



MAKERS' MAZE

INSPECTING THE EXISTING

The Vierhavensblok has a rich history as a productive district of Rotterdam. Building on its industrial character and manufacturing past, this area is in a strong position to become a more integral part of the city. This transition will be catalyzed with new models of working and living, rapid development of new technologies, and a renaissance in craftsmanship (albeit in a modern, digitized and innovative form). Vierhavensblok is already responding to what is needed by functioning as a microcosmic, post-industrial niche full of makers and production led by creative and cultural entrepreneurs. On this industrial headline there is enough space for Keilcollectief, Voedseltuin, Soundport, AVL Mundo, Studio Roosegaarde, Buurman and the many other tenants of the Keilewerf. The power of their self-initiative, cooperation and exchange is enormous. These organizations have adopted and adjusted the existing space to suit their needs and they are hoping to stay. These hopes are braided with insecurity: the area is marked for densification due to the current pressure on the housing market, and a well defined future vision for the site is needed. Therefore, the question shifts from how to create perfect environment for makers, to how to preserve the identity of one that we already have while still facilitating necessary densification.

It is not a coincidence that the area attracts makers. Affordable, flexible warehouses are ready to use while outdoor spaces support the buildings' functions by providing enough room for storage and delivery. Striking emptiness on the site is juxtaposed with few existing buildings. It takes a while to discover all the narrow passages, workyards, and alleys hidden behind or nestled in between long facades, sheds and fences. While not yet easily accessible, these features have great potential to become a walkable, intriguing piece of the city. Our task is to let the makers stay in this space which works well for them, to introduce additional functions while, at the same time, augmenting the existing qualities of the area so that residents can continue the tradition of shaping their own environment.



EXTRAPOLATING THE CURRENT STATE

Objectives are clear: firstly, the existing buildings and users remain in place, either indefinitely or until new purpose-built spaces are available to accommodate them on-site. The makers, Voedseltuinen, workshops and companies don't need to look for another location. Secondly, existing architecture and urban qualities are explored and aggregated, creating a base for new developments. Passages, alleys, inner streets, squares and courtyards are spread through the site changing scale from industrial to urban. We allow for more connections and new entrances, promoting a walkable human scale space that is designed around public and semi public areas, not buildings. The outdoor spaces are well defined from the outset of the project and create an interconnected network: the Makers' Maze. Courtyards, streets and rooftops are hidden from the outside as they organize the new public interior – a space that encourages creativity, productivity and focus. This exciting labyrinth invites visitors to learn and discover, and is designed for walking or cycling only, with vehicle traffic restricted to business/workshop services. The outdoor space is as important as the indoor, if not more. The Voedseltuin will retain its function as a productive permaculture garden and will be surrounded by, yet not entirely unified with, the old and new interdigitated building fabric. By juxtaposing the open, vast scale of the garden, water and the industrial area with the small, intimate scale of alleys and squares, their substance gains new meaning and their quality is enhanced. The increased density of workspaces on the ground floors helps to provide conditions for interaction and exchange: workshops, makers and logistics are allocated space (inside and outside), while housing, shared spaces and some commercial areas are located on upper floors, thus creating a multi-layered, resilient and diverse city fabric. There are no live-work units as such, where office and home are combined. Instead we propose a healthy commute: a resident has to go outside to go to work — at another area of the site. Users of the workshops are encouraged to live within the Vierhavensblok, and housing is reserved for them. The Makers' Maze is not a collection of diverse buildings, but one big interconnected ecosystem, where energy, water, working space, and waste solutions are shared. Makers' Maze is a method rather than rigid design, it allows change, diversity and incongruity.

PLACE DEFINING CLUSTERS

The streets and squares of the masterplan are defined by the surrounding architectural volumes, both new and existing. Learning from the existing buildings on the site (and the surrounding area, such as the Emailliefabriek) the proposed architecture doesn't consist of autonomous buildings but interconnected clusters of diverse volumes and functions. Surrounding and defining public spaces, they consist of blocks of different shapes and heights. Each cluster has a color / materiality that makes it identifiable within the plan and, in the case of clusters created around existing buildings, their facade materials are based off of the existing workshops that anchor the cluster. Materials can be shared and mixed within a cluster as long as its appearance and color helps in defining it. Clusters work as showcases of materials and provide a means to organize, categorize and label them. Existing workshops are no longer temporary, but rather they become an integral part of the foundation of the plan. New volumes are attached to them or are cantilevered above them. These new structures, besides adding floor space, also provide access to rooftops, which are used as communal gardens with shared functions attached: laundry rooms, storage, flex offices, game rooms, labs etc. Layers of shared spaces work as buffers between the living and working zones and create a diverse, mixed urban fabric: not only horizontally but also vertically. The center of the plan keeps the Voedseltuin as an anchor: it serves as a 'central park' of sorts — the green, productive and philanthropic heart of the area.

PARTICIPANTS AND THEIR SPACES

With a strong focus on re-making, reusing and re-inventing, the types of professions supported range from woodworkers and 3D fab-labs, to plumbers and shoemakers. By combining the new-school semi-industrial uses with more traditional ones, we avoid the pitfalls typical of gentrification while maintaining and building on the existing activities on the site. Our proposal addresses the urban and architectural scales to reimagine the neighborhood as a resilient machine that accommodates working, living, playing and resting. It is built on the circular principles of long-lasting design, reuse, refurbishment, and recycling. The main challenge is to integrate new developments while maintaining a sense of community between the existing and new residents. By organizing the site into interlocking

clusters, we hope that the community spirit can survive, because the scale is shifted along with the users. Old relationships remain, but new ones are added on top and each participant plays their own role in the success of the site. The requested programmatic mix of 30-40% businesses, 10-20% offices, 30-50% housing, and 10% services is easy to achieve and adjust, because the clusters are developed not in tandem, but one by one, allowing for small adjustments based on market pressures. The friction of typically noisy working space and peace loving residential programming is carefully considered in the Makers' Maze. Functions are organized gradually and according to their intensity. Squares serve as space for storing and delivering materials and for low noise activities. Especially noisy or disruptive machines are placed into additionally sound isolated boxes inside warehouses. Buffer programming like offices, showrooms or shared rooftops create a physical break between the workshops and living programs. The housing floors built on top of existing workshops are suspended above them (with an air gap and extra insulation).

CIRCULARITY, SHARING & SUSTAINABILITY

In the circular city, there is little to no waste. Collaboration and information sharing create new, interesting connections that lead to ground-breaking circular initiatives. People living in the area trade in their furniture or other objects for renovation or donate them as a material to the workshops. Thus, materials are exchanged between the craft school, workshops, businesses and households for reuse and repurposing. There is a second hand shop where old furniture and other objects can be brought directly and purchased by other inhabitants or visitors. There are many small businesses on the site: plumbers, electricians, and shoemakers work locally in the area to help repair, sort out, reuse and exchange elements needed in households, offices and workshops.

The new buildings in the clusters themselves are built from recycled materials. Where possible demolished buildings from the transforming industrial area will provide material for new structures, whether it is recycled concrete, rubble for roads or recycled bricks. Added structures are designed in a way that makes it easy to reuse their parts with facades and other elements designed for disassembly. Each new cluster comes with a building passport and BIM model when it is completed, so that all of the material information is readily available for the life-cycle of the building.

GUIDING PRINCIPLES

The M4H redevelopment is guided by 8 principles for sustainable urban development. We have chosen to focus on the goals of collectivity and circularity which we address throughout our proposal.

M4H builds on the industrial capacity and quality of the area, offers permanent space to different types of makers, room for experiment and learning, and prefers the sharing of facilities over individual ownership.

The proposed clusters are just an interpretation of what's already there: an assembly of buildings interlocking around outdoor spaces. The quality of the current situation is found, understood and used as it becomes the guiding principle for the new architecture and public spaces. By keeping the existing users on site and adding new ones as the project expands, a rich mix of different types of makers will develop within the Maze. New spaces are ambiguous, encouraging participation and initiative, creating a perfect environment for learning. Besides established companies there is space for a craft school to teach vocations to the younger generation and fabrication laboratories where students and residents can explore new ideas. The school will prepare interns and starters alike to flourish in the surrounding companies. Proximity of artists, makers, students, architects and activists in one space creates an enormous force, where innovation has a room to thrive.

Other points, concerning sustainability are addressed and solved within the proposal:

the site functions with a leading principle of circularity and reuse of materials. Thanks to a diverse mix of various residents initiative, skills and ideas for creative reuse are easy to find. Inhabitants can find electric shared cars in designated parking spaces, park bikes easily in every alley or square, or opt for using adjacent Marconiplein metro station and other public transport options. Use and exchange of renewable energy is done through solar panels and solar heating on the non-accessible roofs. Other rooftops create a network of green spaces that buffer rainwater runoff, increase biodiversity and create space for urban rooftop gardening. The outdoor space is climate adaptive, using permeable paving where possible and thoughtfully placing trees and buildings to enhance local cooling effects.

MAKING IT POSSIBLE

If cities want to remain inclusive they need to find ways to provide the right environments that stimulate productive neighborhoods – by integrating existing production space with new residential units. Semi-industrial space is under threat in cities across the world, pushed to the outskirts in the name of profit. However, these areas are an integral part of lively city fabric and should be celebrated as

such. Creative manufacturing, a mix of design, prototyping, making and marketing, is a popular typology at the moment. This industry needs spaces that are part office, part testing lab, and part production floor: an increasingly difficult configuration to find. Because rent for production space is lower than office space, it is a less profitable and thus unsupported by the market without public policy to protect it. Work space needs to be provided that caters across price segments while also catering to social facilities which support the community – such as medical practices, crèches, and community centers. In order to offset the development of lower rent spaces and social housing, we propose to provide a healthy mix of higher end typologies as well – restaurant spaces, high-end offices, city lofts and a hotel. Thanks to the layered design with many accessible roof gardens serving as an extension of public space, upper floors of the buildings can be used as commercial spaces, restaurants and services while many ground floors can be freed up for workshops, without compromising the financial balance of the development.

MAKER'S MAZE

The future of the site calls for careful orchestration, as unchecked gentrification could easily throw off the balance between the makers and the developers. The city, of course, relies on investment to grow, but the success of the investment is reliant on the creation of a vibrant urban life that is inclusive, balanced, and diverse. It would be impossible to design everything – because there needs to be a certain amount of organic growth. Jane Jacobs pleaded for supporting experimentation in urban environments; she understood that complexity and disorder are charming and breed creativity in the city. The proposal we set forth is a framework that builds on the character of the site while increasing the resilience of the Vierhavensblok through the creation of an adaptable and diverse piece of the city. The combination of new manufacturing industry, urban facilities, housing, culture and a circular economy lays the foundation for an interactive, forward thinking piece of the city, a testing ground for Rotterdam, the port city of the future.

