



DEPARTMENT OF HUMAN SETTLEMENT  
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# DEVELOPMENT PLAN GYELPOSHING MONGAR

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JUNE 2015

## **SECTION I : URBAN DEVELOPMENT PLAN**

## **FOREWORD**

The Royal Command of February, 2015 formed the basis of the Gyelposhing Urban Development Plan. The Royal Vision for Gyelposhing includes, amongst others, an all weather soccer stadium, archery ranges, multipurpose hall/cinema hall for the burgeoning film association, retreat/conference hall facilities, guest houses and hostels, and infrastructure to accommodate the rapid growth that is inevitable once the highway from Nanglam is connected to Gyelposhing. Moreover, the growth of Gyelposhing is not to come at the cost of Mongar town. Where buildings are to be constructed, a monotonous design is to be avoided. All these elements affords Gyelposhing to become the first fully urban designed town ship in Bhutan.

The guiding principle behind the development of the plan respects the existing topography, surface hydrology, natural environment, and settlement pattern by applying smart growth themes in a localized context.

The proposals and design solutions presented in this localized and contextual plan have been developed from the larger context of translating the Royal Vision to the local level. This has been done while also addressing issues at the neighborhood level. The new layout for Gyelposhing considers efficient vehicular and pedestrian access to public amenities within a neighborhood node, located within a comfortable walking distance from a transportation hub. Rationalization of the existing plots, where deemed necessary, has been done, based on the principles of Land Reconfiguration and Relocation, usually away from hazard areas. In the process of Land Reconfiguration/Relocation, the plots that fall within hazard/potential disaster area are relocated to a safer area within the same vicinity, and re-plotted with the provision of proper infrastructure services, amenities, regular plot layouts and access facilities. As much of the land area in Gyelposhing is government owned, there is sufficient area to provide community facilities and roads. As a principle, the plan avoids the destruction of any private houses. The center of the town is envisioned to become a medium-density Urban Village Core, with the building lines defining the streets. As Gyelposhing is the hottest place in Bhutan, extensive vegetation is proposed to green the roads, buffers, parks, and the public domain.

Another major consideration of the Urban Development Plan is housing of the anticipated increase in population, which will have to be accommodated in the city as a whole over the coming decades. While unlikely, the Bhutan National Urbanization Strategy (BNUS) study undertaken sometime in 2007, envisions Gyelposhing's population to be 20,000 by the year 2020. This would mean Gyelposhing will have to infuse an additional 4000 dwelling units to accommodate this additional population. Higher density development along the flatter terraces and along the primary road is proposed to supplement the housing stock and future needs. A large-scale warehousing and housing project is envisioned, which will seek participation of the private sector in creating affordable housing stock, with the support of government finance.

Implementation the Urban Development Plan is a consultative and collaborative process. It involves educating the stakeholders about the benefits of participatory local level planning, and the need for relevant land management schemes and other collaborative efforts.



## TABLE OF CONTENTS

1. Introduction
  - 1.1. Smart Growth Principles
  - 1.2. Gyelposhing Overview
  - 1.3. The Proposed Site
  - 1.4. Aims & Objectives
2. Methodology & Work Plan
  - 2.1. Plan Preparation Process
  - 2.2. Work Schedule
  - 2.3. Aims & Objectives
3. Existing Scenario
  - 3.1. Climate and Vegetation
  - 3.2. Topography and Land Features
  - 3.3. Demography
  - 3.4. Existing Land Use Pattern
  - 3.5. Existing Land Ownership Pattern
  - 3.6. Existing Water Body
4. Existing Amenities
  - 4.1. Road and Circulation Network
  - 4.2. Institutional Establishment and Offices
  - 4.3. Heritage and Religious Structures
  - 4.4. Existing Housing
  - 4.5. Utilities & Services
5. Analytical Study
  - 5.1. Land Suitability for Development
  - 5.2. Slope Analysis
  - 5.3. Aspect Analysis
  - 5.4. Land for No Development
  - 5.5. SWOT Analysis of Gyelposhing Area
  - 5.6. Mode of Land Mobilization
6. Demographic Studies
7. Proposal for Action
  - 7.1. Concept of the Plan
  - 7.2. The Plot Configuration and Design
  - 7.3. Precinct Plan
    - 7.3.1 Development Precinct
    - 7.3.2 Institutional Precinct
    - 7.3.3 Heritage Precinct
    - 7.3.4 Service & Amenities Precinct
    - 7.3.5 Recreational Precinct



### 7.3.6 Environmental Precinct

- 7.4. Road Network
- 7.5. Footpath Network
- 7.6. Open Space Network
- 7.7. Connectivity
- 7.8. Plot Reconfiguration
- 7.9. Land Ownership Pattern
- 8. Conclusion
- 9. Development Control Regulation



## 1. Introduction

The urban development plan (UDP) for Gyelposhing is developed based on the Royal Command of February 2015, and keeping in mind the town's strategic role as an inevitable transit hub once the Nanglam-Gyelposhing road is connected. Geographically, Gyelposhing is centrally located within Mongar Dzongkhag, and has the potential to become the gateway to eastern Bhutan. The reduction of travel distance by almost 75% from the current 300kms from Samdrup Jongkhar, to 68Kms from Nanglam, is literally going to transform the current sleepy town of Gyelposhing into the most important transit hub in eastern Bhutan.

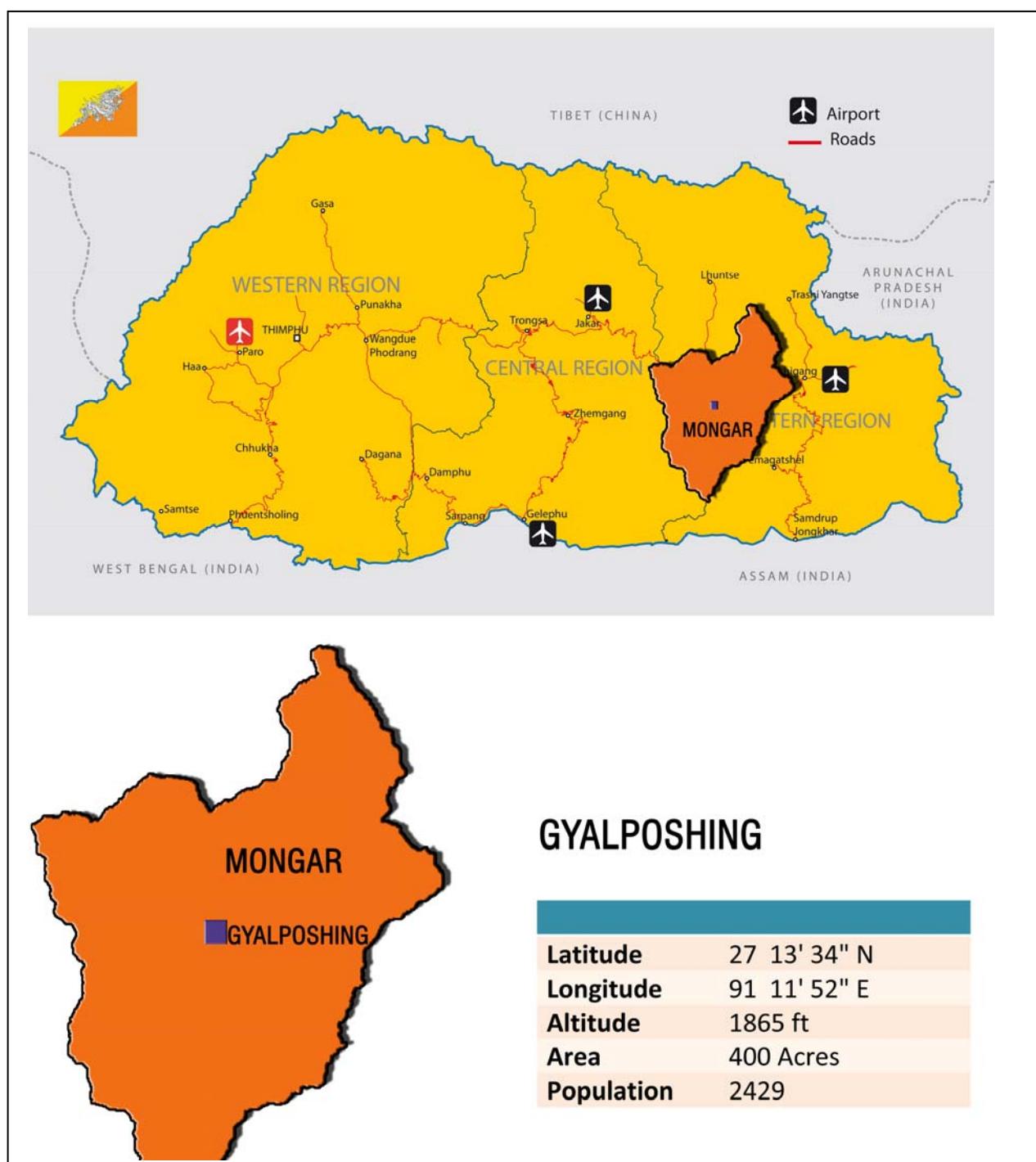


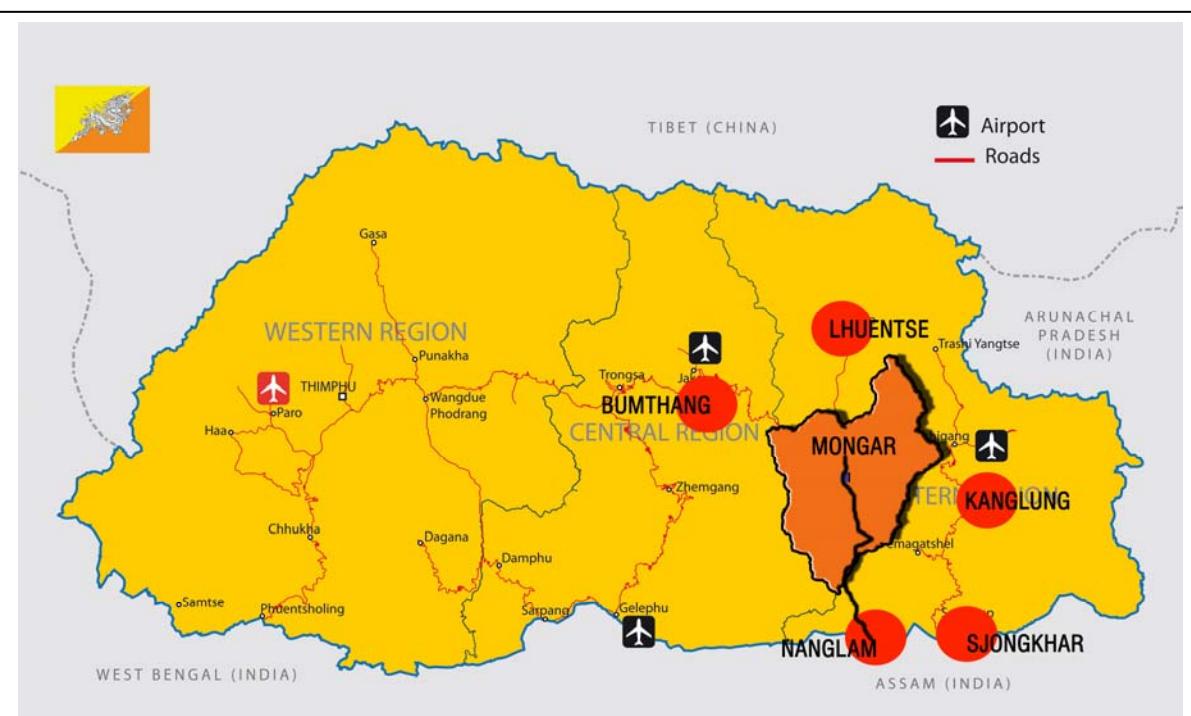
Fig.1 Map of Mongar



With its subtropical climate and warm winters, Gyelposhing also has the potential to be a winter destination for local residents from the colder regions of Bhutan. Coupled with the 4KM long water reservoir from the Kurichu Hydro Power Authority (KHPA), Gyelposhing has the potential to become the tropical lake town of Bhutan: a destination city for conferences, resorts, water sports, and winter coaching camps. The town also has the potential to become a center for Buddha-Dharma teachings, especially in the winter months, with the provision of guest houses and hostels affordable for the pilgrims and older population.

With access to the vast regional market, the rich and fertile environment of the surrounding regions can help transform the Gyelposhing Valley into becoming a rich agro processing town producing world class fruit beverages and jams for both the international and local markets.

While Gyelposhing's primary economy is still hydro power, the hospitality and service industry has the potential to become the next important generators of economic growth. With the widening of the lateral highway to accommodate double lanes, travel time is going to further decrease. Easy access to India via the new highway is going to attract regional tourist. As a result, the spatial quality of Gyelposhing is going to experience tremendous pressure if adequate measures are not taken now.



Distance (km)		
Thimphu	Gyalposhing	430
Bumthang	Gyalposhing	160
Gyalposhing	Yongphula	140
Gyalposhing	Nanglam	70

Fig.2 Context Map of Gyelposhing



The UDP for Gyelposhing is based on analytical assessment of the existing situation pertaining to land use patterns, existing structures, land holdings and infrastructure layouts. The topography, surface hydrology and natural environment also helped shape the plan. The road and pedestrian system layout for Gyelposhing considers efficient pedestrian and vehicular access to public amenities located within a comfortable walking distance from a central urban hub. As Bhutan's first tropical lakeside town, Gyelposhing is expected to become the beacon for other hydro power towns in Bhutan, thus interfacing water based recreation activities with human settlement planning.

Since most of the land is under government ownership, the master planning of Gyelposhing Township has been successful in leaving adequate buffers from hazard zones and steep slopes. Systematic rationalizations of the existing plots have been incorporated where necessary to relocate and reconfigure private land away from hazard zones. Land Reconfiguration & Relocation (LRR), primarily involving rationalization of plot configuration with no reduction in resultant plot area (zero contribution) is the predominant land development tool used. Great care has been taken to ensure the town has adequate vegetative cover.

Planning is the process of addressing complex issues (economic, social, environmental, political, and ideological) which affect the policy decision that ultimately shape the urban development patterns through its various planning tools. It is concerned with the design and layout of the physical environment that is based on an arguable analytical decision making process which again is based on evidence and current trends. Though it is argued that planning should be flexible, pragmatic and even incremental (even if their goals and objective changes), it involves a commitment to achieve a perceived goal and objective. Planning is considered to advocate a generic model of thought style in governance that is based on scientific understanding rather than material interest, expediency or political ideology. Therefore in a way planning can be considered as a form of urban governance to a large extent.

## 1.1 SMART GROWTH PRINCIPLES

The key consideration adopted for the Gyelposhing Urban Development Plan is the ten principles of Smart Growth, adapted to suit our local needs and context. Smart Growth ideas primarily concentrate growth in compact walkable urban centers to avoid sprawl. The following is a brief summary of the principles:

### 1.1.1 MIXED LAND USE

Historically many communities have created land zones that are exclusive to one type of use only, such as business, industry, residential and the like. Suggested within the smart growth philosophy is an approach where these various aspects of community life are intermixed creating varied uses in close proximity. This allows for greater use of public land, increased number of citizens intermixing in business sectors and a revitalized sense of community. Citizens live closer to work sites making these intermixed areas attractive to residential living.



Ideally, there should be a parks and recreation system in place. The parks and recreation system creates parks and trails that support this intermix of uses. Rather than neighborhood parks placed solely in residential areas, the parks and recreation system designs park plazas integrated with business zones, mini park hubs interconnected with walking and biking trail systems that allow moving easily between housing, transportation corridors and business uses.

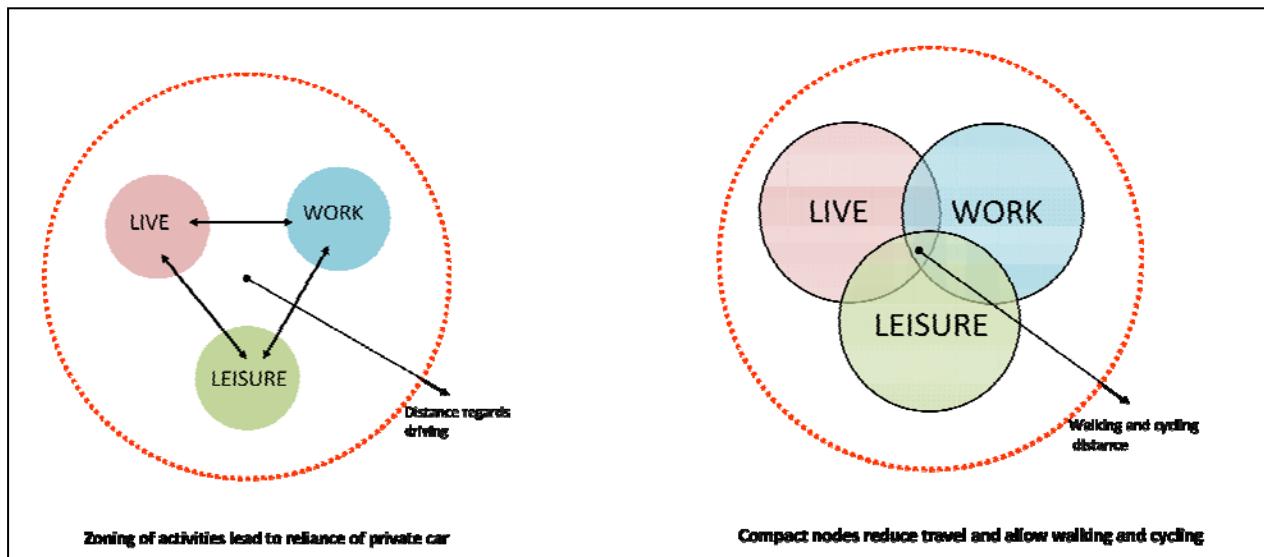


Fig.3 Mixed Land Uses Concept

### 1.1.2 COMPACT BUILDING DESIGN

Compact design, that is building vertically rather than horizontally and not consuming critical land space, suggests that structures and their associated amenities such as parking terraces be encouraged. This philosophy supports the preservation of green space and open space, and allows for undeveloped lands, streams, rivers and lakes to remain undisturbed. This type of design advances increased public transit, reduced traffic congestion, and maintenance and support costs are more efficiently utilized.

The parks and recreation system is then in a better position to weave green space, open space and trail systems through these more vertical structures. Coupling mixed use with compact design serves as a vital element of community sense and land use appeal.



Fig.4 Compact Buildings Concept



### 1.1.3 CREATE RANGE OF HOUSING OPPORTUNITIES

It is not uncommon to find housing options defined by cost, neighborhood style and single focus design. By creating housing choices that are diverse and intermixed, transportation, education, and access to a variety of services is opened and available to a more diverse population set. When intermixing housing choices in new developments as well as existing zones, a greater housing balance is achieved with a variety of single family, multi-family, suburb and in-city options.

Parks and recreation is critical to creating a sense of community within a mix of housing options. Parks become vital as a public service working to meet a greater variety of citizen needs, such as young families, stabilized empty nesters, singles and senior citizens. With full range housing options, full range parks and recreation support opportunities are necessary.

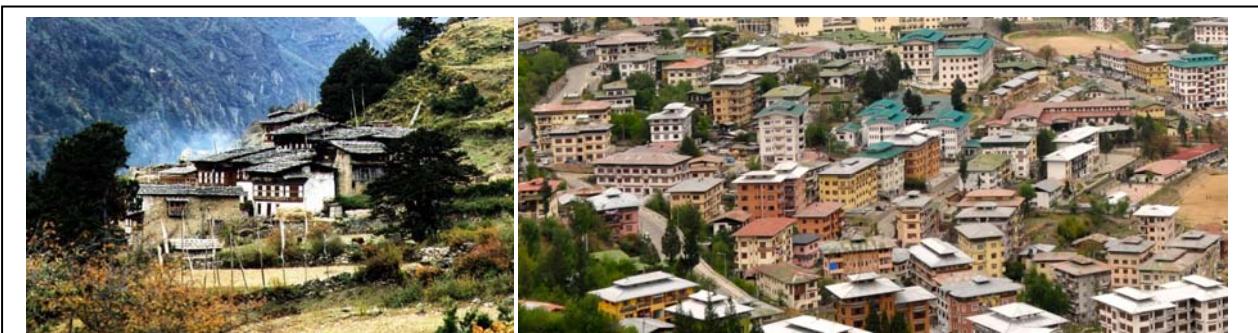


Fig.5 Housing Opportunities Concept

### 1.1.4 CREATE WALKABLE NEIGHBORHOODS

One principle of smart growth that resonates with the parks and recreation system is the concept of walkable neighborhoods. This approach is one where the community is designed in such a way that residents can walk to those elements of the community that are important to them; such as schools, temples, public services, play sites, shopping and work. The commitment that the city design makes is to locate these services within an appropriate walking range of the mixed uses and housing options. Then the design of the community is such that walking is safe, accessible, interesting and possible.

The parks and recreation system is integral to this philosophy. The trail system designed and maintained by the parks and recreation entity may serve as the primary corridor for the walkable neighborhoods. Besides walking and biking trails serving a recreation purpose, they also represent the travel conduit of the neighborhoods.



Fig.6 Walkable Neighbourhood Concept

### **1.1.5 FOSTER DISTINCTIVE AND ATTRACTIVE NEIGHBORHOODS**

Smart growth promotes the idea that a citizen needs to feel a sense of place, of community, identity and pride. Elements of a sense of place may be different for each community. It may be found in distinctive community architecture, or intermixed green spaces, cultural identity, historical preservation or some combination of many components. Sense of place starts with a community accepted vision of what makes that particular community unique, special and attractive.

Many communities look to the already existing natural beauty that serves as a draw to community life. Other communities invest in the green and open spaces of the parks and recreation system to create that unique sense of place. The parks and recreation system may become the common focus for a community sense of place.

### **1.1.6 PRESERVE OPEN SPACE AND CRITICAL ENVIRONMENTAL AREA**

Open space serves many purposes, such as green space, animal habitats, plant growth zones, production lands, recreation experiences and wet lands. Additionally, open space may be a part of the natural beauty of the community that supports quality of life experiences. Open space should be viewed as land that is worthy of protection, preservation or appropriate use and not just unused land.

The parks and recreation system is usually the land guardian for community open space and the responsible party for identification, purchasing, protection and maintenance of that



community's natural beauty. The role of parks and recreation in supporting this principle of smart growth is critical.



Fig.7 Open Spaces Concept

#### **1.1.7 STRENGTHEN DEVELOPMENT TOWARDS EXISTING COMMUNITIES**

This principle encourages new growth in the direction of already existing infrastructure, neighborhoods, public services and to focus on in-fill rather than consumption and expansion into open space, green zones and areas of natural beauty. Rather than abandon older areas, development is focused inward creating a stronger revitalization and perhaps new energy into already established community areas.

The investment that the parks and recreation system makes is to maintain at a high level those already existing parks and recreation resources and to prioritize new efforts into older and well used areas of the community. The tendency is to expand outward, but this principle recommends a focus inward.

#### **1.1.8 PROVIDE A VARIETY OF TRANSPORTATION CHOICES**

An important aspect of smart growth is to create multiple systems of transportation, connectivity and public service that is easy, effective and equitable. For many communities this would mean transportation planning, coordination of land purposes and public transit.

The parks and recreation system assists by encouraging the design, placement, use and maintenance of alternative transportation paths, such as, walking and biking trails that serve not only recreation purposes but may serve as an option for travel to work sites and use for other citizen needs.



Fig.8 Transportation Choices Concept

#### **1.1.9 ENCOURAGE COMMUNITY AND STAKEHOLDER COLLABORATION IN DEVELOPMENT DECISIONS**

For these planning principles to be effectively used citizen participation, understanding, involvement and support is important. Citizens will find different components of smart growth particularly appealing and other principles of less interest. Each community will find the integration or combination of a mixture of these principles helpful. However, citizen involvement and commitment is necessary to garner the long-term support necessary.

The parks and recreation system is usually well experienced in providing opportunities for public involvement and input. The use of public hearings, focus groups, citizen based visionary workshops and the like represent a list of tasks that the parks and recreation system use on a



Fig.9 Stakeholder Consultation Concept

#### **1.1.10 MAKE DEVELOPMENT DECISIONS PREDICTABLE, FAIR, AND COST EFFECTIVE**

In order for smart growth principles to work, the various components must be cost effective. Much of the success of smart growth relies on private developers finding ways to integrate these principles and still generate financial vitality. The government entity assists by reducing barriers to permit applications, regulations and procedures. At times code adjustments will be necessary but not at the expense of safety and prudence.



The parks and recreation system assists with an attitude of being a part of the success of proposed ventures that may require the parks and recreation system to adjust or perhaps vary from standard procedures. It is time for creativity and vision rather than restriction to traditional methods of thinking and planning.

Smart growth is an exciting and vital way to look to the future and create communities that are healthy, interesting and citizen friendly. Not all of the ten smart growth principles need to be applied in all settings. At times only one principle will be appropriate and possible. Perhaps a combination of principles will be most effective for that community. Parks and recreation systems play a critical role in each of the ten principles and success of smart growth can be greatly enhanced by the commitment of the parks and recreation system.

## 1.2 GYELPOSING OVERVIEW

The total municipal area of Gyelposhing is 400.64 acres. About 63% of the total area is registered under private, corporate, and government agencies. About 3.4% of plots with registered area fall under the forfeited category. A majority of the Gyelposhing land use is under government ownership. Privately owned land is limited to the urban core area and across the reservoir lake.

DETAILS	ACRES	NOS
Area within Municipal Boundary	400.64	
Total No of Plots	251.23	121
Government area / Area Under Existing Streams and Roads	149.41	
TOTAL	400.64	
Registered Plots without Issues	242.19	53
Registered but Forfeited Plots	9.04	68
<b>TOTAL</b>	<b>251.23</b>	<b>121</b>

Table 1 Plot Detail

## 1.3 THE PROPOSED SITE

The municipal area of Gyelposhing is confined by the limitations and constraints imposed by its natural terrain. Towards the south the urban boundary terminates at the Kurichu Hydro Power Dam; towards the west the municipal boundary terminates at the base of the steep slopes and the edges of the lakes; towards the north the municipal boundary terminates at the narrowest section of the valley; towards the east, the municipal boundary is formed by the base of the steep slopes.



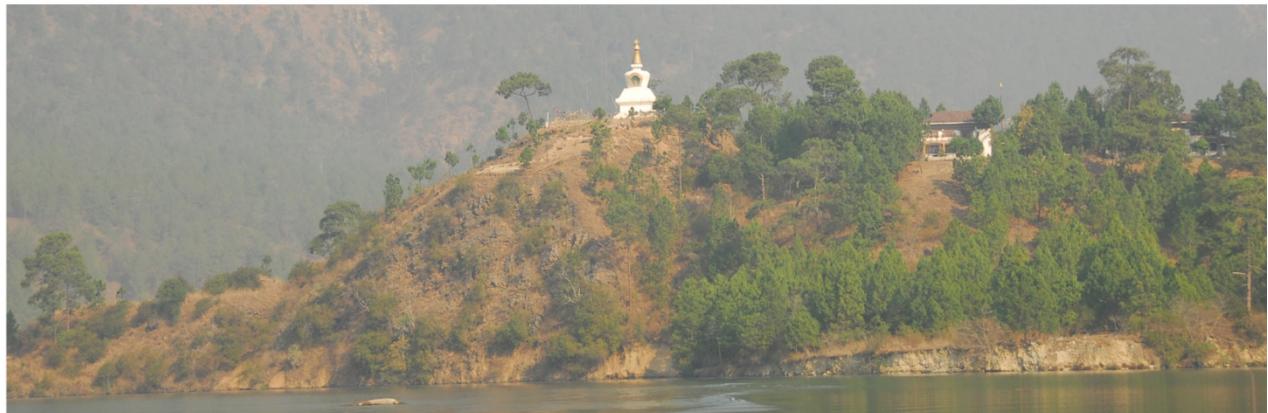
Fig.10 Planning Boundary



SCHOOL



EXISTING TOWN



MAIN CHOETEN



DAM

Fig.11 Planning Boundary

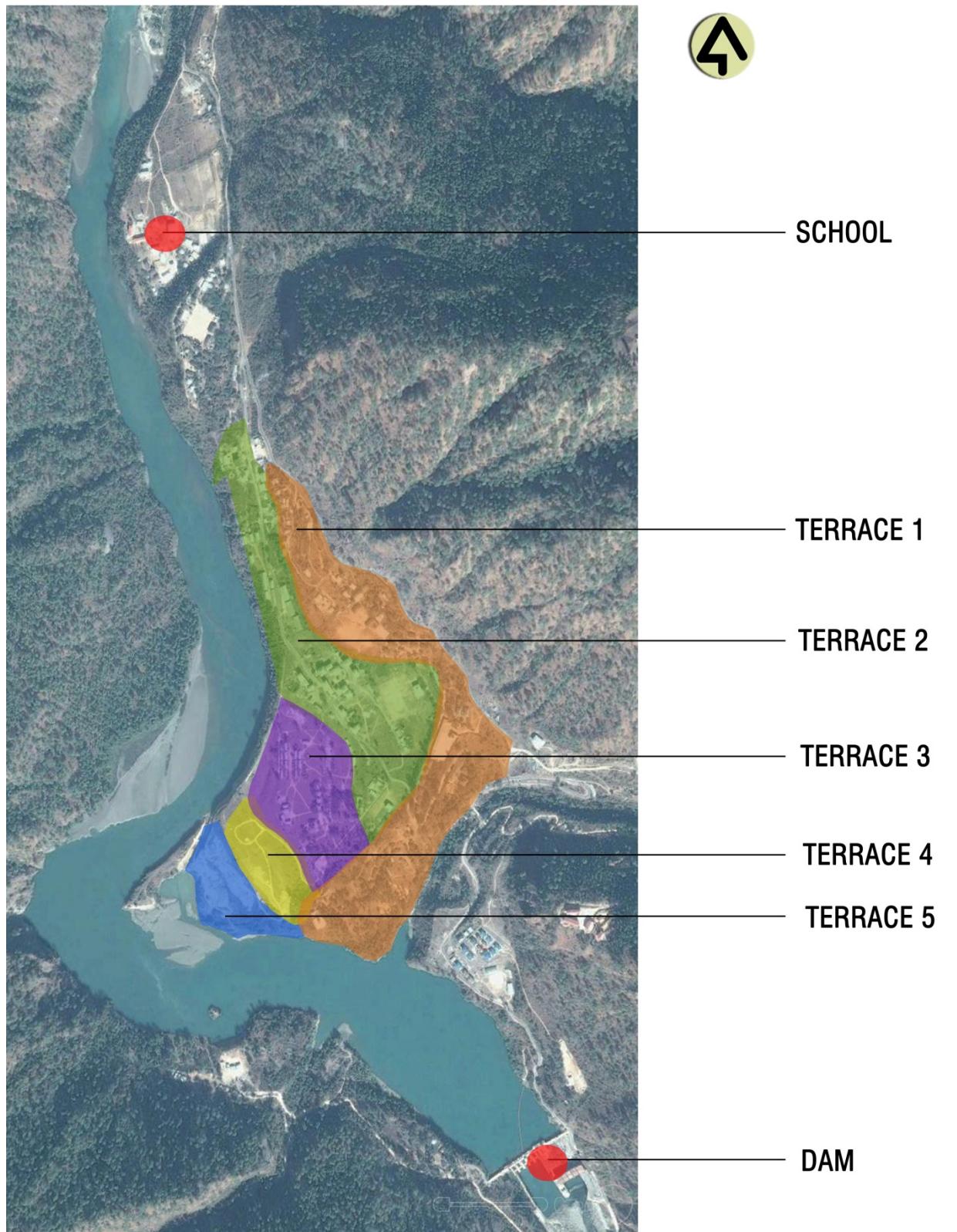


Fig.12 Planning Boundary

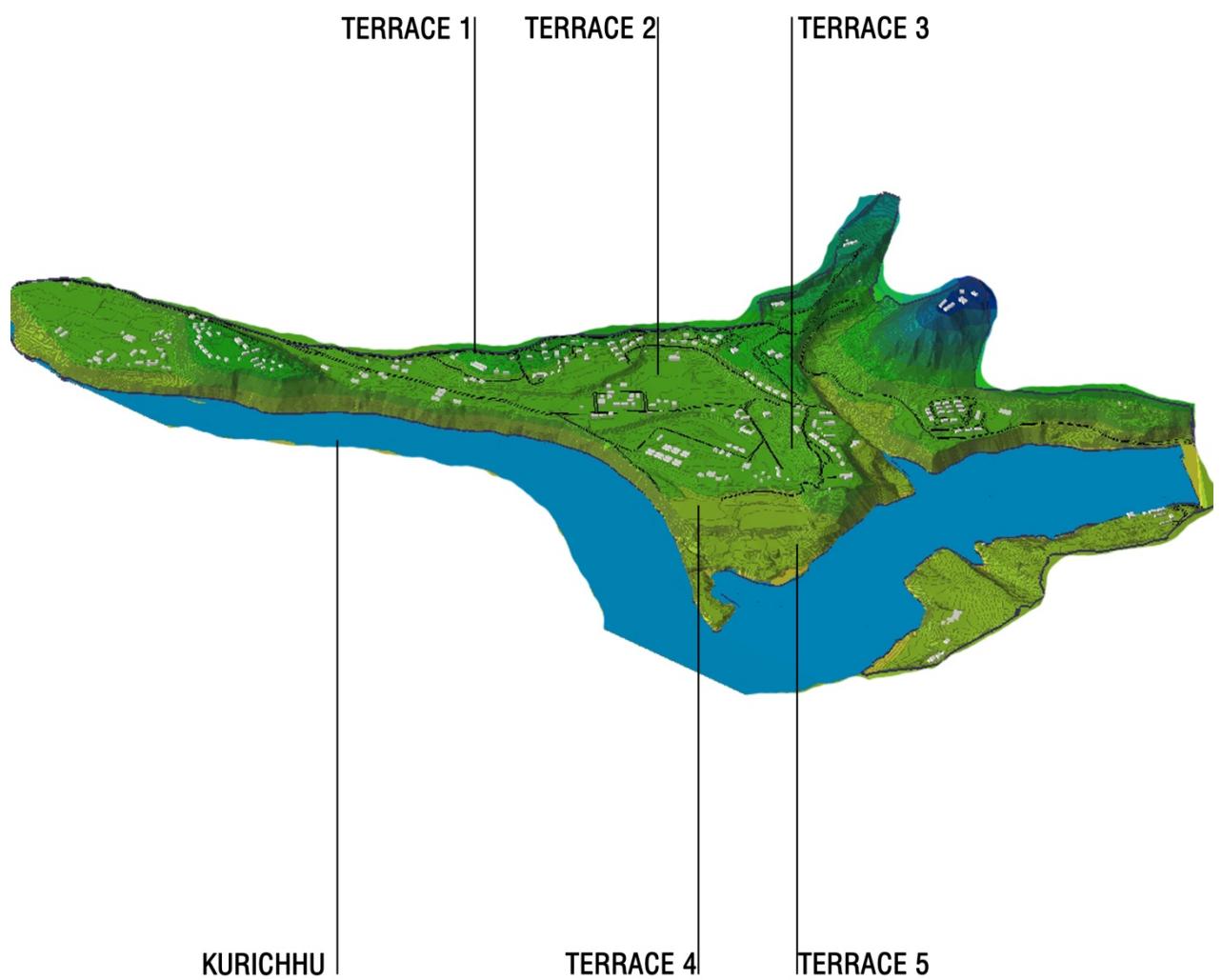


Fig.13 Planning Boundary



## 2. METHODOLOGY AND WORKPLAN

### 2.1 THE PLAN PREPARATION PROCESS

The urban development plan (UDP) for Gyelposhing is based on analytical assessment of the existing situation pertaining to land use patterns, existing structures, landholdings and infrastructure layouts. The topography, surface hydrology and natural environment have also shaped the plan. The layout for Gyelposhing considers efficient pedestrian and vehicular access to public amenities located within a comfortable walking distance from a central Urban Hub. Reconfiguration of the existing plots has been proposed where required to move plots away from hazard areas.

The UDP for Gyelposhing with the vision to “**To create Gyelposhing as a Business, Tourism, Transit, Sporting, and Conferencing Hub in Eastern Bhutan by Smart Growth Principles**” lays down the strategic framework & policy guidelines for the future development of the town in accordance with the Royal Vision. At the local level, the plan will translate the broad principles into more tangible design layouts and regulate the use of space that focus on the physical form, economic functions, and social impacts of the urban environment and on the location of different activities within it.

Modern lifestyles use too many natural resources, polluting or destroying ecosystems, increasing social inequality, creating urban heat islands, and causing climate change. Therefore, sustainability will be one of the key focus while preparing the UDP. There are various current movements in urban planning/design that seeks to create sustainable urban environments with long-lasting structures, buildings with great livability for its inhabitants, amongst which are “New Urbanism”, “Smart Cities”, Sustainable Cities”, “Transit Oriented Development” etc. The underlying considerations in all of these paradigm is compact, efficient land use; less automobile use, yet better access; efficient resource use; less pollution and waste; the restoration of natural systems; good housing and living environments; a healthy social ecology; a sustainable economy; community participation and involvement; and preservation of local culture and wisdom which consists of cities that is designed with consideration of environmental impacts, such as minimizing the uses of energy, water, and the outputs of waste and pollution.

Therefore, the overall approach, including data gathering, stakeholder consultations and reporting took into account the Royal Vision and the principles of Smart Growth. However, more stress has been given to the following:

- **Stadium Location** – finalizing the location and scale of the all weather soccer stadium would determine the character of the urban core
- **Guest House Location** – main strategy would be to keep the guest houses close to areas of religious activities and the town center for easy access and mobility for pilgrims
- **Conference Hall and Resort Location** – to be aesthetically placed in order to have a comparative advantage in the region; market the first lakeside town in Bhutan



- **Shelter Strategy** – since there will be a lot of pressure on existing infrastructure and the town needs to expand to accommodate the growing populace
- **Natural Environment Protection Enhancement Zones** – since Gyelposhing has a few erosion prone zones which needs immediate mitigation measures
- **Development Control Regulation (DCR)** – since DCR is the tool which would ultimately translate the planning framework and guideline into a reality and bring the Royal Vision to form.
- **The Water Body** – interface water based activities with human settlement pattern to turn Gyelposhing into a winter destination for local tourist for water based recreational activities.

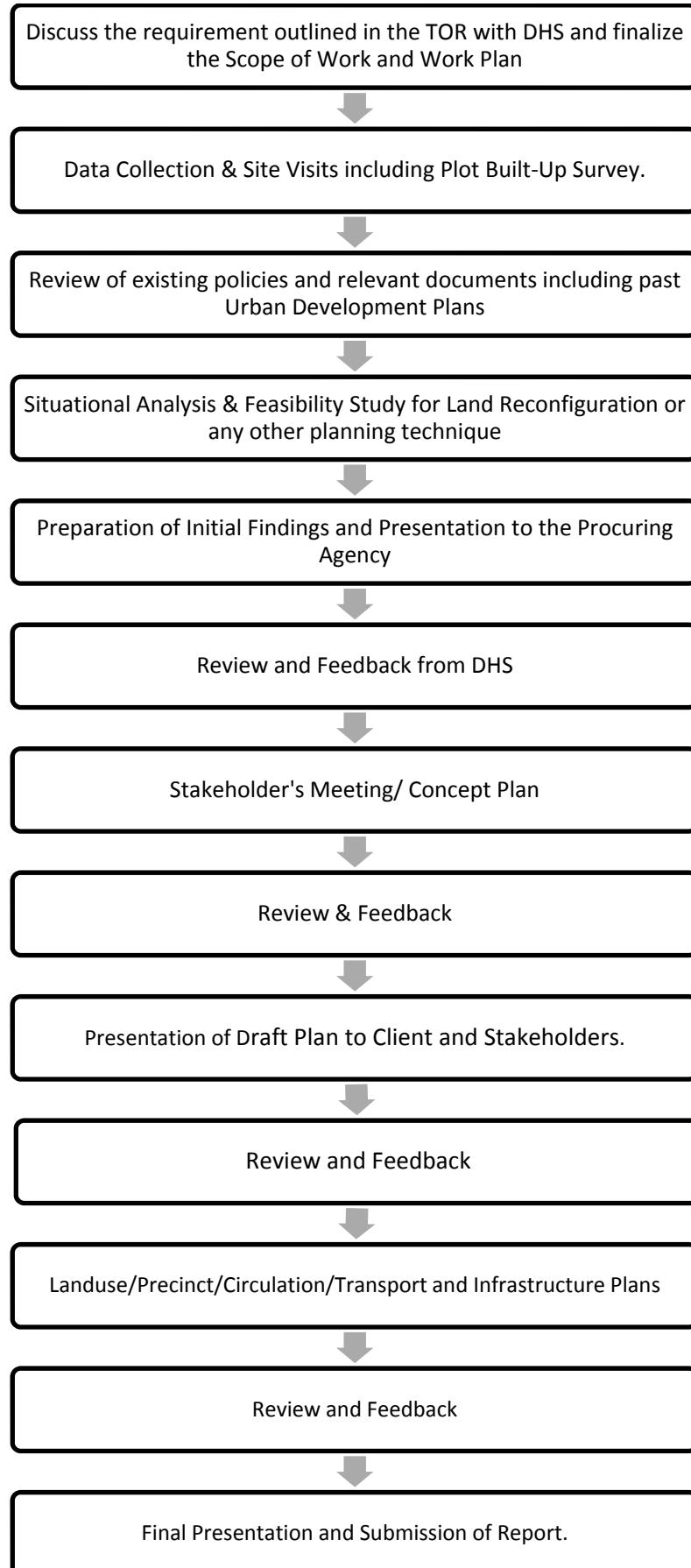
## 2.2 WORK SCHEDULE

Activity	Timeline
<b>Start of Activity</b>	March 2015
<b>Site Visit</b>	March 2015
<b>1<sup>st</sup> Draft Proposal</b>	April 2015
<b>2<sup>nd</sup> Draft Proposal</b>	May 2015
<b>Final Proposal</b>	June 2015

Table 2 Work Schedule



## 2.3 WORK METHODOLOGY





### 3. EXISTING SCENARIO

#### 3.1 CLIMATE & VEGETATION

A careful analysis of the existing scenario helps ensure a comprehensive understanding of the current conditions in order to chart out a site suitability for development matrix. In this regard, the following study of the existing scenario of the physical landscape, vegetation, drainage, land ownership pattern, and infrastructure etc are mapped out.

Gyelposhing enjoys a warm, sub-tropical to temperate climate with an average annual rainfall of 100 to 250 mm in the summer, and 0-5mm in the winter. The average daily winter temperature varies between 5-18°C and the average daily temperature during summer varies between 20-38°C. It experiences all four seasons with monsoon rain for about three months starting from June. During the summer the weather is much warmer and wetter. The following climate data is based on long term weather and climate records. Averages are for Mongar, the nearest biggest town.

Month	Average maximum temperature (°C)	Average minimum temperature (°C)	Average mm precipitation per month
January	18	7	0 mm
February	18	6	3 mm
March	21	11	61 mm
April	24	13	59 mm
May	22	10	133 mm
June	25	15	224 mm
July	24	16	268 mm
August	25	16	81 mm
September	24	15	100 mm
October	22	12	52 mm
November	20	10	4 mm
December	18	5	1 mm

*Climate data for MONGAR 2010 (SOURCE: SYB,NSB)*

Table 3. Climate Data



### 3.2 TOPOGRAPHY & AND LAND FORM

Gyelposhing is located in a bowl like valley in eastern Bhutan. Its geographic location is latitude 27° 13' N and 91° 11' E with an altitude of 560 m above mean sea level. Gyelposhing occupies the river terraces of Kuri Chhu, which are defined by narrow river valleys surrounded by steeply rising Himalayan hills to the east and west. The Drepong stream runs through one side of the municipality and supplies the water needs of the township.

The township is completely surrounded by steep hills with the Kurichu River flowing in a north to south direction with the valley floor having a predominantly west facing slope. The valley is about three kilometers long, and a kilometer wide. The valley floor forms a series of terraces descending from east to west and eventually terminating into the lake formed by the hydro power reservoir. The lake has an average width of 250 meters and backwater length of 4 kilometers.

### 3.3 DEMOGRAPHY

INDICATOR (2015)	MONGAR DZONGKHAG
Population total (Persons)	41852
Area (Sq km)	1,947
Annual Growth Rate	1.02
Gross density (Persons per Ha.)	0.22
Sex ratio (female per 1,000 male)	995.3
Literacy rate (% of total population)	50.1
Average family size	4.6
Net immigration (% of total population)	-1.3
<i>Source: Bhutan Population Census 2005 &amp; Annual Dzongkhag Statistic 2010</i>	

Table 4. Population Data

The population of Gyelposhing at the moment is a small fraction (6%) of the total population of Mongar dzongkhag as a whole. However, this imbalance is poised to rectify dramatically once the strategic economic status of Gyelposhing is realized after the commissioning of the vital Gyelposhing-Nanglam highway, the economic lifeline of the east.



### 3.4 EXISTING LAND USE PATTERN

Gyelposhing is a typical hydro power town in Bhutan. After the hustle and bustle of the construction activities are over, the task of generating electricity is almost entirely automated. This results in a small group of workers and executives who are required to look after the day to day activities of the power generating plant. The economy of the small town is almost entirely dependent on the employment generated by the 60MW power plant. The Kurichu Hydro Power Authority (KHPA) is the single largest employer in the town. As a result the KHPA owns a majority of the land area in the town. The few privately owned plots are predominantly commercial and residential plots allotted by the government in the past.

The landuse is also influenced by the terrain. There are five predominant terraces descending towards the lake. The main permanent houses are built on the highest terraces and feature predominantly the residential and institutional areas of the KHPA. Most government institutes including the Basic Health Unit, Police Station, Telecom Office, Lower Secondary School, etc occupy this terrace.

The second highest terrace is used by the township and an outdoor soccer ground. The third terrace is used by the KHPA as the residential areas for support staff and warehousing facilities. The fourth and fifth terraces are left undeveloped as the land area requires some investment to stabilize the area. The fourth terrace also seconds as a temporary helipad. The fifth and last terrace abuts the riverfront, and houses the sewerage treatment plan in one corner.

Within the town center there are numerous vacant lots. The maximum building height is three storied for the commercial areas and two storied for the residential areas. There are few scattered semi-permanent houses and single storied houses. For the most part a majority of the land is uncultivated and vacant. This may be due to the anticipation for the development of new township.

### 3.5 EXISTING LAND OWNERSHIP PATTERN

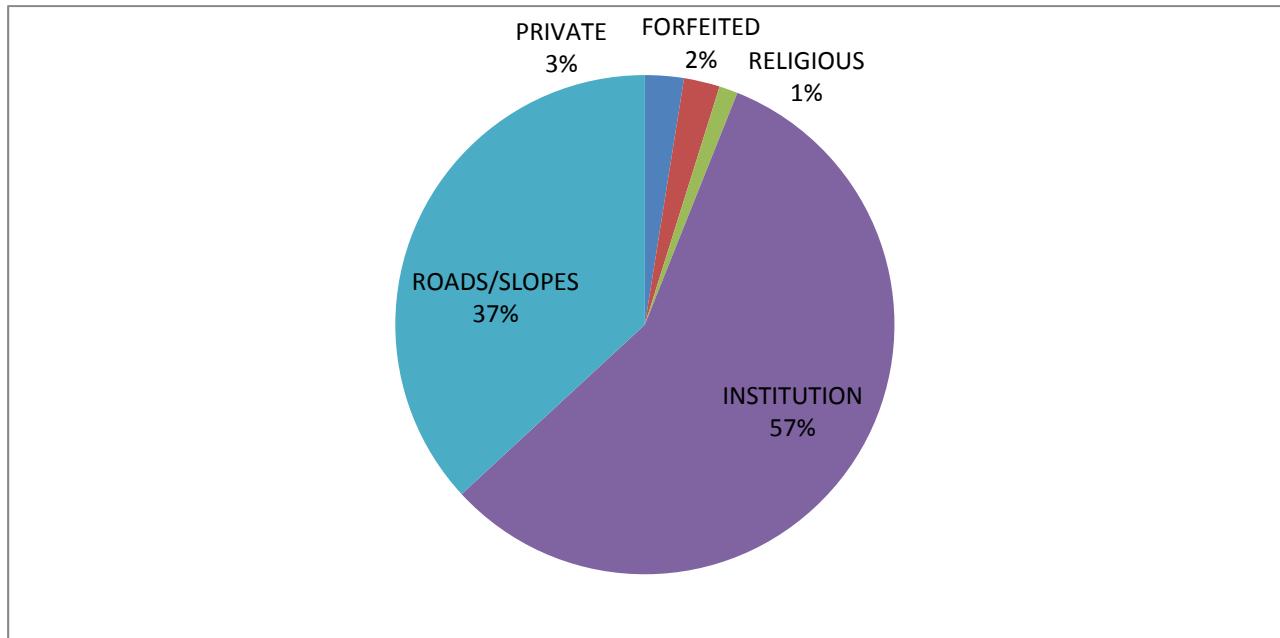
Gyelposhing Municipal area covers 400.64 acres, out of which 10.04 acres constituting 2.51% of Gyelposhing is owned by 27 private plot owners. 68 plots measuring 9.34 acres in total and representing 2.33% of Gyelposhing township area are forfeited. 6 Religious plots belonging to rabdeys and dratshangs represent 1.21% of the total area at 4.84 acres. 20 government institutions collectively make the largest land owners, owning 57.07% of the township and occupying 228.66 acres. The remaining areas inclusive of steep slopes, river banks, streams, roadways, drains, and open space represent 36.88% of the total township area and measures 147.76 acres.



Land Use	No. of Plots	Area (Sqm)	Area (Acres)	Percentage
PRIVATE	27	40630.43	10.04	2.51
FORFEITED	68	37797.64	9.34	2.33
RELIGIOUS	6	19582.33	4.84	1.21
INSTITUTION	20	925354.09	228.66	57.07
ROADS/FOREST/RIVER		597963.44	147.76	36.88
<b>Total</b>	<b>121</b>	<b>1621327.94</b>	<b>400.64</b>	<b>100</b>

Table 5. Landuse Data

Furthermore, there are 76 plots that are less than 13 decimals. However, since the plots were created during a time when government allotted 2400sft standard plots, the status quo has been maintained.





### **3.6 EXISTING WATER BODY**

The Gyelposhing Township is traversed with one minor stream, the Drepong stream, which is seasonal and completely dries out during the winter. The town water supply is currently tapped from this stream. However, since the water supply is inadequate, especially during the winter months, the town also has a bore well supplementing the water. However, during the monsoons, there is evidence that the Drepong river can be prone to flash flooding due to its sheer catchment area. Therefore development have kept away from the banks of the streams.

The lake formed by the hydro power reservoir offers the potential to interface water based activities with the township. On average the lake is 250 meters wide, and the still water goes as far back as 4 kms upstream from the dam. The boatride on the lakes affords a vista, unlike anywhere in Bhutan, and is reminiscent of water bodies in British Columbia, Canada.

Once Gyelposhing accelerates its economic dominance in the region and sees a dramatic increase in its population, the perennial stream coming from Kalapang may have to be tapped to meet the increased demand for water.



## 4.1 ROAD & CIRCULATION NETWORK

Currently the main road coming into Gyelposhing is the 5km Kurizam-Gyelposhing road. Once the Gyelposhing-Nanglam roadway under construction is completed, this roadway will have to be widened to accommodate the increased traffic.

None of the roads have names. Within the township, we have the main street coming from the aforementioned roadway and loops back into the same road. The main commercial plots are arranged in a grid fashion and surrounds a town square.

Driving up from the dam area, the road does a long hairpin turn to negotiate a steep hill, and a further circuitous loop to get back to the main town area. Close to the KPA guest house, there is a straight roadway with mature trees on it, which loops back to the main street. Part of the roadway emerging from this junction is lost to erosion and fenced off.

Most of the residential areas have roads that terminate into their fenced off areas. For pedestrians, there are several shortcut pathways that easily negotiate the terraces.

To access the communities on the right banks of the river and the lake, the road over the dam has to be taken. The surrounding villages of Kalapang and Drepong are well connected to Gyelposhing by feeder roads.

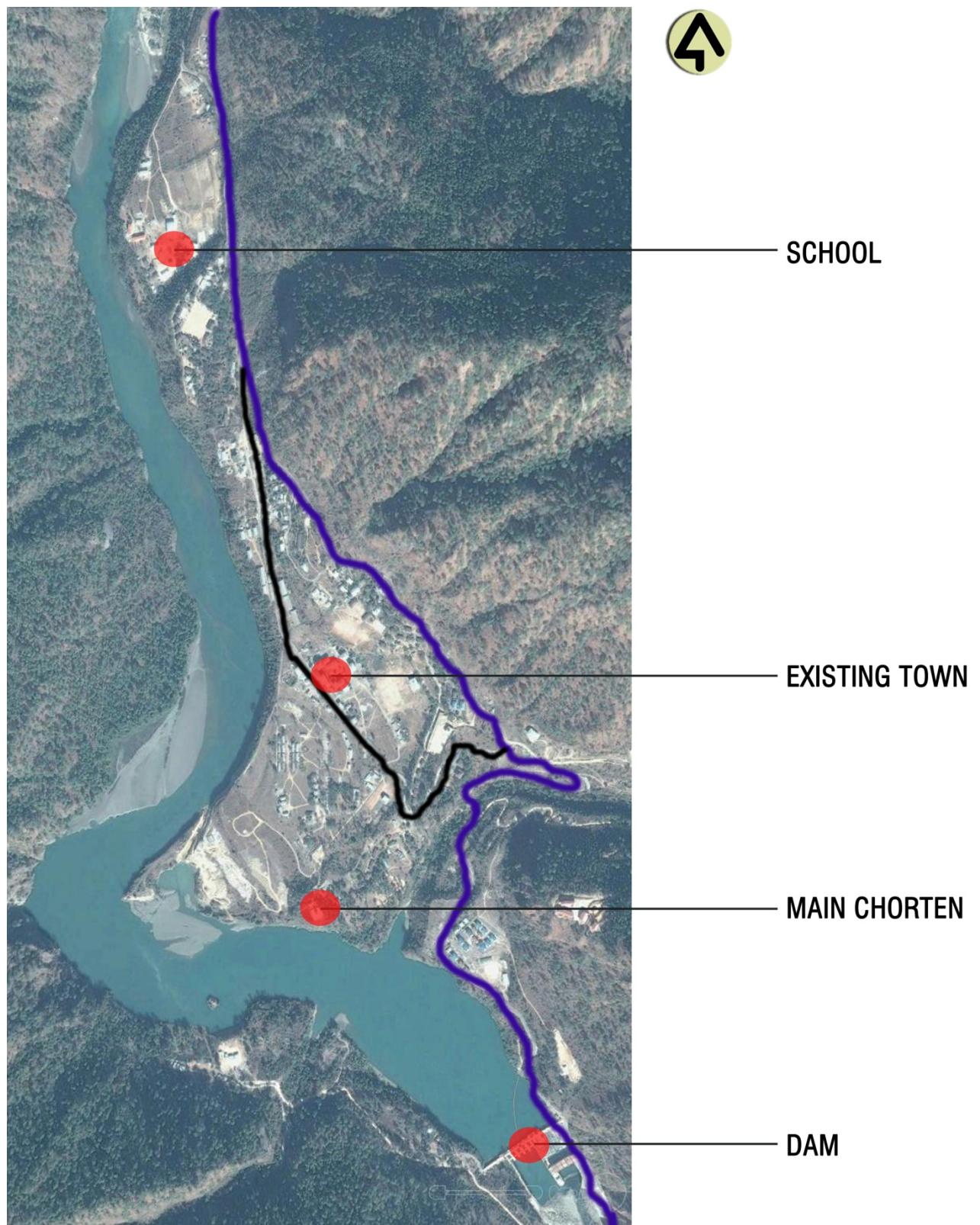


Fig.14 Existing Road Network



Fig.15 Existing Road Network



## 4.2 INSTITUTIONAL ESTABLISHMENT

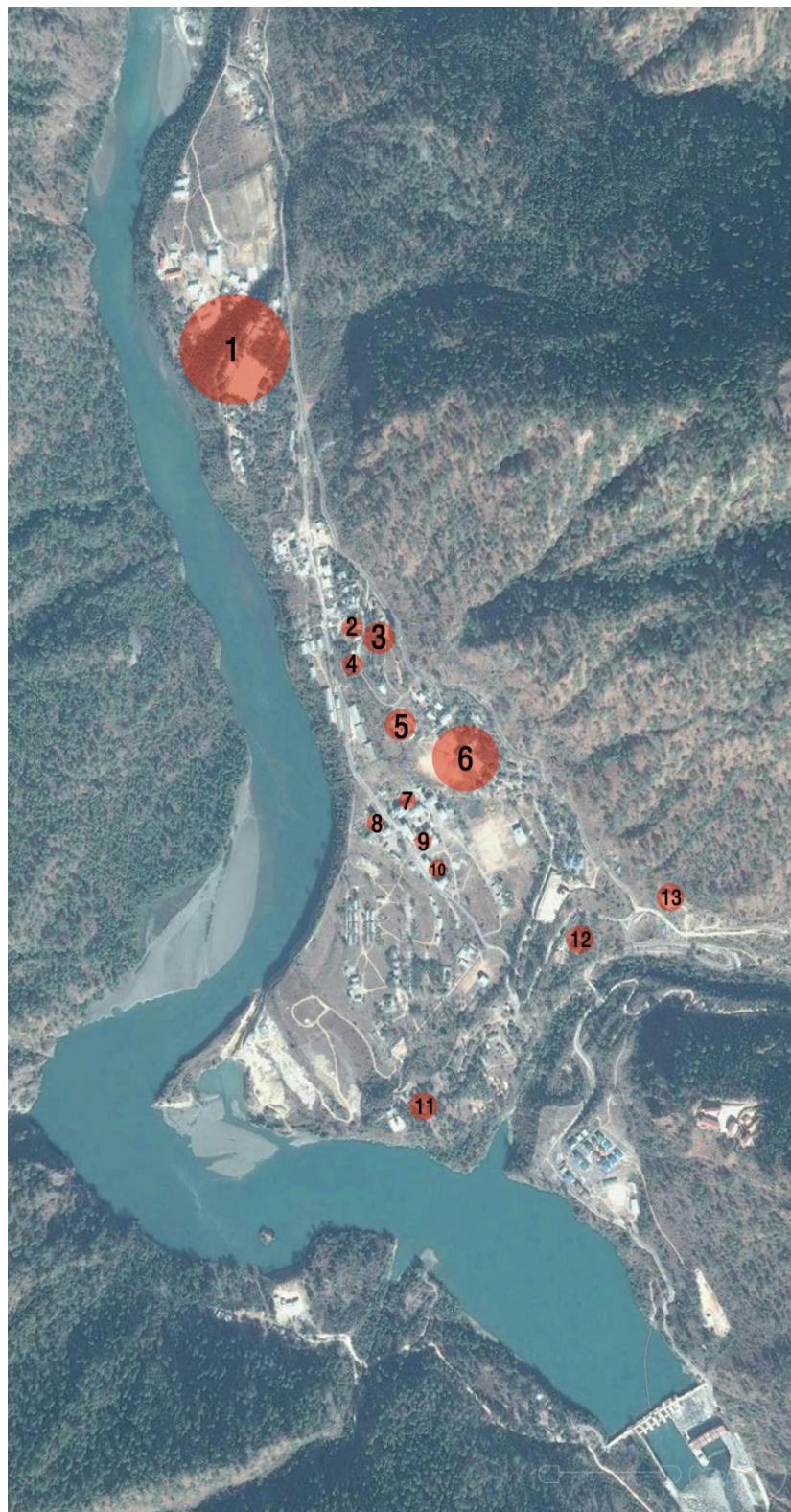
There are several institutional establishments within the Gyelposhing township. The most important office in the town and the region is that of the Office of the Gyaltshab, who is His Majesty the King's Representative in Eastern Bhutan.

The Kurichu Hydro-Power Project Authority (KHPA), is the next main important office in town since the entire economy of the town is dependent on the employment from hydro power plant. The KHPA is also the largest land owner in Gyelposhing town.

The existing schools include a Lower Secondary and Higher Secondary School. There is a large tract of land towards the northern part of the Higher Secondary school which was once earmarked for the establishment of a college.

Other notable institutional areas include the areas occupied by the Royal Bhutan Police, Royal Bhutan Army, Bhutan Telecom, Bhutan Power Corporation, and the Basic Health Unit.

The three major banks namely BNB, BOB, and BDBL has a presence in the town and operate out of private buildings.



- 1 HIGH SCHOOL
- 2 BHUTAN TELECOM
- 3 RBP
- 4 DFO OFFICE
- 5 BHU
- 6 JR.HIGH SCHOOL
- 7 BOB
- 8 BNB
- 9 BPC
- 10 BDBL
- 11 OFFICE OF GYALTSAB
- 12 KPA HEAD OFFICE
- 13 RBA

Fig.16 Existing Institutional Establishment



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Fig.17 Existing Institutional Establishment



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Fig.18 Existing Institutional Establishment



### **4.3 HERITAGE & RELIGIOUS STRUCTURES**

There are several chortens which are a permanent fixture in the landscape and offer a point of reference to orient oneself. The most famous is the chorten on the mound which is visible from all of Gyeposhing. Other notable chortens are the Chorten Kora type chorten next to the highway, and the chorten in the middle of the lake.

As for Lhakhangs, there are three significant ones in the town. The Community Lhakhang in the town has a large open field for outdoor ceremonies. The Lobdra on the hill has panoramic views of the township, and the Lhakhang across the lake has another fantastic view of the lake, with Gyeposhing in the background.

### **4.4 HOUSING**

The quality of housing in Gyeposhing bears a direct co-relation to the location of the terraces. There was a keen awareness to keep buildings far away from the reservoir as possible. The more permanent residential houses for the project authority have been built on the top terrace. The residential buildings are mostly double storied rcc structures accommodating four unit walkup apartments or single storied load bearing structures accommodating two unit bungalows. Most of the institutional buildings including the hospital, schools, the police area, telecom area etc, are built on these higher grounds.

The commercial areas sits on the second terrace and consists of buildings that are predominantly three storied high. These are buildings with retail on the ground floor and four units of residential space on the top two floors. From the third terrace on none of the buildings are of permanent nature. These houses are built of semi-permanent materials and are currently occupied by support staff workers. Most of the houses in these areas are derelict and have clearly outlived its designed life. There are also several warehouse type buildings.

Scattered randomly around the town, are small pockets of hutments and cattle sheds.

As far as possible, while planning and reconfiguring the plots, care has been taken to ensure that the permanent rcc structures have been kept in its original location as a desired outcome.



Fig.19 Existing Heritage & Religious Structures



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Fig.20 Existing Heritage & Religious Structures



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Fig.21 Existing Heritage & Religious Structures



WARE HOUSE



HUTMENTS



EKRA



STONE MASONRY BUILDING



SINGLE STOREY DWELLING UNIT



RCC BUILDING

Fig.22 Existing Housing Typologies



## 4.5 UTILITIES & SERVICES

Owing to the town's importance as a hydro power generating town, Gyelposhing town is well served with mobile/telecommunications and electricity network. Along the main street, roadside drains have been provided but have since come under disrepair, while they are minimal to non-existent along the access and feeder roads. The whole drainage system of the town has to be overhauled and looked at as once entity rather than piecemeal intervention as it is being done now. In fact, serious erosion problems are already evident from the lack of controlling surface runoff, especially along the river's edge, since all the drains terminate into the lake. There is an irrigation channel at the eastern edge of the town. Water supply solely from the Drepong stream is not adequate, and the Project Authority has dug a bore well in the third terrace. Sewerage disposal in the main town is by piped sewerage connected to a central treatment plant. Sewerage disposal in the fringe areas are by individual septic tanks. Municipal trash is collected and taken to the landfill site which is located halfway between Gyelposhing and Kurizam.

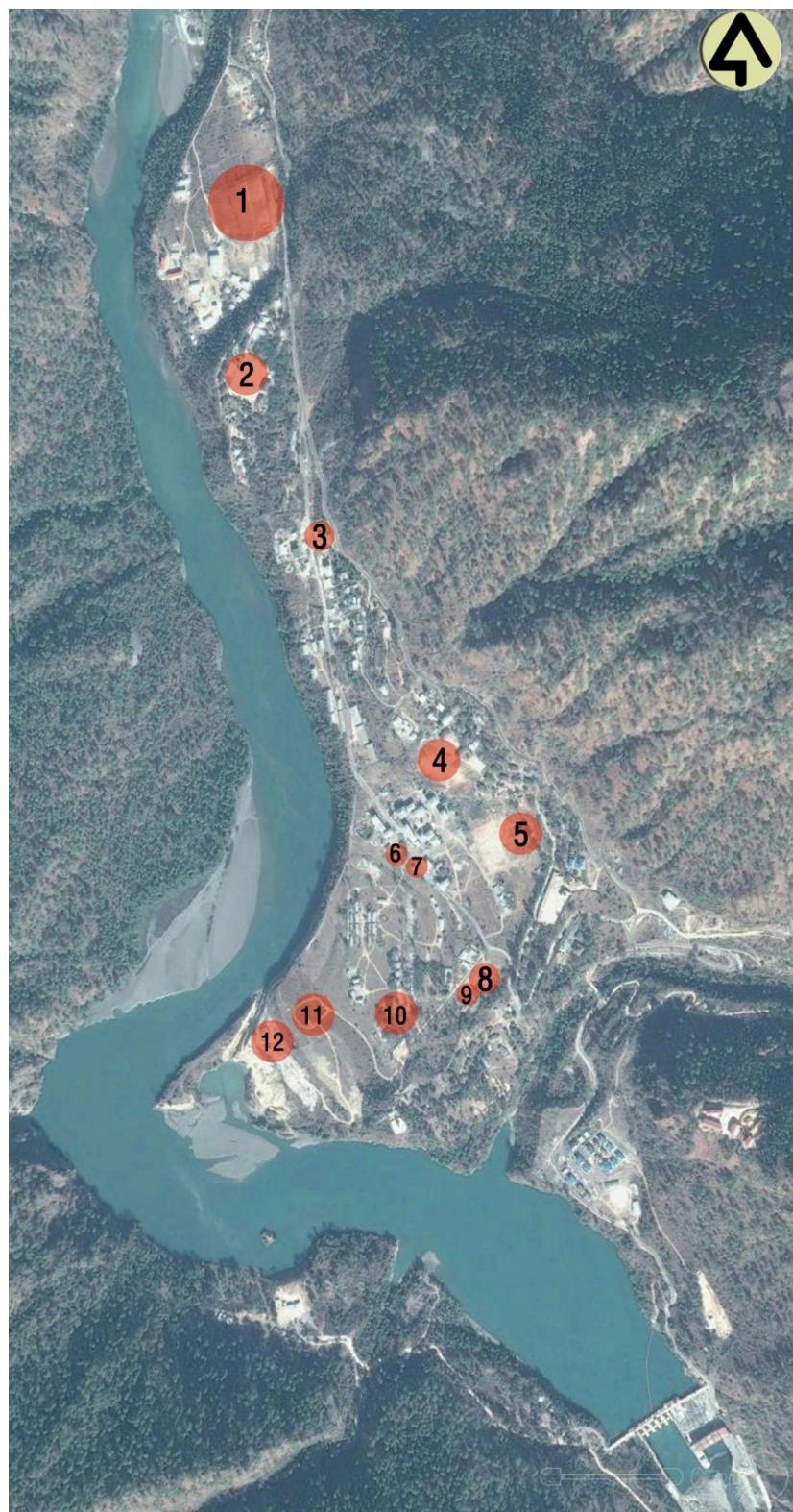


Fig.23 Existing Utilities & Services



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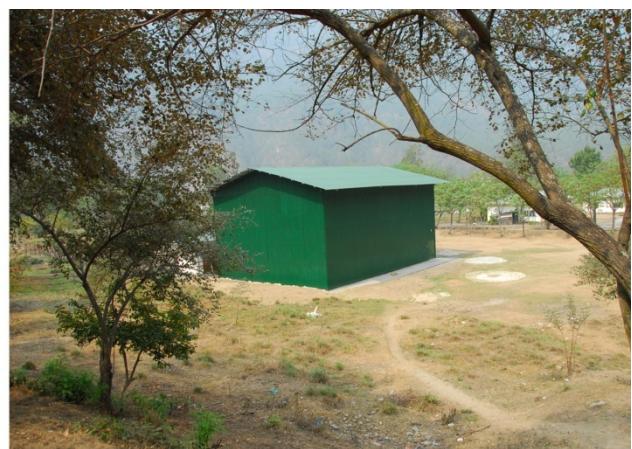


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Fig.24 Existing Utilities & Services



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Fig.25 Existing Utilities & Services



## 5. Analytical Study

A careful analysis of the existing site conditions of Gyelposhing township was carried out to align the design proposals to accommodate and align with the specific vision for the township.

### 5.1 Land Suitability for Development

The main township area of Gyelposhing has five predominant terraces. Two of the terraces have been developed; the first terrace as a predominantly residential area; the second terrace as a predominantly commercial and recreational area. These terraces are relatively flat, and separated by gentle to moderately steep drops. For the most part the terrain abruptly transforms into a steep vertical drop as it reaches the river's edge. In these scenarios, it is essential to maintain a generous buffer from the river's edge in order to discourage development in areas prone to erosion and landslide hazards. Furthermore, steep slopes with gradients in access of 30% have to be left out of consideration for development as per existing rules.

### 5.2 Slope Analysis

The proposed site enjoys very favorable slope for development. The majority of the areas are relatively flat with moderately sloping surface for good drainage. Except for some steeps areas where one terrace abruptly ends and another emerges at a lower elevations, for the most part the slopes are excellent for construction at below 15% gradient.

### 5.3 Aspect Analysis

Solar orientation is very important for one to understand how buildings can be naturally cooled in a hot place like Gyelposhing. Gyelposhing has predominantly west facing slope, so solar shading for the afternoon sun should be an important consideration in the design. As the entire town sits in a bowl like valley, early morning and late afternoon shading is not an issue.

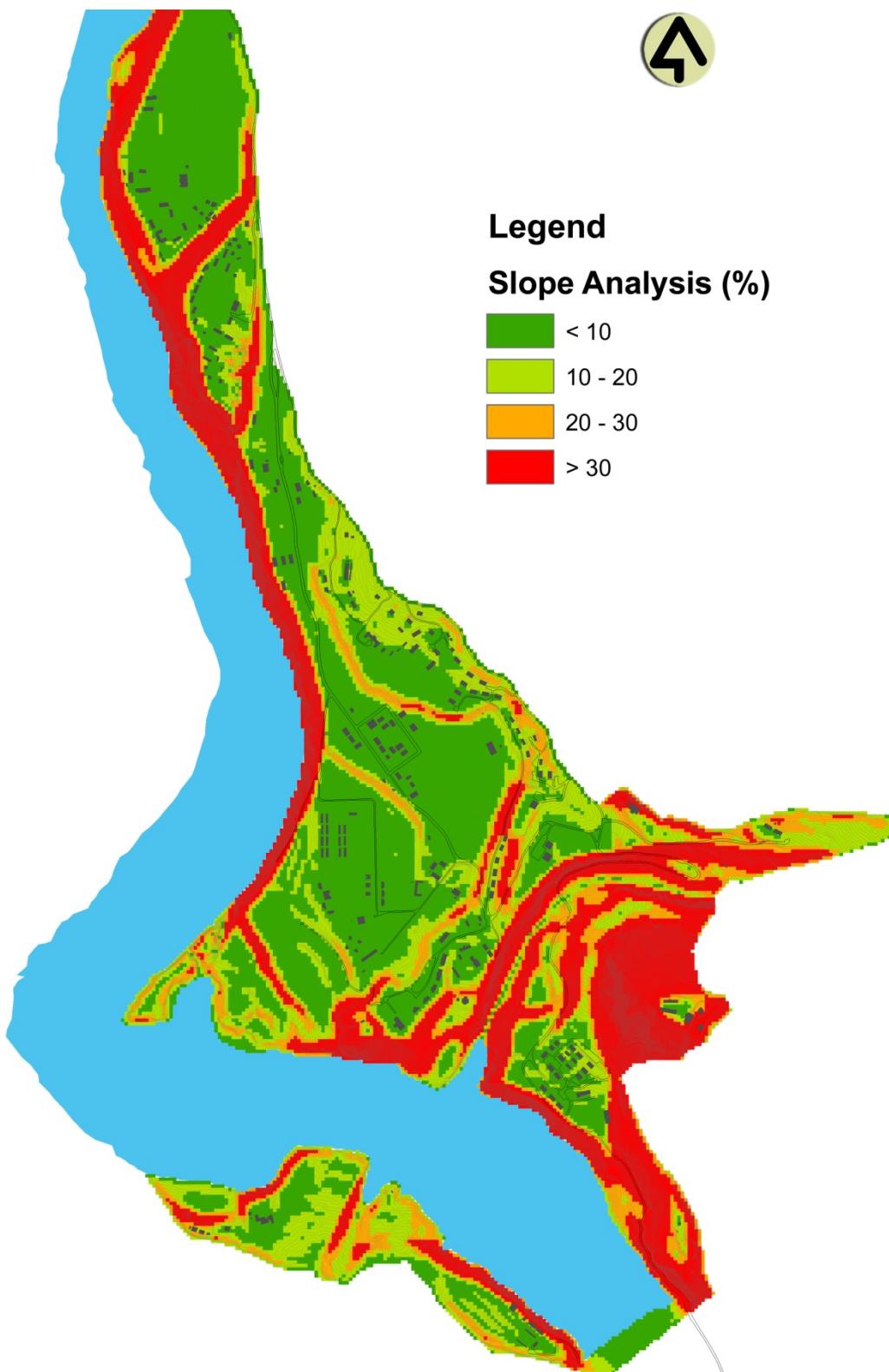


Fig.26 Slope Analysis



## 5.4 Land for No Development

In order to ensure that development does not occur in hazard prone areas it is important to designate areas where new development will not be allowed for the welfare and safety of the local residents. The primary issue in Gyelposhing is the risk of erosion from the river. As a result a considerably generous buffer has to be kept between the river and the developable land even at the cost of shifting some of the plots away from the edge.

Another important aspect is to ensure, for security reasons, a comfortable buffer between the Office and Residence of the Gyaltshab, and the growing township. Therefore, the entire hillock starting from the road junction till the lakeside has the potential to be carved out into one gated enclave.

A lot of effort has gone into greening Gyelposhing by its past residents. These efforts are evident in the numerous areas with mature and significant trees that presently greens the township. Much of these mature trees need to be preserved. Therefore, the areas with significant mature trees would be designated as public parks and would be preserved for the benefit of all town residents.

The steep slopes along the edge of the forest constitute another area where development will not be permitted. There are also areas on either side of streams and rivulets designated as green spaces where development will not be allowed. Until further investment is made to mitigate the risk from flooding, the fourth and fifth terraces would be preserved as open space so that the public will always have a view of the lake while development is kept a safe distance away from the hazard zone.



## 5.5 SWOT Analysis

The strengths, weaknesses, opportunities and threats of the Gyelposhing site is discussed below:

Table 6. SWOT Analysis

STRENGTHS	WEAKNESSES
Centrally located. New highway connection to Nanglam will open more trade opportunities. Already have access to public utilities. Have access to great quantities of energy (hydro electricity)	Unstable river edge would require long term mitigation measures. Hoarding of large land area, restricts provision of essential infrastructure critical to the township
Favorable winter climate; Access to water body for interface between water based recreation activities and settlements.	Lack of linkages especially to Bongdema Industrial Estate will result in unnecessary detour via Lingmethang and Kurizam for goods going to Indian markets via Gyelposhing
Site development cost low owing to relatively flat terrain on the terraces	70% of registered land under private ownership falls in forfeited category depriving the township of development potential
OPPORTUNITIES	THREATS
To develop as a lake side tourist destination for locals and regional tourist	Despite their small plot size, building owners may want to build big buildings as in other urban centers of Bhutan, especially after the town becomes vibrant with the new highway.
To design a town with no restrictions based on plot allotment criteria, and therefore avoid the resultant cookie cutter building typologies.	Existing residential areas near Gyelposhing-Nanglam Highway will experience constant disturbance from heavy vehicle traffic and noise pollution
To develop Gyelposhing as the first completely urban designed township, incorporating the principles of smart growth and having a urban environment that is lush, green, and entirely pedestrian friendly.	Potential conflict between driftwood brought down by the river and river based recreation activities on the lake especially motorized boating.

## 5.6 Mode of Land Mobilization

As there is no need to acquire private land for planning purpose Gyelposhing, the mode of land acquisition is relevant only for the areas currently occupied by the KHPA, which is assumed to be government owned. The private plots within the riverside buffer have been moved away from the hazard zone and reconfigured. The KHPA primarily requires land area for warehousing purpose for their other projects in the pipeline. Therefore, a land swap is proposed at the ministerial level so that the KHPA gets its space for warehousing facilities.



## 6. Demographic Studies

The total population for the entire Mongar district is estimated to be around 42000 in 2015. This population is estimated to double by 2030 assuming a growth rate of 1.6 % per annum. The population of Gyelposhing in 2005 was 2300. In 2015, this population had grown to 2400, an increase of only 100 people in 10 years. However, with the new road connection to Nanglam, the business opportunities for Gyelposhing are going to increase dramatically, and so will the resultant population. The Bhutan National Urbanization Strategy (BNUS) study conducted in 2007 suggests a 2020 population of Gyelposhing at 20,000. This seems highly unrealistic according to current trends. However, if it is true, then we would require an additional 4000 units of housing in the next five years.



## 7. Proposal for Action

### 7.1 Concept of the Plan

The Royal Command for Gyelposhing in the context of Smart Growth Principles forms the basis for the concept of the plan.

The following are the 10 principles of Smart Growth:

- 1) Mixed land uses
- 2) Compact building design
- 3) Creating a range of housing opportunities and choices
- 4) Creating walkable neighborhoods
- 5) Fostering a distinctive, attractive communities with a strong sense of place
- 6) Preserving open space, farmland, natural beauty, and critical environmental areas
- 7) Strengthening direct development towards existing communities
- 8) Providing a variety of transportation choices
- 9) Making development decisions predictable, fair, and cost effective and
- 10) Encouraging community and stakeholder collaboration in development decisions

### 7.2 The Plot Configuration and Design

The existing township of Gyelposhing with its grid like plot arrangement is already serviced with urban utility infrastructure. Although half the town area is shown as forfeited plots, the planning decision was taken to account for each plot within the development plan irrespective of the status of the plot from an ownership point of view. Access roads have been added to enhance the connectivity, permeability, and accessibility of the existing township. In order to enhance the civic and commercial function of the city center, a large public plaza is proposed linking the existing town area to the proposed development towards the lakeside.

During the site visit, areas with built up structures were indentified and mapped to ensure that no permanent structures were affected while extending the road network. The building typologies were identified and mapped along with existing access and natural terrain to make the new roads as cost efficient and gradient friendly as possible.

Gyelposhing has a series of west sloping terraces. While there are significant drops between the terraces, the terraces themselves are fairly flat, with some of the higher terraces away from the



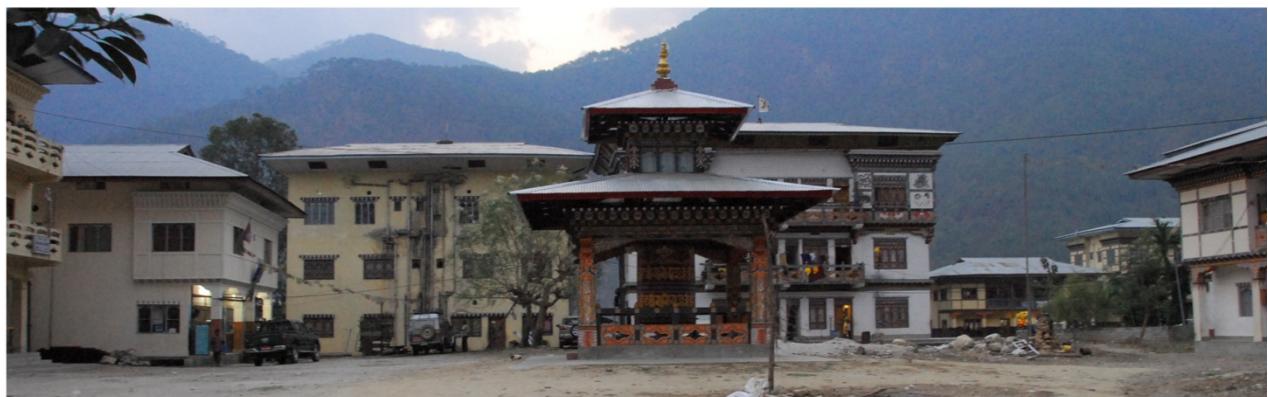
lake significantly built up. After discounting the built up areas, steep slopes, erosion prone and buffer areas, a coherent developable area was mapped out. This strategy also ensured that the environmentally sensitive areas were avoided for development.

A significant number of plots had to be relocated away from erosion prone steep slopes. In the long run, the steep slopes prone to erosion and landslide is proposed to be shaved off at a gentle angle, and the stabilized area used for riverside recreational use.

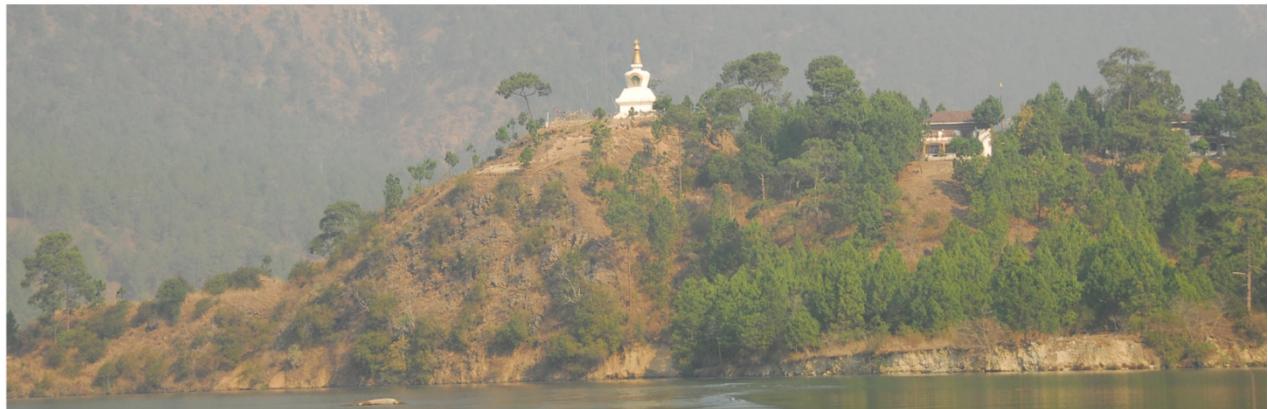




SCHOOL



EXISTING TOWN



MAIN CHOETEN



DAM



## 7.3 Precinct Plan

The Urban Development Plan for Gyelposing follows six predominant precinct categories such as for development, institution, heritage, utility services, recreation and the environment.

### 7.3.1 Development Precinct

Between the town center and the local high school lies a stretch of land that is an assortment of private and government land, and where presently a majority of the hutment in the township is concentrated. A fuel pump and small automobile workshop currently occupies this space. Coming into the town from the north these areas would form the first impressions for the visitor. Therefore, in the proposal, these areas have been rehabilitated by opening them up for mixed use development. The plot areas are determined by their registered areas. Buildings are expected to define the street. However, public amenities like bus terminal, taxi parking, and an indoor vegetable market have been provided behind the plots and away from the main street, so that while the facilities are within walking distance of the town center, the visual clutter and eyesore views are removed from sight.

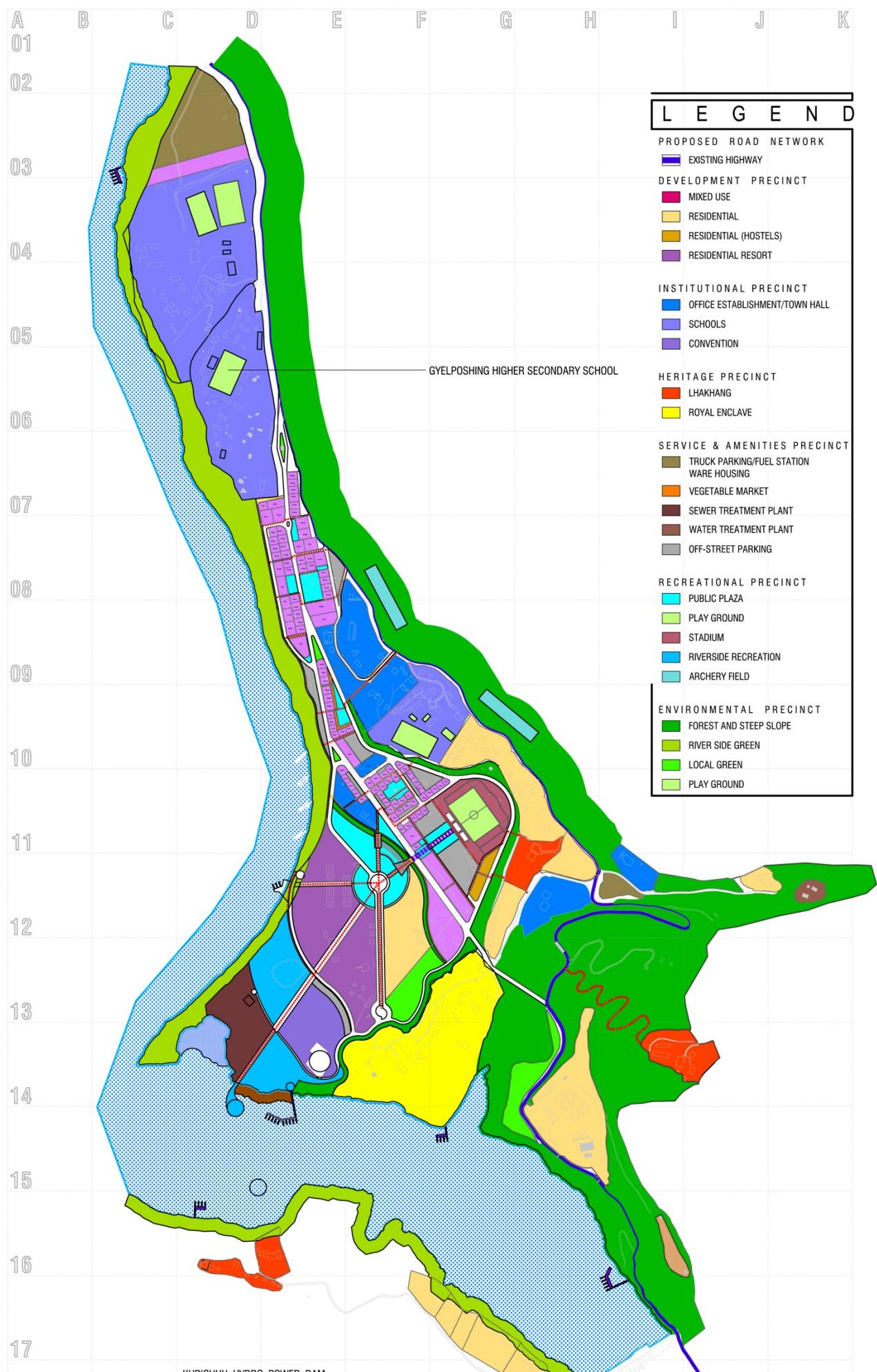
Close to the highway, a vegetable market is provided to allow the villagers from the surrounding villages especially from Kalapang and Drepong to have an opportunity to sell their surplus agricultural produce.

The Development Precinct identifies where investment in building infrastructure is encouraged and consists of mixed use and residential areas. The residential area also has a further category under hostels and resorts.

#### Mixed Use

The mixed use zone comprises of the town center and the areas on either side of the main street running through the town. As this area will form the core commercial area, the buildings are intended to define the streets. Within this area, most plots were allotted when the minimum commercial plot size was 2400sft. Therefore, building setbacks will be enforced and not site coverage for plots below 10 decimals. For new plots that are larger than 10 decimals, the site coverage restrictions as per the DCR will apply.

The maximum building height for the mixed use area is three stories.





## **Residential**

The residential area comprises of areas that are predominantly built up and currently occupied by the KHPA staff. The maximum building height is two storied. The residential areas are all designed as part of a residential enclave and not on individual plots. For the vacant residential plots across the lake, the DCR will determine the plot size and coverage.

The executives presently residing within the proposed Royal Enclave area will be moved to the area above the Ihakhang which offers panoramic view of the entire township. This new area is also close to the KHPA Head Office. Therefore, a new residential area is provided above the Ihakhang and across the KPA Head Office for the six executives bungalows to be relocated from the Royal Enclave area.

Towards the north of the town, another residential area is provided near the proposed warehousing and truck parking area for the workers of the warehouses and the industrial area at Bongdema.

The maximum building height for the residential area is two stories.

## **Residential (Hostel)**

The residential (Hostel) area comprises plots close to the Ihakhang and the football stadium. These plots are intended to provide affordable housing and hostel facilities for pilgrims and students. The location of hostel area ensures that the elderly and the young can access the amenities by foot as the Ihakhang and the stadium are both within short walking distance.

The maximum building height for the residential hostel area is three stories

## **Residential (Resort)**

The residential (Resort) area occupies the third terrace and is intended to provide high standard residential and hotel facilities with good view of the lake for visiting tourists and national guests. This area will supplement the lodging requirements of the convention center as well as tourist accommodation. The accommodation type would consist of hotel rooms, villas, suites, cottages, serviced apartments, and townhouses.

The maximum building height is fixed at two.

### **7.3.2 Institutional Precinct**

The institutional precinct includes all the government offices, schools, and the police station that are already existing in the town. These include the lower and higher secondary schools, the Basic Health Unit, Bhutan Telecom, Royal Bhutan Police, Forest Range Office, Royal Bhutan Army, and the KHPA Head Office.



A new office for the Gyelposhing Municipal Authority (GMA) and the Road and Surface Transport Authority (RSTA) is proposed in the town center. The GMA offices will have a town hall which will front the largest public plaza in Gyelposhing, while the RSTA office will be close to the town center so that scheduled public transportation will drop passengers directly into the town center.

A convention center is proposed on a rock outcrop adjacent to the lake. This location fully captures the aesthetic quality of the serene lake and would enable the convention center to be world class in terms of its setting and a desired destination for local conferences.

On the third terrace, a series of resort type accommodation is proposed which will have sweeping views of the lake. This area would provide accommodation for the conference participants, foreign tourists, and for regional and local visitors. Both the resort area and the conference area is connected to the lakeside by the central promenade linking the public plaza with the lake.

### **7.3.3 Heritage Precinct**

The proposed Royal Enclave will become one of the most important spaces in Gyelposhing. It will house the Office and Residence of His Royal Highness the Gyaltshab, who is His Majesty the King's Representative in Eastern Bhutan.

As the official residence and office of HRH the Gyaltshab, the Royal Enclave will encompass the small hillock presently used as the residential area of the KHPA executives. This would ensure that a prominent location in Gyelposhing is reserved for the Gyaltshab allowing the Office of the Gyaltshab to plan permanent facilities for His Royal Highness and his staff. The enclave would ensure a secure area for the Royal household and also keep a safe buffer from the expanding township. It is proposed that the Royal Enclave will have its own dock facility to access the lake.

The heritage precinct in Gyelposhing will consists of two lhakhangs complexes, one rabdey complex, and the Royal Enclave. The community lhakhang in the main town is a public lhakhang. The lhakhang across the lake is owned privately. The rabdey on the hill overlooking Gyelposhing is government owned.

The community lhakhang has a big outdoor ground for the purpose of conducting blessing ceremonies. This option/flexibility is important since the dharma teachings and the sporting events will be happening around the same time in the winter months. The proximity of the hostels to both the lhakhang and the football ground is strategic to ensure that the lodging facilities are all within a short walking distance of the venues and the commercial core.



### 7.3.4 Service & Amenities Precinct

The erstwhile area earmarked for the college is ideal for the establishment of additional residential areas to cater to the demand of housing once Bongdema Industrial Estate is functional across the river. The Bongdema Industrial Estate will also allow the employment base of Gyelposhing to diversify. For the goods manufactured in Bongdema to be exported to India, a direct access through Gyelposhing is preferred rather than circuiting through Lingmithang, Kurizam and then Gyelposhing. For these reasons, a motorable bridge is required over the Kurichhu to connect Bongdema directly to Gyelposhing.

Furthermore, warehousing facilities will also have to be provided in Gyelposhing for onward distribution of goods to the remote corners of eastern Bhutan.

Owing to the anticipated spike in trucks plying the road once the Gyelposhing-Nanglam highway is connected, a new truck parking and warehousing facility is proposed towards the northern end of the town. A fuel pump and truck parking is provided at the northern end of the town, so that passing traffic along the lateral highway and the Bongdema Industrial Estate can also benefit from its location. Within the premises of the fuel pump will be located the local LPG dealer as well. This area will be visually screened from the highway by carefully planted vegetation.

The auto workshop areas will be expanded towards the south of the township, and would occupy the area presently occupied by the stone quarry. Part of the area will also be used as a truck parking area for the south.

The town center of Gyelposhing is already connected to a common sewerage network which is mechanically treated. The treatment plant is located on the fifth terrace, and therefore the lowest elevation in town. It is proposed that this network is expanded to the rest of the town. Where connection to the sewerage network is not feasible, individual septic tank is proposed.

Currently, the town's water supply is barely met from tapping the Drepong stream. In the future, another water source is proposed by tapping the perennial stream from Kalapang. With a projected population of 20,000 people by 2020 the daily requirement of water for Gyelposhing would exceed three hundred thousand liters a day.

Off street parking is proposed along all the major streets and would constitute one of the main revenues for the municipality. While taxis would be expected to be seeking fares throughout the town, a designated taxi parking area is provided for people wanting to 'reserve' taxis for longer distances.



### 7.3.5 Recreational Precinct

Gyelposhing is proposed to be one of the greenest and most pedestrian friendly towns in Bhutan. It is also a designated sporting town especially in the winter months, when students from all over Bhutan descend into the town to celebrate Camp Raven, a scout camp. Owing to its tropical climate, Gyelposhing also has the potential to become a winter training camp for our national soccer team.

The existing football ground has been revamped with the addition of spectator stands, and will serve as the most important public gathering space in the city for formal celebrations and sporting events. Ceremonial stands have been added for national events. While adequate parking space have been provided around the grounds, with further parking space to be provided by street side car parks.

As the township expands towards the lakeside, especially for the provision of resort oriented lodging it is important to have a significant public open space to connect the old part of the town to the proposed expansion area. To ensure the success of this connection, a vast public plaza is proposed at the edge of the current town, and prominently visible from the main street. Taking advantage of the level difference between the two terraces, the public plaza is proposed to be flanked by two giant Spanish stairs to encourage people gazing and connectivity of spaces.

An avenue of mature trees is preserved and connects the public plaza to a newly created public parkland adjacent to the Royal Enclave. This strategy ensures that the parkway systems and the public domain remains contiguous and uninterrupted, under the giant canopy of the mature trees.

At the lakeside, a sandy beach area is created for recreational activities including a swimming pool and a floating dock. A network of floating docks is proposed to introduce a recreational ferry/boat network, a first of its kind in Bhutan, geared towards allowing the general public and visitors to experience and enjoy the views from the lake. The docks will also double up as ideal locations for launching canoes, sail boats, and kayaks for recreational activities on the lake. As a principle no motorized boats will be allowed on the water to maintain the tranquility of the lake. The public boat will be powered by electric motors.

Two archery grounds will be relocated above the highway and away from residential areas. Adequate arrangements for shelters, amenities and car parking space will be provided to ensure that the archer's needs are addressed without endangering the lives of the local residents. The third archery range has already been developed by the KHPA on a hillock above their residential area near the dam.



### 7.3.6 Environmental Precinct

The entire eastern side of Gyelposhing is bordered by forest on steep slope. The vegetation is predominantly homogeneous coniferous trees of the chir pine variety. There is an irrigation channel running at the edge of this forest. In certain areas, there are pockets of relatively flatter patches of land. The Drepong stream flows from the eastern slopes of the town.

In the young geological formations of the Himalayas, slopes in excess of 30% slope should be off limits to construction especially due to risk of landslides. Therefore, in Gyelposhing, the steep areas have been identified and designated as green reserves, so that no construction will be allowed to occur. In Gyelposhing, the steep areas occur between the settlement and the forest and between the settlement and the river. No construction will be allowed in this zone.

There is greater risk of the town being threatened by erosion from the river. As a result, immediate erosion mitigation works have to be initiated to retard the force of the river current from washing away the riverside slopes. Therefore, a buffer of 30 meters have been kept on the second terrace towards the north. As one comes closer to the town, the buffer has been increased to 100 meters from the river's edge for terraces three and four.

Along the lakeside on the fifth terrace, erosion mitigation works have to be initiated to prevent siltation and the formation of quick sand on the lakeside.



## 7.4 Road Network

The primary purpose of the road is to provide access. However, the quality of the street helps determine the character of the urban setting. Great streets help make community; is physically comfortable; and encourages participation. Great streets are also representative and can be remembered.

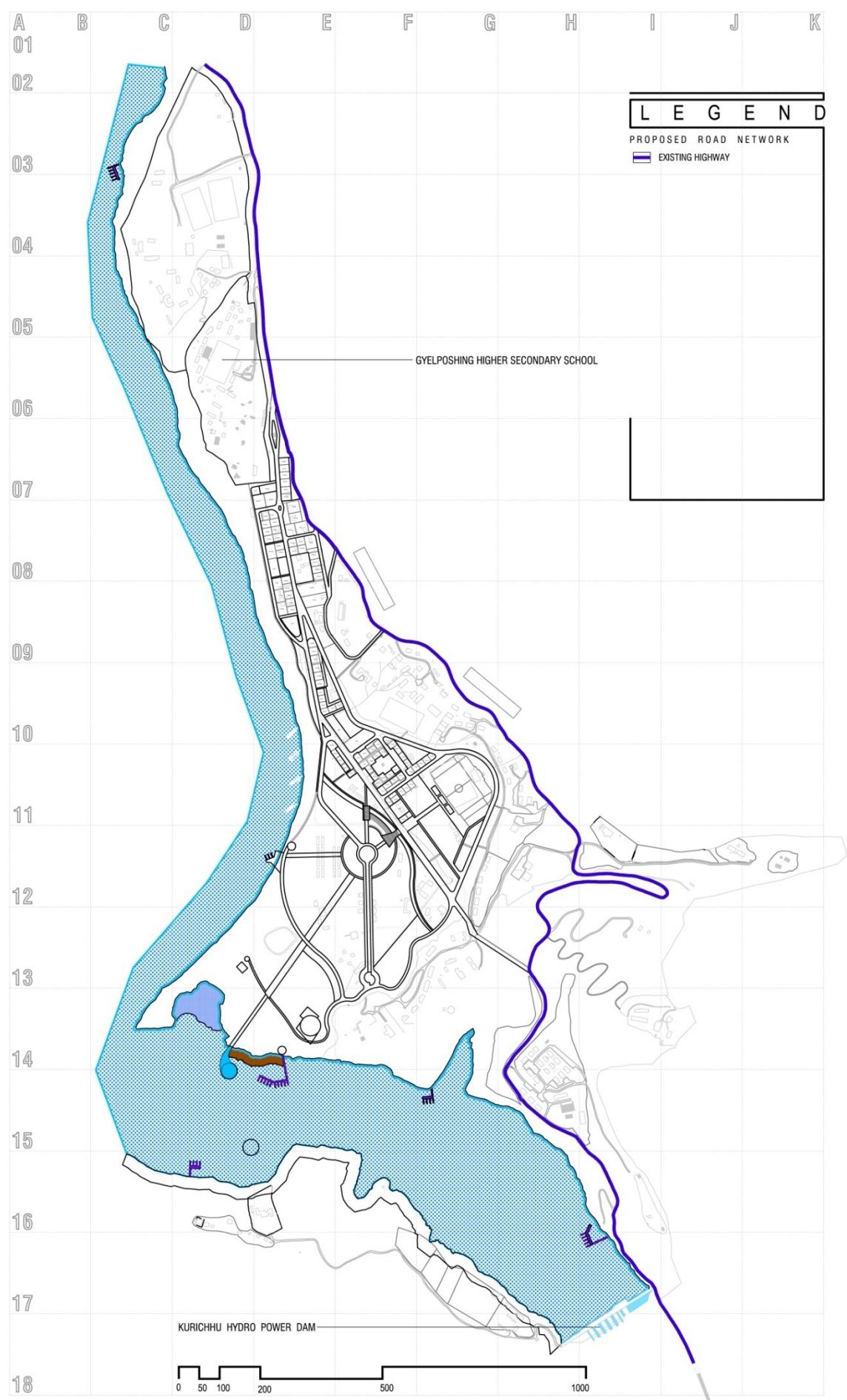
The streets of Gyelposhing are proposed to be at a human scale and follows the natural lay of the land. The tiny grid like street arrangement of the existing town center has been extended to make it more visible and then contrast it with the proposed roads that follow the terrain. A hierarchy of road network was established with the main roads having 10m and 8 m ROW for connector roads and 6m ROW for access roads. Part of the main street running through the town is 14m wide and defined by the buildings on either side of the road. Roadside parking is provided on this street. Another 10m wide road hugs the base of the terrain and connects the rear of the town by forming an elegant arc.

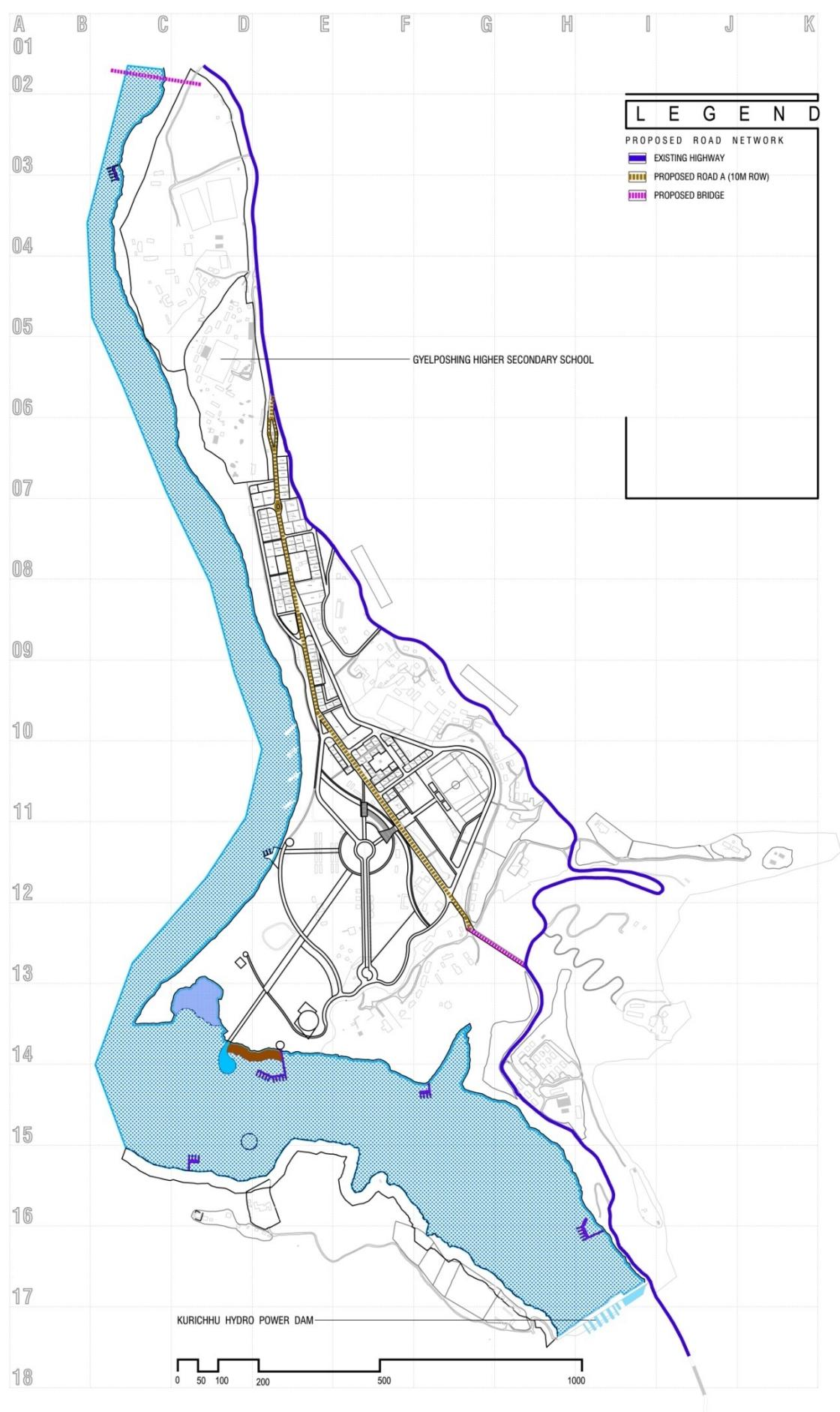
The third 10m wide road connects the third terrace to the second and passes by the public plaza and the mature tree avenue. Here the mature trees have been preserved and turned into an avenue by taking the roadway outside the tree lined avenue and converting the central space between the trees into a 8m wide pedestrian mall under the tree canopy.

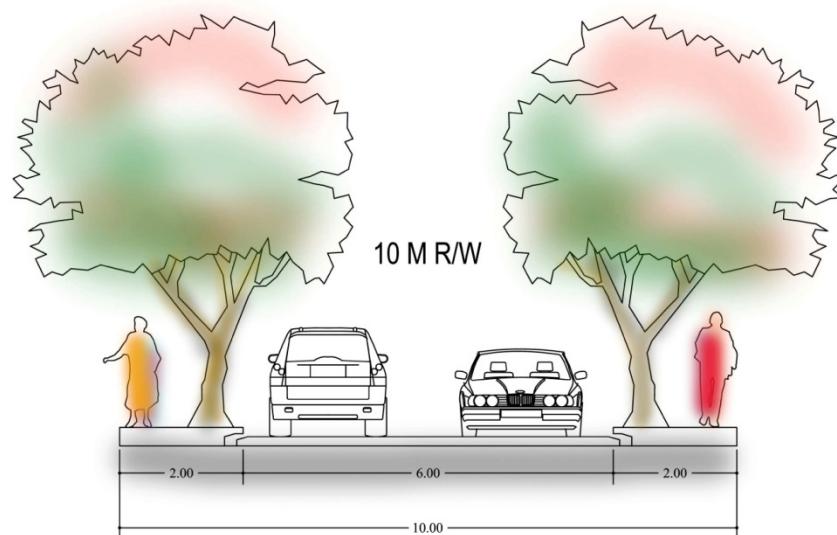
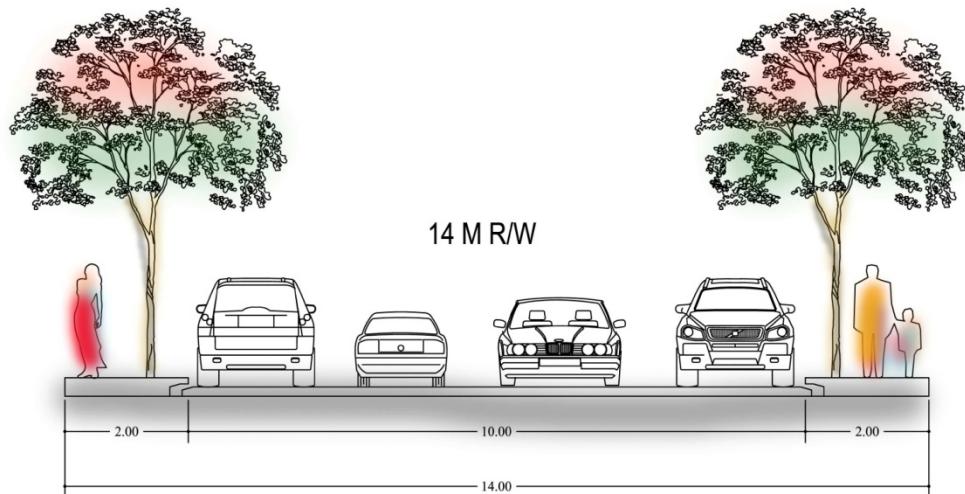
Other roads measure 8m wide and functions as connectors between parallel 10m wide roads. 6m wide roads function as access roads. Both the 10m and 8m roads have roadside pedestrian walkways built in.

To ensure smooth flow of vehicular traffic into the main street of the town from the south, a new bridge is proposed over the Drepong stream, by making a box cutting into the terrain and linking the highway directly into the town. An overhead bridge over the box cutting would connect the Royal Enclave to the KHPA Head Office area. On the left bank of the Drepong stream, the existing vacant areas will be developed into a public park.

Within the lake an electric ferry transport is proposed that will crisscross the 4 km backwater lake, primarily as a tourist photo-op attraction. As a first of its kind in Bhutan, the ferry service would encourage future hydro power towns in Bhutan to also leverage their dormant water bodies as potential tourist cash cows.







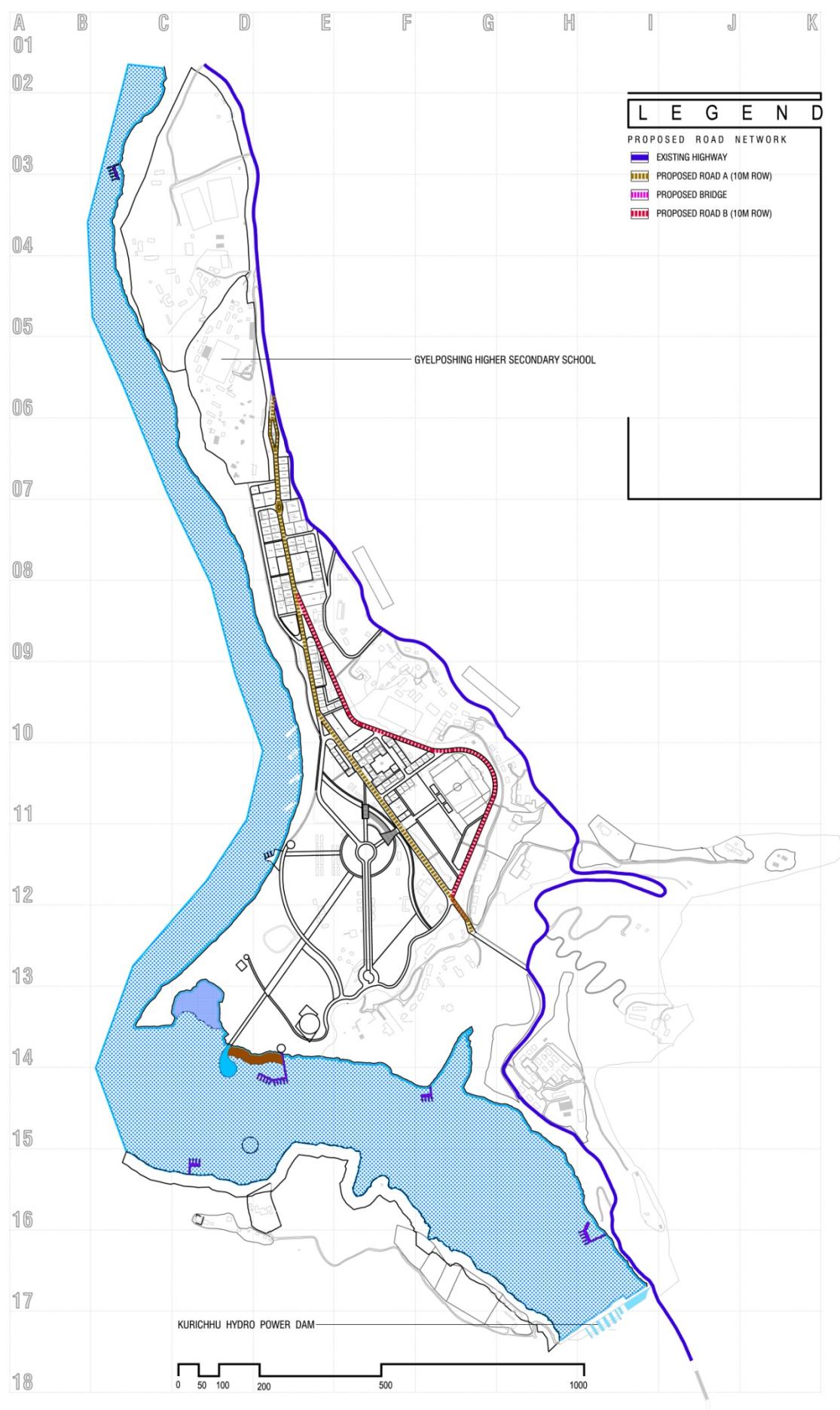


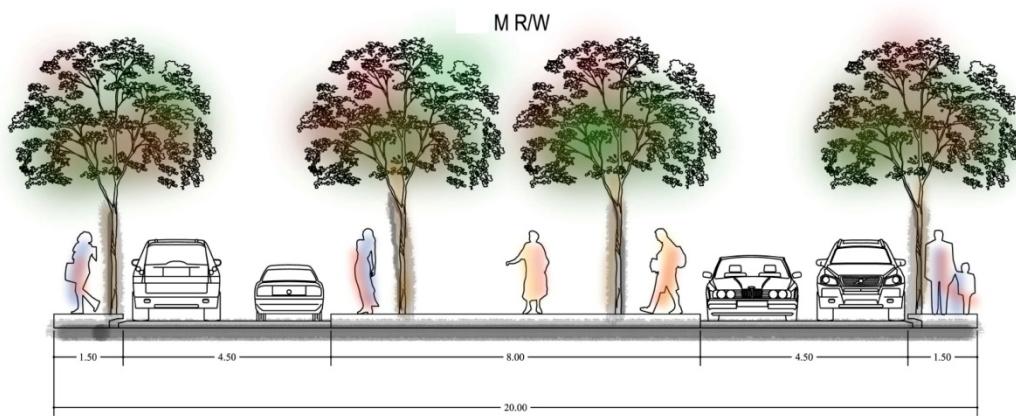
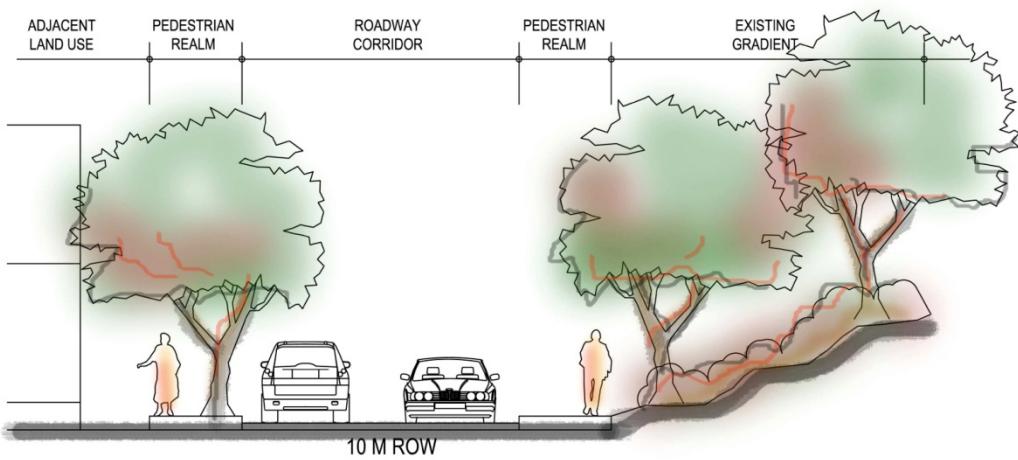
## road network



## EXAMPLES OF MAIN STREET







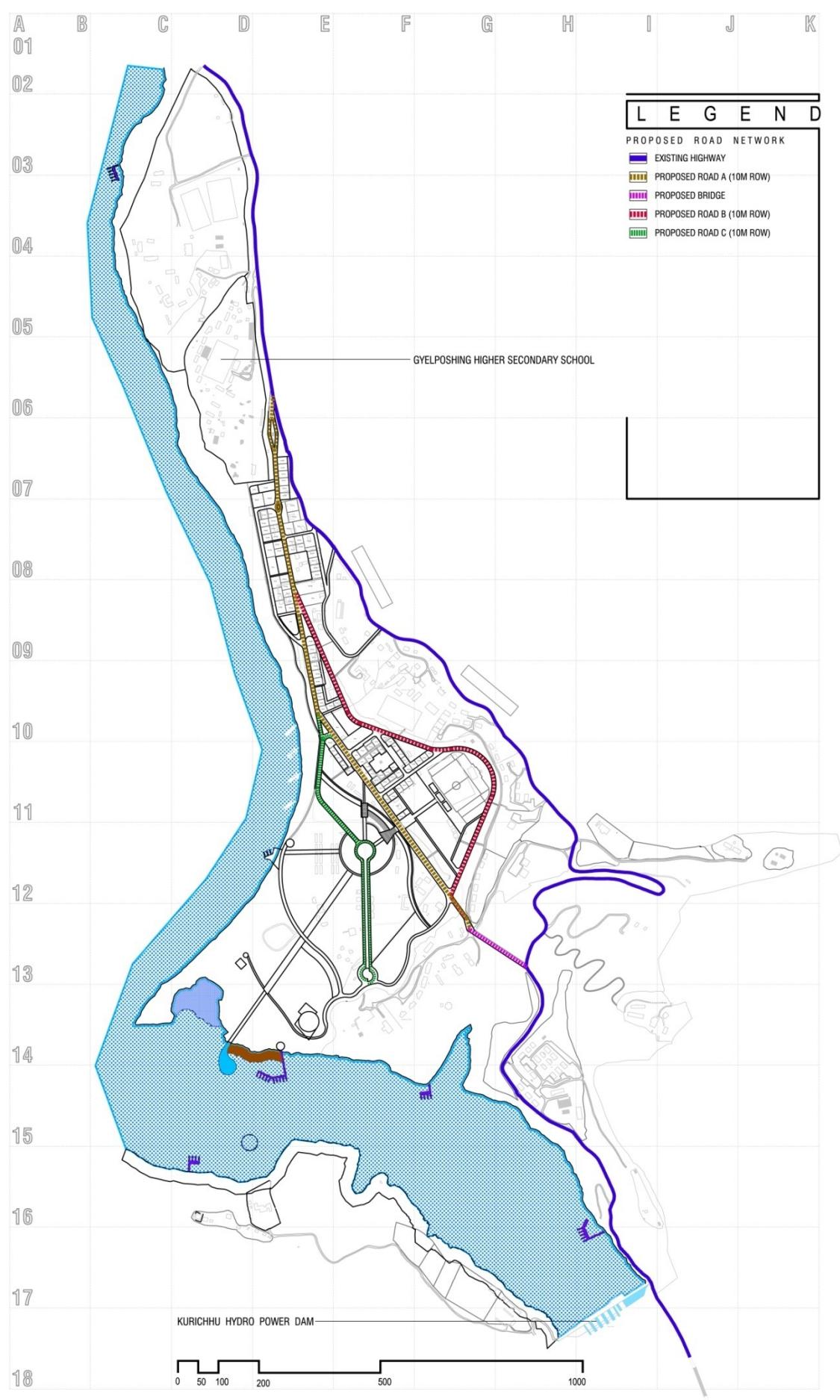


## road network



## EXAMPLES OF STREET



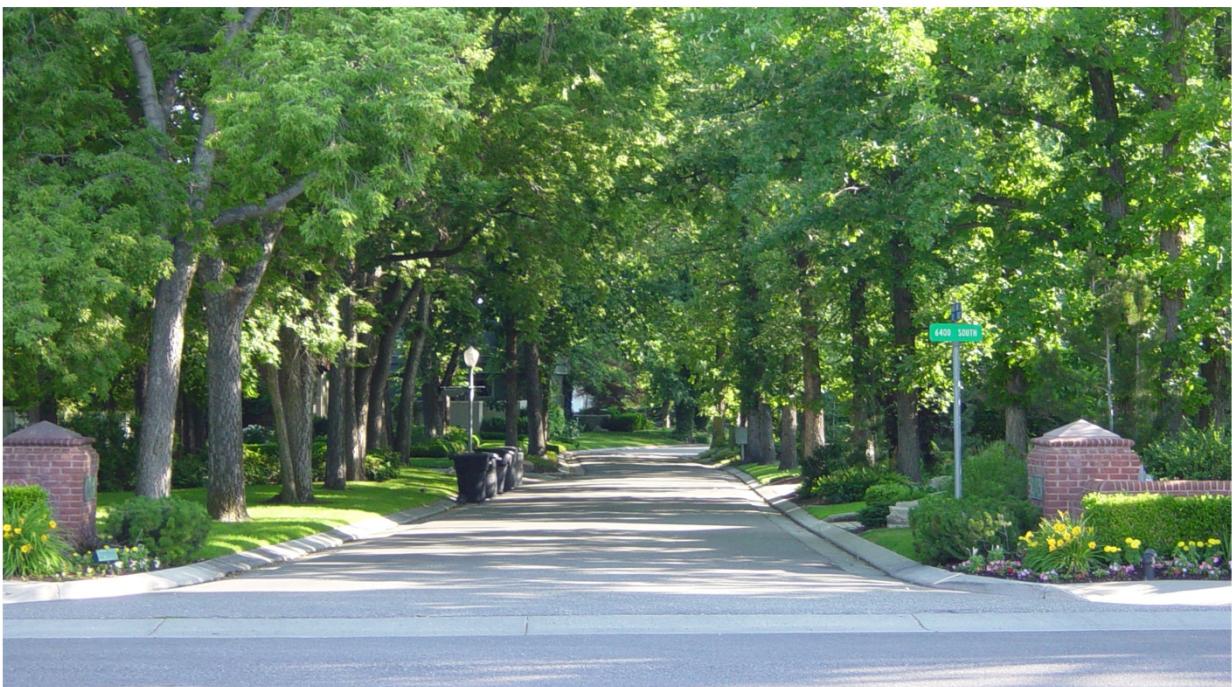


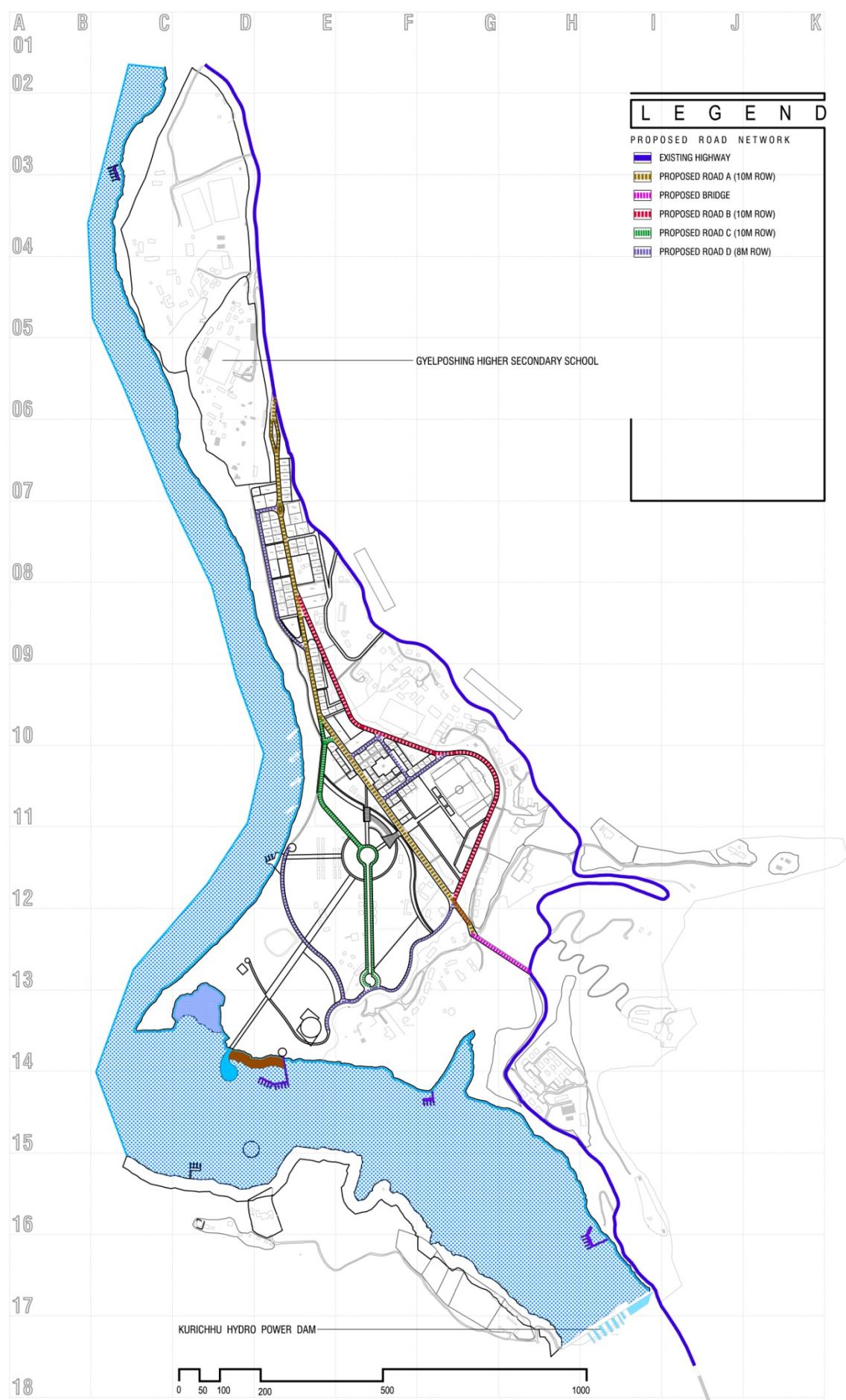


## road network



## EXAMPLES OF STREET





KURICHHU HYDRO POWER DAM

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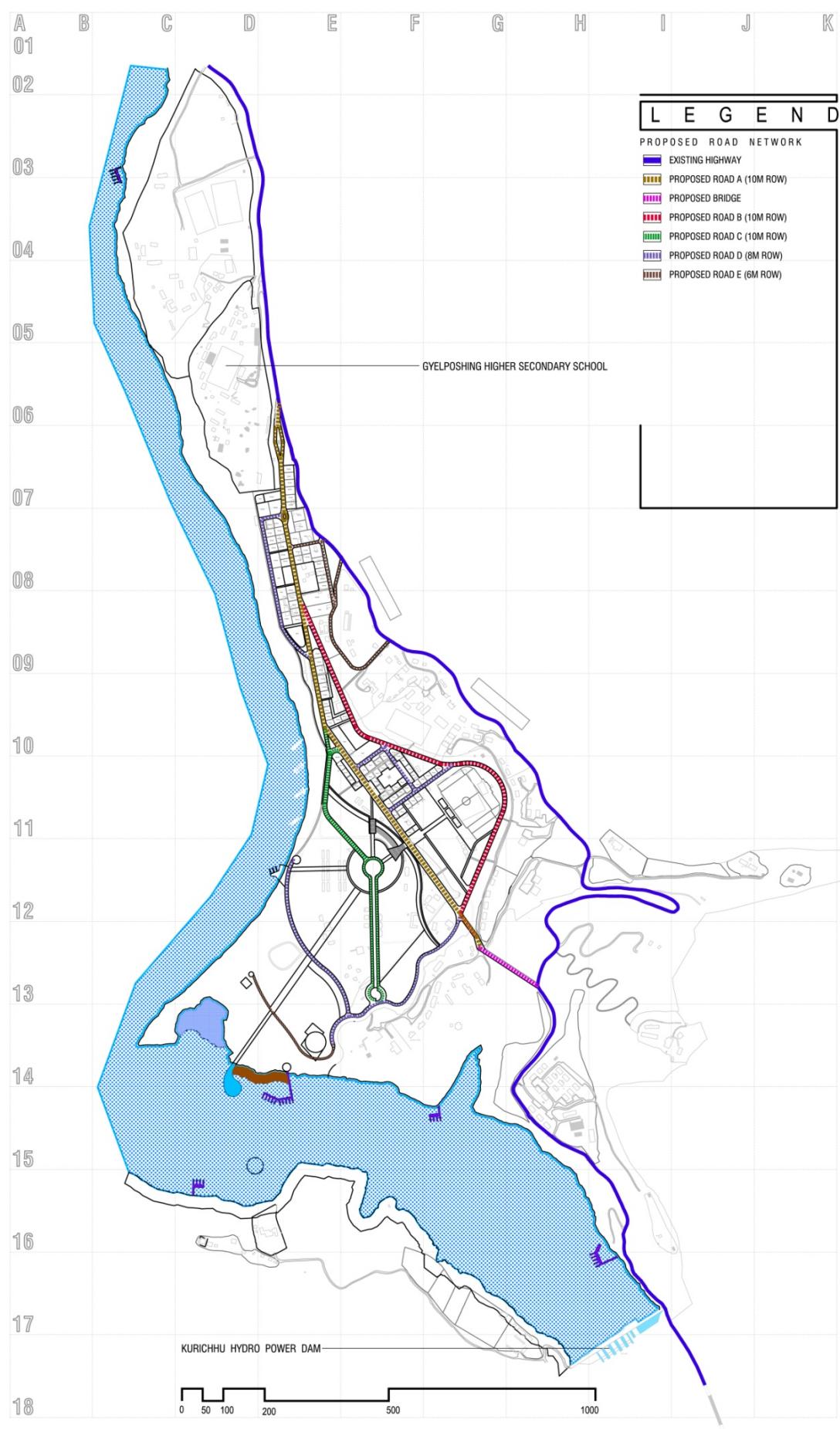


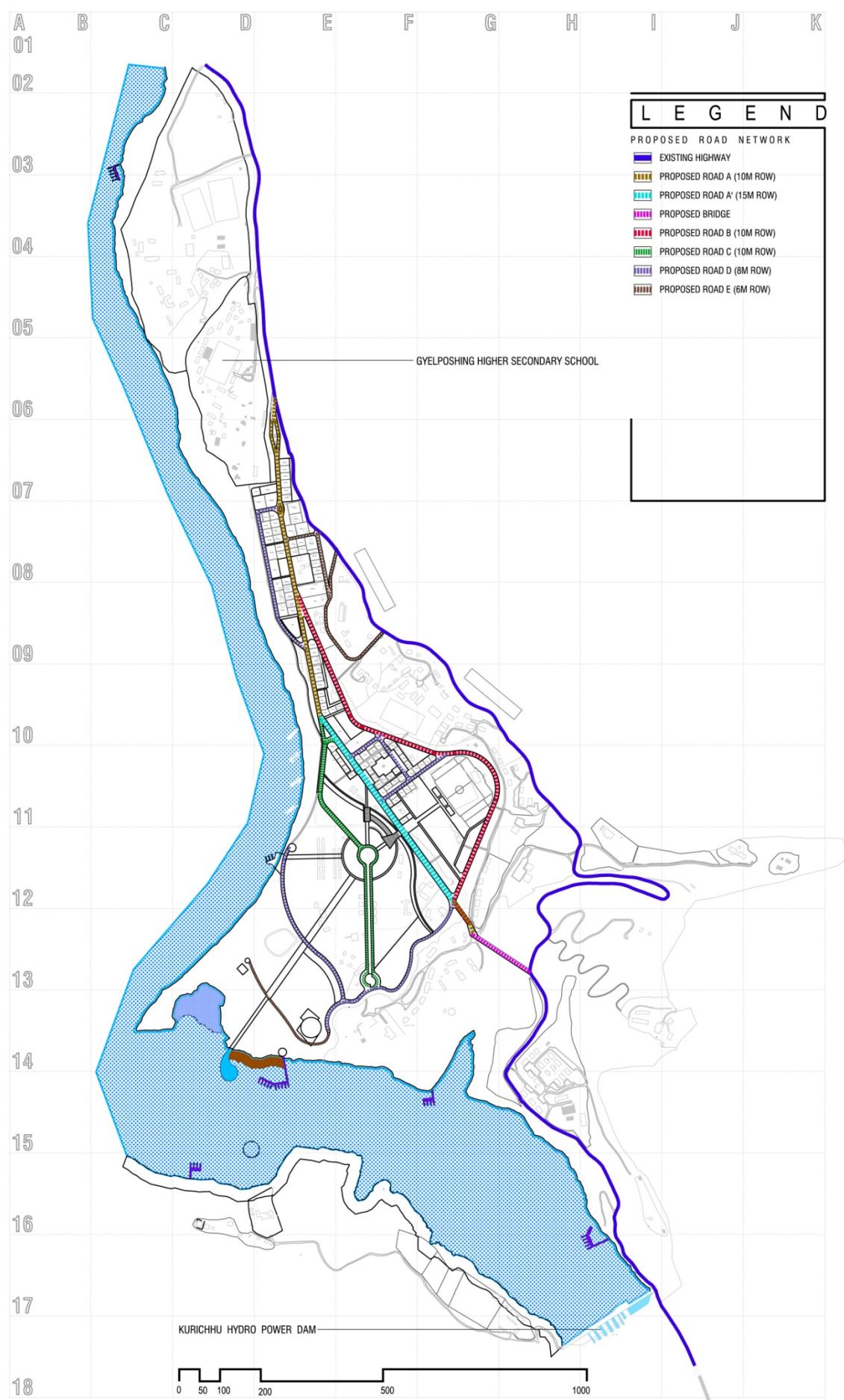
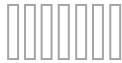
## road network

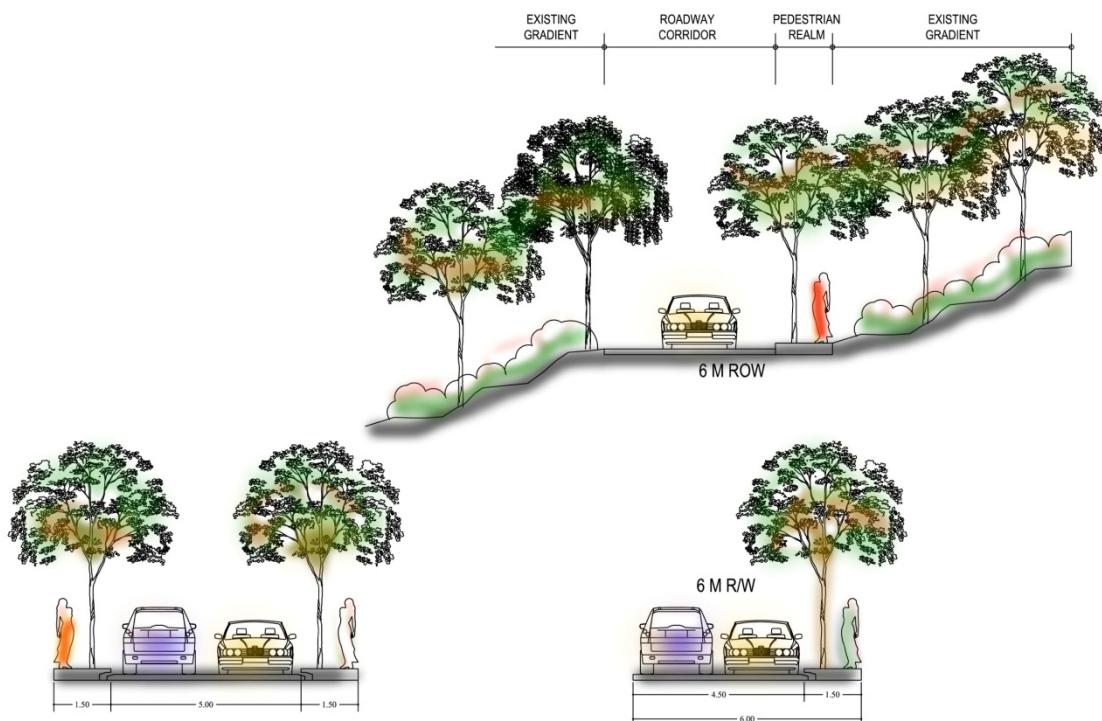


## EXAMPLES OF STREET











## 7.5 Footpath Network

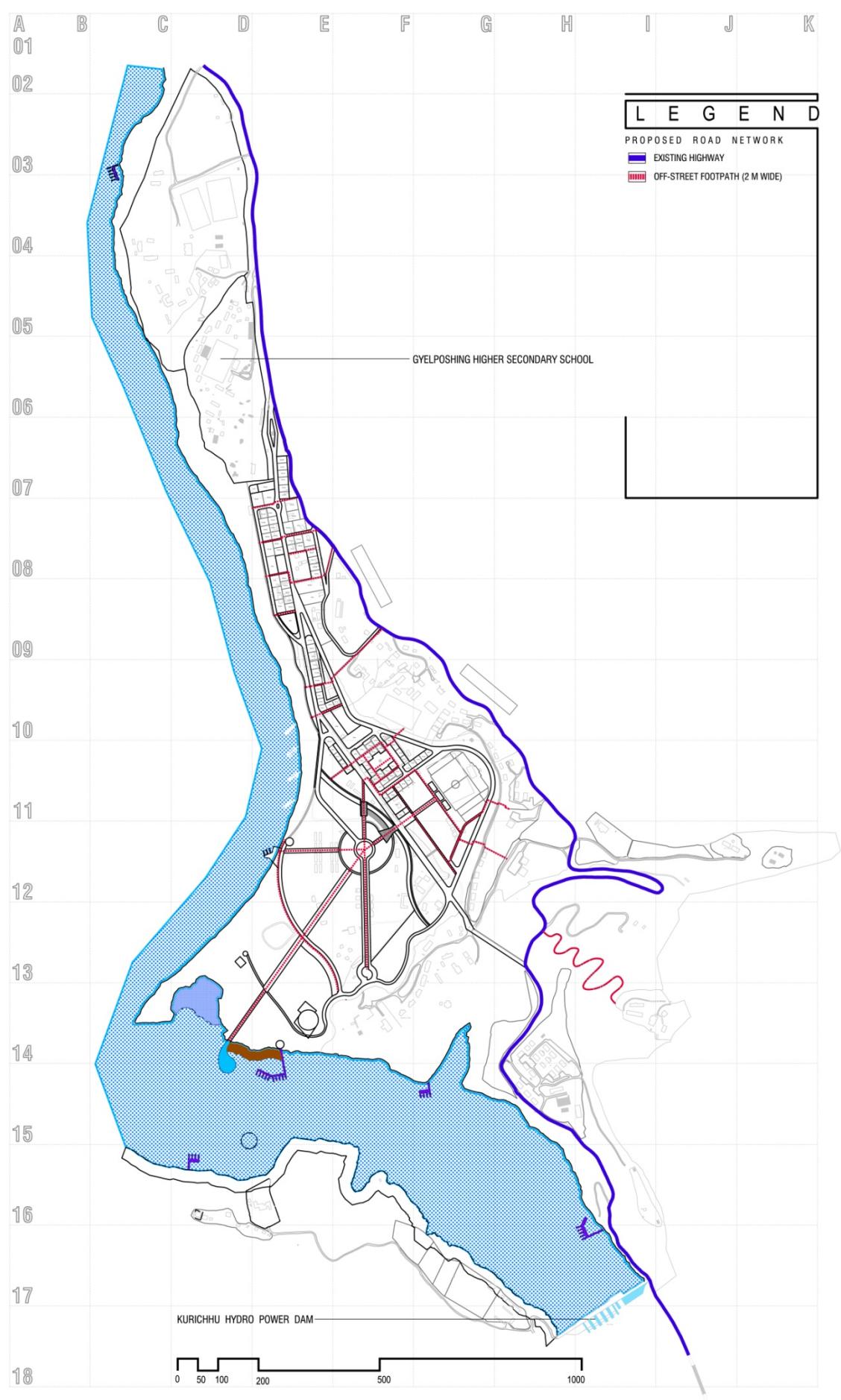
A vast majority of urban residents, including school children and workers, do not own a car or use vehicular transport to get around town. Instead, they travel by foot. Therefore, an efficient network of off street footpaths have been created following traditional trails and drainage to allow quick pedestrian access from one place to the next, often cutting across the neighborhood blocks. Often these footpaths offer the shortest routes joining the urban parks, riverside walkway, and nearby settlements and neighborhoods. The footpath network connects the riverside to the forest and cuts across the city blocks to provide short cuts across town. Where the footpaths meet the streets, pedestrian crossings are provided in the form of island crossings for pedestrian safety.

View Shafts have been kept to preserve the view into the river from the town. These view corridors would visually connect the forest to the river, and enhance the spatial quality of the built environment of the town. The town center is connected to the residential and institutional neighborhoods by efficient footpath systems.

The streets in the town center have roadside pedestrian walkways built in. Additional 2m wide footpath network is proposed throughout the town to facilitate 'short cut' pedestrian movement within the town. For the drops between terraces, it is usually faster to negotiate the grade difference by climbing stairs than to navigate around by taking a long hair pin turn. The footpaths also go between plots to facilitate pedestrian accessibility between parallel roads. On critical sections, the footpath corridors double up as drainage systems and service ducts.

Along the river's edge, a 3m wide riverside promenade is proposed within the 30m buffer to keep the riverside publicly accessible and to prevent development from encroaching into environmentally fragile areas. The walkway along the river will be paved in colored asphalt to save both cost and enhance the durability of the surface. Likewise, bike paths can also be paved a different color by using pigmented asphalt surface.

Footpaths also link complimentary spaces like the Ihakhang and the hostel area. Another scenic footpath is the link from the highway to the rabdey negotiating the steep hill overlooking Gyelposhing.

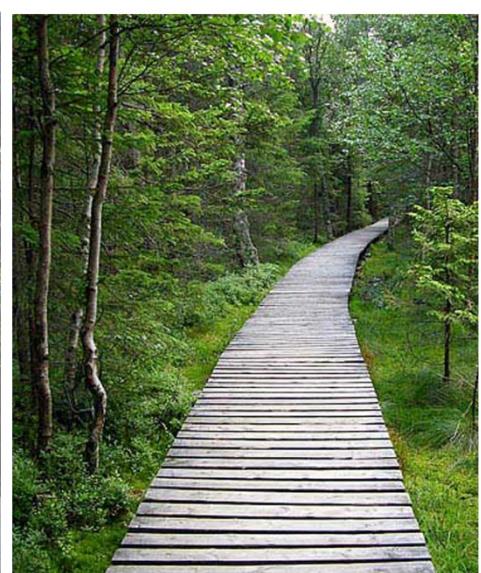


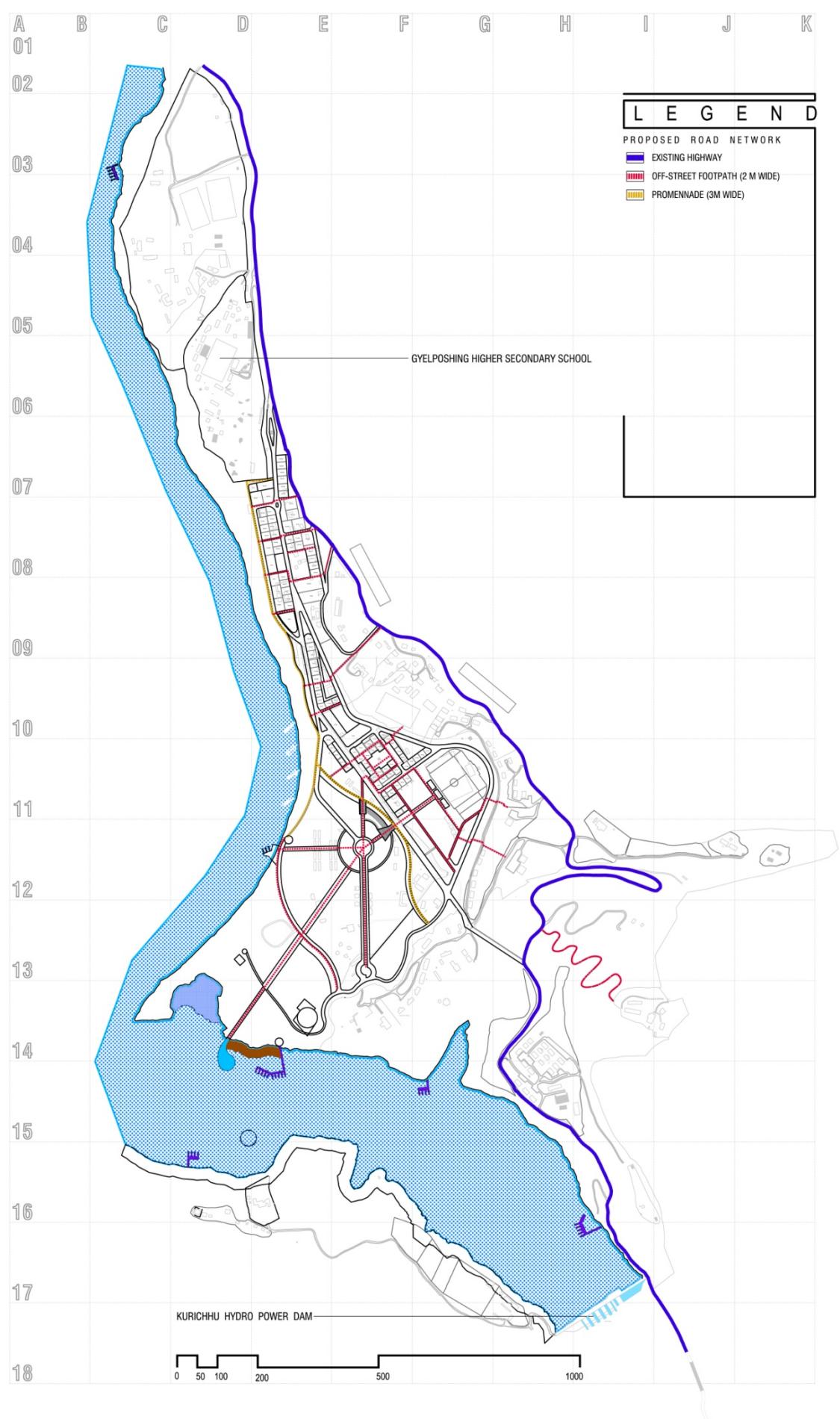


## foot-path network



EXAMPLES OF OFF-STREET FOOTPATH



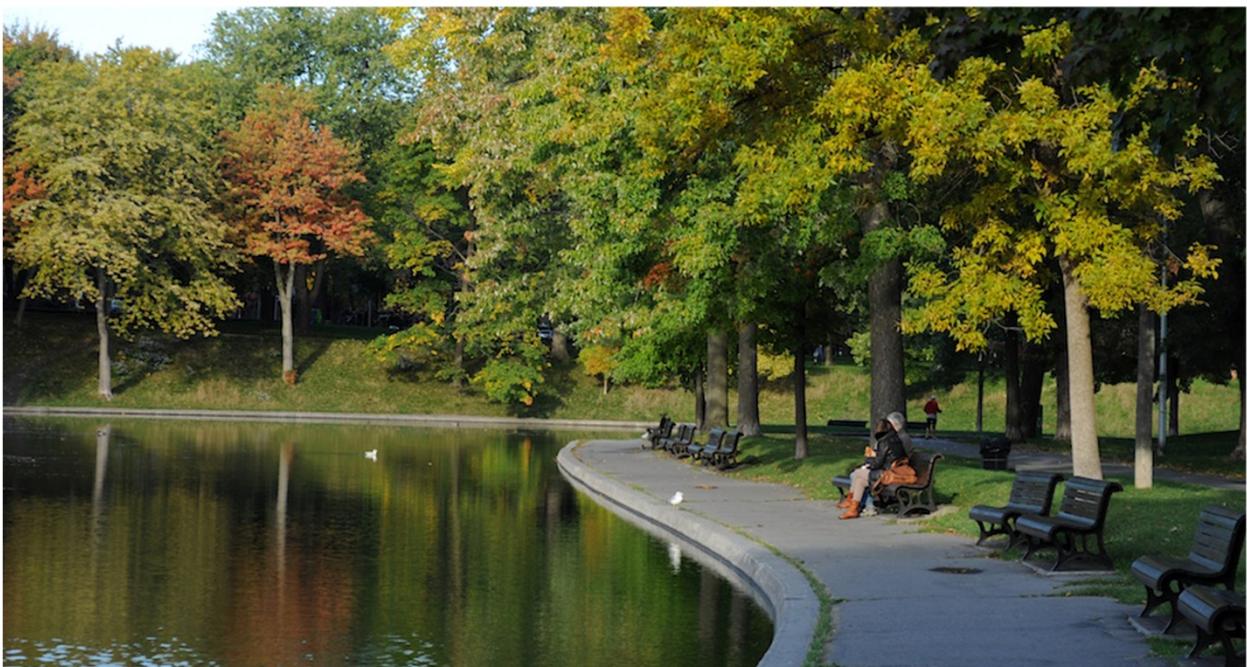




## foot-path network



## EXAMPLES OF RIVERSIDE PROMENADE



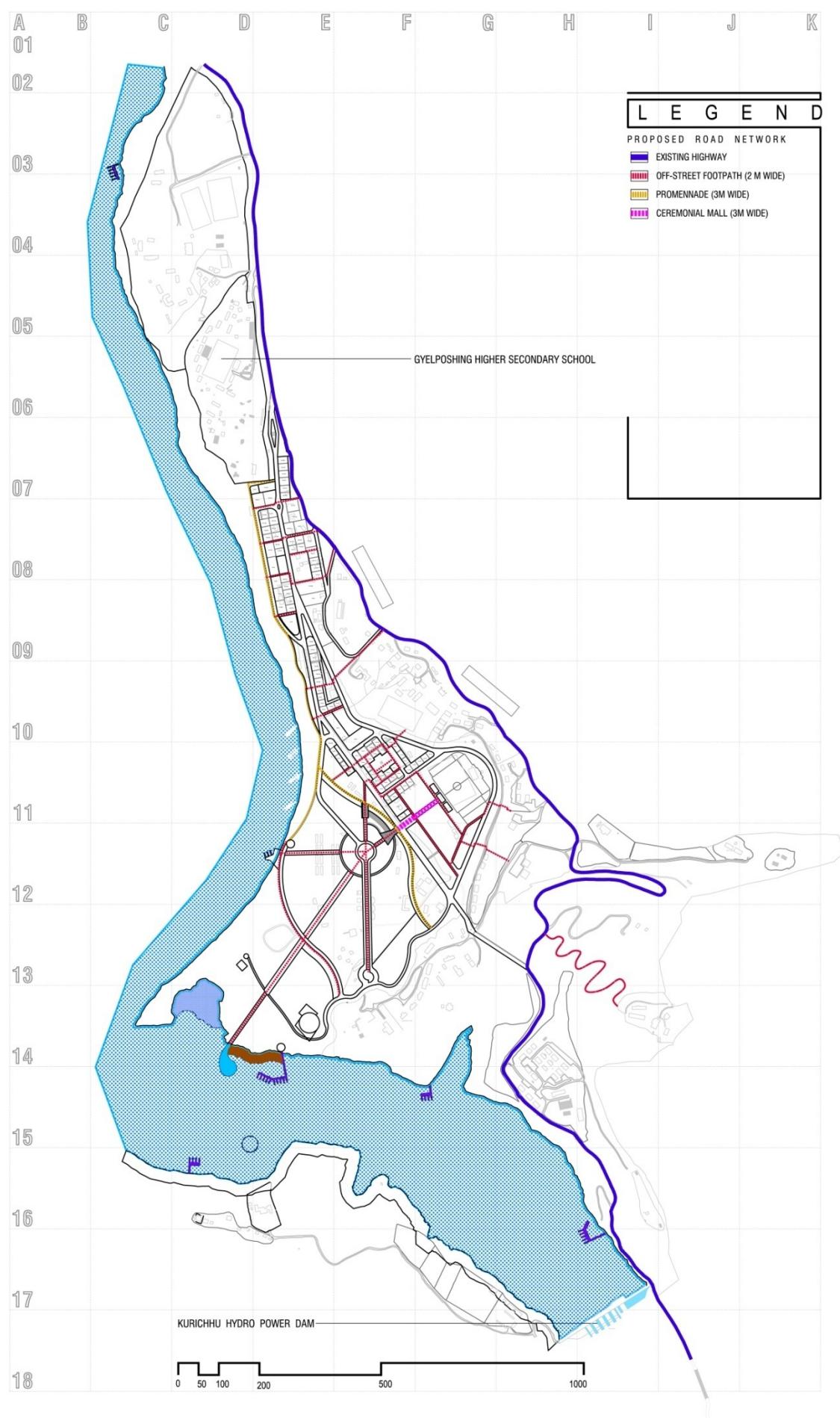
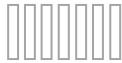


## foot-path network



EXAMPLES OF RIVERSIDE PROMENADE

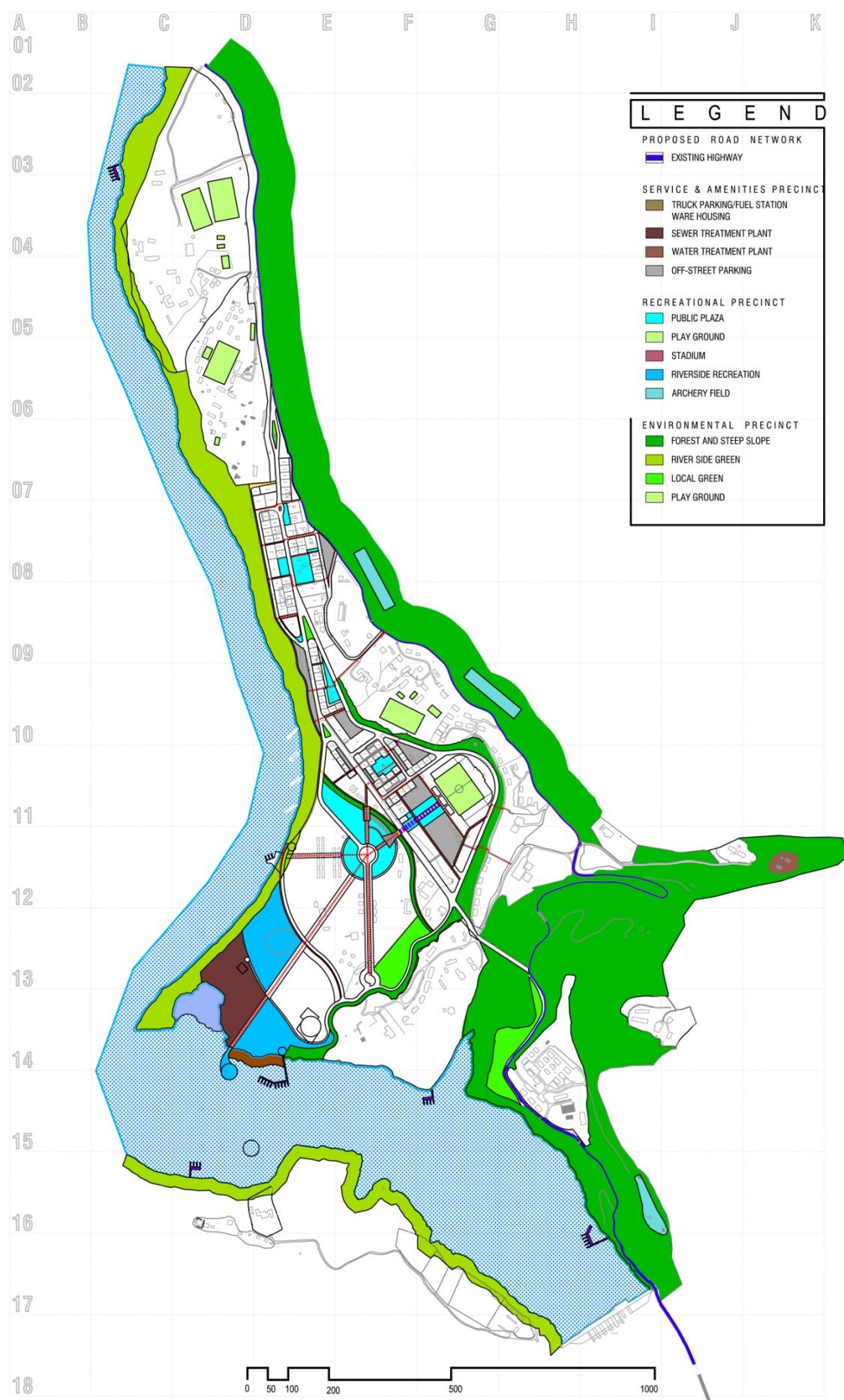






## 7.6 Open Space Network

In the future, as Gyelposhing gets built up, the residents would require a breather in the crowded urban area. The neighborhood parks would provide a natural atmosphere that may induce relaxation and repose. These parks are located to be near residential areas so that local resident population can have full access to these facilities. The parks are also connected to the footpath network so that these open spaces become part of the parks and recreation systems of the city. Small neighborhood parks have been created to provide a meeting place for the community under the shade of tree canopies.





## openspace network



EXAMPLES OF PEDESTRIAN STREET/AVENUE





## openspace network



EXAMPLES OF PEDESTRIAN STREET/AVENUE

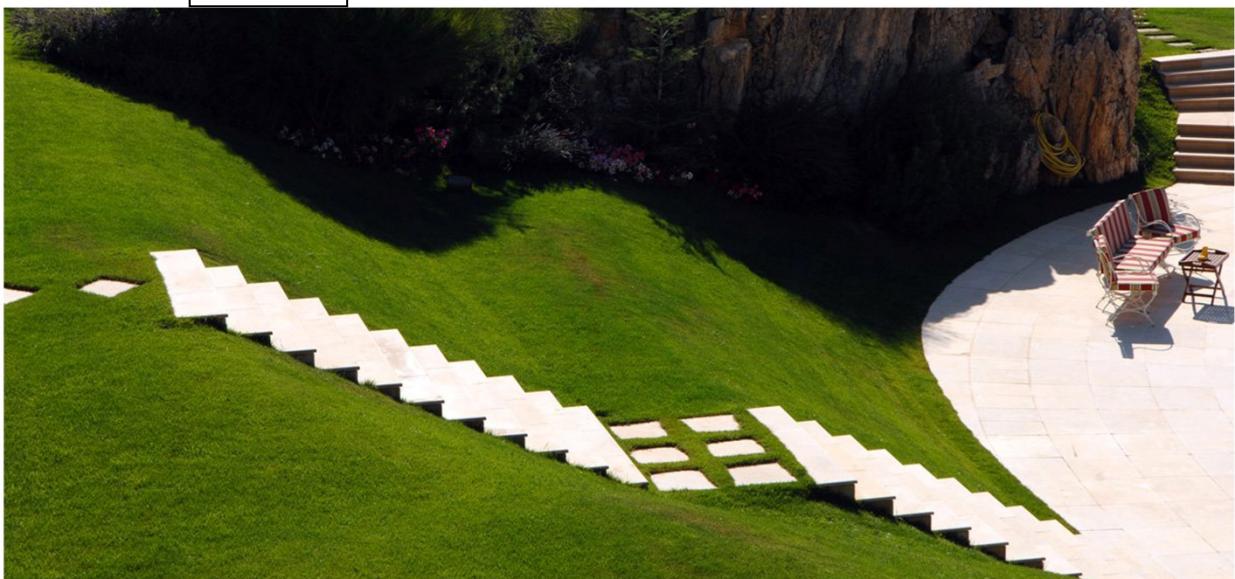




## openspace network



### EXAMPLES OF STEPS





## openspace network



RIVER SIDE PARK/GREEN





## openspace network



EXAMPLES OF LOCAL/NEIGHBOURHOOD PARK

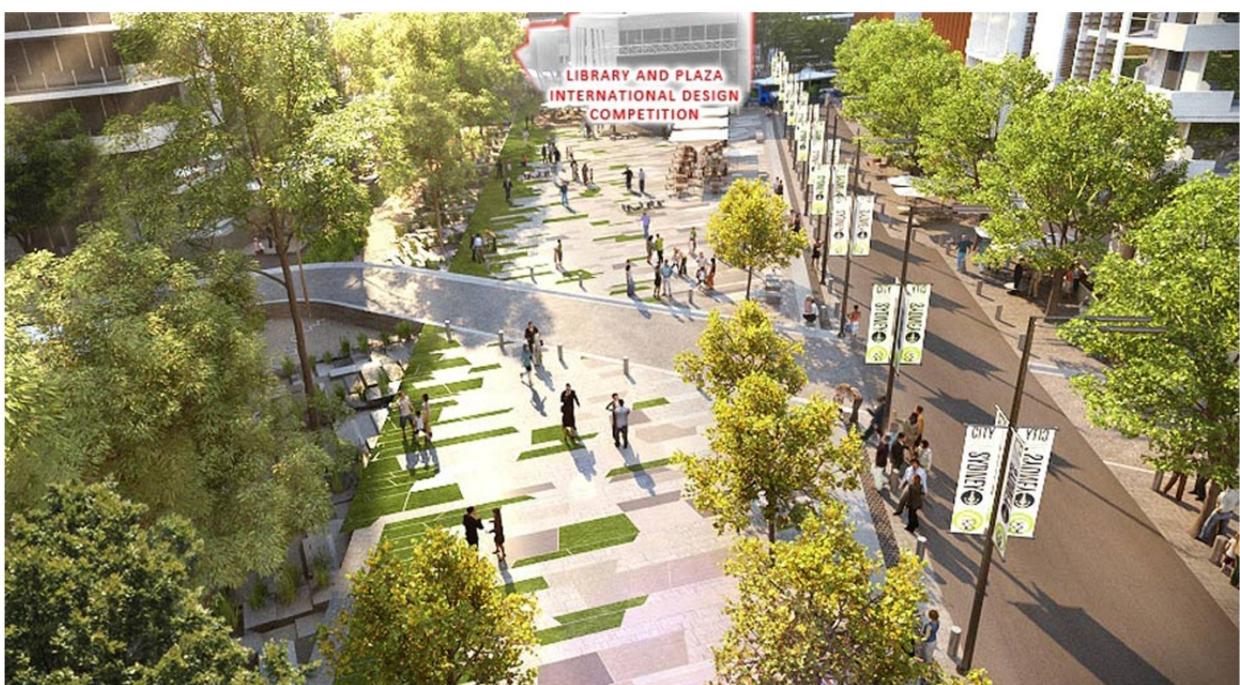




## openspace network



## EXAMPLES OF PUBLIC SQUARE

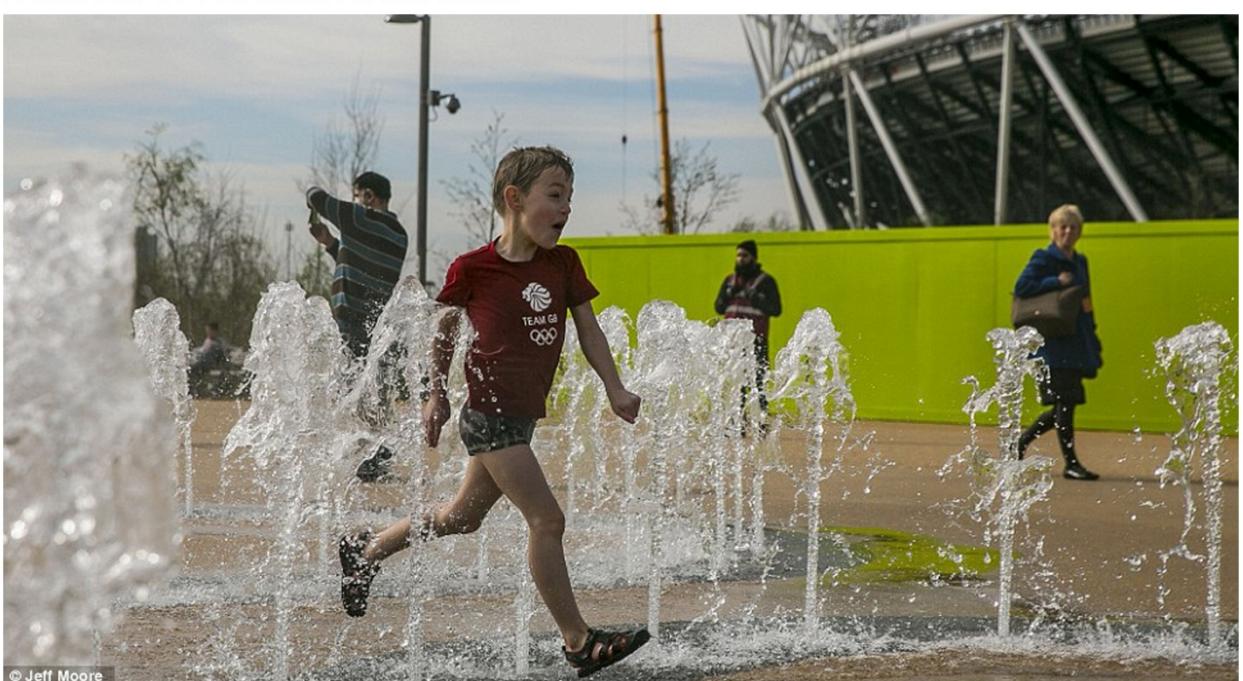




## openspace network



### EXAMPLES OF RIVERSIDE RECREATION



© Jeff Moore

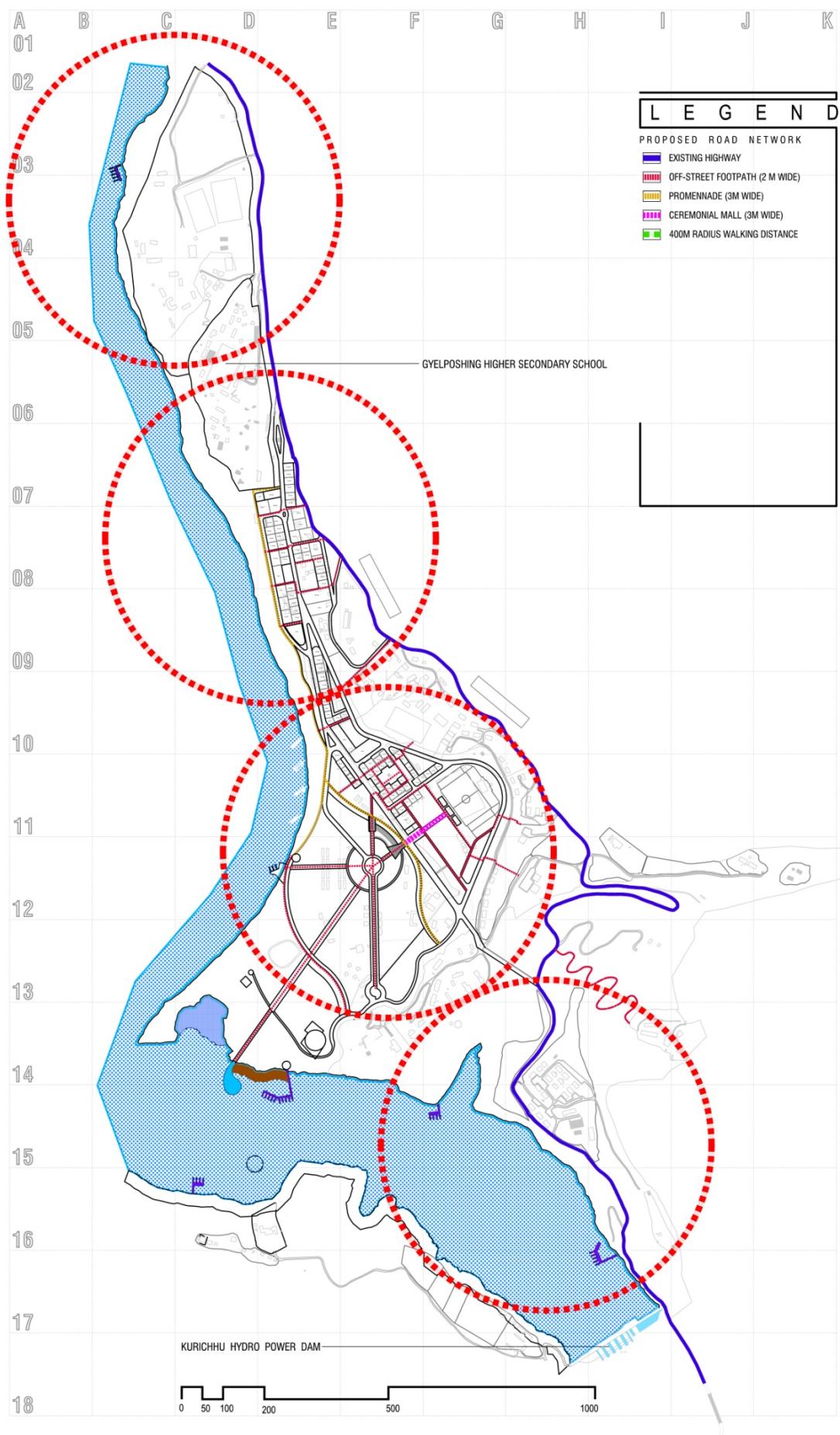


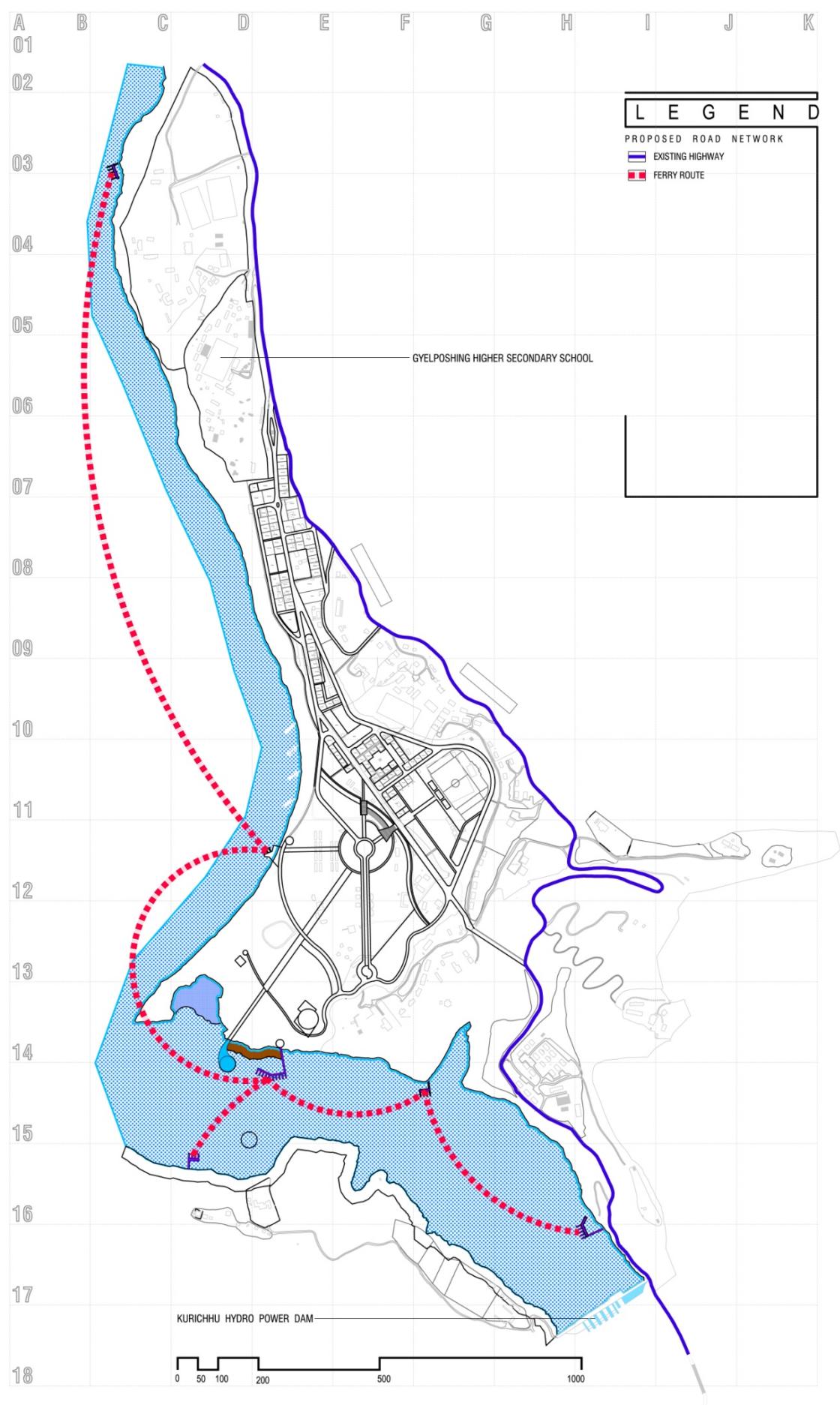
## 7.7 Connectivity

The vibrancy of a town center to a large extent is improved by enhanced connectivity. To this effect, Gyelposhing Township has great connectivity. The soon to be complete Gyelposhing-Nanglam highway will reduce travel time from India to 68km from 300kms presently required, truly making Gyelposhing town the gateway to the east. The domestic airport at Yonphula is also only about three hours away.

To enhance connectivity within the town, bus stops are provided every quarter mile (400 meters), so that public transport is always within easy reach of pedestrians. Off-street footpaths follow well trodden routes, and therefore get from one place to the next in the shortest time possible. Scenic walkways and riverside promenades are provided to encourage the residents to enjoy the natural beauty surrounding the town.

The ferry system on the lake, though recreational in nature, is another mode of transportation available to the town residents.



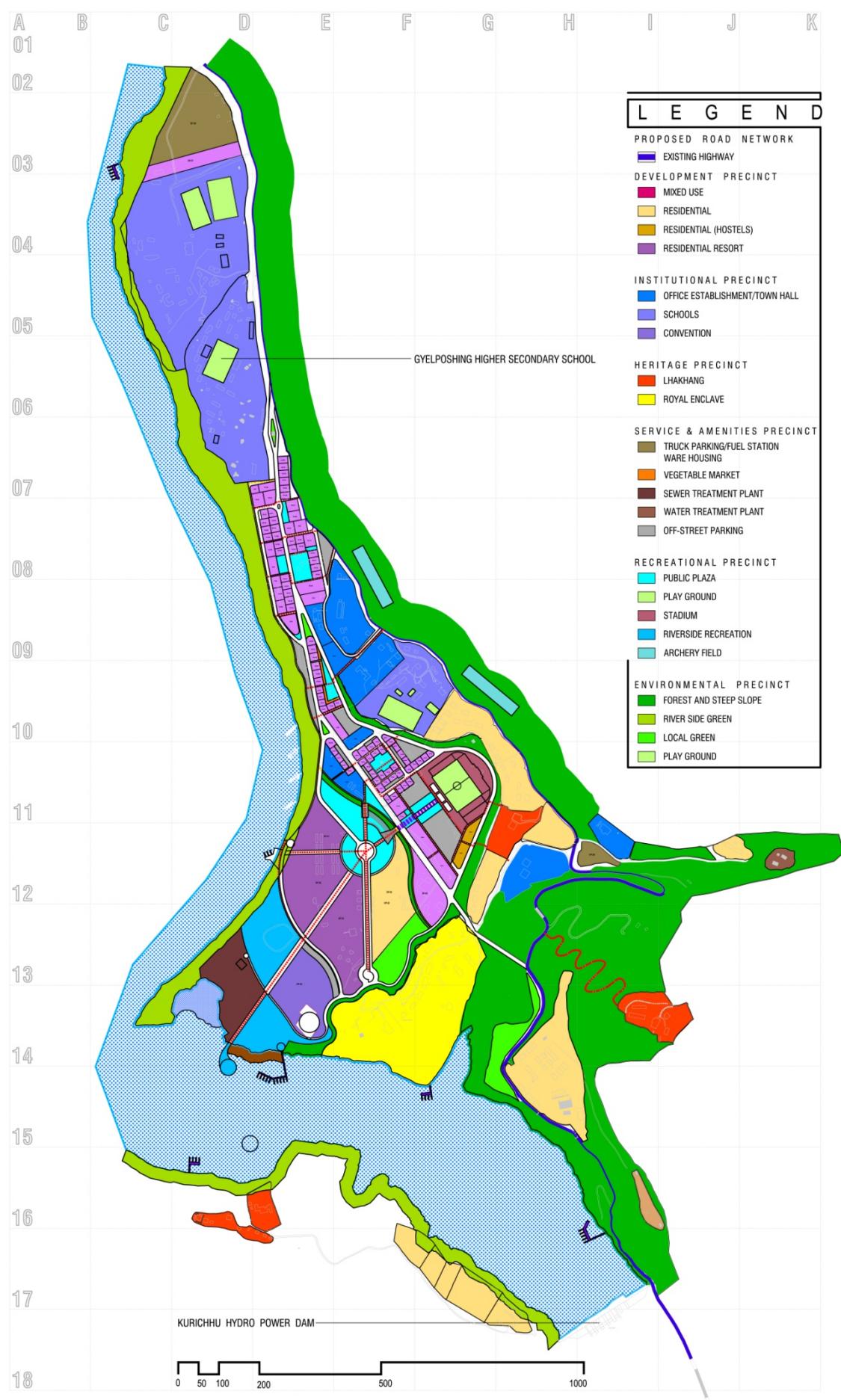




## 7.8 Plot Reconfiguration

About 5% of Gyelposhing is privately owned. Of this a further half is shown as forfeited plots. However, the planning decision was taken to account for each plot within the development plan irrespective of the status of the plot from an ownership point of view. Since most of the plots (mostly forfeited plots) were affected by the 30m buffer from the river's edge, they were relocated/reconfigured away from the hazard area, but kept within the same locality. While the plot areas were retained identically, the orientation of the plots had to be changed based on the new layout. The plot depths were maintained between 23m and 25m.

With the government owned plots, the vacant plots that were being occupied by warehouses were consolidated and converted, where necessary, into public amenities like bus terminal, city hall, plazas, and green preserves. Furthermore, vacant government land has been earmarked for the creation of a convention center, resort standard accommodation, and riverside recreational facilities.





## 7.9 Land Ownership Pattern

With half the privately owned land forfeited by court order, the government now owns 97.5% of land in Gyelposhing. The 2.5% ownership of private property is limited to the town center where the commercial plots are small in size. The larger residential plots are across the lake.

Since the government owns almost all the land in Gyelposhing, the implementation of the Royal Vision articulated through this urban development plan can be expedited and realized without any resistance from private interest groups.

## 8.0 Conclusion

Owing to the multifaceted pressures about to be exerted on Gyelposhing as both a transit hub and tourist attraction in eastern Bhutan, the timely implementation of the strategies envisioned by Royal Vision is paramount.

To this effect, the Urban Development Plan for Gyelposhing takes these various initiatives at the local level and integrates the future growth of Gyelposhing in conformity with the overall Royal Vision for the township and region. The consolidation of developmental activities within the core area and further extending the growth towards the lake, would ensure growth in an incremental and deliberate fashion. Earmarking adequate space to accommodate housing for future residents by already extending utility services and urban infrastructure into these growth areas. The preservation of mature vegetation in the town and the prohibition of development along the buffer zones will not only preserve the scenic character of the valley but also ensure that development happens in a safe, sound, and guided manner.

The juxtaposition of open spaces and parks among settlement areas, and the interconnectivity of recreational areas through the provision of off street footpaths will ensure that local residents will have a fair chance to intermingle as they carry about their daily lives.

The enhancement of permeability through the creation of additional roads and points of connection, would add to Gyelposhing's viability as a regional center for commerce and transit.

A good plan is only as strong as its effective implementation. For these reasons, the Development Control Regulations are next.



## **SECTION II : DEVELOPMENT CONTROL REGULATIONS**



## TABLE OF CONTENTS

1. Development Control Regulation
2. Administration
  - 2.1. Title, Commencement & Jurisdiction
  - 2.2. Applicability
  - 2.3. Interpretation
  - 2.4. Delegation of Power
  - 2.5. Discretionary Power
  - 2.6. Definition
3. Land Development/Subdivision/Consolidation and Building Permission
  - 3.1. Procedure for obtaining development permission
  - 3.2. Procedure for Land Development/ Subdivision/ Consolidation Permission
    - 3.2.1 Application for Land Development/ Subdivision/ Consolidation Permission
    - 3.2.2 Documents and Particulars to be Furnished with the Application
    - 3.2.3 Plans/Drawings and Specifications to be Prepared by Registered Architect/ Urban Planner/ Urban Designer
    - 3.2.4 Scrutiny Fee
    - 3.2.5 Approval of Layout for Plot Subdivision
    - 3.2.6 Rejection of Application
    - 3.2.7 Cancellation/Revocation of Approval
  - 3.3. Procedure for Obtaining Building Permit and Occupancy Permission Existing Housing
    - 3.3.1 Application for Building Permission
    - 3.3.2 Documents and Particulars to be furnished with the Application
    - 3.3.3 Plans/Building Drawings and Specifications to be prepared by Registered Professionals
    - 3.3.4 Scrutiny Fee
    - 3.3.5 Service and Amenity Fee
    - 3.3.6 Grant of Development Permission
    - 3.3.7 Validity of Approvals
    - 3.3.8 Revalidation/Renewal
    - 3.3.9 Process of Revalidation in the event that the Developer exceeds the Validity
    - 3.3.10 Liabilities and Responsibilities of Applicant
    - 3.3.11 Rejection of Application
    - 3.3.12 Cancellation of Approval
    - 3.3.13 Change of Ownership
  - 3.4. No Objection Clearance(NOC) from Referral Authorities for Certain Projects
  - 3.5. Demolition and/ or Reconstruction of Dangerous/Unsafe Dilapidated Buildings



- 3.6. Temporary Permission
  - 3.7. Development Undertaken on Behalf of the Government
  - 3.8. Procedure during Development/Construction
    - 3.8.1 Temporary Service Connection
    - 3.8.2 Loading, Unloading and Stacking of Materials and Equipment
    - 3.8.3 Documents at Site
    - 3.8.4 Safety at Site
    - 3.8.5 Inspections
    - 3.8.6 Deviations during Construction
    - 3.8.7 Illegal Occupation of Building
    - 3.8.8 Occupancy Certificate
  - 3.9. Cancellation of Approval
  - 3.10. Change of Building or Premise Use
  - 3.11. Parking Requirement
  - 3.12. Painting
  - 3.13. Building Height
  - 3.14. Architectural Control
  - 3.15. Access for Disabled
  - 3.16. Structural Control
  - 3.17. Water Supply and Sanitation Control
  - 3.18. Electrical Installations Control
  - 3.19. Telephone
- 
- 4. Precinct Sanctity (Regulation on Use, Building Height)
    - 4.1. List of Precincts Designated in Gyelposing Local Area Plan
    - 4.2. Precinct Schedule showing Minimum Plot Sizes, Plot Coverage, Setbacks, and Maximum Building Height



## Appendix 1

List of Details to be shown on Proposed Land Development Plan/ Subdivision Plan (wherever applicable)

## Appendix 2

List of Details to be shown in Drawings/Plans for obtaining Building Permit

## Appendix 3

Scrutiny Fees and Service and Amenity Fee Payable at the time of Application for Land Development/Building Permit

## Appendix 4

Application for Construction of Building

## Appendix 5

Application for Building Occupancy

## Appendix 6

Occupancy Certificate



## 1. Development Control Regulation

The Bhutan Building Rules 2002, which follow, are basic guidelines applicable across the entire nation in a variety of settlements. On the other hand the Bhutan Municipal Act of 1999 enables Municipal Authorities to prepare plans for their respective urban settlements and adopt relevant development control regulations to direct development within their jurisdictions. The new Development Control Regulations 2015 for Gyelposhing supersedes the Bhutan Building Rules. The notes below explain the relationship between The Bhutan Building Rules 2002, and such development control regulations, which accompany Urban Development Plans/Structure Plans for urban areas.

- ❖ The Bhutan Building Rules, 2002 (BBR, 2002) are applicable to urban areas across the country, in the absence of any structure plan for the urban areas in question. The operation of the Bhutan Building Rules 2002 is thus imperative, in urban areas where no urban development plan/ structure plan/ local area plan exists.
- ❖ Wherever an urban development plan/ structure plan/ local area plan is sanctioned, the provisions of the accompanying Development Control Regulations, which are an intrinsic part of the concerned urban development plan/ structure plan/ local area plan, will be applicable in that urban area. The provisions in the Bhutan Building Rules itself enable this.
- ❖ Wherever a local area plan has been notified, its specific regulations, if any, shall be applicable within that local area alone. Generally, local area plans conform to the Development Control Regulations of the urban jurisdiction in which they fall.

The provisions of this Urban Development Plan for the urban settlements in Gyelposhing shall prevail.

*This tiered set of Regulations reflects the fundamental policy of the Royal Government of Bhutan to decentralize governance, administration and development, enabling and facilitating strong responses to local conditions and aspirations. It may be noted that the new Development Control Regulations 2015 for Gyelposhing, Mongar supersedes the Bhutan Building Rules, 2002 in the Town of Gyelposhing, by providing some additional directives needed in a larger urban context. These same provisions may be extended to the other settlements as plans are prepared and conditions warrant.*



## 2. Administration

### 2.1 Title, Commencement & Jurisdiction

These Regulations may be called the Gyelposhing Urban Development Plan Development Control Regulations, 2015 (Gyelposhing UDPDCR-2015). These Regulations shall come into force with effect from the date of their notification by the Royal Government of Bhutan. These Regulations shall apply to the whole of the area within Gyelposhing as defined by the Gyelposhing Urban Development Plan. The provision in the BBR, 2002 shall supplement the Gyelposhing UDPDCR-2015. This Gyelposhing UDPDCR-2015 shall supersede the BBR 2002 and all other local rules and regulations.

### 2.2 Applicability

- 2.2.1 These Regulations shall be applicable from the date of their notification by the Royal Government of Bhutan. The Regulations shall be applicable to all development except those specifically mentioned in clause 2.2.2
- 2.2.2 Except, as herein after otherwise provided, these Regulations shall apply to all development, redevelopment, erection or re-erection of a building, change of use, etc., as well as to the design, construction, reconstruction of, and making material additions and alterations to a building. However, where a part of a building layout or group-housing scheme is demolished, or altered, or reconstructed, these Regulations shall apply only to the extent of the new work involved.
- 2.2.3 Any action taken, or developments permitted, under the Regulations or Building Rules, existing prior to these Regulations coming into force, shall be deemed to be valid and continue to be so valid, unless otherwise specified.
- 2.2.4 In the case of development, for which the Commencement Certificate has been obtained prior to these Regulations coming into force, and where amendments to the sanctioned plan is proposed, these Regulations shall apply.
- 2.2.5 ‘Commencement Certificate’ granted in the past shall be revalidated in conformity to these Regulations.
- 2.2.6 If there is a conflict between the requirements of these Regulations and those of any other rules or byelaws, these Regulations shall prevail.



## 2.3 Interpretation

Unless the context otherwise requires, the terms and expressions not defined herein shall have the same meaning as indicated in the following legislations:

- 1) The Local Government Act 2009
- 2) The Land Act 2007
- 3) Urban Area and Property Regulations 2003
- 4) National Housing Policy 2002
- 5) Building Code of Bhutan 2003
- 6) Bhutan Building Rules 2002

## 2.4 Delegation of Power

The Implementing Authority may delegate any of the powers, duties or functions conferred or imposed upon or vested in the Implementing Authority to its officers, or designated committee of officers, generally or specially in writing and may impose certain conditions and limitations on the exercise of such powers as it may deem fit.

## 2.5 Discretionary Power

The Implementing Authority may exercise its discretion in conformity with the intent and spirit of these Regulations, in order to mitigate any demonstrable hardship or to sub serve public interest in the following ways:

- a) Decide on matters where it is alleged that there is an error in any order, requirement, decision and determination, interpretation made by it under delegation of powers, while applying these Regulations.
- b) Interpret these regulations in various contexts or in situations where more clarity is required under such circumstances the Implementing Authority's decision shall be final and binding.

Decide upon the nature and the extent of concessions in respect of marginal distances, room heights, etc. that can be granted in cases of proven hardship for reasons which are to be recorded in writing. However, such relaxation shall not affect the health, safety and hygiene of the inhabitants of the building and the neighbourhood and the structural stability of the building. Provided further that while granting such relaxation, as above, the authority may impose conditions as may be necessary. These may include a payment



of deposit and its forfeiture for non-compliance, payment of a premium amount and other obligations, etc.

- d) No concessions in respect of the additional floors shall be given.
- e) Decide on the fine or compounding charges to be made applicable in cases of developments where non-adherence to these Regulations is detected.
- f) Modify the limit of a precinct where the boundary of a precinct divides a parcel of land or where a layout street or a thram or a plot number actually on the ground varies from its location shown on the Urban Development Plan.
- g) Authorize the erection of a building or the use of premises for a public services undertaking or a public utility purpose where such an authorization is reasonably necessary for the convenience and the welfare of the public, even if such erection or use is not permitted as per these Regulations.
- h) Determine and establish the location of precinct boundaries in cases of doubts or controversies.

## **2.6 Definition**

These Regulations, unless the context otherwise requires, the terms and expressions defined as follows shall have the meaning indicated against each of them.

The terms and expressions not defined in these Regulations shall have the same meanings as in the Bhutan Municipal Act, 1999 and the rules framed there under or as mentioned in the Bhutan Building Rules, 2002 and the Building Code of Bhutan, 2003 as the case may be unless the context otherwise requires.

### **ADDITIONS AND/ OR ALTERATIONS**

Shall mean any change in an existing authorized building or approved plans of a building, or a change from one use to another use, or a structural change such as additions to the area or height, or the removal of part of a building, or a change to the structure, such as the construction or cutting into or removal of any wall or part of a wall, partition, column, beam, joist, or re-roofing, or re-construction of any kind, alterations to a floor, including a mezzanine floor, or any support, or a change to, or closing of any required means of ingress, or egress, or a change to fixtures, or equipment, as provided in these Regulations.

**ADVERTISING SIGN/HOARDING**

Shall mean any surface or a structure with any character, letter or illustration, applied there to and displayed in any manner whatsoever out of doors for the purpose of advertising, giving information regarding, or to attract the people to any place, cause, person, public performance, article or merchandise, and which surface or structure is attached to, forms part of, or is connected with any building, or is fixed to a tree or to the ground, or to any pole, screen, hoarding or displayed in any space, or in or over any water body included in the limits of the notified area of the Implementing Authority.

**AIR-CONDITIONING**

Shall mean the process of treating air to control simultaneously, or singly, its temperature, humidity, cleanliness and distribution to meet the requirement of an enclosed space.

**AMENITIES**

Shall mean roads, streets, open spaces, parks, recreational grounds, play-grounds, gardens, water supply, electric supply, street lighting, drainage, sewerage, public works and other utilities, communication network, etc. for the citizens' use and convenience.

**APARTMENT/FLATS**

Shall mean residential buildings constructed in a detached or semidetached manner being designed as ground floor plus one or more upper floors and constructed as separate dwelling units with common staircase and other building services.

**APPLICANT**

Shall mean the registered owner(s) of a property who applies in the prescribed form to construct/ alter/ extend a building.

**ARCHITECT**

Shall mean a person with degree or diploma in architecture from an Institute, College or University accredited by the respective country's accreditation board to impart professional degrees in architecture.

**ATTIC**

Shall mean the space within the confines of the roof structure, above the ceiling of the top floor which is constructed and adopted for storage purpose, lift machine room, water tanks etc.

**BASEMENT OR CELLAR**

Shall mean the lowest storey of a building more than 75% below the lowest ground level. Permitted only for vehicular parking and other building services.

**BUILDING LINE**

Shall mean the plinth of the building running in line with the adjoining plinth of the building parallel to the road.

**BUILDING SERVICES**

Building Services shall mean HVAC plant, power generator, underground sumps, pumps, boilers, sub-station, lift pits and related services, chutes, storages, laundry and other services related to building maintenance

**BETTERMENT CHARGE**

Means a charge levied by the Implementing Authority for ensuring off-site services and amenities to the area by the Implementing Authority.

**BUILDING**

Meaning any structure for whatsoever purpose, and of whatsoever materials constructed and every part thereof, whether used as human habitation or not including foundations, plinths, walls, columns, floors, roofs, chimneys, plumbing and building services, fixed platforms, verandas, balconies, cornices or projections, part of a building or anything affixed thereto. However, structures of a temporary nature like tents, hutments, etc. erected for temporary purposes or for ceremonial occasions, with the permission of the Implementing Authority, shall not be considered to be "buildings".

- a) "**Assembly building**" shall mean a building or part thereof where groups of people congregate or gather for amusement, recreation, social, religious, patriotic, civil, travel and similar purposes. Assembly buildings shall include theatres for drama and cinema, city halls, town halls, auditoria, exhibition halls, museums, "marriage halls", "skating rinks", gymnasiums, stadia, restaurants, eating or boarding houses, places of worship, dance halls, clubs, road, air, or other public transportation stations.
- b) "**Business building**" shall mean any building or part thereof used for transaction or record thereof. Offices, banks and all professional establishments are classified as business buildings if their principal function is transaction of business and/or keeping of books and records thereof.
- c) "**Detached building**" shall mean a building with walls and roofs independent of any other building and with open spaces on all sides.
- d) "**Semi Detached Building**" shall mean a building detached on three sides with open spaces as specified in these Regulations. A superficial connection via a beam, wall, balcony, corridor, Sky Bridge, or any other trivial connection will not qualify a building to be defined as "semi-detached"



- e) "**Educational building**" shall mean a building exclusively used for a school or college, recognized by the appropriate Board or University, or any other Implementing Authority involving assembly for instruction, education or recreation incidental to educational use, and including a building for such other uses incidental thereto such as a library, laboratory, fine arts facility, or a research institution. It shall also include quarters for essential staff required to reside in the premises, and buildings used as hostels and boarding solely captive to an educational institution whether situated in its campus or not.
- f) "**Hazardous building**" shall mean a building or part thereof used for:
  - (i) Storage, handling, manufacture or processing of radio- active substances or of highly combustible or explosive materials or products which are liable to burn with extreme rapidity and/or producing poisonous fumes or explosive emanations.
  - (ii) Storage, handling, manufacture or processing which involves highly corrosive, toxic obnoxious alkalis, acids, or other liquids, gases or chemicals producing flame, fumes, and explosive mixtures or which result in division of matter into fine particles capable of spontaneous ignition.
  - (iii) Storage, handling, manufacture, experimentation, research, or processing which could cause any danger to the public health, hygiene or safety, as certified by the competent health and safety officials of the Royal Government of Bhutan
- g) "**Industrial building**" shall mean a building or part thereof wherein products or materials are fabricated, assembled or processed, such as assembly plants, laboratories, power plants, refineries, gas plants, mills, dairies and factories.
- h) "**Institutional or public building**" shall mean a building constructed by the Royal Government, Semi-Government organizations, public sector undertakings, registered Charitable Trusts for their public activities, such as administration, education, medical, recreational and cultural, hostel for working women or men, or for an auditorium or complex for cultural and allied activities, or for an hospice, care of orphans, abandoned women, children and infants, convalescents, destitute or aged persons and for penal or correctional detention with restricted liberty of the inmates ordinarily providing sleeping accommodation, and includes dharamshalas, hospitals, sanatoria, custodian and penal institutions such as jails, prisons, mental hospitals, houses of correction, detention and reformatories, clubs, golf course, sports stadium, buildings and facilities constructed by the Royal Government for the promotion of tourism, such as inns, resorts, lodges, etc..



- i) "**Commercial/ Mercantile building**" shall mean a building or part thereof primarily used for commercial purposes such as shops, stores, departmental stores or markets, for display and sale of goods or merchandise, including office, storage and service facilities incidental thereto located in the same building. Mixed use buildings with commercial areas on the ground floor and residential above shall be construed as Commercial building for the purposes of this document.
- j) "**Office building (premises)**", shall mean a building or premises or part thereof whose sole or principal use is for an office or for office purposes or clerical work. "Office purposes" includes the purpose of administration, clerical work, handling money, telephone, telegraph and computer operation; and "clerical work" including writing, book-keeping, sorting papers, typing, filing, duplicating, punching cards, tapes or machines, calculations, drawing, of matter for publication and editorial preparation of matter of publication.
- k) "**Residential Building**" shall mean a building in which sleeping accommodation is provided for normal residential purposes, with or without cooking or dining facilities, and includes one or more family dwellings, lodging or boarding houses, hostels, dormitories, apartment houses, flats and private garages of such buildings.
- l) "**Special Building**" shall mean
  - (i) a building solely used for the purpose of a drama or cinema theater, motion picture, drive-in-theatre, an assembly hall or auditorium, town hall, lecture hall, an exhibition hall, theatre, museum, a stadium, a "community hall, marriage hall;
  - (ii) a hazardous building;
  - (iii) a building of a wholesale establishment;
  - (iv) centrally air-conditioned building which is more than three floors,
  - (v) a building of more than two floors constructed on stilts,
  - (vi) a building of more than four floors.
- m) "**Storage Building**" shall mean a building or part thereof used primarily for storage or shelter of goods, merchandise and includes a building used as a warehouse, cold storage, freight depot, transit shed, store house, public garage, hangar, truck terminal, grain elevator, barn and stable.
- n) "**Unsafe Building**" shall mean a building which,
  - (i) is structurally unsafe,



- (ii) is unsanitary,
  - (iii) is not provided with adequate means of egress,
  - (iv) constitutes a fire hazard,
  - (v) is dangerous to human life,
  - (vi) in relation to its existing use constitutes a hazard to safety or health or public welfare by reasons of inadequate maintenance, dilapidation or abandonment.
- o) "**Wholesale establishment**" shall mean an establishment wholly or partly engaged in wholesale trade and manufacture, wholesale outlets, including related storage facilities, warehouses and establishments engaged in truck transport, including truck transport booking, warehouses.

#### **BUILDING LAND PARCEL**

Shall mean a land/plot or part of a land/plot or combination of more than one land/plot over which a building is to be constructed as approved by the Implementing Authority.

#### **BUILT-UP AREA**

Shall mean the area covered by a building on all floors including cantilevered portions, if any, but except the areas excluded specifically under these Regulations.

#### **BALCONY**

The platform projecting from the wall of a building with a balustrade or railing along its outer edge, often with access from a door or window.

#### **BUILDING SETBACK**

Shall mean a distance between the plot boundary and building or distance between building.

#### **BUILDING INSPECTOR**

Shall mean a technical person authorized by the Implementing Authority to inspect buildings and their premises during construction / renovation / addition / alteration.

#### **CARPET AREA**

(Otherwise called "Net Internal Floor Area") shall mean the covered area on all floors, excluding the area of the walls.

#### **COMPETENT AUTHORITY**

Shall mean the authority as defined in the Municipal Act, 1999.

**IMPLEMENTING AUTHORITY**

The government body responsible for governance, implementation and additions/corrections for these regulations.

**CHIMNEY**

Shall mean a construction by means of which a flue is formed for the purpose of carrying products of combustion to the open air and includes a chimneystack and the flue pipe.

**COMMON WALL**

Shall mean a structure joining two or more properties.

**COMBUSTIBLE MATERIAL**

Shall mean that material which when burnt adds heat to a fire when tested for combustibility in accordance with the IS: 3808-1966 Method of Test for Combustibility of Building Material, National Building Code, India.

**CONVENIENCE SHOP**

Shall mean shops each with a carpet area not exceeding 20 sq.m and comprising those dealing with day-to-day requirements, as distinguished from wholesale trade or retail shopping. It includes:

- (i) Food grain or ration shops
- (ii) Doma shops/kiosks
- (iii) Shops for collecting and distribution of clothes and other materials for cleaning and dyeing establishments
- (iv) Tailor or darner shops
- (v) Groceries, confectioneries, general provision shops
- (vi) Hair dressing saloons and beauty parlours
- (vii) Bicycle / scooter/ motorcycle hire shops
- (viii) Motorcar hire shops
- (ix) Vegetable and fruits shops
- (x) Milk and milk products shops
- (xi) Medical and dental practitioners' dispensaries or clinics, pathological or diagnostic clinics and pharmacies



- (xii) Florists.
- (xiii) Shops dealing in ladies ornaments such as bangles, cosmetics, etc.
- (xiv) Shops selling bakery products
- (xv) Newspaper, magazine stalls and circulating libraries
- (xvi) Wood, coal and fuel shops
- (xvii) Books and stationery shops or stores
- (xviii) Cloth and garment shops
- (xix) Plumbers, electricians, radio, television and video equipment repair shops and video libraries
- (xx) Restaurants and eating houses
- (xxi) Shoes and sports shops
- (xxii) Hardware shops
- (xxiii) Taxi stand office

With the approval of the Implementing Authority, this list may be added to, or altered, or amended from time to time.

#### **CORRIDOR**

Shall mean a common passage or circulation space including a common entrance hall.

#### **COURTYARD**

Shall mean a space permanently open to the sky within the site around a structure or surrounded either partially or completely by a structure.

#### **COMMON PLOT / LAND**

Shall mean a common open to sky space exclusive of setbacks, margins, parking spaces and approaches, at the ground level of the building unit to be used collectively by the joint owners.

#### **COVERED AREA**

Shall mean the area covered by a building on the ground floor.

**DEVELOPER**

Shall mean the person, who is legally empowered to construct or to execute work on a plot of land, building unit, building or structure, or where no person is empowered, the owner of the building unit, building or structure.

**DEVELOPMENT**

Means the carrying out of building construction, engineering, mining, or other operations, in, over, or under land or water or the making of any material or structural change including demolition of building or reclamation of land or any change in use of the premises and includes redevelopment and layout and sub-division of any land.

**Plotted Development:** Means the carrying out of development leading to the subdivision of land into plots.

**Flatted Development:** Means the carrying out of development on a site leading to the construction of flats.

**DEVELOPMENT CHARGE**

Means a charge levied by the Implementing Authority as per the provisions of the Bhutan Municipal Act, 1999 clause 95.

**DEVELOPMENT PERMISSION**

Means a valid permission, or authorization, in writing by the 'Implementing Authority' to carry out development, issued to a legally empowered developer, with due regard to the prevailing Act/ Regulations in force at the time of issue.

**DEVELOPMENT RIGHT**

Means the right to carry out development of a building or land, and shall include the transferable development right in the form of right to utilize the permissible built-up area of land utilizable either on the remainder of the land partially reserved/ directed to be reserved for a public purpose within the site of the reserved, or elsewhere.

**DEVIATION**

Shall mean carrying out or undertaking a building construction or land development activity in departure from the sanctioned/ approved plans, permissions or orders, irrespective of the degree of change.

**DRAIN**

Shall mean a system or a line of pipes, with their fittings and accessories such as manholes, inspection chambers, traps, gullies, floor traps, used for drainage of buildings or yards



appurtenant to the buildings within the same catchments. A drain includes an open channel for conveying surface water or a system for the removal of any liquid.

**DWELLING UNIT**

Shall mean a shelter consisting of residential accommodation for one household. Provided that the minimum accommodation in a dwelling unit shall be one habitable room of minimum carpet area of 9sqm with a minimum side dimension of 2.5m and a water closet (WC). It may not have more than one kitchen or cooking space.

**ENCLOSED STAIRCASE**

Shall mean a staircase separated by walls and doors from the rest of the building.

**ENGINEER**

Shall mean a person with a degree or diploma in civil and /or structural engineering from any recognized Institute, College, or University of Engineering accredited by the respective country's accreditation board to impart professional degrees in engineering.

**EXISTING BUILDING**

Shall mean a building or a structure existing before the commencement of these Regulations.

**EXISTING USE**

Shall mean use of a plot of land, a building, or a structure existing before the commencement of these Regulations.

**EXIT**

Shall mean a passage, channel of means of egress from any building, storey or floor area to a street or other open space of safety; horizontal exit, outside exit and vertical exit having meanings at (i), (ii) and (iii) respectively as under:

- (i) "HORIZONTAL EXIT": shall mean an exit which is a protected opening through or around at firewall or bridge connecting two or more buildings.
- (ii) "OUTSIDE EXIT": shall mean an exit from a building to a public way, to an open area leading to a public way, or to an enclosed fire resistant passage leading to a public way.
- (iii) "VERTICAL EXIT": shall mean an exit used for ascending or descending between two or more levels, including stairways, smoke-proof towers, ramps, escalators and fire escapes.

**EXTERNAL WALL**

Shall mean an outer wall of a building not being a party wall even though adjoining a wall of another building and also shall mean a wall abutting on an interior open space of any building.

**ESCAPE ROUTE**

Shall mean any well-ventilated corridor, staircase or other circulation space, or any combination of the same, by means of which a safe place in the open air at ground level can be reached.

**FIRE AND/ OR EMERGENCY ALARM SYSTEM**

Shall mean an arrangement of call points or detectors, or sensors, or sounders, and other equipment for the transmission and indication of alarm signals working automatically or manually in the event of fire.

**FIRE PROOF DOOR**

Shall mean a door or shutter fitted to a wall opening, and constructed and erected with the requirement to check the transmission of heat and fire for a specified period. Fireproof doors for various purposes must conform to the specifications and performance standards as laid out in the Bhutan Building Code of Bhutan 2003, (BTS-015-2003, Part 2 Section 6 Fire Protection).

**FIRE PUMP**

Shall mean a machine, driven by external power for transmitting energy to fluids by coupling the pump to a suitable engine or motor, which may have varying outputs/capacity but shall be capable of having a pressure of 3.2kg/cm<sup>2</sup> at the topmost level of a multi-storied building.

**FIRE RESISTANCE**

Shall mean the time during which a fire resistant material, i.e. material having a certain degree of fire resistance, fulfils its function of contributing to the fire safety of a building when subjected to prescribed conditions of heat and load or restraint. The fire resistance test of structures shall be done in accordance with IS: 3809-1966 Fire Resistance Test of Structure.

**FIRE SEPARATION**

Shall mean the distance in meters measured from any other building on the site or from another site, or from the opposite side of a street or other public space to the building.

**FIRE SERVICE INLET/ HYDRANT**

Shall mean a connection provided at the base of a building for pumping up water through-in-built fire-fighting arrangements by fire service pumps in accordance with the recommendation of the Chief Fire Officer.

**FIRE TOWER**

Shall mean an enclosed staircase, which can only be approached from the various floors through landings or lobbies separated from both the floor area and the staircase by fire resisting doors. The specifications and performance standards of the enclosing walls, materials and doors shall be as per those stated in IS3809-1966 Fire Resistance Test of Structure.

**FLOOR**

Shall mean the lower surface in a storey on which one normally walks in a building, and does not include a mezzanine floor. The floor at ground level with a direct access to a street or open ground/ land shall be called the ground floor; the ground floor shall also be counted as a floor in defining the number of floors. (In the estimation of floors, the actual areas or extent of the floors shall have no consideration) The nomenclature of the other floors shall be as follows: the floor above the ground floor shall be termed as floor 1, with the next higher floor being termed as floor 2, and so on upwards.

**FLOOR AREA**

Shall mean the total area of the floor including the area of walls.

**FRONT**

Front as applied to a plot; shall mean the portion facing the road and in case of plot abutting on more than one road the plot shall be deemed to front on all such roads / means of access.

**FOOTING**

Shall mean a foundation unit constructed in brickwork, stone masonry or concrete under the base of a wall or column for the purpose of distributing the load over a large area.

**FOUNDATION**

Shall mean that part of the structure, which is in direct contact with and transmitting loads to the ground.

**GARAGE/ PARKING – PRIVATE**

Shall mean a building or a portion thereof designed and used for the parking of vehicles.

**GARAGE/ PARKING – PUBLIC**

Shall mean a building or portion thereof, designed other than as a private garage, operated for gain, designed and/or used for parking motor-driven or other vehicles.

**GROUND LEVEL**

Shall mean the lowest ground level within the plot.

**GROUP HOUSING**

Shall mean a housing scheme wherein two or more independent dwelling units or buildings are constructed in an undivided parcel of land.

**HABITABLE ROOM**

Shall mean a room occupied or designed for occupancy for human habitation and uses incidental thereto, including a kitchen if used as a living room, but excluding a bath-room, water closet compartment, laundry, serving and storing, pantry, corridor, cellar, attic, store-room and spaces not frequently used.

**HAZARDOUS MATERIAL**

Shall mean: radioactive substances and material which is highly combustible or explosive and/or which may produce poisonous fumes, explosive emanations, or storage, handling, processing or manufacturing of which may involve highly corrosive, toxic, obnoxious alkalis or acids or other liquids; other liquids or chemicals producing flame, fumes, explosive, poisonous, irritant or corrosive gases or which may produce explosive mixtures of dust or fine particles capable of spontaneous ignition.

Biological substances causing viruses, infections or which could cause uncontrolled bacterial growth harmful to humans, livestock, or plant life.

**HEIGHT OF BUILDING**

Shall mean the vertical distance measured from the level of the lowest natural ground level, up to the top of the finished level of the top most floor slab in case of flat roofs and up to the midpoint of the height of the sloping roof. The height of the sloping roof shall be taken as an average height of the relevant floor. The number of floors specification includes the ground floor. However the maximum height of the attic shall be limited to that given in the Critical Dimensions (see Concerned Section).

In addition to the precinct regulations, the height of buildings shall be governed by the "Guidelines on Traditional Architecture of Bhutan" and by the overall allowable building heights.

**HEIGHT OF A ROOM**

Shall mean the vertical distance measured from the finished floor surface to the finished ceiling/slab surface. The height of a room with a pitched roof shall mean the average height between the finished floor surface and the bottom of the eaves and the bottom of the ridge.

**LAYOUT**

Shall mean laying out a parcel of land or lands into smaller plots for building on, with laying of roads / streets, including formation, levelling, metalling or blacktopping or paving of the roads



and footpaths, etc. and laying of the services and amenities such as water supply, drainage, street lighting, open spaces, etc.

**LIFT**

Shall mean a mechanically guided car, platform or transport for persons and materials between two or more levels in a vertical or substantially vertical direction.

**LOFT**

An Intermediary floor between two floors on a residual space in a pitched roof, above normal floor level with a maximum height of 1.5m and which is constructed or adopted for storage purpose.

**MARGIN/ SETBACK**

Shall mean space fully open to sky provided at the ground level from the edge of the building wherein built-up area shall not be permitted except specifically permitted projections under this regulation.

**MEZZANINE FLOOR**

Shall mean an intermediate floor with height not more than 2.3m, between two main floors overhanging or overlooking a floor beneath and accessible only from the lower floor. The total floor area of the Mezzanine floor should not exceed 1/3rd of the lower area. The floor area of the mezzanine floor shall be considered for calculating the total built up area of the building.

**MUNICIPAL BOUNDARY**

Shall mean the boundary of Gyelposhing Town as defined by the Royal Government/ Competent Authority.

**NON-COMBUSTIBLE**

Shall mean not liable to burn or add heat to a fire when tested for combustibility in accordance with the IS: 3808-1966 Method of Test for Combustibility of Building Materials.

**OCCUPANCY OR USE**

Shall mean the principal occupancy or use for which a building, or a part of it, is used or intended to be used, including contingent subsidiary occupancies; mixed occupancy building being those in which more than one occupancy are present in different portions of the building.

**OCCUPANCY CERTIFICATE**

Shall mean an official document issued by the Implementing Authority certifying that the building is safe and fit for occupation.

**OWNER**

Shall mean person in whose name the land or property is registered as per the Land Records with the N.M.C. and who receives rent for the use of the land or building or would be entitled to do so if it were let.

**PARAPET**

Shall mean a low wall or railing built along the edge of roof or a floor.

**PARKING SPACE**

Shall mean an area, enclosed or unenclosed, covered or uncovered, sufficient in size to park vehicles with space for movement. Parking spaces shall be served by a driveway connecting them with a street or alley and permitting ingress or egress of vehicles.

**PARTITION**

Shall mean an interior non-load bearing divider wall not more than one storey or part thereof in height.

**PLINTH**

Shall mean a portion of a building between the surface of the surrounding ground level and the finished floor surface immediately above the ground.

**PLINTH HEIGHT**

Shall mean the height of the finished floor of the lowest floor level above the natural ground level.

**PLINTH AREA**

Shall mean the built-up covered area measured at the floor level of the basement or of any storey, including the walls.

**PLOT**

Shall mean a piece of land enclosed by definite boundaries fixed by the Implementing Authority.

**PORCH**

Shall mean a covered surface supported on pillars or otherwise for the purpose of a pedestrian or vehicular approach to a building.

**PRECINCT PLAN**

Shall mean a geographical area designated in the approved Urban Development Plan/ Structure Plan/ Local Area Plan for the purpose of regulating land uses within the approved municipal boundary.

**PUBLIC UTILITY NOTE, PUBLIC FACILITY, SERVICES BUILDINGS** shall include buildings or works developed or undertaken by the Govt./ Semi-Govt. or Public Undertaking only, such as sub-station, and receiving station of the Electricity Dept., Building for infrastructural facilities like bus service, water supply, drainage, sanitation, domestic garbage disposal, pumping station, electricity, purification plant, police building, post and telegraph and telecommunication, public urinals, milk supply, and public telephone booth, fire brigade station, ward and zonal offices of Implementing Authority, taxies, scooter and cycle stand and parking lot, garden, nursery, playground and open spaces, canal, communication network, first aid medical centre, primary health centre, dispensary, library, reading room and religious buildings/ places of public worship.

**PROPERTY**

Shall mean either a business or industrial premise; a single domestic dwelling, e.g. a house or an apartment; or a building with multiple domestic dwellings, businesses or industries or empty lot.

**REGISTERED ARCHITECT/ ENGINEER/ STRUCTURAL DESIGNER/ URBAN PLANNER/ DESIGNER/ DEVELOPER**

Shall mean respectively a person registered by the Implementing Authority or any other recognized institutions/ organizations for the purpose of these Regulations as an Architect, Engineer, Structural Designer, Urban Designer, Urban Planner or Developer, under these Regulations or any other Rules prevailing for the area.

**RECREATION and OPEN SPACES**

Shall mean an area primarily intended for active and passive recreational purposes.

**REFERRAL AUTHORITY**

Shall mean an Authority created by the RGoB to which certain aspects of a proposed development may be required to be referred to, and a ‘no objection certificate’ obtained from, before the Implementing Authority scrutinizes/examines the proposal for giving approval.

**RESIDENTIAL BUILDING**

Shall mean a building used for human habitation including garages and out houses.

**RESIDENTIAL USE**

Shall mean a use of any building unit for the purpose of human habitation and includes similar activities like hotels, lodges, inns, guesthouses, and hostels.

**RIGHT OF WAY**

(ROW) shall mean an area reserved for road carriageway, central verge, footpath, roadside drains, avenue plantations and utilities.

**ROAD/ STREET**

Shall mean any public expressway, highway, boulevard, street, lane, pathway, alley, stairway, passageway, carriageway, footway, square place or bridge, whether a thoroughfare or not, over which the public have a right of passage or access or have passed and had access uninterrupted for a specified period, whether existing or proposed in any scheme, and includes all bunds, channels, ditches, storm-water drains, culverts, sidewalks, traffic islands, road-side trees and, hedges retaining walls, fences, barriers and railings within the street lines.

**ROW HOUSES**

Shall mean a row of houses with only front and rear open spaces.

**STREET-LEVEL OR GRADE**

Shall mean the officially established elevation or grade of the centre line of the street upon which a plot fronts, and if there is no officially established grade, the existing grade of the street at its midpoint.

**SUB-DIVISION**

Shall mean the division of a single plot or building unit into two or more legal parts.

**SANITARY INSPECTOR**

Shall mean a technical person authorized by the Implementing Authority to inspect and regulate water supply, drainage and sanitation.

**SERVICE ROAD**

Shall mean a road/ lane provided at the front, rear or side of a plot for service purposes and includes a road/ lane provided along a major road or expressway to cater to local traffic.

**SHOPPING CENTRE OR COMMERCIAL CENTRE**

Shall mean group of shops, offices and/ or stalls designed to form market/office complex.

**SITE DEVELOPMENT**

Means the carrying out of engineering, mining, or other operations, in, over, or under land or water or the making of any material or structural change including demolition of building or reclamation of land or any change in use of the premises and includes redevelopment and layout and subdivision of any land.

**STAIR COVER**

Shall mean a structure with a covering roof over a staircase and its landing built to enclose only the stairs for the purpose of providing protection from the weather, and not to be used for human habitation.

**STOREY**

Shall mean the portion of a building included between the surface of any floor and the surface of the floor next above it, or if there be no floor above it, then the space between any floor and the ceiling next above it.

**TENEMENT**

Shall mean an independent dwelling unit with a kitchen, or a cooking space.

**TENEMENT BUILDING / OWNERSHIP FLATS**

Shall mean a residential building constructed in a detached manner, or in a semi-detached manner, or as ownership flats in a building unit, each being designed and constructed for separate occupation with independent provision of bath and WC.

**TRAVEL DISTANCE**

Shall mean the distance from the remotest point of a building to a place of safety, be it a vertical exit or a horizontal exit or an outside exit, measured along the line of travel.

**URBAN PLANNER/DESIGNER**

Shall mean a person with degree or diploma in Urban Planning/ Designing from an Institute, College or University accredited by the respective country's accreditation board to impart professional degrees in Urban Planning/ Designing.

**UNAUTHORIZED BUILDING**

Shall mean a building or structure which was constructed without sanction from the Implementing Authority empowered to control building pattern and form, at the time the concerned construction took place.

**VENTILATOR**

Shall mean an appliance or an aperture which is usually used for the purpose of ventilating a room or space.

**WATER CLOSET (WC)**

Shall mean a privy with an arrangement for flushing the pan with water, but does not include a bathroom. It shall not be smaller in floor area than one square meter.

**WATER COURSE**

Shall mean a natural channel or an artificial channel formed by draining or diversion of a natural channel meant for carrying storm and wastewater.

**WAREHOUSE OR GODOWN**

Shall mean a public or private building, the whole or a substantial part of which is used or intended to be used for the storage of goods whether for storing or for sale or for any similar purpose.

**WHOLESALE TRADE**

Shall mean a business or enterprise, which operates on the basis of buying, receiving, transiting or taking goods from the producers and selling, trading, distributing such goods and products to retailers, convenience shops, etc., but not to the end users. Any trade where ninety percent of the premises used is for the storage of bulk goods, cartons and crates of goods, disassembled goods or goods to be passed on to retail units or direct sales outlets shall be deemed to be a Wholesale Trade use/ activity.

**WINDOW**

Shall mean an opening, other than a door, to the outside of a building, which provides all or part of the required ventilation.

**INTERPRETATION AND MEANING OF EXPRESSION**

The use of present tense includes future tense, the masculine gender includes feminine gender and singular includes plural or vice versa.



### **3. Land Development/Subdivision/Consolidation and Building Permission**

#### **3.1 Procedure for obtaining development permission**

No person shall change the use of a land or carry out development without the written permission of the Implementing Authority.

Provided that no such development permission shall be necessary for the following:

- (i) Carrying out works for the maintenance, improvement or alteration of a building, being works which affect only the interior of the building without altering the structural members of the building or which do not materially affect the external appearance thereof – such as providing or closing of a window or a door or ventilator not opening towards other's property, providing intercommunication door, white washing/ painting, retiling, plastering and patch work, re-flooring and replacement of flooring. Provided further that no built up area shall be added to the existing work without seeking the Implementing Authority's permission. Provided however that no such exemption shall be available in the case of heritage buildings/ structures in heritage precincts.
- (ii) Carrying out the following works by/ in compliance with an order or direction made by an authority under a law for the time being in force:
  - a) required for the maintenance or improvement of highway, road or public street, being works carried out on land within the boundaries of such highway, road or public street including repairs, extensions, modifications to existing service installations, culverts, bridges, tunnels, drains, foot over bridges, subways, pavements, pedestrian railings along pavements, medians, etc,
  - b) for the purpose of constructing, laying, inspecting, repairing or renewing drains, sewers, mains, pipes, cable, telephone or other apparatus including breaking open of a street or other land for that purpose,
  - c) falling in the purview of the operational constructions by Government departments/ bodies, such as water tanks – over head or underground, pumping stations, sub-stations, traffic signals, bus stop shelters, overhead electrical equipment for electrification, etc.
- (iii) excavation (including) wells made in the ordinary course of agricultural operation; (for the construction of a road intended to give access to land solely for agricultural purposes),



(iv) for an occasional use of land such as exhibitions, fairs, etc., but shall obtain temporary permission from the Implementing Authority.

## **3.2 Procedure for Land Development/ Subdivision/ Consolidation Permission**

### **3.2.1 Application for Land Development/ Subdivision/ Consolidation Permission**

A person or body intending to carry out layout development as defined in these Regulations in or over a land and /or subdivide and /or consolidate land or a building within the limits of Gyelposing Urban Development Plan shall obtain prior permission for the same from the Implementing Authority by applying in a standard format and furnishing all information in forms, formats and plans prescribed under these regulations and as may be amended from time to time by the Implementing Authority.

The application shall be signed by the legal owner of the plot or authorized signatory. The applicant shall submit signed plans and drawings along with the application as per clause 3.2.2 and pay the requisite scrutiny fees, development charges, betterment charges, and other charges and dues if any to be leviable under the Regulations.

### **3.2.2 Documents and Particulars to be Furnished with the Application**

The following particulars and documents shall be submitted along with the application.

- 1) Copy of the Land Ownership Certificate issued by the Gyelposing Municipal Authority (GMA)
- 2) Copy of the latest Site Plan certified/ issued by the GMA
- 3) Copy of Precinct Certificate substantiating “Use Conformity”
- 4) Three copies of proposed layout plan drawn to a scale of not less than 1:500 showing the details as listed in Appendix I, wherever applicable (in the case where plot is more than ten hectares, scale shall not be less than 1:1000)

Note: Drawings shall be prepared in S.I. system only.

Certificate of undertaking in the standard form by the registered Architect/ Urban Planner/ Designer.

- 5) Full information should be furnished in the Form along with the plan.

The applicant shall also submit a copy of N.O.C/ clearance from relevant Authority as per wherever applicable.



### **3.2.3 Plans/ Drawings and Specifications to be Prepared by Registered Architect/ Urban Planner/ Urban Designer**

The plans and particulars prescribed under clause No. 3.2.2 above shall be prepared by a registered **Architect, Urban Planner and/ or Urban Designer**

### **3.2.4 Scrutiny Fee**

A person or body applying for permission for carrying out development shall with his/ its application pay to the Implementing Authority the scrutiny fees as mentioned in Appendix-3 or as decided by the Town Committee from time to time.

### **3.2.5 Approval of Layout for Plot Subdivision**

The approval of layout proposed to be developed and /or subdivided and /or consolidated will be given upon furnishing the required information in a standard format and fulfillment of the requirements as described in the following sections. Intermediary scrutiny and checks shall be conducted by the concerned authorities without prior notice. In case of any change in the approved layout plan the proposal has to be revalidated by the GMC. If it is noted during the scrutiny or site visits of the concerned authorities that no prior approvals for the changes in the approved layouts have been procured by the person/ body and/ or failure in producing valid documents for such changes, the development approval/ permission shall be cancelled.

### **3.2.6 Rejection of Application**

If the plans and information given do not contain all the particulars necessary to deal satisfactorily with the development permission application, the application shall be rejected.

### **3.2.7 Cancellation/ Revocation of Approval**

The development permission if secured by a person/body by misrepresentation or by producing invalid documents, such development permission will be cancelled.

## **3.3 Procedure for Obtaining Building Permit and Occupancy Permission**

A person/ firm/ body or developer shall not erect a building or carry out additions and alterations or carry out civil construction activity without obtaining a building permit from the Implementing Authority. A building permit shall be issued only to the legal owner of the land/ plot.

However applications for temporary permission involving erection/ construction of temporary structures shall be permitted only in specific locations which would have to be approved beforehand upon the payment of fees specified in appendix 3 by the GMA. The procedures for obtaining building permission and also those procedures that are to be followed during construction are different for the two classes of buildings/ construction:

- a) Residential structures not more than three floors (ground plus one floor) on minimum plot size of 500 sqm with maximum site coverage of 40%.

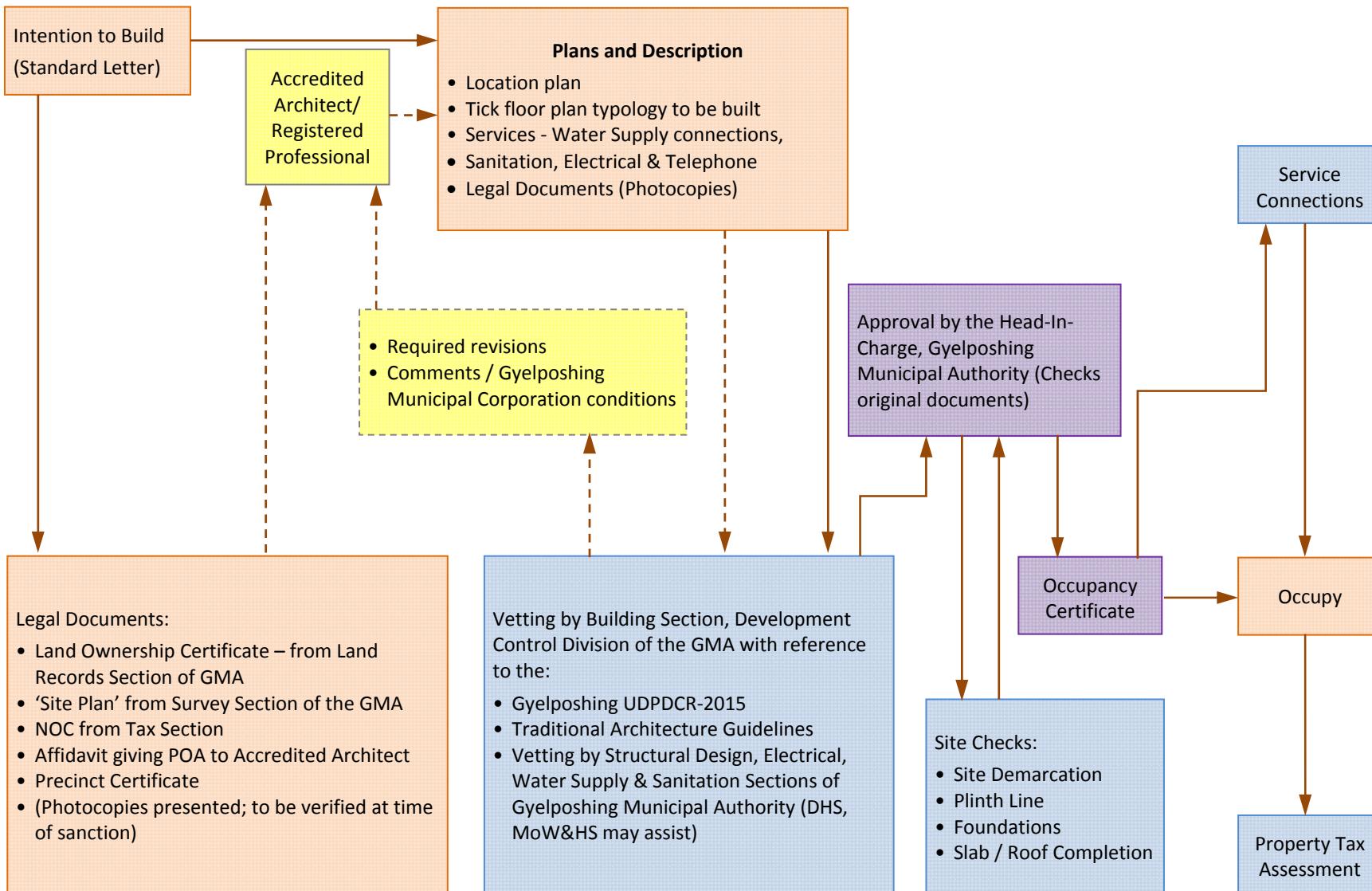


- b) Residential structures not more than two floors (ground plus one floor) on minimum plot size of 380 sqm with maximum site coverage of 40%.
- c) More than two floors (ground + two floors) on minimum plot size of 380sqm in the Mixed Use Zone with maximum site coverage of 40%.

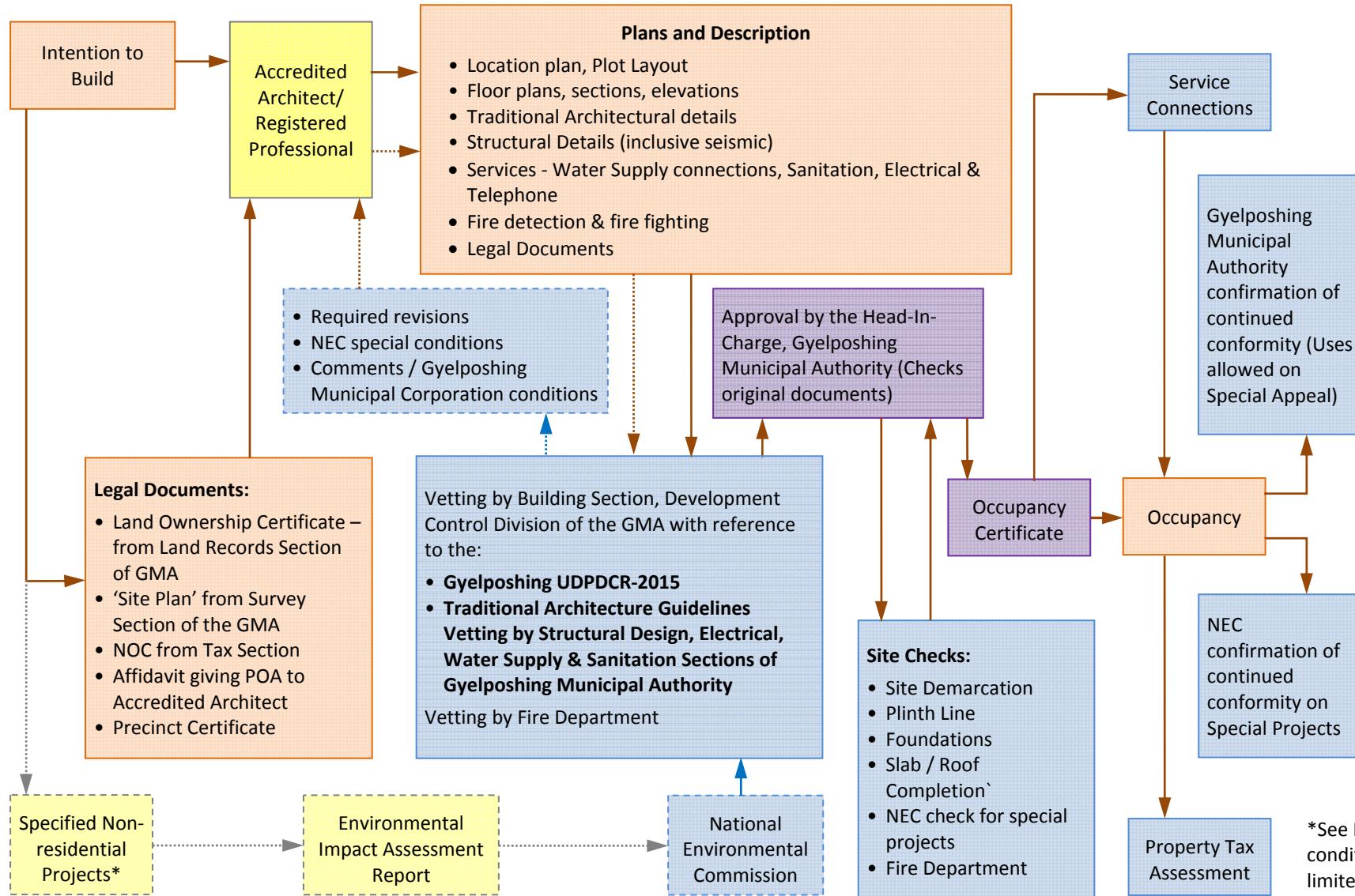
A mechanism for speedier approvals in the case of tier “a” as above is proposed through a Green Channel of accredited architects/ engineers. All building applications shall enclose an “ultimate structural capability of the structure” statement from the architect/ structural engineer, in terms of total number of floors.

The procedures for the different classes of buildings/ constructions are described in the following charts:

**Figure 65: procedure for obtaining building permissions and also the procedure that is to be followed during construction of residential structures not exceeding two dwelling units and / or not more than two floors (ground plus one floor) in plots up to 1000 square meter**



**Figure 66: Procedure for obtaining building permission and also the procedures that are to be followed during construction of three or more residential units, or any building on a plot of more than 1000 square meters of land/ or more than two floors (Ground plus two and more) or buildings for non-residential uses.**



### **3.3.1 Application for Building Permission**

A person or body intending to erect a building or carry out additions and alterations to a building or to carry out development as defined in these Regulations in or over land owned by him/ it within the limits of the GMA shall obtain prior permission for the same from the Implementing Authority by applying on the prescribed form and furnishing all information in the forms and format prescribed under these regulations and as may be amended from time to time by the Implementing Authority. The application shall be signed only by the legal owner of the plot or authorized signatory. The applicant shall submit signed drawings along with the application as per the clause 3.2.2 below and pay the requisite scrutiny fees, development charges, betterment charges, and other charges and dues if any to be leviable under the Regulations.

### **3.3.2 Documents and Particulars to be furnished with the Application**

- a) The applicant shall sign all forms, plans, sections or written particulars or cause them to be signed by him and his duly authorized registered Architect, Engineer, Developer etc. as the case may be. Such person or authorized registered Architect, Engineer, developer shall furnish documentary evidence of his authority. If such notice or other document is signed by such authorized registered Architect, Engineer, Developer it shall state the name and address of the person on whose behalf it has been furnished.
- b) The forms, plans, sections and descriptions to be furnished under these Regulations shall all be signed by each of the following persons:
  1. A person making application for development permission.
  2. A person who has prepared the plans and sections with descriptions, and must be a registered Architect.
  3. A person who is responsible for the structural design and supervision of the construction i.e. a registered structural designer or civil engineer.
  4. A developer
- c) A person who is engaged either to prepare plan or to prepare a structural design and structural report or to supervise the building shall give an undertaking (accepting full responsibility for all of the above and liability in case of direct or indirect damage or loss) in the prescribed form.
- d) A person/body who under the provisions of the relevant sections of these regulations is required to furnish to the Implementing Authority, plans or other documents, shall furnish **THREE** copies of such plans and other documents. One copy of each plan and



document shall be returned, on approval, to the applicant duly signed by the Implementing Authority or authorized officer.

- e) It shall be incumbent on the person/ body whose plans have been approved, to submit amended plans for deviation leading to increase in built-up area, building height or change in plans, he proposes to take during the course of construction of his building work, and the procedure laid down for plans or other documents hereto before, shall be applicable to all such amended plans.
- f) Approval of drawings and acceptance of statements, documents, structural report, structural drawings, progress certificate, or building completion certificates shall not discharge the Owner, Engineer, Architect, Structural Designer, Developer, from their responsibilities, imposed under these Regulations and other local laws.
- g) A certificate of structural capability of the building in terms of ultimate number of floors it is designed for, and the soundness of the structural design from the licensed structural designer in regard to the proposed building shall be submitted in the format prescribed under these Regulations. He shall also submit the detailed design and plans for office record.
- h) Three copies of the proposed layout plan of the area proposed to be developed shall be submitted to a readable scale, as the case may be showing the details as listed in the Appendix-1 wherever applicable.
- i) Three copies of the detailed drawings showing the plans, sections and elevations of the proposed building work to a scale of 1:100 showing the details as listed in Appendix-2, wherever applicable, shall be submitted.

### **3.3.3 Plans/Building Drawings and Specifications to be Prepared by Registered Professionals**

The plans/ building drawings and particulars prescribed under these Regulations shall be prepared by a registered Architect.

### **3.3.4 Scrutiny Fee**

The scrutiny fee payable at the time of application shall be as per the rates indicated in Appendix-3 or as decided by the Town Committee from time to time.



### **3.3.5 Service and Amenity Fees**

Permission for carrying out development shall be granted by the Implementing Authority only on payment of service and amenities fees as may be decided by the City Committee from time to time. These fees and maintenance charges shall be revised on review by Implementing Authority from time to time.

### **3.3.6 Grant of Development Permission**

Grant of Development Permission shall mean acceptance by the Implementing Authority of all the requirements of these Regulations excluding the following

- a) Easement rights.
- b) Variation in area from recorded areas of a plot or a building.
- c) Structural reports and structural drawings.
- d) Soundness of material specifications used in construction of the building.

### **3.3.7 Validity of Approvals**

The validity of the approved building plan shall be for two years from the date of approval. The construction should start within two years from issue of building permission

### **3.3.8 Revalidation/Renewal**

Building permission granted under these regulations shall be deemed to have lapsed, if such development work has not commenced till the expiry of two Gregorian calendar year from the date of development permission, provided that, the Implementing Authority may on application made to it before the expiry of above period (two Gregorian calendar year) extend such period by a further period of one Gregorian calendar year at a time by charging an amount to be fixed by the Town Committee from time to time for renewal of the building permission.

### **3.3.9 Process of Revalidation in the event that the Developer exceeds the Validity**

#### **APPROVAL OF LAYOUT**

The approval of building permission will be given in two stages:

- i. Preliminary approval, and
- ii. Final approval



## **PRELIMINARY APPROVAL**

The approval of the layout plan is the stage which approves the proposed layout plan enabling the commencement of work on the site to facilitate activity related to subdivision and transfer of land as per the relevant standards and as proposed in the layout plan submitted by the applicant.

## **FINAL APPROVAL**

The final approval of the building permission shall be given only on the completion of all the requisite development on the site and after inspection and verification of the performance of the services and other common facilities provided as per the relevant standards. In case of any changes in the approved layout plan the proposal has to be revalidated by the GMA.

### **3.3.10 Liabilities and Responsibilities of Applicant**

#### **Liabilities of Applicant**

Notwithstanding the development permission granted under these Regulations, a person/ body undertaking any development work shall continue to be wholly and solely liable for any injury or damage (direct or indirect) or loss whatsoever that may be caused to anyone in or around the area during such construction and no liability whatsoever in this regard shall be cast on the Implementing Authority.

#### **Responsibilities of Applicant**

Neither the grant of development permission nor the approval of the plans, drawings and specifications shall in any way absolve the applicant of the responsibility for carrying out the development in accordance with requirement of these regulations.

### **3.3.11 Rejection of Application**

If the plans and information given as per these Regulations do not give all the particulars necessary to deal satisfactorily with the Building permission application, the application shall be rejected.

On receipt of the application for Building Permission, the Implementing Authority after making such inquiry as it thinks fit may communicate its decisions granting or refusing permission to the applicant as per the provisions of the Act.

The Building permission shall be in the prescribed form and it should be issued by the Implementing Authority. Every order granting permission subject to conditions or refusing permission shall state the grounds for imposing such conditions or for such refusal.



### **3.3.12 Cancellation of Approval**

The building permission if secured by a person/body by a misrepresentation or by producing false documents is not valid and such development permission will be treated as cancelled/ revoked.

### **3.3.13 Change of Ownership**

Building permission granted under these Regulations shall be deemed to be suspended/ cancelled/ revoked, in cases of change of ownership, unless the ‘original’ owner who applied for, and obtained the development approval submits a letter to the Implementing Authority about the change in ownership giving details of the transaction and the new owner submits an application duly attaching copies of all the official records of such a transaction and an undertaking that he accepts the transfer to himself, of all the responsibilities and liabilities of the previous owner that relate to the development on the site.

## **3.4 No Objection Clearance(NOC) from Referral Authorities for Certain Projects**

The proposal submitted shall be in conformity with other Acts/ Regulations and shall, wherever applicable submit the NOC, from the respective authorities for conformity with:

- a) The Bhutan Power Corporation's Electricity Grid Lines and the horizontal and vertical clear distances to be kept open to sky
- b) The provisions of Environmental Assessment Act, 2000.
- c) The provisions of NEC Secretariat’s, ‘Regulations for the Environmental Clearance of Projects, 2001’.
- d) The conservation/ preservation of monuments and cultural heritage.
- e) The Department of Industry, Ministry of Economic Affairs, RGoB for the establishment of industries.
- f) The Department of Trade, Ministry of Economic Affairs, RGoB for the setting up and operation of fuel stations
- g) The Department of Geology and Mines, Ministry of Economic Affairs, RGoB for the setting up and operation of:
  - a. Quarrying and mining activities on less than 3 hectares
  - b. Mineral exploration for verifying mineral deposits
  - c. Emergency responses to natural disasters/ hazards.



- h) The Department of Forestry Services, Ministry of Agriculture and Forest, RGoB for:
  - a. Surface collection of sand and boulders,
  - b. All other activities governed by the Forest and Nature Conservation Act, 1995 and Rules, 2000, except sections that require NEC's clearance
- i) The Department of Agriculture, Ministry of Agriculture and Forest, for:
  - a. Farm roads,
  - b. Irrigation channels,
  - c. Activities related to agriculture research and development

### **3.5 Demolition and/ or Reconstruction of Dangerous/Unsafe Dilapidated Buildings**

Wherever it is necessary to demolish a dilapidated/ unsafe structure in the interest of public safety, such demolition shall be carried out by the owner wherever so directed by the Implementing Authority. However if the same is to be reconstructed, it shall be done in conformity with these Regulations with due approval from the Implementing Authority.

### **3.6 Temporary Permission**

Applications for temporary permissions need not be submitted through the registered professional. A scrutiny fee shall be paid as specified in the Appendix-3. These temporary permissions shall be permitted only for:

In the case of private premises - temporary sheds to be used for storing construction material/ as watchmen's cabin during construction phase.

### **3.7 Development Undertaken on Behalf of the Government**

The Office-in-Charge of a Government Department shall inform in writing to the Implementing Authority of the intention to carry out development for its purpose along with the plans of proposed development or construction.

- I. All the development undertaken on behalf of the Government shall strictly confirm to these regulations.
- II. Any Government proposal which is not in conformity with Gyelposhing Urban Development Plan, Mongar and these regulations should have prior approval from the Competent Authority.



### **3.8 Procedure during Development/Construction**

- a) No applicant shall carry out any further work after any of the inspection stages (clause 3.7.4) without an inspection and clearance by the Implementing Authority.
- b) The progress certificate shall not be necessary in the following cases:
  - (i) Alteration in Building not involving the structural part of the building.
  - (ii) Extension of existing residential building on the ground floor up to maximum 15sq.m in area provided it conforms to the set back rules and plot coverage.
- c) On receipt of the progress report certifying that the work has been executed as per the approved plan, it shall be the duty of the Implementing Authority to inspect, verify and endorse the report.

#### **3.8.1 Temporary Service Connection**

An applicant with a certified copy of building permit may apply to the respective agencies for temporary connection of services like electricity, water and sewerage.

#### **3.8.2 Loading, Unloading and Stacking of Materials and Equipment**

The use of a public street/ road or a public place for loading and unloading and stacking of materials of construction and construction equipment and excavated materials shall not be allowed, unless permitted by the Implementing Authority.

Material or equipment found on public street/ road or public land without prior approval is liable to be confiscated and the owner shall be liable for penal charges.

#### **3.8.3 Documents at Site**

The person to whom development permission is issued shall during construction, keep:

- a. Posted in a conspicuous place, at the site for which permission has been issued a copy of the development permission and
- b. A copy of the approved drawings and specification on the site for which the permit was issued.

#### **3.8.4 Safety on Site**

All construction sites must be organized in a manner that the safety of all persons (particularly laborers) on the site, at all times is assured. Every person on the construction site should be well equipped with helmet, boots, gloves, safety belts, first aid kit etc. On such sites safety barriers will be erected around all chutes, shafts, floor openings and slab edges, etc. All the workers at site should be insured.



### 3.8.5 Inspections

Building constructions shall be subject to routine/ periodic inspections by the Implementing Authority or persons/ bodies authorized by the Implementing Authority. In the event of deviation(s) from the approved plan and drawings or any of the conditions noted in this section, the Implementing Authority shall have the full authority to stop construction.

The Implementing Authority may, at any time during erection of a building or the execution of work or development, make an inspection thereof without giving prior notice of his intention to do so.

1) Inspection at various stages:

Following shall be the recognized stages for progress verification and checking in the erection of a building or the execution of a work:

- (i) Site layout shall be verified and approved by the authorized Engineer/ Building Inspector from the Implementing Authority,
- (ii) Foundation; before casting of footings
- (iii) Plinth; in case of basement before the casting of basement slab,
- (iv) Each storey shall be inspected before any casting,
- (v) Before roofing

2) A person/ body who is empowered/ responsible under these Regulations shall give to the designated officer of the Implementing Authority at least four working days notice in writing of the time at which the work will be ready for inspection.

This shall be called the progress certificate. This progress certificate shall be duly filled-in and kept with the owner/ architect and produced at the time of each inspection to be scrutinized and signed/ endorsed by the building inspector, before the commencement of the next stage of construction.

- 3) The applicant/ developer/ owner shall permit authorized officers of the Implementing Authority to enter the plot for which the development permission has been sought/ granted for carrying out development, at any time for the purpose of enforcing these regulations.
- 4) The applicant shall keep a board at site of development mentioning the survey no., city survey no, block no, final plot no, sub plot no, etc name of owner, and name of architect/ engineer/ developer/ owner, building permit no.



- 5) The building shall also be inspected for fire safety norms as per the fire safety regulations.

### **3.8.6 Deviation During Construction**

Deviations during construction from the approved building plan shall require prior approval from the Implementing Authority and would be approved only if it is in conformity to these regulations. The procedure laid down for plans or other documents here to before shall apply to all such revised (amended) plans.

In case the approval for deviation (which is in conformity to these Regulations) is not sought from the Implementing Authority prior to deviation, penalty shall be paid to the Implementing Authority as per the following formula:

**Amount= Excess area deviated x 1\*(prevailing unit area cost of construction, based on current BSR)**

Note:

1. Internal deviations which does not have structural implications and which are within the set back rules may be approved after resubmission of as-built drawings and upon payment of a lump sum penalty as may be fixed by the City Committee from time to time.
2. Any deviations which are not in conformity to these Regulations shall be demolished at the owner's own risks/ costs.

### **3.8.7 Illegal Occupation of Building**

- a) Notwithstanding the provision of other laws to the contrary the Implementing Authority may by written notice, order the whole building or part thereof to be vacated forthwith, or within the time specified in such notice:
  - (i) if such building or part thereof has been unlawfully occupied in contravention of these Regulations.
  - (ii) if a notice has been issued in respect of such building, or part thereof, requiring the alteration or reconstruction of works specified in such notice have not been commenced or completed.
  - (iii) if the building or part thereof is in a ruinous or dangerous condition, which are likely to fall and cause damage to persons occupying, restoring to or passing by such building/ structures or any other structure or place in the neighbourhood thereof.



- (iv) If the site is in danger of collapsing, due to land slide, or erosion, or flood, or if the site is in danger of stones, boulders, debris, earth falling on it from areas at a higher elevation
- b) The reasons for requiring such building or portion thereof to be vacated shall be clearly specified in the notice.
- c) The affixing of the written notice on the premises shall be deemed a sufficient intimation to the occupiers of the building or portion thereof.
- d) On the issue of notice, a person occupying the building or portion thereof to which the notice relates shall vacate the building or portion as directed in the notice and no person shall so long as the notice is withdrawn, enter the building or portion thereof, except for the purpose of carrying out a work of reinstatement which be lawfully permitted to be carried out.
- e) A person who acts in contravention of the above provisions or who obstructs the action taken under these regulations shall be removed from such building or part thereof by the police, which may also use such force as is reasonably necessary to affect entry in the said premises.
- f) The cost of measures taken under this provision shall be recovered from the owners.

### **3.8.8 Occupancy Certificate**

The applicant shall obtain occupancy certificate from the Implementing Authority prior to occupancy or use of development so completed.

The application for Occupancy Certificate shall include:

- (i) In case of any change from the approved plans, (which is permissible within these regulations), a completion report in the prescribed form along with two copies of the 'as built' drawings endorsed by the Architect/ Engineer. It shall also be incumbent on every person who is engaged under these Development Control Regulations to supervise the erection or re-erection of the building, to endorse this completion report. One copy of the 'as built' drawings shall be stamped and returned to the applicant after inspection and approval by the Implementing Authority.
- (ii) A copy of the progress certificate containing all the comments and endorsements of the building inspector at every stage of inspection.



In case of occupying the building or part thereof without obtaining occupancy certificate, all service connections shall be disconnected.

On receipt of the application, the building and its premises shall be inspected within 2 weeks by the Implementing Authority to verify that the work has been completed as per the approved building drawings, or if there is a change, permissible within the Regulations, approve and endorse the 'as built' drawings submitted along with the completion report. The inspection team shall consist of authorized Architect and Engineer from the Implementing Authority. Based on this inspection report the Occupancy Certificate shall be issued.

The Implementing Authority issuing occupancy certificate before doing so shall also inspect the building for the fire safety provisions (as per the norms) and issue a certificate that necessary requirements for the fire protection (wherever applicable) under these regulations have been fulfilled and if not, the applicant shall be asked to carry out necessary additions, alterations or rectifications to the satisfaction of the Implementing Authority before issuing occupancy certificate.

The Authority issuing occupancy certificate shall ensure that

- a) Septic tank and soak-pit have been constructed as per standards and are located as per approved plan, or where applicable the sewer line is connected to the main sewer line.
- b) Domestic drains (to collect the rainwater) have been constructed as per standards and are connected and as directed by the Municipal Corporation.
- c) The completed portion of the building/ dwelling unit applied for occupation is fit and safe for occupancy.
- d) Construction debris around the building, and/ or on the abutting road, and/ or adjoining property is cleared by the applicant.
- e) The applicants have permanently displayed the full postal address (house number, street name and zone) outside the main entrance to the building and where appropriate, each dwelling unit, with unit number.
- f) Parking space is properly paved and the layout of parking space is provided as per the approved plans. Signboards indicating the entrance, exit and location of parking spaces for different types of vehicles shall be permanently erected and maintained at a prominent place of a building unit.
- g) Certificate of lift Inspector has been procured and submitted by the owner, regarding satisfactory erection of Lift.



- h) Proper arrangements are made for regular maintenance of lift as provided in Building Code of Bhutan 2003 and in these regulations
- i) The completion report endorsed by the Implementing Authority and certificate of fire safety for the building (as per the fire safety norms) has been procured and submitted by the owner.
- j) Proper arrangements are made for regular maintenance of fire protection services as provided in Building Code of Bhutan 2003 and in these regulations
- k) In the case of buildings with three storeys , public gathering places, cinemas, auditoria, schools, colleges, government building and hospitals, a Certificate of Structural Stability shall be obtained from the site engineer.

The occupancy certificate shall not be issued unless the required information is furnished by the owner and the site engineer/ Architect concerned, in the schedule as prescribed by the Implementing Authority from time to time. The occupancy certificate shall be issued within one week after the receipt of all the required information.

Permanent connection to services like water, sewerage, electricity and telephone to the building shall be given by the respective agencies after issue of occupancy certificate only.

### **3.9 Cancellation of Approval**

If the construction is not as per the approved building drawings, the Implementing Authority shall, by written notice, direct the owner to stop further construction. The construction shall be resumed only after approved rectification is carried out to the satisfaction of the Implementing Authority. In case the owner fails to rectify the deviations which are not acceptable, the Implementing Authority shall cancel the building permit and disconnect the services.

### **3.10 Change of Building or Premises Use**

The applicant shall apply in writing to the Implementing Authority for conversion of building or premises to other uses or activity. Permission for change of use shall be given only if the building use conforms to precinct use schedule, structural safety of the building and other relevant clauses of these regulations. Change of building use without written permission of the implementing authority shall be regularized on payment of fines only if it conforms to the land use schedule and safety standards. If the building use does not conform to the land use and safety standards it will revert to the original use and the defaulter shall still pay a fine. The fine shall be 20% of the cost of construction of misused floor area.



### **3.11 Parking Requirements**

Same as BBR 2002

### **3.12 Painting**

Same as BBR 2002

### **3.13 Building Heights**

As mentioned in the Precinct Regulations

### **3.14 Architectural Control**

Same as BBR 2002

#### **MINIMUM FLOOR SPACE OF ROOMS IN RESIDENTIAL BUILDINGS**

Same as BBR 2002

#### **CIRCULATION SPACE REQUIREMENTS**

Same as BBR 2002

#### **LIGHT AND VENTILATION REQUIREMENTS**

Same as BBR 2002

#### **ARTIFICIAL LIGHTING AND MECHANICAL VENTILATION**

Same as BBR 2002

#### **VENTILATION SHAFT**

Same as BBR 2002

#### **PLINTH HEIGHT**

Same as BBR 2002

#### **FIRE SAFETY**

Same as BBR 2002

#### **ELEVATORS**

Same as BBR 2002

#### **GARAGE CUM SERVANTS QUARTERS**

Same as BBR 2002



## **PORCH**

Same as BBR 2002

## **SEPTIC TANK & SOAK PIT**

Same as BBR 2002

## **ROOF AND SITE DRAINAGE**

Same as BBR 2002

### **3.15 Access for Disabled**

Same as BBR 2002

### **3.16 Structural Control**

Same as BBR 2002

### **3.17 Water Supply and Sanitation Control**

Same as BBR 2002

### **3.18 Electrical Installations Control**

Same as BBR 2002

### **3.19 Telephone**

Same as BBR 2002



## 4. Precinct Sanctity (Regulation on Use, Building Height)

### 4.1 List of Precincts Designated in Gyelposhing Urban Development Plan

Sr. No.	Designated Precinct	Uses Sanctioned	Special Conditions
1.0	<b>DEVELOPMENT PRECINCTS</b>		
1.1	MIXED USE	<p>Cinema Hall, Multiplexes, Shopping Centers, Food Courts, Bowling Alleys, Pool and Billiard Halls, Lodging and Boarding Houses, Hotels, Tourism and Recreation based facilities. Commercial Center, Retail Shops, Public Buildings, Auditorium, Petrol Pumps, Transport Terminal for passengers, service stations, taxi stand, public transportation stops, vegetable vendors, pathological laboratories, Nursing Home, dispensaries, clinics, Hospitals, Office Buildings, Public Facilities, Public Utilities, Banks, ATM's Professional Offices, Parks, Gardens, Playgrounds, Crèche/ Children's Day Care Center, Pre-primary educational facilities, Training Institutes Research Institutions, Hostels, Boarding Houses, Staff Quarters, Canteens, Sports Complex Gymnasium, Library, Assembly Buildings including Swimming Pool, Club, Community Hall, Open Space proposed for Party &amp; Marriage Ceremony and Amusement and Recreation Activities, Art Galleries, Exhibition Halls, Discotheques, Bars (in association with eating establishments of forty seats and over).</p>	<p>Min. Plot size – 300sq.m</p> <p>Residential uses.</p>



Sr. No.	Designated Precinct	Uses Sanctioned	Special Conditions
1.2	RESIDENTIAL	Apartment, group Housing, residential units, single dwelling units. Any commercial use including retail outlets, shops shall not be permitted.	Min. Plot size – 400sq.m Institutional use may be permitted on a minimum plot size of 1000 sq.m
1.3	RESIDENTIAL (HOSTEL)	Apartment, group Housing, residential units, single dwelling units. Lodging and Boarding Houses, Hotels, Tourism and Recreation based facilities	Min. Plot size – 400sq.m
1.4	RESIDENTIAL (RESORT)	Apartment, residential units, single dwelling units. Lodging and Boarding Houses, Hotels, Tourism and Recreation based facilities	Min. Plot size – 1000sq.m
<b>2.0 INSTITUTIONAL PRECINCT</b>			
	Institutional Precinct	<b>Institutions</b>  Educational, Training, Cultural and Government Institutions, Public Libraries, Museums, Art galleries, Government Offices.	Residential and other activities incidental to the main institutional use, provided only 20 % of the site should be used for such activities.
<b>3.0 HERITAGE PRECINCT</b>			
	Heritage Precinct	a) Spiritual and religious artifacts and palaces, Chortens, Mani Walls, Lhakhangs, prayer wheels, statues, monasteries.  b) Heritage Village	Existing heritage buildings may not be dismantled and replaced. Renovation and restoration to be done with proper care and attention.
<b>4.0 SERVICE AND AMENITIES PRECINCT</b>			
	Service & Amenities Precinct	Water treatment plant, sewage treatment plant, electric substations, fuel station.	Subject to Environmental Impact Assessment study.



Sr. No.	Designated Precinct	Uses Sanctioned	Special Conditions
5.0	<b>ENVIRONMENTAL PRECINCT (LANDSCAPE)</b>		
5.1	Forests and Steep Slopes	<p>Activities related to environmental enhancement and protection. Existing structures may be retained with prior approval, but new construction and extension of old structures will not be permitted.</p> <p>Footpaths, cycle tracks, walkways, and landscape elements for public parks will be permitted.</p> <p>Preservation of existing vegetation and use as passive outdoor recreation area.</p>	
5.2	Flood Protection Zone	Open space amenities like parks, gardens, and active recreational sports facilities like soccer fields, outdoor basketball and tennis courts etc.	Sporting facilities and sewage treatment plants may be constructed after getting necessary approvals.
5.3	Public Green Space	Open parkways, children's play ground, rock garden, water fountains, amphitheaters, gazebos, trellis, outdoor cafes, information kiosks, public toilets, and recreational landscape elements.	Special attention to be given to public safety especially through provisioning of adequate lighting, elimination of blind spots, safe infrastructure design, and universal accessibility to public amenities like toilets and pathways.
5.4	Agriculture & Paddy Fields	Cultivation of agricultural produce.	Building and infrastructure construction prohibited.



## 4.2 Precinct Schedule showing Minimum Plot Sizes, Plot Coverage, Setbacks, and Maximum Building Height

Sl. No.	Designated Precincts	Min. Plot Area	Max. Plot Coverage Allowed (%)	Min. Setbacks	Max. Height
		Sq.m		Meter	no. of floors
<b>1 Development Precinct</b>					
1.1	Mixed Use	300	-	2m on sides, 1.5 m in front and 5m on rear accommodating the septic tank	3
1.2	Residential	400	40	3m on three sides and 5m on side accommodating the septic tank	2
1.3	Residential (Hostel)	400	40	3m on three sides and 5m on side accommodating the septic tank	3
1.4	Residential (Resort)	1000	45	3m on three sides and 5m on side accommodating the septic tank	2
<b>2 Institutional Precinct</b>					
	Institutional Precinct	1000	40	3m on three sides and 5m on side accommodating the septic tank	3
<b>3 Heritage Precinct</b>					
	Heritage Precinct	-	40	3m on three sides and 5m on side accommodating the septic tank	2
<b>4 Service and Amenities Precinct</b>					
	Heritage Precinct	-	-	3m on all sides	2
<b>5 Environmental Precinct</b>					
	-	-	-	-	-

**Note 1: Plot Coverage**

The maximum plot coverage shall be within the setback rules as prescribed in this regulations.

**Note 2: Projected Balconies**

Cantilevered balconies (not enclosed) projecting up to 1.2 m in the setback area from the ground floor level external wall face shall be permitted. Projections beyond 1.2 m may be permitted provided they do not extend into the set back areas and they are structurally safe. Such projections/structures shall not cover the septic tanks. In case of commercial buildings cantilevered balconies shall be allowed only at the rear.



## Appendix 1

### List of Details to be shown on Proposed Land Development Plan/ Subdivision Plan (wherever applicable)

- (i) The boundaries of the plot and plot level in relation to neighbouring road level.
- (ii) The highest and lowest levels of the plot and average slope with direction thereof.
- (iii) The position of the plot in relation to neighbouring streets and name of the streets
- (iv) Width of the proposed streets and internal roads.
- (v) Sub-division of the land or plot or building unit with dimension and area of each of the proposed sub-divisions and their use in conformity with these regulations.
- (vi) Dimensions and areas of open space and common amenities plots provided for under these regulations.
- (vii) All the existing buildings and other development standing on or under the site.
- (viii) The position of buildings and of all other buildings and construction which the applicant intends to erect.
- (ix) The means of access from the street to the buildings or the site and all other building and constructions which the applicant intends to subdivide.
- (x) Yards and open spaces to be left around the subdivided buildings to secure free circulation of air, admission of light and access.
- (xi) The width of street in front and of the street at the side or rear of the subdivided building.
- (xii) The direction of north point relative to the plan of the site or the buildings.
- (xiii) Any physical feature such as trees, wells, drains, pipelines, high-tension lines etc.
- (xiv) Existing streets on all sides indicating clearly the regular line for streets if any prescribed under the Local Area Plan and passing through the building units
- (xv) The location of the building in the plot with complete dimensions.
- (xvi) A plan indicating parking spaces, with egress and ingress if required under these regulations
- (xvii) The positions of the building units immediately adjoining the proposed development.
- (xviii) The position of every water closet, privy, urinal, bathrooms, cess pool, well or cistern in connection with the building other than those shown in the detailed plan.

- (xix) The lines of sewers on the site and/or building, the size, depth and inclination of every sewer and the means to be provided for the ventilation of the sewers.
- (xx) The position and level of the outfall of the sewer.
- (xxi) The position of sewer, where the sewerage is intended to be connected to sewer.
- (xxii) Tree plantation required under regulation No.7.45.



## Appendix 2

### List of Details to be shown in Drawings/Plans for obtaining Building Permit

#### DRAWING GUIDELINES

Drawings with complete design information and details, but not limited to the following, shall be submitted to the Implementing Authority for scrutiny and approval.

#### A) ARCHITECTURAL DRAWINGS

- a) Site plan shall be drawn to scale and shall include the position of the proposed building in the plot showing the dimensions of the plot boundaries, set back lines and showing the approach road, location of septic tanks, soak pit, roof drainage, and drainage plan. The site plan shall clearly show any proposed widening right of way, no build line where a 15m clearance is required major streams, minor streams, cliffs, ledges, etc. are required as indicated by the latest official site plan issued by GMA (for safety and environmental protection)
- b) Site plan shall include a schematic drawing showing information on adjacent plot like building line, permanent features, drainage, access road, septic tank and soak pit location.
- c) Layout plan of each floor, elevations of all sides of the building, sections through toilets and staircases, details of doors, windows, traditional cornices, railing/parapet, opening and other methods of ventilation, details of toilet and kitchen.
- d) Proposed parking layout as prescribed under this regulation
- e) A digital copy of the drawings for reference, if available.
- f) Drawings shall have proper title block indicating name and signature of owner, Architect, type and number of storey, location, date, revision number and date, scale, and north direction.
- g) The following minimum scales shall be followed:
  - Site Plan 1:500
  - Elevation/plan/section 1:100
  - Stair case/toilet/kitchen details 1:50
  - Door/windows/cornice details 1:25

**B) STRUCTURAL DRAWINGS**

- a) A copy of design calculation notes.
- b) Design codes used shall be listed on the drawing.
- c) Loads (assumed or actual) shall be listed on the drawing.
- d) Material properties shall be listed on the drawing.
- e) Assumed soil bearing capacity or soil investigation report shall be attached.
- f) Foundation plan, truss layout plan showing truss and purlin spacing, beam and slab layout plan for each floor showing clearly the staircase opening, shaft opening and any other openings and depressions.
- g) Concrete and reinforcement details for foundation, beams, slab, staircase, lintel, cornice, projections, zhu and rabsey, wall, etc.
- h) Truss elevations and connection details showing the holding down details.
- i) Details of separation gap indicating the location of such gap on the plan wherever required
- j) Details of splice locations and splice length for beams, columns, slab and staircase.
- k) For Load bearing walls, details of plinth band, lintel band, roof band including vertical bars at corners, opening jambs, wall junctions to be shown.
- l) Foundation details indicating depth of foundation and plinth level.
- m) Dimensions shall be clearly indicated for all structural members
  - Anchorage of beam bars in an external beam – column junction
  - Column ties and Beam stirrups details
  - Retaining details in case of foundation founded on different levels
- n) Drawings shall bear proper title block indicating name and signature of owner, Structural Engineer, type and number of storey, location, drawing title, date, revision number.

**C) ELECTRICAL CONNECTIONS**

- a) Single line diagram of total electrical system showing incoming terminal point and distribution network.



- b) Electrical layout plan showing positions of light points, power points, any other outlets, switches and wiring diagram.
- c) Tapping off junctions, switchboards, and distribution circuits for power and lighting from SDB and phase distribution (in the case of multiphase installations) shall be indicated clearly on the wiring layout plan.
- d) Sub distribution boards showing circuits and respective loads and protection devices.
- e) Power distribution boards for large multi-storey buildings showing floor- wise distribution from main control board and incoming power line.
- f) For multi-storied / complex buildings, design calculations shall be submitted.
- g) Drawings shall bear proper title block indicating name and signature of owner, Electrical Engineer, type and number of storey, location, drawing title, date, and revision number.

#### **ADDITIONS AND/ OR ALTERATIONS TO EXISTING INSTALLATIONS**

The following information shall be submitted for additions and/or alterations to existing Installation:

- a) Polarity test results
- b) Insulation test results
- c) Earth continuity test results
- d) Earthing test results
- e) Capacity, condition and specification of existing spare circuits
- f) Rating, specification and condition of existing incoming mains control gear
- g) Composite (existing and proposed) layout plans for all floors

Note: For factories, relevant by laws shall be followed as per Bhutan factory, electricity rules or relevant international standards.

#### **LEGEND SHALL SHOW**

- a) Type and wattage of fixtures
- b) Type of SDBs
- c) Type of PCBs and connected load



- d) Type of MCBs
- e) Switches and Switchboards
- f) Junction boards

### **COMPOUND ELECTRIFICATION WORK**

- a) Fixture and fitting specification
- b) Foundation details for support poles etc.
- c) Terminal box details.
- d) Size and type of cable proposed to be used.
- e) Single line diagram showing
  - (i) Connections
  - (ii) Phase distribution
  - (iii) Circuitry

### **TELEPHONE CONNECTIONS**

Submitted drawings shall indicate symbols and legend. All points, junctions, routes ducts, telephone terminal cabinet are to be clearly indicated.

Drawings shall bear proper title block indicating name and signature of owner, Concerned Engineer, type and number of storey, location, drawing title, date, and revision number.

### **D) DRAINAGE AND SANITATION**

- a) Plan showing Kitchen, bathroom and WC outlets.
- b) Plan showing location of septic tank and soak-pit or sanitary pipe lay out to the nearest sewer line, including manholes, wherever it exists.
- c) Drainage layout plan connecting to the nearest storm water drain.
- d) Sewer design shall be in accordance with plumbing code of practice.
- e) Materials and sizes of pipeline.

### **E) WATER SUPPLY**

- a) Layout plan of internal plumbing system of each floor with details of pipe sizes and material.

- b) Water meters shall be provided for each dwelling unit.
- c) Plumbing design shall be in accordance with plumbing code of practice.
- d) Materials and sizes of pipe line
- F) Drawings shall bear proper title block indicating name and signature of owner, Engineer, type and number of storey, location, drawing title, date, and revision number.



### **Appendix 3**

#### **Scrutiny Fees and Service and Amenity Fee Payable at the time of Application for Land Development/Building Permit**

Sr. No.	Category	Service and Amenity Fees (Nu. Per Sq.m of Built-up Area)
01	Residential/ Institutional Building Use	Nu. 30/sq.m
02	Commercial/ Industrial Uses	Nu. 50/sq.m

**Scrutiny Fee:** The minimum scrutiny fee for land development / building permission shall be Nu. 3000.00 or Nu. 16.14/sq.m whichever is more. Fee for renewal of development / building permission shall be Nu. 500.00.

Sr. No.	Category	Fee
01	Issuance of Official Site Plan	As approved by City Committee



## Appendix 4

### Application for Construction of Building

(Please type or write in clear block letters, use additional sheet if necessary)

To:

The Chairperson/ Thrompon

Urban Centre .....

1. Name of applicant:.....

Passport size Photo

2. Sex: Male ( ) Female ( )

3. Date of Birth: Day Month Year Age  
 ( ) ( ) ( ) ( )

4. Citizenship Identity Card No. ....

5. Permanent Address: .....

6. Present Address: .....

7. Postal Address:.....

8. Contact details: Telephone No. (Residence) :.....

Telephone No. (Office) :.....

Fax No. :.....

E-mail address :.....

9. Land ownership:

- Government Allotment (Allotment order no & date) .....
- Purchased from the open market (Registration no & date) .....
- Allotted under Kasho (Copy of Kasho to be attached) .....
- Inherited/exchanged/gifted (Details of previous owner to be attached).....
- Subdivided (Approval letter no & date) .....

10. Plot details: Plot No:..... Area:..... sq.m, Dimensions:.....

11. Declaration: The information supplied in this application form is correct to the best of my knowledge and if there are any discrepancies, I shall be personally responsible for the same and I am prepared to face any disciplinary or legal action against me.

Date: ..... Place: .....

Signature:

For official use only

Noting of the dealing officer with regard to land holdings, building construction, etc.

Recommended ( ) Not recommended ( )

Name & Signature of the Dealing Officer: .....

Signature of Thrompon/Chairman : .....

City/Municipal Corporation

Remarks (if any):



## Appendix 5

### Application for Building Occupancy

To:

The Thrompon/Chairman,  
City/Municipal Corporation,

.....

Sir,

I hereby certify that the addition/ alteration/ construction of building on Plot/ Thram No. .... in ..... Lam, in ..... town has been completed on ....., according to the approved building plan/ drawings, vide permit No. .... dated.....

The work has been completed to our best satisfaction. Workmanship and all the materials (type and grade) have been used strictly in accordance with the approved documents/drawings and relevant standards, codes of practice and specifications. Provisions of the Bhutan Building Rules, conditions or orders issued there under have not been transgressed/ violated in the course of the work. The building is fit for use for which it has been added/ altered/ constructed. The necessary 'Occupancy Certificate' may be issued.

Signature of the Owner: .....

Name & Address: .....

Telephone No. (Residence): .....

Telephone No. (Office): .....

Fax No.: .....

E-mail address: .....

Dated:



## Appendix 6

### Occupancy Certificate

To,

.....  
.....  
.....  
.....

Sir/Madam,

With reference to the application dated ..... regarding the addition/ alteration/ construction of building on plot/Thram No. ..... in Street/ Lam.....in .....town has been inspected on date ..... and found that the building is fit / not fit for occupation.

Instruction / Remarks (if any):

Thrompon/Chairman  
City/Municipal Corporation  
Dated:



Municipal Seal



