

Visit report 4 October 2016 – Arcadis: Big U

By: Maurits Zeinstra

Climate resiliency strategies as a driver for sustainable urban redevelopment

On Day 4 of our American study tour we visited design & consultancy firm Arcadis US in New York city. Edgar Westerhof, national director for flood risk and resiliency of North America gave a presentation about the Big U Project in NY. Westerhof moved to NY, 4 years ago and is in charge of the total portfolio of this department of about \$40 million.

The Big U project is a result of hurricane sandy (2012) which flooded major parts of lower Manhattan which resulted in \$60 billion storm-related damages in the region. After hurricane Sandy it was clear that something has to be done in order to prevent such damages in future. The US department of Housing and Urban Development (HUD) announced its Rebuild by Design program which is an initiative of Henk Ovink. This new method brings local communities and civic leaders together where the dialogue is centered in the development. The focus lies on the design itself and not at the related legislative aspects that come with the design. This method has led to a paradigm shift where planners and government approach both disaster response and emergency preparedness.

Arcadis is one of the cooperation parties that developed the Big U project which includes a system of different protection measures around Manhattan. 50 projects in total are currently going/being developed which are Sandy related. There will not be one square meter in which nothing is there, this makes the Big U projects really expensive and also complex. The great expertise of Arcadis regarding flood defenses is a great addition to these projects and contributes to the future resiliency of the region. After hurricane Sandy, Arcadis is monitoring all the numbers for NY regarding to sea level rise. Arcadis developed a flood defense system for Horizon which is a telecommunication center. After 9/11 all vulnerable equipment of this company was relocated to basement areas to guarantee higher protection. After hurricane Sandy the company was again stricken because of the relocation of the equipment. Arcadis developed a physical removable structure which protects the company in a future storm event. This is an example of only one company in a densely populated, business oriented area like Manhattan in which many companies are affected if such an event occurs. Arcadis developed similar solutions for a sewer system and hospital in the area. The Big U project is a more collective measure for protecting Manhattan.

A remarkable fact regarding to the US is that there is no specific legislation regarding to how a project like the Big U should be designed. This makes participation of the different stakeholders more and more important. Green retrofitting is an aspect that came out as a desire from the Rebuild by Design program. In comparison, the army corps of engineers constructed massive flood protection structures in New Orleans which were not desirable in the Big U project. The Big U project consist of more soft measures, location where space is available green areas are implemented into the design which function as a natural flood defense system. Areas where space is limited, swing-down-gates are realized which are developed in collaboration with the experience from the Dutch department.

Finance of projects is a major problem in America because the country is basically bankrupt. The different governmental levels of the US will only act on disasters that occur. Based on the disaster the government sets up a strategy which is not connected to any form of legislation. NY can implement some solutions because of funds raised from hurricane Sandy. There are many cities along the east-coast which do not

have these funds. After realization assets need to be maintained. Funds to maintain assets, once it has been constructed are also often not available in the US.

The presentation of Edgar Westerhof showed how the US and NY city in particular is handling storm protection. The presentation exposed the major problems the city is facing regarding to designing flood protection measures with absence of legislation, financing the projects and maintaining them. The Americans act on events that occur which form the starting point and strategy for developing solution. You may ask yourself if this approach is the right strategy for protection in future. The Big U project is in any case a step in the right direction where new rules are developed, resilience became a flavor of redevelopment and NY is having a dialogue in order to achieve a safer and more sophisticated Manhattan.