

Graduation Plan

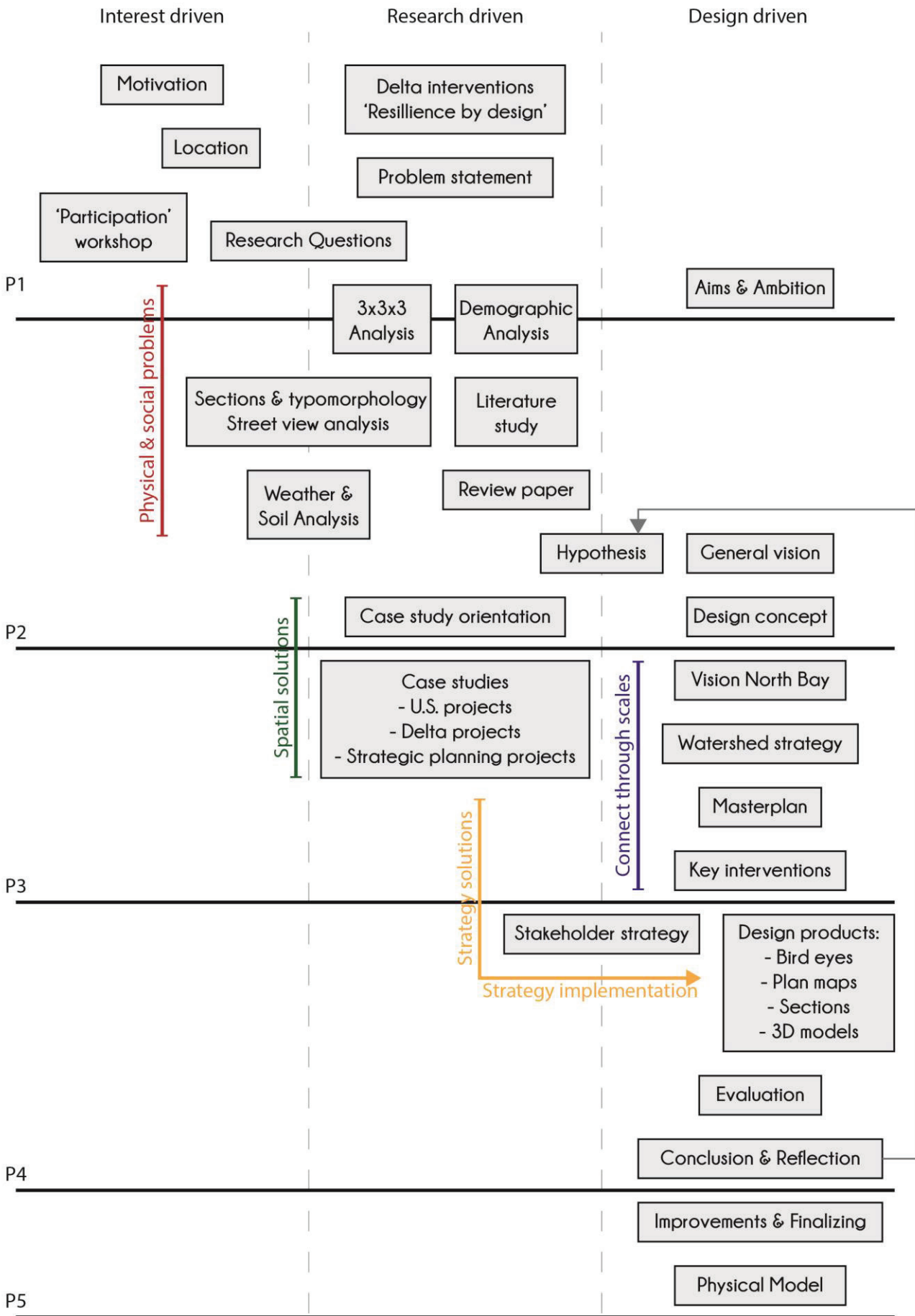
Master of Science Architecture, Urbanism & Building Sciences

Graduation Plan:

Personal Information	
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Graduation Studio	
Name / Theme	San Francisco Bay – Resilience by Design 'Designing for uncertain delta-landscape futures' Delta Interventions / Delta Urbanism Research Group
Teachers	Prof. dr. ir. Han Meyer (mentor) Prof. dr. Wil Zonneveld (mentor) Dr. ir. Taneha Kuzniecowa Bacchin Dr. Fransje Hooimeijer
Argumentation of choice of the studio	During my bachelor, I was introduced to the topic of water in the built environment through a minor in water management. Ever since my fascination for integrated design between water management and urban design has been growing. Especially the value of water, expressed in spatial quality and measurable worth, makes water a powerful element to design with. Due to climate change and the expected densification of our cities water management will become a more important topic in the years to come. For a sustainable future, both in the context of urban development and environment, water related processes in our cities are essential and therefore my focus of choice for my graduation.
Graduation Project	
Title of the graduation project	Adaptation in San Rafael through a strategic adaptive policy
Goal	
Location	San Rafael - Canal Area San Francisco Bay, United States
The posed problem	<p>The city of Rafael is quite young, the earliest settlements date from the west coast colonization era but real development only occurred in the last century. Like many cities around the Bay area, the city was established around a creek, at the bay's edge. Placing the city between two natural boundaries, hillsides in the west and marshlands in the east. For a long time the natural marshlands between city and bay were left alone, until the lands were reclaimed to make room for industry, later followed by other urbanization in the form of housing and public spaces. With the expected climate change scenario's pointing to increasing sea levels, the water level in the bay is also expected to rise. Former marshlands now find themselves in flood area's that are guaranteed to be flooded in the near future, if no actions will be taken.</p> <p>Another problem facing the bay area, and San Rafael, is the economic pressure created by silicon valley. The housing prices and land value have increased exponentially in the last 20 years, the worldwide recession barely noticeable. Shortage of housing and increasing living expenses are creating a harsh environment to live in. It's almost impossible to settle in the region and many residents are on the brink of leaving. The American economic system, based on credit scores and mortgages, makes it possible for house and landowners to profit, but those who rent are forced to live together in high numbers within small houses.</p> <p>This trend has been going on for quite a while and has become noticeable in demographic analyses and spatial experiences. Run down neighborhoods, unsafe areas, abandoned plots and lack of general spatial quality. The gap between the rich and poor is increasing and so is the quality of the urban environment.</p> <p>The main problem however, is the relation between the social- and water related problem. The areas that are going to be flooded in the near future are also the living environment of the social vulnerable. With the economic situation, relocation is impossible, they are simply not able to afford new housing or pay the new rent prices.</p> <p>The threat of water often gets calculated in economic losses, areas with the high economic value are at higher risk when a flood event takes place. However, when the</p>

	<p>most vulnerable residents of your city are the most a likely to be hit by flood events, the threat should be highest, because they have everything to lose, without opportunity to recover. On the studio topic of resilience by design, this means adaptation to an environment where floods can be handled.</p>
<p>Research questions and</p>	<p>Main research question</p> <p>Can a spatial policy, created out of the urgency of flood prevention, contribute to social economic improvement?</p> <p>Sub Questions</p> <p>How severe is the water management problem of San Rafael, what is the scale of the required measures?</p> <p>What is the economic impact of water (protection) in the United States?</p> <p>Which stakeholders could play a role in the (re)design process, what is their role now and what could it be in future developments?</p> <p>Which water management options have proven to be an positive influence in area's with social-economic discrepancies?</p>
<p>Design assignment in which these result</p>	<p>The end product is a series of design interventions that will strategically be placed, or can be places to work as a catalyst. The designs will work through time and affect different scales.</p> <p>End product will include:</p> <ul style="list-style-type: none"> - A vison for the city of San Rafael to guide the design interventions - A strategy for the watershed to deal with the run-off water - A masterplan for the targeted area to redesign (1:5000 / 1:2000) - Design interventions, presented through: Bird eye views, Plan maps (1:500), sections (1:50), 3d illustrations

Process
Method description
<p>The main research question will have to be answered by executing the design and strategy. The sub research questions are providing (the data) design choices or supporting design choices. During the process of this thesis the focus moves from interest driven, to research driven to design driven. This is mainly reflected in the choices, during the P1 it was all about orientation, what did we want to do, after that we had to find answers to question we asked out of interested but started building on research. The final stage, all answers will be design driven, but still build on the research and choices made.</p>



Literature and general practical preference

Literature:

Wegener, M., Button, K., & Nijkamp, P. (Eds.). (2007). *Planning History and Methodology (classics in planning, 5)*. Northampton, MA: Edward Elgar Publishing, Inc.

Oosterlynck, S., Broeck, van den, J., Albrechts, L., Moulaert, F., & Verhetsel, A. (Eds.). (2011). *Strategic Spatial Projects; Catalysts for change*. New York, NY: Routledge.

Albrechts, L. (2008). *Strategic Spatial Planning Revisited: Experiences from Europe*. *Quaestiones Geographicae*, 2008(jan.).

Meyer, H., Bregt, A., Dammers, E., & Edelenbos, J. (Eds.). (2014). *Nieuwe perspectieven voor een verstedelijkte delta: naar een aanpak van planvorming en ontwerp*. Amersfoort, MUST Publishers.

Gehl, J. (2010) *Cities for People*. Washington, DC: Island Press.

Haasnoot, M., Kwakkel, J., Walker, W., & Maat, J. Ter. (2013). *Dynamic adaptive policy pathways: A method for crafting robust decisions for a deeply uncertain world*. *Global Environmental Change*, 23(2), 485-498.

Walker, W., Haasnoot, M., & Kwakkel, J. (2013). *Adapt or Perish: A review of planning approaches for adaptation under deep uncertainty*. *Sustainability* 2013, 5(3), 955-979.

European Commission. (s.d.) *Paris Agreement*.

on 14-01-2017, from:

http://ec.europa.eu/clima/policies/international/negotiations/paris_en

Case Studies:

United states delta interventions cases:

Greater New Orleans Urban water plan
Rebuild by design, New York

Delta interventions cases:

Room for the river, The Netherlands

Design gains from water implementations:

Havencity, Hamburg
Spree river side, Berlin,
River walk, San Antonio, U.S.
Gedempte Gracht, City Centre, Zaandam

Reflection

Relevance

The climate is changing, no matter if you believe we are causing it or not, the facts are there. We will experience more nuisances from heavy rainfalls and rising sea levels, especially in our dense cities. At the same time more people are moving to the cities and our urban environment becomes more densely populated. In America, and especially in the San Francisco bay area, this means more roads and pavement to support the already out of control car based system.

With heavier rainfalls and rising water levels, the water will have nowhere to go, and floods will become a common situation, hitting the poorest, most vulnerable residents the most. Instead, proactive measures should be taken to prevent flood and improve the living environment in neighborhoods that are currently lacking quality. By tying social-economic possibilities to water management measures, these low quality areas are given the potential to grow.

The social-economic gains from projects like these could prove to make water management implementation more feasible in the future. Necessary interventions could be included in strategic development of cities, ensuring execution rather than postponement, taking a step towards a more social, economic and environmental sustainable future.

Time Planning

The planning for products is tied to the methodology; they are in indication on which product will be worked during the phases of the graduation. This is just a list with the dates that either prevent studying or are important moments in the graduation.

Msc3 semester		
05/09	1.1 - 1.2	Orientation lectures & selection research group First ideas research questions
10/10		Field trip to San Francisco (13/10)
7/11	1.10	<u>P1 report</u> (10/11)
14/11	2.1	Workshop Rotterdam (14/11) <u>P1 presentation</u> (18/11)
26/12		Christmas Holiday
09/01	2.7 - 2.9	<u>P2 report</u> (12-01) <u>P2 presentations</u> (19/01)
27/01	2.10	Snowboard Holiday
Msc4 semester		
03/04	3.8 - 3.9	P3 Presentation
10/04	3.9 - 4.1	<u>P4 application</u> (13/04)
01/05	4.2 - 4.5	P4 presentations (11/05 - 24/05) <u>P5 application</u> (24/05)
26/06		P5 presentations: 26/06- 7/07
There no running lectures or courses, everything has been completed before the P2 application date.		