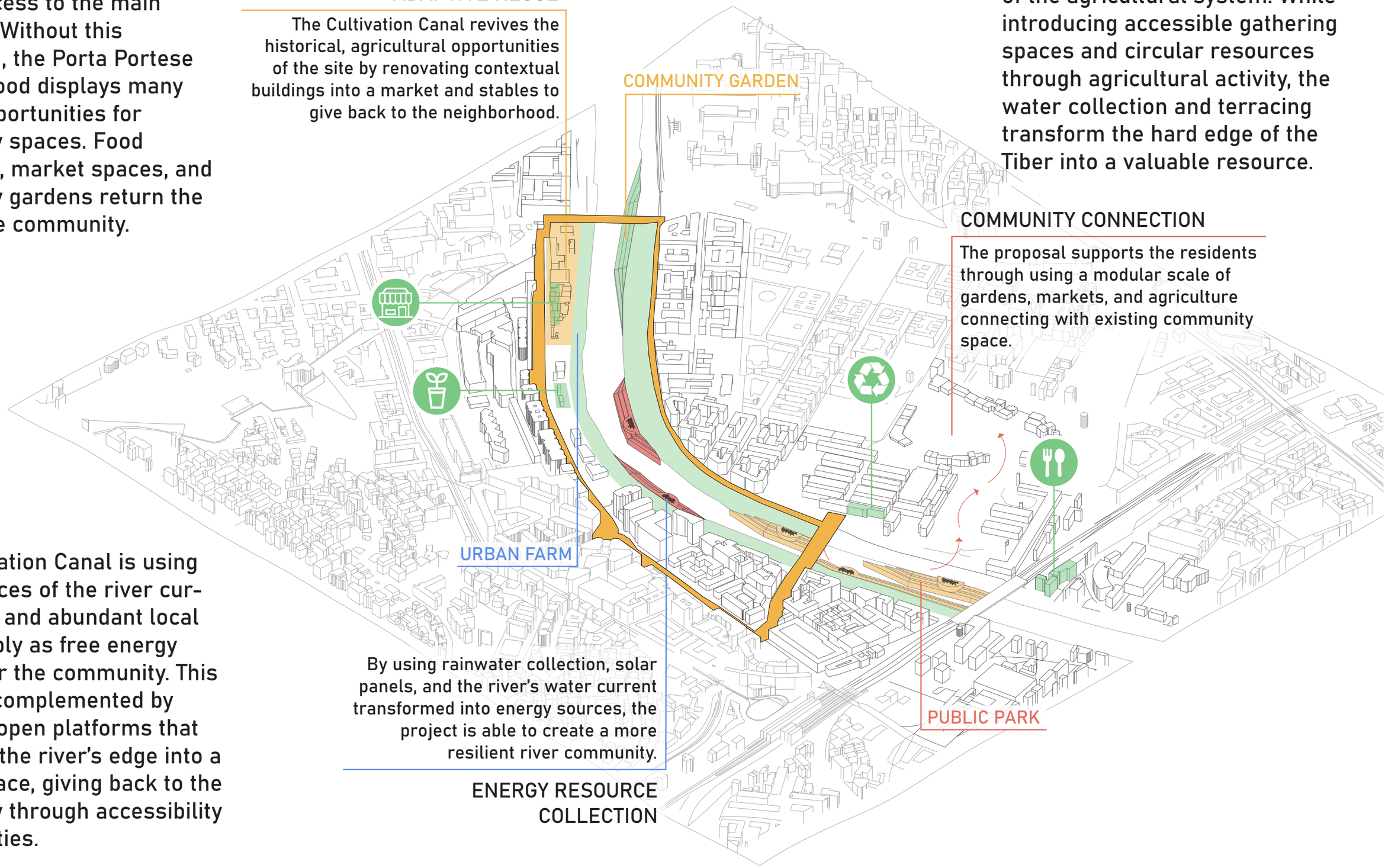
CULTIVATION CANAL

The design of modern retaining walls, intended to prevent flooding, eliminated the Roman access to the main waterway. Without this connection, the Porta Portese neighborhood displays many missed opportunities for community spaces. Food production, market spaces, and community gardens return the Tiber to the community.

The Cultivation Canal restores a more gradual elevation change from the river to the neighborhood, expressed through the historical renewal of the agricultural system. While introducing accessible gathering spaces and circular resources through agricultural activity, the water collection and terracing transform the hard edge of the Tiber into a valuable resource.

ADAPTIVE REUSE

The Cultivation Canal revives the historical, agricultural opportunities of the site by renovating contextual buildings into a market and stables to give back to the neighborhood.



COMMUNITY CONNECTION

The proposal supports the residents through using a modular scale of gardens, markets, and agriculture connecting with existing community space.

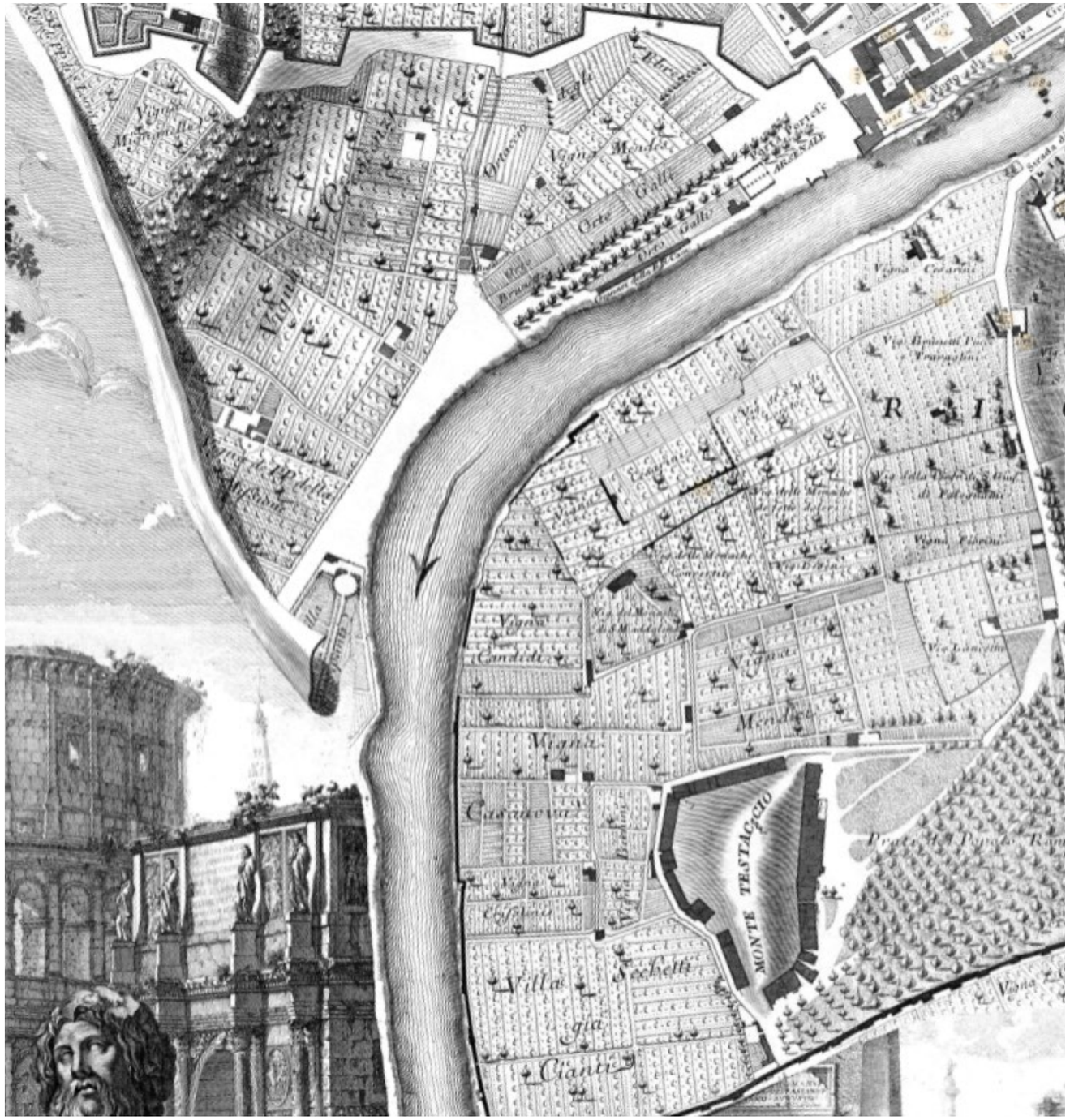
The Cultivation Canal is using the resources of the river currents, sun, and abundant local water supply as free energy sources for the community. This is further complemented by the public open platforms that transform the river's edge into a useablespace, giving back to the community through accessibility and amenities.

By using rainwater collection, solar panels, and the river's water current transformed into energy sources, the project is able to create a more resilient river community.

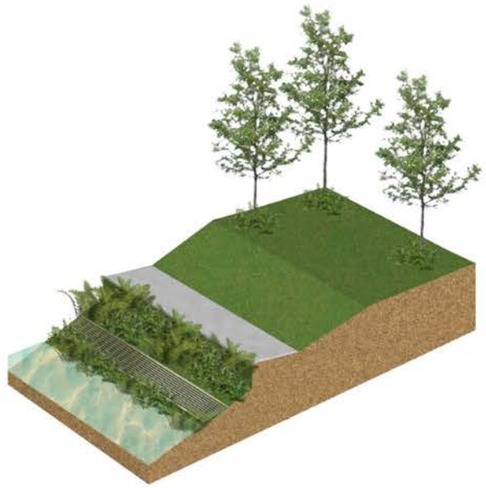
ENERGY RESOURCE COLLECTION

ARCHITECTURAL QUALITY AND HERITAGE

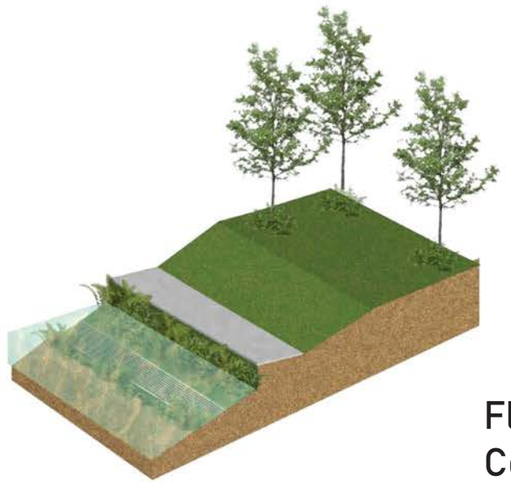
PROPSAL IS DERIVED FROM THE EXISTING HISTORICAL FARMLAND AND AGRICULTURE



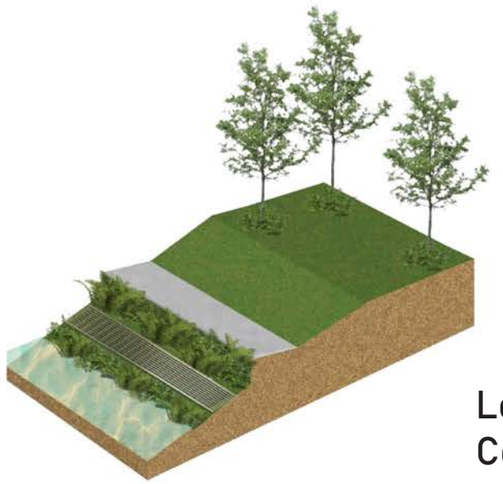
(Nolli Plan of Rome 1748: extensive farmland once lined the Tiber embankments)



Post Flood Condition



Flood Condition

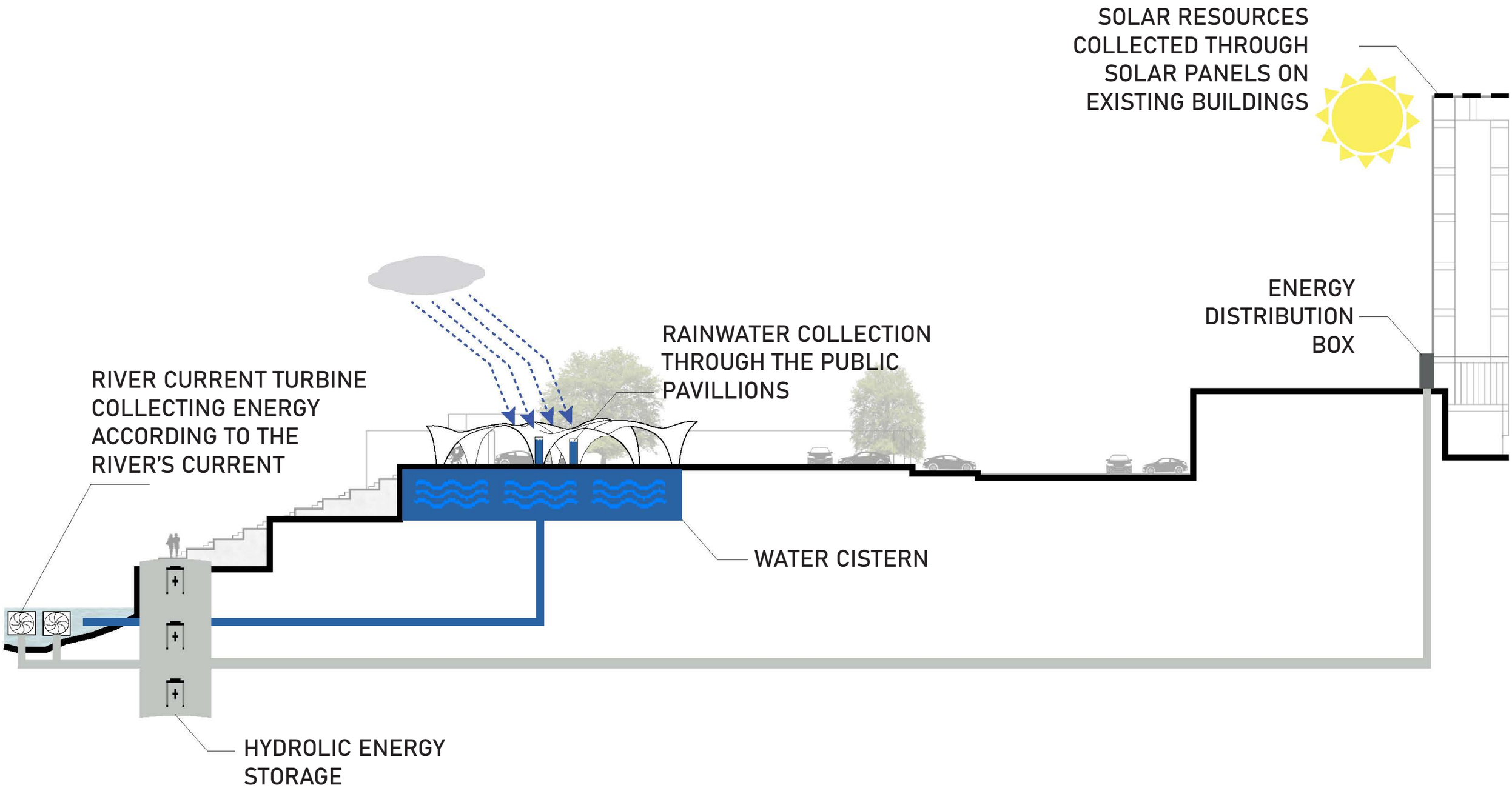


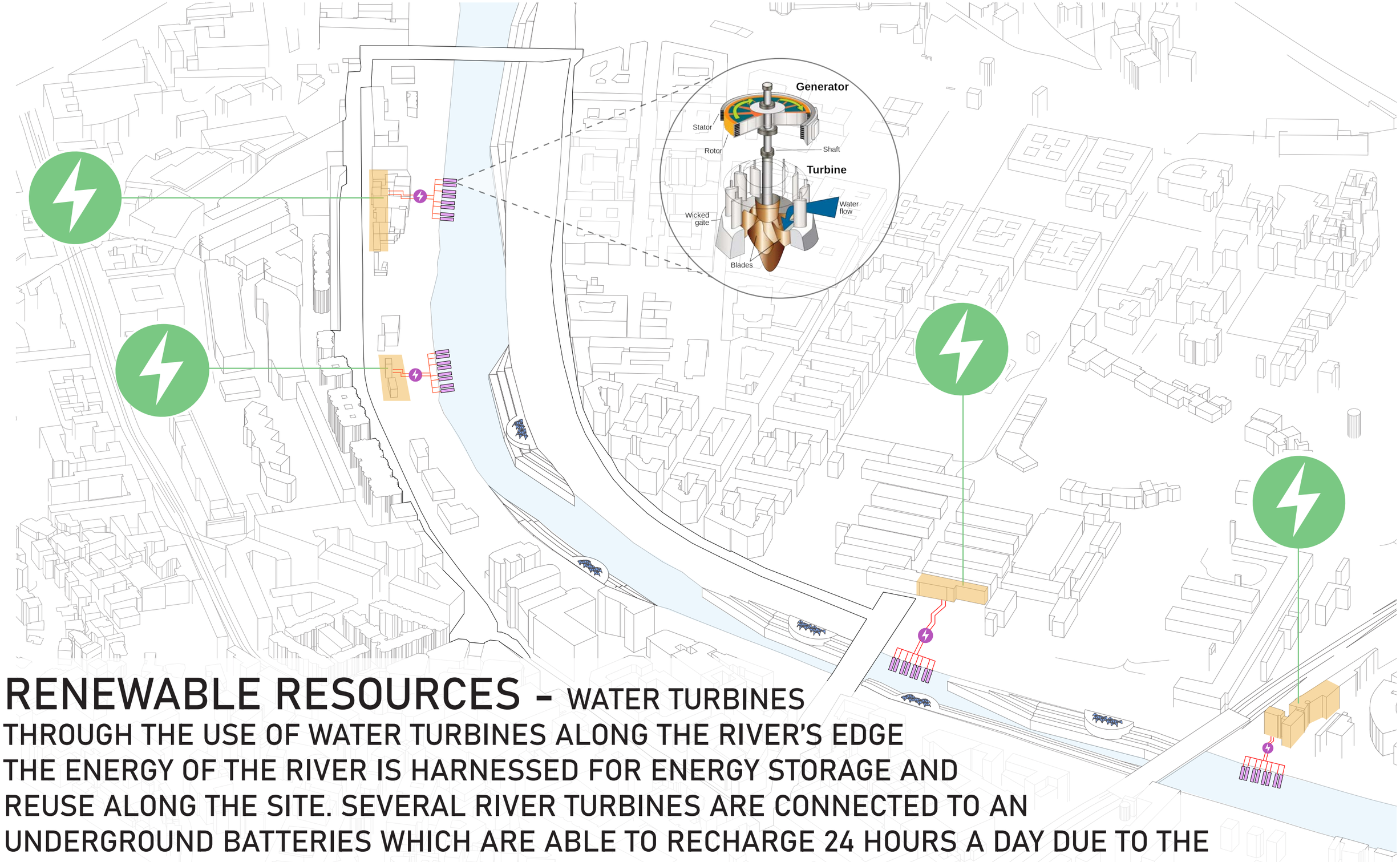
Low Water Condition

THE PROJECT TAKES INTO CONSIDERATION THE HISTORICAL FLOODING OF THE TIBER RIVER THROUGH A RIPARIAN EDGE CONDITION

CLIMATE RESILIENCE

THROUGH THE USE OF RAINWATER COLLECTION, SOLAR PANELS, AND WATER TURBINES, THE PROJECT IS ABLE TO CREATE A MORE RESILIENT RIVER COMMUNITY



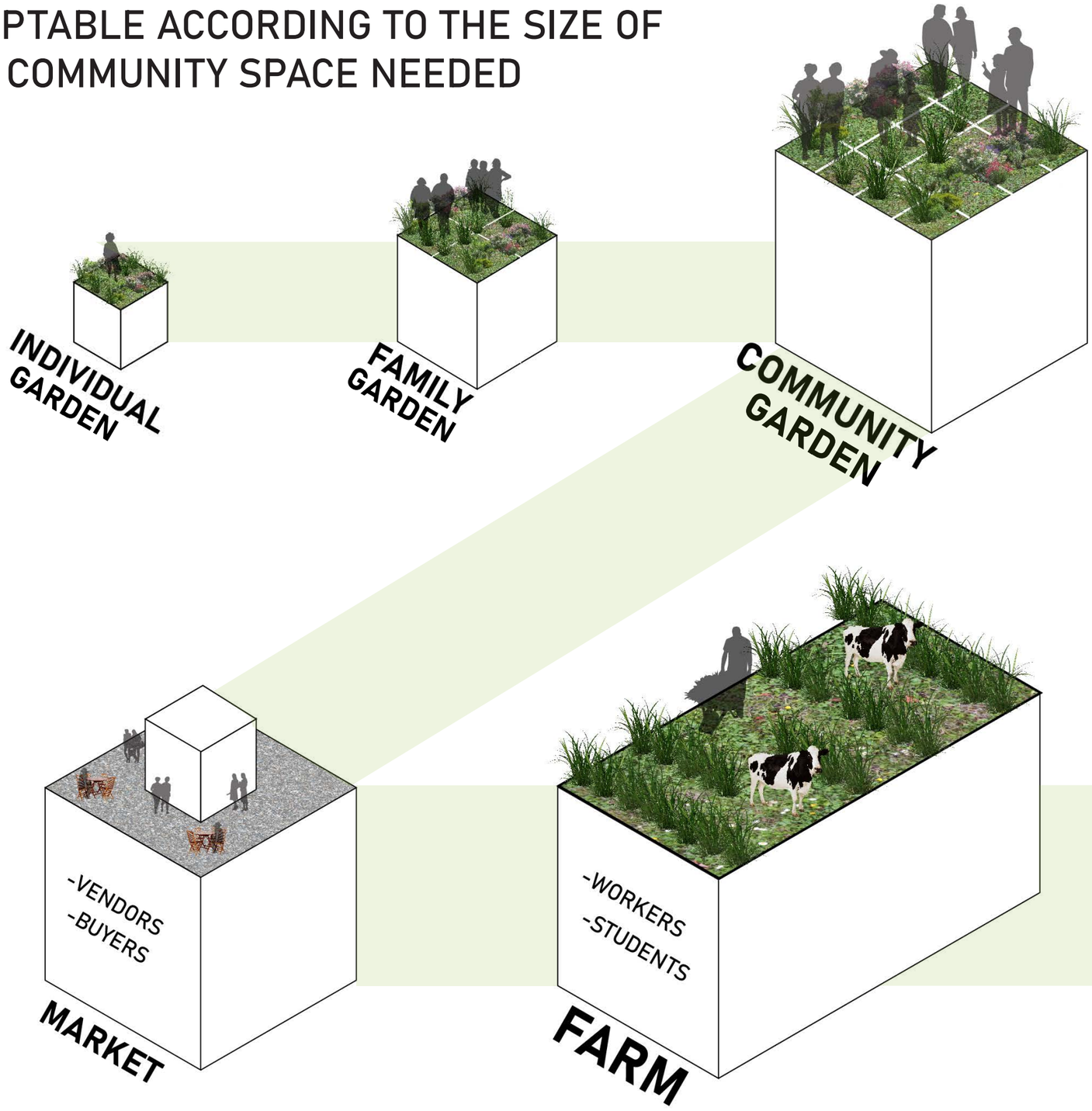


RENEWABLE RESOURCES - WATER TURBINES

THROUGH THE USE OF WATER TURBINES ALONG THE RIVER'S EDGE THE ENERGY OF THE RIVER IS HARNESSED FOR ENERGY STORAGE AND REUSE ALONG THE SITE. SEVERAL RIVER TURBINES ARE CONNECTED TO AN UNDERGROUND BATTERIES WHICH ARE ABLE TO RECHARGE 24 HOURS A DAY DUE TO THE CONTINUOUS FLOW OF THE RIVER. THESE BATTERIES ARE CONNECTED TO THE ADAPTIVE REUSE PROJECTS TO HELP POWER ENERGY SYSTEMS WITHIN THE BUILDING. THROUHG THE CURRENT OF THE RIVER WATER TURBINES ARE ABLE TO CONVERT OVER 90% OF WATER'S KINETIC ENERGY INTO MECHANICAL ENERGY.

PEOPLE CENTERED PLACES

THE DESIGN HAS A SCALE THAT IS ADAPTABLE ACCORDING TO THE SIZE OF THE COMMUNITY SPACE NEEDED



PROPOSAL SITE PLAN

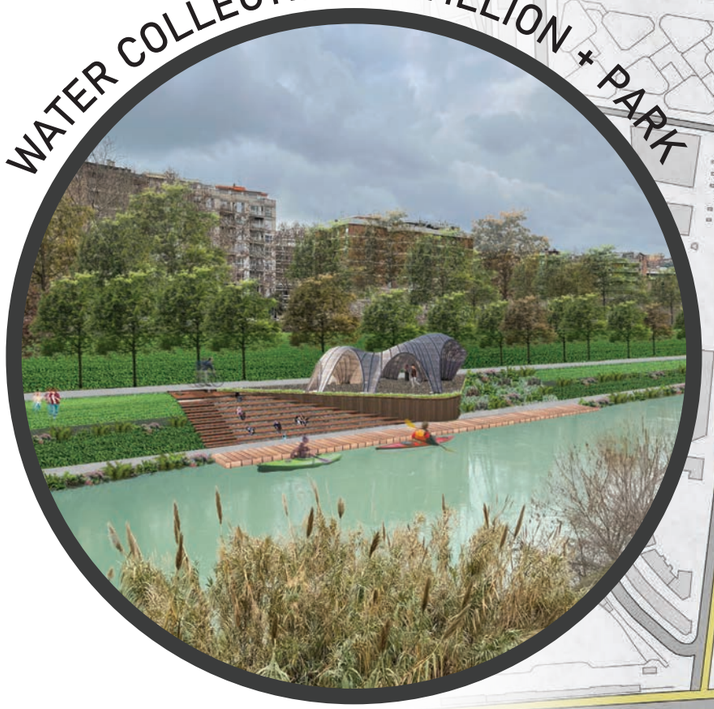
COMMUNITY MARKET

GREENHOUSE TO SUPPORT
THE RESTAURANT AND
VENDOR MARKET

PRODUCE VENDOR MARKET IS
SUPPORTED BY THE URBAN FARM

COMMUNITY GARDEN

WATER COLLECTING PAVILLION + PARK



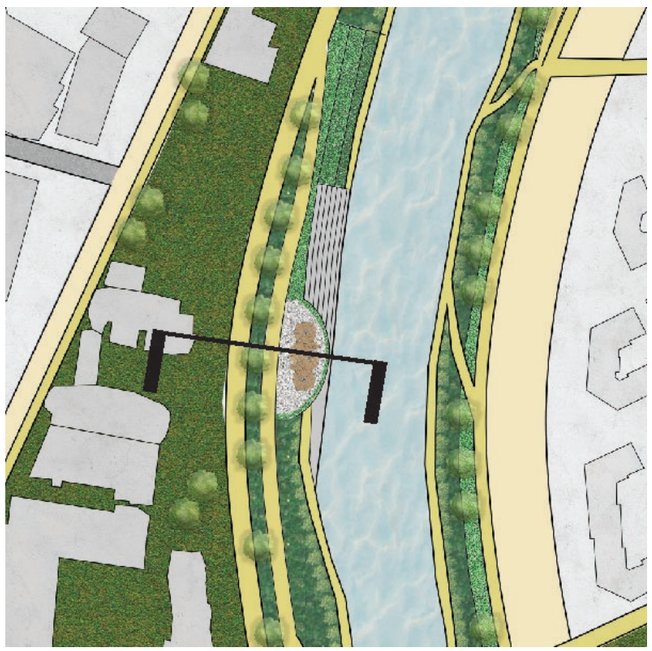
GREEN WASTE RECYCLE CENTER
TO SUPPORT AGRICULTURE AND GARDENS

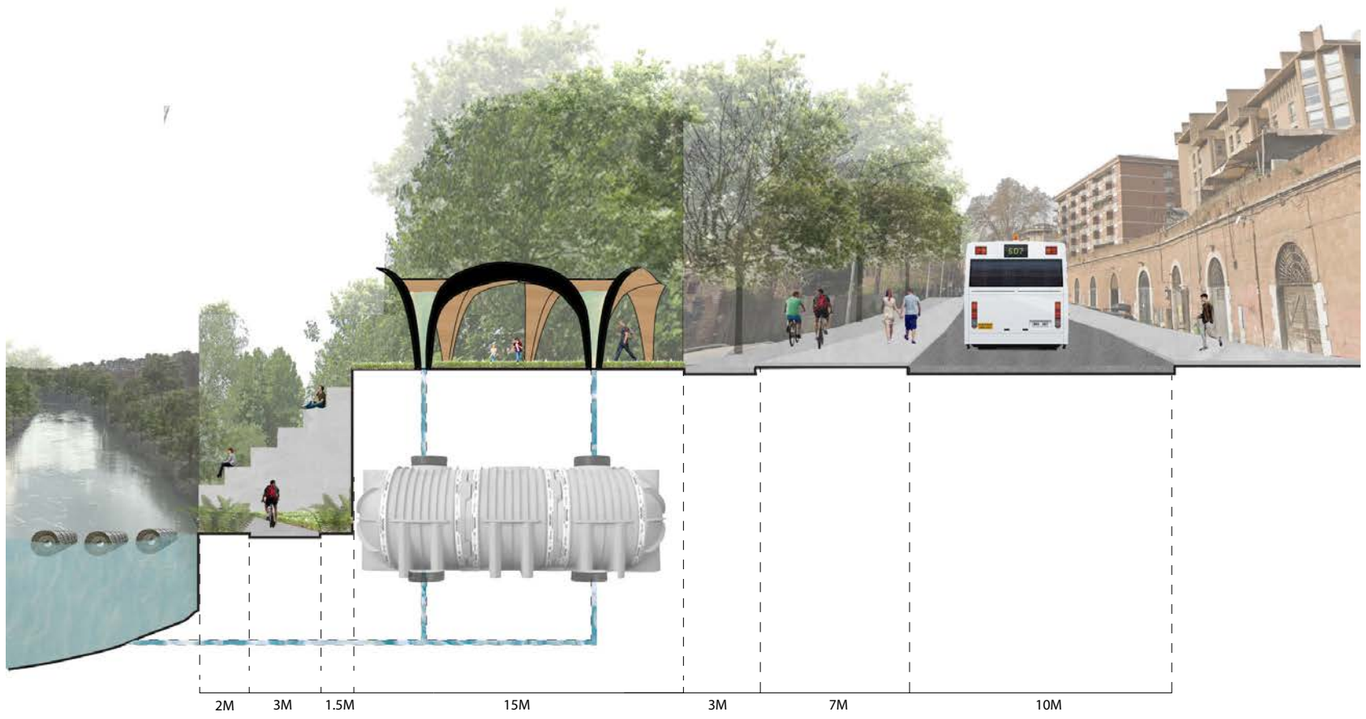
RIVER COMMUNITY SUPPORTS A
RESTAURANT VENDOR MARKET

THE SITE PLAN CONSIDERS FUTURE ARCHITECTURAL DESIGNS THAT WOULD SUPPORT THE CIRCULAR RESOURCES CREATED BY THE PROPOSAL

THE PROPOSAL CREATES TERRACING THAT MAKES THE RIVERS EDGE MORE ACCESSIBLE TO THE PUBLIC, WHILE ALSO PROVIDING COMMUNITY PAVILLIONS THAT COLLECT WATER RESOURCES.

BEFORE

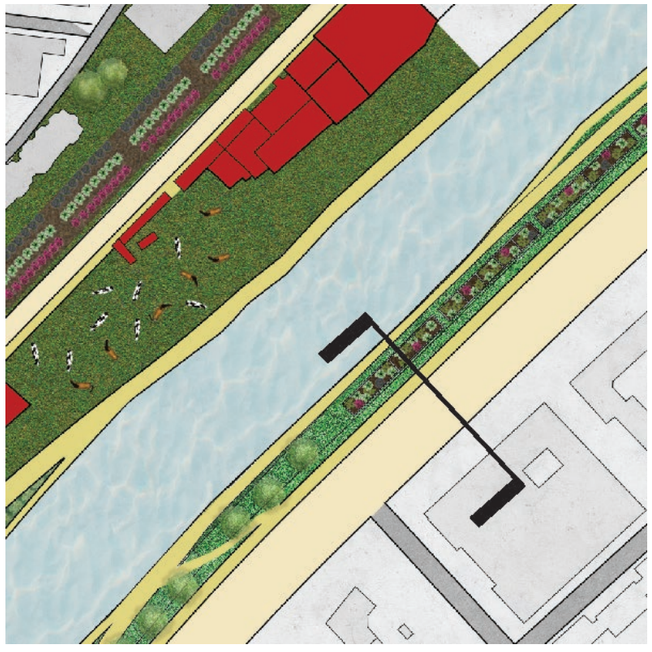




AFTER

THE PROJECT TAKES ADVANTAGE OF A REPARIAN EDGE CONDITION FOR ACCESSIBILITY, AS WELL AS RESTRICTING THE NEIGHBORING ROAD TO PRMOTE USE OF PUBLIC TRANSIT AND WALKING.

BEFORE

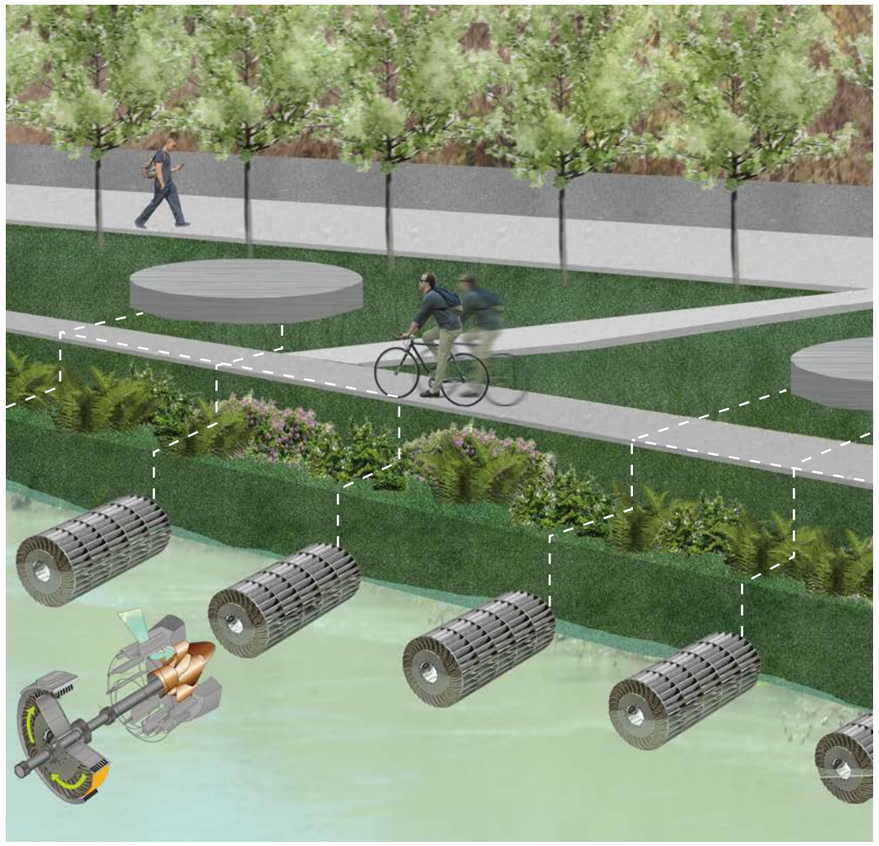


AFTER

THE PROPOSAL USES PUBLIC PAVILLION SPACES TO NOT ONLY COLLECT RAINWATER, BUT ALSO TO INVITE THE COMMUNITY TO ENJOY THE RIVER'S EDGE.

THE PROJECT SUPPORTS ADAPTIVE REUSE TO GIVE BACK TO THE COMMUNITY WITH THE INTENT OF SUSTAINABILITY IN MIND.

THE PROPOSAL SUPPORTS A CIRCULAR RESOURCES PLAN THROUGH THE USE OF WATER TURBINES TO POWER THE BUILDINGS SURROUNDING THE RIVERS EDGE AND BEYOND.



CULTIVATION CANAL STRIVES TO REUSE THE EXISTING CONDITIONS OF THE SITE, WHILE PROVIDING FOOD RESOURCES THROUGH THE MARKETS, URBAN FARMS, AND COMMUNITY GARDENS.

LEED APPENDIX

LEED v4 for Neighborhood Development Plan
Project Environmental Credits

STRONG
MODERATE
CONSIDERED

	LEED N.D. CREDIT CRITERIA Smart Location & Linkage	PROJECT STRATEGY
	Imperiled Species and Ecological Communities	Ecological communities are supported through the upgrading of the landscape and habitat.
	Wetland and Water Body Conservation	Reparian Edge and Water collection terracing supports water body conservation.
	Agricultural Land Conservation	Agricultural land is multiplied to support food production.
	Floodplain Avoidance	Reparian Edge supports floodplain avoidance.
	Access to Quality Transit	Major roads used around the edge of the site are transformed for transit, bike, and pedestrian use.
	Bicycle Facilities	Major roads used around the edge of the site are transformed for transit, bike, and pedestrian use.
	Housing and Jobs Proximity	Urban farming and Markets create job opportunities for the community.
	Steep Slope Protection	The river's edge is transformed through terracing allowing for accessability and gentle slope.
	Restoration of Habitat or Wetlands and Water Bodies	Wetlands are supported through the upgrading of the river edge landscape through absorbant plantings.
	Neighborhood Pattern & Design	
	Walkable Streets	Major roads used around the edge of the site are transformed for transit, bike, and pedestrian use.
	Reduced Parking Footprint	Major roads around the edge of the site are set aside for transit, and therefore have no vehicle parking.
	Connected and Open Community	The accessibility to the river's edge and terracing allows for connected and open community spaces.
	Access to Civic & Public Space	Public space is accessible along the river's edge, connecting with community outreach.
	Access to Recreation Facilities	Rental equipment is offered along the river's edge, including canoes and bikes, supported by the bike paths.
	Visitability and Universal Design	The proposal is adaptable because of the adaptive reuse and low construction.
	Community Outreach and Involvement	Community outreach is involved through the creation of jobs at the markets and urban farms.
	Local Food Production	The urban farms, markets, and community gardens support local food production.
	Tree-Lined and Shaded Streetscapes	Most streets and bike paths are lined with trees to support shading techniques and the reparian edge.
	Neighborhood Schools	Public parks support the Neighborhood schools through location.
	Green Infrastructure & Buildings	
	Construction Activity Pollution Prevention	Construction activity pollution is prevented within the proposal due to the adaptive reuse component.
	Optimize Building Energy Performance	Building Energy Performance is supported through solar panels on existing buildings and energy used from water turbines.

LEED v4 for Neighborhood Development Plan
Project Environmental Credits

STRONG
MODERATE
CONSIDERED

	LEED N.D. CREDIT CRITERIA Smart Location & Linkage	PROJECT STRATEGY
	Historic Resource Preservation and Adaptive Reuse	Adaptive reuse is suggested within the proposal through the addition of the markets and recycling/waste center.
	Minimized Site Disturbance	There is minimal site disturbance through the adaptive reuse on the site, as well as reuse of resources.
	Rainwater Management	Rainwater is collected through the public pavillion design.
	Heat Island Reduction	Plants installed to reduce the heat on paved surfaces contributes to the reduction of the heat island effect.
	Solar Orientation	Solar panels are oriented towards the south to achieve maximum yield.
	Renewable Energy Production	Renewable energy is produced through the use of solar panels and water turbines.
	Infrastructure Energy Efficiency	The addition of more power supply sources creates more energy efficiency within the current infrastructure.
	Recycled and Reused Infrastructure	Reuse of existing buildings and roads and the addition of more power supplies.
	Innovation & Design Process	
	Innovation	The proposal harnesses energy from the Tiber river through the pavillions, collecting rainwater reused for irrigation, and the water turbines, that create renewable energy used in the surrounding buildings.
	Consultation with LEED® Accredited Professional	Francesco Bedeschi - Director for European Market at SINERGI Integrated Building Sciences / Executive Board Member, GREEN BUILDING COUNCIL ITALIA (LEED for Neighborhood Development)