Sea Level Rise and Resilient City Design
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This summer I worked with Professor Stefan Al in City and Regional Planning Department of Penn Design on his book about resilient city design. Due to sea level rise and other climate changes, some coastal cities face the danger of being under the sea level or having more frequent strikes of natural disasters like floods and storms. In this book we put together the strategies that urban designers can use to make the cities more resilient to those disasters. The book has two parts, in the first part we review the master plans of four cities around the world—Rotterdam, Ho Chi Minh City, New Orleans, and New York—to be more specific. These plans usually include retreat plans, transportation plans, more sustainable development and construction of coastal defense. We want the second part of the book to be a tool kit for urban designers who are looking to design a more resilient coastal city. We categorize design ingredients such as well-known ones like seawalls and dikes and lesser-known ones like polders and strategic retreat into four categories—protect, adapt, store and retreat.

Through this project I feel I acquired research skills such as gathering useful information online and in library collections, summarizing and articulating what the team has found, and documenting the sources of both pictures and texts in an organized way. For the first part of the book, we searched for the master plans for over twenty cities before we decided on the four cities to take a closer look at. For each design ingredient, we looked for basic information, performance diagrams, pros and cons, and design precedents to prepare for the writing and also to come up with our own drawings of those design interventions.

I have gained useful design skills as well. I’m now better at expressing things visually, as I needed to pull out the design ideas from texts and comprehensive design plans and articulate them through my own drawings. I have become better with hand drafting because I needed to draw out the sections of my design interventions of these ingredients to discuss with my coworkers before I put the idea into Rhino for modelling and Illustrator for colors and line weights. I’m now more proficient with design software like InDesign, Illustrator and Rhino through all these practices.
This was the first time I worked on one book project from just having one basic idea about the book, and it has definitely provided me with more insights into research in the field of design. Design research is more about providing our insights into existing design ideas and conveying them in our logic to benefit more designers than just categorizing and documenting what’s out there.