

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



Graduation Plan: All tracks

The graduation plan consists of at least the following data/segments:

Personal information	
Name	Anne van Stijn
Student number	confidential
Telephone number	confidential
Private e-mail address	confidential

Studio	
Name / Theme	ExploreLab 21
Teachers / tutors	Main mentor: Robert Nottrot Research mentor: Lei Qu TBD mentor: Ype Cuperus
Argumentation of choice of the studio	Only within the Explorelab I could formulate my own graduation projects and graduate on the rehabilitation of China's crumbling high-rises.

Graduation project	
Title of the graduation project	Rehabilitating China's crumbling high-rises
Goal	
Location:	China, Beijing
The posed problem,	<p>The early generations high-rise housing in Beijing are visibly approaching the end of their intended lifespan. They are deteriorating rapidly due to initial development policies: they were built with relatively low quality standards, are from poor quality materials and are constructed with low budgets. Furthermore the severe deterioration is legacy of the lack of maintenance from the government during the public housing period and little maintenance has occurred after the transition to the market housing system. (Hui, 2012, Junhua et al., 2001, Wang, 2007)</p> <p>The housing reform, resulting in housing affordability issues and the construction of new and diversified high-rise housing estates, has accelerated a process of socio-spatial segregation in the housing stock (Hui, 2012). The middle and higher income groups are moving out of the earlier high-rises into the new estates (Hui, 2012). Soon, they are replaced by less affluent renters, unable and unwilling to maintain their temporary domus. In fact, a complex whole of mismatching interests</p>

	<p>of different stakeholders has prevented any significant re-investment in the crumbling high-rises. This financial impasse, the social deprivation and the continuing physical decay have initiated a negative spiral in the early generations high-rise housing.</p> <p>As conventional renewal methods have not been successful to break the negative spiral, it is proposed that rehabilitation could offer a solution instead (Hui, 2012). However not much research to how the early high-rises can be rehabilitated, has been done yet. Developing a workable rehabilitation strategy will be vital to break the negative spiral and offer a future to the crumbling high-rises of China.</p>
<p>research questions and</p>	<p>The research thesis will focus on answering the main research question: Can a hands-on rehabilitation strategy be developed to deal with the challenges of the early high-rise housing in Beijing?</p>
<p>Design assignment in which these result.</p>	<p>Within the design the main question: How can the developed strategy be implemented on an architectural scale and what are the implications on an urban scale? will be answered. The product of the research will be a hands-on strategy which offers a generic method how to rehabilitate the early high-rises. In the design, the developed rehabilitation strategy will be implemented to illustrate the use of the generic strategy in a case (one, or a cluster of high-rises) and on a larger scale.</p>
<p>Process</p>	
<p>Method description</p>	
<p>The Research and design methodology</p>	
<p>The research and design question will be answered by using mixed research and design methods. The research method and design method will be explained in the following paragraphs. A summary of the research and design methodology can be seen in the info-graphic (figure 1).</p>	
<p>Research Method</p>	
<p>To be able to generate the generic strategy to rehabilitates the early high-rises, as an</p>	

answer to the research question posed above, several sub-questions need to be answered:

1. *Is it possible to form an understanding of the origin, development and status quo of the early high-rises in Beijing?* To be able to solve the challenge of the crumbling high-rises a better understanding of the early high-rises is necessary. Through the use of literature survey their origin will be discussed. Following, the typological development of the high-rises will be reviewed focusing on finding their weaknesses and opportunities by use of a SWOT analysis. Then a literature analysis will be made to explain their development from origin to now. The sub-question will be concluded with an elaboration of the status quo of the high-rises, through the use of literature survey. This knowledge will form the theoretical framework on the exact nature of the challenges and the opportunities to which the rehabilitation strategy can respond.
2. *Who are the involved stakeholders and is it possible to identify their interests, needs and possibilities in the rehabilitation process of the early high-rises?* To be able to answer the posed main research question this sub-question aims to clarify the stakeholder's interest in the physical, social and economic realm of the rehabilitation of the early high-rises as well as an identification of the possible role of set stakeholders within the rehabilitation process. This sub-question will be answered through the use of scientific stakeholder analysis methods, such as: a basic stakeholder analysis, power versus interest method and the common good method. Due to the exploratory nature of the research, the input for the analysis will only be gained through literature. The result of this sub-question will be a set of recommendations to the rights and responsibilities of each stakeholders to which the rehabilitation strategy needs to respond.
3. *Which policy and design tools can be used to find a solution to the defined financial, organizational, and physical challenges in the early high-rises?* This sub-question will develop knowledge on what can be used to rehabilitate the crumbling high-rises and how it can be done. In other words this question will focus on forming a theoretical framework on the possible design and policy tools available to guide the rehabilitation of the early high-rises according to the prerequisites found in the results of sub-question 1+2.

As the challenge of the crumbling high-rises is both physical, social-economic, and engraved by complex urban housing problems (such as the housing affordability issues, speculation, and urban renewal practices) it will be insufficient to solely make a physical re-design strategy. The rehabilitation needs to address all issues on the financial (socio-economic), organizational (community placial), and physical (technological-aesthetic) dimensions (Hui, 2012) simultaneously. Therefore this sub-question will be split into three

research domains to find policy and design tools to deal with the rehabilitation in each domain. Each of the three domains will be researched through the use of literature survey and case study analysis.

Note that aim of this research sub-question is not to give an overview of all possible rehabilitation strategies in each domain and make an inspirational large toolset. The tools researched are directly responding to “the prerequisites” defined in the above sub-questions and will give a smart toolkit from which the “hands-on” strategy can be formed.

Finally, the identified design and policy tools to rehabilitate the early generations high-rises will be combined to develop the integral rehabilitation strategy. In the development special attention is given to ensuring the workability of the strategy. The goal is not only to make is realistic to use, but also to make it understandable for all involved stakeholders, useable to start improving the status quo from today. Or in short: to make the strategy hands-on!

Design methodology

In the design the developed generic strategy will be implemented “in (hypothetical) reality” to illustrate the strategy in a specific setting. Both on a large scale (all of the early high-rises within the third ring road of Beijing) and in a case (The high-rise cluster in Dongsishitiaojia). The design within the specific realm will form not only a more concrete design vision of the future of the crumbling high-rises but can also be used to feed the generic strategy.

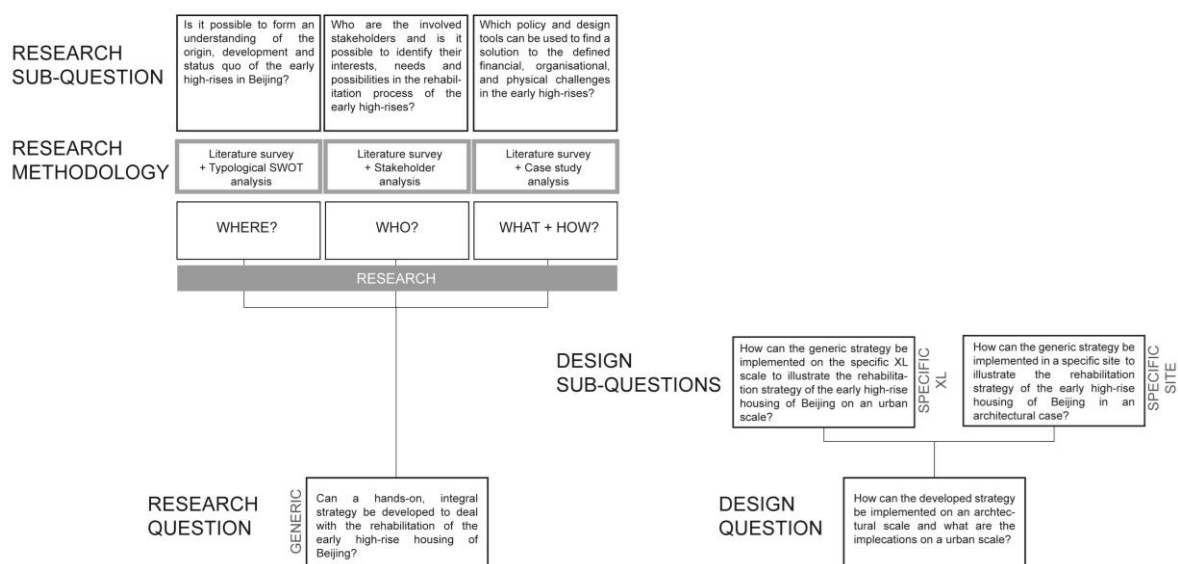


Figure 1: Research and design methodology

Literature and general practical preference

In the list below an initial literature list can be found. In the following list case studies are mentioned to support the research. The methods of designing will not be further mentioned as they will depend on the outcome of the research. However it can already be said that the design process will be following a very workable and realistic step-by-step approach.

Literature:

ANGLIN, P. M., DALE-JOHNSON, D., GAO, Y. & ZHU, G. 2014. Patterns of Growth in Chinese Cities: Implications of the Land Lease. *Journal of Urban Economics*, 83, 87-107.

ANONYMOUS 2013a. Haunted Housing. *The Economist*.

ANONYMOUS 2013b. Unstable Foundations 1: If Beijing is your landlord, what happens when the lease is up? *China Economic Review*. 17-06-2013 ed.
<http://www.chinaeconomicreview.com/china-land-lease-property-law-ownership-rights>: China Economic Review.

ANONYMOUS 2013c. Unstable Foundations 2: How will a Slowing China Cope with Rapidly Aging Buildings? *China Economic Review*.
<http://www.chinaeconomicreview.com/Unstable-Foundations-Part-2>: China Economic Review.

ANONYMOUS 2013d. Unstable Foundations 3: Could Poor planning turn China's city centers into slums? *China Economic Review*.
<http://www.chinaeconomicreview.com/Unstable-foundations-land-leases-china-urban-slums-city-centers-sprawl>: China Economic Review.

ARVESEN, A. 2008. *Direct and Indirect Energy Consumption of Households in Beijing*. Master, Norwegian University of Science and Technology.

BARTH, J. R., LEA, M. & LI, T. 2012. *China's Housing Market: Is a Bubble About to Burst?*, Santa Monica, Milken Institute.

CROMPTON, D. 1994. *A guide to Archigram, 1961-74*, Princeton, Academy Editions. Siglo XXI.

CUPERUS, Y. 2001. An introduction to open building. *The 9th International Group of Lean Construction conference*. National University of Singapore.

DENG, L., SHEN, Q. & WANG, L. 2011. The Emerging Housing Policy Framework in China. *Journal of Planning and Literature*, 26, 168-183.

FOSTER, P. 2010. China's Crumbling Buildings: Not Built to Last. *The Telegraph blog* [Online]. 2015].

GROVES, R., MURIE, A. & WATSON, C. 2007a. Four Worlds of Welfare and Housing. In: GROVES, R., MURIE, A. & WATSON, C. (eds.) *Housing and the New Welfare State: Perspectives from East Asia and Europe*. Hampshire, UK: Ashgate Publishing Ltd.

GROVES, R., MURIE, A. & WATSON, C. 2007b. *From Socialist Welfare to Support of Home-Ownership: The Experience of China*, Hampshire, UK, Ashgate Publishing Ltd.

HUANG, Y. 2012. Low-income Housing in Chinese Cities: Policies and Practices. *The China Quarterly*, 212, 941-964.

HUANG, Y. 2013. Lack of Affordable Housing Threatens China's Urban Dream. 20-09-2013 ed. <https://www.chinadialogue.net/article/show/single/en/6365-Lack-of-affordable-housing-threatens-China-s-urban-dream>: chinadialogue.

HUI, X. 2009. The Chinese Housing Reform and the Following New Urban Question. *The 4th International Conference of the International Forum on Urbanism*. Amsterdam/Delft.

HUI, X. 2012. *Housing, Urban Renewal and Socio-Spatial Integration: A study on Rehabilitating the Former Socialistic Housing Areas in Beijing*. PHD, TU Delft.

HULSHOF, M. & ROGGEVEEN, D. 2011. *How the City Moved to Mister Sun: China's New Megacities*, Amsterdam, SUN.

JUNHUA, L., ROWE, P. G. & JIE, Z. 2001. *Modern Urban Housing in China 1840-2000*, Verlag, Munich, London, New York, Prestel.

KENDALL, S. 2004. An Open Building Strategy for Achieving Dwelling Unit Autonomy in Multi-unit Housing. *Housing and Society*, 31, 89-99.

KENDALL, S. H. & TEICHER, J. 2010. *Residential open building*, Routledge.

KUIJPERS, B. 2013. *Updating Shanghai: Life From the Ground Up*. Master, TU Delft.

LARSON, C. 2012. The Cracks in China's Shiny Buildings. *Businessweek*. 27-09-2012 ed. <http://www.businessweek.com/articles/2012-09-27/the-cracks-in-chinas-shiny-buildings>: Businessweek.

LI, C. 2012. Liveability of High-rise Housing Estates: A Resident-centered High-Rise Residential Environment Evaluation in Tianjin, China. *48th ISOCARP Congress*. Perm, Russia.

LI, L. 2010. Easing Housing Woes: A new Law Brings the Hope of Decent Housing for Everyone. *Beijing Review*, 53, 26-27.

LIN, H. 2014. *Evolving Danwei Housing: an Alternative Way to Develop Former Public Housing in Shenzhen, China*. Master, TU Delft.

LIN, Z. 2007. Urban structure for the expanding metropolis: Kenzo Tange's 1960 plan for Tokyo. *Journal of architectural planning and research*, 24.

LIN, Z. 2010. *Kenzo Tange and the metablist movement: Urban utopias of modern Japan*, New York, Routledge.

LIU, L. 2007. *Housing Market in Urban China*. Master, University of Nevada.

MINTER, A. 2008. Avoid Tall Buildings. *Shanghai Scrap* [Online]. [Accessed 02-01-2015 2015].

NAGORE SETIÉN, I. Towards an open and user driven housing architecture: Layers principle, infrastructure types and technical devices. Congreso Internacional de Vivienda Colectiva Sostenible, 2014 Barcelona. Máster Laboratorio de la Vivienda Sostenible del Siglo XXI.

QIAN, Y. 2010. Most Homes to be demolished in 20 Years. *China Daily*. 07-08-2010 ed. http://www.chinadaily.com.cn/china/2010-08/07/content_11113982.htm: China Daily.

REE, K. & KRAMER, A. 2014. *Mainland China Real Estate Markets 2014: ULI Analysis of City Investments Prospects*, Washington DC, USA, Urban Land Institute.

RONALD, R. & CHIU, R. L. H. 2010. Changing Housing Policy Landscapes in Asia Pacific. *International Journal of Housing Policy*, 10, 223-231.

RONALD, R. & DOLING, J. 2010. Shifting East Asian Approaches to Home Ownership and the Housing Welfare Pillar. *International Journal of Housing Policy*, 10, 233-254.

ROWE, P. G. 2005. *East Asia Modern: Shaping the Contemporary City*, London, Reaktion Books Ltd.

UN-HABITAT 2008. *Housing and Urban Upgrading in Yantai*, Nairobi, UN-Habitat.

UN-HABITAT 2014. *The State of China's Cities* Beijing, China City Press.

WANG, S. W. 2011. The Evolution of Housing Renewal in Shanghai, 1990–2010: A 'Socially Conscious' Entrepreneurial City? *International Journal of Housing Policy*, 11, 51-69.

WANG, Y. P. 2007. From Socialist Welfare to Support of Home-Ownership: The Experience of China. In: GROVES, R., MURIE, A. & WATSON, C. (eds.) *Housing and the New Welfare State: Perspectives for East Asia and Europe*. Hampshire, UK: Ashgate Publishing Ltd.

WU, F. 2014. Commodification and Housing Market Cycles in Chinese Cities. *International Journal of Housing Policy*. 13-06-2013 ed.
<http://dx.doi.org/10.1080/14616718.2014.925255>: International Journal of Housing Policy.

WU, X. 2013. *Peoples Commune 2.0*. Master, TU Delft.

XIE, Y. & COSTA, F. J. 1993. Urban Planning in Socialist China: Theory and Practice. *Cities*, 10, 103-114.

XIE, Y., LAI, Q. & WU, X. 2009. Danwei and Social Inequality in Contemporary Urban China. *Res Social work*, 19, 283-306.

YANG, Z. & CHEN, J. 2014. *Housing Affordability and Housing Policy in Urban China*, Heidelberg, New York, Dordrecht, Londen, Springer.

YANG, Z. & WANG, S. 2011. The Impact of Privatization of the Public Housing on Housing Affordability in Beijing: An Assessment Using Household Survey Data. *Local Economy*, 26, 384-400.

YE, J. Unknown. *China Housing Policy and Housing Market* [Online].
http://www.prrs.net/papers/Ye_China_Housing_Policy_and_Housing_Market.pdf.
[Accessed 03-01-2015 2015].

YE, J., SONG, J. & TIAN, C. 2010. An Analysis of Housing Policy during Economic Transition in China. *International Journal of Housing Policy*, 10, 273-300.

ZHANG, X. Q. 2010. Chinese Housing Policy 1949-1978: The Development of a Welfare System. *Planning Perspectives*, 12, 433-455.

ZHOU, J. 1985. Standard Design in Architecture. *Architectural Yearbook of China (1984-1985)*. Beijing: China Construction Industry Publishing House.

Case studies and precedents:

1. Open Building precedents and OB Families: SAR, KEP, KSI, Two-step-housing supply system, CHS, Plug in City (Archigram), Metabolist extension of Tokyo into the bay (Kenzo Tange) and Nakagin capsule tower (Kisho Kurokawa)
2. Self-financing models: "The other New York"

3. Rehabilitation strategy of the former public housing in Beijing (Hui, 2012)

Reflection

Relevance

A continuing negative spiral has been initiated in the early high-rise housing which decreases living conditions, and could eventually lead to social problems. Currently there has not yet been much research done to monitor the emerging problems or finding solutions for the challenges. By developing a strategy to rehabilitate these high-rises, knowledge is generated which potentially could facilitate the improvement of the living conditions of many.

Moreover this exploratory research might prove to transcend its preliminary scope. Although the scope of the research has been limited to the early high-rise housing within the third ring-road of Beijing, the strategy might offer a better future to more high-rises. Early high-rises in other Chinese cities will probably have much in common and even the future of the early high-rises might transcend to be a foresight for the future of later generation high-rises built during the building frenzy of the early market period. In these high-rises, similar conditions and signs of rapid physical deterioration can already be observed (Minter, 2008, Foster, 2010). By developing a rehabilitation strategy for the early high-rises of Beijing, the vast challenge of China's crumbling high-rises could be brought to attention, remedied and even prevented.

Finally by focusing on a merger of interests the strategy might be beneficial to a variety of ambitions and interest transcending the boundary of the challenge of the early high-rises. This includes aiding the improvement on many major challenges in housing nationwide. Such as developing a more long term oriented real-estate market, development of affordable housing, and addressing sustainability challenges.

Time planning

In the tables below (figure 1+2) a detailed planning of the research and the design project has been set out. This is of course an initial planning, if over the course of the projects new insights arise than the tasks and products can be subject to change.

Table 1: Research project planning

Week	Date	Deadlines	Research tasks	Products
1.1	31 Aug – 6 Sep		1. Create a P1 document	Research 1. Draft P1 document
1.2	7 Sep – 13 Sep		1. Update P1 document	1. Updated draft P1 document
1.3	14 Sep – 20 Sep	Elevator pitch presentation	1. Update P1 document 2. Create an elevator pitch 3. Visit different experts to on rehabilitation (in Chinese context)	1. Updated draft P1 document 2. Elevator pitch presentation
1.4	21 Sep – 27 Sep		1. Update P1 document 2. Start collecting and reading literature	1. Updated draft P1 document

1.5	28 Sep – 4 Oct		1. Update P1 document 2. Collecting and reading literature	1. Updated draft P1 document
1.6	5 Oct – 11 Oct		2. Create P1 presentation 2. Collecting and reading literature	1. Draft P1 presentation
1.7	12 Oct – 18 Oct		1. Update P-1 document 2. Update P1 presentation	1. Final P1 document 2. P1 presentation
1.8	19 Oct – 25 Oct	P1 Presentation (21- 22 Oct)	1. summarize comments and evaluate critique	
1.9	26 Oct – 1 Nov		1. literature survey	
1.10	2 Nov – 8 Nov		1. literature survey	
2.1	9 Nov – 15 Nov	Final registration date P2 (13 Nov)	1. literature survey	
2.2	16 Nov – 22 Nov		1. literature survey 2. Create research draft	1. Research draft
2.3	23 Nov – 29 Nov		1. Literature survey 2. Stakeholder analysis 3.Updating research draft	1. Updated research draft
2.4	30 Nov – 6 Dec		1. Literature survey 2. Case study analysis 3.Updating research draft 4 Start developing toolbox	1. Updated research draft
2.5	7 Dec – 13 Dec		1. Literature survey 2. Case study analysis 3.Updating research draft 4 Developing rehabilitation strategy	1. Updated research draft 1. (Small) toolbox architectural interventions as result of the case study analysis
2.6	14 Dec – 20 Dec		1. Finish first research draft 2. Create draft presentation interim research results	1. Finish a first research draft. 2. Draft P2 presentation
-	21 Dec – 27 Dec	Holiday		
-	28 Dec – 3 Jan	Holiday		
2.7	4 Jan – 10 Jan		1. Finish P2 interim draft thesis 2. Finish P2 presentation interim research results	1. Interim draft thesis 2. Presentation interim research results
2.8	11 Jan – 17 Jan	P2 Presentations	1. summarize comments and evaluate critique	1. Interim Draft Thesis 2. Presentation interim research results
2.9	18 Jan – 24 Jan		1. Developing rehabilitation strategy 2. Developing Toolbox 3. Work on draft final research thesis	
2.10	25 Jan – 31 Jan		1. Developing rehabilitation strategy 2. Developing Toolbox 3. Work on draft final research thesis	
-	1 Feb – 7 Feb	Holiday		
3.1	8 Feb – 14 Feb		1. Work on draft final research thesis	

3.2	15 Feb – 21 Feb		1. Work on draft final research thesis	
3.3	22 Feb – 28 Feb		1. Work on draft final research thesis	
3.4	29 Feb – 6 Mar		1. Work on draft final research thesis	
3.5	7 Mar – 13 Mar		1. Finish final research thesis	1. Final research thesis
3.6	14 Mar – 20 Mar			

3.7 21 Mar – 27 Mar P3 Presentation

Figure 1: Detailed research project planning

Table 2: Design project planning

Week	date	deadlines	Design tasks	Products Design
1.3	14 Sep – 20 Sep	Elevator pitch presentation	1. Case(s) + site(s) analysis 2. Collecting and making (2D + 3D) Documentation	
1.4	21 Sep – 27 Sep		1. Case(s) + site(s) analysis 2. Collecting and making (2D + 3D) Documentation 3. Visit P4 presentation to practice	
1.5	28 Sep – 4 Oct		1. Case(s) + site(s) analysis 2. Collecting and making (2D + 3D) Documentation as preparation on the design 3. Visit P4 presentation to practice	1. Maps and 3D model of analysis case(s) + site(s)
1.6	5 Oct – 11 Oct		1. Finish case(s) + site(s) Analysis	1. Initial Beijing high-rise case(s) + site(s) analysis (including high-rise and site categories + challenges and opportunities within the case(s) and site(s))
1.7	12 Oct – 18 Oct			1. In P1 presentation included: high-rise case(s) + site(s) analysis
1.8	19 Oct – 25 Oct	P1 Presentation (21- 22 Oct)		
1.9	26 Oct – 1 Nov			
1.10	2 Nov – 8 Nov		1. XL-scale and site analysis	
2.1	9 Nov – 15 Nov	Final registration date P2 (13 Nov)		1. Site analysis (including: morphological and typological analysis)
2.2	16 Nov – 22 Nov			
2.3	23 Nov – 29 Nov			
2.4	30 Nov – 6 Dec			
2.5	7 Dec – 13 Dec		2. Create design concepts on the generic 3. XL-scale and site analysis	1. Concept designs (2D and/or 3D) of the XL-scale and site. .
2.6	14 Dec – 20 Dec		1. Create draft presentation 2. Create draft booklet or other medium to present design concept	1. Draft presentation 2. Draft booklet or other medium to present design concept
-	21 Dec – 27 Dec	Holiday		

-	28 Dec – 3 Jan	Holiday		
2.7	4 Jan – 10 Jan		1. Finish P2 presentation design concept 2. Finish booklet or other medium to present design concept	1. Presentation design concept 2. Booklet design concept or other medium (optional)
2.8	11 Jan – 17 Jan	P2 presentation		1. Presentation design concept 2. Booklet design concept or other medium (optional)
2.9	18 Jan – 24 Jan	P2 presentation		
2.10	25 Jan – 31 Jan		1. Working on implementation strategy (specific XL + site) Charette form	
-	1 Feb – 7 Feb	Holiday		
3.1	8 Feb – 14 Feb		1. Working on implementation strategy (specific XL + site) Charette form	Finish 3 concept designs
3.2	15 Feb – 21 Feb		1. Working on implementation strategy (specific XL + site) Following the steps of the rehabilitation method	
3.3	22 Feb – 28 Feb		1. Working on implementation strategy (specific XL + site) Following the steps of the rehabilitation method	
3.4	29 Feb – 6 Mar		1. Working on implementation strategy (specific XL + site) Following the steps of the rehabilitation method 2. Visit P4 presentation to practice	Finish an initial set of architectural drawings as required for P3
3.5	7 Mar – 13 Mar		1. Working on implementation strategy (specific XL + site) 2. Start P3 presentation 3. Visit P4 presentation to practice	1. Draft P3 presentation
3.6	14 Mar – 20 Mar		1. Finish P3 presentation	1. Final P3 presentation
3.7	21 Mar – 27 Mar	P3 presentation (25 Mar holiday)		
3.8	28 Mar – 3 Apr	(28 Mar holiday)	1. Working on implementation strategy (specific XL + site) Following the steps of the rehabilitation method	
3.9	4 Apr – 10 Apr		1. Working on implementation strategy (specific XL + site) Following the steps of the rehabilitation method	
3.10	11 Apr – 17 Apr		1. Working on implementation strategy (specific XL + site) Following the steps of the rehabilitation method	
4.1	18 Apr – 24 Apr	Final application P4 (22 Apr)	1. Working on implementation strategy (specific XL + site) Following the steps of the rehabilitation method 2. Working on presentation drawings	

			3. Start P4 final design presentation 4. Start P4 final design booklet 5. Start P4 final design other medium (optional)	
4.2	25 Apr – 1 May	(27 Apr holiday)	1. Working on presentation drawings 2. Updating P4 final design presentation 3. Updating P4 final design booklet 4. Updating P4 final design other medium (optional)	1. Updated P4 final design presentation 2. Updated P5 final design booklet 3. Updated P5 final design other medium (optional)
4.3	2 May – 8 May	(5-6 May holiday)	1. Finishing P4 final design presentation 2. Finishing P5 final design booklet 3. Finishing P5 final design other medium (optional)	1. P4 final design presentation 2. P4 final design booklet 3. P4 final design other medium (optional)
4.4	9 May – 15 May	P4 presentation		1. P4 Final design Presentation (including: drawings (and models) to explain the strategy implementation on the specific-XL: vision maps/ models + drawings and models to explain the implementation of the strategy in the specific-site: Situation drawings, floor plans, sections, elevations, technical sections, façade-elevation and floor plan fragments, and details)
4.5	16 May – 22 May	Final application date P5 (20-05)		2. P4 Final design Booklet 3. P4 Final design other medium (optional) 4. Final research report
4.6	23 May – 29 May		Fine-tuning design	
4.7	30 May – 5 Jun		Fine-tuning design	
4.8	6 Jun – 12 Jun		1. Updating P5 final design presentation 2. Updating P5 final design booklet 3. Updating P5 final design other medium (optional)	1. Updated P5 final design presentation 2. Updated P5 final design booklet 3. Updated P5 final design other medium (optional)
4.9	13 Jun – 19 Jun		1. Finishing P5 final design presentation 2. Finishing P5 final design booklet 3. Finishing P5 final design other medium (optional)	1. P5 final design presentation 2. P5 final design booklet 3. P5 final design other medium (optional)
4.10	20 Jun – 26 Jun	P5 presentation		1. P5 final design presentation 2. P5 final design booklet 3. P5 final design other medium (optional) 4. Final research report
4.11	27 Jun – 1 Jul			

Figure 2: Detailed Design Project Planning

Literature

- FOSTER, P. 2010. China's Crumbling Buildings: Not Built to Last. *The Telegraph blog* [Online]. 2015].
- HUI, X. 2012. *Housing, Urban Renewal and Socio-Spatial Integration: A study on Rehabilitating the Former Socialistic Housing Areas in Beijing*. PHD, TU Delft.
- JUNHUA, L., ROWE, P. G. & JIE, Z. 2001. *Modern Urban Housing in China 1840-2000*, Verlag, Munich, London, New York, Prestel.
- MINTER, A. 2008. Avoid Tall Buildings. *Shanghai Scrap* [Online]. [Accessed 02-01-2015 2015].
- WANG, Y. P. 2007. From Socialist Welfare to Support of Home-Ownership: The Experience of China. In: GROVES, R., MURIE, A. & WATSON, C. (eds.) *Housing and the New Welfare State: Perspectives for East Asia and Europe*. Hampshire, UK: Ashgate Publishing Ltd.