

Design for Resilience
Building Back Better

Urban Upgrading in ALWIDAI CREEK WHERE

8th ICBR Lisbon | Nov 2018
Building 4Humanity
DESIGN COMPETITION

Category 2:
Resilient Projects (Unbuilt)



Team Project Coordinator(s): Dr. Muna M. Eltahir, Tasneim O. M. Gaafar
Team Members: Zainab O. M. Gaafar, Abrar Abdallah Ahmed Elmustafa
Project Location: Khartoum - Eliwdai Village Team Code: B4H-DC2170

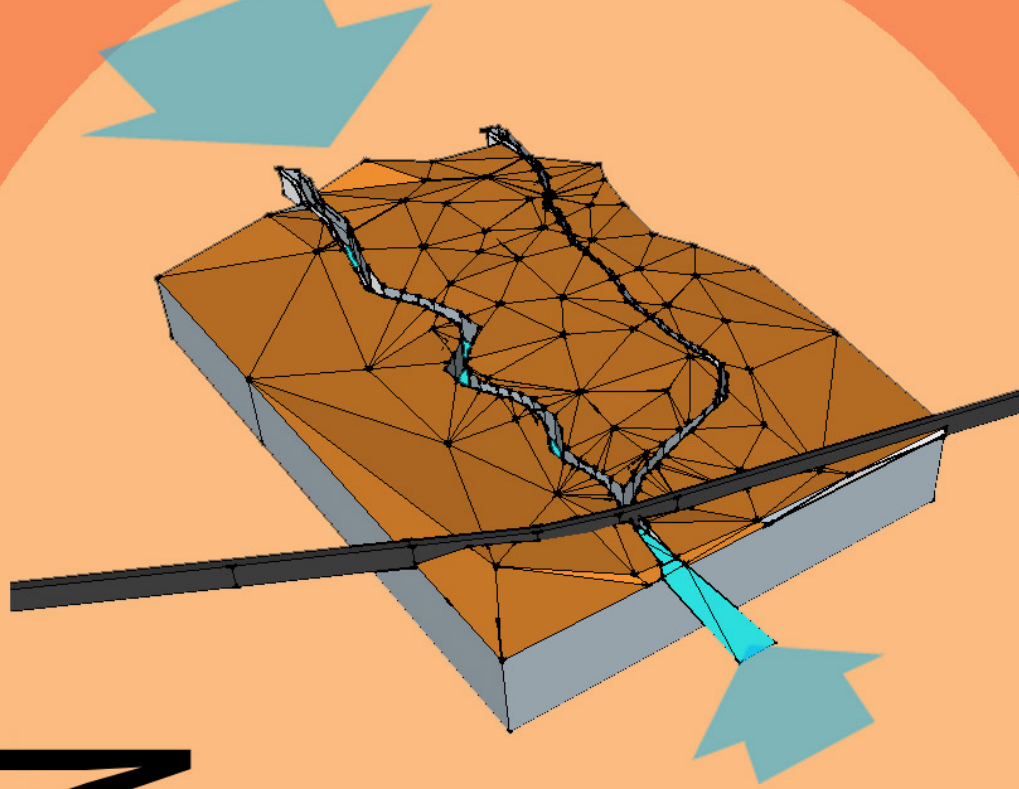
Alwidai is a village south of Khartoum that has been merged into the city due to the rapid expansion of Omdurman. The area is a flood prone zone as it falls on the path of a seasonal creek.



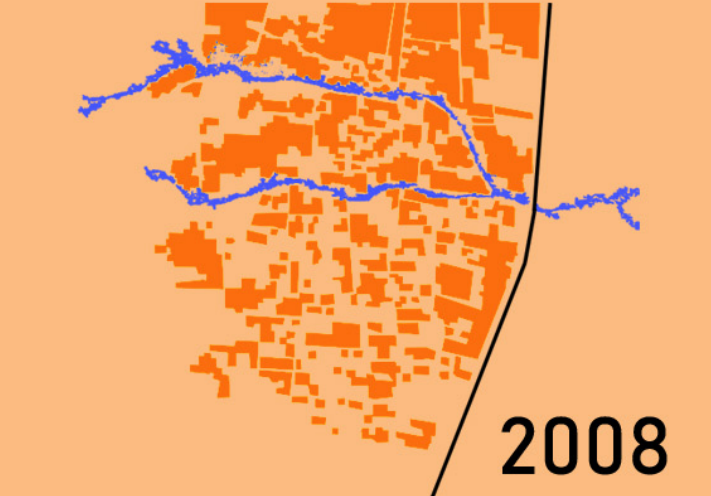
Location of Alwidai Village

Al-Widai Creek which starts from the mountains, north of Kordofan and passes through several localities before its last destination to the Nile .

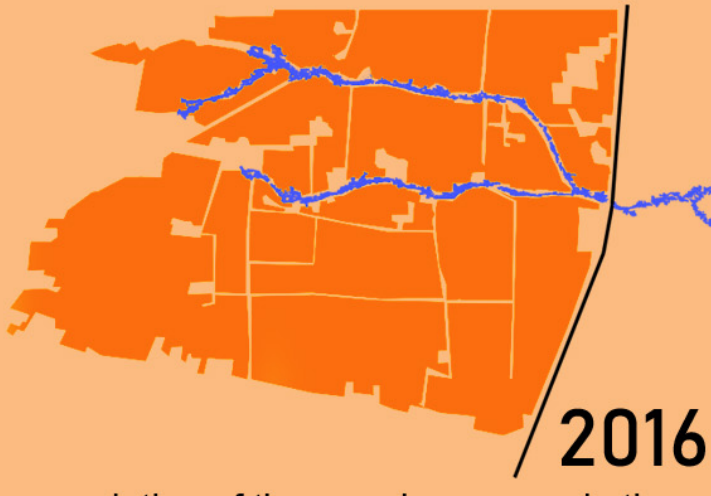
Flooding comes from the west-ern rainfall heading east through Alwidai Creek



The creek brings in clean water from the White Nile when it's level rises during the rainy season



2008



2016

The population of the area has grown in the past couple of years despite it being a flood prone area

WHY

The effect of these floods has grown in recent years due to the increase of inhabitants that settled in the area informally with no consideration to the natural water pathways. The results were disastrous as shown in the floods of 2008, and 2012 when hundreds of houses were destroyed and many people were left homeless for months.



* In addition to destruction of the built environment, Alwidai as an informal settlement lacks basic services including schools, healthcare centers and public spaces.

*While the informality takes a grid shape and is relatively organized it lacks proper connectivity. The area around the main creek is polluted and unattractive.

THE CONCEPT

The concept for the project uses urban upgrading to build a resilient community. This approach includes examining the local social, economic, physical and environmental characteristics of the area and providing integrated urban solutions that can be replicated throughout the settlement.



A plantation of Acacia trees is introduced as a barrier to break the flooding before it reaches the settlement. Acacia trees grow locally and are known for their resilience and ability to withstand flooding for long periods of time.



Use of materials: using earth architecture including burned clay bricks as local materials that is %100 reusable and available in the area with simple building designs that can be built and replicated by local builders.



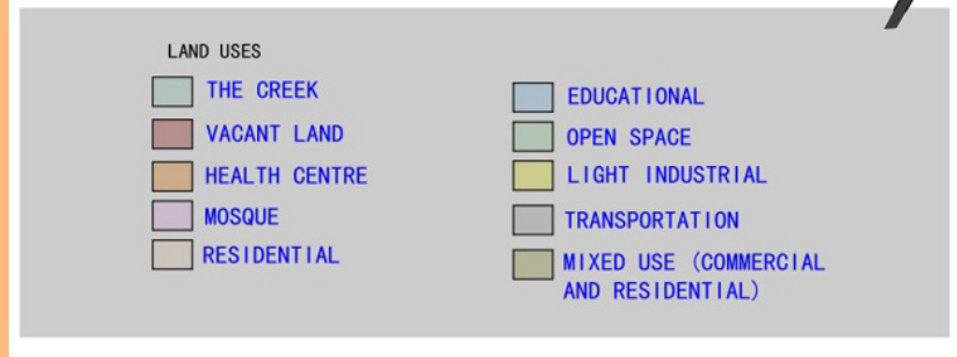
OUR GOALS

* **Social Integration:** The project aims to involve the community in the building and upgrading process Using the Nafeer concept (building together) which is traditional in Sudan.

* **Sustainability**



EXISTING SITUATION



ALBARBAEN ROAD: UNSEFTY AND HIGH CRIME ROAD

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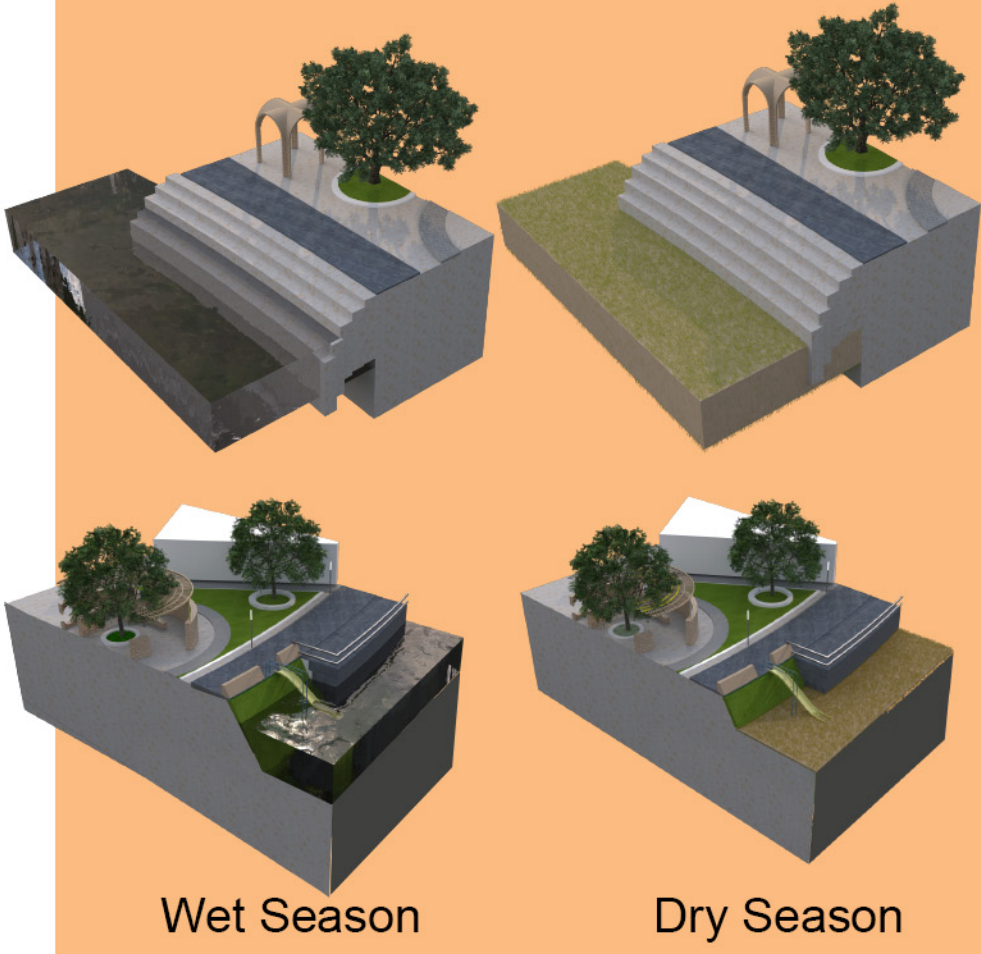
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The Solutions are divided into two zones:

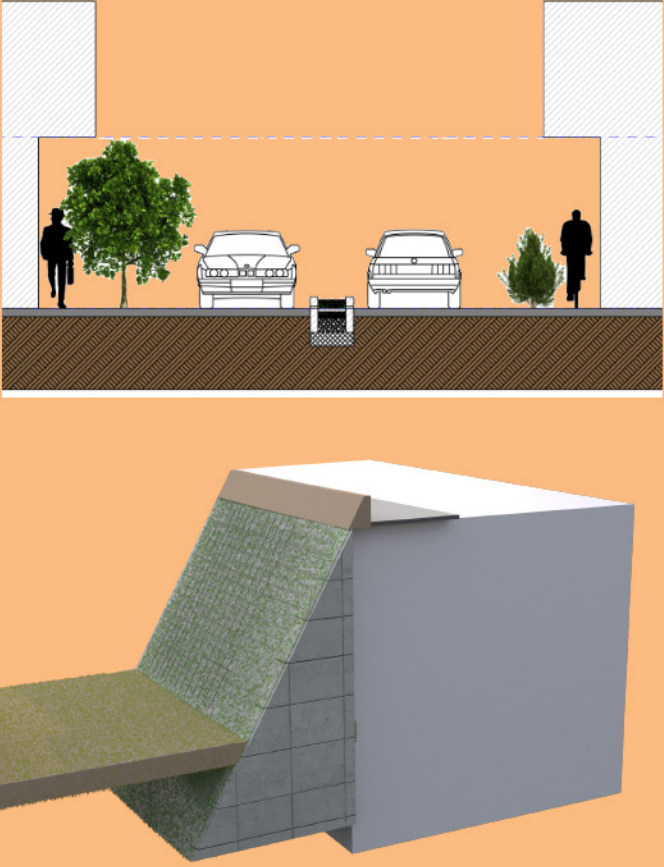
zone A is the western boarder of Alwidai where the water hits first. The proposal aims to break down the water's speed and direct it into particular channels to minimize the impact on the buildings.

Zone B is the intersection of the two main creeks. This area is redefined using the creek as a focal point for various commercial, recreational and social activities to bring the community together and reshape the surrounding area.

THE DIFFERENT ACTIVITIES ACCORDING TO DRY AND WET SEASONS



STREET DRAINAGE AND CREEK IMBACKMENT TREATMENT

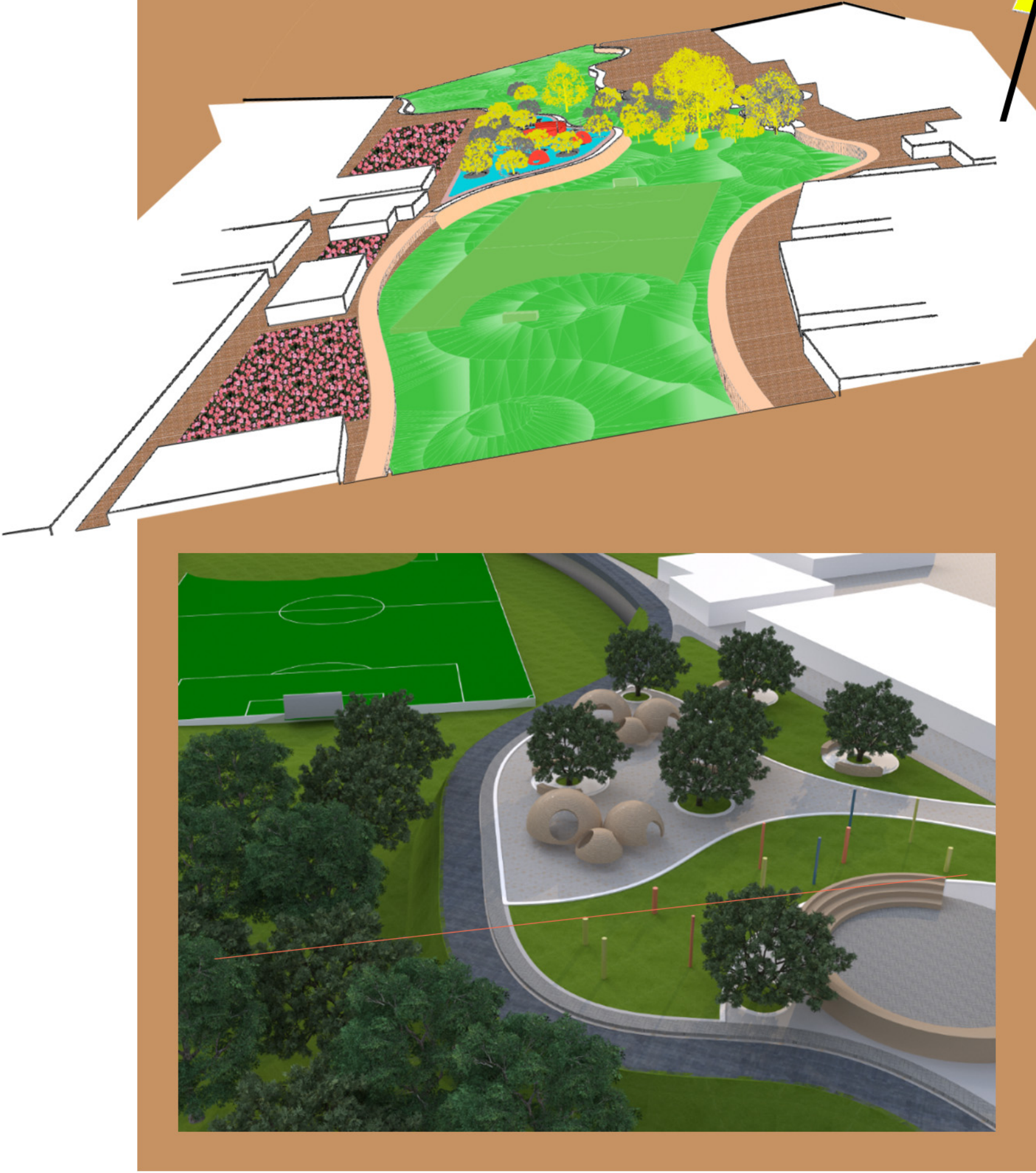


FUTURE INCLUSION OF RESIDENTS IN COMMERCIAL ACTIVITIES



ZONE ONE: A FAMILY FRIENDLY SEASONAL PARK

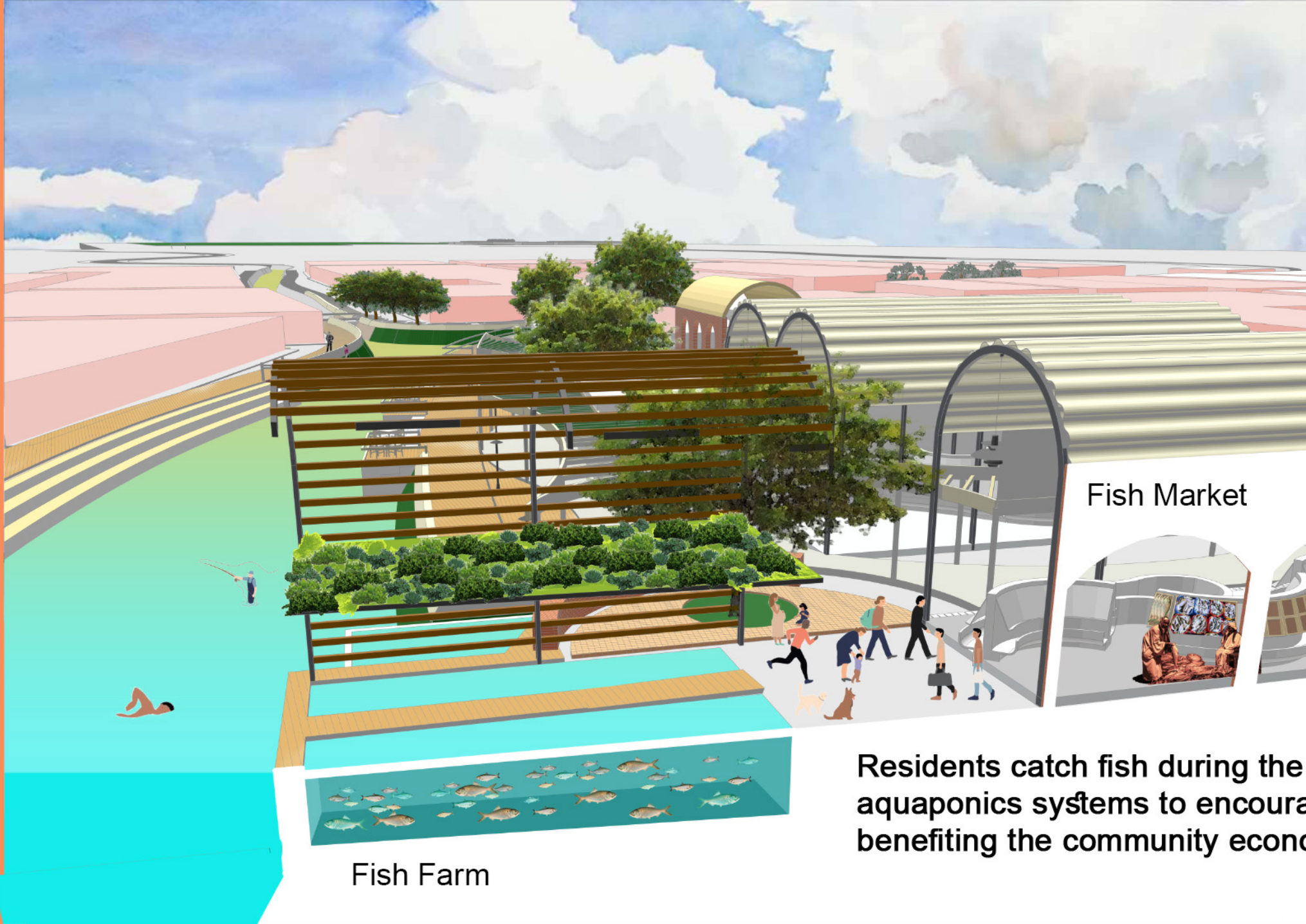
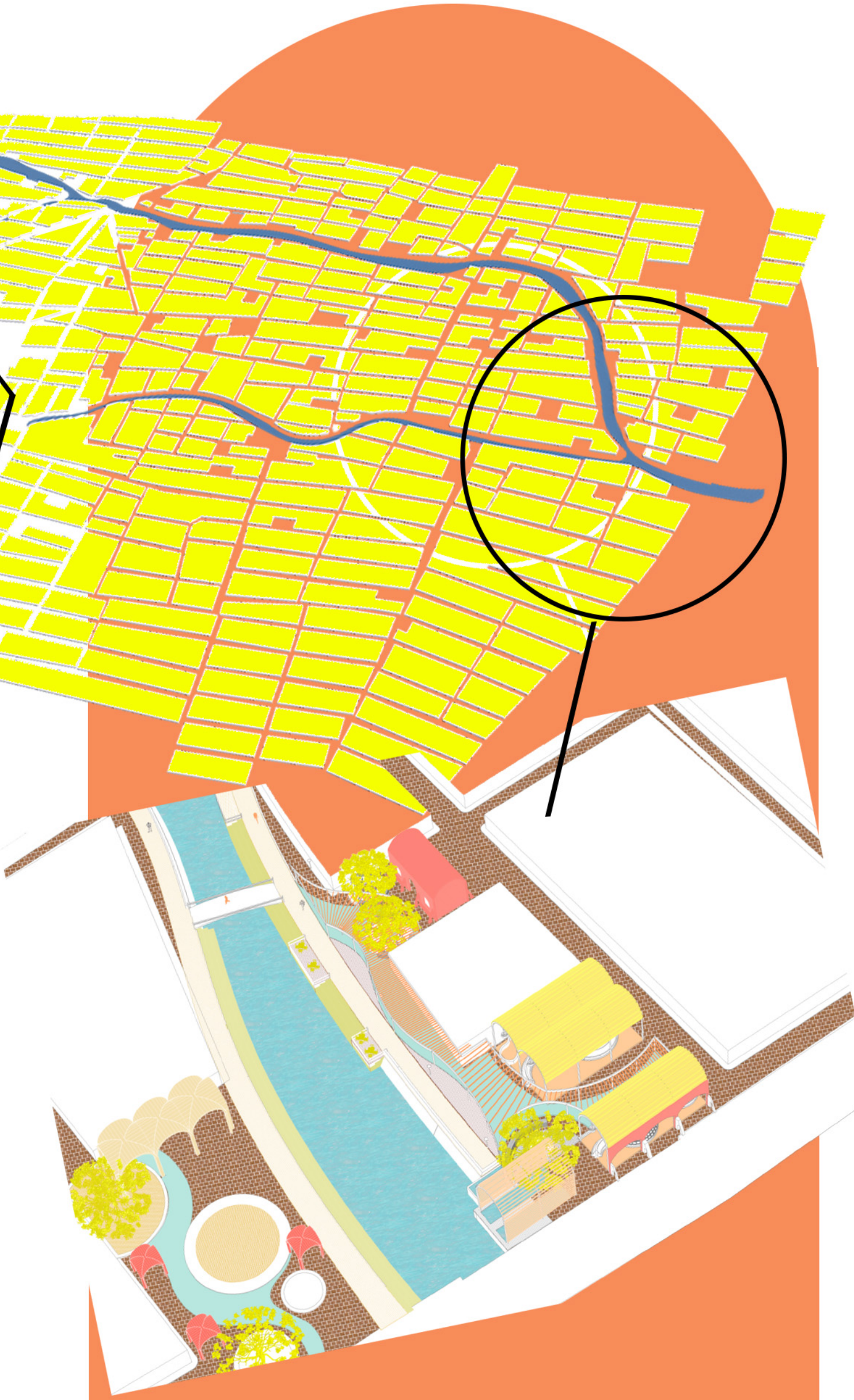
A family seasonal park is designed as a large public space to make use of the large amounts of water while adding a much needed public space for the inhabitants



ZONE TWO: A MIXED USE AREA

Economic Viability: A summer festival is proposed to take place at the creek area during the rainy season.

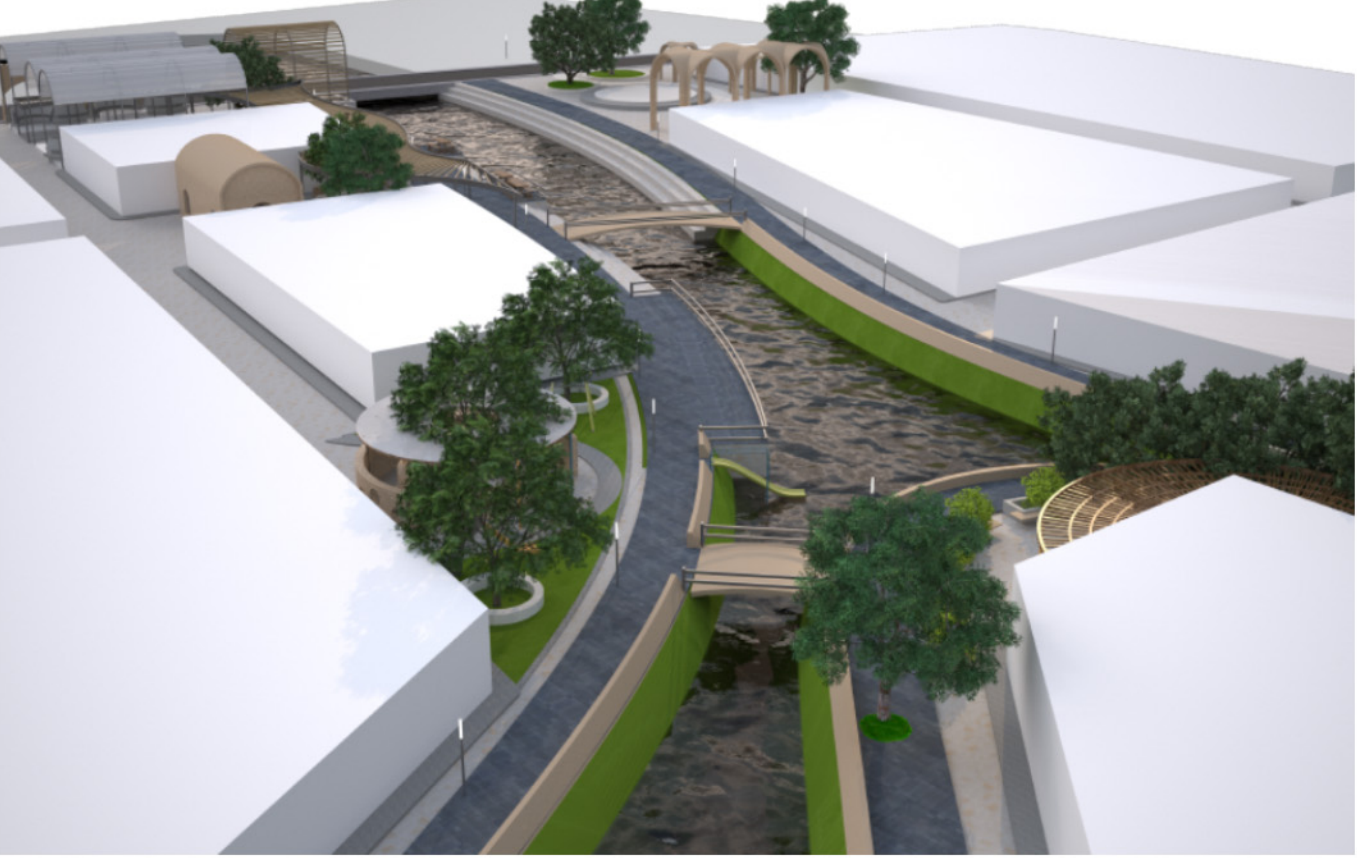
Fishing and sport activities will take place in the area & the surrounding residential units will accommodate cultural, recreational and service activities by using part of the house as a restaurant, café, shop or event venue.



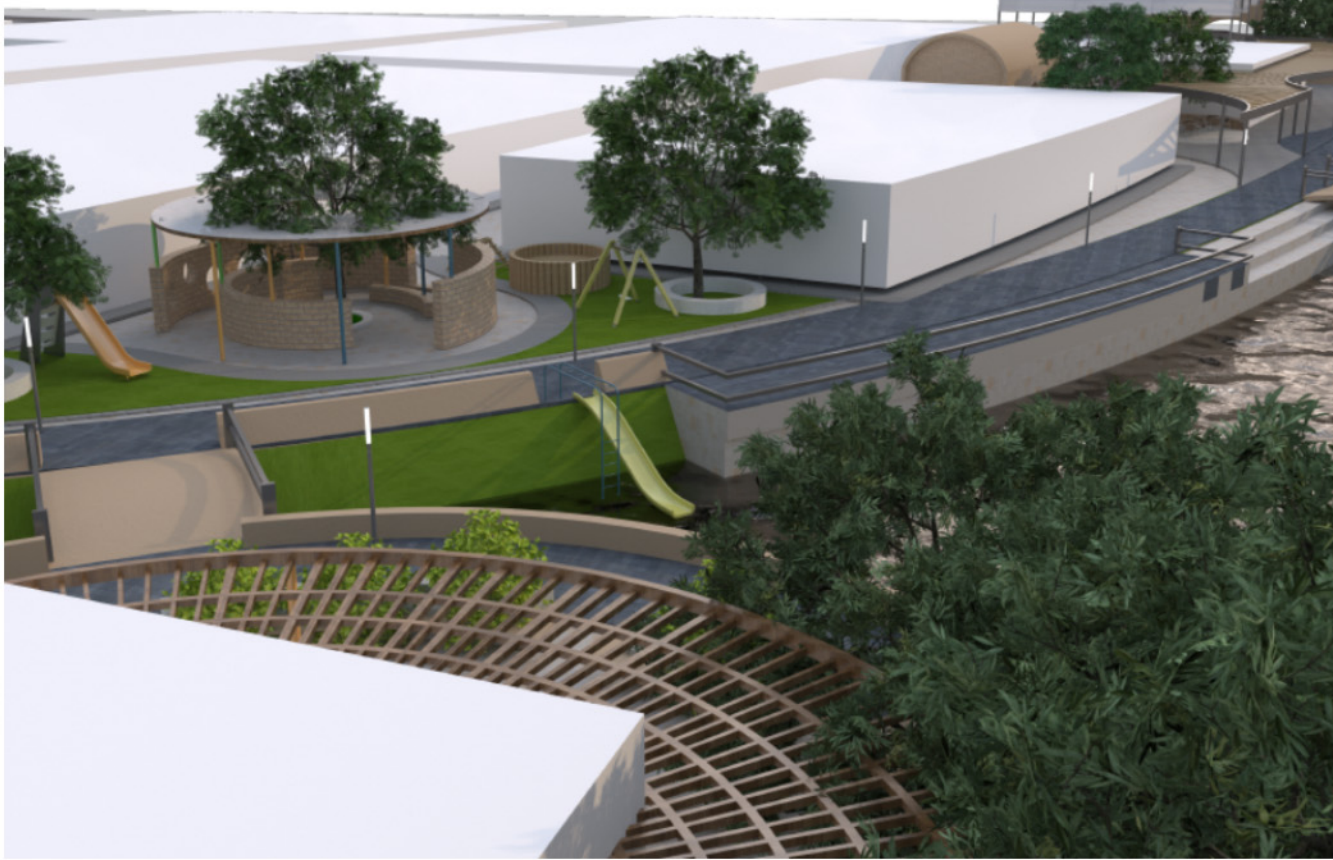
Residents catch fish during the rainy season. A fish market is designed with aquaponics systems to encourage fish production throughout the year while benefiting the community economically.



The creek is used during the dry season for horse riding, play-grounds and as a social space for people



Pedestrian bridges connect the banks together during the rainy season



Multiple zones for residents from all ages and interests