Macro Center Working Papers

April 2005

Macro Studio Projects: Afghanistan

Follow this and additional works at: https://docs.rwu.edu/cmpd_working_papers

Recommended Citation
https://docs.rwu.edu/cmpd_working_papers/21

This Article is brought to you for free and open access by the Center For Macro Projects and Diplomacy at DOCS@RWU. It has been accepted for inclusion in Macro Center Working Papers by an authorized administrator of DOCS@RWU. For more information, please contact mwu@rwu.edu.
THE CENTER FOR MACRO PROJECTS AND DIPLOMACY
ROGER WILLIAMS UNIVERSITY

WORKING PAPER SERIES
VOLUME SEVEN: SPRING 2005
POST-CONFLICT RECONSTRUCTION: RE-CONNECTING SITES, NATIONS, CULTURES

MACRO STUDIO PROJECTS: AFGHANISTAN
The Center for Macro Projects and Diplomacy was established at the First Macro Conference held at Roger Williams University, Bristol, Rhode Island in April 2004.

The Center fosters the interdisciplinary formulation, study, demonstration and debate of ideas contributing to human progress through the improvement of world habitat. In the increasingly globalized world, solutions to problems require a broad approach that considers an array of concerns—cultural, environmental, technical, economic, social, political and legal—as well as the communication and negotiation skills necessary to achieve agreement. Many current proposals or projects fail because they are conceived in isolation or consider relationships narrowly. With invited leaders, faculty and students concentrating on clearly-defined issues of importance to the world community—land, water, energy and food supplies; transportation, environmental quality, housing, education, health care, heritage—the Center follows through on steps needed to design, display, debate, evaluate, test, and in appropriate cases, deploy undertakings of relevance and urgency.

Current activities of the Center include:

- organization of an annual conference on selected themes involving large scale projects and their potential for positive diplomatic impact,
- publication of the annual Journal of Macro Projects and Diplomacy, that acts as a forum for exchange of ideas and a means to disseminate information and report research activities. The Journal for Macro Projects and Diplomacy is available from Roger Williams University, Bristol, Rhode Island.
- development of Preliminary Project Proposals for consideration by investors and government for implementation.
- publication of Occasional Papers by leaders in the field on selected large scale projects with urgent implications

MACRO PROJECTS WORKING PAPERS SERIES

The Center also publishes the Macro Project Working Paper Series. All Working Papers are the product of faculty and student research at Roger Williams University that address an annual conference theme. Papers have been grouped by subject such as international relations, architecture and planning, engineering, management, law and finance.

Director, Center For Macro Projects and Diplomacy
Stephen White

Publications Designer and Coordinator
Timothy Ganetis

For further information, contact

The Center for Macro Projects and Diplomacy
Roger Williams University
One Old Ferry Road
Bristol, RI 02903-2921
(401) 254-3605
www.macrocenter.rwu.edu

Copyright 2005, Roger Williams University
All rights reserved. No part of this publication may be reproduced in any form without prior permission from Roger Williams University or individual contributing authors. Copyright clearances of any borrowed material are the responsibility of individual authors.

Views expressed in the publications of the Center for Macro Projects and Diplomacy are reflective solely of the authors and not the University, its faculty, staff, administration or Board of Trustees.
Post-Conflict Reconstruction: Re-Connecting Sites, Nations, Cultures

The Second Annual Conference of the Center for Macro Projects and Diplomacy at Roger Williams University, Bristol, Rhode Island.

VOLUME SEVEN: SPRING 2005, REVISED 06/2005

MACRO STUDIO PROJECTS: AFGHANISTAN

CONTENTS

1. General Overview 3
   a. Special Land Use: Zones of Land Protection 4
   b. Environmental Protection and Responses 4
   c. Ten Principles for Settlement Reconstruction 6
   d. Selected Architectural Principles 7

2. Bamiyan 8
   a. Settlements 11
   b. Housing 11
   c. Bamiyan as a Prototypical Settlement 12
   d. Phasing 14
   e. Bamiyan Settlements 16
   f. Schools 17
   g. Adaptive Reuse of a Qala 18
   h. Housing on Slopes 19
   i. Incremental Housing 20
   j. New Courtyard Housing 22

3. Kabul 24
   a. Kabul River at the Timur Shah Mausoleum 26
   b. Roads and Preservation 29
   c. Cultural Restoration and Preservation 29
   d. Housing and Pedestrian Paths - Jade Maiwand Street East 32
   e. Housing / Retail / Hotel Public Bath and the River - Jade Maiwand Street West 34
   f. High Rise Tower Hotel, Housing and Parks 35
   g. Mikrorayan Site - Plattenbau Construction 36
   h. University Housing and University Growth 40

4. Bibliography / Internet Resources 45

5. Credits 49
Afghan village North of Kabul with distant Hindu Kush mountains.
Legend:

1. New urban growth South of Kabul's airport
2. Arid landscape forms contrast with the geometrical square-shaped compounds walls
3. Urban bazaar scene
4. Shop owner
5. Open sewage in market street
6. Countryside tea house
7. Geometric patterns ornate the wall of the Mazar-i-sharif main Mosque
8. Women weaving a kilim
9. Man made caves carved into the sandstone cliff in Bamiyan
10. Kakrak Valley in Bamiyan is a Unesco World Heritage site
11. Teacher and pupils at work
12. Mud brick housing bathed in spring light
13. Buzkashi player
1. General Overview

In both rural settlements and urban centers, the wars that Afghanistan has endured have destroyed many services and structures. World population growth and its impact within Afghanistan amplifies the need for reconstruction. This investigation explores ways that reconstruction may proceed outside urban centers to create stable, safe and comfortable conditions that could assure a positive and hopeful way of life.

Over the next few years, the demands for housing and services in Afghanistan will increase dramatically. Urbanization, the attraction of jobs and the desire for a better way of life create their own demands by drawing people away from the rural areas. By creating and improving conditions in order to provide a better way of life in the rural settlements, growth could be encouraged. In doing so, this could reduce the attraction and the necessity of the migration of the rural population into the urban centers. It is necessary to remember that any effort to initiate reconstruction needs input from all the parties that are involved. The input of people that will be affected is of the highest priority of planning in order to assure informed decision making. The common good is best defined through empirical social approaches rather that sketchy and anecdotal data.

Various site investigations involve existing conditions in Afghanistan and potential conditions related to growth and population increases in the country. The focus of these investigations is primarily on rural settlements or those small villages that dominate the agricultural valleys of the country. Sites are chosen also in Kabul to better understand where major growth patterns exist and where improvements could be made. Learning why urban centers draw people to them produces a deeper understanding of the problem and may give a better perspective on amenities for settlements that could discourage mass-migration from the rural settlements to urban centers.

The settlement of Bamiyan is typical in many respects of other rural villages. These typical qualities include vernacular themes of architecture which involve issues of program, materiality and detail. Major portions of Bamiyan have been destroyed and ruins still exist. Land has been often vacated and ownership is in question.

In Bamiyan, the existing infrastructure cannot adequately support the existing population or the expected population growth in the future. No clear contemporary water treatment programs are in affect. Fresh water for human consumption is scarce. The sparse water supply that does exist near farms is collected with great care and directed into valley irrigation channels. Electric power is virtually non existent. The mountainous topography surrounding towns is severe and the composition of the soil for these steep slopes is poor for both grazing and for agriculture.

Outside these settlements, an urban center like Kabul has occupied a central place that grew and accepted multicultural ethnic groups from both the East and the West. In addition to being a major urban center on the fabled “Silk Road”, its civilization dates back thousands of years.

The current conditions in Kabul are critical. Often, the image of poverty and squalor dominate its presence. The city has an estimated population of 3.5 million. It has an antiquated infrastructure system, an inadequate road system, a lack of electrical services, poor water quality, inadequate water treatment and sanitation, a shortage of housing, and unplanned land use. Many of its buildings are in ruins as a result of the wars that have plagued the city since the late 1970’s.
a. Special Land Use: Zones of Land Protection

Looking over the physical uses of the valley topography that seems prototypical for small settlements, it seems that the establishment of legal regulations for land use is both necessary and timely. Establishing a plan that regulates land use and restrictions would be an essential first step in reconstruction. It is recommended that “Zones of Protection within Settlement Valleys”, be established for the following:

(1) Small Family Farms: Topography and availability of water. These regulations provide protection to this precious resource. (2) Historic Preservation Sites: These are the markers of a country’s culture and history. (3) Grazing land. This is a resource that must be protected through management. Extensive spring overgrazing has resulted in serious deterioration and damage of these lands. Consider seasonal restrictions or “discontinuance” of use by domestic stock. Establish grazing reserves. Protect against the practice of “dry farming”. (4) River protection: the use of the river as a source of water for the people and for agriculture require its protection. Establish protected edges and prohibit contamination of any kind. (5) Reforestation: This is a program that should be encouraged and expanded throughout the country where altitude and soil conditions permit. It affects water conservation, microclimates, construction material, and the beauty of the country. (6) Protect special topographical features unique to Afghanistan. (7) Protect wildlife and wildlife habitat.

b. Environmental Protection and Responses

Environmental protection seems to be of little concern. Much of Afghanistan has archaeological structures that warrant historic preservation. They are of cultural importance both to the citizens of Afghanistan and to outsiders who visit. Tourism can have a positive economic impact that would play a part in long-term reconstruction of the country. The town of Bamiyan is the home of many historic sites, the most well known of which are the Buddhas which were destroyed by the Taliban in 2001. Bamiyan, in that sense, could be a case study that could provide a careful look at issues of historic preservation and the economic result of tourism that could then be applied to settlements throughout the country.

With the existing conditions described above, all prototypical design language should address the following conditions:

1. Environment
   - energy use and conservation
   - use of water
   - green belts
   - protection of water
   - protection of agricultural land
2. Cultural considerations,
   - respect for historic preservation
   - space requirements and program considerations
   - scale of spaces between structures
3. Construction and Materials
   - use of available construction or new construction materials,
   - traditional building techniques by local builders
   - structural technologies that assure stability
4. Typical infrastructure elements
   - energy, water, sanitation, roads
5. Building types
   - housing, education, healthcare
Legend:

1-2. Buddhist monks cells carved in the cliff in Bamiyan.
3. The Red City (Shahr-i-Zohak), remains of an ancient fortress, ten miles east of Bamiyan.
5. From inside the Shrine of Ali at Band-i-Amir.
6. Remnants of a watch tower in Bamiyan.
7. Sheidan Village.
8. A slope highlighted by poplar trees lining an irrigation ditch.
9. Following an established pattern, an irrigation ditch marks the interface between agricultural land and land occupied by houses at the foot of a hill.
10. Ancient irrigation canals on the side of mountain slopes have been carefully engineered to bring water to far away locations.
c. Ten Principles for Settlement Reconstruction

1. **Cooperation:** Work with local groups, laymen and professionals to establish what the people need and desire in the area where reconstruction will take place. Don’t assume answers without careful assessment.

2. **Land Tenure:** Establish procedures to ascertain legal land ownership and when necessary, provide compensation to eliminate obstructions to proper planning.

3. **Land Use and Special Regulations:** Set regulations to protect land with unique qualities. This will include cultural amenities, archaeological sites, unique vernacular architecture, land subject to environmental damage, protect special characteristics of the individual farms that blanket the valley; protect rivers and water supplies from contamination.

4. **Cultural Respect:** Evaluate historic preservation programs, protect religious ideologies and traditions, develop neighborhoods that encourage cooperation, ethnic and gender equality, and respect for people of all ages. Reestablish regulations and the law.

5. **Environment:** Protect the Environment - in all its aspects. Create architectural designs that support this protection.

6. **Climate:** Understand and utilize climate condition as it exists in the many regions of the country. Protect from its adverse affects; Utilize an architectural and urban pattern language responsive to climate condition that promotes good use of solar energy.

7. **Infrastructure:** Reconstruction essentially begins by initiating systems to treat wastewater, control and generate freshwater, generate power for lighting, heating, and communication. Improve transportation.

8. **Education and Health:** Rebuild and expand schools to educate the adults of the future. Plan schools to serve multiple uses for public involvement. Initiate planning of health clinic and medical centers to eliminate disease and improve health.

9. **Construction and Materials:** Use local materials and consider local labor for construction; Investigate innovative designs to counter earthquakes and natural elements that erode vernacular construction. Use contemporary materials and structure when and where appropriate.

10. **Generate employment:** For all of the above promote employment, and job creation.
d. Selected Architectural Principles

1. Land Use and Density: In lieu of agricultural land, build on steeply-sloped land to allow meaningful population increases without sacrificing farm land.


3. Scale: Respect existing scale of urban and rural settlement structures and extend it wherever possible. Retain and rebuild damaged or destroyed existing structures where possible.

4. Community: Support, extend, and interconnect neighborhoods housing, schools, services, and reduce reliance on automobiles. Investigate designs that provide essential services within walking distances. Interconnect local settlements with public transportation systems.

5. Flexible Use: Design flexible spaces that support multiple use and allow future adaptive reuse.

6. Culture and History: Design with an understanding of the culture of place. Promote preservation of cultural elements and archaeological discoveries.

Legend:
1. Brick maker near Kabul.
2. Shah do Shamshira mosque, Kabul.
5. Courtyard House on the slope of TV Hill in Kabul.
6. Bamiyan valley with qala (fortified compound) in the foreground.
7. Puli Khishti mosque in Kabul and market.
8. Removing silt from an irrigation canal.
9. Large Buddha of Bamiyan before destruction.
10. Large Buddha of Bamiyan after destruction.
Legend:

1. Satellite image of Bamiyan site. (approx 6 kilometers across)
2. Large Buddha niche
3. Small Buddha niche
4. Shahr-i-Gholghola hill
5. Areas of settlement
6. New Bazaar
7. Areas of irrigated agriculture
8. Areas of rain-fed agriculture
9. Airfield
10. Hospital and University

2. Bamiyan Valley looking South-East toward the Shahr-i-Gholghola fortress hill
The approach here is to suggest population growth over a 40 year period, and the driving issues that should be addressed in that growth.

Agricultural land requires protection and the expansion and improvement of farming techniques. These measures could provide jobs and increased food production for the population of settlements as they grow. Like other agricultural centers, there is a potential to export products to the other urban centers in Afghanistan and to different parts of a global market. The future value of small, individually owned farms may be in question for economic reasons. The issue is not just a response to more efficient farming techniques but it is also a culture of respect for the ownership of small farms and the stability that it creates. In this country with harsh winters, greenhouse construction could extend the growing season and allow for the production of crops for local consumption as well as for distant markets. Responses to this issue would include advanced water conservation techniques that would allow scarce water resources to be more effectively used.

If the economy of the many settlements is to prosper and expand in a meaningful way for the people, then attention to job creation and income will probably involve tourism. The valley image, with its patterns of small farm subdivisions, itself could be destroyed if unplanned and uncontrolled growth patterns were allowed. Population increases, and the “sprawl” that often accompanies it, could destroy the farms themselves. This would cause the loss of not only the primary sources of food production but also the loss of the uniqueness and beauty that could be used to generate and sustain a viable tourism economic element.

The need for reconstruction and development of basic services in both major urban centers and settlements involves rebuilding the infrastructure. Water, wastewater treatment, power and power generation, waste material removal, transportation and the improvement of roads, general sanitation, and communication systems are basic needs that are currently not being provided in an adequate way to the people of Afghanistan. How these services are quickly achieved is important. An organized plan for the settlements and the urban centers, developed with the input of the people involved, is key to its success.

Design response to climate conditions is a tool that can help reconstruction efforts in many ways. Afghanistan has cooler temperatures in the summer in the mountains and very warm dry conditions in the southern part of the country. Thus, the different regions of the country would have different strategies to integrate climatic response into building design.

Legend:
1. Bamiyan is located 200 kilometers west of Kabul, in the heart of the Indu Kush mountain range.
2. A 1970’s view to the “plateau” across the valley taken from the niche of the large Buddha. Visible at the forefront is the old bazaar that has been relocated near the river after being destroyed during fighting in the 1990’s.
3. Vernacular houses are built on the lower range of mountain slopes to preserve agricultural land.
Legend

1. Ledges and main relief
2. River and primary irrigations ditches systems
3. Tree growth/Forest are primarily located along the valley floor irrigation ditches and the River
4. Roads and “tracks”
5. Built structures: existing buildings (in magenta) versus extensively destroyed buildings (in black)
6. Irrigated agriculture versus rain-fed agriculture
a. Settlements

The existing small-town rural fabric consists of clusters of buildings, sometimes with more than one family occupying each building. Usually located near farm parcels, the clusters are relatively low in density and decentralized in their locations. The distance between settlements is relatively short, seemingly based on walking distances to the fields and the close proximity to commercial and retail services.

Historically and continuing into the present day, Afghanistan seems to have been built around a multicultural and multi-ethnic base that enjoys independence and territorial separateness. Independence and individual rights with autonomy seem to have played a significant part of its history. With the incredible mountainous terrain, vast distances and low population, this could be expected. Its people welcome a certain independence in their governance and decision making.

Taking this overview into account, a case for planning directions that favor smaller sub-centers of growth can be made. This smaller growth pattern of sub centers located within walking distance of one another could be extended to the neighborhood or community level and may be a model for the future settlement growth.

These design studies explore the architectural components that make up these sub-centers in settlements and the values and architectural language that might be expressed by this planning approach.

Within these neighborhoods would be found basic services for every day needs. One would expect external and internal spaces to meet in that provide services, an elementary school, governing offices / town meeting spaces, regulating offices and enforcement, religious and cultural places, and housing.

b. Housing

The reconstruction of settlements and the ability to absorb returnees and population growth requires housing. The construction of housing brings about a feeling of normalcy, provides security, and revives the economy. “Informal” or illegal settlements offer no security of tenure. Eviction and relocation are a constant threat. With various considerations of time and planning and the existing status of housing, it is proposed here that the government should take measures to legalize these settlements and grant security of tenure so that the people can be assured of their homes and planning can advance.

Innovative types of housing can be implemented:

1) New housing developments, with higher costs, good quality (See page 22-23: Prototype Courtyard Housing).

2) Housing that is rebuilt from the ruins of the existing damaged structures.

3) New housing of the scale and construction of older, vernacular types of building.

4) Incremental house construction that allows expansion over time. According to this approach, a single room with toilet may be the starting house with other rooms added to it as funds become available (See page 20-21: Prototype Housing on Slope).
c. Bamiyan as a Prototypical Settlement

Legend:

1. Map of cultural artifacts and natural features that require protection
   1-2. Buddha Niches and Monastery Cave Complex
   3. Shahr-i-Gholghola hill (archeological site)
   4. Kakrak Valley
   5. Foladi Valley

2. Map showing protected areas, World Heritage Site as well as the agriculture protected zone and the zone dedicated to urbanization

Legend:

- Archeological and Natural Protected Zone
- Potential Urbanization
- Agriculture Protected Zone
- River Protection Corridor
d. **Phasing** - The phasing sheets show anticipated changes over intervals of time.

In the initial phase, intensive planning with input from local residents and professionals is initiated. Land use protection regulations are established. The town center is a focus for earlier development containing cultural buildings, retail and commercial services. Here, the town expands toward the river to the SE. “Right of Ways” are incorporated into all new buildings complexes, newly built roads and pedestrian paths where future infrastructure will be required.

By phase II schools are constructed, housing is expanded within the valleys in small sub-centers separated by reasonable walking distances to farms, schools and other services. Steep-slope housing with exterior gardens and the potential for expansion are constructed.

Greenhouse construction and the use of water conservation systems begins to extend the agricultural growing season. Tourism services continue to grow.
By Phase III, housing density and population will have grown significantly enough to require a wastewater treatment plant to be built. “Right of ways” allow for efficient construction. Airport expansion begins and processing and manufacturing facilities grow. Better access to outside economic markets for specialty items are possible.

Infrastructure is completed. Town Centers grow to limits. Roads and paving are expanded. Agriculture and crop yields are increased. By the completion of Phase III, the town centers are complete and cultural services are established. Mixed-use buildings including housing form the core of neighborhoods. Schools expand while housing growth reaches the limits supported by services previously constructed.
e. Bamiyan Settlements- This enlarged plan focuses on the settlement center. The growth extends to the existing market buildings, housing, retail, and basic services. Agricultural land is protected, as is the river. Growth to the east joins the existing market with mixed-use buildings and significant housing increases. The promontory overlooking the valley allows continuous increases in growth with housing and government services and tourist accommodations. The steep slope to the plateau above has housing adapted to its topography. This housing responds to sunlight, views, exterior spaces, and is served by pedestrian paths.

The model photos (page 17) show the major land change that is often typical of valley topography. The town center, showing new buildings, is intended to continue the existing settlement scale and character. A new school forms a core of education and cultural amenities including open space for public use.
Legend:

1. New development in the triangle between “plateau” and bazaar
2. Non-farm housing developed on slopes as a means to spare valuable arable land
3. The old city of Bamiyan with its traditional fabric of courtyard farmhouses and large Qalas is connected to the bazaar by new development
4. Schematic cross section through the large Buddha niche, the agricultural valley, Bamiyan old town, and the plateau.

(f for specific functions, see legend on opposite page)

**f: Schools**

Education should occupy the initial stages of reconstruction. Existing schools that were damaged or destroyed should be rebuilt and additional new schools should be constructed. The design investigation shown here anticipates growth over a number of years, serving students from nursery age to adolescence. Environmental and climatic responses to sun are basic design tools. The elimination of heat in the summer months and the introduction of natural ventilation techniques for cooling when needed are applicable to this two-stage phased design. The plan invites flexible use. Moveable walls produce a large meeting room which can also serve as a community meeting space. Flexible use spaces are also designed into exterior private gardens for teaching outside on warm days. The large play field is landscaped and used both for school activities and community functions.
g: Adaptive Reuse of a Qala

Legend:

1-2. Location Plan and model of existing Qala
1. Qala
3. Guest House Prototype: Ground floor plan
   1. Green Courtyard
   2. Existing structure to remain or to be restored
4. Typical Upper floor plan
5. Restored Exterior facade
6. Qala in context
7. Guest House Section
**h: Housing on Slopes**

*Legend: Housing Type Samples*

1. Incremental Housing
2. New Vernacular Housing
3. Large scale Development Housing
4. Mixed Use
i: Incremental Housing

There is a need to design housing that can be expanded over time by initial or subsequent owners. Topographically, the planning of these units can be adjusted to various site gradients from flat conditions to steeper slopes and allow placement to account for existing obstructions like major rock outcropping or existing buildings. This design approach is realistic in goals and funding. In the initial stages of planning and construction, funds and financing are usually small and difficult while the need is apparent. To build a small structure initially within a set property, with established envelope parameters, would allow expansion when the owner is able and his space needs are critical. This study sets
Legend:
6. Section along the slope showing the narrow terraces and the two-way street
7. Concept Plan showing property lines, empty lots
4. Small lots served by pedestrian paths are 16 ft. x 54 ft.
5. Larger lots served by vehicular lane are 16 ft. x 82 ft.
6. Lots along the two-way street have a wider street frontage.
8. Concept plan showing and vehicular and pedestrian networks
9. Concept plan showing the infrastructure (or right of way for future implementation): water, sewage, electricity
10. Study of densification of the small 16 ft. x 54 ft. lot using a combination of rooms of different sizes. Over time, lot owners would build the room that they need.

land use parameters that allow for incremental growth to occur in an ordered way. Unit size is flexible in square footage but heights are controlled for the protection of the rights of neighbors. Construction materials are assumed to be vernacular mud bricks, stone foundations and building construction by local labor forces or the owners themselves.
j: New Courtyard Housing

The satellite image above shows the area immediately north of the airstrip. One can notice the stark contrast between the compact traditional urban fabric on the left and the loose structure of the recent land development on the right. In the case of the recent development, vehicular access has been pushed to an extreme where streets fully encircle each expansive, walled compound. The consequence of such a loose fabric is that space is wasted for streets rather than being used for housing or other productive goals. This attitude is unsustainable considering the very limited supply of land for building construction that does not compete directly with agricultural land. While very generously sized courtyards (as in picture #1 and 2) are beneficial in term of flexibility of use (possibility of maintaining a family garden for example), they also are detrimental in overall density (ratio of dwelling units per units of land area to support them).

Legend:
1. Satellite image of the area directly North of Bamiyan airstrip. Dense vernacular settlement (1). Dangerously low density as well as oversized vehicular access system characterize the new development (2).
2. Close-up photo on similarly low density urban fabric; while owners benefit from the comfort of the nicely sized private courtyards, the consequence for the city at large is space-ineffective and land/infrastructure-hungry sprawl.
3. Proposed courtyard housing prototype (3) shown in context of a new development area. Although it provides for twice the number of dwelling units and private courtyards (4 & 5), its height is limited to two or three stories fits well in the low surrounding urban fabric. The wide footprint of this prototypical housing type is very efficient in terms of the small land area use (6).
of the city. The proposed prototypical housing project above is a reinterpretation of vernacular courtyard housing. It achieves a higher density by staggering units above one another. Each dwelling unit is provided with a courtyard as well as a street facade. This allows the placement of public and private spaces within the dwelling. It is suited for a higher density than average development while still maintaining the “low” character of an Afghan city (1, 2 or 3 stories). The Courtyards, although modest in their dimensions (respectively approximately 18 ft. x 17 ft. for the lower dwelling unit and 12 ft. x 15 ft. for the upper dwelling unit) offer a private, view-sheltered outdoor space. All drawings above assume North is at the top of the page.
Legend:

1. Satellite Image of Kabul centered around Shar-i-Now
   1. Old City Center
   2. Mikrorayan Russian Housing
   3. Kabul University/ Aliabad area
   4. Airport
   5. Shar-i-Now area
   6. TV Hill (Kohi Asamayi)
   7. Kohi Ali Abad Mountain

2. Map of Kabul Showing the Investigated Sites
   1a. Kabul River near Timur Shah Mausoleum
   1b. Jade Maiwand Avenue East
   1c. Jade Maiwand Avenue West
   2. Mikrorayan Russian Housing
   3. University Area

Post-Conflict Reconstruction: Afghanistan
3. KABUL

Existing / Proposed Urban Fabric: The road from the Airport to the River in downtown Kabul will change and densify in use as population grows. This investigation examines how that growth might occur and how a resulting entrance to the city may develop. Landscaped green spaces, selective in their location and scope, are in keeping with this growing urban center. The plan extends and interacts with the five sites; the Mikrorayan - Russian Housing site, the Timur Shah Mausoleum- Kabul River Site, the two sites on Jade Maiwand Avenue and the site adjacent to Kabul University. Protection of the River and respect for environmental green spaces, respect/protection of cultural buildings, transportation flow with urban growth are shown.

Legend:

1. 1960's aerial view of Kabul old city
2. Mid-1970's view of the old city
3. Contemporary scene of Jade Maiwand Avenue looking West
4. Extensive destruction of the Eastern part of the Old City following war conflict
5. Shahi do Shimshira Mosque
6. Bazaar scene
7. Puli Khiishi Mosque
8. Timur Shah Mausoleum undergoing current restoration
a. Kabul River at the Timur Shah Mausoleum

Two issues are investigated at this site: the protection/renovation and use of areas adjacent to the River and the creation of a public place that respects the cultural heritage of this important monument. With the shallow water, the existing river bed is exposed and its ground surface is used as an impromptu market area and temporary stall locations for various uses. The existing markets at the river’s edge are overcrowded and interfere with vehicular traffic. The proposal recommends reconstruction of the river bed in a stepped design to concentrate the River flow to narrower confinement, and introducing paved surfaces that will be used by the people as expanded market space. Quiet alcoves along the river allow an “outdoor room” to rest away from the crowds of people.

The narrow bridge that leads to and from the Mausoleum site has been replaced with a level platform that spans across the river. Its prominent scale responds to the specific presence of the Mausoleum. The proposed platform not only connects both sides of the river for pedestrian use but it also provides market spaces that can receive the market stalls relocated from the Mausoleum area.

Legend:

1. Model of the existing urban fabric of Kabul River
2. Shopfronts and facade along Kabul River
3-4. View along Kabul River long facade
5. Timur Shah Mausoleum in the 70’s
6. Proposed Plan of the Area around Timur Shah Mausoleum and Kabul River
   1. Timur Shah Mausoleum
   2. Kabul River
   3. Shahi do Shimshira Mosque
   4. River Front Buildings
   5. Jade Maiwand Avenue looking West
   6. Puli Khishti Mosque
   7. Old Kabul City
b. Roads and Preservation

The road on the South edge of the river has been repaved for pedestrian use only, accepting building deliveries and services on a morning and evening schedule. The road on the north side of the river and others are improved in quality to accept the relocated flow of traffic. The Timur Shah Mausoleum, initially completed in 1817, will be restored and be the showcase of this cultural center. The proposed paving pattern around the Mausoleum will itself reflect the outline of the original walls that marked its perimeter base on photographs from 1917 (see illustration #3 on next page).
Post-Conflict Reconstruction: Afghanistan

Legend:

1. Proposed Site plan of the Mausoleum and River area
   1. Timur Shah Mausoleum with paved and landscaped surfaces
   2. Kabul River with recommended Edge
   3. New Market Bridge Platform
   4. Pedestrian Street
   5. New Open Market Spaces
   6. Upgraded road

2. Timur Shah Mausoleum undergoing renovation by the Aga Khan Trust for Culture (AKTC) 2004

3. 1917 View from Kohi Bini Hisar Mountain looking at Timur Shah Mausoleum with walled perimeter (1) and Kabul old city (2)

4. Shopfronts and facade along Kabul River (see legend in text in facing page)
c: Cultural Restoration and Preservation

Throughout Afghanistan, the depth of culture and history is recorded in its ancient historical buildings. Often in state of disrepair or damaged by conflict, the reconstruction of this fabric of the country’s heritage should be protected and repaired. The Timur Shah Mausoleum in Kabul is currently being restored by the Aga Khan Trust for Culture. Much of the work shown above is an expansion of this restoration and an extension of preservation efforts to set the Mausoleum within an enhanced wider historic urban fabric.

This attitude of restoration, sensitive renovation and an extension of design attention to related context, is a recommended model for other historic sites.

Timur Shah Mausoleum site - River Front Buildings

Distinctive in architectural language, these buildings both north and south of the river deserve preservation. Their history and original design should be researched. Early design attitudes suggest these approaches for long term protection and use of the buildings:

1. Building envelope - Replace roof with original materials; repair all exterior wall details such as the pilasters and niches and upgrade surface finishes. Remove and replace all wood windows with new windows that match the original design. All units are to be made by local craftsman.

2. Storefronts - Repair where possible. Replace where necessary with new wood and glass construction. Review historical data on design and use it in the restoration/renovation process. Exterior Wood shutter doors should be retained; inner doors could be contemporary wood and glass.

3. Signage and information systems: Establish guidelines such as document size, location, construction, color, language as part of optional standards that are to be followed.

4. Awnings: They serve a good purpose and provide protection and scale. As described for signing above, establish construction parameters of safety, size and structure, location, color, and material.

5. Interior renovation to include all upgraded building systems like safety egress requirements, fire protection, electrical and mechanical system upgrades and direct access to upper floor use.

Initially, these design improvements would set a tone of respect for the past but allow and invite contemporary use and extend the use of the riverfront buildings into the future.

In this case, at this site, it is recommended that these buildings should be protected, preserved, restored and not be replaced with new buildings.
Legend:
1. Model photo
2. Diagram of functions
3. Section across the Kabul River looking East showing (1) expanded market areas (south bank) and (2) vehicular roadway (north bank)
4. Proposed river bed profile
5. Existing river bed profile
6. Kabul River: Existing conditions at low water mark showing makeshift stalls
Legend:

1. Las Ramblas Barcelona, Spain (Precedent)
2. New Green Spaces
3. Study Section for a Landscaped Pedestrian Promenade for Maiwand Avenue
4. View of the existing conditions of the Old City of Kabul

General Legend Keys
1. Timur Shah Mausoleum
2. Maiwand Avenue
3. Puli Khishti Mosque
4. Urban Park along Kabul River
d. Housing & Pedestrian Paths - Jade Maiwand Avenue East

This investigation explores the creation of new housing within the existing urban residential fabric. Its purpose is to extend the fabric, not to overwhelm it, and to contribute a better sense of scale than the existing block buildings create. The design significantly increases the housing density. Existing pedestrian pathways are strengthened and neighborhoods are defined. A “community” is maintained. Materials are chosen to be responsive to local conditions and traditions.

The proposed interior courtyards that are seen above, respond to the cultural tradition of Islamic courtyard housing. Pedestrian circulation paths are designed with new paving materials and are integrated into the fabric and new school facilities.
Legend:

1. Infill new buildings (red) in existing urban fabric
2. Planted school courtyard
4. Maiwand Avenue replanned through tree alignments and sidewalks. Pedestrian paths activate the depth of the urban fabric
5. Section through the fabric of the old city along pedestrian path perpendicular to Maiwand Avenue showing Timur Shah Mausoleum
e. Housing / Retail / Hotel / Public Baths and the River - Jade Maiwand West

The proposal is generated by the existing housing to the south, the wide existing street, the river and the site location in the City. Small recesses in the street facades provide small scale entrances to housing with identity and scale. The ground floor is designated for retail use. Parking is located at the rear. A new urban contemporary hotel serves tourists and anchors the southwest edge of the city. Public baths, a cultural element throughout Afghani history, are reestablished between the new and existing housing. All buildings take advantage of environmental strategies for power, sun and ventilation. The lower density of housing to the south has a seamless transition to the new higher density housing.

Legend:
1. Reduced road width, Park along the Kabul River, and development to the South.
2. Kabul River with drought-induced shallow water. Existing high rise building and Kohi Sher Dar Waza mountain in the background
3. Plan of the historic city
   1. Proposed Park
   2. Jade Maiwand Avenue
   3. Existing housing
1. Looking West down Jade Maiwand Avenue with new mixed use housing and hotel development
2. Recessed facade for identity and scale facing the new park and the River to the North.
3. Plan of the Western end of Jade Maiwand Avenue showing
   1. Proposed Park along Kabul River created from the reduction of the road width.
   2. Existing road North of Kabul River closed to allow pedestrian park
3. New housing
4. Hotel
5. Public Baths
6. Kabul River
7. Jade Maiwand Avenue
4. North - South Section through River and Park looking East

f. High Rise Tower Hotel, Housing and Parks

At a wider urban planning scope, the hotel tower anchors the West edge of the historic city and the West end of Maiwand Avenue. Its fifteen-story presence is matched by the existing high rise building to the East. The reduction of the width of the existing street, Maiwand Avenue, allows adequate traffic circulation while creating a new park and urban space along the Kabul River. Low wall enclosures provide protected space facing the park. A new pedestrian bridge anchors the park to the north side of the Kabul River where an existing roads is converted to a pedestrian promenade.
g. Mikrorayan Site

The Master Plan for Kabul was developed in 1964 with the help of Russians and later revised in 1971. This is when the first Soviet prefabricated “Plattenbau” blocks were constructed. These existing housing units are well used today and are felt to be some of the better housing offered in the city. Oriented North-South and low in profile, their orientation is a positive one but the existing spaces between the buildings are large and open with little sense of community. The proposed design establishes a new neighborhood identity with more scaled and defined green spaces for people while providing an increase in density of badly needed housing units. Neighborhoods are defined and a sense of community is created. Existing units are renovated, adding new contemporary services for kitchens and bathrooms. Stairwells are expanded for public use and equipped for storage.

Because the location of the Mikrorayan is conveniently close to downtown Kabul, there is a great potential for densification here to avoid harmful sprawl at the outer edge of the city. Public transportation can be accommodated on Airport Road to link to the city center. The goal of this plan is to double the number of dwelling units available.
Legend:

1. Model view showing new construction and existing buildings
2. Land-use Plan
3. Pedestrian walking distances in time, showing locations of schools
4. East - West Section perpendicular to Boulevard

1. Boulevard
Legend:

1. Plan
   1. Airport road treated as a landscaped boulevard
   2. New Infill Housing
   3. Typical Upgraded Russian housing
   4. Schools
   5. New housing located between Plattenbau buildings
   6. Mixed-use - Commercial

2. Landscaped Boulevard
3. New infill housing
4. Low rise appartments/new roads
5. Additive Wet Services: kitchen, bathrooms, and laundry rooms
6. Housing types:
   small courtyards
   large courtyards
   open areas
Phasing takes place over a number of years so disruptions can be minimized.

The approach here is also to upgrade the existing exterior spaces and buildings to more comfortable standards. For example some stairwells are equipped with an elevator to better accommodate disabled people. In this concept plan, a larger proportion of the land on the ground becomes privately owned and cared for at no expense to the city. The money saved by reducing the ground maintenance/landscaping costs can be assigned to better use elsewhere.
h. University Housing and University Growth

Kabul’s architectural history shows a typology of spaces within spaces that are typical in Islamic cultures. Courtyard housing is the typical housing typology. Buildings are connected with interior circulation to offset severe winter weather. Terraced gardens represented by Babur’s Gardens from 1842 also show this continuous celebration of space with landscape and water elements. It is suggested that any master plan for the University could incorporate these elements.

The housing serves primarily as Kabul University housing. The design replaces destroyed buildings with contemporary structures, rebuilds some damaged existing buildings with new services and paths, and keeps undamaged buildings. The overall proposal increases housing density. It also explores how these structures can make a transition to the university structures. Sloped housing explores the relationship between exterior spaces and small housing units with visual privacy and generates a cultural response through the use of contemporary design elements.
Legend:

1. 1/32” scale Model
2. Proposed new linkage between Ali Abad/University area and Shar-i-Now area
Legend:

1. Plan
2. Green Courtyards
3. Potential University Buildings
4. New Housing Construction
5. Midrise Housing Construction
6. Existing Park
7. Green Houses
8. Road to North Kabul
9. Renovated and Rebuilt Existing Housing
10. Increased Densification
Legend:

1. New and Existing Housing scale considerations
2-3. Lowrise Housing is found inside blocks; higher blocks line the avenue
Bibliography and Internet Resources

General:


Afghanistan Information Management Service Project – AIMS (UNDP) http://www.aims.org.af/

Trade and Transport:

Electronic Cultural Atlas Initiative at UC Berkeley http://www.ecai.org/silkroad/cultures/mapscape.html


Social:


Environmental, Agricultural and Land Use:


Geology:


Ambraseys, Nicholas and Bilham, Roger, “The tectonic setting of Bamiyan and seismicity in and near Afghanistan for the past 12 centuries” http://cires.colorado.edu/~bilham/BamiyanAfghanistan.pdf

Architecture and Construction:


Oliver, Paul: “Dwellings: the house across the world”, University of Texas Press, Austin, 1987


Reconstruction:


UN-HABITAT “Preliminary Study of Land Tenure Related Issues in Urban Afghanistan with Special Reference to Kabul City” March 2003 http://www.fukuoka.unhabitat.org/out/siryo/project_b01/Afghan%20Land%20Report.5%20Aug%202003.pdf

Kabul:


Bechhoefer, William: “Serai Lahori: Traditional housing in the old city of Kabul” University of Maryland School of Architecture, 1975


Bamiyan:


Professor Tarzi ZEMARYALAÏ 2003 Bamiyan survey: http://silkroadfoundation.org/newsletter/december/bamiyan.htm


Hazara People:

Projects by Associations:
Verein Afghanischer Ingenieure und Techniker in Deutschland e.V. (Association of Afghan Engineers and Technicians in Germany) http://www.afghan-vait.de/

Projects by the Technical University Berlin in Afghanistan http://subbotnik.a.tu-berlin.de/kabul/


Photos links on the Internet:
Photos at the Huntington Photographic Archive of Buddhist Art at The Ohio State University http://kaladarshan.arts.ohio-state.edu/loststolen/Afghan/bamiyan/bamiyan_overview/index/photomap.htm

Photos by ……… http://www.pixagogo.com/2121325331

Photos by………. http://afghanchaplain.smugmug.com/keyword/bamiyan/3


Photos by Ruth and Frank Harold: http://depts.washington.edu/uwch/silkroad/cities/afghanistan/
afghanistan.html

Photos by Dr. Bill Podlich (1967-68): http://www.pbase.com/qleap/afghan_1&page=2

Photos by ……………. : http://members.virtualtourist.com/m/tt/4dtb50/7T1...

Photos by Daud Saba: http://afghanmagazine.com/2004_05/photoessay/photoessay_bamiyan.shtml

Photos by Volker Thewalt: http://www.thewalt.de/afghanistan/


http://topics.developmentgateway.org/afghanistan/rc/BrowseContent.do~source=RCContentUser~folderId=2655

Maps and Satellite Pictures:

http://www.aims.org.af/country_profile/maps/cities/cities.html

Perry-Castañeda Library Map Collection at University of Texas at Austin http://www.lib.utexas.edu/maps/afghanistan.html

http://www.spaceimaging.com/gallery/enduring_freedom/default.htm

Kabul City Map http://www.reliefweb.int/rw/fullMaps_Sa.nsf/0/031C0173DB7379B285256E61005F83FB/$File/aims_kabul_afg010104.pdf?OpenElement
Macro Studio Students

Emily Angelo
Andrea Campbell
Evan Carroll
Douglas Coll
Adam Darter
Adam David
Stacy Hassell
Meagen Hendricks
Jeremy Jamilkowski
Daniel Johnson
Christopher Lee
Yujin Nagao
David Norris
Andrew Ostrander
Thomas Papp
Emily Parris
Gregory Ralph
Nathaniel Richards
Daniel Rogers
Kathleen Scanlon
Louis Schellhase
David Strumski
Jeremy Thibodeau
Benjamin Waters

Faculty

Patrick Charles
Charles Hagenah

Director, Center For Macro Projects and Diplomacy
Stephen White

Publications Designer and Coordinator
Timothy Ganetis