

“村兼城”——农村外来人口的城市化基地

MIGRATIONAL FIELDS

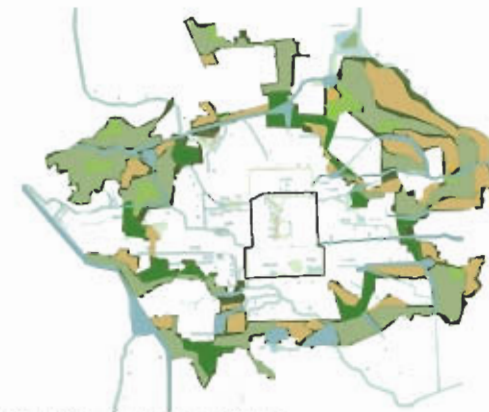
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地段位于北京周边的规划绿带边缘，是城市与农村之间的独特转折点。不幸的是，这一绿色外环正迅速被新的高层住宅开发项目所侵蚀。目前地段内充斥着大量农村外来打工者，是典型的正在加速城市化的城中村地区。

具体来说，地段紧邻太阳宫地铁站，城市绿带和坝河，是农村面向城市的大门。原地段被传统的农田赋予横向肌理，并受到南北向灌溉水渠的切割。至今，住宅尺度划分使此空间肌理依然清晰可辨，而灌溉水渠则已成为地段的主要道路。地段的主要人口由以成为城市居民为目标的农村外来打工者和自家农田被国家收购的老农共同组成。

本小组的规划理念是通过营造一个以高密度农业生产为主的新型村庄，使地段成为农村外来打工者与城市居民身份的交换站。毗邻北京绿带上可持续制造农作物、能源、清洁水和空气的多产空间体系被延伸至并滋养本地段。新形式的农业生产与教育项目为农村流动人口提升自身技能以应对未来都市生活提供了“孵化”基地。

空间形态上，规划以恢复地段上的原传统农田横向肌理出发，而这些小尺度肌理与区域结构相适，并在城市新环路网格和大尺度街区的影响下发生扭曲。此外，高架的灌溉水渠将地段结构进行竖向切割，并顺势形成一系列街道、广场等公共空间。保留的现存建筑被赋予新的公共服务功能以回应社区新的等级结构。新住宅形态在传统合院空间周围引入屋顶耕地，温室（高科技）生产、太阳能生产模块以及居住模块。三种特别的住宅形态被设计以嵌入地段横向肌理，进而营造出一系列具有穿越山谷丘陵特征的空间——以唤起人们对于中国农业梯田的回忆。地铁交通枢纽在地段中充当城市坐标的角色，路口上方建筑由巨大绿色温室以及吸引基地农民乃至城市居民来此充电的学习中心共同组成。



Regional Design of Greenbelt 北京市绿化带规划



Greenbelt Emerges into the Site. 地段成为城市和绿带的交汇点

Site acts as a gateway.

Farming Park Forest Wetland Wood Farms



东西向线性的温室起到集水的作用
Greenhouses to distribute water and winter farming



住宅屋顶作农田使用
Housing with roof top farming plots



公共建筑
Public Buildings



公共空间系统
Public Structure



保留建筑
Retained Buildings



水系统及湿地
Canals and Wetland



全景
Full Buildout



The proposed greenbelt surrounding Beijing marks a unique transition between urban and rural landscapes. This outer ring surrounding the city is quickly being encroached upon by new high-rise development. The existing villages at its edges are increasingly deteriorating, inhabited by rural workers attempting to enter the city.

More specifically, the site between the Sun Palace transport station, the greenbelt and the Bahe River serves as threshold between urban and rural life. The old rice paddy proportions, creating a plan of ribbons cut transversely by irrigation canals, determined the physical form of the village. Today, this form is still evident in the housing dimensions and the irrigation canals now serve as primary streets. The dominant demographic on the site is rural migrant workers attempting to urbanize and elderly farmers who have sold their right to farm to the state.

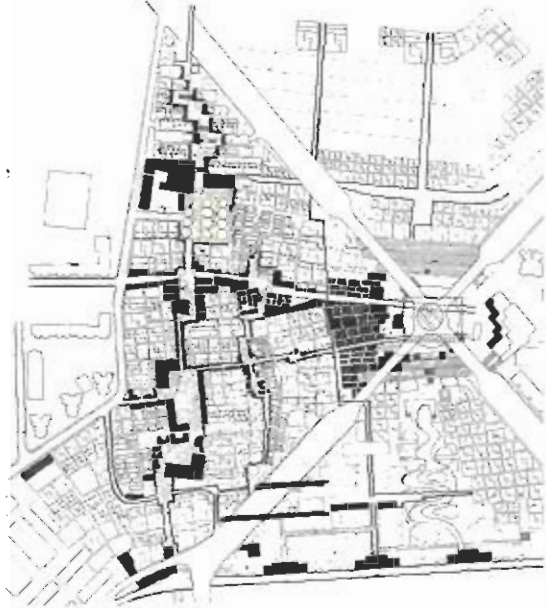
The proposal for the site is to create an exchange between the rural workers and urban inhabitants by creating a new village centered on new forms of high density agricultural production. Sustainable farming of food, energy, clean water and air, is proposed along the greenbelt creating a productive space that bleeds into the site. New forms of farming and education provide a venue for migrant workers to increase their skill set allowing for urbanization and exchange.

The physical form of the project begins by striating the site with ribbons taken from the rice paddy dimensions. These small-scale ribbons connect into the regional framework of the greenbelt and twist to merge into the new city grid of ringroads and megablocks. This framework is cut transversely by elevated irrigation canals that organize a series of vertical streets and piazzas into a public

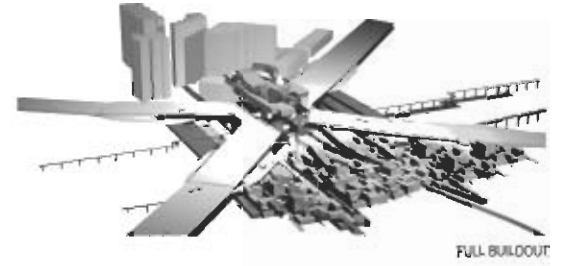
structure of major and minor axes. Existing buildings are given new public functions and fit into this hierarchical framework. The housing typology integrates rooftop farming, greenhouse (high-tech) farming, photovoltaic (energy) farming and living quarters around traditional courts. Three unique housing typologies are proposed to fit into these ribbons and create a series of conditions through valleys and hills – reminiscent of the terraced farms in rural China. The transport station acts as a civic indicator of the project, housing a large greenhouse and learning center.

Above Left: Transfer station woven into the housing typology and market.

PUBLIC SPACE



CIRCULATION



FULL BUILDOUT



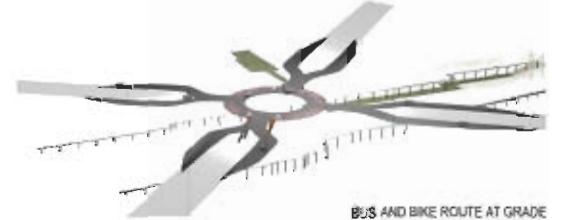
GREENHOUSES



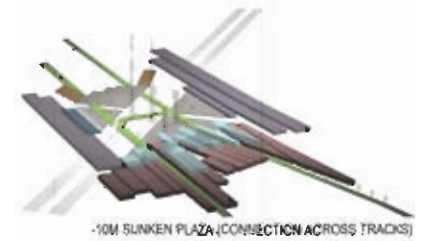
HOUSING



ELEVATED ROAD



BUS AND BIKE ROUTE AT GRADE



10M SUNKEN PLAZA (CONNECTION ACROSS TRACKS)



15M SUBWAY PLATFORM

MASTER PLAN



KEY

Housing	Institutional	Water
Type A (2 floors)	Retail	Wetland
Type B (2-4 floors)	Light Industrial	Rooftop Farming
Type C (3-8+ floors)	Farmland	Preserved Bldgs

PROGRAM SPACES

RESEARCH	9,800	HOUSING	190,883	PUBLIC GREENHOUSE	10,000
COMMERCIAL	38,000	LIGHT INDUSTRY	7,500	WETLAND	18,000
PUBLIC SERVICE	22,000	PARKING	45,000 (1,800 CARS)	ROOFTOP FARMING	110,792
		PRIVATE GREENHOUSE	38,000	PRESERVED BLDGS	20,790

Project Principles

1. Transform urban and rural lifestyles.

The site acts as an incubator for the integration of urban and rural lifestyles. It provides a forum for city residents (i.e., artists, sociologists, ecologists, etc.) and migrant workers to share aspects of their lifestyles (economic and social), creating a hybrid between rural and urban forms of living and working.

2. Sustainable infrastructure.

The site is part of a larger system of sustainable infrastructure tied to the greenbelt, which has the potential to be productive – providing space to farm food, water, air, and energy. The site draws on the greenbelt, the canal system, the wetland, and housing, to maximize that potential. These systems are integrated into the housing typology at the unit, cluster + neighborhood scales.

3. Station as collector and distributor.

The station is an essential exchange point, drawing and distributing traffic to and from the road and subway systems, parks, water, historic axis, and local community. A market area linked to light industry mediates the space between the station and housing. The educational center and greenhouse located above the station create a regional marker and density activity at the transport hub. The roads are lifted to allow the fabric and key layers of the project to flow through the station. This allows light and activity to occur in close proximity to the train platforms, embedding the station into the community.

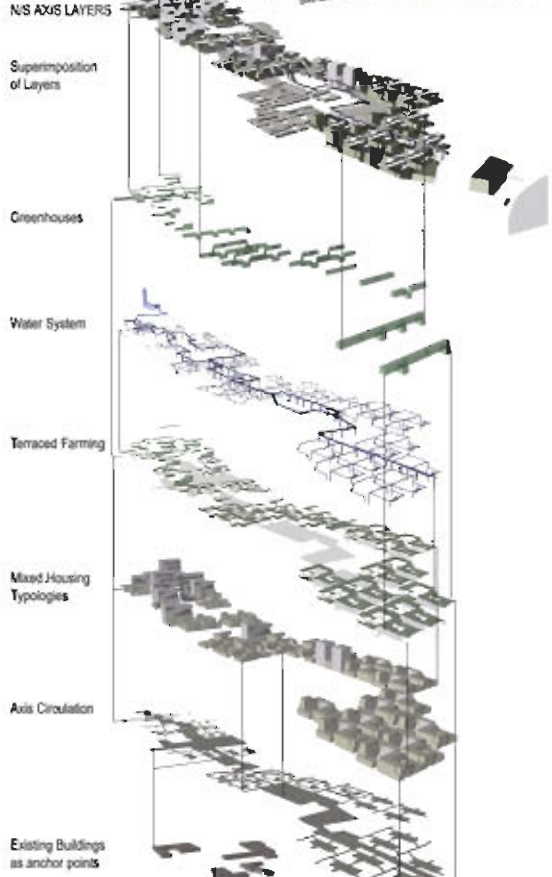
4. Redefine the axis.

Formerly, a north-south axis linked temples within the site and aligned with the

Temple of the Sun. The excavation of this axis and the repurposing of several existing buildings along it re-establishes a local public way that becomes the central armature for the local community, containing a library, school, health care facilities, shops and restaurants. A series of fountains emphasize the aesthetic and productive value of water along the main axis, distributed from a high-rise water tower at the top of the axis to the rooftop farms via an aqueduct.

5. Reinterpretation of the low-rise, high density housing typology.

The site's existing housing will be replaced with low-rise and high-rise housing, integrated into the grain of existing housing and organized into linear "ribbons." The housing typology allows for flexibility and growth, while providing variability. Sustainable infrastructures, i.e. farmland, are integrated into each unit.



1. 城市与农村生活方式的转化
 地段角色为融合都市与农村生活的孵化器。它为城市居民（艺术家、社会学家、生态学家等）与农村打工者分享彼此生活方式（经济与社会层面）的平台，并营造一个混合农村与城市生活工作方式的新型聚居形态。

2. 可持续生态系统
 地段是与绿带连接构成的更大尺度的可持续生态系统的子系统，具有生产性的潜能——提供空间用以制造农作物、清洁水、清洁空气以及能源。地段利用绿带、运河系统、湿地以及新型住宅以实现生产潜能最大化。这些系统被融入到住宅单元、组团乃至社区尺度中。

3. 地铁站作为汇集和疏散枢纽
 地铁站是重要的转换节点，它将交通流从道路系统、地铁系统、公园、水、历史轴线以及当地社区中汇集并疏散出去。连接轻工业的市场成为从地铁站到居住空间的过渡。教育中心和巨大的绿色温室位于站台上空，形成区域性的标志物并提升交通枢纽的活动密度。道路升起使规划的肌理与关键元素穿越地铁站。这一段将阳光与活动引入靠近站台的区域，从而使地铁站与社区更好地融合在一起。

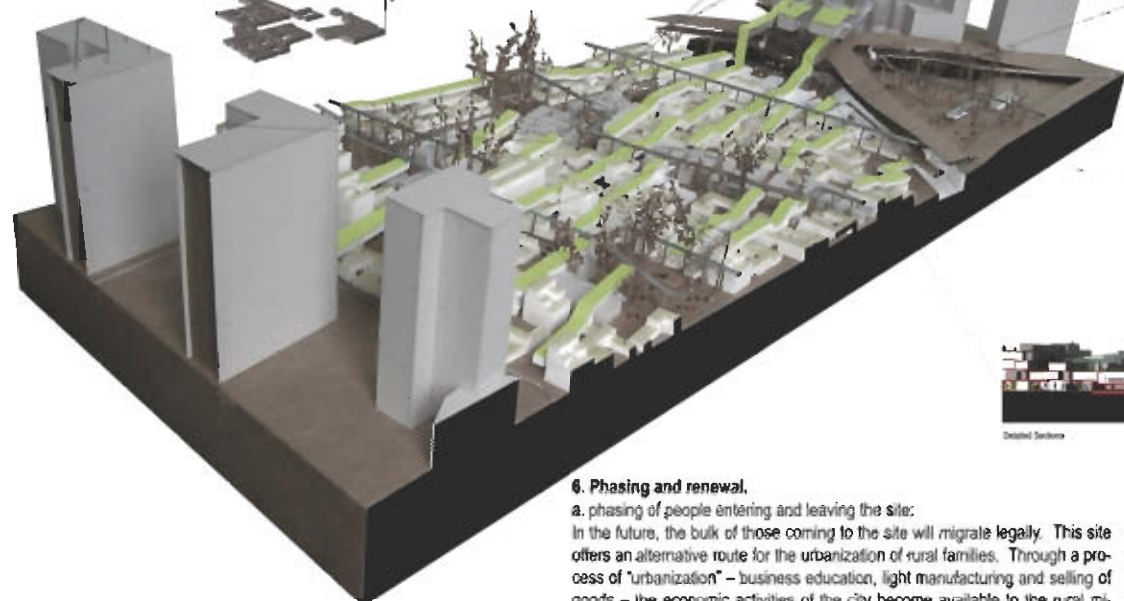
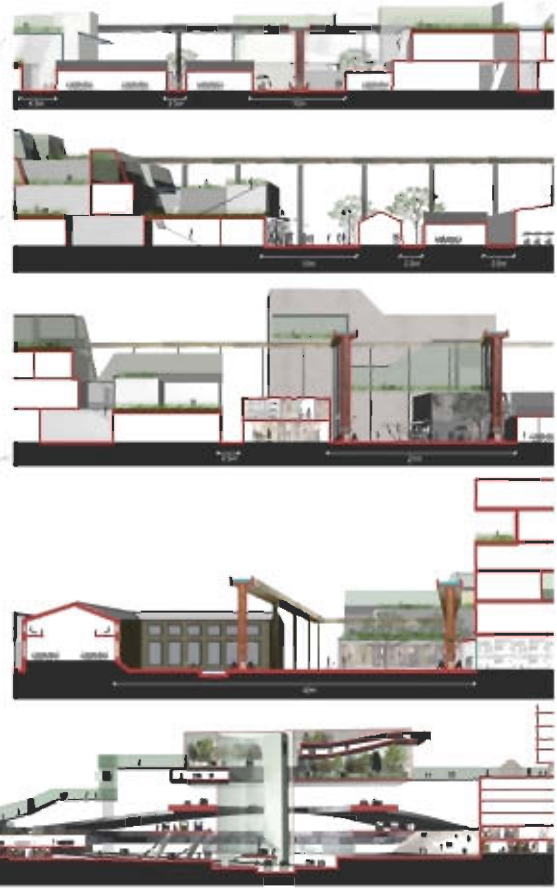
4. 再定义“轴线”
 历史上，一条南北向的轴线贯穿地段的谷子寺庙，并指向“太阳宫”。对这一轴线的嵌入式肌理处理以及对沿轴线一些现存建筑的改造为社区建立了一条公共街道，并通过引入图书馆、学校、医疗设施、商铺、餐馆等使之成为社区活动的中心区域。一系列喷泉凸现了沿主要轴线水渠的生产功效与审美价值——这一水脉从位于轴线顶部的高层水塔流出，通过高架水槽到达并灌溉住宅屋顶耕地。

5. 对低层高密度住宅类型的再阐释
 地段的现存住宅将被融入线性“纽带”肌理的高、低层住宅所取代。住宅类型具有自由度和可生长性，以提供多样选择性。可持续的生态系统设施，如太阳能板以及农田，被整合到每一个居住单元中。

6. 分阶段与更新
a. 人口进入与离开地段的阶段性
 将来多数来到地段的人将会得到合法的移民许可，因此地段为农村家庭选择城市化提供了一条可能途径。农村人口在地段内通过“城市化”教育（经商训练、轻工业制造、出售货物），以保障他们在未来城市经济社会活动中得以生存并占据一席之地。

b. 用地与季节的阶段性——闲置地vs可耕地
 土地利用将按因时规划以实现全年持续的生产输出。公共地块将允许闲置地进行自然改造而不必使用对土壤有害的无机肥料。此外，高科技农业与绿色温室将使冬季农产品输出成为可能；轻工业产品的输出增长将成为农业淡季社区农民收入的额外来源。

c. 建设阶段性
 1. 修建地铁站（包括市场、培训中心及餐馆），湿地，森林，风车，以及安置居民的临时住宅；完成所有的“绿色”连接点的建设。
 2. 完成高密度西边住宅；开始包括公共项目的南北轴线建设。
 3. 农业住宅建设始于南北轴线，朝向地铁站；修建沿河的零售商铺和娱乐设施。
 4. 在城市化完成后农村移民输入停滞，整个地段将作为教育基地长期存在下去（如生态学、农学夏令营、高科技农业中心等）

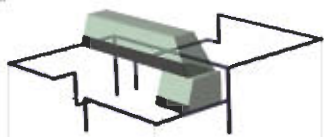


6. Phasing and renewal.
a. phasing of people entering and leaving the site:
 In the future, the bulk of those coming to the site will migrate legally. This site offers an alternative route for the urbanization of rural families. Through a process of "urbanization" – business education, light manufacturing and selling of goods – the economic activities of the city become available to the rural migrant.

b. phasing of the land and seasons – fallow land vs. cultivated land
 The land use will be phased to allow for continuous production throughout the year. Shared plots will allow fallow plots to recharge without the use of inorganic fertilizers. Furthermore, high-tech farming and greenhouses will allow for agricultural production during the winter, with an increase in light industry providing additional off-season means of income.

c. phasing of construction
 1: Train station (including market, training center, and restaurants), wetlands, forest, and windmills, and temporary housing for displaced residents. Create all "green" connections.
 2: High-density western edge housing and start of north-south axis, including public programs.
 3: Farming housing begins at the north-south axis and works towards the station. Build the retail and entertainment along the river edge.
 4: After urbanization is complete and the influx of rural migrants ceases, the entire site could be converted to an education system – i.e., ecology, farm camp, high-tech farming center.

Green house & Water System



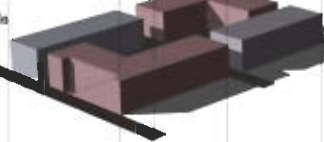
Farming Plots



Units on upper Floor



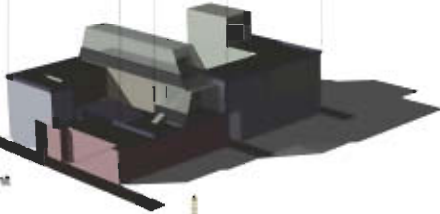
Units at Grade



Circulation



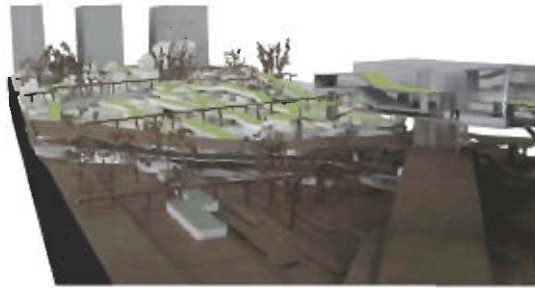
Combined Unit



Section showing air flow

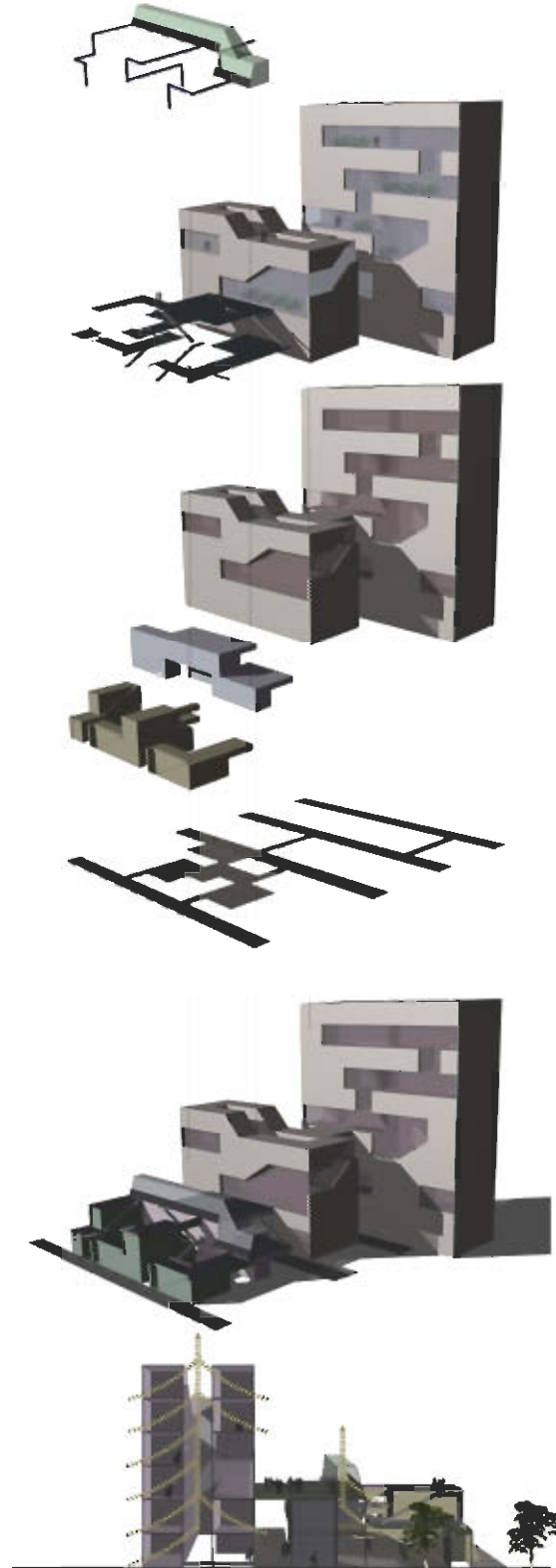
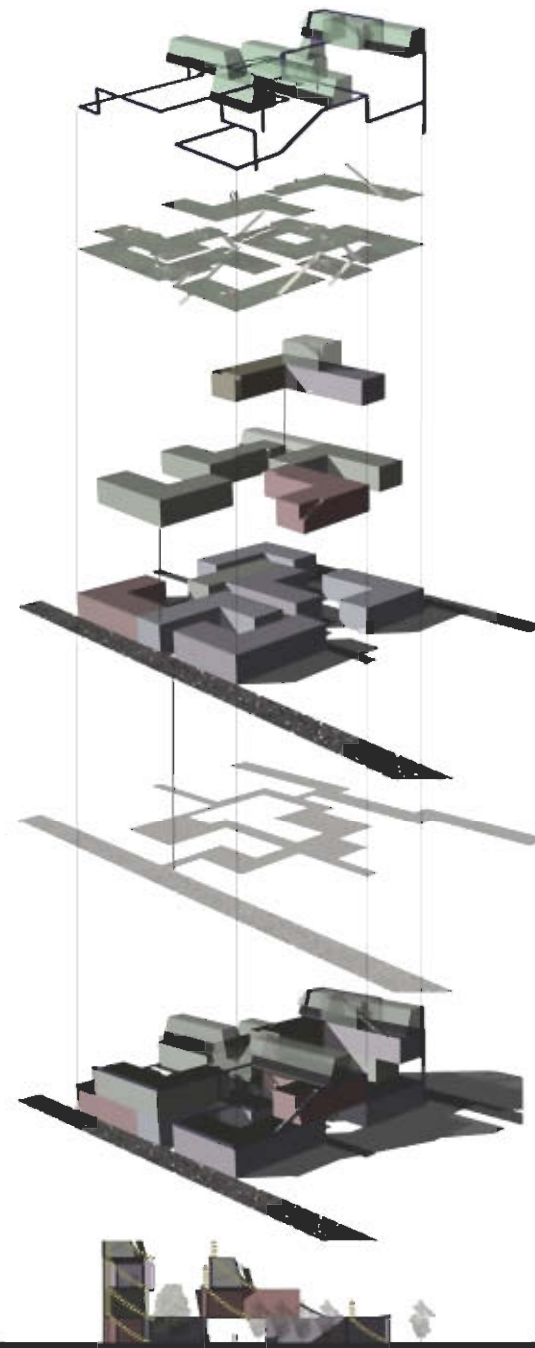


Three housing typologies were designed to provide diversity and difference within a set armature. These housing typologies can be combined to create a series of hills (low density areas) or valleys (high density areas). Each housing typology integrates farming into the house design. Thus even at the micro scale, there is continuously a tension between urban and rural. Furthermore, each housing unit is linked to a shared greenhouse that allows for agricultural



production to occur throughout the winter. These greenhouses are used to distribute water and collect solar energy (electricity and water heating). The greenhouses also act to pull warm air out from the housing units, forcing a continuous flow of air. By combining different unit typologies, the architecture of the project attempts to build an artificial landscape. It is this landscape, in fact, that marks the threshold between urban and rural.

Above: View of housing coming into the transport station
Above Right: View of retained structures and new housing forming a square.



TYPE A	ground area	570sqm(19m*30m)	
	family number	6	
	area for each family	110sqm	
	total roof farmland	418sqm	
	total ground farmland	98sqm	
	person/ground sqm	0.04	
	farmland/ground sqm	0.902	
	类型A	占地面积	570平方米 (19m*30m)
		户数	6
		每户面积	110平方米
	屋顶农田总面积	418平方米	
	地面农田总面积	98平方米	
	人口密度	0.04人/平方米	
	农田面积/占地面积	0.902	

TYPE B	ground area	1225sqm(35m*35m)	
	family number	13	
	area for each family	110 sqm	
	total roof farmland	761 sqm	
	total ground farmland	141 sqm	
	person/ground sqm	0.04028	
	farmland/ground sqm	0.7363	
	类型B	占地面积	1225平方米 (35m*35m)
		户数	13
		每户面积	110 平方米
	屋顶农田总面积	761 平方米	
	地面农田总面积	141 平方米	
	人口密度	0.04028人/平方米	
	农田面积/占地面积	0.7363	

TYPE C	ground area	1152 sqm(32m*36m)	
	family number	23	
	total living space	2496 sqm(7 floors)	
	other-use space	108.8 sqm	
	total farmland	992 sqm	
	person/ground sqm	0.8759	
	farmland/ground sqm	0.861	
	类型C	占地面积	1152平方米 (32m*36m)
		户数	23
		可居住空间总面积	2496平方米 (7 floors)
	其他用途空间总面积	108.8平方米	
	农田总面积	992平方米	
	人口密度	0.8759人/平方米	
	农田面积/占地面积	0.861	