THE PROJECT

ON THE EDGE OF MEXICO CITY

Mexico City, the city that was once a lake, sits in a drainless valley, surrounded by mountain ranges, one of which is Sierra Santa Catarina. Its volcanos play a very important hydrological role: its slopes are permeable, allowing rainwater to infiltrate the deep aquifer, and preventing water from running down into the city. Today, parts of Sierra Santa Catarina have been urbanised. Development in the area means that the rainwater now runs down the streets, instead of being absorbed by the bare rock, causing issues of flooding in parts of Mexico City.

On the very edge of the city, on the slopes of the Guadalupe volcano, lies the neighbourhood of Miravalle. In three decades, Miravalle has developed from an informal settlement into a well organised, and politically structured, neighborhood. Yet despite all of its achievements, the community still faces challenges concerning the maintenance and

Invasion of the natural reserve

safety of its public spaces, as well as the management of the adjacent nature reserve. The Miravalle Community Council aims to provide solutions to these shared problems of urbanity and citizen rights. It is also concerned with the misuse of local resources, which, if managed properly, could provide autonomy when it comes to critical issues, such as a costly dependency on potable water, which is currently delivered to Miravalle by trucks.

UNDERSTANDING WHAT IS NEEDED

Through group walks and discussions over meals, the team began to gain an understanding of both the strengths and shortcomings of the approach

taken in Miravalle. Community leaders decided that it was important to map this information, which was done at a workshop in Mexico City.

Three urgent issues came out of the discussions at the workshop: the importance of protecting the city's edge; the effective use of local resources; and the safeguarding of public spaces. In response, three interventions were identified through a participatory process with the community representatives: a walk to the top of the volcano in order to identify local resources; a system to harvest rainwater from the roof of a communal building; and the retrofitting of security measures in urban spaces in order to safeguard them.

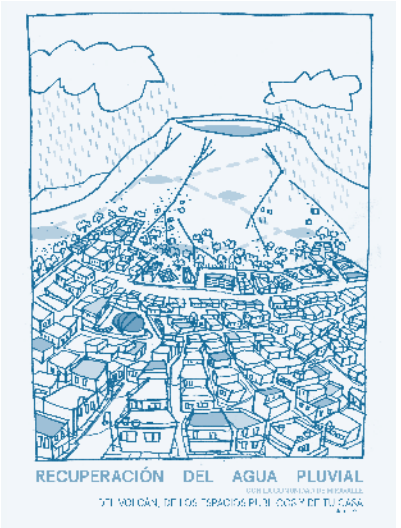
Throughout this process, it was important to keep in mind the eco-hydrological role of Miravalle, and to recognise and reflect on the possibilities that the territory offers its inhabitants. On one hand, there exists the responsibility of promoting an urban ecology that will help to repair the infiltration function of the slopes. And on the other, the realisation that the volcano, if taken care of and properly managed, could provide much needed wealths.

BORDER SPACE

At Miravalle's edge, urban life and the nature reserve meet. The conflict created by a growing population and the protection of the natural space is causing pressure on this border.

In some areas, established programmes and facilities such as sports fields, peri-urban agriculture, and schools, prevent the further occupation of the land. Existing programming of the border space points to a strategy that could be expanded on: protection through usage. Rather than fencing off the nature reserve, it could become a space of productive inhabitation. With the promise of recreational facilities and the potential to generate income, the edge will be

People from neighborhoods beyond Miravalle joined the expedition to the top of the volcano. Recognising the mountain as a provider, and not as a threat, shifted the perspective of the community.



Poster Rainwater Harvesting. As harvesting surfaces serve the slopes of the volcano and dammed water bodies, the roofs of the houses and—the dome.

protected by the residents themselves.

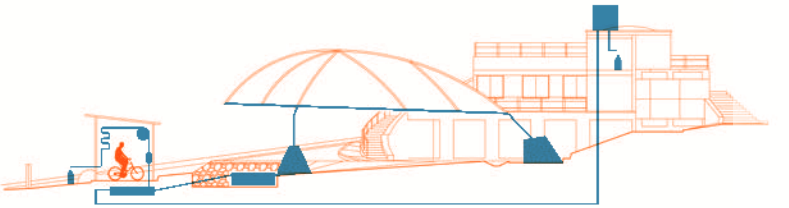
THE VOLCANO WALK

The walk to the top of the volcano created a framework for a series of events aimed at raising awareness around the value of the natural area, the possibilities it offers if managed properly, and its potential to absorb and retain water if proper strategies to restore its capacity are employed. More than a simple recreational outing, the aim of the walk was to identify local resources that would help to improve the lives of community members. It's important to realise that because of its location, Miravalle sits in a privileged position within Mexico City's periphery

THE USE OF LOCAL RESOURCES

Located in one of the driest spots in Water supply in Miravalle is not sufficient for the population and presents a major expense for an already economically stressed neighborhood. On the other hand, and despite the fact that Miravalle is located at one of the driest spots in Mexico City, its seasonal rainwater would be enough to cover the needs of the area. The community has experimented with the harvesting of rainwater, but with little success.

Gathering flowers on the slopes of the volcano for adorning a street saint, and for use in traditional medicine. One can imagine the volcano melting into the city through the vegetation contained in the green urban spaces designed to infiltrate and store water.



Dome fountain functional sketch

The team suggested that the challenge lies in finding a way to scale up existing interventions, creating a network, rather than having individuals working by themselves. Such a system would help to create independence, and generate a new sense of wealth, with the realisation that local resources are abundant, and that the needs of the community can be met from within.

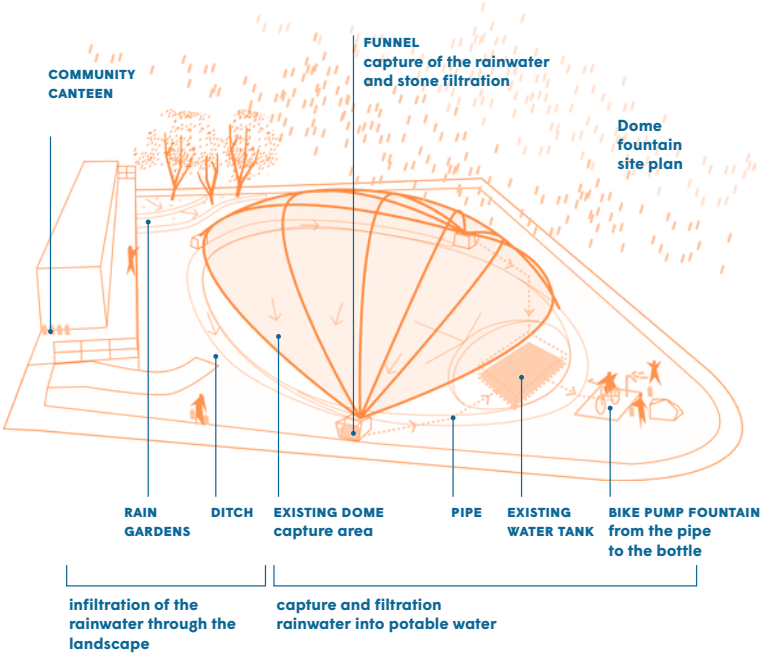
RAINWATER HARVESTING DOME FOUNTAIN

The dome fountain initiative that is currently under construction gives new function and meaning to an important, but under-utilised communal space. Rainwater collected via the dome, which also functions as an open-air parliament, will provide drinkable water for the public.

Water is harvested from the roof of an existing public building, after which it is pushed through a bicycle pump, exiting through the water fountain. The fountain allows free access to clean drinking water. Water is also pumped into storage tanks on top of the community diner.

The rainwater collected via the dome's roof will be purified and accessible to everyone. The

The kindergarten in Miravalle is a good example of the community's ability to create pleasant and multi-functional spaces, taking advantage of topography and local resources. Located on a steep slope, teachers and parents used volcanic stones to build a retaining wall, with steps that double as seats for the open-air amphitheater.



project serves not only to make use of a locally available resource, but also as a model for urban water management practices that can be replicated throughout the neighborhoods, and the city.

SAFEGUARDING PUBLIC SPACE

Miravalle stands out as a community for having built facilities such as the dome—taking social control of previously neglected and dangerous places. Yet, paradoxically, on a smaller scale these buildings often create unsafe corners, niches and walkways. The physical integration of these spaces as part of the neighbourhood is essential to convey the idea that the spaces are owned and cared for.

SPACE WRAPPING

The team suggested that wrappings made from semi-transparent materials was one way in which to integrate leftover spaces, and show that the community is taking ownership of them. Thus the design of the dome's public space is complemented by enclosures that regulate the relationship of users with the various public and semipublic spaces, such as the roof terraces, balcony, and entrance to the health centre. The design of these structures can be further expanded upon through workshops with residents, putting community involvement at the centre of the project.

FUTURE OUTLOOK

Reviewing the strategies previously implemented in Miravalle seemed to have been a turning point for this community that had already accomplished so many things. Growing inwards rather than expanding; reinforcing strategies that make use of local resources and that provide safe environments; introducing small interventions to upgrade existing infrastructure—these are the new drivers of design, with the residents acting as the key agents of the transformation process. Changing the community's perspective about their geographical position—from a marginalised border town to a neighborhood with an extraordinary landscape and access to natural resources—will hopefully bring even more transformation down the line.

Poster illustrating space wrap

Project Credits

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