

Dialog-oriented Urban Design Processes and the Place-led Approach.

Upgrading Informal Settlements in Maputo, Mozambique

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Abstract

This case study shows the contribution of the World Bank consultancy provided by the architecture and urbanism studio *superwien urbanism* to the Municipality of Maputo in the rehabilitation of twenty public spaces in irregular settlements of Maputo, Mozambique. The project consists of the rehabilitation of these spaces into multifunctional community spaces and neighbourhoods' centralities, as well as the rehabilitation of 20 km active mobility pathways to connect pedestrians and cyclists on the city scale. The development of the project was based on a dialog-oriented urban design process and the place-led approach, involving locals in all project phases. From the site selection to the final design, various local stakeholders and specialists had the main role in the project development, including local architects and urbanists, residents of the project area, local leaders and architecture students. In addition, *superwien* implemented a process to develop, adapt, combine and use various participatory tools in five pilot neighbourhoods, in order to approach the community in a meaningful way and achieve positive results. The findings of these participatory activities were shared with different stakeholders in the Maputo Urban Lab, which also included local architecture students. Within Maputo Urban Lab's various activities, the local students learned about the different participatory tools and had the opportunity to apply them in participatory workshops in the remaining fifteen neighbourhoods of the project area. Their results were presented to the Municipality of Maputo and the *superwien* team through a rapid design, where the students could make their own design suggestions for the spaces they visited. Finally, *superwien* has been developing the final 22 public spaces designs which aim to ensure an inclusive, diverse and accessible approach.

Keywords: Maputo, public spaces, informal settlements, participatory design process

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1. Urban transformation project Maputo

In 2020 the Municipality of Maputo (CMM), Mozambique, received a USD 100 million-dollar grant from the World Bank Group (WBG) to prepare and implement the Maputo Urban Transformation Project (Projecto de Transformação Urbana - PTUM) in support of the main priorities of the Municipal Development Plan (PDM-2019-2023) in order to implement the most challenging and transformative investments and reforms in urban infrastructure. In the framework of PTUM WBG is deploying the Participatory Urban Design Project (PUD), which seeks to develop dialogue-oriented planning techniques to promote the integrated planning and design of open and usable public spaces in underserved areas. Furthermore, the project seeks to transfer knowledge and experience about participatory urban design processes to local governments (World Bank Group, 2021, p. 1).

Regarding the PTUM, the architecture and urbanism studio superwien urbanism was assigned to provide consultancy to the CMM and support the efforts to upgrade the informal settlements around the city centre of Maputo. This project targets twenty of Maputo's most vulnerable neighbourhoods and aims to invest in urban infrastructure and increase sustainability and inclusiveness within intervention through institutional, policy, or governance changes (Conselho Municipal de Maputo, 2020, p. 4).

The focus of this consultancy is on the rehabilitation of one open space per neighbourhood into multifunctional community spaces and neighbourhoods' centralities, as well as the rehabilitation of 20 km active mobility pathways to connect pedestrians and cyclists on the city scale. Our goal was to integrate residents, students and practitioners in a wide participatory planning process by applying a dialog-oriented planning and co-creative design approach, in order to develop successful and meaningful public spaces for the residents of Maputo.

2. Public space site selection in 20 neighbourhoods

The project sites, 20 neighbourhoods (see Figure 1), comprise an area of approximately 17.26 km² and the project could benefit their 264,054 inhabitants (Instituto Nacional de Estatística, 2019). As a first step in the planning process, the neighbourhoods have been prioritized under various criteria including: climatic vulnerability, poverty and poor access to basic infrastructures. These neighbourhoods are dense with a low green and recreational space distribution and most of the residents have limited or no access to water supply, solid waste collection, energy or sewage. In addition, the areas suffer from floods, given the poor drainage system (Conselho Municipal de Maputo, 2021).

In this context, we approached the public spaces as important elements in the informal urban fabric, essential as a meeting place for exchange, activity and recreation, just as much as for commuting and the fulfilment of everyday needs. The current COVID crisis has highlighted the many benefits of well-proportioned and organized public spaces but also the risks of poorly maintained, unhygienic and overcrowded places.

In an integrative diagnostic, the CMM has identified 107 existing public spaces spread over the 20 neighbourhoods in the project area and compiled a data set of detailed analyses of their condition and uses. The study revealed that those public spaces suffer from a lack of urban furniture and basic infrastructures, such as public toilets and shaded areas. In addition, most of them are in degraded conditions because of the lack of maintenance policies and flooding in rainy seasons is, for many, a reoccurring issue.

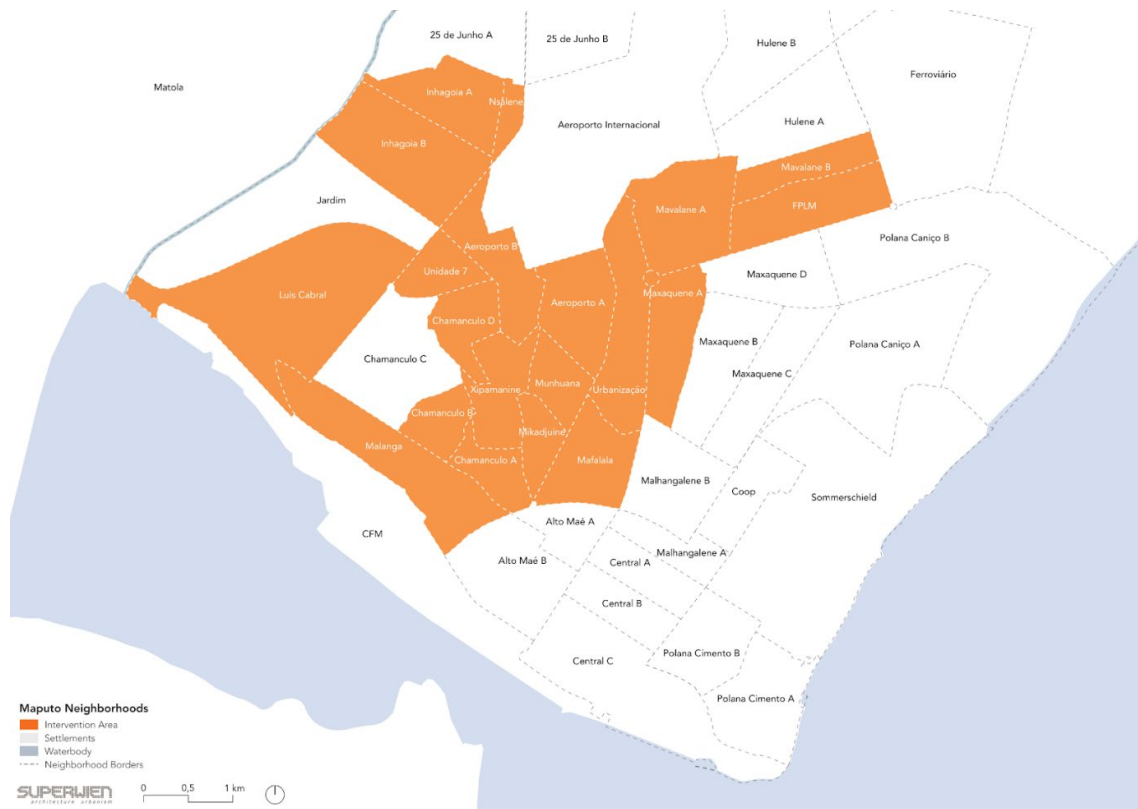


Figure 1. Map of Maputo highlighting the project area of 20 neighbourhoods (Superwien, 2021).

As consultants, it was very important to select public spaces where the rehabilitation would have meaningful impacts in the neighbourhoods and act as important elements in the further improvements planned in the PTUM. Therefore, superwien appraised important aspects of the CMM quantitative data with a focus on the accessibility of and to a) the public spaces and b) the existing and future public transport. To analyse the accessibility, we used “5 minutes walking distance” as a parameter to identify public transport stations, points of interest and road network in the surroundings of the public spaces. The 5-minute walk, which is approximately 400 m in distance, is the amount of time people are usually comfortable walking and can be seen as a neighbourhood unit for social interaction and access to public services, a concept first defined by Perry (1929). Within our analysis, the proximity of the public spaces to the road network ended up being considered the most important criterion for the final selection. However, we also took into consideration qualitative data regarding usages and perspectives from residents in each neighbourhood through surveys, emotional mapping and site visits. The flooding areas were also an important aspect and it became a criterion for the site selection. A GIS-based Multi-Criteria Analysis (MCA) was used to help make the best possible decision by looking at a wide range of factors where multiple favourable solutions may be presented. By taking into account international and local experts’ opinions, six criteria for site selection were determined (see Figure 2).

CRITERIA FOR PUBLIC SPACE SITE SELECTION

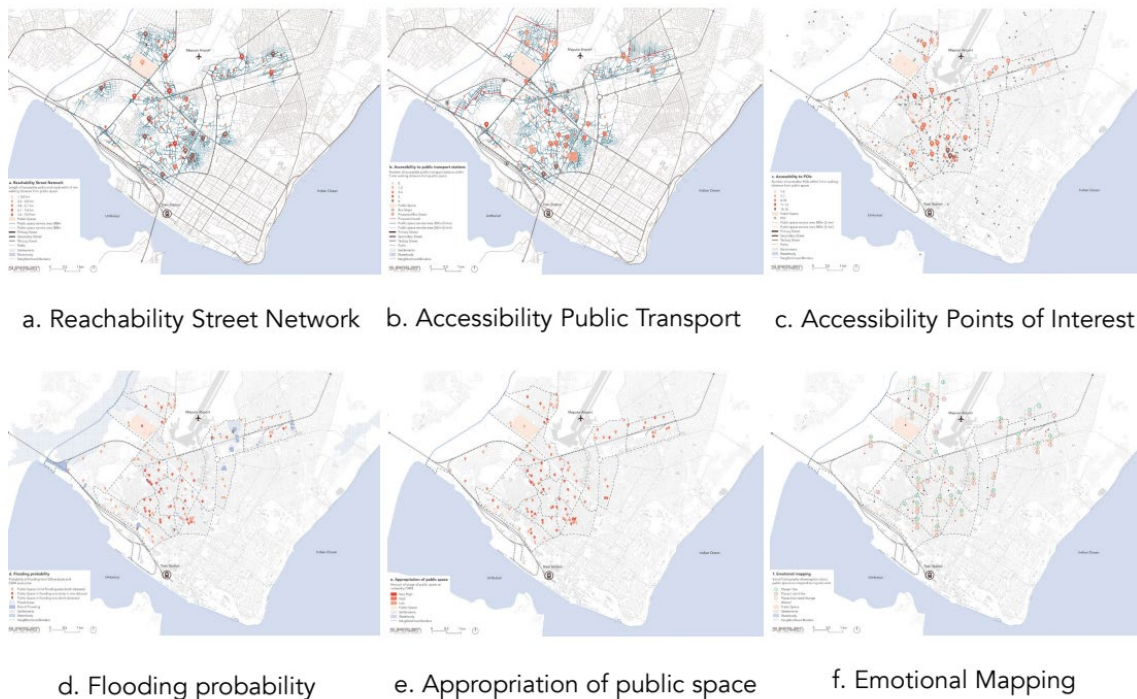


Figure 2. Maps with the results of the six criteria used for the public space selection (Superwien, 2021).

Furthermore, we weighted the importance of the criteria and performed a sensibility test by using different scenarios that provide an overview of the best public spaces for each neighbourhood by altering the importance of different criteria. After a detailed assessment of the different weighting options, we selected the most favourable one as the base for a coordinated assessment and selection with the stakeholders.

This task was an important decision since we wanted to provide them access to quality public spaces for as many and justly distributed within the whole project area. Also, the available public spaces were diverse in size, condition and overall access. Finally, we decided for the access through the street network was the most important factor, which led us to a decision for public spaces with a large range of sizes and well located in their own neighbourhood context (see Figure 3).

Within this process of site selection, the local superwien team started their first co-creative sessions, in the form of a first assessment by spontaneous interactions with emotional mappings and surveys with the local residents in each of the neighbourhoods. However, due to the large size of the overall project area at the time we selected the spaces, it consisted of site visits to all of the 20 neighbourhoods and the application of several participatory tools used in interactions organized together with the secretaries of the barrios.

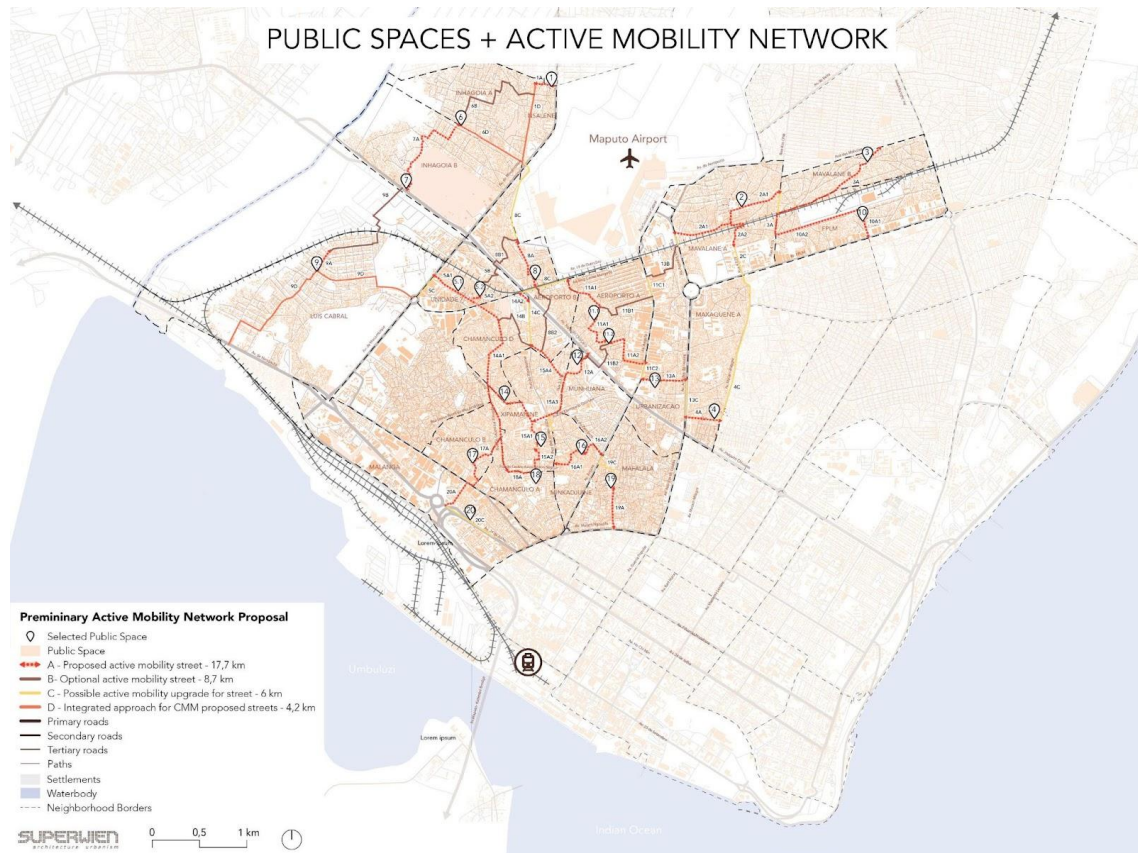


Figure 3. Map with the proposal for an active mobility network connecting the public spaces of the 20 neighbourhoods (Superwien, 2021).

3. A toolbox for the dialog-oriented planning process

Inclusive planning enables the population to take a central role during the development of a project. The participation of locals raises the community's awareness of the importance and benefits of space regeneration as well as other social and economic aspects. In addition, a participatory urban design process promotes a sense of ownership and belonging of the local communities, resulting in the long-term success of the intervention.

Superwien has developed and used participatory design tools that have been developed and used in different parts of the world, mainly in Latin America and the Caribbean, but also in Central and South Asia and Europe. In the heart of the so-called Urban Design Lab lies the integration of locals into the different phases of the design process (Krebs, 2019). These tools deploy creative ways to approach locals and involve them in a planning process including and by doing so, providing qualitative data for the design process. Based on the learnings and examples from previous experiences in many cities of the world, superwien collected and organized participatory tools in a "Maputo Toolbox" (Krebs and Mayr, 2023), which not only describe the hands-on application but also shows in which project phase it can be used, how to combine them in workshop sessions and adapt them for the specific project and local groups.

These tools present different possibilities to engage the public at various stages within a planning process, which follows a representative structure of four phases. The phases are named after their main objective in the stage of the process, the first being “local assessment & scoping” followed by “vision & goals”, “action planning” and closing with “feedback & evaluation” (see Figure 4).

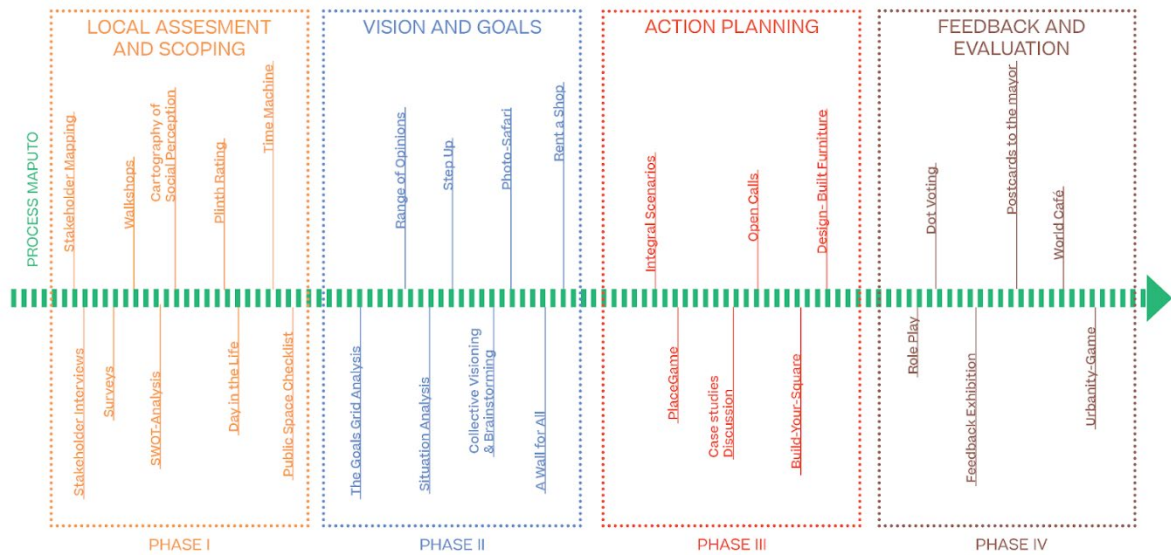


Figure 4. Diagram from the Toolbox showing the different possibilities of tools to be used in participatory sessions in different project phases (Superwien, 2021).

To analyse and assess the whole project area, we formed a local team of architects and urban planners in Maputo, who are an integral part of all project phases. They work on the ground, find the necessary information, conduct essential research about building materials and hold most participatory activities, in addition, they are an essential link between local and international stakeholders.

From the beginning, we focused on including locals in the project development, from local specialists and practitioners, who had a technical perception of the area, to local residents, who will be the future users of the rehabilitated spaces. Through the local superwien team, we were able to learn more about the intervention area, identify the emerging topics and reach important project stakeholders. In order to do so, participatory tools were used to approach the locals, such as: emotional mapping, with which we approached residents and asked how they feel about the public spaces in their surroundings; surveys with locals to better understand the characteristics of the public space’s users; and interviews with key stakeholders, to see the different perspectives to approach the public spaces. This gave us an overview of the area, including the current situation of the public spaces, the difficulties that they have with maintenance, characteristics of their current use and social groups who use them, and development potentials. In addition, the participatory tools supported us in the site selection previously explained. For instance, the output of the emotional mapping was used as a criterion for the site selection.

After the site selection, we felt the need to assess each one of the public spaces selected to get specific information on a small-scale level. We also aimed to involve even more the locals who live in the surroundings of the public spaces and will be their future users. To do so, we chose five public spaces of different sizes (micro, small, medium, large and football field) and searched for local residents, who have a relevant position in the community (such as block chefs) and could help to reach other interested residents to participate in our workshops. We called these residents “multipliers” and set the goal to employ at least one person for each of the twenty neighbourhoods of the project.

With the support of the multipliers, our team organized workshops with the local community in the five pilot spaces (see Figure 5), in order to try out and choose the tools which work the best in these informal settlements of Maputo. We used tools for local “assessment & scoping”, “vision & goals” and “action planning” and grouped them based on the type of community groups we would approach. We also had to adapt some tools to the local reality: for instance, the illiteracy of most of the participants and having only activities in open spaces, given the COVID-19 regulations, were important factors to which we had to adapt some tools.

PARTICIPATION IN PHASE 2
PILOT NEIGHBORHOODS



Figure 5. Participatory activities with locals of the five pilot neighbourhoods (superwien, 2021).

Another interesting aspect was to make additional activities for specific community groups, such as women, children and community representatives. This allowed us to

hear different voices and see the perspective of minorities, resulting in a more integrative approach. The different perspectives can be exemplified in the workshops of one public space: in the workshop with the general population (mostly men), they said that the space is rarely used by women. However, in the workshop with women, they said that they use the space a lot, but mostly when men are not there.

To approach different community groups, it is also important to identify which tools work the best for each group. For the women's workshops, we tested many tools from the World Bank's "Handbook for Gender-Inclusive Urban Planning and Design" (World Bank Group, 2020), which were very successful in approaching gender minority issues and needs. Regarding children, creative and playful tools work the best to keep them interested and comfortable to share their opinions. Additionally, we developed our own tools, for example an urban game, called "Build-your-Square", which did not work well with the other community groups, but was very successful with the children and youth and enabled us to add their perspectives and wishes in our final design of the public spaces.

During the experimental pilot phase for creating the tailor-made co-creation tools for the design process in Maputo, we developed a method to apply the learnings of each pilot in the following one (see Figure 6). By doing so, we tested the tools and analysed which ones worked better in which community group. According to the lessons learned, we adopted the respective tools and found the best combination of co-creation tools for the upgrading of public spaces in informal settlements.

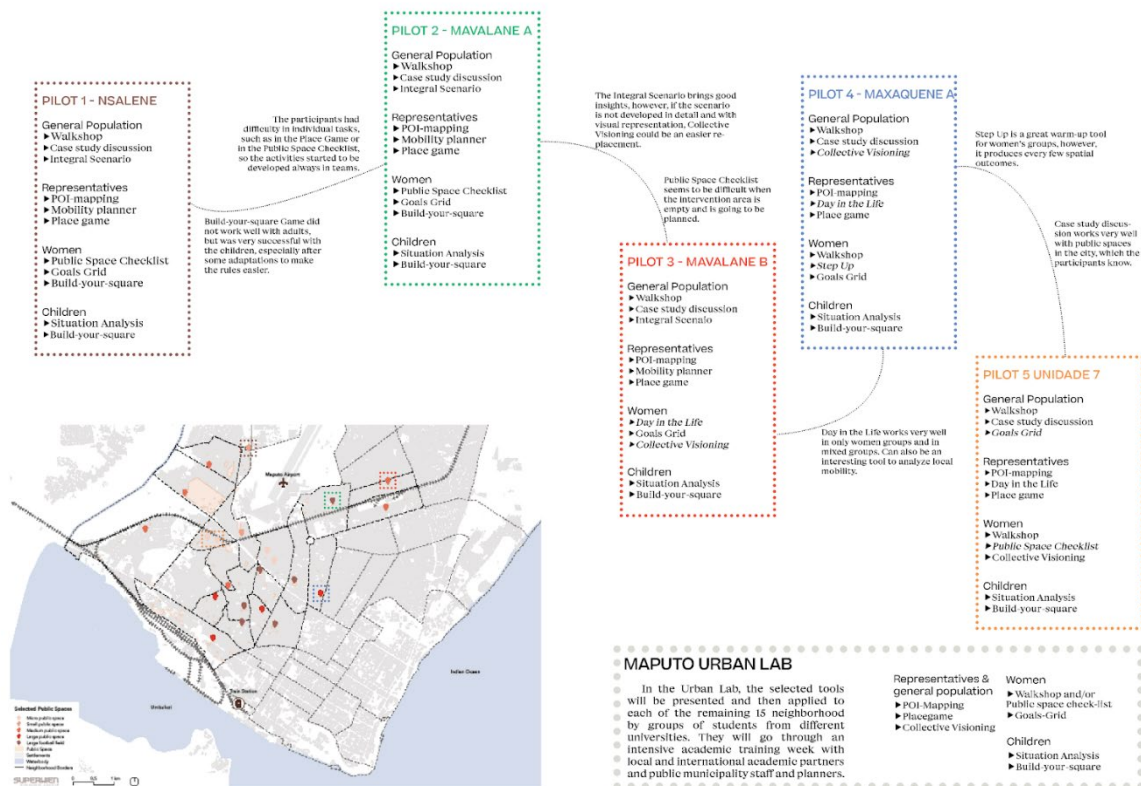


Figure 6. Diagram showing the tool selection process and how the tools changed until the final combination used in the Maputo Urban Lab (superwien, 2021).

4. The Maputo Urban Lab

With the learnings from the pilot neighbourhoods and with the support of the multipliers, we were able to identify which tools were successful in involving the local community on the project and provided us with important results for the following tasks. To apply these tools in the remaining 15 neighbourhoods, we looked for local architecture students from different universities, who would be interested in expanding their knowledge of participatory urban design in being part of our team. Our idea was to organize an “Urban Design Lab” and engage the students in an urban think tank over several days of lectures, workshops, urban cinema and other activities as a space to connect and exchange ideas about the project area.

The Maputo Urban Lab has as its main goal to bring together the stakeholders of a project, in order to approach multidisciplinary topics and find solutions regarding urban challenges, as well as co-create design ideas. The goal was to involve even more locals in the project and give students the opportunity to apply participatory tools in a local project. We also expect that, with this strong background in participatory urban design, these students would feel comfortable in applying the participatory principle in many of their future work as architects and urban planners of Mozambique.

During the Maputo Urban Lab, we brought together specialists from superwien from Vienna and Maputo, CMM and more than 35 local students and 15 multipliers from the target neighbourhoods. The Urban Lab that was co-organized by CMM, superwien and the Ordem Dos Arquitectos de Moçambique (OARQ) enabled us to share the knowledge of each one of these parts together to think about the city of Maputo and its future. The Urban Lab had four days of workshops, from Friday to Monday, in different locations of Maputo, including places in the intervention area.

Among those activities, CMM shared their findings and contributions to the project, giving an overview of the PTUM’s goals, what has been done so far regarding the public spaces we were approaching. Our local team explained in detail our findings and the site selection, as well as the importance of participatory planning in the process. In addition, our Vienna team brought many examples of participatory planning in different cities of the world to show this concept can bring meaningful results in various contexts. Online lectures, movie sessions and discussions with locals and international specialists were organized who gave inputs to the students and visitors.

To prepare the students for their workshops in the remaining 15 neighbourhoods, we demonstrated the use of the selected participatory tools. We explained in-depth the participatory process and tools, focusing on our learnings from the pilots. The students met the multipliers and, with their support, put those tools into practice in the neighbourhoods and presented their findings to our team (see Figure 7). Sending students to 15 irregular settlements of the city and organizing multiple workshop sessions with locals in two was not an easy task. But even with unexpected events and issues, the students managed to apply the tools and achieve positive and relevant results in all 15 neighbourhoods. With their work and support and a dialog-oriented approach, we managed to collect information, ideas and visions of the public spaces to be intervened. We included locals of all the locations in our design process, with the focus laid on the co-creation of designs. The participatory tools applied with the local communities allowed a collaborative environment for deciding on important elements their future public spaces shall have.

PARTICIPATION IN PHASE 2
MAPUTO URBAN LAB



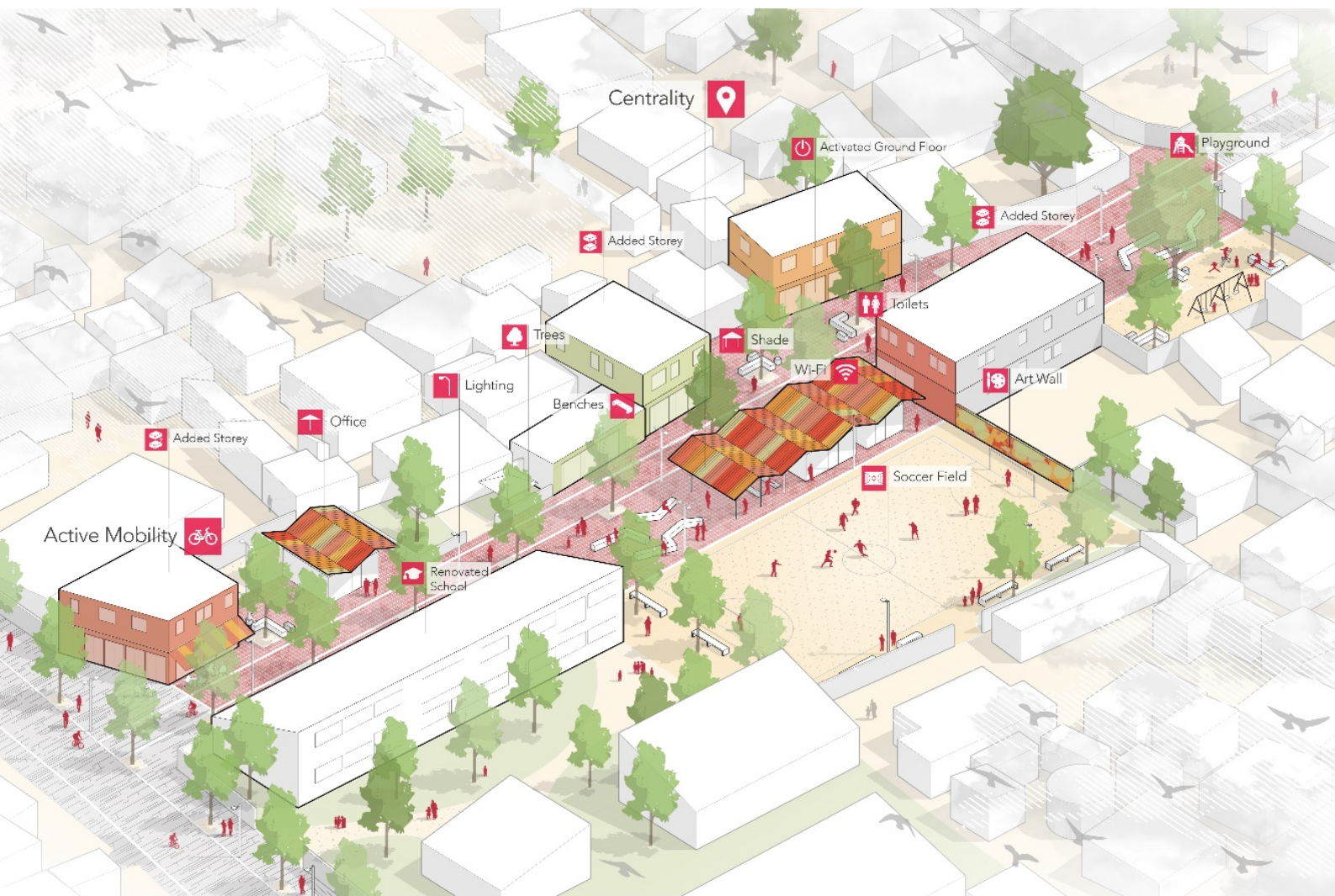
Figure 7. The various activities with local architecture students in the Maputo Urban Lab (superwien, 2021).

The most important result, however, was to open discussion and dialogues with the students and local participants after each activity, in order to see how different knowledge could be translated to the local reality. This step was successfully achieved with the active participation of the students in the discussions, who brought relevant information about the culture and costumes of Maputo society, information about material and construction costs, vulnerable groups of Maputo's irregular settlements and much more. Finally, the students had the opportunity to interpret their experiences and findings in analysis workshops. Through a rapid design session, they also worked on their own design for the public spaces they visited and translated the communities' wishes and needs in a meaningful project, which was presented for us, the CMM and representatives of the World Bank.

5. Next steps

The Maputo Urban Lab was an exciting experience that allowed the exchange between practitioners, the chamber of architects, university students, local residents and the municipality. Many ideas, concepts, designs, comments and more were collected that had to be organized and processed. The task of designing quality public spaces for such

a large project area is a challenging topic, where many stakeholders have differing opinions that have to be taken into account. Working with this variety of opinions is great input for an inclusive design process and the design outcomes show how an inclusive design process has successful results (see Figure 8-10). We envision articulated urban spaces designed as centralities for each of the 20 neighbourhoods and accessible through an active mobility network. We identified seven key design elements and strategies to be applied in the context of each of the 22 public space designs.



Maputo | Maxaquene A | Future Development

SUPERWIEN

Figure 8. Design of a public space rehabilitation in Maxaquene A within the participatory process (superwien, 2022).

The first strategy was to maximize public spaces and area densification, which relates to the low number of public and open spaces and their limited size. The second key design element was a community porch as a centrepiece for the local community of each neighbourhood in form of a multifunctional community centre that combines many

functions, such as an office for the municipality, toilets, a lecture and workshop space and a library. The third strategy was the economic reactivation of the area, acknowledging the importance of encouraging commercial activities in public space designs and multifunctional community spaces, specific marketplaces for both formal and informal commerce and the activation of the existing ground floor. The fourth key element was the use of diverse and inclusive urban furniture not to limit the possible usage of the public spaces to one age, gender, or functional group. This is shown in the design of specific sports zones, multipurpose fields, playgrounds for children, Ntxuva (African chess) tables for different age groups, varied seating arrangements for young and old people, and market stalls for street traders, among others. Green infrastructure is an essential element of sustainable future development. Therefore, planting trees and using sustainable materials became the fifth urban design strategy. Local co-creation and maintenance was the sixth strategy; it ensures that each public space has some leeway for local adjustment, although the design is structured similarly for all locations. This strategy encouraged the design of elements that might foster a local identity for the area or could be developed and built by locals, thus strengthening their connection with the place. Last but not least, security aspects and the integration of basic infrastructure in the design should be the foundation of all designs, from the Active Mobility Network to public spaces.



Figure 9. Design of a public space rehabilitation in Maxaquene A within the participatory process (superwien, 2022).

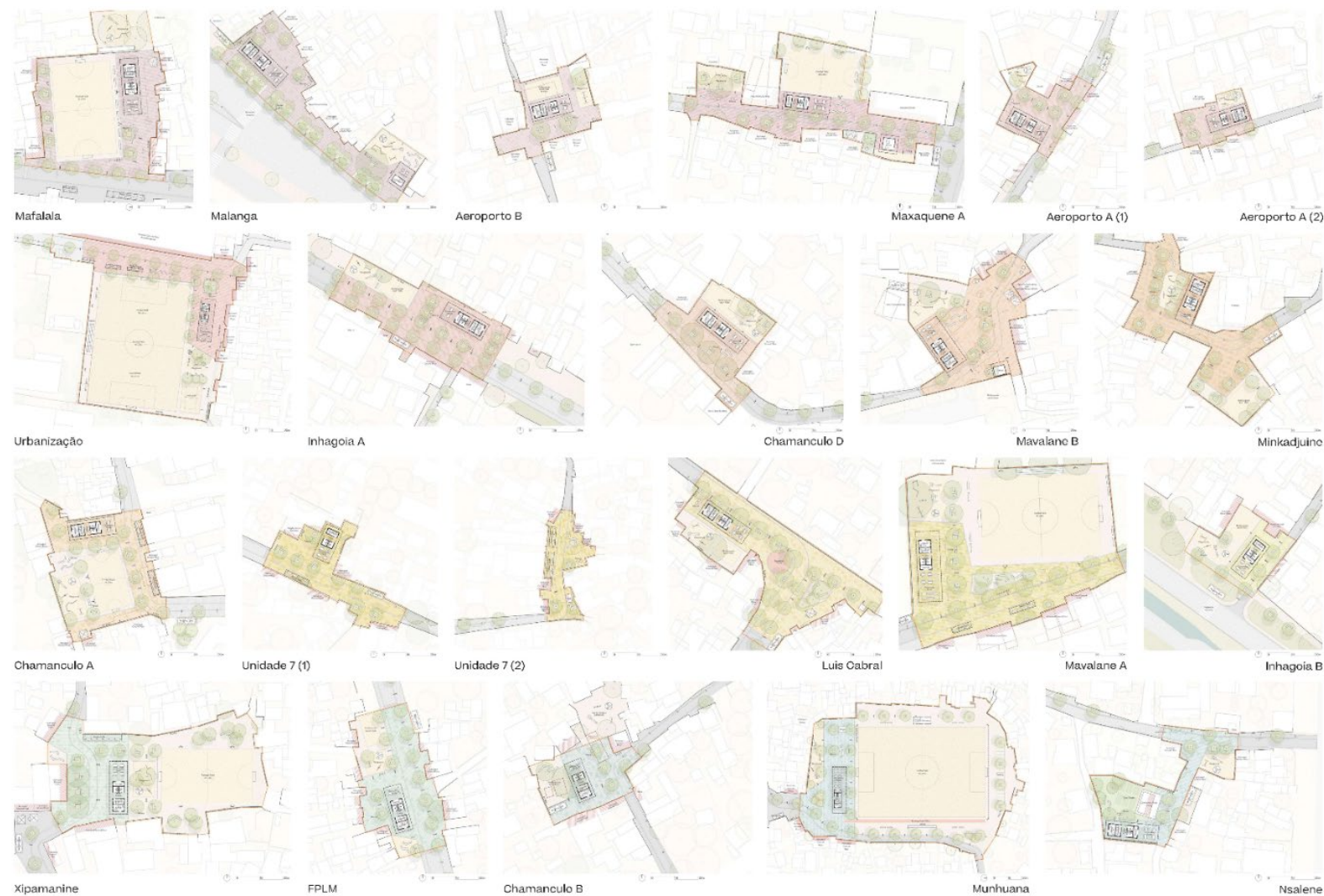


Figure 10. Compilation of all 22 public space designs in the different neighbourhoods of Maputo (superwien, 2022).

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