted to explore the possibility of a modern interpretation of them in the company's real estate ventures. A piece land was available at one end of their Guangzhou venture, not suitable for middle and higher income housing since it was next to the highway. The government regulations require that a certain percentage of units in large scale housing developments need to be of lower rent and hence not more than a certain size. This provided the opportunity and a site to embark on an 'experiment' in a low income housing typology which is now Tulou Collective Housing.

B. *How were the Architects and Specialists chosen?*

The architect, Urbanus Architecture and Design had previously worked for the client and are known for a creative and research-based approach to design. They were thought to be the most suitable firm for this unique venture.

The other consultants were chosen in consultation with the architects. The Contractor was chosen by the client.

C. *Objectives*

The design solution, from the functional point of view sought the following objectives:

- To provide apartments affordable for the low income population.
- To provide living spaces that fulfil minimum space requirement.
- To provide living spaces that are well lit, ventilated, comfortable and secure.

From the social point of view:

- A place that would encourage community interactions.
- Provide a socially comfortable place for new migrant workers to the city, who were to be the potential occupants of these apartments.

From the formal point of view:

- Develop a modern interpretation of the traditional *tulou* houses of the rural area.
- Provide a setting for this form in the urban landscape amongst contemporary housing typologies.

The Urban Tulou is an experiment of sorts and a unique example of low income housing. Another objective from a broader perspective was to see if this could become a replicable model for low income communities elsewhere.

D. *Functional Requirements*

The architects were introduced to the site and asked to suggest a design proposal for a low income affordable housing block. They were also requested to look at the traditional *tulou* for inspiration. The architects researched the issue about how the project could evolve both formally and socially. Part of the research was on minimum space standards. In consultation with finance personnel of the client a functional program for a building that could have around 300 small apartments of around 40m² in size each was developed. Each apartment could have a maximum of two bedrooms, cooking facilities, a dining/living space and a toilet. Along with these there would be facilities such as a community hall, a library and internet facilities. One or two shops a restaurant and office space for the management of the apartments would also be required. Open community spaces within, evolved from the development of the form.

IV. Description

Tulou Collective Housing is a residential block with a maximum of seven storeys in its circular outer ring with an inward sloping roof. The inner rectangular block is lower, five and six storeys the roofs of which are flat. The ground floor in part has the management office, two shops and a restaurant. The basement floor has a community hall, a library and a hall with computers, around a courtyard that has an open to sky part through which rises a tree up into the open courtyard above it.

The circular ring block and the rectangular block within it have the apartments with the access corridors on one side and balconies on the other. The top floor of the ring block has slightly larger apartments and a mezzanine level could be provided because of the higher ceiling height. These are about 60m² in size and there is one that is 68m². The corridors in the circular block and the rectangular one are connected at various levels by bridges. The main access to the project is through a break in the circular block.

The space between the outer circular block and the rectangular one is for circulation at ground level leading to staircases at various points. There are no elevators. There is a courtyard raised above ground within the rectangular block. In the rectangular block, at higher levels there are large double height spaces in the corners for gatherings.

There are play lots for children and a basketball court outside the circular ring block.

There are no parking facilities as people with cars are not allowed to live here.

A. Project Data

B. Evolution of Design Concepts

The shape of the block is inspired by the *tulous* found in the rural areas in the Fujian province. These date back three to four hundred years and are no longer used. The original *tulous* were fortress like structures up to four storeys in height with earthen walls 1.5m thick at the base. The housing units for extended families were along the periphery. The lower floors had no openings and the openings at the upper levels are very small. The central space was for community activities.

The feature that was appealing to the architects was that unlike modern urban housing structures the *tulou* form offered the opportunity for introducing shared community spaces within its introvert shape.

Transforming the concept of the original *tulou* from its historical and rural context to that of urban low income housing in the 21st century was a challenge that the architects handled very well. The outer wall becomes a screen with balconies behind, providing privacy and protection from the elements. Inside is a rectangular version of the *tulou* which has a courtyard.

From the social point of view what the design successfully incorporates is the space for interaction of the community. This is made possible because of the shape and the careful articulation of internal open spaces which create the opportunity for people to see, hear and talk to each other.

The architectural language of the facades is modern and reflects a polite sensitivity to modern China.

Response to Physical Constraints

The building is a part of a large housing complex and occupies a very small part of the entire site.

The location is flat and required no site preparation as such. There were no trees or plants of any significance. There is a highway next to the plot and since the form is circular it has a tangential geometrical relationship with it and therefore exposes only a small number of apartments directly to it. The outer diameter of the circular block is 72m and this helps keep the geometrical configuration of the apartments reasonable for internal divisions since the lines are derived radially from the centre. The diameter to height ratio was carefully thought out to retain a comfortable scale for the inhabitants.

Response to User Requirements

The apartments in the building are meant to be rented out to people of low income and had to be affordable for them. The architects researched minimum standards and based the design on them. The general size is 40m² and maximum number of occupants allowed per unit is five. Although small, the spaces are well disposed and allow smooth functioning of domestic activities. The access corridor and the balcony on either side of each unit shade and keep away the rain. The apartments are well lit and airy, the top floor duplexes abundantly so.

The corridors allow visual contact with other corridors and the doorways to other apartments therefore interaction and security is ensured. The balconies facing inwards have wooden screens and allow privacy. The balconies facing outside have the concrete screen which doesn't allow people to see in and at the same time allows light and air.

Purely Formal Aspects

The main building form is a circular ring and the space inside contains another rectangular block which connects to the outside block and has a courtyard. There are variations in height of both and they all together form the entirety of the building, yet retaining their individual geometric characteristics.

Landscaping

Landscaping is simple and sensitively placed. Bamboo trees are planted in a line and rise against blank walls with elegant verticality, particularly near the entrance to the building. The ground surfaces inside the building between blocks are paved with stone with occasional shrubbery. Interestingly quite a few of the inhabitants keep indoor plants which they seem to take good care of.

C. *Structure, Materials and Technology*

Structural system

The building uses a reinforced concrete frame structure.

Materials

- Structure - Reinforced concrete frame.
- Internal partition walls: Hollow concrete blocks.
- External screen: Prefabricated perforated concrete panels assembled on site. Wooden screens panels on hinges that open out from the balcony behind.
- Internal balconies: Wooden screens with steel railing behind.
- Floor: Ceramic tiles.
- Pavement and courtyards: Paving stone.

Technology

Conventional and locally available.

D. *Origins of Technology, Materials, Labour Force, Professionals*

The technology used was local, all materials were available locally, and the labour force was also local.

All professionals involved in the project are local. The two main architects, Xiaodu Liu and Yan Meng, originally trained in China and have graduate degrees from the USA, where they also worked for a few years.

V. Construction Schedule and Costs

A. *History of Project Design and Dates*

Shenzhen Vanke Real Estate Company is one of the largest housing developers in China and the highest taxpayer amongst real estate companies. This building is a small part of a large housing scheme having a wide range of building and unit types. The architects have worked on several projects for the company before this building.

Design Period: 2006- 2008

Construction Period: 2007- 2008

B. *Total Costs and Main Sources of Financing*

Total cost USD 7,61,800 (RMB 52,000,000)

Cost /m² USD 300 (RMB 2,025)

Total construction area 13,711 m²

Main source of financing: The Client/ Shenzhen Vanke Real Estate Company.

C. *Qualitative Analysis of Cost*

Cost per square metre: USD 300

D. *Comparative Costs*

The cost per square metre mentioned is the average for the entire housing complex. The actual cost for the building per square metre is lower. The architects think it should be around USD 250. This is comparable to other buildings of the same quality.

E. *Maintenance Costs*

The maintenance cost of the building is around USD 300 (RMB 2,000) per month. There is no central heating or cooling system. Some occupants have installed air conditioners.

F. *Ongoing Costs and ‘Life Performance’ of Building*

The building is expected to have a life of 30 years with good performance. Moreover such buildings seem to have a high turnover i.e. demolished to make way for another if the market so demands.

VI. Technical Assessment

A. *Functional Assessment*

The arrangement of spaces in the apartments, the arrangement of apartments in the blocks, the circulation routes, relationship to open spaces and location of common facilities all are very carefully thought out. The small size of the apartments is the only indication that the building is for low income people. It is easy to orient oneself in the building and the colour scheme helps. Access to the apartments units are easy. The proportion of open spaces to built up spaces is appropriate.

The apartments are small and in the ones where there are four people it would seem quite crowded. However in order to be affordable they cannot be any bigger. Where the number of occupants is two they are very comfortable, in fact the top floor duplexes almost seem lavish in comparison. The inclusion of a balcony in each and every apartment is very useful as extra space, used for a variety of purpose - from drying clothes, as storage, as a space for the outdoor units of air conditioners and to keep pets.

B. *Climatic Performance*

The approach to the design and the arrangement of its elements makes the Urban Tulou a climate responsive building. The climate is sub tropical and there is the need for protection from solar radiation and driving rain at the same time air flow is needed for comfort. Each apartment is protected from the elements by virtue of the balcony on one side and the access corridor on the other. The outer balconies are protected by the perforated screen which shades and moderates the outdoor light. The inner balconies are partially protected by wooden screens and the depth is sufficient for solar protection. Air flows through the apartment via the balconies, the rooms and the high level openings on the corridor side. Some families keep the main door open and a pleasant breeze flows through the apartment. The shape being circular there is no building orientation as such and this is helpful because ample wind gets around the building. For 4 month of the year the airflow is from south and the rest of the year from the north. All apartments get their fair share of air flow.

Rainfall accompanied by high winds can be a problem and rain may find its way into the apartments but this is common enough problem in regions of similar climatic characteristics.

C. *Water and Rainfall*

Water supply is from the city system and drainage of domestic used water is through the sewage system. There is no water retention or reuse scheme. Rainfall on the sloped roof of the circular block is drained through a channel two-thirds of the way down the slope. Rain water on the flat roof is drained through rainwater pipes.

D. *Environmental Response*

The building sits on land that has no distinctive natural features that the building needed adaptation to. The ground surfaces are all paved with stone and there is no scope for ground water recharge within its confines. The plantation is bamboo trees and some local plants.

E. Choice of Material and Technology

Materials used are those that are commonly used in urban construction. The wooden screens seem to be an exception in the manner they are used. Technology is contemporary nor high neither traditional.

F. Response to Emergency Situations

The Pearl River delta which is the general location of the project is prone to floods. The site location itself is on higher ground and has not known any floods. The area is outside of China's earthquake zone. There are adequate numbers of fire escapes in prominent locations.

G. Ageing and Maintenance

The building goes through regular maintenance. There are no major problems with ageing. In the cool season warm moisture laden air sometimes flow from the sea which causes condensation on the surfaces. This is a common problem in the area and causes paint to peel off from the wall surfaces.

H. Waste Management and Recycling

The management of waste is particularly good here. Domestic wastes from the occupants are collected in at least four categories with different bins for each. Recyclable waste is sent for recycling and potentially harmful waste e.g. batteries are disposed of properly.

I. Design Features

The building elevation emphasizes horizontality as opposed to the verticality of the surrounding apartment blocks and is a welcome change. Its masses are pleasantly proportioned and the facade treatment is simple and elegant. The relationships between parts are well articulated and details well worked out.

J. Impact of Project on the Site: Circulation, Vehicular Movement and Infrastructure

The occupants of the building cannot own cars and therefore there is hardly any vehicular circulation around it. It is at one end of a large housing scheme therefore cars do not pass by it to reach other buildings. People here use public transport and have to walk to the bus station the road to which is not yet complete and is difficult to negotiate in wet weather.

K. Durability and Long Term Viability of the Project

The official life time of this building is estimated to be 30 years. With proper maintenance and care it can last much longer. In terms of use and its users it is a viable project. It is a unique

example of low income housing and has great potential for replication in other parts of the country.

L. *Ease and Appropriateness of Furnishings*

The furniture of the apartments was designed by the architects. They are practical and utilitarian and require little or no maintenance. A side of the bed can be folded up to increase its size. There is very little storage space and clothes and linen are kept on shelves in the bedroom walls. The furnishing in the living space is a simple table and chairs for eating and work and a cooker tucked into an alcove. The toilet is of minimum size. The residents take good care of their apartments.

VII. Users

A. *Descriptions and Responses of those who use or Benefit from the Project*

The apartments are meant for low income people and the architects like to use the term 'affordable housing'. Taxi drivers, cleaners, waiters/waitresses, household help with income ranges between RMB 1000 to 2000 (around USD 150 - 300) are meant to be users. However people of higher income also rent apartments here with two or even one person to an apartment.

Mr. Yang who is 28 runs the convenience store in the building and lives in one of the apartments with his wife and son. He has been living here for 2 years and is happy with the low rent and the environment.

Mr. Zhang, 28, is a civil engineer who lives here with his girlfriend. He could possibly afford a higher price apartment but prefer to live here because it is cheap and it allows him to play basketball. He also plays the guitar in a band whose members are all from the building. They perform in social occasions here.

Mrs. Zhu, 22, lives here with her taxi driver husband their one year old son and her mother in law. Previously they lived in a small village in a walk up apartment cheaper than this but of poor quality. She thinks people here are nicer than people in other housing blocks. She has part time work in the buildings restaurant and has good relationships with her neighbours. She hopes they will be able to move to a larger apartment when they have more money.

Mrs Zhao, 23, lives two doors away from Mrs. Zhu with her husband who is an accountant with the real estate company. He used to live here alone before they got married and she came to live here one and half years ago. She thinks the environment is nice here and the people friendly.

Ms. Xiaolu and Ms. Yewei are single women in their early 20s who work as waitresses in the buildings restaurant and share an apartment. They moved here two years ago and thinks the rent is cheap and would continue to live here as long as they can

Mr. Yin, 29, is a software engineer who lives alone in an apartment. He could not afford to live alone in any other place. He intends to leave when his income improves. He is aware that the building is an experimental one and thinks it is a success.

Ms. Wei is 18 and lives in one of the top floor duplexes with her boyfriend. She used to live in a smaller apartment in the same building but prefers her current apartment. She thinks the top floor is a very romantic place to live in and enjoys the views. They intend to continue living here till they have enough to buy their own place.

Wen Chen and Junlian Zhanu, both designers in their mid 20s, live in one of the largest apartments of the building and seem to be wealthier than the average occupant. They have furnished the apartment well. They lived in different cities before and have been here since the project started. They think they are lucky to live here but will move to a bigger place soon.

There seemed to be no children of the age group 5 - 10 or young teenagers here. None could be seen even on a holiday. Some people have small babies. It could be inferred that young people live here and they do so because of the low rent and community life. Quite a few are new to the city having moved from villages in search of work. The apartments here seem to be a transition place before they move on to bigger places. According to the manager of the building, 75% of the apartments here have changed tenants since the project became operational two years ago. Although meant for low income people a few of the residents are wealthier and live here for the low rent and community conveniences. Almost all of them find commuting to work difficult.

B. *Response to the Project by Clients, Community*

There were some discussions about the project with a graduate student of architecture, a few architects, an author, a graphic designer both in Guangzhou and Shenzhen where the architects' office is located.

Architectural Professionals and Cultural Intelligentsia

The project is an experiment and one of its kind and the developers were not concerned with profit in this particular building. They chose the right architects who are known for their innovative approach to design. Many young architects like to work for the office because they can learn a lot, even though the pay is less.

The Architects and designers at Urbanus are very involved in their work and they think about the people they design for. They also have a very busy office having worked on 200 projects over the last 10 years, 60 of which are built. Every building they designed is special and there are no copies. However they are very busy and would probably do better if they did lesser projects.

The Urban Tulou project is unique and deserves consideration by the government agencies to be developed as a model. It can be referred to as 'social architecture' too.

Urbanus is one of the pioneers in innovative modern design in China. There are many large projects in China and without meaningful thought behind them. In this respect not only this

project but others by the architects have set the pace for a new generation of Chinese architects.

The developer is happy with the success of the project and intends to construct similar buildings in other parts of China perhaps with even smaller sized units.

Popular Reaction to the Project

That it is different in look and in the way that it functions. This can become an example for other to follow. The rents are low and the quality of apartments is good and it inspires community interactions.

Neighbours and those in the Vicinity

It is a unique looking building.

VIII. Persons Involved

Client:	Shenzhen Vanke Real Estate Company.
Architects:	URBANUS Architecture and Design.
Design:	Mr. Xiaodu Liu and Mr. Yan Meng.
Assisted by:	Da Li, Yujun Yin, Zhiyi Huang, Hui Li, Yun Cheng, Xu Huang, Lei Zuo.
General Contractor:	Shenzhen Jiasheng Construction Co. Ltd.
Curtain Wall Design Consultant:	Architecture Precast GRC (HK) Ltd.
Structural Engineer:	Wu Zhou Engineering and Research Institute.
Lighting Consultant:	URBANUS Architecture and Design Inc.

IX. Publications

(Europe and North America)

- Calavara, Michele. "Cerchio della vita." *La Repubblica MiMi Delle Donne*, (May 2009): 76 - 82.
- Yang, Andrew. "The Underdog Archetype: The Building Boom in China." *Cooper-Hewitt National Design Journal*, (Mar 2008): 6 - 9.
- Fernandez, Aurorar. "09 Urbanus Achitecture&Design." *HoCo (Density Housing Construction & Costs)*, Edited by a+t Ediciones, 128 - 143. Spanish: Gaficas Sntamaria press, 2009.
- Liauw, Laurence. "Urban Dwelling Guangzhou." *Domus*. (Mar 2009): 64 - 69.
- Liauw, Laurence. "Urbanus Tulou-A New Collective Chinese Urban Type." *Architecture ASIA*, (Mar 2009): 16 - 23
- Ouroussoff, Nicolai. "In Modern China, 'Little Kingdoms' for the People." *The New York Times*, 13 Dec 2009, p.12.
- Umi. "House for Security Guard, Janitor and Housekeeper." *ABITARE*, (Sep 2008):80 - 91.

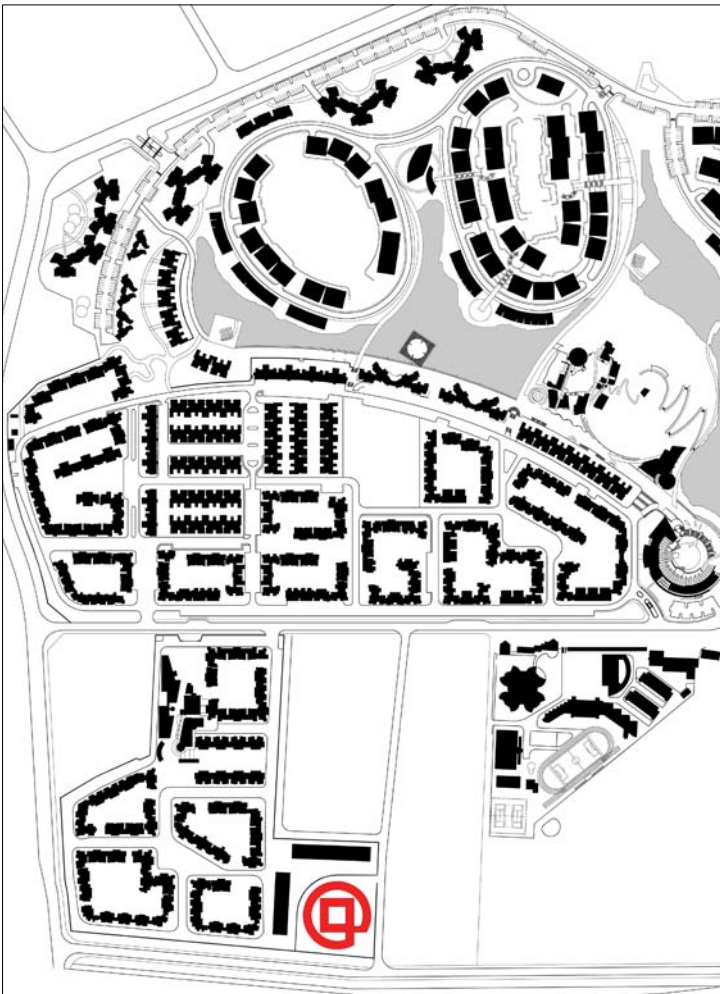
- Urbanus. “Solos: Tulou-Affordable Housing in China.” Domus. (Aug 2009): 50

(in Chinese)

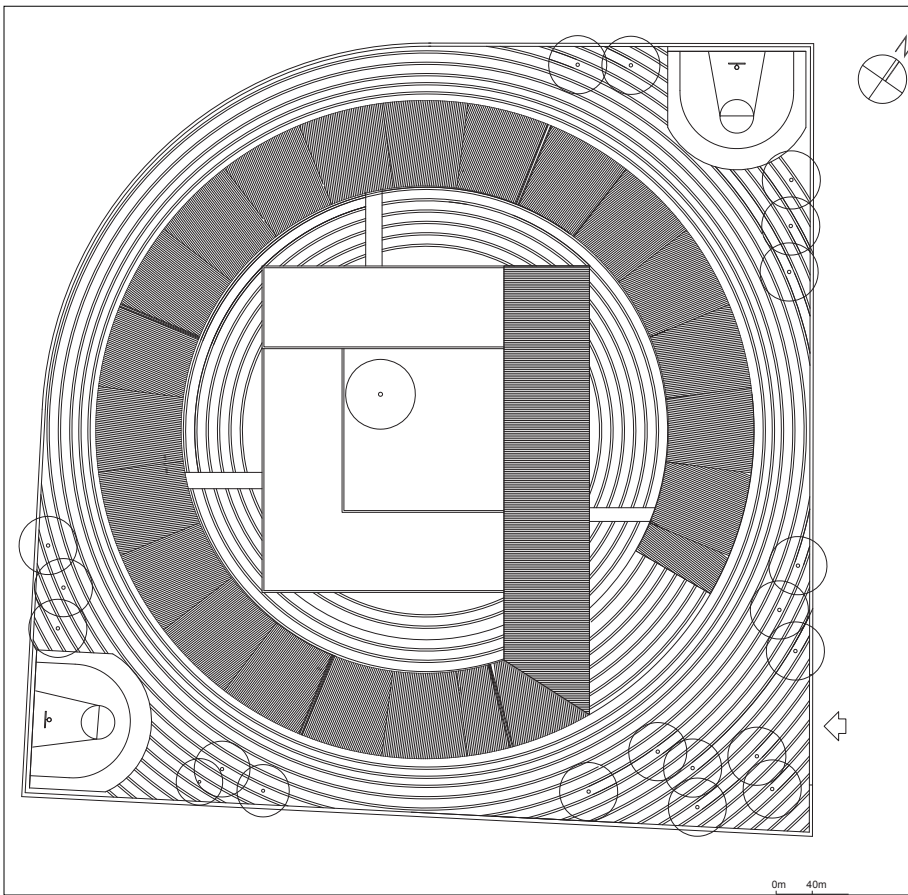
- 中国艺术建筑院. “中国建筑艺术年鉴-- 07-08.” 北京. 艺术文化出版社. 2009: 32 - 35
- 王丹. “土楼式居住与社区化空间.” a+a建筑知识, 2009 (2) : 56 - 63
- 邓妍. “‘土楼公舍’— 低收入者住得起的屋子.” 深圳晶报, 2009 (2) : C6
- 钟和晏. “都市里的土楼实践.” 三联生活周刊, 2009(2): 132 - 134
- 饶小军. “优胜奖：土楼公舍.” 世界建筑, 2009(2): 28 - 29
- 滕琪. “直击传媒大奖 解读公民建筑.” 建科之声, 2009(2): 30 - 31
- 王辉. “建筑师茶会.” 建筑创作, 2009(2): 副刊
- 都市实践. “土楼公舍.” 城市中国, 2009(1): 41 - 43
- 田小磊. “广州土楼公舍的文化争议-公共住宅的实验与反思.” 凤凰周刊, 2008(12): 82 - 84
- 陆彦. “专访广州新土楼建筑师：‘低收入人群也有生存的尊严.’” 外滩画报, 2008(12): B38 - B40
- 都市实践. “向公民建筑致敬-中国建筑传媒奖颁奖特刊 居住建筑特别奖--土楼公舍.” 南方都市报. 2008(12): A 06 - 07
- 都市实践. “土楼公舍” 时代建筑, 2008(11): 48 - 57
- 梁智仪. “一场价廉物美的实验 现代土楼住宅.” 明报周刊, 2008(11): 32 - 35
- 何文琦. “‘土楼公舍’引起国际设计界关注.” 深圳商报, 2008(9): C3
- 阮庆岳. “中国建筑风火轮.” IE家饰, 2008(3): 64 - 73
- 都市实践.
“土楼公舍：关于中国城市低收入住宅模式的探索/都市实践：城市有责任为人们
提供更好的公共空间” 建筑与文化, 2008(1): 42 - 47/54 - 57
- 刘晓都, 孟岩, 王辉. “城市填空：一项给‘城市空虚’重注活力的计划.” 世界建筑, 2007(6): 16 - 83
- 葛丽丽. “从‘心造’展看中国建筑10年”, 缤纷Space, 2010.01, 99 - 100
- 都市实践“介入城市——
给城市公共空间重注活力的‘城市填空’计划” 《思考再织城市》
▪ 2010.02, 130 - 131
- 李程、刘晓都“都市实践——城市更新、共生、公共空间、城市廉租住宅、文脉”
Domus China 2010.03, 152 - 177
- 杂志编辑“设计的立场”三地巡回展, M.style创意, 2010.03, 74

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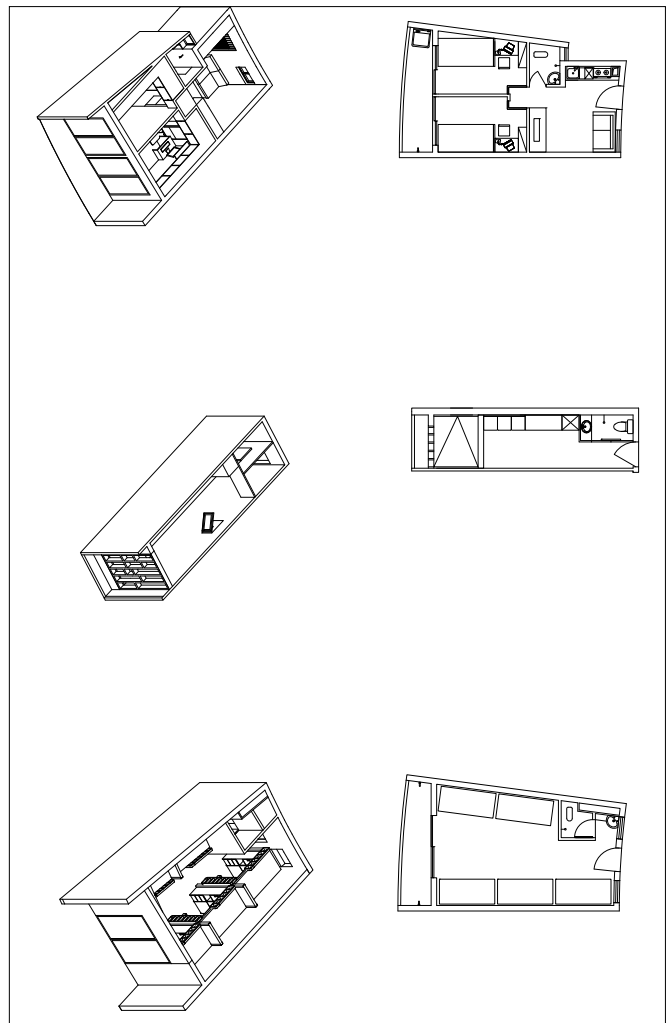
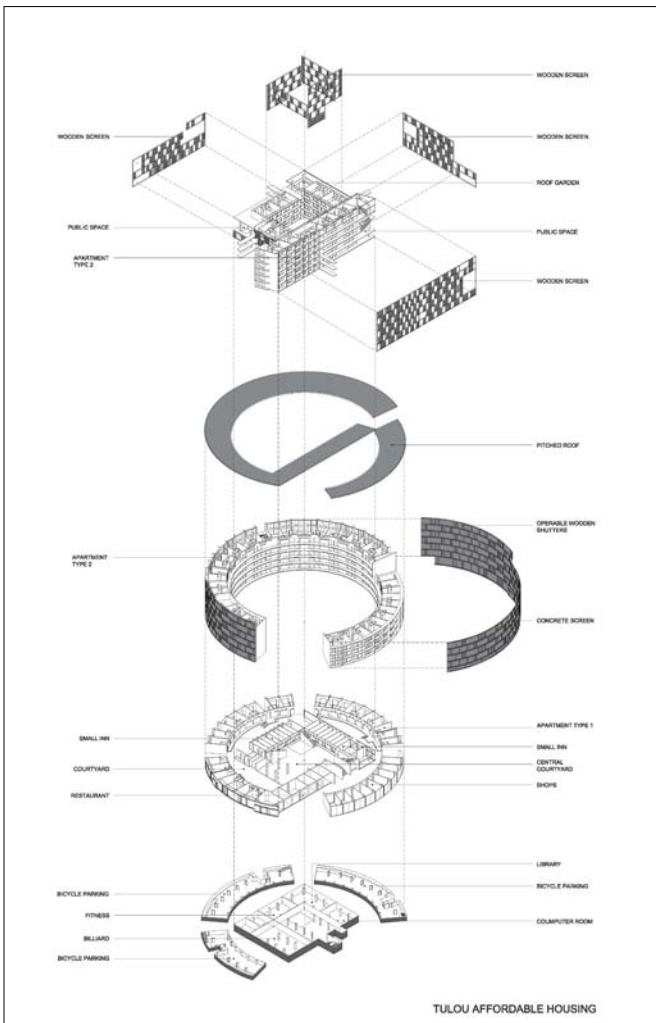
April 2010



Tulou site map



Tulou components and apartment's plans.





Bird's eye view of the tulous.

Housing office and shops at the main entrance.





Detail of an exterior wall.

View of the central courtyard.

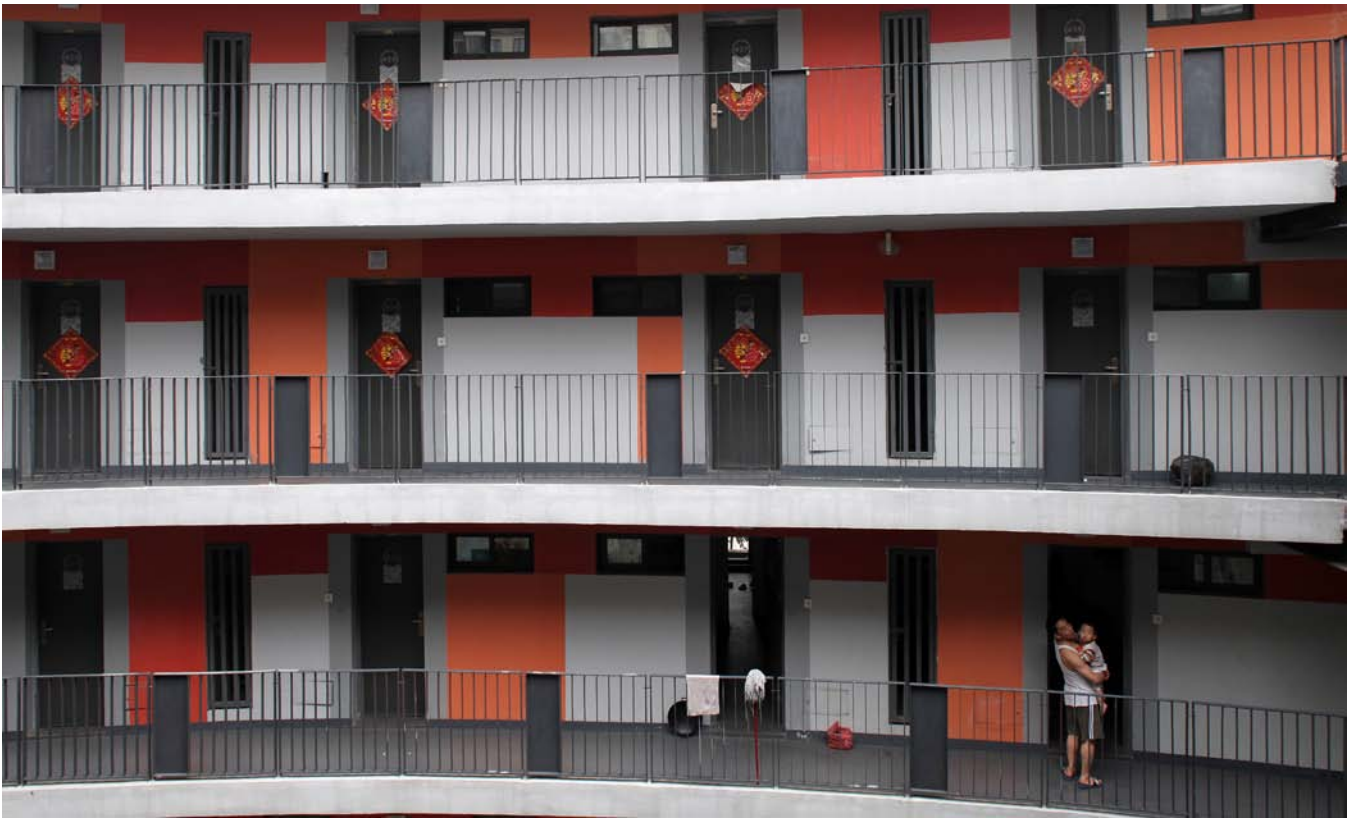




Apartments and balcony looking towards the central courtyard.



Blue courtyard.



Balconies of the red courtyard.



Basket ball playground.



Exterior wall.

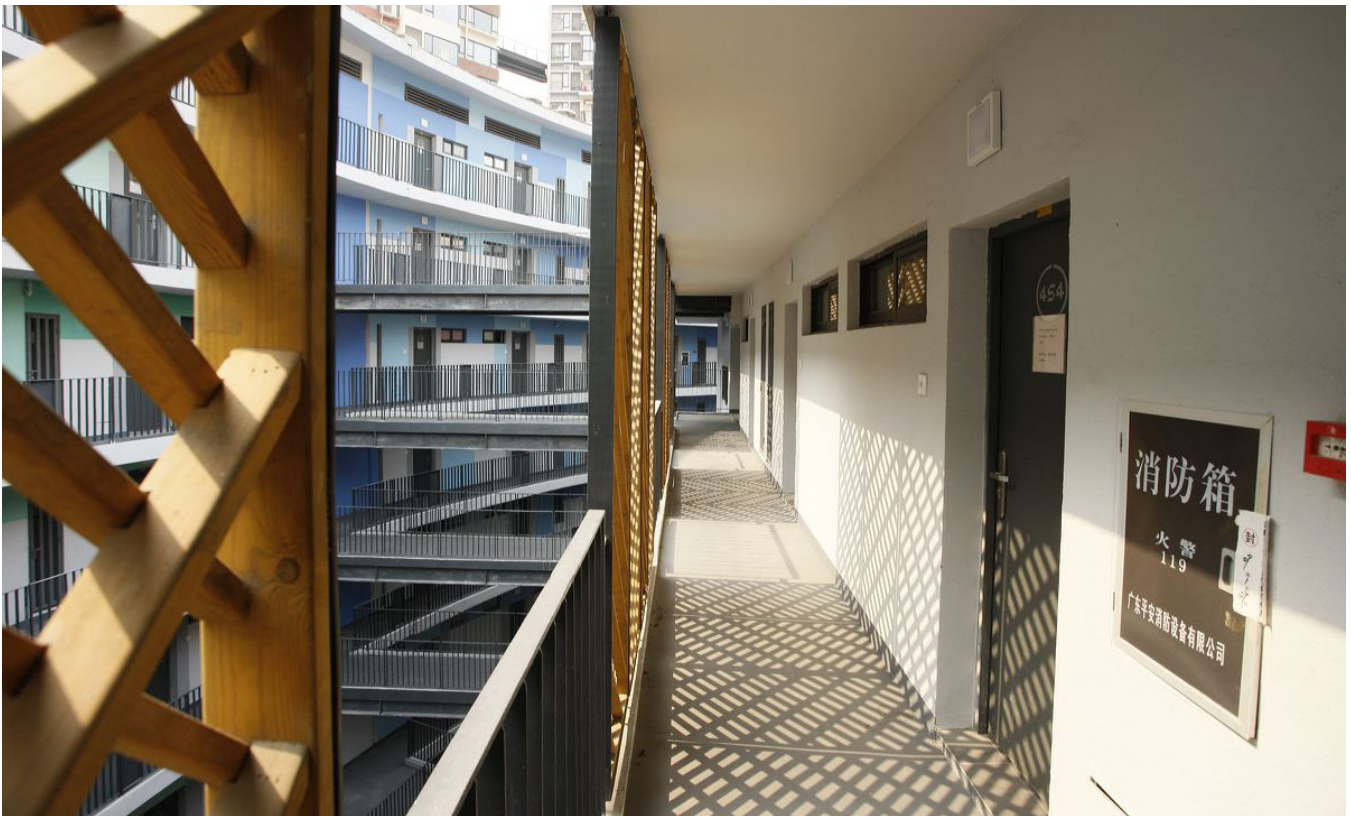
Public spaces on the ground floor.





Public spaces and shops on the ground floor.

Corridor behind the wooden pattern.





Kitchen of a family apartment.



Interior of a duplex apartment.

