THE CHINESE UNIVERSITY OF HONG KONG
Social Science Panel

Application no. : _____ (For Office Use Only)

Direct Grant for Research 2018-19
Application Form

1. Investigator(s) Information
[Please attach a CV (within two A4 pages) for the Principal Investigator and each Co-Investigator (if any).]

	Name	Department / Unit
a) Principal Investigator	Peter W. Ferretto	School of Architecture
b) Co-Investigator(s)	Ling CAI	Guangzhou University, China

2. Plan to develop this proposal into RGC General Research Fund (GRF) / Early Career Scheme (ECS) proposal within two years :

☑ Yes (for applied amount up to HK$100,000)
☐ No (for applied amount up to HK$50,000) *(Please skip part 4a)*

3. Project Title

Rural Prototypes: Redefining a New Material Consciousness for Chinese Hakka Villages.

4. Project Objectives and Long-term Significance *(A maximum of one A4 page)*
Please state the purpose of the proposed investigation, identify the key issues and problems being addressed and the possible outcome of the research project, its relevance, significance and value.

"*Architects don't invent anything, they transform reality. Architecture does not have a pre-established language nor does it establish a language. It is a response to a concrete problem, a situation of transformation*" (Siza, 2015)

1- Proposed Investigation
This design research project looks at the possibilities of rethinking abandoned rural Chinese villages and capitalizing on a disappearing rural culture. After the catastrophic effects on urban heritage, modernization is now in the process of decimating most of China's rural villages. By designing "prototype" for the abandoned Hakka village of Hexin Wu (何新屋), located in Guangdong Province, China, our ambition is to present an alternative way to re-think the issue.

The project wishes to challenge conventional preservation paradigms, instigated by a national rural heritage policy focused on introducing tourism as a rural solution. In short, we aim to make abandoned villages operational again. By conceiving the village as an ecosystem, we will study a series of "real" prototypes with associated implementation strategies. "Real" in this context relates to showing sensibility and practicality to deliver proposals that can be achieved (financially) and implemented (buildable) by the community.

In this context, Hexin Wu village represents an example of a Chinese village, rich in heritage, not deemed worthy of preservation. An abundant number of villages of this kind exist, all of which are confronted with a dark reality: i.e. face certain extinction or lose their soul by giving way to the practice of "Disneyfication", a form of architectural conservation that mutates villages into an

Please add extra paper if necessary.

architectural taxidermy museum.

2- Key Issues and Problems Addressed
The key issues focuses on injecting life back into rural Hakka communities by engaging with traditional forms of craftsmanship, specifically "adobe building", that are rapidly disappearing.

3- Possible outcomes
A small prototype intervention, testing the design and technical potential of adobe (mud buildings) and at the same time hone and learn from traditional skills. The prototype will engage directly with important social amenities the He Xin Wu community require, such as community, educational and learning centers.

4- Relevance
Rural Chinese villages are changing at an unprecedented rate, the notion of the rural condition is today rife with preconceived ideas that have little in common with actual everyday countryside life. This project explores "actual" rural conditions, to expose examples of villages that are changing and understand how and why they transform. We wish to expose how villages adapt and calibrate.

5- Significance
The significance relates to the wider picture of how we make rural Chinese villages relevant again and how we can work with the vestiges of history that far too often get forgotten and potentially erased.

6- Value
The value of the research relates to how we as architects, planners and designers can assist rural villages in their pressing aim to modernize without losing their social and heritage DNA.

Far too often professionals seek answers in preconceived solutions that pay little attention to tangible and intangible culture of the place. Hakka villages have a rich culture of craftmanship that can, if tapped into correctly, help rather than hinder this process.

a) How will this proposal be developed into RGC General Research Fund (GRF) / Early Career Scheme (ECS) proposal? *(A maximum of one A4 page)*

The PI and CoI propose to develop this project into a GRF proposal, to be submitted in October 2019.

Over the last year Prof. Cai and I have worked directly with the Hakka village of He Xin Wu. We have visited the village 6 times, organized a graduate Design Studio with CUHK students (13), met the village secretary to discuss the village's pressing problems and listened to their proposed vision, discussed with local party representatives about the wider heritage strategy and finally in January 2019 we started a co-research project with Natural Resource Department of Guangdong Province and Guangzhou University to research the "Revitalization of Rural Heritage Settlements in Guangdong Province".

These activities demonstrate that we are building a strong network of connections associated with the project and are testament to the potential professional and academic impact of the project. By developing the proposal during the next 10 months we can capitalize on the work performed to date, and organize a coherent position that could be clearly translated into a GRF proposal.

The research team has also established considerable experience with rural Chinese villages. In 2016 we received a GRF grant, titled "Adapting Villages" looking at Dong Minority villages in Hunan. As part of this grant we constructed several prototypes, including "Book House" project a 200m² library for children. In may 2019 we are hosting an international workshop about rural villages sponsored by IEES at CUHK where we wish to present the first findings of the research.

Please add extra paper if necessary.

5. Background of Research *(A maximum of three A4 pages, including references.)*

Summary of related work already done by you and other researchers, and outline of previous and alternative approaches to the issue:

The background research to the project is divided into 4 categories: Village, Preparation, Experience and Literature.

Figure 1 He Xin Wu, Hakka Village, Guangdong Province

1_HE XIN WU HAKKA VILLAGE

He Xin Wu is a traditional Hakka village located in North West Guangdong Province. It belongs to a vernacular typology of Hakka rural architecture named Wei Long Wu.

1.1_Wei Long Wu

Wei Long Wu, or "*Surrounded Dragon House*" in English, is type of traditional Hakka walled village settlement. The development of Wei Long Wu starts from the ancestral hall at the centre, then gradually radiates outward with a series of "rows" to expand the entire site. The courtyard formed by ancestral hall and its subordinate rooms are usually rectangular shaped serving for ancestry worshipping and other ceremonial functions. The Wei Long, the circular residential area is parallel to the edge of the courtyard of the ancestral hall at the front and shape a semicircle at the back.

The Wei Long Wu follows complex topographical and geographical design considerations in its vernacular architecture. As a complex each row or ring gets progressively higher from the centre as to create a natural rain water drainage system where all water is stored in a semi-circular pond at the front of the village that also acts as a naturally cooling element. As Hakka people were originally immigrants from northern China, the communal living structure is built especially for protect their people and properties.

Hakka people have a long tradition of crafting their villages by using local materials such as stone, pebble and stucco to make a simple foundation of Wei Long Wu and rammed-earth to make the wall and timber structure for roof. The pitched timber roof can also protect the rammed-earth wall underneath from rain.

1.2_He Xin Wu

He Xin Wu is a rare example of Wei Long Wu in Guangdong Province today that is well preserved in such a large scale. He Xin Wu had nine Wei Long, the semicircle residential area during its most prosperous time and four of them are still exist. An extra village wall has also been built with four watchtowers at each comer. Schools, storages, dye houses and farmland were arranged along the village walls.

Please add extra paper if necessary.

1.3_Revitalization
He Xin Wu is abandoned nowadays as the condition of the village no longer suitable for people to live and many rammed-earth walls collapsed without proper maintenance. The local government is intending to redevelop the village as a new tourist attraction and started to repair the village and built some supporting facilities. A new public toilet was completed last year next to the entrance of the village. it was built by concrete instead of the traditional rammed-earth and. The walls of toilet were painted with brick patterns and the roof was covered by fake tiles to imitate traditional building.

2_PREPARATORY WORK

During the last 12 months we have worked closely with the He Xin Wu on several fronts:

3.1_Joint-workshop with Guangzhou University
15 Master of architecture students have participated in a joint-workshop held by the School of Architecture, the Chinese University of Hong Kong and the School of Architecture and Urban Planning, Guangzhou University in Hexinwu in September, 2018. The three-day workshop provided a valuable chance for students to learn the culture and vernacular Hakka architecture.

3.2_Design Studio
The PI led a Master of Architecture Design Studio during the first semester of 2018-19 academic year titled "Real Villages" and selected Hexinwu as the site. 15 students were divided into four teams to analyze and find their own stance to response condition of the abandoned Hakka Village by proposing from large scale mater plan to small scale house design and try to attract people coming back to the village while respecting the village's tradition. At the end of the semester, students visited the village in December and presented their final design projects of the revitalization of Hexinwu to the local villagers.

3.3_A New Research Centre in He Xin Wu
We have established a new research centre called "the Research Centre for Revitalization of Rural Cultural Heritage in Guangdong Province" in collaboration with the School of Architecture and Urban Planning, Guangzhou University and supported by Guangdong Provincial Department of Natural Resources, Guangdong Provincial Department of Housing and Urban-Rural Development and Guangdong Provincial Department of Culture and Tourism. The centre will focus on the protection and revitalization projects of Hexinwu and will provide an ideal platform for the future design studio.

3.4_Memorandum of Understanding with Guangzhou University
The school of Architecture, the Chinese University of Hong Kong has signed a Memorandum of Understanding with the School of Architecture and Urban Planning, Guangzhou University to promote collaboration between two sides in the research and teaching programs related to the rural China.

3_RURAL EXPERIENCE

3.1_Joint Summer Workshops with Guangzhou University
Since 2016, we have already held three joint summer workshops with the School of Architecture and Urban Planning, Guangzhou University in Gaobu, a remote Dong minority village in Hunan Province. Each year 15 students from the Chinese University of Hong Kong worked with 15 students from Guangzhou University together in the village for around two weeks on a specific architectural issue in order to help improve the living quality of local villagers and protect their valuable tradition cultural heritage.

3.2_Conference
PI and CoI have attended the Forum of Southeast Minorities' Settlement in 2018 in Changsha as a

Please add extra paper if necessary.

guest speaker to share the experience in practicing in China's rural area. And in May 2019 are organizing a International Workshop, titled "Adapting Villages" at CUHK

3.3_Book House

We have completed a library project in Gaobu Village, Hunan Province in 2018 called Book House. The design takes the traditional Dong house "Ganlan" as the creative starting point, where the timber frame is adapted and reconfigured as to accommodate different programmatic and spatial configurations. Having witnessed how stairs become a key architectural element in Dong daily life, a place where people usually congregate around and especially a place where children love to play, stairs became the generating idea of the building. The library becomes a dynamic circulation and programmatic vessel for villages to interact.

Most of the children in the village are raised by their grandparents as their parents need to work in cities. Educational facilities in the village such as libraries are scarce, hence our idea was to offer an educational incubator, a house for children to learn through playing.

4_LITERATURE REVIEW

4.1_References

Blundell-Jones, P. (2016). *Architecture and Ritual: How Buildings Shape Society.* London: Bloomsbury Academic.

Ferretto, P. W., & Cai, L. (2019). Village Prototypes. A Survival Strategy for Chinese Minority Rural Villages. *Journal of Architecture*.

King, B., & Sausalito , B. (1996). *Buildings of Earth and Straw: Structural Design for Rammed Earth and Straw-bale Architecture.* California: Ecological Design Press.

Knapp, R. G. (2000). *China's Walled Cities.* Oxford: Oxford University Press.

Messmer, M., & Chuang, H.-M. (2013). *China's Vanishing Worlds: Countryside, Traditions and Cultural Spaces.* Cambridge: MIT.

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Wang, S. (2016, July 11). The possibility of coexistence between urban and rural. *Royal Acadey 26th Annual Lecture*. London.

Wei, A. W., & Pins, A. (2014). *Ai Wei Wei Spatial Matters: Art, Architecture and Activism.* London: Tate.

Whyte, M. K. (2010). *One Country, Two Societies: Rural-urban Inequality in Contemporary China.* Cambridge: Harvard University Press.

Zwerger, K. (2006). *Vanishing Tradition: Architecture and Carpentry of the Dong Minority of China.* Bangkok, Thailand: Orchid Press.

6. Research Plan and Methodology *(A maximum of three A4 pages, including key references.)*

Please add extra paper if necessary.

RESEARCH PLAN
The research plan is divided in to four phases:

Phase 1 – Feasibility (2 Months)
1.1_Background: Macro and Micro, Historical, Geographical and Social. Present discussion, Case studies
1.2_Mission: Design thinking before site visit
1.3_Workshop 1: Site Visit with Prof. Ling Cai GZU
1.4_Case studies of similar project

Phase 2 – Social Empathy and Material Testing (2 Months)
2.1_Empathy: Listen to the Community
2.1_Possibilities: Rapid Spatial Experiments
2.3_Workshop 2: Local Craftsmanship
2.4_Understand the physics and structural properties of Abode.

Phase 3 – Prototype Implementation (4 Months)
3.1_Indetify three sites as possible intervention sites
3.2_Work out budget for the prototype
3.3_Find funding from local government and local institutions to fund the small prototype
3.4_Several funding bodies including, Guangdong Provincial Department of Housing and Urban-Rural Development and Guangdong Provincial Department of Culture and Tourism, have already expressed support.
3.5_Workshop 3: Construction of prototype

Phase 4 – Prototype Synthesis (2 Months)
4.1_Survey the final prototype
4.2_Generate feedback for the users
4.3_Write one Peer reviewed paper

METHODOLOGY
The methodology of the project relies on using architectural prototypes as a means of generating knowledge. Knowledge associated to the fabrication aspect and, once the prototype is erected, knowledge related to how people actually use the protype.

1.0_Architectural Prototype Theory
The architectural prototype is here seen as a vessel of change, a concept that is able to instigate and challenge a transformation that does not start from a clean slate scenario, nor does it relate to nostalgic superficial surface readings of Hakka culture, but carefully seeks solutions that are rooted in an evolutionary process.

The architectural prototype has of late in the professional and academic realm become discouragingly associated solely with digital fabrication, with multiple software programmes computing data to produce iterative designs. However, in our discourse, the notion relates to organizational systems as conceived by the Dutch architect and theoretician Raoul Bunschoten.

In "Urban Flotsam: Stirring the City, Chora" the prototype, is conceived as an architectural organism: object, event, regulation that reacts to a given context, relying importantly on a feedback mechanism to evolve into a given proposal. As adaptive structures, prototypes respond to specific conditions, using materials that may not necessarily be meant for final production and complete designs. The role of the prototype is to be unique and a test of original ideas, a design fragment which challenges preconceived thinking and may lead to a radical change of position.

Contrary to conventional architecture, the prototype relates to temporary and adaptive design solutions. In this respect, they are similar to the idea of "Magnet" coined by the British architect Cedric Price, who believed magnets to be facilities with inherent possibilities of change, growth and adaptability compared to buildings. Price argues that architects often see buildings as a cure for social problems, a role he believes they are singularly ill-suited to, as they are: too slow, too solid and too late. The architectural prototype, as a context-sensitive design, serves as a working model for an implementation in numerous analogous situations. The

Please add extra paper if necessary.

prototype as a paradigm encourages a rethinking of existing ecosystems in order to incorporate novel expressions as well as new performances.

2.0 Architectural Prototype Practice
The methodology of designing and building the abode prototype will follow very closely the steps outlined in the research plan. For the entire duration of the project I will work with a Junior Research assistant for the whole duration of the project. Most probably this will be an ex-student of mine who has already experience of the village.

Site Mapping
1. Discussion with the local villagers as to the best social programme and site for the prototype.
2. Detailed architectural survey of the site.
3. Architectural drawings, Plans and Sections
4. Site Model, Scale 1:50

Craftmanship Materials Skills
1. Workshop with local craftsmen: adobe, stone, tiles, timber
2. Material tests with Adobe and ways to strengthen properties
3. Ways of upgrading local mud block tools
4. Recording the local construction knowledge
5. Sourcing of additional materials, such a aggregate and possibly cement to add to the mix

Prototype Design
1. Design Concept workshop at CUHK to propose at least three options
2. Make scaled models of each proposal
3. Fabricate mock-up of the final design
4. Assess the design in terms of environmental performance
5. Produce a budget for the final design

Prototype Fabrication
1. This will involve 3 visits by the PI and CoI
2. The RA will stay on site for 1 month to supervise the works
3. We plan to work only with local traders, and try and erect the prototype with local and student participation.
4. Ensure all heritage, planning, safety aspects of the design comply with statuary requirements

Post Occupancy Analysis
1. Once the prototype is in operation
2. Produce feedback in terms questionnaires and participatory response
3. Observe the prototype from both a micro and macro perspective
4. Conclude with a "Lessons Learnt" report to be distributed to the authorities and the villagers

7. Working Schedule

a) Start Date: 01.06.2019 (DD/MM/YYYY)

b) End Date: 31.03.2020 (DD/MM/YYYY)

c) Duration (in months): 10 Months

d) Gantt chart *[Please attach a one-page Gantt chart showing the research activities.]*

8. Detailed Budget

The budget must be as realistic and detailed as possible. Justification for each item of the budget is required. Whenever possible, elaborate on how the cost of each item is computed. No funding will be allocated if justifications are not provided.

Item	Budget Amount (HK$)
a) Staff Cost –	

Please add extra paper if necessary.

	Technician:	
	Research Assistant:	Part-time Junior Research Assistant at 50% for 10 months. **9,000 x 10 = 90,000 HKD**
b)	Equipment –	
c)	Consumables –	
d)	Travel Expenses –	Travel for 3 trips, PI and RA, to Hexin Wu (何新屋) village in Guangdong Province, including: High speed train, Bus and Hotel. **3000 x 3 = 9,000 HKD**
e)	General Expenses (Please specify) –	Presentation panels, reports and model equipment. **1,000 HKD**
f)	Others (Please specify expenses for Conference and Research Trip, if any) –	
	Total Amount (HK$) (Sum of a to f):	**100,000 HKD**

Item **Justification:**

a)

b)

c)

d)

e)

f)

9. Declaration of Funding from Similar or Related Proposals

a) Other research funds already secured for this research proposal:
[This amount will be deducted from the total cost of the project in Section 8 above.]

Source	Amount (HK$)
Nil	

b) Other research funds to be or are being sought for this research proposal:
[If funds under this item are secured, the amount of the Direct Grant to be awarded may be reduced]:

Source	Amount (HK$)
Nil	

10. Declaration on Research Ethics Approval

Please mark the appropriate box(es) to confirm whether the appropriate approval(s) has/have been sought/obtained.

I would like to declare as follows:

	Approval not required	Approval required	Approval being sought	Approval obtained
Survey & behavioural research ethics	☐	☐	☑	☐

Please add extra paper if necessary.

Human research ethics	☑	☐	☐	☐
Animal research ethics	☑	☐	☐	☐

I shall arrange to obtain the required approval(s) myself and ensure that all resources (including equipment and space) will be available for this project. Where necessary, I shall make the appropriate application/arrangement for this project in advance.

Remarks:
As approved by AAPC at its meeting on 7 June 2016, staff members are required to present the certificate(s) of passing the ethics test(s) before they could apply for any internal or external grants. For details, please visit the Research Ethics Training Website at https://www.research-ethics.cuhk.edu.hk/web/.

11. Declaration on Eligibility and Proposal Type

Please mark the appropriate box(es).

☑ I do not have two or more Direct Grant projects in progress *or* any Direct Grant completion report(s) overdue.

☑ I have fulfilled my previous undertaking(s) to develop my Direct Grant project(s) into RGC General Research Fund (GRF) / Early Career Scheme (ECS) application(s) as follows:
- RGC Ref. No.: _____

☐ I am a new recruit in the current academic year (2018-19).

☑ I undertake to develop this Direct Grant project, if funded, into an RGC General Research Fund (GRF) / Early Career Scheme (ECS) proposal and expect to submit it within two years (i.e. 2020-21 or 2021-22). I understand that if I fail to develop this Direct Grant project into a GRF/ECS proposal within two years, I will not be awarded Direct Grant for the ensuing two years.

☑ The project completion date will be at least six months before my contract end date.

Signature of Principal Investigator	Name of Principal Investigator
Department / Unit	Date

- End -

Please add extra paper if necessary.