





**项目地址:**  
津巴布韦哈拉雷市  
**项目面积:**  
2,869,365 m<sup>2</sup>  
**设计时间:**  
2013年  
**所获奖项:**  
2013年美国景观设计师协会学生组荣誉奖

**LOCATION:**  
Harare, Zimbabwe  
**AREA (SIZE):**  
2,869,365 m<sup>2</sup>  
**DESIGN PERIOD:**  
2013  
**AWARD:**  
2013 ASLA Student Awards — Honor Award

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寻找其他可依赖的水资源变得十分重要。

项目聚焦在了三个主要影响哈拉雷和诸如哈拉雷农场一样的非正规聚居区的问题上:

1) 健康: 疟疾和霍乱在哈拉雷是仅次于艾滋病的两种致命的疾病, 都由水资源管理不善而引起。

2) 水: 哈拉雷的地下水位在过去的10年里下降了两倍, 这使得非正规聚居区更加难以抽取地下水, 这突显了对“登波”之外其他可替代的水资源的需求。

3) 植被和农业: 哈拉雷丧失了其大部分的林地面积, 这凸显出了对可持续造林和耕种方法的需求。

在像哈普雷农场这样的地区, 孩子们

没有鞋, 也缺乏配套设施和社交空间, “如何”设计变得与设计“什么”一样重要。因此, 这是一个关于基本需求和人文关怀的项目, 这里的软性基础设施成为了社会基础设施。通过引人注目和具有直接影响的人为干预措施, 项目旨在教育并启发哈普雷农场的居民。项目包括: 社会化和交流的场所、多种尺度上雨水收集的方法, 以及绿化和维护哈普雷农场的合作式农林系统。这些都将有助于创建一个平衡和强健的社区。

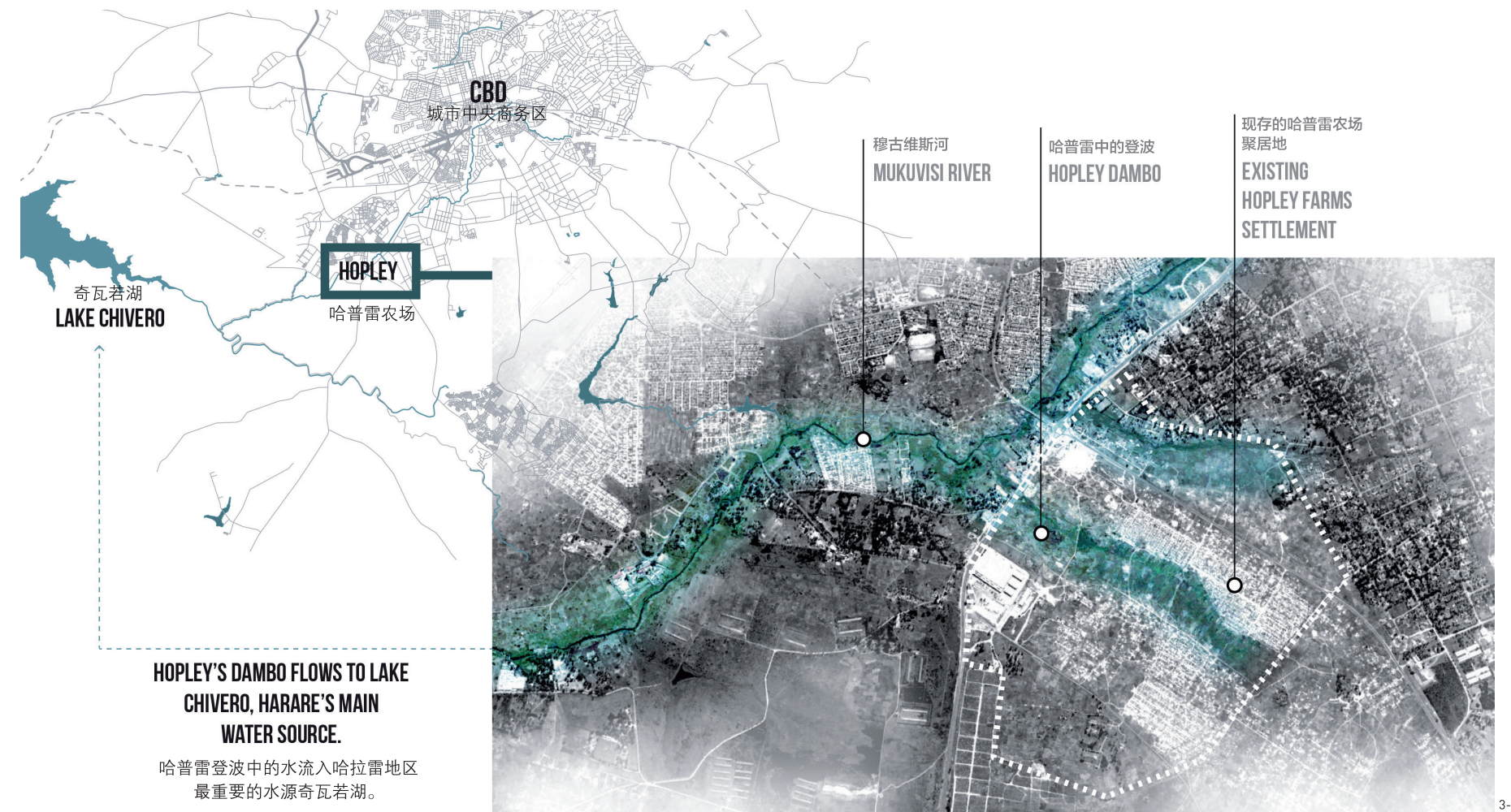
景观设计策略力求简单, 设计从现有场地条件出发, 并为不断增长的社区带来裨益:

1) 社交中心作为社交活动的发生场所, 划定在现有道路的交叉口。这些地点包括水

井、公用水箱、露天洗衣场所、学校、诊所、体育场地, 以及其他社区需要的设施。更重要的是, 这些区域将成为未来城市化的前沿阵地, 发挥监管地区发展的角色, 建立起对节点的管理以及对非正规侵占区域的保护。这将有助于界定自建城市发展的范围。

2) 引入雨水收集作为水资源。哈拉雷的气候条件为利用这一资源提供了可能, 能够解除对单一水资源的依赖, 有助于保护“登波”。

3) 公共农业和家庭农业活动以耕种带的形式进行组织, 多尺度的农业合作社为居民提供教育及就业机会。农作物品种依据它们对水的需求及哈拉雷现有的传统雨水灌溉方



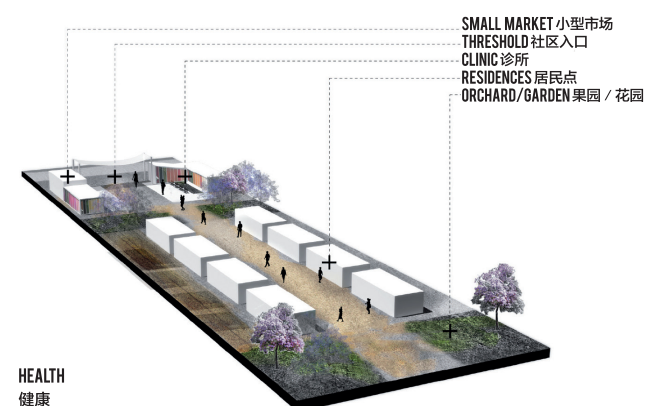
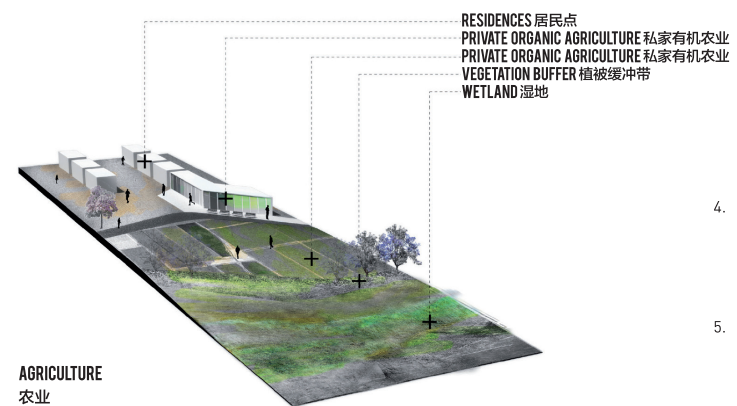
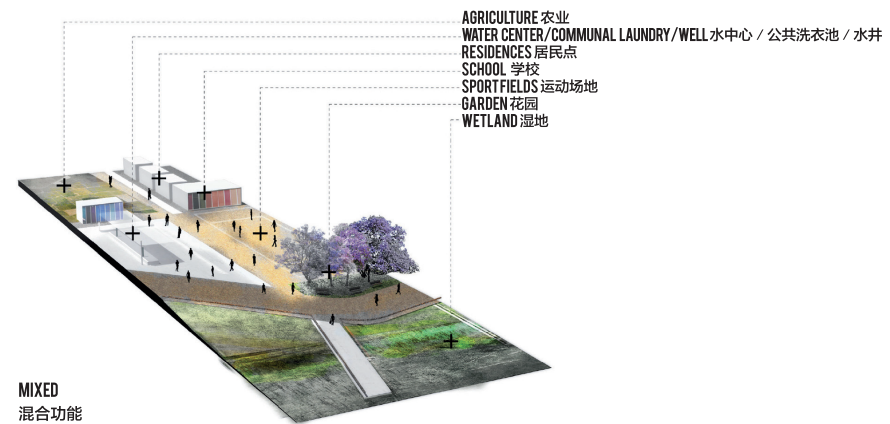
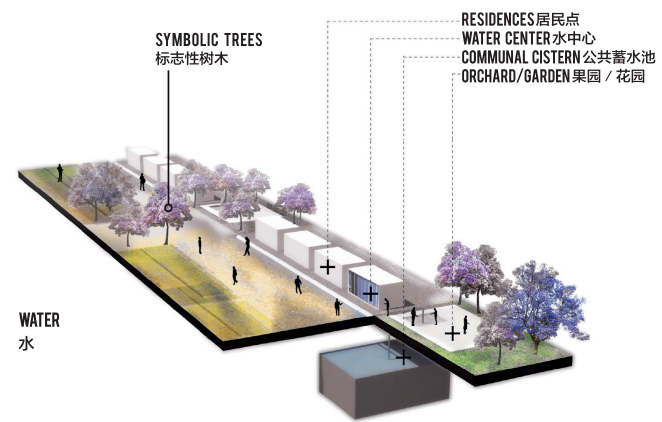
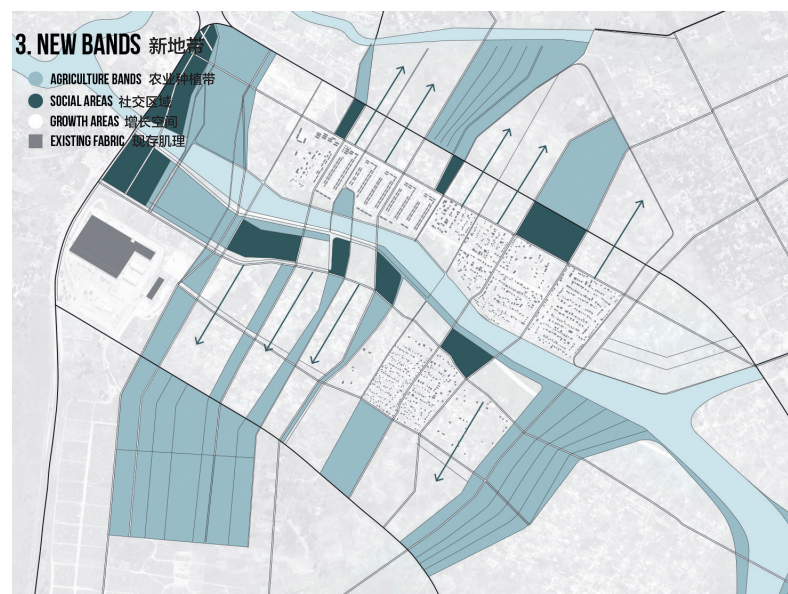
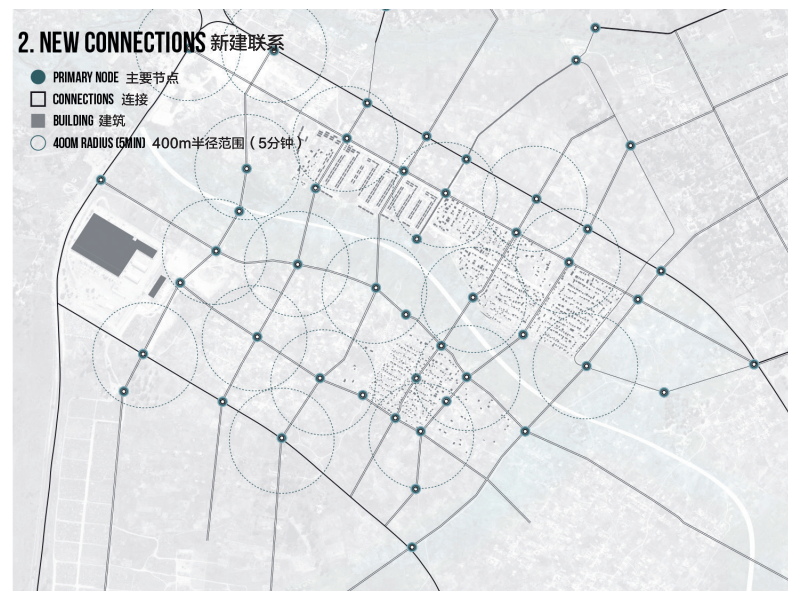
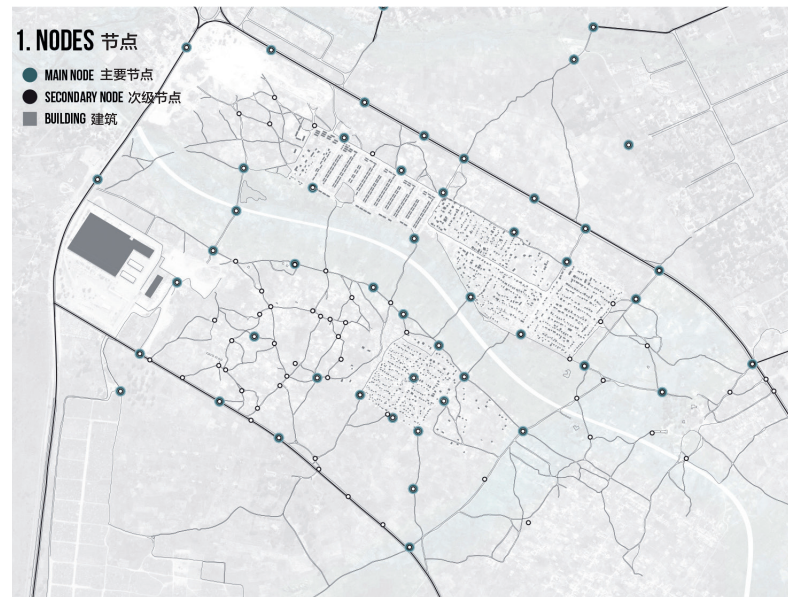
2. 通过划拨自建发展的土地, 并建设农业、水和社交设施, 景观系统将指导哈普雷农场未来的发展。  
3. 哈普雷农场位于城市扩张的生态敏感廊道内。

2. A landscape system guides Hopley Farm's future informal growth by allocating land for self-built construction and establishing agriculture, water and social amenities.  
3. Hopley Farms is located within an ecologically sensitive corridor at the threshold of urban expansion.

3-1

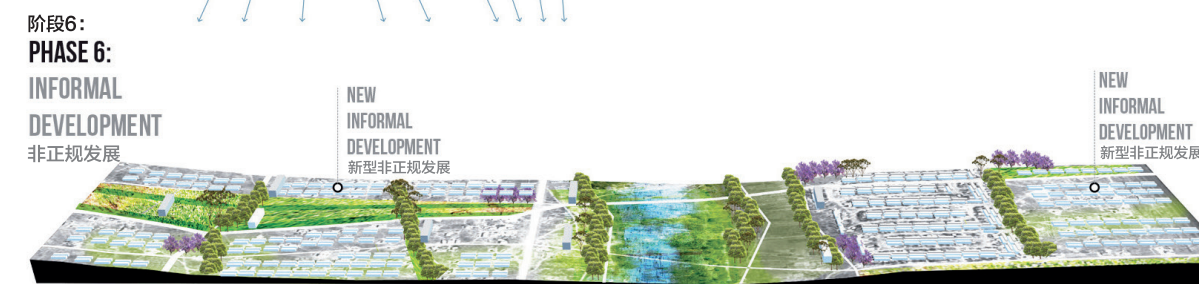
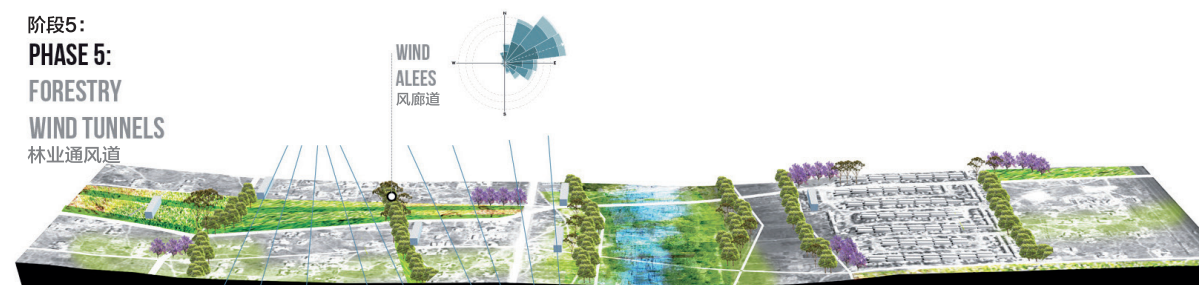
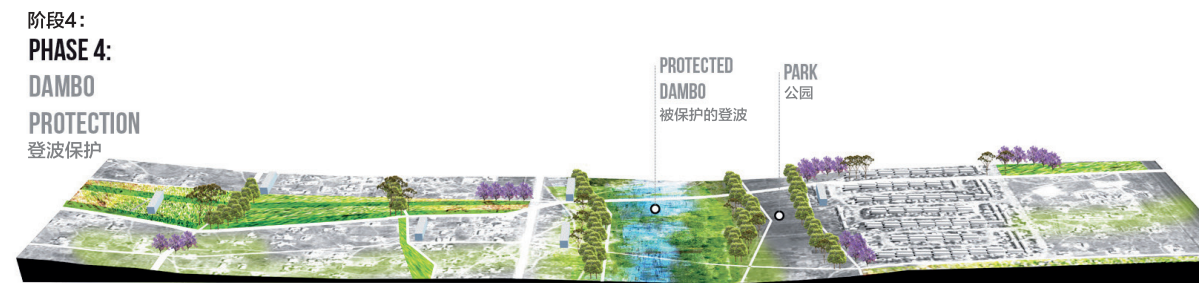
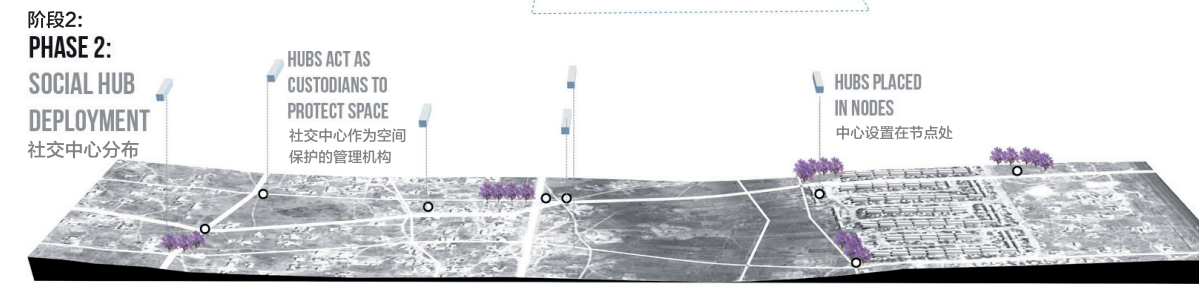
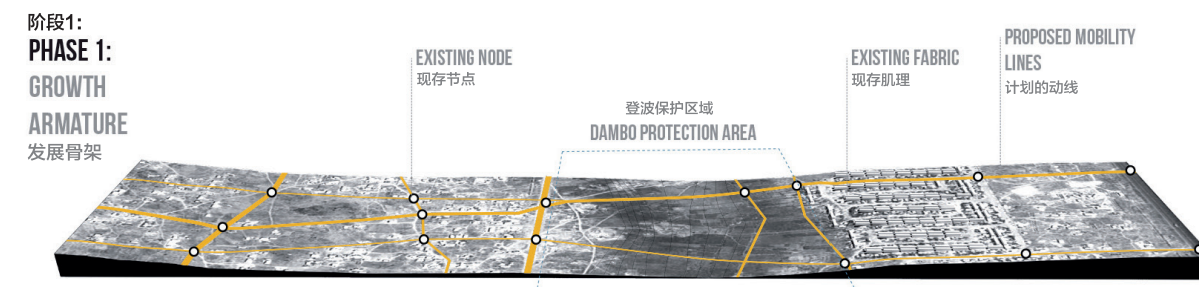


3-2



4. 现有的节点被设置为增长带，成为新的连接点，未来自建住宅、农业带和社交区域也由此划定。
5. 社交中心成为项目的核心，提供并保护那些在非正规聚居区往往会被忽视的设施与服务。
6. 分阶段实施规划

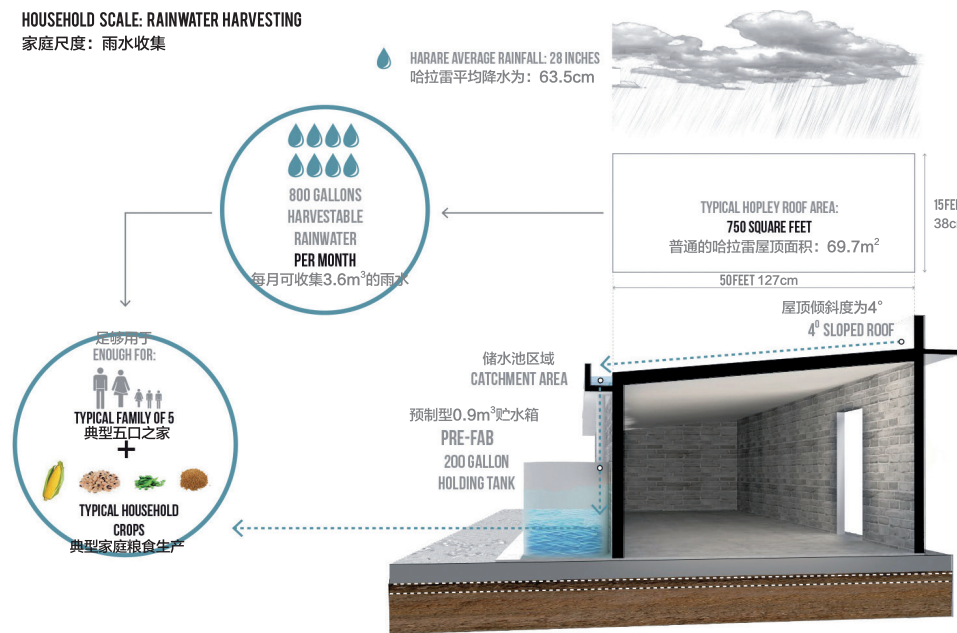
4. Existing nodes are selected which become points of new connections that establish growth bands, allocating areas for future self-built dwelling, agriculture bands, and social areas.
5. Social hubs become the centerpiece of the project, providing and protecting the amenities and services that are usually missing in informal settlements.
6. Phasing plan



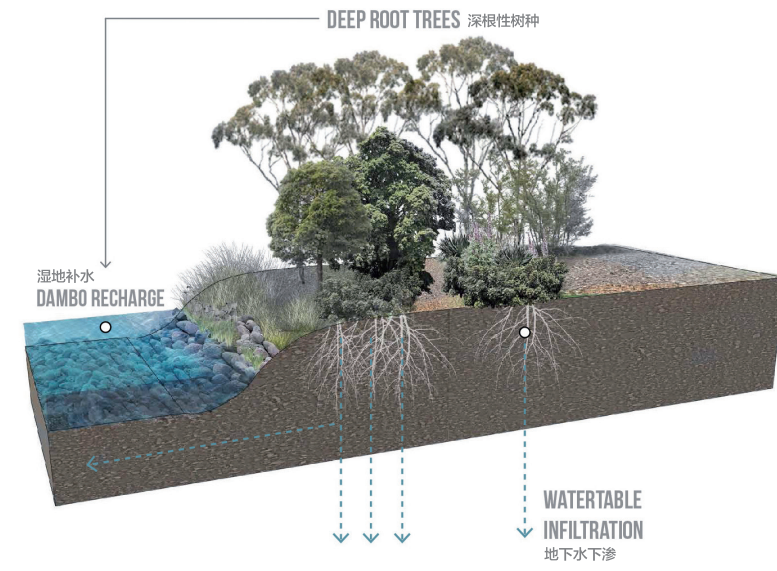
**PHASING**  
EXISTING NODES BECOME SOCIAL HUBS THAT PROTECT AREAS OF AGRICULTURE WHERE A SYSTEM OF AGROFORESTRY TRY EVOLVES AND THE DAMBOIS PROTECTED. REMAINING SPACES ARE DEVELOPED THROUGH SELF-BUILT HOUSING.  
**阶段性**  
现存的节点成为了社交节点，并对农业区域起到保护作用，其中涵盖了农林业系统，“登波”也可得到相应保护。预留空间用于建造自建住宅。

式而选择。  
4) 人行道路和一些允许简单公共交通通行的主要道路，亦有助于限定扩张的格局。  
5) 采用本地物种和非侵入性物种的造林运动具有显而易见的优点，比如有助于补给含水层、收集柴火以及营造优美的场所。更重要的是，造林运动创造了风道，可以驱散蚊虫。  
这些设计手法超越了空间层面，力求教育哈普雷农场现有的和未来的居民。社交中心通过教导居民如何收集雨水、如何加入农业合作社，以及如何依据气候条件改善他们的房屋，为居民提供了援助。因此，通过与水和植被相关的简单举措，以及社交互动和学习空间的营造，一个新的、更健康的社区被创建了起来。LAF

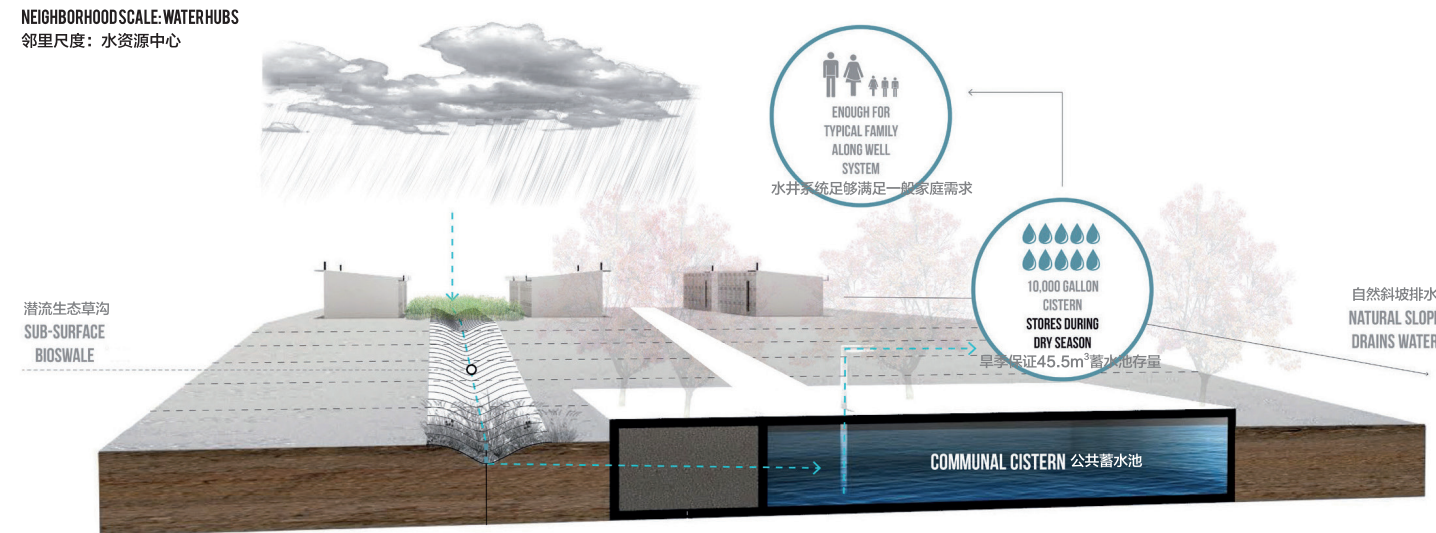
**HOUSEHOLD SCALE: RAINWATER HARVESTING**  
家庭尺度：雨水收集



**DISTRICT SCALE: INFILTRATION AND DAMBO BUFFER**  
区域尺度：下渗与登波缓冲带



**NEIGHBORHOOD SCALE: WATER HUBS**  
邻里尺度：水资源中心



Out of necessity, cities in developing countries are becoming increasingly informal. Continuous migration from the countryside places more pressure on the city to provide basic needs, services and opportunities for those who flock in search of better lives. Inside informal settlements, communities self-construct their dwellings and adapt them through continuous transformation in order to satisfy shelter and economic needs. This is typically achieved quicker and better than any formal housing program. Even if they are

ambitious and a solution in and of themselves, informal settlements remain incomplete and unsustainable forms of urbanization, frequently lacking basic services, such as water supply, sanitation, accessibility, education, health, and amenities. Moreover, landscape in informal areas is usually an afterthought, a plane that gets conquered by human intervention without regard for future consequences in order to satisfy the most pressing and immediate of needs. Like most of self-built cities around the world, this is also the case in the settlement

7. 通过三个尺度来管理水资源。雨水收集为哈普雷提供了可替代的水资源，公共蓄水池成为社交空间，具有生态重要性的登波也得到了保护。

7. Water is managed at three scales. Rainwater harvesting provides an alternative water source for Hopley, communal cisterns become social spaces, and the dambo is protected for its ecological importance.

8.9. 具有弹性的水中心可以全年提供水资源而无资源压力。

8.9. Water Hubs are designed to be resilient to provide water throughout the seasons without straining resources.

of Hopley Farms, located in the city of Harare, Zimbabwe.

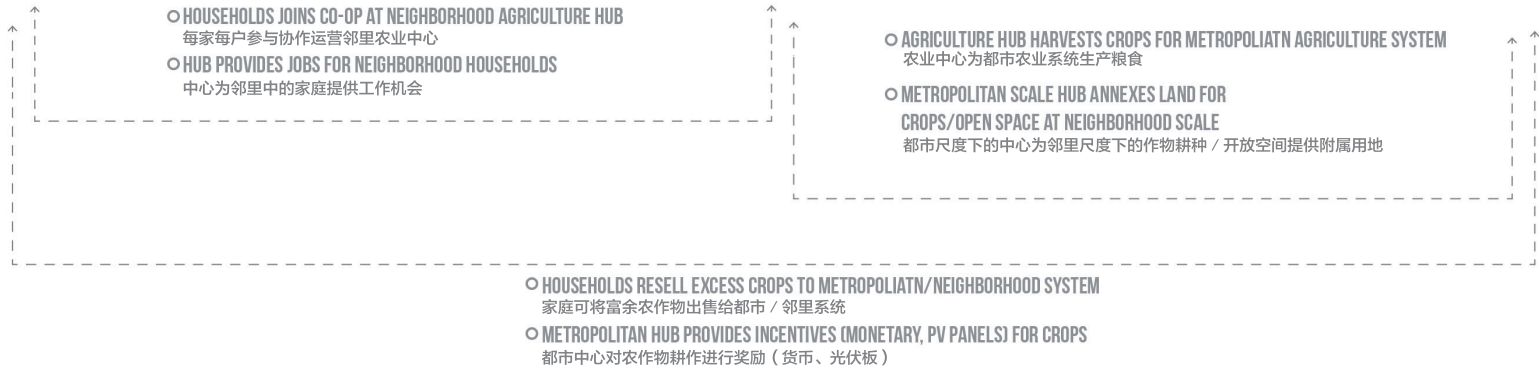
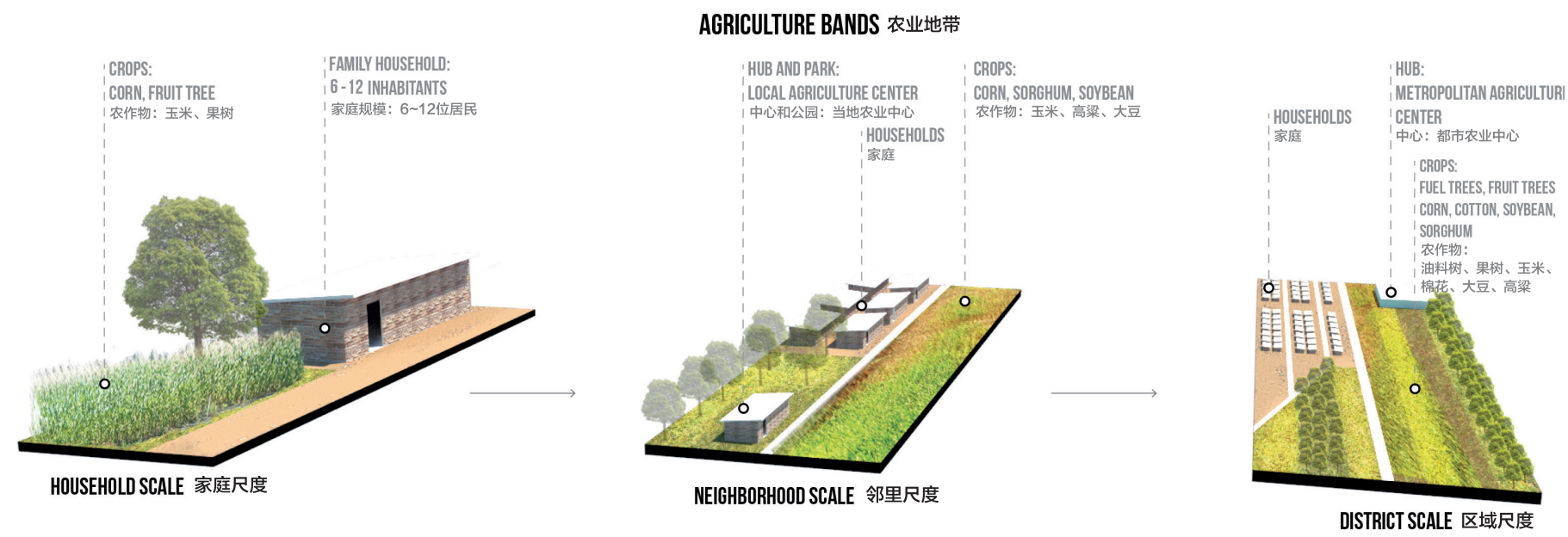
Hopley Farms is a community of over 25,000 inhabitants which began to occupy an area of south Harare in 2007 after informal residents of the central city were forcefully evicted by the Zimbabwean Government. With the fear, anger and feeling of profound loss, they forcefully re-initiated life in this new location. Although self-constructed dwelling structures are mostly of good quality, the public spaces, amenities and

social components of healthy urban districts are severely lacking. One dilapidated school serves the entire population and only one water well is shared by thousands. No health services are present, while ad-hoc agriculture is encroaching on important ecological real estate.

The project introduces Landscape Armatures as a preemptive design method that allows to tap into the potential of informality by providing it with those aspects that the settlers cannot achieve on their own.

The landscape armature bundles ecological, social, economic, infrastructural, water-management, and agricultural conditions. Through the establishment of this landscape framework, settlements elevate out of a state of submission in which they usually remain in relation to the formal city in relatively short periods of time.

Hopley Farms is expected to double its population in the following two decades. The proposal addresses the current need of the existing community as well as those of future



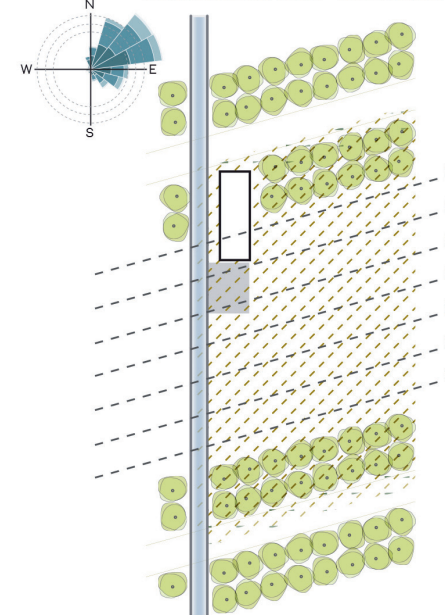
**AGRICULTURE CO-OP 农业合作计划**



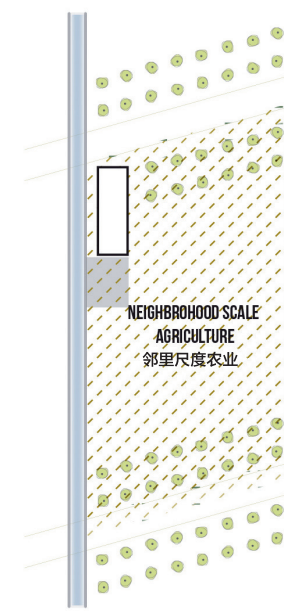
**阶段1: 管理机构和水资源 PHASE 1: CUSTODIANS & WATER**



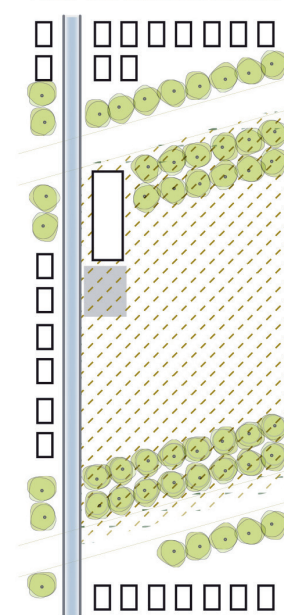
**阶段3: 成年树木 = 通风道 PHASE 3: MATURE TREES = WIND TUNNELS**



**阶段2: 树木幼苗与作物 PHASE 2: YOUNG TREES AND CROPS**



**阶段4: 非正规城镇化 PHASE 4: INFORMAL URBANIZATION**



**GETATION CATALOG 植被目录**

**HARVEST VEGETATION TREES AND PLANTS GROWN FOR CULTIVATION PRACTICES, INCOME, AND FOOD SOURCE. 生产作物**  
 为了耕作实践、收入与食物来源而种植的树木与作物。

<b>"MANGO" 芒果</b> MANGIFERA INDICA 800 MM HOUSEHOLD SCALE 家庭尺度 DISTRICT SCALE 区域尺度	<b>"BANANA" 香蕉</b> MUSA ACUMINATA 1000 MM HOUSEHOLD SCALE 家庭尺度 DISTRICT SCALE 区域尺度	<b>"MAZHANJE" 甜梅树</b> UPACA KIRKJANA 500 MM HOUSEHOLD SCALE 家庭尺度 DISTRICT SCALE 区域尺度	<b>"NHENGENI" 大青梅</b> XIMENIA CAFFRA 600 MM HOUSEHOLD SCALE 家庭尺度 DISTRICT SCALE 区域尺度
<b>"MAIZE" 玉米</b> ZEA MAYS 800 MM HOUSEHOLD SCALE 家庭尺度 DISTRICT SCALE 区域尺度	<b>"SORGHUM" 高粱</b> COMBRETUM ZEYHERI 500 MM HOUSEHOLD SCALE 家庭尺度 DISTRICT SCALE 区域尺度	<b>"SOYBEAN" 大豆</b> JULBERNARDIA GLOBIFLORA 700 MM DISTRICT SCALE 区域尺度	<b>"BLACK EYED PEA" 黑眼豆</b> BRACHYSTEGIA SPICIFORMIS 800 MM DISTRICT SCALE 区域尺度

**SYMBOLIC TREES TREES GROWN AROUND SOCIAL HUBS TO ENHANCE IDENTITY AND PLACEMAKING. 标志性树木**  
 在社交中心周边种植可加强身份归属认同与营造场所气氛的树木。

<b>"JACARANDA" 蓝花楸</b> JACARANDA MIMOSIFOLIA	<b>"FLAMBOYANT" 凤凰木</b> DELONIX REGIA	<b>"ACACIA" 金合欢</b> ACACIA SAMANEA	<b>"MUTITI" 阿比西尼亚刺桐</b> ERYTHRINA ABYSSINICA
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**CONSUMPTIVE TREES FAST GROWING TREES USED FOR CONSTRUCTION AND AS FIREWOOD. 经济性树木**  
 为建设工程与柴火供给种植的速生树木。

<b>"SICKLE BUSH" 代儿茶</b> DICHROSTACHYS CINEREA 柴火供给	<b>"BUSH WILLOW" 灌木柳</b> COMBRETUM ZEYHERI 柴火供给	<b>"MNONDO" 球花热非豆</b> JULBERNARDIA GLOBIFLORA 柴火供给	<b>"MSASA" 美丽短盖豆</b> BRACHYSTEGIA SPICIFORMIS 柴火供给
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**PROTECTIVE TREES TREES GROWN FOR THEIR BARK AND LEAVES USED AS MOSQUITO REPELLENT. 保护性树种**  
 树皮树叶用于驱蚊, 同时亦可用作营造登波缓冲。

<b>"NEEM" 印楝</b> AZADIRACHTA INDICA 树皮具有驱蚊作用	<b>"CHINABERRY TREE" 楝树</b> MELIA AZEDARACH 果实具有驱蚊作用	<b>"BLACK LOCUST" 洋槐</b> ROBINIA PSEUDOACACIA 花具有驱蚊作用
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- 三个阶梯式的途径及一个农业合作计划, 为哈普雷农场提供了食物、工作机会以及身份认同。
- 农林业阶段性发展
- A three tiered approach and an agricultural cooperative program to vegetation provide food, jobs and identity to Hopley Farms.
- Agroforestry phasing

residents. The growth armature ties both the existing and the future through a balanced and integrated system by deploying a landscape framework of agriculture, water and social spaces. This strategy is a pre-emptive approach on informal growth by inserting the necessary socio-economic and ecological amenities for the upcoming and existing areas. By planning for future growth, the design addresses the spatial and socioeconomic needs for a community in constant transformation. Thus, the project attempts to be one step ahead of unsustainable informal growth.

As many areas in Harare, Hopley Farms is traversed by a "dambo", a local word that refers to shallow, sponge-like wetlands. The dambos are extremely important for the ecological balance of the city since they allow

recharging of the aquifer and drain rainwater to Lake Chivero, Harare's main water supply. Currently, the dambos are encroached by subsistence agriculture altering their ecological functions. Therefore, protection of these dambos is essential, and a need to rely on other water sources becomes important for the environment, the community and for the future of the city as a whole.

The project focuses on three main issues affecting Harare and informal settlements like Hopley Farms:

1) Hutano (Health): Malaria and Cholera are the two deadliest diseases in Harare after HIV, all having poor water management as their source.

2) Mvura (Water): The water table in Harare has dropped to twice its depth in the last ten

years, making it harder for informal settlements to tap it and highlighting the need for alternative water sources beyond dambos.

3) Miti (Vegetation and Agriculture): Harare has lost most of its woodland acreage, revealing a need for reforestation and cultivation in sustainable ways.

In an area like Hopley Farms where children have no shoes and there is a lack of amenities and social spaces, "how" to design becomes just as important as "what" to design. Therefore, the project is about the essential and the humane, where soft infrastructure becomes social infrastructure. Through interventions that will have compelling and immediate impacts, the project seeks to educate and inspire the dwellers of Hopley Farms. These include: places of socialization and exchange, multiscale

options of rainwater harvesting, and a cooperative agroforestry system to green and feed Hopley Farms, all of which will contribute to create a balanced and robust community.

The landscape design strategy relies on simplicity; design moves that stem from existing site conditions and offer the benefits for a growing community:

1) Social hubs as points of social encounter, defined by crossings of existing paths. These include the presence of wells and communal cisterns, open air laundry areas, schools, clinics, sport fields and other programs that the community needs. Moreover, they become the first piece of future urbanization by acting as custodians that establish stewardship over nodes and protect areas from informal invasion. This helps

demarcate the areas where the self-built city can grow.

2) The introduction of rainwater harvesting as a water source. Harare's climate offers a potential to tap this resource and eliminate the dependency on one water source and help protect the dambos.

3) Communal and family agriculture, organized in cultivation bands, include hubs for education and job opportunities for residents through a multi-scale agriculture cooperation. Agriculture species are selected for their water needs and traditional rain-fed irrigation as exhibited in Harare.

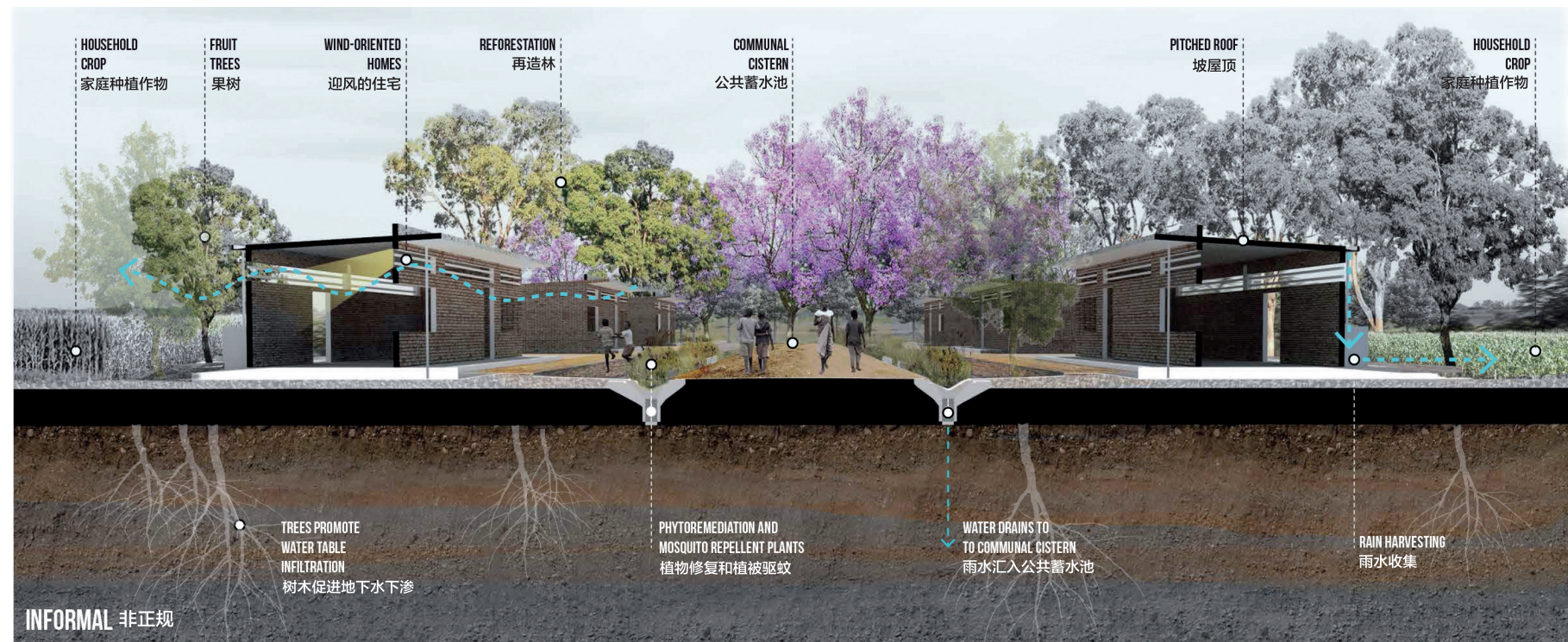
4) Pedestrian paths and a few main roads that allow for simple forms of public transportation also help to define growth patterns.

5) A reforestation campaign that utilizes indigenous and non-invasive species with distinct advantages such as helping recharge the aquifer, firewood harvesting, and aesthetical place making. Moreover, the reforestation campaign creates wind tunnels that combat the concentration of mosquitoes.

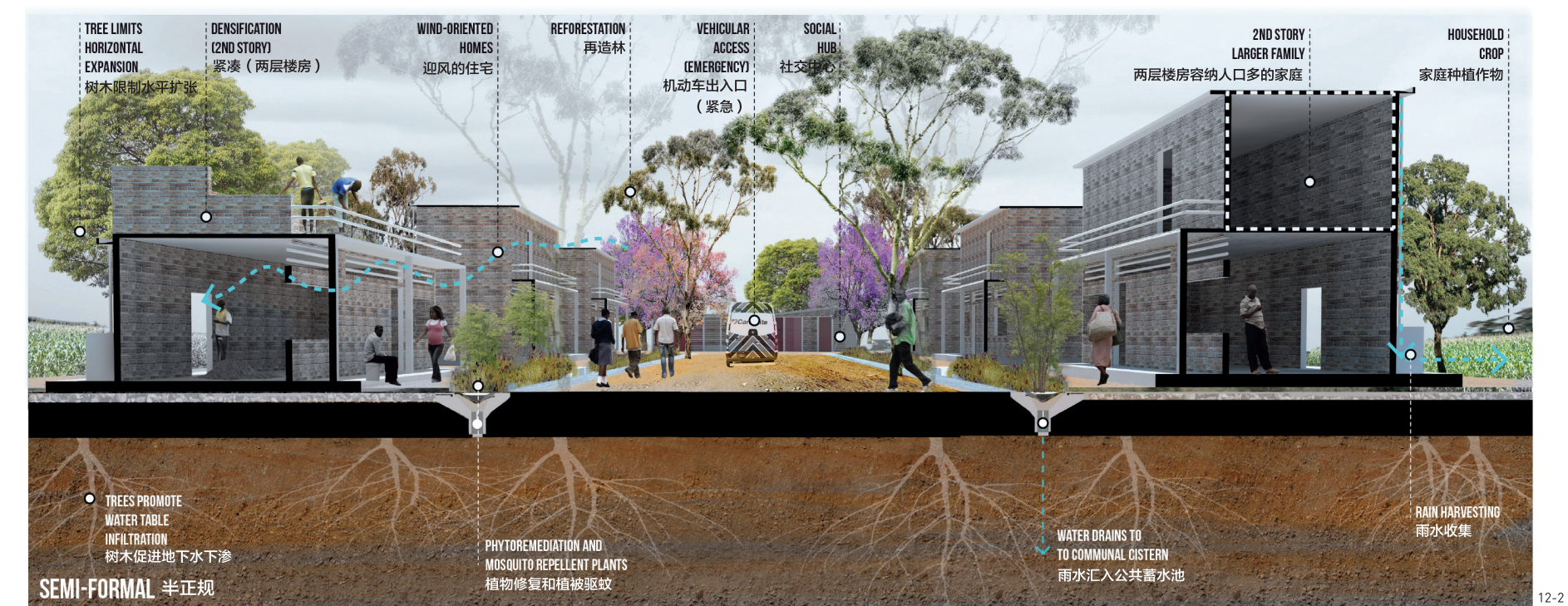
These design moves go beyond the spatial. They strive to educate the existing and future residents of Hopley Farms. Social hubs provide assistance by educating residents on how to harvest rainwater, how to become part of the agriculture cooperative, and how to improve their homes so as to take advantage of the climate. Therefore, through simple moves that relate water and vegetation, a new healthier community is created by providing the spaces where it can socially interact and learn. **LAF**

12. 社交中心为创建一个可持续发展的哈普雷提供了教育机会。通过提供有关选址、朝向和管理实践的技术援助来提升自建住宅，而所有的新建筑都将依据一个新的景观框架发展。

12. Social hubs provide education to build a sustainable Hopley. Self-built homes are upgraded by providing technical assistance such as location, orientation and management practices of new buildings, all within a new landscape growth armature.



12-1



12-2