Self-Build House in Rural China – Create Satisfying Houses

Project Process Journal

The Glasgow School of Art
MDes Design Innovation & Service Design
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With the development of China’s economy, the government’s support for rural infrastructure, and the enhancement of welfare in all aspects, more and more people want to build their own modern private residences in the countryside. At the same time, their requirements for self-built houses have also increased with the continuous improvement of their living standards (Wan, 2011). This might be a good trend, but there are many problems existing during the whole process.
“Although the self-built housing market is very hot, but there are many problems.”
— Liu, 2013

01

Literature Research

Background
Why focus this
Purpose of building
Different building way
Development history
Conclusion
1.1 Background

Self-built houses in rural areas is a development trend with great prospects

1. The government's policy for building new rural
2. Rural infrastructure is getting better and better
3. Urban housing prices are too high
4. With economic development, farmers’ income has increased, and there are new requirements for the quality of life and living quality

These have led to more and more people wanting to build a private house in the countryside


Figure 1, 2. Self-built housing market in rural china
Many people are not satisfied with the houses they built

Although the self-built housing market is very hot, but there are many problems. Safety problem of the house, the quality of the materials is poor, the design of the house is inferior or there is no drawing, etc. which eventually caused the homeowner to be dissatisfied with his house.


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*Housing satisfaction is obtained by self-reporting by the respondents. 0 points means “not satisfied at all”; 10 points means “completely satisfied”

The average satisfaction of rural housing (almost all self-built houses) based on a survey of five provinces in China is 6.13 (full is 10)

Figure 3. A bad experience of a rural self-built house owner
From online news

Figure 4. Rural residential housing satisfaction
1.2 Why focus this

This is an important thing with many problems yet.

In China, owning your own house is a very important thing, and it is the dream of their generations or even generations. It often takes them decades of savings.

However, the construction of their own houses in the countryside is not satisfactory, so I want to help them to build more satisfactory houses as much as possible.


1.3 Purpose of building

Residential and emotional needs

1. The house is dilapidated and needs renovation
2. Improve living conditions, especially for the elderly
3. Show financial strength. Vanity
4. Love for hometown (For those who return to country)

The main purpose is living needs (1 and 2), but some people also have emotional needs for "saving face" or return to hometown to because of love (3 and 4).

1.4 Different building way

At present, most of self-built houses are built by mutual assistance self-construction and semi-professional construction.

Mutual assistance self-construction: homeowners build by themselves with relatives and friends, or find some individual craftsmen to help.
Semi-professional construction: homeowners contracted to half-qualified construction team.

The boundary between these two is actually not very clear, and there are many situations in between.
1.5 Development history

Gradually upgrade and change

Figure 9. 1980s. Below 100㎡. Built by traditional blue bricks and tiles. Wood is often used for support structures. From online

Figure 10. 1990s. Reinforced concrete frame structures began to be widely adopted. Fat roof houses began to replace the traditional sloping roof tile. Red bricks and hollow bricks were used for the walls. From online

Figure 11. 21st century. Two- and three-story buildings have emerged, breaking through the original need for simple living and starting to pursue comfortable and high-quality housing. From online

1.6 Conclusion

Existing Problem

1. The entire industry lacks systemicity
2. Insufficient government supervision and regulation
3. Poor and incomplete design
4. Builders are often local craftsmen rather than regular construction units

Conclusion from all literature I have read

Besides data and macro analysis, I also need human perspectives

Theses provides a lot of historical and social background analysis. News and data reports provide evidence for the existence of this issue.

But these problems are too macro and abstract. The second-hand research lacks insight of human. So I will continue to in-depth research from human to explore those microscopic problems that fit people and life.

Next step:
Identify stakeholders and conduct interviews. Need more "story" and experience.

Reflection
“The field of self-built houses is still in a chaotic state. The owners don’t know what they want, the designers don’t know what they do, and the relevant departments don’t know what to promote.”

— Tang, An Architect
2.1 Stakeholders

Three core stakeholders

- Homeowner
- Architect
- Builder

The homeowner: center of the entire system, the purchaser and receiver of the service, and our target user.
Architects & builders: service providers and directly determine the quality of the house.

Interview focus

Owner: building experience, details, reasons for making each choice, problems encountered, satisfaction with the house

Architect & Builder: common project experience, common problems, views on this field
2.2 Homeowner

Interview

“Building a house in the countryside is based on your own feelings, how big is your own land, how big do you want to be, how much is the budget, how many people are in the family.”

“Rural houses don’t have to be so elegant, just plain. We are all following most people. Other people’s buildings are about how tall and big they are, and mine is about the same.”

“I want to build a house better than others, but I don’t want to be too distinctive and dazzling. Anyway, if you want to build a new house, you can’t do it badly.”

Design part

1 Visit and refer to the recent self-built houses nearby
2 Think about house size, number of floors, number and size of rooms, etc.
3 Have a general idea and plan and find a draftsman to help with the drawings.
4 Use drawings and discuss with the construction team.

Figure 13, 14, 15, 16. 4 homeowners who have built houses in the countryside in the past two years
Construction part

- There are all scattered cement workers, rebar workers, carpenters, electricians, plumbers, etc. in the village, but no whole team.

- Even a relatively regular construction team is still not very professional. It also has subcontracting behavior.

- The team is pulled up by acquaintances, no one is stranger

- Although it is not a complete construction team, workers all know the process, different workers will cooperate with other according to the steps and are responsible for their own parts.

- They will work with reference to the drawings, but still have deviations

- Materials need to be found and purchased by yourself and delivered to the site in advance before workers start work.

“There are many problems, although it is very uncomfortable, but there is no way. Once the house is built, it is difficult to modify.”

“There must be some dissatisfaction, but you can only do this, anyway, it’s no problem to live, just forbear”

Results and Satisfaction

Homeowners think houses have many problems and flaws. But because basic living is not a problem, plus some reasons such as the difficulty of defending rights, they just bear it.
Problems they have faced

- Unprofessional workers without advanced abilities
- Chaotic process, random schedule
- The owner has no knowledge and can't find problems in the construction
- Quality problems like cracks in the roof, waterproofing problem (or even defective foundations).
- Communication problem. Workers cannot understand and ideas cannot be realized.
- Materials need to be bought by themselves. Workers may not work when materials are not here

No analysis of the whole process

The problems are messy now

Now, it lacks the combing and analysis of the entire user experience and process, and only stays at the statement of the homeowner, without deep explorations of these stories.

The current problem classification is too shallow, and the logic and connection between the problems have not been discovered yet. Need more generalization, breaking and reorganization. So these points now seem very trivial.

I need to conduct more analysis and research to find out what exactly affected self-built houses?

What's next after whole interview:
Organize and analyze homeowners' journey
Organize and analyze the process of self-built houses
Query and compare foreign self-built housing cases

Reflection
2.3 Architect

Interview

“The field of self-built houses is still in a chaotic state. The owners don’t know what they want, the designers don’t know what they do, and the relevant departments don’t know what to promote.”

“The biggest problem now is that the owners don’t know what they need. Their inner thoughts are not well expressed, even if the expression and translation are in place, they may not be achievable.”

“The rural self-built houses have very little understanding of the geographical environment. Most houses are built using a cube and placed in a certain position on the site. So 99% of the houses we see are square matchboxes.”

Before design: the owners don’t have their own thoughts, ignoring design, just blindly following others

Hope to modify and optimize based on a city commercial housing layout.

Use and simply modify the template design drawings from the internet or even do not need the drawings at all.

“We are all like that, just do the same as the neighbor’s house” (A common sentence from the owner.)

Because of these, rural independent houses lack the considerations for the site, culture, nature, and human. It’s difficult to be a unified whole with reasonable details.
During the design: the owners do not know what they want, and can’t express well

Most owners are unable to determine their true functional needs without the guidance of designers. It’s not simply a rough classification of bedrooms, kitchens, and dining rooms, but rather a detailed single-space use thinking to find out your own usage habits and the most personal functions. Such as these two:

Design suitable for farm work
The function of the house may change to fix some farm work like poultry breeding and other work.

Design for the elderly
An important purpose for rural self-built houses is to improve the living experience of elderly parents. However, many homeowners have no consideration.
After design: Problems in construction

Unprofessional construction team:
1 Limited skills
2 Quality defects or problems
3 Cooperation and collaboration problems in temporary teams

Communication problem
It’s a difficult thing to communicate the details of the project to the workers and let them complete it willingly.

1 Resist details that increase construction costs.
   The workers will be impatient to meet the better details that ‘wasting their time’
2 Resist the unfamiliar technique.
   The workers will resist techniques they haven't used before, hoping to change to simple one.

Expert and good insights but only from the perspective of the architect

The architect has deep thought about this field, jumping out of her inherent perspective, to look at the entire system from a higher dimension. She has made many conclusions and attributions. But because she is still in this system, she is inevitably affected by her own position. And she is seldom looking for the problem of her own part (architect), but this may be because there are seldom professional architects involved in nowadays rural self-built houses. When absorbing her views, I need to pay attention to the limitations by position of her standpoint.

What’s next after whole interview:
Construct the current system diagram and analyze the relationship between stakeholders

Reflection
2.4 Builder

Interview

Figure 27. A mason who has been in the countryside for more than ten years, has been in different construction teams and has experience in various projects.

“There are many scattered workers like me in my home, many houses are built by us, they all look basically the same.”

“I also want to become a senior technician to make more money, but my ability is really limited. In many cases, I can only do the work I have been proficient in repeatedly”

Work is not fixed, often change places

Unstable, will go wherever can have a job. Worked in many teams. Most are scattered workers, only doing simple works and building very simple houses. Few are the large construction team containing senior technicians but still have temporarily recruited like me. Those skills needed work are done by senior technicians and I just do some basic works.

Skills are limited but hope to improve

Often consult the senior technicians during breaks in a large construction team and learn some skills. Not very skilled and can’t get a certificate but it is ok just to help them.
In the big construction team: just do your own work

Can only understand some simple drawings, not complicated drawings. Generally, in a large construction team, I just do my own thing. They all have professional people to communicate with Party A.

In the rural construction team: communication barriers often appear

Can participate in the discussion in small rural construction teams but have many problems. Homeowners want some shapes or styles, but they can't describe it clearly, and we can't understand. We also want to try to make it as homeowner's want. But usually, the result is not even as good as the simplest basic style.

Limited ability, good third perspective

Such construction workers are widespread in rural China, which is the main of the rural construction team. Limited skills, want to be better, but can't achieve. But compared with the rural construction team, he has got some improvement from limited professional team experience which concealed his shortcomings well, allowing him to play a bigger role.

They are more concerned with their own lives, without time to think about the entire industry.

What's next after whole interview: Analyze the relationship between stakeholders, especially the core three: Homeowner, architect, builder

Reflection
2.5 Conclusion

Many Pain Point

Many pain points and personal experience were discovered. However, I need to know how these contents interact and ultimately affect the results of self-built houses? What happened in the middle? What is the key to this?

Different Angles

The content revealed by these three different stakeholders is quite different. They look at this topic from different angles. These gave me a lot of space to better understand how the reality behind this theme works.

Trivial and not enough

First of all, affected by the COVID-19 epidemic, the interviews at this round were all conducted online, which made me lose a part of the possibility of gaining’s breadth (such as body language and demeanor, etc.). But the great thing is that they expressed a lot of content, from personal experiences to some attitudes and opinions. Of course, this round of survey information is too trivial, and it is far from enough for a thorough understanding of the whole issue. I need to organize and summarize them again.

What’s next after whole interview:
Further analyze the original research content.
Can’t just stay on the surface.
Disassembly and reconstruction.
Illustration and analysis.
Compare and think more about the different stakeholders in the system.
The owner did not connect to professional architect and contractor, but connected to unprofessional Draftman and Construction team. And this also led to the lack of communication and supervision between the designer and the builder.
3.1 Process

After reviewing domestic interviewees, I also watched the "Grand Design" series to learn about self-built houses abroad. The processes are generally similar, but there are fewer problems in developed countries like United Kingdom. Their entire market is more systematic and standardized. Architects and builders have professional qualifications. Communication and collaboration with homeowners are relatively mature.

The comparison is too simple

Not enough comparison is reflected in the diagram. I need to summarize the similarities and differences between different nodes in the whole process at home and abroad and analyze them. This helps me understand the process to find the key points.
3.2 Persona

"In our rural area, building a house is not considered. Followed the others, I just set the size and room according to my own situation. The houses in our house are almost the same."

"I hope to build a house. No one wants to be worse than others, but it can’t be too special."

**Personality:**
Friendly, Warm-heart, Follow the mainstream, Conservative, Fear of change and controversy

**Relationship:**
The village is full of acquaintances. Many things rely on these acquaintances

**Wants:**
Better house quality
-Improve the living environment of elderly parents
-The home of the Spring Festival
-The symbol of one's own face, compare one's heart

---

**Conclude from interview**

Some characteristics are too typical, and in reality there are many people who are similar but not so typical. They may have one or several characteristics like Malin. So in the follow-up process of this project, my target group may be refined, narrowed down or expanded.

**Reflection**

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**Figure 29. A migrant worker, from online**

- **Name:** Malin
- **Age:** 47
- **Finance:** Low income and budget
- **Education:** Elementary school
- **Occupation:** Factory worker
3.3 Journey

The journey can be analysed by phases

The pain points and minor issues in the previous interview can be classified into the phases of this journey, which are obvious.
3.4 Attribution

Three aspect

After analyzing and categorizing the pain points and problems obtained in the first round of interviews, I found that most of them are caused by poor design, construction and supervision.

Design
The rough architectural design can not fit the environment and lifestyle

- No thinking about the site and nature.
- No thinking about own living needs.
- No design for house layout, moving lines, lighting, waterproofing and various details of life.

Inhuman design, like:

- Too far away from bedroom to toilet
- Too idle or crowded space
- Insufficient lighting
- The stairs and countertops are too high or low
- No suitable space for drying grains and winemaking
- Wheelchairs can’t pass aisles

Construction
Limited construction level is difficult to build a high-quality house

- Temporary team
- Chaotic process and insufficient coordination
- Architectural aesthetics problem
- No claims and other guarantees
- Quality problem
- Limited knowledge, can’t understand some content
- Limited construction skills, can’t complete certain content

Bad house quality, like:

- Details: switches and sockets are not reserved, some of the wall insulation layers are omitted
- Big problems: cracked wall, leaking, not vertical wall

Supervision

During the construction process, there is a lack of third parties to supervise the construction. It is unclear whether the construction is completely in accordance with the architectural design plan, the progress of the construction, the degree of precision and completeness of the construction.
3.5 Further process analysis

The process of self-built houses in rural China
(concluded through research)

The process of self-built houses in UK
(homebuilding, 2020 & loveproperty, 2019)

After analyzing the journey, I divided the whole process of self-built house into four phases: Land & fund, Approval, Design, and Construction. And I compared the differences in the whole process of self-built houses at rural China and abroad again, and wrote them under the corresponding phases.

* The government’s strictness in the approval phase also affects the results of houses, but it can’t be changed, so not consider it for now

I also compared the better situation in China and placed it in the above picture with a dotted frame. It’s closer to professional processes abroad with professional architects and contractors.

Figure 31. Process analysis of self-built house
3.6 Clear target group

Figure 5. Way of building self-built houses in rural China

Figure 32. Composition of the construction team


In the previous page, the general and excellent conditions of self-built houses in rural China are summarized. Here I went back to read the previous literature research. In fact, the main difference between the two is money. As shown in Figure 4 above, provinces with relatively higher economic levels have higher average housing satisfaction and vice versa.

With the economic development and rejuvenation of homeowners, people are investing more and more in self-built houses (figure 2, page 06), and requirements are getting higher and higher. As can be seen from the two charts on the left, the red line in the chart is rising, which means that more and more homeowners choose professional architects and builders.

Of course, the majority of people still choose the downloaded drawings and traditional craftsmen for many reasons, which is the non-red line in the two charts on the left. They have more difficulties, and they also hope to build a better house. This group of people is my target group. Homeowners I interviewed earlier are also close to this group. I hope to help them build better houses.

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*Housing satisfaction is obtained by self-reporting by the respondents. 0 points means “not satisfied at all”, 10 points means “completely satisfied”.*
3.7 System map - with professional service
3.7 System map - without professional service

Through comparison, it is obvious that the problem lies in these red lines. The owner did not connect to professional Architect and Contractor, but connected to unprofessional Draftman and Construction team. And this also led to the lack of communication and supervision between the designer and the builder.

The situation between them changes from a solid long triangle to two isolated short lines.

Figure 34. System map - without professional service
How might we let rural homeowners be willing to get professional design and construction in a low-cost and accessible way?
4.1 Further explore

**Behind these three red lines**

The different trends lead to the lack of professional services for the homeowners (including architectural design, construction and certain regulatory communication).

**Key of issue**

Failure to connect to professional services is the key to this problem. And why? What keeps them away from professional services?

**Interview again**

To explore this question. I interviewed the homeowner, architect and builder again.

**Clear purpose**

After having a clear goal of exploration, the interview has directions. I need to focus more on motives and reasons. What are the homeowners considering when making choices? What difficulties did they encounter when trying to obtain professional services?

**Reflection**

**Triangle relation**

If the homeowner successfully accesses professional architects and builders, the coincidence of architectural design and construction (a certain regulatory communication) will also be supplemented, forming a stable long triangle.

If the homeowner does not have access to professional architects and builders, but chooses draftman and rural construction team. They will be like three scattered points connected by two short lines, and they do not form a stable whole.

![Figure 35, 36. Professional stable triangle and unprofessional not closed triangle](image)
4.2 Reasons

After round 2 interview, I concluded:

Objective reason: they cannot choose professionals

Professional services are too expensive, and our target group has a limited budget

No approach to get enough information and contact information of professional service providers

Subjective reason: they are reluctant to choose professionals

In fact, at the beginning of the project, many homeowners tried to access professional services, and they had consulted with professional companies.

1. Distrust of unfamiliar companies
   Due to the natural distrust of unfamiliar companies, and the people around them basically follow the old methods, the herd mentality made the homeowner choose rural acquaintance networks. In other words, they prefer a certain 60 points rather than an uncertain 80

1. Communication problem
   Their way of thinking and habits, their understanding of this matter and what they focus are totally different. In other words, they don’t communicate at one level

- Don’t know the importance of architectural design
- Think that they just need to provide some basic information then architect can design
- Think the architectural design is just drawing
- Love to use template drawings/styles and just make changes based on this

- It’s unclear where and how big the difference is between unprofessional and professional construction teams
- Lack of architectural knowledge, incomprehensible architectural terminologies

Homeowner

- Architectural design affects the safety and living experience, which is very important.
- Detailed analysis of the user’s life scene and personality needs are also required
- There are many details of the design that cannot be showed on the drawings
- Some template drawings are too rough or do not meet the rural living habits

Homeowner

- Difficult to show homeowners the advantages of professional construction teams intuitively
- What efforts constructors have made on quality and details, the owner cannot understand

Builder

Figure 37. Communication gap
4.3 How might we

The key to change (build a stable triangle relationship)

— “get professional design and construction”

Break subjective reasons: they are reluctant to choose professionals

— “be willing to”

Break objective reason: they cannot choose professionals

— “in a low-cost and accessible way”

How might we let rural homeowners be willing to get professional design and construction in a low-cost and accessible way?

How do we achieve "be willing to"

1 Distrust of unfamiliar companies
   — Build Trust
   What do they care about? What do they worry about?

2 Communication problem
   — Establish effective communication methods
   What do they want to get through communication? How to access the service? Information display and transmission methods and processes?

How to achieve "Low-cost"

Reduce costs while ensuring professional design and construction

How to achieve "Accessible"

The medium and advertising method that suits their habits
4.3 Be willing to

Engage session + Interview

I designed an engage session to help me explore what the homeowner cares about in the initial selection process of the house? What kind of communication do you like?

After warming up, interviewees imagined they are in the stage of preparing to build a house. Draw what they want and use different communication methods to discuss the ‘ideal home’ in heart. Demonstrate communication and continuously adjust in the process.

Findings

1. Need guidance to sort out needs
Rural homeowners are not completely unclear about their needs, they just don’t know how to describe them clearly without certain guidance.

2. Prefer reference and multiple choice questions
Chinese are familiar with and like the transaction of commercial housing. They are used to picking from a ready-made content instead of starting from zero. They like to refer others and say ‘I want this’ or ‘I like this’

3. More sensitive to tangible things
It is easier for them to understand the intuitive results (real image/sample room) rather than words/imagination.

Compared with urban people, the living habits of rural people are more convergent. More common needs and fewer personal needs.
4.4 Low-cost way

Potential direction

Improve reuse rate

Use modular pre-design?

Prefabricated building? Not suitable

After research, I found that in the United States and Japan where prefabricated buildings are already very mature, it can reduce costs. But in China, relatively low labor costs and immature of prefabricated buildings, the use of it will even slightly increase costs.

“Modular construction can cost 10% to 20% less thanks to assembly line efficiency.”

4.5 Accessible

Acquaintance network

The social network of acquaintances of rural people is developed. They are not used to relying on self-searching. So I learned from the strategies of some electronic platforms that have been very successful in rural areas - “Group purchase” + “Coupons”. Such a model can take advantage of users’ preference for cheapness and Herd mentality. It developed rapidly rural acquaintances network.
More and more homeowners are choosing professional service providers. But there are still some people who want to access professional services but hesitating.
5.1 Two directions

After brainstorming based on previous research, I have two directions

1 "Rural Commercial Housing"

Based on discovery from "be willing to"
- Like to picking from a ready-made content
- More sensitive to intuitive tangible things
- Many common needs and few personal needs
And from "low cost way"
- Standardization saves design costs
- Time saved by adept workers, labor costs saved
- Large number of standard materials decrease prices from suppliers

Downloaded online template drawings are often low quality/not suitable for local conditions. After deeply field research, we tailor-made dozens of standardized pattern house options for each area.

It sacrificed certain customization to provide customers with limited budgets with a professionally designed and constructed high-quality housing. Viewing the nearby pattern houses that have been built can enhance their trust. One-stop delivery reduces communication problems.

2 A platform for integrating architects and builders

Toolkit for helping homeowners and architects/constructor to communicate

Now builders and architects are propagating separately, and there is no complete platform yet. So the number of service providers homeowners can find is very limited. Our platform provides an accessible approach to search and compare various service providers’ qualifications, experience, charging level, past cases, etc. Information transparency and the large platform’s qualification review of service providers can build customer trust to a certain extent.

Toolkit assist the communication between homeowners, architects and builders, helping them to express and understand each other better at the same level.
5.2 Needs and goals

Based on these two directions, I rethink the needs of users.

**Hesitate or give up**

As I research before (page 52), more and more homeowners are choosing professional service providers. But there are still some people who want to access professional services but hesitate or give up.

**Aim**

Help these homeowners who want to access professional services but still have gaps, to bridge the gap and connect to professional architectural design and construction. Form a "stable long triangle"

**Keys need to be solved**

As I concluded before (page 64), four keys:
1. Trust
2. Communication
3. Low-cost
4. Accessible

**What I want**

For 1 and 2, I hope to make certain adjustments to the existing professional service methods so that the homeowner and the service provider can better establish the relationship.
For 3, I hope to add an intermediate point between the existing professional and unprofessional services("pattern house"), giving them a good choice.
For 4, I hope to make a platform to make professional services more accessible and comfortable for homeowners.
5.3 Combine and detail

I try to combine these two directions and refine them to a platform

Pattern house

Our professional architects have conducted research on specific areas and designed professional plans that meets the majority of people in that area. And they constructed by our professional builders. Provide one-stop delivery.

Service provider platform

Information display of settled professional service providers (architects and contractors)

Demand test

Elementary demand test help users better think about their needs. Generated report facilitate communication with architects and builders later. And the result will affect whether to recommend pattern house

Tripartite talks

Besides individual communication with architects and contractors on the platform, a three-party conference group containing selected service providers offer a way to communicate project together

Communication toolkits

Use "Communication Toolkit" step by step. help better express and understand.

1 "Online Drawing"
An online collaborative drawing tool for architects to quickly pull out the floor plan in the initial stage. Homeowners can participate in the offset, zoom and other adjustments. Everyone uses it together to help information transmission.

Figure 39. Visual Paradigm, An online quick floor plan creating tool
https://www.visual-paradigm.com/
2 “VR Browsing”
After the floor plan, users can use this to browse the layout of the room instead of just the floor plan. And there are some preset furniture and decoration that can be added for virtual viewing effects.

3 “Details Showing”
This allows architects to show some design details that cannot be shown on the drawings, helping others better understand

5.4 Prototype

Figure 40. KULEJIA 3D design browsing tool
https://www.kujiale.com/

Figure 41. Pipeline laying show
https://www.kujiale.com/

Figure 42. Prototype chinese version
https://www.figma.com/file/pBguB2j8OINV/USEm7V1hy1/iphone8?node-id=0%3A1

Figure 43, 44, 45. Offline prototype
Feedback

I tested 6 users (three online and three offline). Everyone's reactions were different. Some like pattern house very much, thinking that is convenient to build a house in the countryside just like choosing a commercial house. Some think that this platform has gathered many service providers and has great advantages in query and mutual comparison. Others like the tripartite conference room and communication toolkit very much, believing that these functions help communication.

Suggestion

1 “Novice guidance”
Certain guidance is necessary

2 “Not interested in doing demand test”
Certain reward (coupon?) is needed to offset the user's laziness when doing demand testing

3 “Function separation”
Tripartite conference room and communication toolkit can be accessed separately through the link

Better expression

Here I only used high-fidelity supplemented by explanation to make the prototype. In fact, you can first prototype the system diagram and journey together so that the subjects can better understand my entire system plan.

Reflection

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Here I only used high-fidelity supplemented by explanation to make the prototype. In fact, you can first prototype the system diagram and journey together so that the subjects can better understand my entire system plan.
Here is the solution and output

06 Design Outcome

Concept
Map
Journey
Services blueprint
Business model canvas
High-Fi interface
6.1 Concept

After Prototype, I improved and produced the final plan.

0 “Villastruct”

I named the whole project "Xiang Le Ju", which means a happy residence in the village. The English name is “Villastruct” based on “Village” and “Construct”.

1 “Villastruct” Wechat Mini Program

In the choice of the main medium, I used the WeChat mini program that is similar to the APP but is more lightweight and can be used directly on WeChat (China’s largest social software) without downloading. When users first use it, they will do a demand test to help homeowners think more about their houses. After the test, a report will be generated to facilitate subsequent communication with the service provider. If the test result matches our Pattern House, we recommend Pattern House. Users can search, browse and compare various settled professional service providers and communicate with them, including Tripartite talks and Communication toolkits functions.(page76)

2 Villastruct’s own service provider

Customers who choose our pattern house will choose his favorite among the plans designed by Villastruct’s architects. And the construction is carried out by Villastruct’s construction team. Because it is a standardized house, the cost can be reduced. Also, every detail design has gone through a lot of consideration, and our workers are already very skilled in this, and the quality control of the construction is excellent. Customers can visit the completed pattern houses of other homeowners nearby to enhance their trust.

3 “Self-built Discuss Room” Link

Even those non-core users who are not ready to choose Villastruct’s own or settled service provider can enter “Self-built Discuss Room” we separated through a link to use “Tripartite talks” and “Communication toolkits” functions. Help homeowners communicate better with the service providers they are looking for.

3 Advertising method

Use model “Group purchase” + “Coupons” Which has been proven successful in rural areas, taking advantage of users’ preference for cheapness and Herd mentality, developing rapidly in rural acquaintances network.
6.2 Map

Homeowner

Non-core users
Homeowners with severe budget constraints
Homeowners with not so limited budget

Medium

Villastruct

“Self-built Discuss Room” Link

Communication toolkits

Tripartite talks

Pattern house

Demand Test

Service provider platform

Online communication (chat) (tripartite talk) (toolkits)

“Villastruct” Wechat Mini Program

Service Provider

Unknown service provider

Villastruct Architect
Villastruct Construction team

Villastruct’s own service provider

Qualified other settled service providers

Figure 46. System map (Simple version, just for explaining Concept)
6.3 Journey

Start

Non-core users

Find service providers by themselves

Use “Self-built Discuss Room” and communicate smoothly

Build a better house

Homeowners with severe budget constraints

Enter Mini Program Demand Test

Doesn’t match/dislike pattern house

Find service providers by themselves (probably be draftman and rural construction team)

Build a better house

(make the two short lines into small triangles and extend them as long as possible)

Homeowners with not so limited budget

Match demand and like pattern house

Consult with customer service staff for details

Choose favorite pattern house

Obtain a standardized high-quality house

Doesn’t match/dislike pattern house

Search, browse, and select the suitable architect and contractor

Tripartite communication

Obtain a customized high-quality house

Result

Consult with customer service staff for details

Choose favorite pattern house

Obtain a standardized high-quality house

Figure 46. Concept map
6.4 Services blueprint - standardized high-quality house

Evidence

"Villastruct" Wechat Mini Program

Customer journey

Enter "Villastruct"  Demand test  Recommended pattern house  Consulting details  Choose favorite pattern house  (Can check the progress)

House under constructing New completed house

Interaction line

Front stage

Requirement test report  Customer service staff communication  Professional workers are constructing  Suitable and quality assurance materials

Visible line

Pattern house options suitable for most local people

Back stage

Requirements test database  Professional qualifications and training of construction team  Suitable and qualified cooperative material suppliers

Inner interaction

Support processes

Professional research conducted on the field  Professional architectural design

Figure 47. Services blueprint - standardized high-quality house
6.4 Services blueprint - customized high-quality house

Evidence

Customer journey
- Enter "Villastruct" Wechat Mini Program
- Demand test
- Search, browse and compare settled service providers
- Choose favorite architects and contractors and communicate
- Tripartite communication
- (Can check the progress)
- New standardized high-quality house

Interaction line

Front stage
- Requirements test report
- Communicate with selected architects and contractors
- Professional workers are constructing

Visible line

Back stage
- Requirements test database
- Settled service providers information database
- Architects communicate, collaborate and supervise with contractors

Inner interaction

Support processes
- Professional research conducted on the field
- Qualified settled service providers

Figure 48. Services blueprint - customized high-quality house
## 6.5 Business model canvas

<table>
<thead>
<tr>
<th><strong>Key Partners</strong></th>
<th><strong>Key Activities</strong></th>
<th><strong>Value Propositions</strong></th>
<th><strong>Customer Relationships</strong></th>
<th><strong>Customer Segments</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>People who want to build a house in the countryside:</td>
</tr>
<tr>
<td>Qualified service provider</td>
<td>Platform operation</td>
<td>Platform:</td>
<td>Approach:</td>
<td>Core users: Homeowners who want to get professional service but hesitated or gave up.</td>
</tr>
<tr>
<td>Reliable stable supplier</td>
<td>Inspection and cooperation with service providers</td>
<td>- Homeowners are easier to access professional service</td>
<td>Professional service providers</td>
<td>Non-core users: Homeowners who find service providers themselves</td>
</tr>
<tr>
<td>Homeowners (are our best advertiser)</td>
<td>Platform and tool improvements</td>
<td>- Professional services providers are easier to advertise</td>
<td>Partner:</td>
<td>Professional service providers who want to enter the rural market:</td>
</tr>
<tr>
<td></td>
<td>Advertising</td>
<td>Pattern house:</td>
<td>Assistant:</td>
<td>Architect Contractor</td>
</tr>
<tr>
<td></td>
<td>Field research</td>
<td>A low-cost option for some homeowners</td>
<td>- Help homeowners and service providers build better relationship</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pattern house construction</td>
<td>Process, methods and tools:</td>
<td>Channels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pattern house design and workers training</td>
<td>Build trust and help communicate between homeowners and service providers</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Key Resources</strong></td>
<td><strong>Tools:</strong></td>
<td><strong>Cost Structure</strong></td>
<td><strong>Revenue Streams</strong></td>
<td></td>
</tr>
<tr>
<td>Integrated platform:</td>
<td>Good user experience</td>
<td>Platform development</td>
<td>- Pattern house sales</td>
<td></td>
</tr>
<tr>
<td>Qualified service provider</td>
<td></td>
<td>Platform operation</td>
<td>- Service provider’s settled fee</td>
<td></td>
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<tr>
<td>Field research</td>
<td></td>
<td>Employee salary</td>
<td>- Advertising revenue</td>
<td></td>
</tr>
<tr>
<td>Pattern house:</td>
<td></td>
<td>Advertising cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field research and architectural design</td>
<td></td>
<td>Field research</td>
<td></td>
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<tr>
<td>Adept construction worker</td>
<td></td>
<td>Pattern house design and workers training</td>
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<td>Reliable supplier</td>
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<td></td>
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<tr>
<td>Process, methods and tools:</td>
<td></td>
<td>&quot;Self-built Discuss Room&quot; Link</td>
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<tr>
<td>Integrated platform:</td>
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<td>Offline staff</td>
<td></td>
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<tr>
<td>Qualified service provider</td>
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</tbody>
</table>

**Cost Structure**
- Platform development
- Platform operation
- Employee salary
- Advertising cost

**Revenue Streams**
- Pattern house sales
- Service provider’s settled fee
- Advertising revenue

**Figure 49. Business model canvas**
6.6 High-Fi interface - English version

Dear users, in order to match the house you like more accurately, we need to do a test for you.

**Part - 1 Basic information**

- **Budget**: 300,000V - 500,000V
- **Size**: 100m² - 120m²
- **Floor**: 2 - 3
- **Rooms**: 4 - 6
- **Style**: Chinese style

**Part - 2 Long-term residents**

- **Number**: 4
- **Child**: 2
- **Elderly**: 2
- **Pets**: 2

Congratulations on completing the test. Here is your test report. Use it to communicate with service providers!

**Demand Test**

**View**

**Report**
Project reflection

First of all, thanks to everyone who has given guidance, time, participation and opinions to this project. Thanks to my tutor Fergus Fullarton Pegg for the full guidance in the project. Thanks to all interviewees and participants. Thanks to the feedback and opinions given by Jonathan Baldwin and Emma Murphy in the two interim reviews. Thanks to my classmates who help me, including but not limited in discussing, giving the video feedback in interim review2, checking and give comments for PPJ before final submission...

Advantage:
A chaotic field, a very important thing, want to be better but difficult, a large real group and demands. The final plan responded to HMW one by one. I helped those homeowners who hesitated or gave up to successfully access professional service providers. And those homeowners who find service providers themselves can also benefit from our “Self-built Discuss Room” Link. At the same time, this field has become more mature and complete (more people use professional service providers, and information is effectively transmitted, and service providers can also understand customers’ ideas and needs).

Insufficient:
Many first-hand information is obtained through three rounds of interviews, although a lot of content is indeed obtained from the interviews. But it may be more creative to use some generative tools to assist sessions. Moreover, many of my final plans are designed by myself. I should allow users to participate more in the design part to conform to the principles of co-design. Lack of literature support after leaving the literature research stage. My follow-up process relies more on the direction derived from my summary and analysis of the survey.

Bibliography


