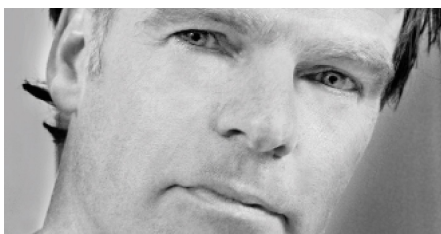# Talking Tall: Winy Maas, MVRDV

Winy Maas, MVRDV

Winy Maas
Winy Maas (Schijndel, 1959) founded MVRDV in 1993 together with Jacob van Rijs and Nathalie de Vries. Early work such as the television center Villa VPRO and the housing estate for elderly WoZoCo, both in the Netherlands, have lead to international acclaim and established MVRDV's leading role in international architecture.

The work of MVRDV/Winy Maas is published and exhibited worldwide and received many international awards. The monographic publications FARMAX (1998) and KM3 (2005) illustrate the work of the Rotterdam based office.

Winy Maas lectures and teaches throughout the world and takes part in international juries. He currently is visiting professor of architectural design at the Massachusetts Institute of Technology and is professor in architecture and urban design at the faculty of architecture, Delft University of Technology. Before this he was professor at among others Berlage Institute, Ohio State and Yale University.

Here, he is in conversation with CTBUH Communications Manager Jan Klerks.

"As the Asian context is still developing and hence flexible, its design culture has a bigger tolerance for new typologies and the ideas that help shape it. The Asian context is characterized by a collectivism which is organized from the bottom up."

In Winy Maas' vision, the urban future of Chinese cities could take the shape of supersized parabolic structures in and around current cities. To get the picture, imagine a range of various green hills with apartments and spacious terraces in the shell, and giant interior spaces within, filled with industry, leisure and technology. Through combining functional space, such as housing and offices, with nature, agriculture and energy production, the hill-shaped towers of hundreds of meters tall will be truly mixed cities. On a hypothetical site of only 0.5 km^2, these vertical suburbias could accommodate up to 100,000 people. This is equal to the density of Hong Kong, but with a compact and more efficient infrastructure. As a new building typology, this concept has been developed to cope with the large economic growth and rapid urbanization of China in a sustainable and self-sufficient way. The China Hills project is just one of the creative ideas for urban problems through which MVRDV makes a name for itself internationally (see Figure 1).

...wind design

66 We discovered that we could not only design the building, we could design the wind. 99

Bill Baker, Partner of SOM and structural engineer for the Burj Khalifa in Dubai describes the design and construction challenges for building to a height never before attempted. Mr. Baker reflects on the many iterations of the model in a wind tunnel, in order to control the magnitude of the wind loads transferred on to it. From "The Design and Construction of the World's Tallest Building" Structural Engineer Magazine, December, 2009.

Figure 1. China Hills project © Beijing Center for the Arts

MVRDV's office is located in a characteristic building in a pre-war neighborhood to the west of the city center of Rotterdam, the Netherlands. At first glance the office looks typical for an architecture firm; a large room with consecutive rows of desks all facing the same direction, with models, drawings, images and a creative buzz everywhere. It's against this backdrop where we meet Winy Maas, the "M" in MVRDV, who founded the company for architecture and urbanism in 1993 together with Jacob van Rijs and Nathalie de Vries. During the interview, Maas introduces the theories, ideas and designs of the office, which are anything but typical. Recently, Fast Company Magazine voted MVRDV the 44th most innovative company in the world "for its radical designs which comfortably and sustainably fit as many people in as little space as possible."

Stacking and Mixing

Maas is enthusiastic when he talks about some of the firm's Asian projects. "As the Asian context is still developing and hence flexible, its design culture has a bigger tolerance for new typologies and the ideas that help shape it. The Asian context is characterized by a collectivism which is organized from the bottom up. By blending individuality with collectivity, we're connecting architecture with urbanism and turning urbanism into landscape architecture. The result is a very expressive total image."

Maas visualizes this by showing a screenshot of a study which at a quick glance resembles a pile of playing blocks and toy houses. "Very often you see a project in which functions have been stacked on top of each other, and then they call it a mixed-use building. However, mixing functions is more than piling spaces and functions on top of each other and calling it a city in a city. This study is more of a village within a city. We blend different functions, such as residential and office spaces, with infrastructure and public spaces between these. More than just stacking spaces and usages, the connections between these entities determine whether a

multiple use building is also a mixed-use building. By integrating public spaces within the building you create opportunities for people to make contact, which is an essential use of the urban public space."

The study is also a good example of MVRDV's theoretical and mathematical approach. "We often design a computer model which allows us to test and visualize various schemes of an idea. When we change something, we instantly know what the effects will be throughout the whole scheme. By doing so, we know what's realistic and what is not," says Maas. This computer-based modeling approach has been researched and visualized in publications entitled KM3, FARMAX, Metacity/Datatown and Space Fighter. "When setting up a model, we cooperate with an engineer to ensure the model produces results which are technically feasible. We introduced the concepts of wild ducting and wild piping, which allows for flexible connections given the chosen configuration of the units."

Showing that he is always full of ideas, while discussing the Asian context Maas dreams up a prefabricated skyscraper for India with small and flexible units, to be marketed as The $1,000 Home. On another project: "For the city of Taipei we're currently designing a project composed out of vertical plots, so buyers can chose their own house. By doing so we allow for individualism within the collective." Although MVRDV currently has many projects underway in Asia, Maas notices a

shift within the Chinese design context: "At the moment we see a transition of preference from iconic design and Western architects to young local architects, who perhaps surprisingly look at the old customs, such as the Feng Shui principles of design."

Pixels

A very contemporary design typology where collectivism and individuality meet is called pixilation. This is a two-step process, in which the smallest component is designed first. Then these pixels are arranged as building blocks to shape the bigger structure. Through this design process, MVRDV co-designed a 116 meter tall pinecone-shaped tower called Sky Village for the Copenhagen municipality of Rødovre (see Figure 2). This tower is composed out of stackable green-roofed units, size 7.8m x 7.8m x 4m, which is suitable for an office space, a small apartment or three parking spaces. ✍

Figure 2. Sky Village, Copenhagen © MVRDV

Figure 3. DNB Nor, Oslo. Southwest Aerial © MVRDV

Maas on Sky Village: "Its main concept is based on individual units of around 60 square meters which can be stacked in various configurations. This maximizes available space and allows for easy structural changes in response to changing market demands."

Sky Village was designed with sustainable features in mind, such as a grey water recycling, the use of forty percent recycled concrete in the foundation, and energy generating devices in the façade. "Although technical advances in sustainability are important, LEED and BREAAM don't really take a lot of the social sustainability into the account. Yet this is something that we very much try to accomplish through our work," says Maas.

"Instead of stacking apartments on a green plot, we designed a building in which residential space is literally mixed with green space."

A similar concept has been designed for the Norwegian capital city of Oslo. Resembling a rock or a cloud, the new DnB NOR headquarters appears to have been assembled out of uniform designed cubes (see Figure 3). Maas: "The pixilated design adapts to the urban context and combines an efficient and flexible internal organization, based on small-scale working entities, with a variety of specific communal spaces, a sheltered public passage and respect for urban view lines. Pixilated design allows for this specific response whilst at the same time being highly efficient and flexible. As a result, every floor of the building is both unique and generic. As such, the pixilated volume makes the generic specific."

Mixing Nature

Studies where large green gardens are mixed with residential towers are good examples of mixing functions with nature. As a family needs more space, this poses opportunities to house families in tall buildings, which has always been an uneasy combination in a Western context. Maas on the topic: "For the Dutch city of Hengelo, we designed a tower containing what every typical Dutch family wants: a house and a garden to call their own. Families typically prefer a house over an apartment. When thinking in terms of density,

you imagine a tower with large, garden size balconies, or even hanging terraces, including trees. So instead of stacking apartments on a green plot, we designed a building in which residential space is literally mixed with green space."

The same typology was applied to a 21-story tower project, or as MVRDV calls it: a Sociopolis, in Huerta, which is a historical Spanish region of Valencia (see Figure 4). As a reference to authentic Huerta plots, every single house in the tower has its own outside space, almost like small farmhouses. These hanging patios are a natural extension of the interior living space. It's almost like designing a rural tower. "Residents can even grow their own fruit!"

The Mirador building is an example of mixing communal space and communities in one structure. The 22-story apartment building in Sanchinarro near Madrid appears to be made up of different blocks, each representing a community, which are stacked and glued together into one towering superblock, while leaving one open communal space inside the structure. Maas: "Mirador was part of a housing

Figure 4. Sociopolis, Huerta © MVRDV

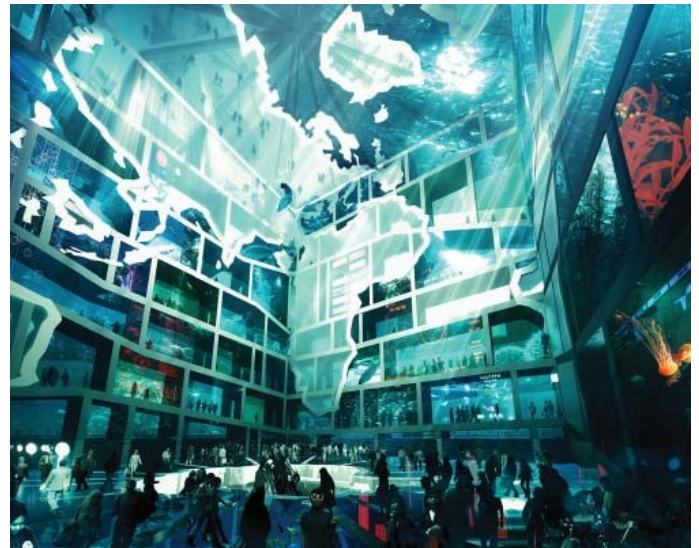Figure 5a. Water Cube, Yeosu, Korea. Exterior © MVRDV

Figure 5b. Water Cube, Yeosu, Korea. Interior © MVRDV

scheme involving 60,000 to 70,000 new homes. Looking back I think it functions well. I only wish there would have been an escalator to reach the community garden so it would be easier to access the space."

Stacking Nature

Besides mixing functions with each other and mixing functional space with infrastructure and public space, MVRDV has produced some hotly-debated projects involving green space and nature. In 2000, it stacked landscapes for the Dutch pavilion of the World Expo in Hannover, Germany. The theme of the 36 meter tall building was Holland Creates Space. Six Dutch eco-system landscapes were stacked to showcase how a country can make the most out of a small space.

One year later, MVRDV presented their Pig City project, which now can be considered as a predecessor of the vertical and urban farming studies we see nowadays. Pig City comprised of 76 towers, each 622 meters tall and a floor plan of 87 x 87 meters, solemnly dedicated to pig farming. These so-called "pigscrapers" were proposed as a way of optimizing the production process in the space intensive pig industry. Animal welfare and economic land use were important factors in developing the concept. The biogas generated by the pigs'

waste is collected as a clean energy source; fish farms inside the towers provide animal food and help reduce transport. The project never got realized, but it triggered many responses and heated discussions.

For one of their latest projects, MVRDV is stacking the water of the oceans. Intended to showcase the beauty of the oceans, MVRDV stacks them into a Water Cube for the 2012 World Expo in Yeosu, Korea (see Figures 5a+b). Arranged like a world map in the shape of a glass box, different basins inside the walls of the cube represent the world's oceans and continents. Both polar seas are positioned at the top and bottom, the tropical seas in the middle. Seawater will be pumped throughout the basins continuously to sustain water ecology and circulation. At the same time, the glass basins serve as a temperature buffer from outside conditions, which is symbolic of the ocean's role as temperature moderator for our entire planet.

Thinking Tall

Listening to Winy Maas and seeing these fascinating projects is an inspiring experience. But what lessons can we learn from this? MVRDV's portfolio contains several tall buildings, although design is more focused on the mixed urban habitat. Throughout their

works, the question of how to create and design urban densities has been a central focus, both through building design and publication of research. Much of their work revolves around the idea that different functions should not just be stacked in one uniform designed entity, but that these should be able to individually express themselves while at the same time cooperate with one another. A tall building is not a design target, but it can be a result of a design process which is based on stacking and mixing different uses and spaces, and the way these cooperate. Unlikely combinations can be mixed with surprising results. MVRDV's work also shows that mixing functions is something which can also be applied to suburban projects. Such projects present themselves as a city in a village, offering urban solutions to a suburban landscape. To be a city in a city, much more is required than stacking apartments on top of offices on top of hotels and calling it a skyscraper. It's also about the indoor and outdoor spaces that connect these uses and the way these allow for interaction between them. ∎

More information on projects and publications by MVRDV can be found at **www.mvrdv.nl**

Interviewed by Jan Klerks, CTBUH Communications Manager