This article features some of their projects which range from designing village schools, creating a master-plan strategy for an eco-tourist island resort, to designing and building an agricultural education and community centre. Research assistants and students are involved in both the design and implementation of these projects which advocate sustainable techniques and the use of local materials.

Joshua Bolchover and John Lin
Assistant Professors, University of Hong Kong
New Bud In Sichuan

ZHU Jingxiang, CUHK
The tremendous loss of life and property caused by the 5.12 Sichuan Wenchuan Earthquake reveals the absence of decent structural design and adequate monitoring of the construction process in the region. Reconstruction has been difficult and a large number of temporary shelters that are neither durable nor thermally comfortable have been built in an attempt to meet the urgent needs of those affected. These shelters, when demolished later, will give rise to new construction waste.

A research team led by Prof. Zhu Jingxiang of the School of Architecture at The Chinese University of Hong Kong (CUHK) has developed an integrated light-structure system for the reconstruction. With the support of the Hong Kong Dragon Culture Charity Fund and the CUHK New Asia Sichuan Redevelopment Fund, they have completed Xiasi New Bud Primary School in 2009, and Dazu New Bud Study Hall in 2010, helping the little children to study in a nearby school. The buildings are safe and durable, and the cost of construction is low. It also looks attractive and features good thermal performance and a high energy-saving capacity.

The primary load-bearing part of the school is a light-gauge steel frame, which is strengthened by a prefabricated panel system. These two parts are bound together by mechanical fasteners to form a strong but light composite structure. Although the wall is only 16cm thick, the system is able to resist high seismic forces. Under the protection of the outer panel and surface coating, the life of the skeleton is expected to last over 20 years.

The school features high thermal performance, thanks to the use of thermal insulation and storage materials. It also adopts a multi-layered envelope system where the position and ratio of the doors and windows are carefully designed to ensure that classrooms will be cool in summer and warm in winter. The decentralized opening system brings in enough day-light and natural ventilation by chimney effect, which greatly reduces energy consumption.

Additionally, the design incorporates environmental concepts by mostly using mechanical joints instead of chemical compounds to avoid toxic emission and to facilitate maintenance and disassembly in the future. In Xiasi New Bud school, solar water heater and an eco-friendly toilet are equipped to improve rural sanitation; in Dazu New Bud study hall, a wind turbine is used to provide clean energy to power the LED lights installed.
The principle of sustainability is also reflected in the choice of materials. Materials dismantled from the old school are reused as paver, spacer or thermal mass. Some of the stone bases discarded by the villagers are also reused to furnish the courtyard. Besides, no other materials except cement were purchased for construction. Old bricks, stones and tiles are reused to achieve terrazzo effects in the flooring. This encourages local workers to preserve and develop their crafts, while reducing dependence on industrialized building materials. As all superstructure components are prefabricated in factories in Shenzhen and Chengdu, on-site assembly became an easy
task. With the guidance of CUHK researchers, professional workers built them within only two weeks.

It takes many years for me to conceive, experiment and, finally, put such a light-structure system into practice. The success of the construction of New Bud Primary School demonstrates the significance of articulating research in design. The research brings about new ideas and methods, while the design transforms such ideas and methods into a building. This research has also ironed out the long-existing contradiction between construction speed and quality. It does not only integrate the potential ability of different manufacturers, but also provides an opportunity to unite different communities and disseminate knowledge.

In each of the real constructions, 30 volunteers including university students from the mainland and Hong Kong, as well as architects, took part. This enabled them to experience innovative building technology and the symbiotic relationship that can exist between the rural and the urban.

Project Information:

2009 Xiasi New Bud Primary School
Architect : ZHU Jingxiang, Nelson TAM Sin Lung, XIA Heng
Floor Area : 450 sq m
Total cost : 600,000 CNY (around 1300 CNY/ sq m )
Completion Date : September 2009

2010 Dazu New Bud Study Hall
Architect : ZHU Jingxiang, Nelson TAM Sin Lung, XIA Heng
Floor area : 260 sq m
Total cost : 420,000 CNY (around 1600 CNY/ sq m )
Completion Date : August 2010

**Performance Comparison—Winter Without Temporal Heating**

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**Light Structures**

Thermal test of New Bud, traditional and temporary shelters, 2010 winter.
[A] Appealing
adjective; evoking or attracting interest, desire, curiosity, sympathy, or the like; attractive.

For architects, China might be the only big market in the world which is still flourishing in nowadays. This gold rush makes all the architects around the world come to China and hoping to have a piece of action. Now, China has become architects’ new ‘Dubai’.

Meanwhile in the west, the building industries are still recovering from the global financial crisis in 2008, unable to afford many new buildings. That makes China even more attractive to architects.

2008 Olympic in Beijing and 2010 World Expo in Shanghai are showcase of newly imported architecture to China from the outside world. Chinese clients are becoming more adventurous on contemporary architecture. During the last decade, all major practices have built many exciting buildings in some ‘First-Line’ coastal cities like Beijing and Shanghai. Gradually the inlands’ ‘Second-Line’ cities have also developed their appetites on foreign architecture too.

[B] Bold
adjective; not hesitating or fearful in the face of actual or possible danger or rebuff; courageous and daring

China has been undergoing big transformations in society since the 80s. In order to show off its power, the government or even developers are looking ‘special’ designs with ‘wow’ factors in built environments. Super tall skyscrapers and Iconic buildings in Beijing, Shanghai are now their new totem, to symbolize the mighty economic power and determination of ‘Open Door Policy’ of the New China.

These new forms of architecture create breakthrough in the Cityscape and evokes many arguments for having bold design in old cities. Government authorities have the absolute power to relocate local communities and ‘give way’ to the new developments and new developments could be materialized in just a couple of years.

Government policies are in-favor to demolish the olds rather than conservation.

[C] Cash
noun; money in the form of coins or banknotes, especially that issued by a government.

Cash is King.

Since the Chinese’s buying power in the world becomes paramount by many years of overseas exports, nobody could stop Chinese buying. Now the new wealth in China not only able to shop the world-known brands like Armani and Gucci, they could also acquire services on global architectural brands like KPF and Fosters.

[D] Demands
noun; the desire to purchase, coupled with the power to do so.

Urbanization in China is inevitable while city population expands rapidly since ‘Open Door Policy’ in 80s. Labors are flocking to settle in cities. As a result, it increases immense pressure on the city resources. To cope with a property market with millions waiting to buy their own properties, residential projects become the most demanding projects of all building types in China.

Chinese clients tend to hire well-known architects on high profile projects like transportations, civil works and super high rises, thus Hong Kong and Chinese practices still have the edge on getting those residential projects in China. It is because residential projects require fewer special skills and Hong Kong architects are easier to coordinate and communicate with all parties in China. After all, the consultant fees of local practices...
in Hong Kong or China are fractioned in compared to global brands.

[E] Ecology

noun; human ecology. the branch of sociology concerned with
the spacing and interdependence of people and institutions.

While everybody goes Green and every city shouts for
environmental ecology; you will be amazed to find out that the
Ecological and Energy Efficiency Standards under Code and
Policy in China are much higher than what we have in Hong
Kong. They have 'window-wall ratio’, ‘daylight acts’, and many more
to tailor with the local climate which varies
between provinces and cities.

Interestingly, from our experience in practice, we found that
when those strict statutory requirements are enacted in real
practice, the standards sometimes could be negotiable and
handled in alternative way. Perhaps it is the reason why even
though Building Energy Assessment System in China
(equivalent to LEED in the USA and BREEAM in the UK) is now
available, it is still yet to be globally recognized.

In addition, energy consumption in China is becoming the
highest in the world in decade. The buying power fuels up the
number of vehicles on the roads. According to the Netherlands
Environmental Assessment Agency, soaring demand for coal to
generate electricity and a surge in cement production have
helped to push China’s recorded emissions for 2006 beyond
those from the US already. It says China produced 6,200m
tonne of CO2 in 2007, compared with 5,800m tonne from the
US; Britain produced about 600m tonne. Under these
circumstances, is China a real practitioner of "Eco"?

Architecturally, renewable energy and sustainable construction
material or method applied on buildings are still very rare. Green
features like solar panels and sun louvers serve as ornaments
rather than their actual green merits.

[F] Familiarity

noun; the state of being familiar (i.e. commonly or generally
known or seen); friendly relationship; close acquaintance;
intimacy.

In China cities, it is not difficult to discover some familiar
buildings or architectural scenes which you may have seen in
magazine or somewhere overseas. Perhaps Chinese clients
prefer to pay safe on big scale development, want precedent
which has been built.

Sometimes architects would be struggling to communicate with
client who may not have architectural education background. In
order to communicate easier, precedent images are fast and
deliverable tools. It can seek mutual understanding and
agreement on abstract and conceptual idea. Especially for
Developers who have budget control, promising design role
models in town planning or architectural images could enhance
their confidence on the development. It is good for Client in
terms of investment point of view. However, it would easily set
unnecessary framework on design idea and direction.

Leslie Earl Robertson, who was one of the chief structural
engineers of the World Trade Center in New York, the Shanghai
World Financial Center and the Bank of China Tower in Hong
Kong, once said that nowadays is Era of Discovery more than
Invention. It may also apply to architectural world that
breakthrough will be required to avoid familiar architecture.

[G] Gigantic

adjective; very large; huge: a gigantic statue

Behold, the scale of the projects in China are MASSIVE!!! It is
just because Clients are chasing everything bigger, taller while
every building is fighting to become the new icon in town. It is
not merely desire of one or two aggressive Developers, but
even local authorities are encouraging it. Some of them would
grant developers with GFA exemption on skyscrapers and
landmark developments, this phenomenon happens especially in second, third-line cities. For instance in Nanning, when super high rise is more than 300m tall, the portion above 100m will be exempted for Plot Ratio.

[H] Horizon
noun; the limit or range of perception, knowledge, or the like.

While China provide a new horizon for architects to make architectural dreams come true, architects also brought new design ideas to China. Influence from internet, travelling and studying overseas, have broaden the Chinese perception of new architecture.

Some of the clients in China start hiring architectural educated project managers and representatives to overlook their projects. It is a giant step for clients to operate like a ‘professional’, and uplifting the standards of building industries.

[I] Improvise
verb; to compose, utter, execute, or arrange anything extemporaneously

Working for Chinese clients should always be vigilance since the building industries in China is still not fully developed. There ain’t any national standard form of contract for the industries in which both parties are practicing under their own rules.

Most of the overseas architects have to work closely with local design institutes (LDI) for statutory submission. They could give guidance to overseas architects the ‘know-how’ on Chinese projects, together with all-in-one consultancy services in all building disciplines in a budget price. Many clients are keen to hire them to back up the overseas architects’ design. As a result, clients are reluctant to seek alternative advice from foreign consultants and experts.

[J] Jury
noun; a group of persons chosen to adjudge prizes, awards, etc., as in a competition.

Open Competition is always a vital source of new commission for architects in the States or European Countries. However, it is not yet popular in Mainland China. Even though there are many projects seeking good architects, they prefer to use invited competition instead of open competition. In fact, invited competition with referred potential architects is beneficial to client who can impose Jury’s judgment. They can control cost and keep their freehand to negotiate fee. They can also be ensure those architects are known by them or world-wide. However with all those factors, the design may not be the best of the best solely in design point of view. It is not like open competition which can establish a platform for many talented architects who are yet to be well-known.

[K] Kitsch
noun; something of tawdry design, appearance, or content created to appeal to popular or undiscriminating taste.

Kitsch is a word once labeled bad taste on mass produced goods. Sometimes global reproduction of international style in China could post a threat to the built environments. Regardless the context and the culture of the site would disharmonize the building with its surroundings. Architects in China are still struggling to create their own identity of contemporary Chinese Architecture. Though the futures is bright due to some younger generation of architects have returned from overseas, they all have a better understanding to design buildings to suit its local context.

[L] Land
noun; a realm or domain

China is one of the biggest countries in the world and Chinese Government is the only single land provider in the country. Under monopoly, it is easy to develop any land in China without going through long public enquiry process like what we have in Hong Kong. The prominent case is that the new Beijing International Airport was built from land acquisition to completion smoothly within just 6 years. The architect Lord Foster once praised the Chinese government’s high efficiency in clearing all the hurdles for the project.

Since lands are so cheap in China, many developers started piling up land stocks in cities. In recent years, Chinese Government is trying to clamp down the accumulations of lands in Developer’s hands. They could penalize the developers or even forfeit the land if the construction is not commenced by deadline.

[M] Manpower
noun; power in terms of people available or required for work

The building industry in China is still heavily labour intensive, it happens not only during construction but also in the design and planning stages. As the wages are really low in compared to Hong Kong and overseas, a lot of Clients are very keen to hire locally trained architects and consultants. Overseas architects mostly could only involve in the preliminary stages of the projects, providing design without going through the whole construction process.

[N] New Money
noun; fortune recently acquired

There are many newly rich people in China setting up new company even without property development experience since there is a high demand in property market all over the country. This phenomenon created many job opportunities in the industry but sadly their approaches are not appreciating architecture. They are interested in maximize their profit rather than promoting good design. Architects should be aware when new client approaches.

[O] Overcrowded
adjective; uncomfortably close together

Urbanization in China attracts villagers migrating to cities. These villagers usually have no legal right to access any social welfare and social housing. Many of them may end up living in poor quality accommodations. It is a common phenomenon in most first-line cities. Meanwhile the property investors are accumulating land stocks and unoccupied properties in town, which is widening the gap between the rich and poor in China.

[P] Prejudice
noun; any preconceived opinion or feeling, either favorable or unfavorable

Everybody has prejudice but some can accept different opinion more easily than others. Chinese clients (especially those without architectural training) usually have their strong mind set and own judgement on architecture. They would either like it or hate it without middle ground.

Architects have to learn what the clients want and their decisions are usually made fast and unchangeable. Learning to read the clients’ minds are the ‘Art to success’ in China market which is quite a challenge.

[Q] Quality Control
noun, a system for verifying and maintaining a desired level of quality in a product or process by careful planning, use of proper equipment, continued inspection, and corrective action as required.
Quality controls on site work for construction mainly rely on self-discipline of the developer, consultant and contractor teams in China. There was news about collapse of whole building under construction in Shanghai few years ago. There ain’t a fully developed national standard in China to monitor the buildings, construction site safety and building products. Therefore people prefer to purchase and invest on properties which are developed by HK or overseas developers.

[R] Renminbi

noun; the currency of the People's Republic of China, the basic unit of which is the yuan.

While everybody in the industry is fighting to earn Renminbi (RMB) in China, it is not easy to transfer money to outside countries even Hong Kong which is the Special Administrative Region for China. Since the Chinese government still have the upper hand to control RMB exchange rate with complicated tax system.

[S] Stararchitect

Stararchitect or also stararchitect [star + architect] is a term used to describe architects whose celebrity and critical acclaim have transformed them into idols of the architecture world and may even have given them some degree of fame amongst the general public. Celebrity status is generally associated with avant-gardist novelty.

During the early 90s, Starchitects from America and Europe have already got commissioned for jobs and established offices in China. They were the pioneers of overseas architects in China which they brought in new icons and styles. Starchitects could get job easily with the obsession by Chinese Clients especially when the money is unlimited. This phenomenon is still going on and even growing fast and now China has become the new heaven for Starchitects to put their marks. Local authorities are delighted to have starchitects’ signature piece in their cities.

[T] Taste

Noun; ideas of aesthetic excellence or of aesthetically valid forms prevailing in a culture or personal to an individual

With more completion of international architects’ works in China, people’s taste of architecture is being uplifted. General Public have the chance to expose with the outside world through newly built architecture in Chinese cities.

[U] Underrated

verb; to rate or evaluate too low; underestimate.

Local Chinese architects have always been underrated by their Hong Kong counterparts. In fact, the project scales and types in China are more becoming prominent in recent years. For instance, Beijing Olympic Stadium was designed with parametric tools (Digital Project by Gehry Technologies) though Hong Kong Clients and Consultants are still reluctant to explore those building information modelling technologies.

I believe the new generation of Chinese architects could overtake the Hong Kong’s architects in matter of decades. It is because they have been exposed to high profiled and complicated projects during these years. On the other hand, Hong Kong projects are still limited in conventional building types and working methodologies.

[V] Vocation

noun; a particular occupation, business, or profession; calling.

There are different kind and style of architectural schools in this world. Some aim to make architectural dreamer, some prefer students to be thinkers, and surely some are targeted to provide architectural workers to fit into the real practice after graduation.

In China, professionals including architects and engineers in Local Design Institute are knowledgeable and helpful. They give out advise on regional situation and statutory criteria. However their training and work approach is more focus on vocational more than aesthetical aspects.

[W] Who is the boss?

In this commercial world, people who is paying are usually the boss. They can decide and even design. When many architects’ dreams is to do good design from their own, they have to remember that the real boss for design sometimes are Client, especially in China. Rich people who is paying consultants can dictate on design approach even they are not professionals in building and architecture. For those developers who have in-house professional representative can also intervene the project design decisions more severely.

[X] Xerox

verb (used with object), verb (used without object); (sometimes lowercase) to print or reproduce by xerography.

Xerox is modern technology to duplicate stuff fast and conveniently. It applies to paper work, drawings, building and even human being. In this high demanding market in Mainland China, fast re-production is required. Plus it is guarantee to ‘learn’ from building design in overseas countries partially and wholly under globalization.

[Y] Yearning

noun; an instance of such longing.

“What is contemporary architecture and who is the representative architect for new China?” is always a hot topic in late 10-20 years. In fact, there is a strong desire for contemporary architect to represent their new national status and properties. Prominent construction projects like Civil works, and those building works for big events like Olympic and World Expo are yearning that Mainland China has entered a new era.

[Z] Zealous

adjective; full of, characterized by, or due to zeal; ardently active, devoted, or diligent.

In this new era, China became the focal point of the world stage. Everyone is watching it growth and trying to get a piece of action there. For architects, it is a golden opportunity in this century which is resemblance to 200 years ago when Ching Dynasty opened its port to foreign trading. The difference is that we are not trading tea or china anymore but exchanging knowledge and experience.

Phyllis Leung
Architect and Urban Designer
Phyllis has been studying and practicing in Hong Kong and New York City. After being rejuvenated in States for couple of years, she decided to move back to her hometown. Hong Kong as a main station for exploring architecture and urban issues continually.

Jo Lo
Architect and Interior Designer
Jo was educated and trained in Hong Kong and the UK. He has been working in London for last 10 years and recently returned and practice architecture in Hong Kong. He has an unique view on how HK architects are practising in nowadays China.

HKIA Journal 2011 - Issue 60
China Merchants Garden City Cyber Port
Gravity Partnership Ltd.

The Garden City Cyber Port is an office/industrial mixed-use building located in a residential district along Nanhai Road in Shekou, Shenzhen, China. The prime objective is to provide a flexible space that caters for corporate of various scales and business nature, while creating a stimulating work environment to encourage innovation and exchange of ideas. The building is contextually in harmony with the surrounding scale and urban fabric, and at the same time injecting new element into this otherwise monotonous district without causing alienation. The development aims to provide over 40,000m² of high quality office space primarily designed for enterprises in the high tech industry equipped with large volume of machineries and other research tools.

Flexible space planning is therefore a major concern for occupants to allow partitioning of the walk-free space according to their needs. The architect envisioned an office space different from those commonly found in a high density urban setting, where traditionally office workers can only take their breaks in an enclosed communal space. The development is strategically divided into two building blocks. A courtyard is enclosed between these two buildings and this courtyard is extended to the main street to form an entrance plaza. Commercial activities are allocated on the perimeter of the main street and plaza; drawing people from the main street to create vibrant urbscape. The disposition of building mass helps to minimize the wall effect along Nanhai Road, and increasing the amount of office spaces that is in direct contact with open air and natural light. By introducing interesting communal space such as podium garden and entrance plaza for social interactions between occupants, a more interactive working atmosphere is created. The incorporation of various green features provides the occupants a pleasant environment in connection with nature. The building is set back from the street where it abuts. The large piece of greenery is created and dedicated to the public and the city.