

The XX UIA Congress Beijing '99
International Competition for Students of Architecture
"Urban Housing for the 21st Century"

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เนื่องในวาระของการประชุม UIA Congress ครั้งที่ 20 ซึ่งจัดขึ้น ณ กรุงปักกิ่ง ประเทศจีน ช่วงเดือนมิถุนายน 1999 SCUBC (Scientific Committee of XX UIA Congress Beijing '99) ได้ประกาศเชิญชวนให้ผู้สนใจที่เป็นนักศึกษาส่งผลงานทางสถาปัตยกรรมเข้าร่วมประกวดในหัวข้อ "Urban Housing for the 21st Century"

หัวข้อดังกล่าวนี้ได้สืบเนื่องมาจากประเด็นของการประชุมและผลงานที่เสนอในที่ประชุม United Nations Conference on Human Settlements ครั้งที่ 2 (1996) ที่จัดขึ้น ณ เมือง Istanbul ซึ่งเกี่ยวข้องกับการตั้งถิ่นฐานและที่อยู่อาศัย หรือที่รู้จักกันในชื่อของ Habitat Agenda and Istanbul Declaration หรือ HABITAT II ใจความสำคัญของ Istanbul Declaration ได้กล่าวถึงประเด็นการแก้ไขปัญหาความเสื่อมถอยของสภาพที่อยู่อาศัยและการตั้งถิ่นฐานของมนุษย์ที่หลายประเทศกำลังเผชิญอยู่ รวมทั้งการพัฒนาคุณภาพชีวิตภายใต้การตั้งถิ่นฐานของมนุษย์ ซึ่งจะกลายเป็นประเด็นที่สำคัญของโลกต่อไปในศตวรรษหน้า ดังนั้น การประกวดแบบครั้งนี้จึงได้หยิบยกเอาประเด็นของที่อยู่อาศัยในศตวรรษที่ 21 มาเป็นหัวข้อของการประกวด เป้าหมายสำคัญคือเพื่อสนับสนุนให้เกิดการนำ UN Habitat Agenda และเอกสารอื่นๆ ที่เกี่ยวข้องกับการตั้งถิ่นฐานมนุษย์ไปสู่แนวทางปฏิบัติ รวมทั้งเป็นการส่งเสริมให้เกิดการแลกเปลี่ยนความคิดในการนำเสนอปัญหาและแนวทางแก้ไขซึ่งเกิดขึ้นเฉพาะเจาะจงในแต่ละพื้นที่ แต่ละภูมิภาคของโลก

นักศึกษาปริญาโท ภาควิชาการวางแผนภาคและชุมชนเมือง คณะสถาปัตยกรรมศาสตร์ สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง ได้ส่งผลงานเข้าร่วมประกวดจำนวน 1 ผลงาน โดยได้รับการสนับสนุนงบประมาณในการดำเนินงานจากคณะสถาปัตยกรรมศาสตร์

Housing a Scavenging Community with

Existing Condition and Problem Statement

The On-Nuch Scavenging Settlement

The On-Nuch Scavenging Settlement comprises three small communities, occupying three pieces of land along the passage leading to the former On-Nuch dump site. Dwellers are originally scavengers sorting recyclable garbage from the previous dump. The dump site was later terminated, filled with top soil, and waiting to be developed into a public park. The Authority decided to replace the initial dumping method with a new fertilizer plant, a policy which also transforms the dwellers' way of life. Some of them are now employed as dump truck collectors. A small portion of the occupants, who possess sufficient resources, set up their small recycling businesses, buying and selling recycling materials in the vicinity. The rest of them sort out recyclable materials from dump trucks for business owners. However, the three communities currently coexist under three separate forms of land occupation—leasehold, owner-occupier, and squatting. The distinction of forms of land occupation reflects also the varying degrees of tenure security, which virtually determines the different physical conditions of the three settlements.

The underlying reason for choosing to pursue the housing issues of this settlement is our attempt to save the community and to facilitate its recycling activities with an environmentally sound maneuver.

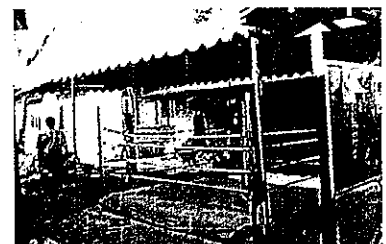
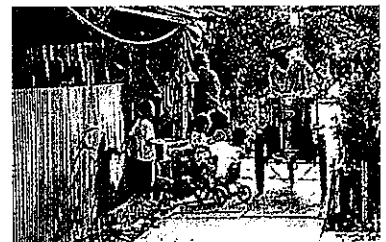
The succeeding sections describe the settings of the three communities.

1. The Muslim-Island Community

The Muslim-Island Community, a settlement on leasehold land, is a 30-year-old community, comprehending approximately 60 households. Dwellers were required to pay 3,000 bahts for an initial fee and 200-300 bahts for monthly rental to their Muslim landlord. Most structures, some of which are two-storied units, appear to be built with permanent materials. Since the settlement is considered "legal", dwellers are able to obtain public utilities from the authority. No sewer lines are provided, however. The community is polluted with waste water and filled with rubbish, since no community organization in charge of arranging the cleaning and collecting activities exist.

2. The Ruam-Jai-Patana Community

The Ruam-Jai-Patana Community used to be a squatter settlement on a piece of privately owned land. After the 1985 eviction attempt, the dwellers lost in their negotiation with the landlord for a replacement plot. With the assistance from a foreign commercial bank, the community then established a saving co-op to acquire resource to buy the present piece of land as communal asset. The community is able to repay its debt after 15



Global Thoughts and Local Actions

years of consolidated scavenging. It is now an owner-occupier settlement comprising approximately 70 households, each owning a 120-square-meters plot. Most structures in this community, some of which are two-storied, are made of permanent materials. All the households are legally provided with water supply and electricity.

3. The Long-Island Community

The Long-Island Community squatted along the access road toward the disposal plant. The community takes up an area of 50 meters by 1,000 meters strip of land which belongs to the local authority. Several evicting threats and harassment have been imposed along the past 30-year period. No harsh action has yet been taken, since the local authority still never came up with any concrete purpose of utilization over this plot. The community embodies approximately 100 households of 5-8 persons per household. The majority bread winners are presently dump truck laborers, small-scale second-hand material traders, and disposal plant wage workers, with an average daily income of approximately 100 bahts, barely sufficient for their basic needs. An average shack normally houses 2-3 families raising the living density way above its legal limit. Living condition has been worsen by the existence of garbage sorting lots along side each cramping shack cluster. Clusters are interconnected by rotten wooden walkways over waste water and rubbish littered by the inhabitants themselves. Since the settlement is considered "illegal," no official utilities can be connected. The households, therefore, obtained their water supply and electricity from their "legal" neighbors across the fence with extreme cost. Some provider households at the other side of the fence intentionally tore down part of the fence as a point of entry, and established a shack on the Long Island Strip solely for the utility distributing purpose. Without tenure security, people never bother to build permanent structures. Most shacks are made of temporary materials obtained from the dump site, i.e., card boards, and metal sheets. There is no sewer lines nor rain storm drainage provision in the area, which brought about flooding during rainy season. Nonetheless, the idea of transforming the former dump site to a public park makes the evicting ploy most imminent.



Our design proposal is gearing toward the rescue of this Long-Island community, the most vulnerable among the three scavenging settlements. However, what we learned from the comparison among the three settlements was the importance of land tenure, a driving force mobilizing the local residents to invest in and improve their physical living conditions. Obviously, the eviction tendency and unhealthy environment greatly affected the tenants' scavenging activities, which, most importantly, is an activity which supports the recycling and reusing of scarce resources in the city, in accordance with the essence of Agenda 21.

A Precondition from Agenda 21 and Habitat II

Following the current trend of sustainable development paradigm, firstly, we took the concept of collective local action to solve the global ecological problems as stated: *Think globally and act locally*. We do believe that the equity of resource distribution, be it intergeneration or intrageneration, is essential to the sufficiency of scarce resources and the survival of our fragile ecosystem. Recycling and reusing of materials are among the important factors contributing to sustainability. *The survival of a scavenging community as such is, therefore, prominent at the macro level of the city*. Secondly, we need to help those in the society who are socially, economically, and politically less privileged since they are the most vulnerable to unsustainable acts. In the micro level therefore, we agreed that maintaining the sustainability and adequacy of the urban housing is essential. In this light, we assumed two critical propositions under the concept of Istanbul Declaration (Habitat Agenda): "*adequate shelter for all*" and "*sustainable human settlement*." In our sense, adequacy of shelter includes the right to legal security of tenure, equal access to land, affordable financial opportunities, and equal access to services. (see Chart I) Sustainable housing, on the other hand, means "meeting the needs of the present without compromising the ability of future generations to meet their own needs." Again, the present needs include economic security, social, cultural, and health contentment. To ensure the future generation to meet their own needs means minimizing the use of non-renewable resources (i.e., fossil fuel), and sustainable use of finite renewable resources (i.e., recycling and reusing of water). These preconditions are the source of our design concepts. (See also our design concept).

Chart I. Agenda 21 & Habitat II precondition

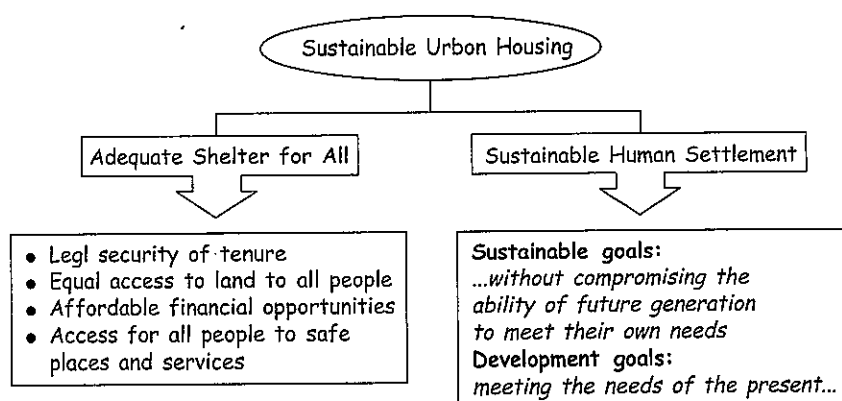
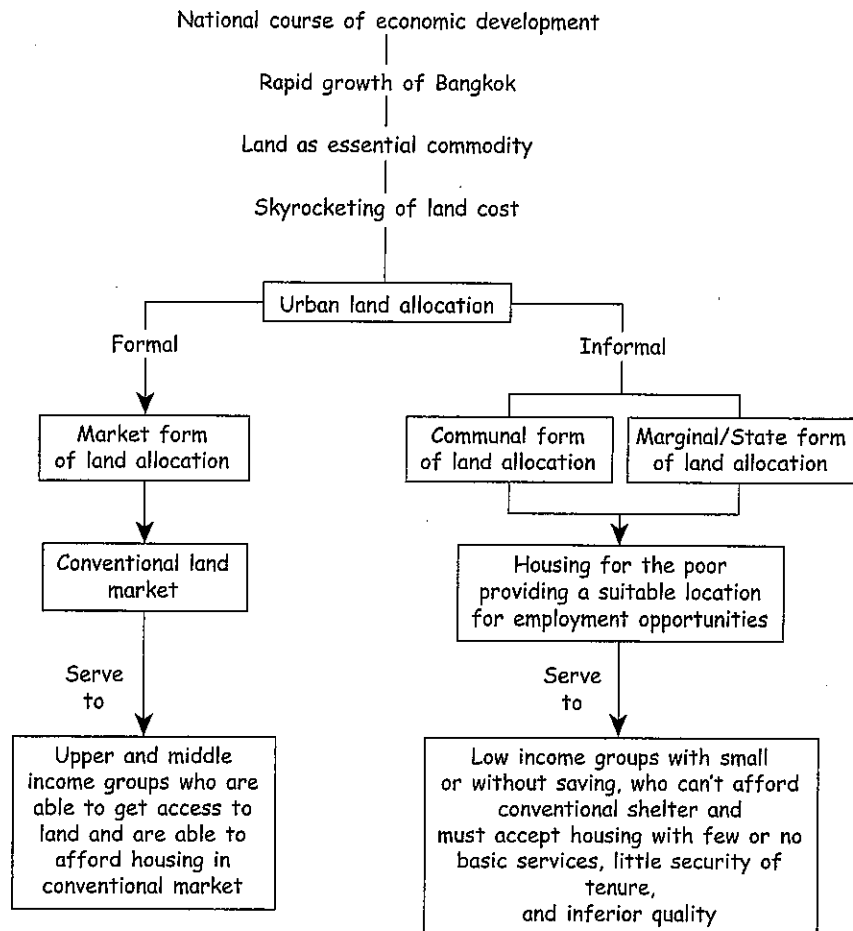


Chart II, Structure of Land Allocation



Forms of Land Allocation

Land is obviously the most crucial resource for creating housing. However, different forms of land allocation coexisted in most Third World cities owing to imperfect market economy. Three forms of land allocation—the market form, the state form, and the communal form—are involved in the Bangkok housing process. Most upper and middle income dwellers are able to afford the market form of land allocation, which allows the market force to determine the equilibrium of supply without intervention. While the state form of land allocation and housing production can by no means meet the needs of the growing number of the urban poor, those who have no saving can't help but resort to the third form of land allocation, which tenure security and decent housing quality are usually not accounted for. (see Chart II). We attempt to challenge the urban poor's land deprivation issues by legalizing the communal forms of land allocation via the Governance and Civil Society Approach. (See also the Governance Approach)

A Vicious Circle of Housing Problems

Housing issue has long been considered part of the vicious circle of poverty and deprivation. The urban poor usually earn insufficient and unstable income, a dilemma which barred them from getting access to finance served by formal financial institutions and legal land tenure. Illegality also prevented them from getting access to necessary utilities and brought about poor housing conditions, which ultimately lead to poor health and working ability. Working impotency further leads to financial scarcity, which bring them back to the state of poverty (See Chart III).

Using tenure security as a departing point, this proposal strives to challenge the problems of housing the poor under the urban governance approach to provide sustainable housing to break this vicious circle at the micro level, while relieving the ecological problems at the global level.

An Introduction of a Governance Approach to the Designing and Implementation Process

In contrast to the conventional housing approach, the Governance approach allows the local community organizations, under the role of civil society, to interact with the local authority to voice their needs and obtain services via collective resolutions and informed decision making. In the case of housing along the "Long Island Stripe," the local community organization negotiates for an alternative lot nearby to relocate the settlement to make room for a more productive activities across the potential park. After a 15-year tenure is granted and the new settlement is legalized, the community brings in a technical team from the KMITL School of Architecture to help design the settlement with participatory technique. Dwellers gradually self-build their shelters with the team's close consultation. Utilities can then be legally serviced by the authority. Housing in the new settlement will be administered under the communal housing concept to obtain formal loan and to prevent selling of legal rights. The increase of income via communal agriculture production and good living environment then enhance life-chance and good health to enable the community to pay back loan to financial institutions and pay monthly rental to the authority (See Chart IV).

Design Concepts

In order to accommodate the overall solution proposed in Chart I and to break the vicious cycle as illustrated in Chart III, three integrated design concepts, focusing on livelihood, environment, and self-help, are stemming from the above justification, which brings about some detailed design guidelines:

Chart III, Vicious Circle of Housing Issues and Roots of Housing Problem

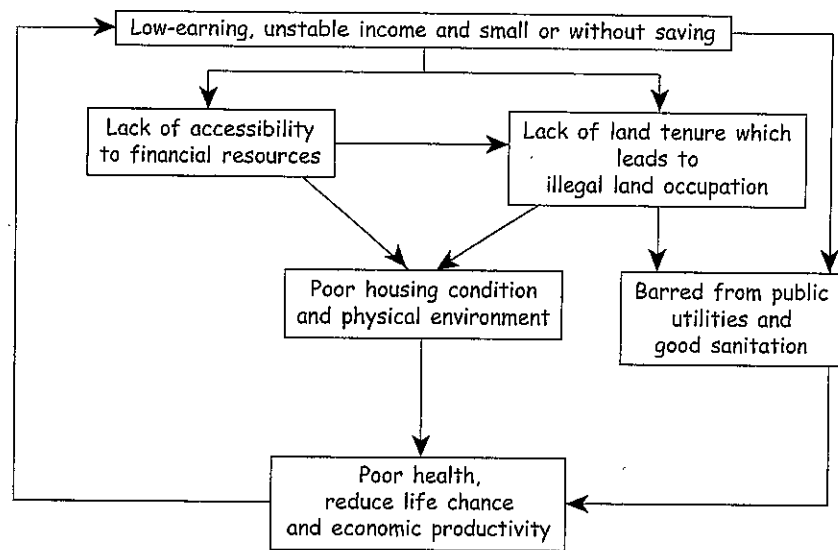
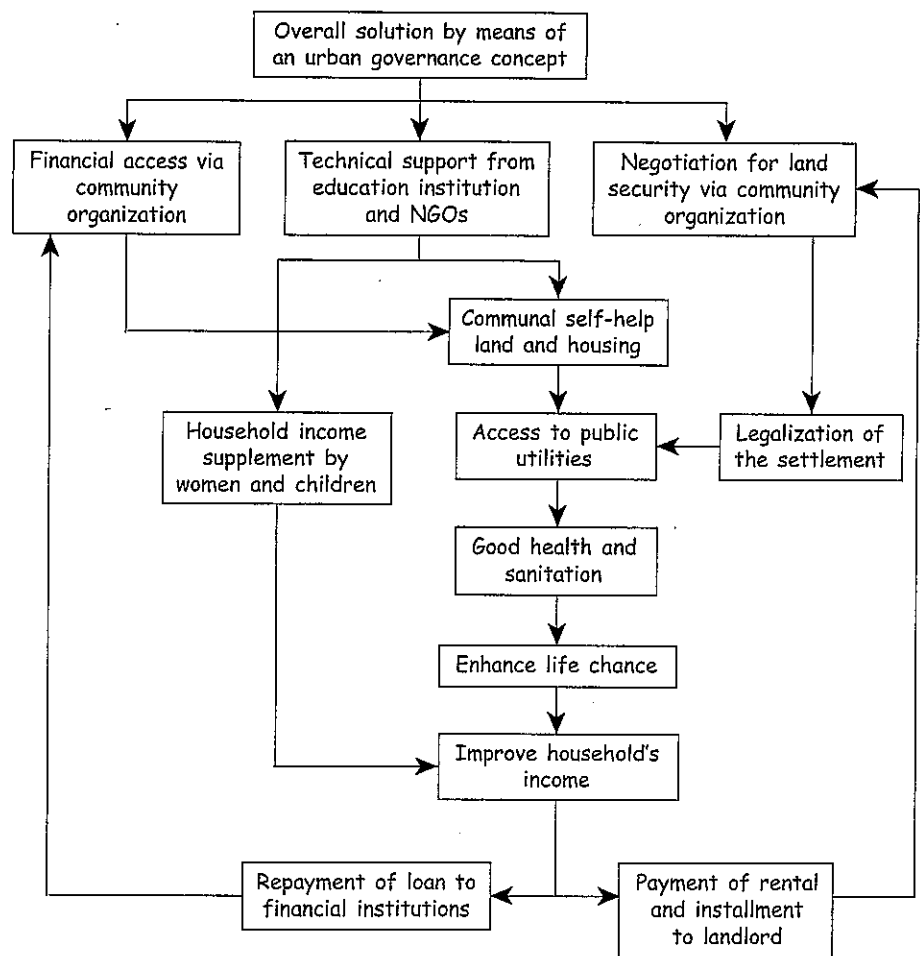


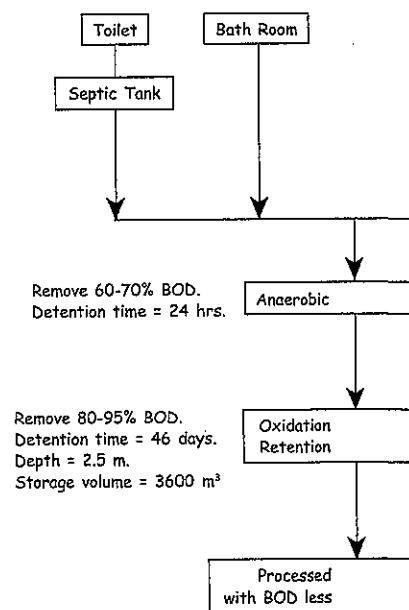
Chart IV, Operationalized Solution



Our ultimate proposal vis-a-vis the

Category	Existing settings / problems	Proposed response / course of action
Design of dwelling units	The community comprises dwelling units small shacks to house numerous medium size households of 5-8, with multipurpose areas for sleeping, eating and other dwelling activities. Dwelling units are spontaneously scattered along the access street, with physical conditions that are exceedingly deteriorated.	Redesigning and gradual relocating to adjacent lot in order to improve physical settings and to accommodate a higher quality of life, while preserving the community's employment and way of life. Promoting the consolidation of and interaction among dwellers by grouping the dwelling units around the common area in blocks of double-story structures, eight apartments per block.
Tenure security and utilities	The community does not hold any tenure security.	Negotiating with the local authority, by means of community organization or NGOs, for a 15-year tenure with a possibility of extension. Providing public utilities by means of the "civil society" approach.
Income Supplement	There is very limited or no space around the shelter for livestock, horticulture and other income earning activities.	Providing sufficient space in the common area for horticulture, fish pond, and livestock for the community's subsistence and commercial purposes. Communal agriculture will be operated by women and children who have more spare time using recycled water from the oxidation pond.
Recreation	There is very limited or no space for socialization, recreation, or sports pursuit. Most sports and play activities for kids are taken place on the traffic surface or near the dump site.	Providing specific common recreational space for sports, socialization, and leisure, sufficient for members of the community.
Major employment opportunities	There are two types of material gathering warehouses and sorting areas scattering around the residential spaces. They are large scale sorting lots owned by traders and small lots owned by small investors. Wage sorters have no warehouse of their own.	Preserving the community's original recycling activities but separate working- from living-zones to avoid hazardous side effects. All three types of gathering activities will be relocated to an empty lot next to the high-rise apartment. Large scale traders are required to pay monthly rental fee to the authority to cross subsidize cost occurred at the residential areas.
Sanitation	Sanitation measure in the community is virtually non-existence.	Establishing collector sewer lines from the community for both household waste and rainstorm water to the designated retention pond to prevent flooding during monsoon season. The pond will also function

Chart V. Proposed Zero Energy Consumption Water

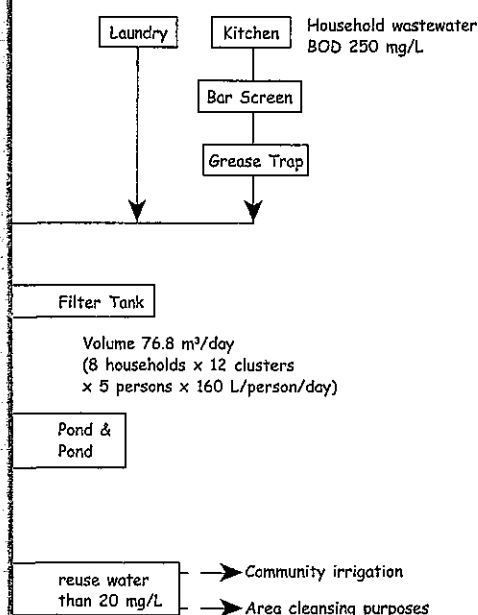


existing problems & design concepts

Category	Existing settings / problems	Proposed response / course of action
		as an oxidation unit to clean up and supply recycled water to the community agricultural activities. Providing "anaerobic filter" toilet system to improve household hygiene. Providing open air kitchen to enhance comfort and safety, and to accommodate traditional spicy Thai cooking.
Design and construction methods	Shacks were put up freely.	Involving the local residents in the designing process via gaming and model building methods to reach a consented final design solution in accordance with personal needs and perceived identity of the community. Using appropriate technology and local used materials such as plywood, metal sheets, and crate material for construction materials. Applying simple design with self-help techniques in mind such as modular assembly method. Focusing on energy efficient design for physical comfort, such as natural lighting and ventilation with optimal void-to-solid wall ratio.

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Recycling Process for the New Settlement



Three major design concepts:

Design Concepts	Design Guidelines
Supporting Livelihood	<ul style="list-style-type: none"> Supporting daily activities and living behavior Ensuring socio-cultural compatibility Enhancing life-chance Supporting role of women and children, i.e., occupation
Environmentally Sound	<ul style="list-style-type: none"> Good sanitation Energy efficient design i.e., natural lighting, ventilation, compact site planning Recycling and Reusing of materials and water. Communal agriculture Neighborhood identity and compatibility to the urban fabric
Self-help	<ul style="list-style-type: none"> Appropriate technology, usage of local and used materials obtained free or with minimal cost Self-built techniques Participatory design solution

The house plan configuration must provide privacy yet invite social interaction, and maximize outward viewing to enhance security to protect dwellers from potential crime.

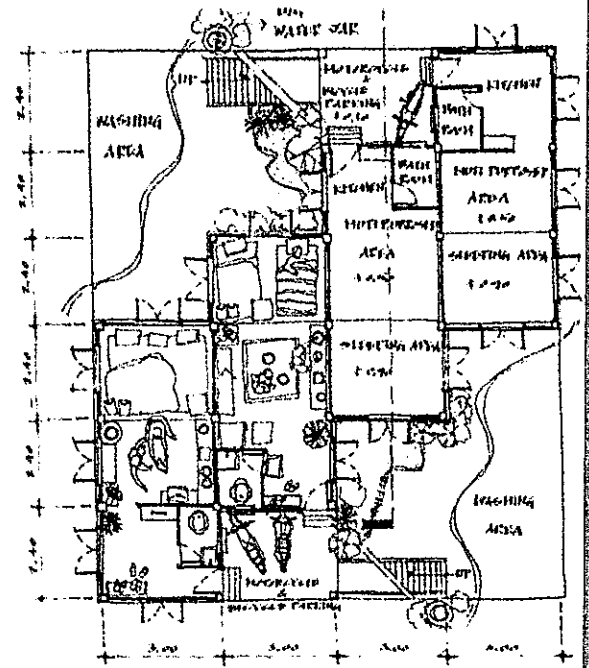
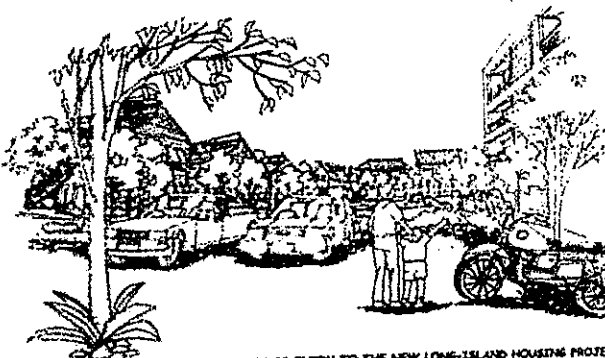


Diagram illustrating the relationship between Single Family Dwelling, Extended Family Units, and Zigzag to End. The diagram shows three types of floor plans:

- SINGLE FAMILY DWELLING**: A 3x3 grid with a diagonal line from the bottom-left to the top-right, labeled **2.40**.
- EXTENDED FAMILY UNITS**: A 3x3 grid with a diagonal line from the bottom-left to the top-right, labeled **2.40**.
- ZIGZAG TO END**: A 3x3 grid with a diagonal line from the bottom-left to the top-right, labeled **2.40**.

Arrows indicate the flow from the Single Family Dwelling to the Extended Family Units, and from the Extended Family Units to the Zigzag to End.

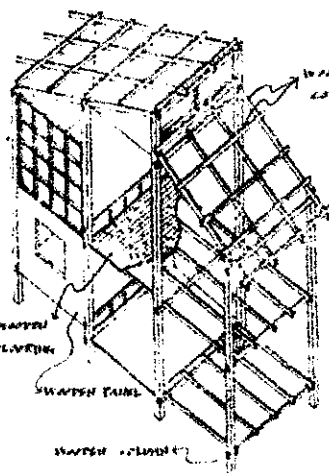
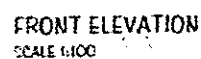
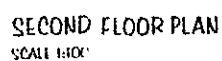
A SCHEMATIC ILLUSTRATION OF OPERATIONAL



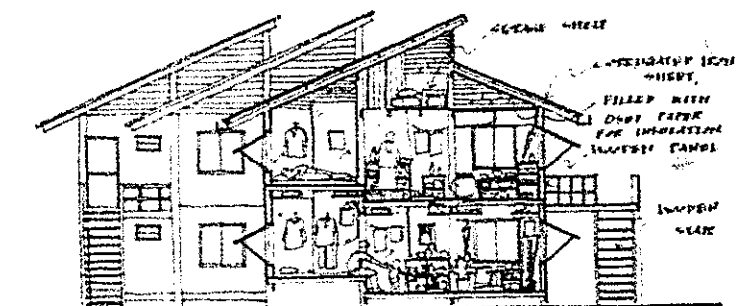
THE POINT OF ENTRY TO THE NEW LONG-ISLAND HOUSING PROJECT



FRONTAL VIEW OF A DWELLING BLOCK



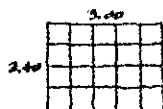
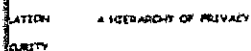
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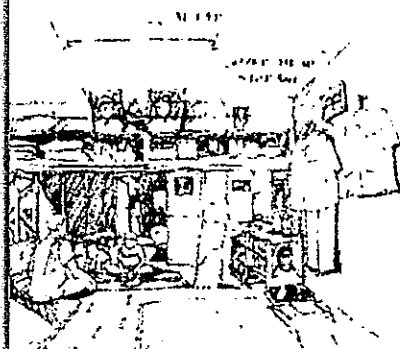
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MODULAR SYSTEM

AXONOMATIC
SCALE 1:100

SECTION
SPALL HCO



INTERIOR SPACE FOR SLEEPING LIVING AND EATING ACTIVITIES



THE SHARED COMMUNAL AREA FOR SOCIAL INTERACTIONS