GROWING WHAT WAS THERE:

REGENERATING AN OLD RAIL YARD INTO A GARDEN FOR ELDERLY AND MIGRANT COMMUNITIES

PROJECT STATEMENT

As cities continue to expand globally, repurposing agricultural land and resources for urban renewal has become a common issue. In China, where farmland is rapidly disappearing due to development, it's time to rethink how to provide healthy and fresh food to low-income urban communities. Investing in quality public spaces for disadvantaged groups is crucial for future growth. Urban farms present a win-win solution that offers food security and creates excellent public spaces. This project aims to bring the collective memory of the site's agricultural history and the conversation about equality to the heart of downtown Kunshan.

The abandoned railyard serves as the perfect location for this urban agriculture project, providing an opportunity for economic, social, and environmental sustainability in urban renewal within a densely populated area. This project integrates urban agriculture into city spaces and life in a way that supports a new community while preserving traditional lifestyles and engaging underprivileged groups.

PROJECT NARRATIVE

Kunshan, a bustling city located in the Yangtze River Delta between Shanghai and Suzhou, is situated in one of the most rapidly developing regions of China. Thanks to the new high-speed rail line, residents can reach both cities in just ten minutes. With a population exceeding 2 million, Kunshan is growing at an unprecedented pace, driven by its strategic location and booming economy. The project site is located in the heart of the old downtown area, just a stone's throw away from the newly constructed high-speed rail station that was completed in 2010. The surrounding area is teeming with modern infrastructure, including apartment buildings, elementary and high schools, and hospitals, making it an ideal location for urban renewal.

Design Intent

Post-industrial sites and abandoned lands in China are often redeveloped into theme parks or museums that aim to preserve the industrial history of the location. However, with the growing population and economy of the country, these single-function public parks may no longer be sufficient for condensed land use and economic development. Reprogramming these sites, rather than simply redesigning them, can provide a better solution. Increasing the amount of productive landscape is necessary for efficient land use, and productive landscapes are not just about generating profit, but also about creating multi-functional spaces in dense urban areas. By integrating local production with the preservation of the historical and natural features of the site, it is possible to achieve a synergistic effect that benefits both the site and the local community.

Our project seeks to breathe new life into a 25-hectare post-industrial site in Kunshan, with four core objectives: 'Reuse,' 'Reconnect,' 'Remember,' and 'Re-Justice.'

First, we aim to honor the site's rich history and minimize waste by embracing an adaptive reuse approach. Unlike other urban renewal projects in China that often erase a place's identity and social attachment, our strategy preserves all original buildings and machinery structures. By doing so, we can create a lasting connection to the site's industrial culture and memory.

Secondly, our project will foster connections within the site and its surrounding communities. By repurposing the site for productive use, we can maximize its potential benefits and realize interconnections between producers and consumers. This approach will serve both the original dwellers and the new working class, creating a verdant and connected landscape network of agricultural plots, ecocorridors, and parks. These features will ensure the recharge of the region's aquifer and promote walking and biking. Plazas, sidewalks, and trails will link the natural landscape with civic, cultural, and entertainment spaces, enabling the community to connect with nature and each other.

Thirdly, our project aims to protect traditional city culture and create new cultural connections. By introducing the concept of a productive landscape, we can tap into the value of traditional production in the city, such as flower, bird, potted plant, fish, insect, and vegetable production in free markets. This strategy will create local job opportunities, establish more free markets, attract consumers around the city, and facilitate learning and research processes. All these objectives will be part of the reprogramming strategy for the post-industrial site, establishing a new network of productivity.

Ultimately, our project will strive for re-justice in the community of underprivileged groups. By creating edible public spaces, we will provide nearby residents with fresh and affordable food, participatory collective farming activities, and more jobs. This initiative will help the residents inherit the local agricultural tradition and industrial heritage, paving the way for ecological and sustainable development.

Sustainability

The overall design of Kunshan Railyard Greens was shaped by the site analysis.

Facilities and Materials Re-use

Reprogramming a post-industrial site through adaptive reuse is an effective way to preserve its historical significance and cultural identity. The project aims to create a productive landscape that re-establishes the site as a hub of economic activity and community engagement. By repurposing the existing facilities and machinery on the site, the project celebrates the industrial heritage of the area while embracing innovative and sustainable solutions for the future. For instance, the rail track's sturdiness makes it ideal for transporting heavy goods and was therefore repurposed to hold trolleys or mobile farming containers and nurseries. The warehouses' interior spaces, which are hollow and offer ambiguous spatial definitions, were transformed into free markets that specialize in flowers, tea, birds, insects, fish, and potted plants, among others. The proposed adaptive reuse plan should incorporate these markets, as well as the production processes for the traded goods and creatures. The built facilities offer the ideal context for vertical farming, making containers an excellent choice for hydroponic and aquaponic growing systems.

Stormwater Usage

The garden showcases stormwater usage by filtering runoff from development through intermediate landscapes before returning it to waterways. This helps to reduce runoff volume to the river and provides storage for agricultural irrigation. The garden's innovative "productive sponge" includes bioswales that work together to reduce runoff to the river while supporting agriculture.

Organic Growing Methods

Railyard farm is organically managed with productive bio-intensive raised beds, low water consumption, and energy inputs. Building facilities host hydroponic and aquaponic growing systems for leafy greens, such as spinach, kale, bok choi, and others—vertical farming is ripe with possibilities in this area of China, where 60% of local vegetable consumption is leafy greens.

Food, Equality, and Community

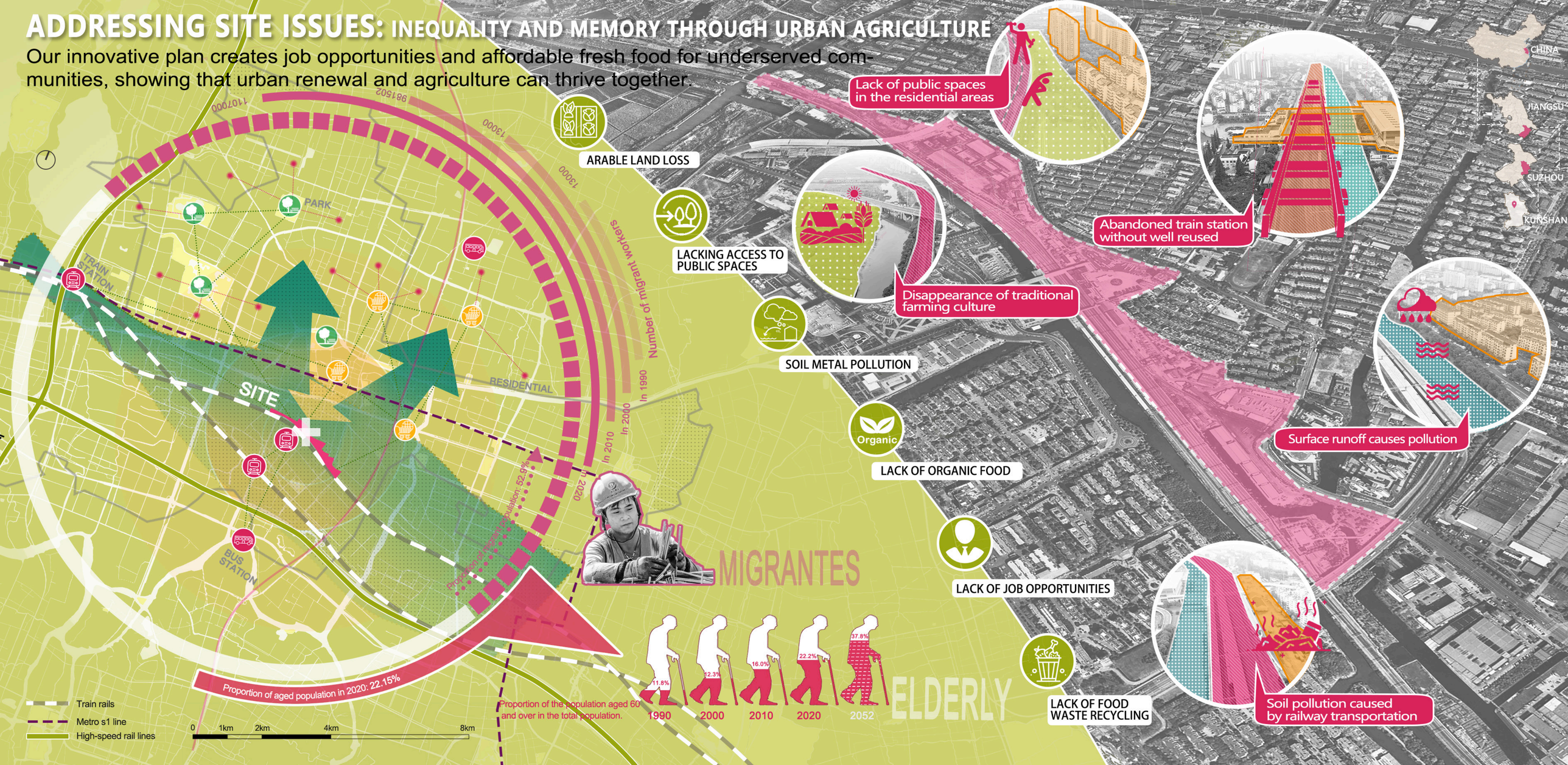
Productivity requires a certain amount of land, but by weaving a living system into existing structures, a landscape can generate fresh and unpredictable spaces. In essence, the landscape becomes a producer of spaces for various types of work. This also means that it can offer employment opportunities. These include the production of fresh vegetables, the cultivation of flowers and potted plants, the raising of birds, pet fish, and insects, and the sale of these products in free markets. The landscape also supports other community and agricultural programs, such as restaurants and markets. This idea is deeply ingrained in the city's culture and traditions. The sight of birds being raised in backyards and balconies, and the cultivation of potted plants, are still widespread in the old city. What's notable is that these jobs can be performed by the elderly and low-income migrants, requiring little education. The Railyard Farm is a distinctive urban garden that serves as a participatory public space. It capitalizes on local resources and the local workforce in innovative ways. Anyone can participate in planting, tending, harvesting, learning, and teaching. It's a place where people can congregate, engage in conversations about local food systems, share food, and savor the changing of the seasons.

Summary

One of the driving factors behind China's rapid growth has been the availability of cheap labor provided by migrant workers from nearby villages and less developed areas. However, reevaluating the relationship between cities and these underprivileged groups is critical for achieving social and environmental justice in China. The Railyard Farm experiment presents a novel concept for urban life by elevating food production to a vital function of a city. By creating a robust public space that merges indoor and outdoor agricultural experiences, this project offers a playful and socially engaging experience, positioning urban agriculture as a dynamic living laboratory for innovation and education, as well as a platform for equality initiatives. This project aims to promote local production activities that celebrate the original culture, preserve the original urban texture and landscape, and create job opportunities for the local low-income population. By bringing innovative hybrid agricultural and urban typologies into close dialogue, this forward-looking interactive serves as a model for urban renewal in China, specifically in the context of two major metropolitan cities. Agricultural land in China is often stripped of its historical or cultural significance to make way for urbanization. By preserving and transforming abandoned post-industrial sites for adaptive and productive use, the master plan for Kunshan offers an exemplary approach. This approach shows that agriculture can coexist with site history, creating a replicable model for urban renewal that can be applied throughout the Global South.

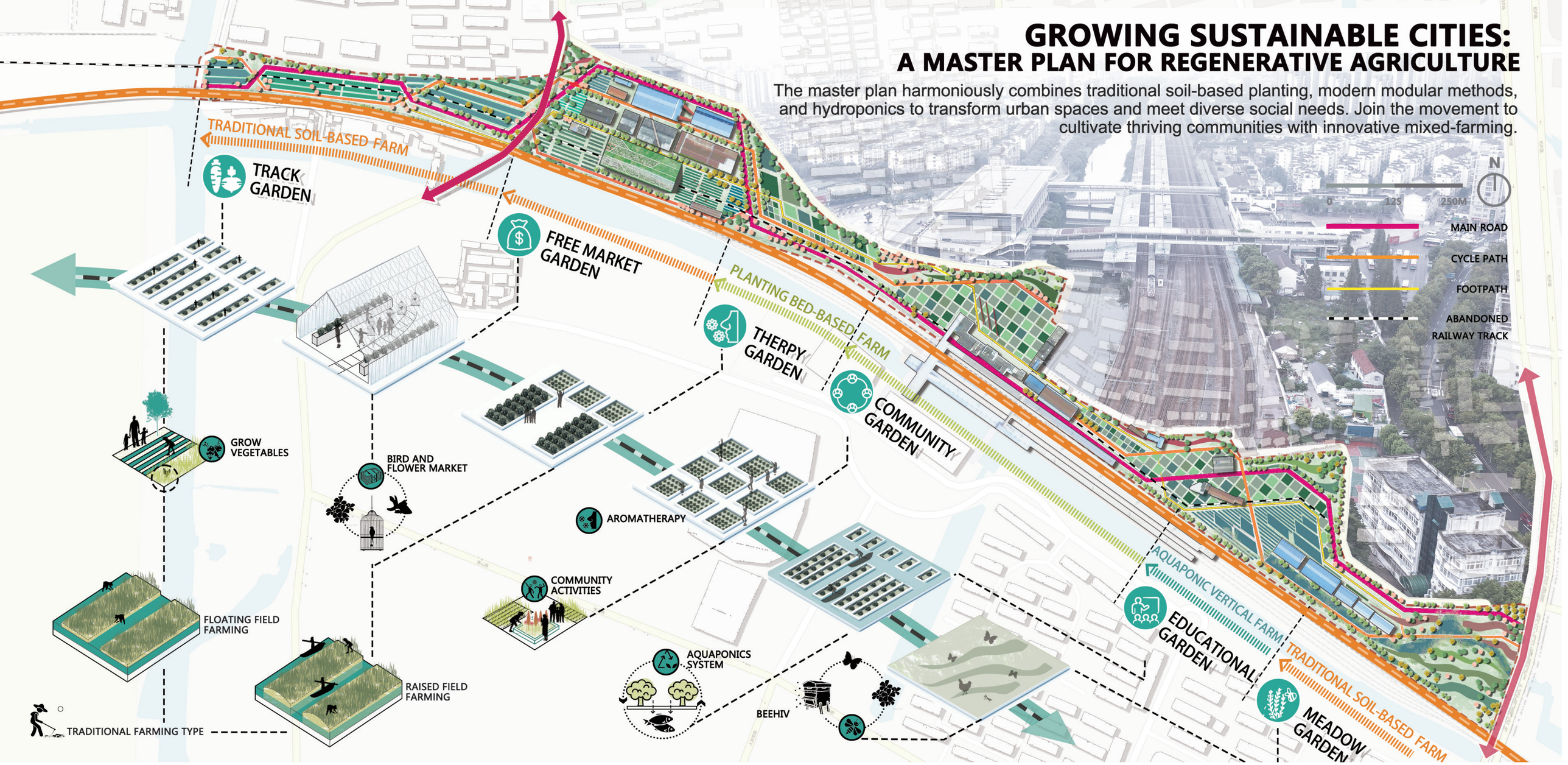
ADDRESSING SITE ISSUES: INEQUALITY AND MEMORY THROUGH URBAN AGRICULTURE

Our innovative plan creates job opportunities and affordable fresh food for underserved communities, showing that urban renewal and agriculture can thrive together.



GROWING SUSTAINABLE CITIES:
A MASTER PLAN FOR REGENERATIVE AGRICULTURE

The master plan harmoniously combines traditional soil-based planting, modern modular methods, and hydroponics to transform urban spaces and meet diverse social needs. Join the movement to cultivate thriving communities with innovative mixed-farming.



REVIVING COMMUNITY SPACES: ADAPTIVE AND PRODUCTIVE REUSE OF ABANDONED FACILITIES

Through flower and bird markets, agricultural education, and other initiatives, we transformed abandoned facilities intovibrant community spaces.
Our approach preserves local heritage and promotes sustainable development through adaptive reuse and community engagement.

BIRD AND FLOWER MARKET

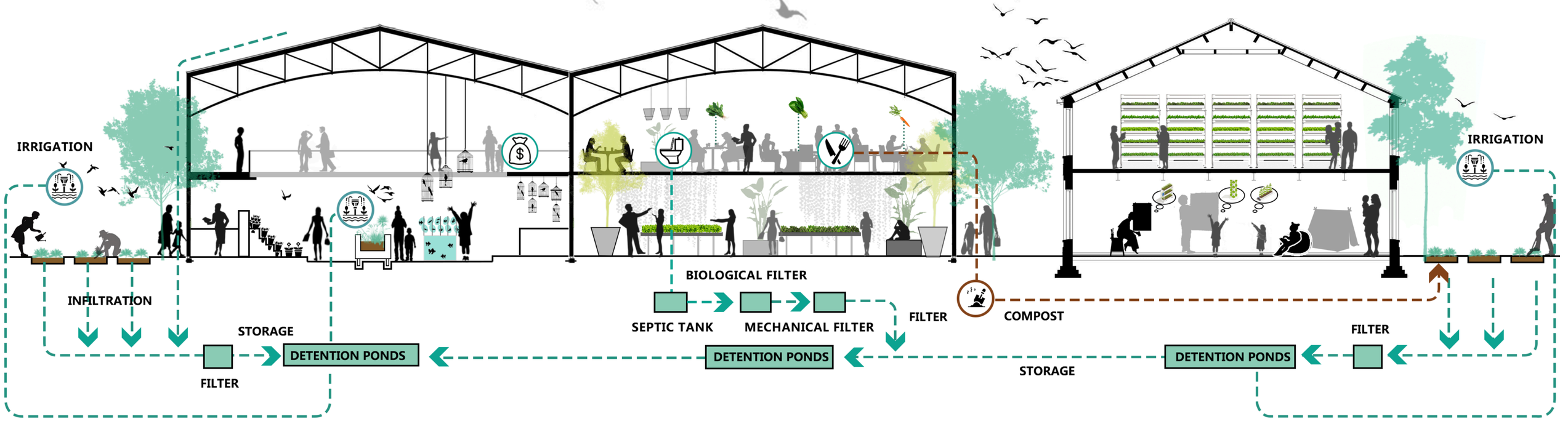
AS A VIBRANT AND PROFITING SPACE, THE FLOWER AND BIRD MARKET AROUSES THE MEMORY OF THE RESIDENTS WHILE RADIATING THE VITALITY OF THE PLACE.

VEGETABLE VENDORS

THE FREE TRADING MARKET PROVIDES A SPACE FOR RESIDENTS TO TRADE. HERE, URBAN AGRICULTURE NOT ONLY BRINGS HEALTH TO THE RESIDENTS THEMSELVES, BUT ALSO DELIVERS HEALTH TO OTHERS IN THE COMMUNITY.

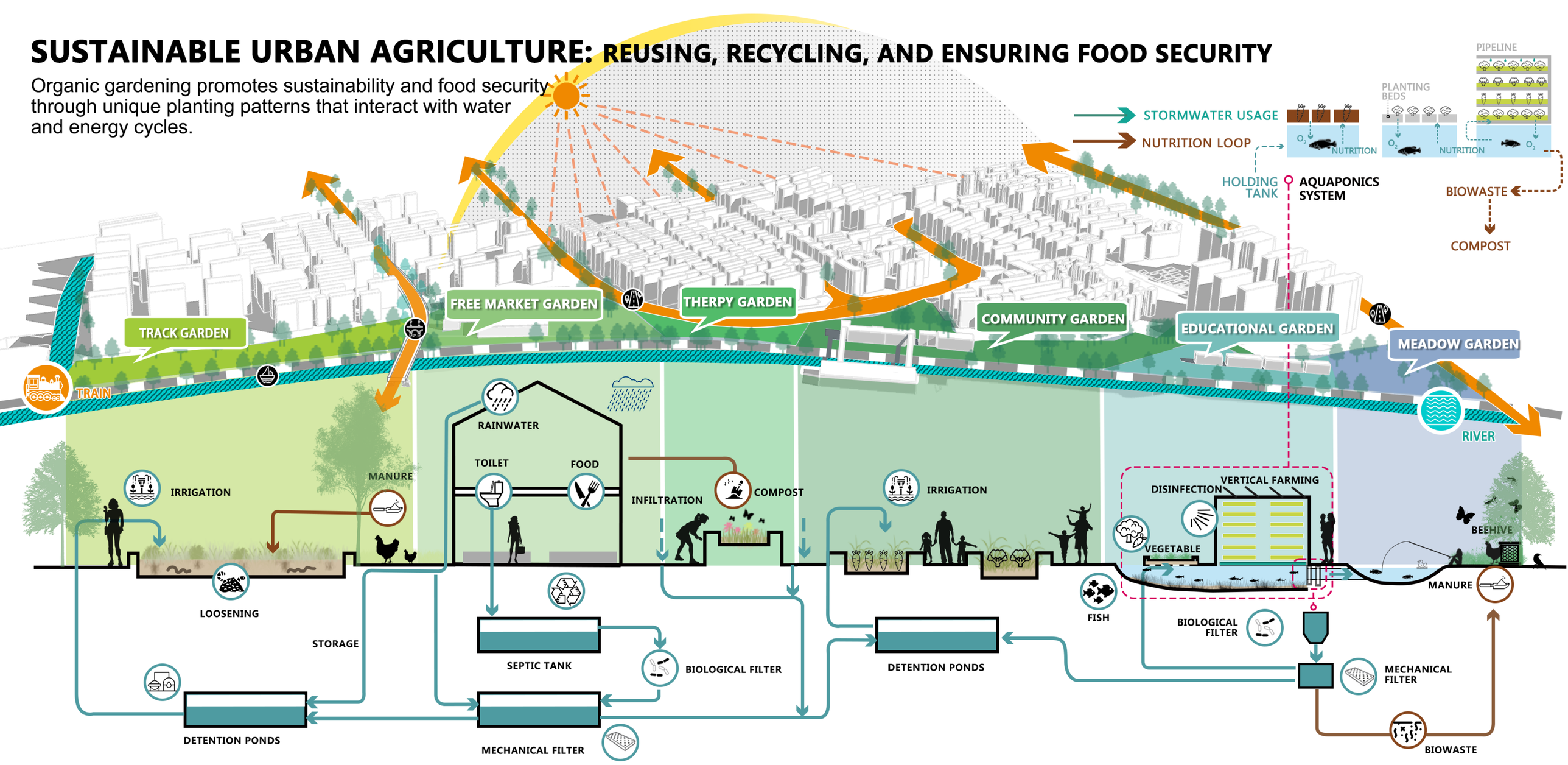
SCIENCE EDUCATION

RESEARCH AND EDUCATION SPACE ALLOWS YOUNG PEOPLE TO LEARN NEW TECHNIQUES FOR GROWING VEGETABLES.



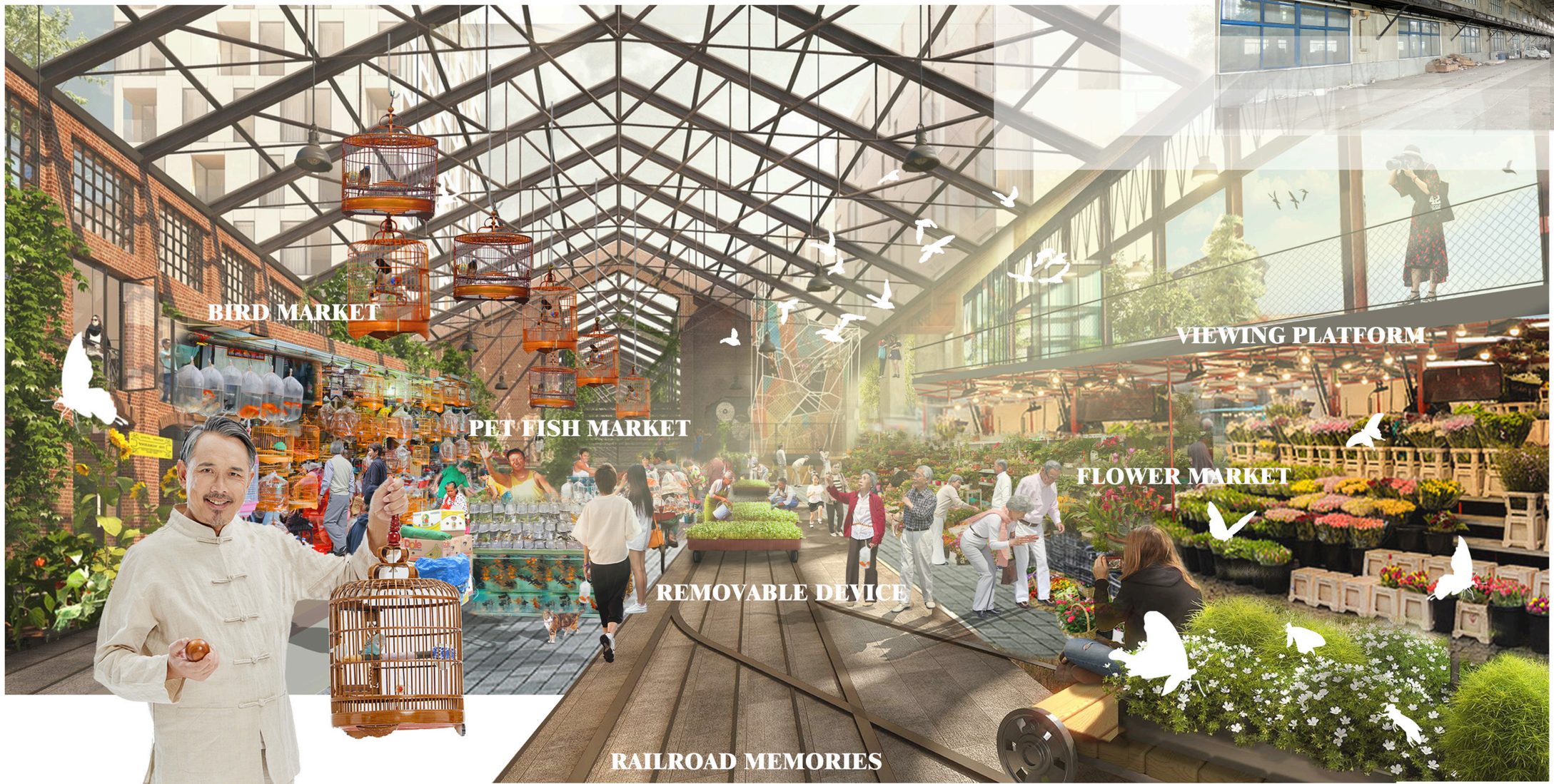
SUSTAINABLE URBAN AGRICULTURE: REUSING, RECYCLING, AND ENSURING FOOD SECURITY

Organic gardening promotes sustainability and food security through unique planting patterns that interact with water and energy cycles.



REVITALIZING ABANDONED SITES: SHOWCASING TRADITIONAL PRODUCTION IN THE CITY

Transforming warehouses and structures into free markets that highlight traditional production. Rolling plant--ing beds on thetracks as a reminder of the site's history. Reinvigorating the community with new possibilities.



TRAIL GARDEN: REPURPOSED RAILROAD TRACKS AS A FLOWER TRAIL REMEDIATED BY PLANTS

Hyperaccumulating plants are used to absorb heavy metals from contaminated soils, while the space on either side of the trail serves as a vegetable growing belt, creating a shared leisure space for community residents to enjoy.

Ramie
Boehmeria nivea(L.)Gaudich
The annual purification rate of soil Hg is as high as 41%

Violet
Viola verecunda A. Gray
The roots can separate special organic matter, thus promoting the activation and absorption of Cd , Pb and Zn in soil

Celandine
Chelidonium majus
Can absorb As in soil

Kenaf
Hibiscus cannabinus
Absorbing As and Fe from the soil mainly through the roots

IRRIGATION

ARTIFICIAL CULTIVATION

HEAVY METAL HYPERACCUMULATING PLANTS

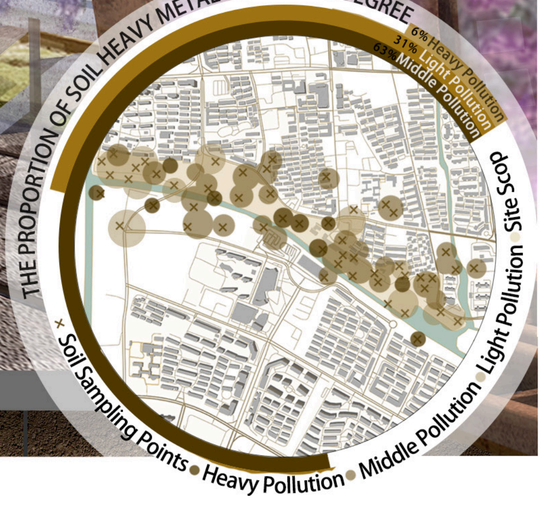
WATERING PLANTS

RAILROAD MEMORIES

STORMWATER

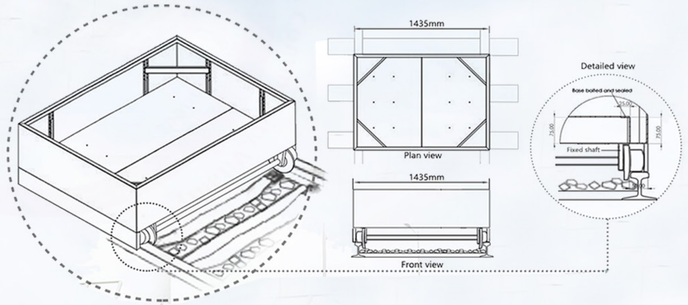
DETENTION PONDS

Zn Hg Cb Hg As As Fe



CRANE & CONTAINERS GARDEN: AN INDUSTRIAL PAST TRANSFORMED INTO A PRODUCTIVE AND SOCIAL SPACE

Preserving original facilities, an abandoned crane becomes a new visual focus, cargo space turns into a community garden, and containers into hydroponic rooms, creating a productive and social space.



Track planters

A sliding planting tank unit is designed using track elements

Lettuce

Sown in mid-April and mid-August, and harvested in early May and early October.

Spinach

Sown in early March and mid-August. Harvested in mid-May.

Potato

Sown in late March and harvested in early June and early July.

RECONNECTING COMMUNITIES THROUGH GARDENS: A PRODUCTIVE AND SOCIAL URBAN LANDSCAPE

Kunshan station square transformed into household-based vegetable plots with paths that create a social network. The garden promotes a sustainable and productive lifestyle, reconnecting people with nature and their community, enhancing wellbeing and fostering community pride.

Tomato
Seeded in late April and harvested in late June and early July.

Lettuce
Sown in mid-April and mid-August, and harvested in early May and early October.

Purple Cabbage
Sown in mid-March and early August, harvested in May and October.

Chinese Cabbage
Sown in late March and early August, and harvested in early May and early September.

White Radish
Sown in the middle of March and early July, harvested in early June, mid-July, early September and early November.

FARMING ACTIVITIES

RAILWAY ART SCULPTURES

COMMUNITY VEGETABLE PLANTING PLOTS

AQUAPONIC VERTICAL FARM: A MODERN TWIST ON TRADITIONAL FLOATING AGRICULTURE

The site's former cargo space now houses a communal vegetable garden, and the buildings have been repurposed into aquaponic systems. The language of the productive landscape breathes new life into the once-abandoned industrial facilities.

Tomato
Seeded in late April, and harvested in late June and early July.

Chinese Cabbage
Sown in late March and early August. Harvested in early May and early September.

Eggplant
Sown in late April and early June, and harvested in mid-June and early October.

SOLAR PANELS
WATER CIRCULATION
RAINWATER HARVESTING
RAINWATER HARVESTING
DRAINAGE
INDOOR VEGETABLE HYDROPONIC GARDENS
BUGS
FROG
PLANKTON
FISH
HERON
WATERSIDE PLANTS
EARTHWORM
MATERIAL EXCHANGE BETWEEN SOIL AND WATERY
FISH POND
HUMUS
ORGANIC FERTILIZER FROM AQUATIC PLANTS
HYDROPONIC VEGETABLE CONTAINERS
COMMUNITY WALKING PATHS
CONTAINERS
CLUM
PLANTING BOXES
VENDORS
SHRIMP
HYDROPONICS
TRANSPORT
SOLAR ARRAY
WIND TRBIN
SELF-SUPPLY ENERGY PLANT FACTORY USING RENEWABLE ENERGY
LED LIGHTING
STEP PLANTING B
RETENTION PONDS
FISH BREEDING PONDS
CONTROL CENTER

A DYNAMIC LIVING LABORATORY FOR INNOVATION AND EDUCATION

PRODUCTIVE PUBLIC REALM: FOOD, EQUALITY, AND COMMUNITY FOR URBAN RENEWAL

Preserving local site memory and providing a sustainable gardening utopia for disadvantaged groups. A highly participatory approach creates a productive public realm for a better life in urban renewal.