URBAN DESIGN GUIDELINES FOR A HILL TOWN
CASE APPLICATION OF RANGPO,SIKKIM

Thesis Project Report
submitted in partial fulfillment of the requirements
for the Post Graduate Degree of
Master of Architecture (Urban Design)

Submitted by
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2016

CERTIFICATE

ACKNOWLEDGMENT :

BEFORE GOING INTO DEPTH OF THE THESIS, I'D LIKE TO THANK MANY OF THOSE WITHOUT WHOSE HELP IT WOULD HAVE BEEN IMPOSSIBLE FOR ME TO COMPLETE THIS THESIS PROJECT.

I EXPRESS MY DEEPEST GRATITUDE TO MY THESIS GUIDE Prof. TAPAS KUMAR BHATTACHARYA AND

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SHERAB PALZER,ABHIGYAN SARKAR) AND CLASSMATES ESPECIALLY SAMYA RAKSHIT , WITHOUT WHOSE SINCERE HELP AND ADVICE I MAY NOT ACHIEVE THE GOAL SUCCESSFULLY.

PRITISH HALDER
3RD SEMESTER, M.ARCH
001410202002

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1 INTRODUCTION

1 INTRODUCTION

1.1 TERMINOLOGIES:

URBAN DESIGN

Urban design is the collaborative and multi-disciplinary process of shaping the physical setting for life in cities, towns and villages; the art of making places; design in an urban context.

Urban design involves the design of buildings, groups of buildings, spaces and landscapes, and the establishment of frameworks and processes that facilitate successful development.

GUIDELINE

A guideline is a statement by which to determine a course of action. Guidelines are not binding and are not enforced.

HILL TOWN

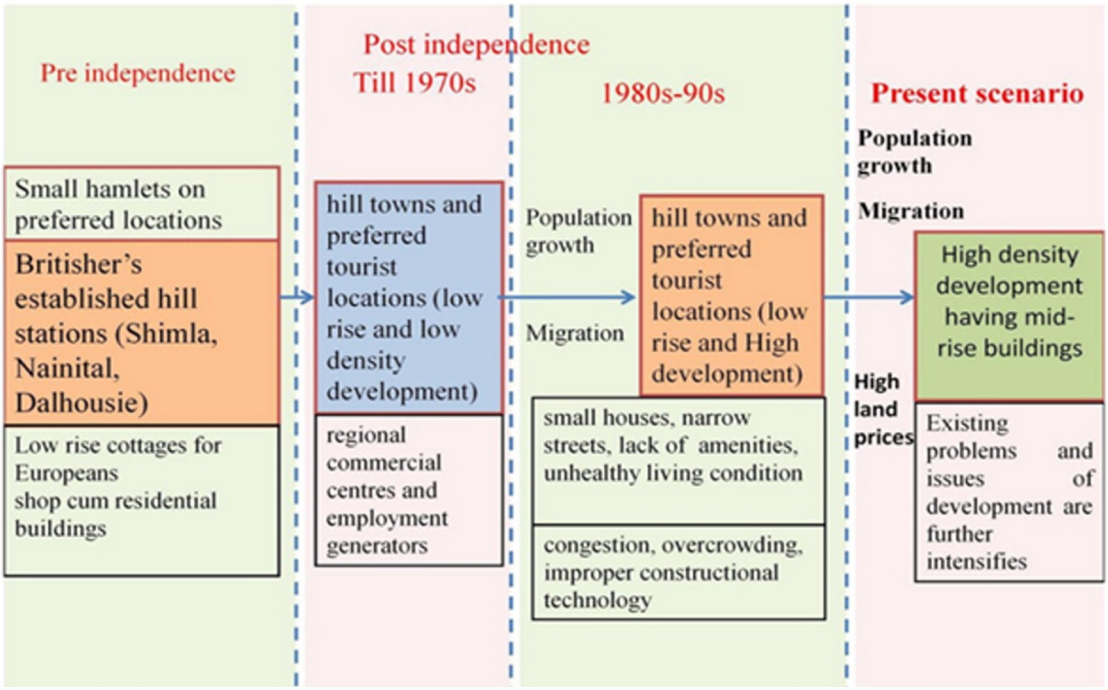
"Any area above 600 m in height from mean sea level, or any area with average slope of 30°, considering the sensitive and fragile eco-system of hills and mountains." -NBC

However, the state governments may identify and notify areas to be covered under 'hilly area', which need to be dealt with special consideration, when developmental activities are taking up.

1.2 WHY HILL TOWN:

Indian cities and towns are growing exponentially to meet ever-increasing demand for buildings arising from large increase in urban population due to high growth rate and migration.

The development in hill stations/towns of India can be grouped into four stages.



1 INTRODUCTION

The present scenario of development is most critical in hill towns, as these picturesque hill towns are experiencing tremendous pressure for development, which has changed the overall image of hill towns.

Due to inadequacy of existing pattern of development to cater the increased demand for residential, work places, recreational, commercial and educational areas for both residential and floating population, there is a shift from the low rise buildings to the midrise buildings in hill towns.

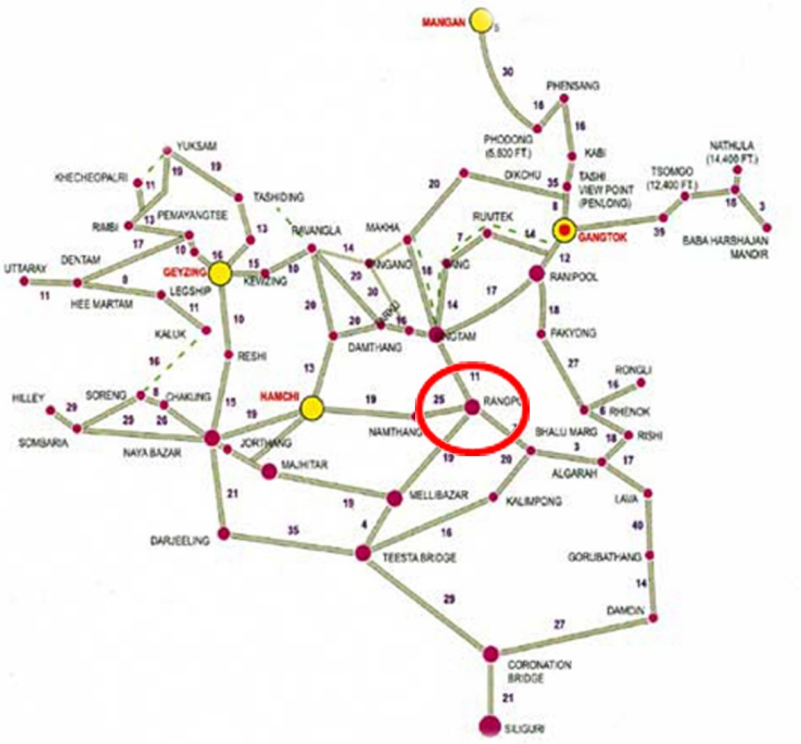
Hence the ever expanding scenario of rapid urbanization has come to affect many hill towns .

With it comes the need for proper guidelines, design solutions and planning.

Buildings covering entire hill slope in Shimla town

1.3 WHY SIKKIM:

From Census 2011, Sikkim has population of 6.11 Lakhs, an increase from figure of 5.41 Lakh in 2001 census. The total population growth in this decade was 12.89%. One in every four persons in Sikkim now lives in urban areas.



1 INTRODUCTION

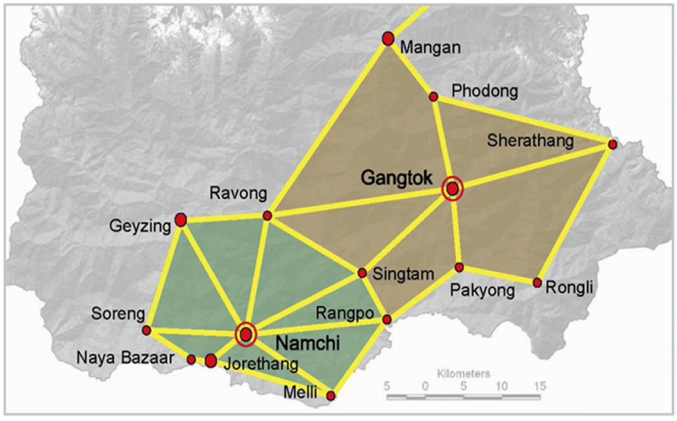
Sikkim is the smallest state in India with land area of 7096 SQ. km. The State of Sikkim is encircled by three different international boundaries including the additional neighboring state of West Bengal.

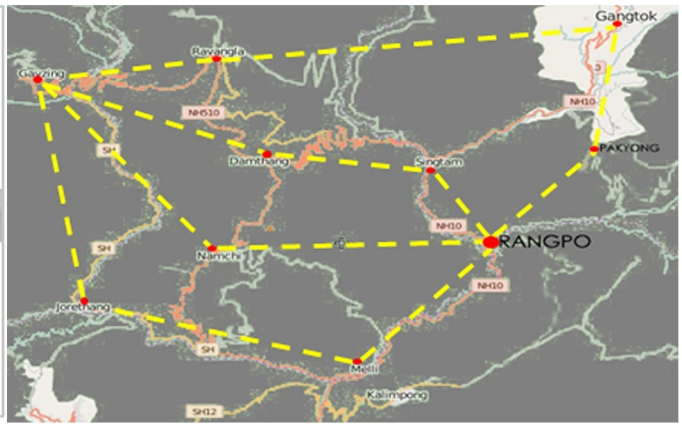
Projected introduction of air and railway terminus' will affect transport, commercialization and tourism in a positive manner.

Being the smallest state in India , only Gangtok has a city development plan (CDP).Towns such as Jorethang , Rangpo , Namchi & Mangan have no such city plan. Need for proper development in a state bordering 3 countries is an issue of National importance.

1.4 WHY RANGPO:

Main entry point to Sikkim
5th Most populated town in Sikkim
Balanced catchment as a regional centre
Close proximity to regional tourist spots
Circle of regional influence is not more than 25 km
Major physical connection through nh 31A and projected railway point
Potential to become a major industrial hub
River valley positioning with scenic backdrop





1 INTRODUCTION

1.5 SALIENT CHARACTERISTICS OF TRADITIONAL SETTLEMENT IN HILL REGIONS

Various salient characteristics of traditional settlements which are crucial for planning and design of new buildings in hill regions are:
Traditional hill settlements in India are usually developed on relatively flatter terrain than surrounding areas, which are often considered more stable and less prone to natural hazards like landslides and cloudburst.

Traditional settlements in hill regions of India are mostly located on southern slopes to have sufficient solar exposure throughout the day and protection from northern cold winds.

Proximity to surface water source is one of the main criteria for selecting site for settlement in hill regions.
Settlements in hill regions are classified into three categories as ridge, mid land and valley settlements. Each type of settlement has its own peculiar issues for development which are unique .

Developmental activities in traditional settlements are generally carried out with due consideration to the context and buildings are generally constructed along the contours to reduce site development work (i.e., cutting and filling of slopes).

1 INTRODUCTION

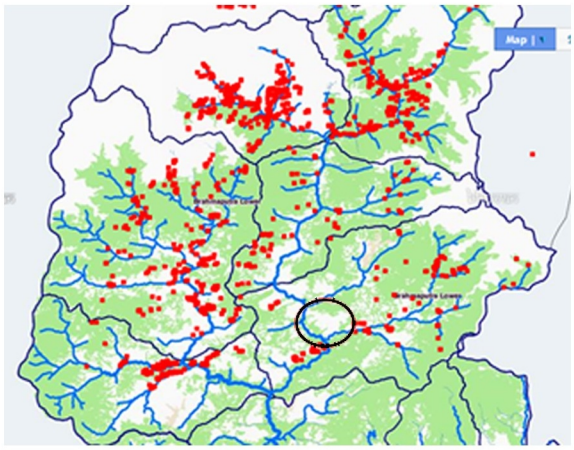
1.6 NATURAL DISASTERS IN HILLY AREAS

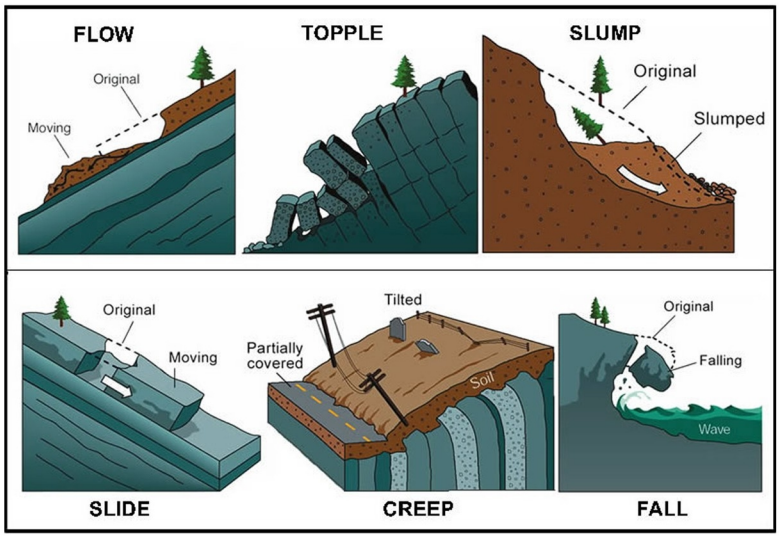
Natural disasters in hilly areas can be classifed as:

Geophysical origin, which includes earthquakes, land slides, etc.

Climatic origin, which includes flood, forest fire, etc.

Land slide:



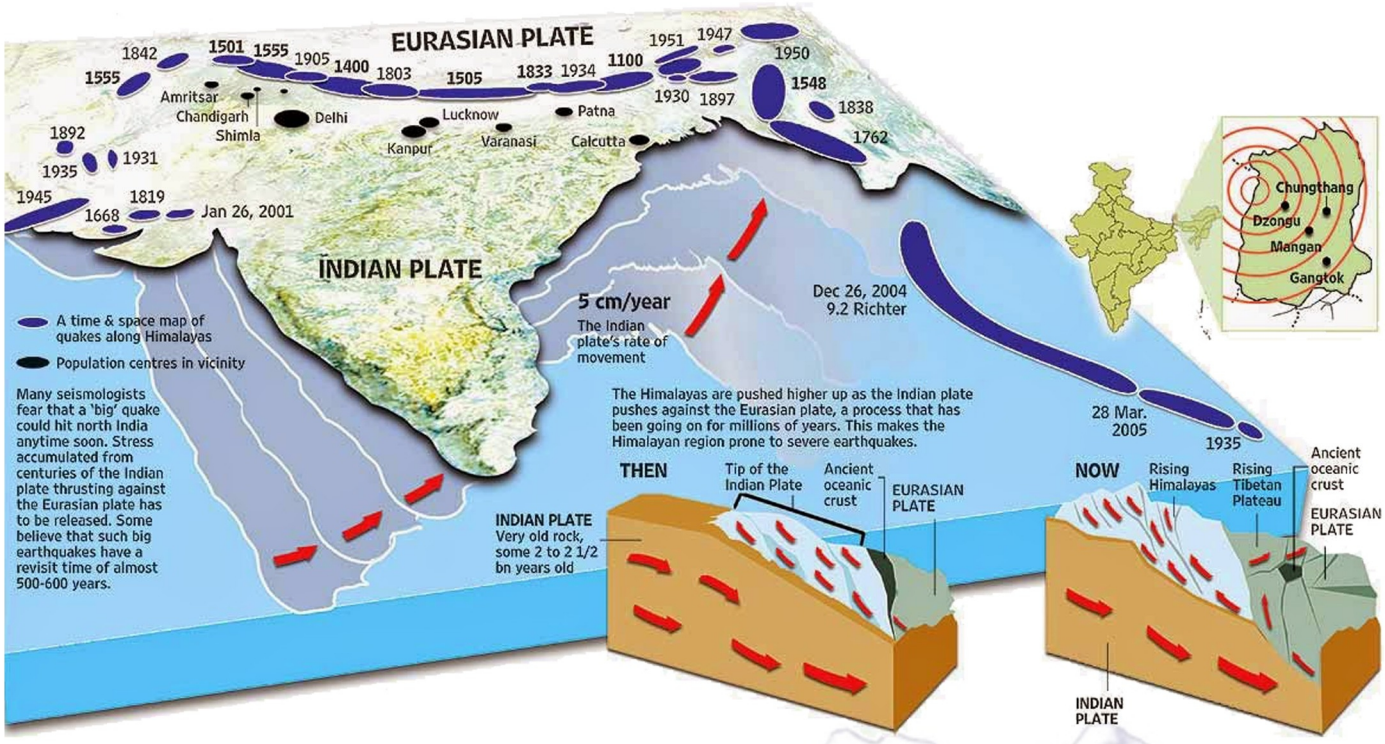


Different types oflandslide

Landslide prone areas in Sikkim

Earthquake:

Sikkim, which lies in high-risk zone IV, has experienced 18 earthquakes of magnitude five or greater intensity in the last 35 years.The largest of these was a 6.1 earthquake in November 1980.



1 INTRODUCTION

1.7 AIM:

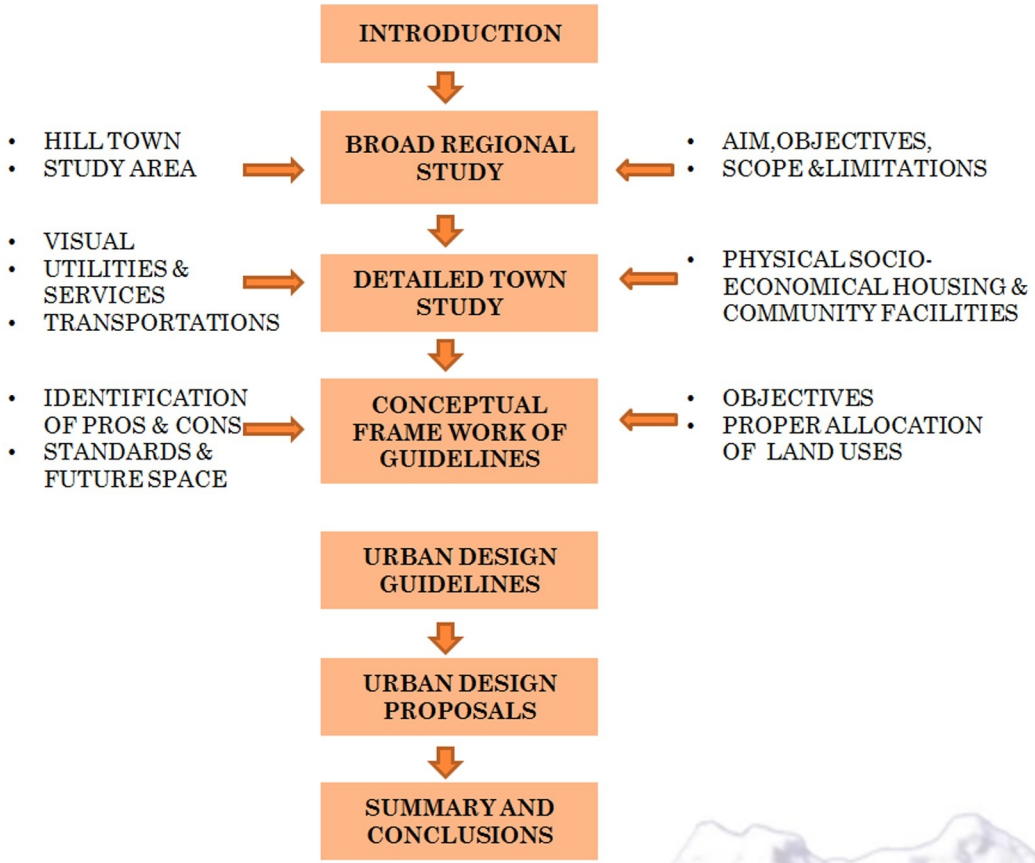
To learn, explore and plan for prevention of haphazard growth, upgrade it's overall physical environment while preserving related values and picturesque vista's of Rangpo.

1.8 OBJECTIVE:

To identify the urban development needs of Rangpo.
To preserve and create the physical forms that reflects the character of Rangpo.
To create well-defined hierarchy of public places.
To document the various tools, methods, practices and considerations used in urban development in this area.
To analyse the issues and to suggest the best possible solutions for the forward journey of the town ,from the alternative solutions.
To develop urban design guidelines for the hill-town of Rangpo.

1.9 METHODOLOGY:

1. A macro level study of the area to understand the urban design aspects of that area.
2. Identification of the problem of this area.
3. Case studies of similar cases . Analysis & derivation of inferences from the case studies.
4. Site level study for detail intervention.
5. Evolving new urban design strategies.
6. Area level design proposal.
7. Formulation of urban design policies & guidelines.
8. Site level design alternative.



1 INTRODUCTION

1.10 SCOPE:

1. To develop a framework for developing hill town, which includes a set of guidelines, techniques based on the characteristics of the town.

2. To analyze the characteristics , growth pattern m capacity etc. of the hill town.

3. To suggest solutions for the issues and problems in form of strategic guidelines, maps etc.

LIMITATION:

1. Focus is primarily on the selected study area, which however forms part of a much wider hill area.

2. The study is based on the assumption that impacts and spin-offs of the defined area will act as a catalyst for similar initiatives in the surrounding area.

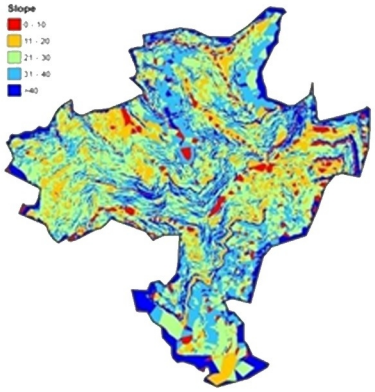
2 CASE STUDY

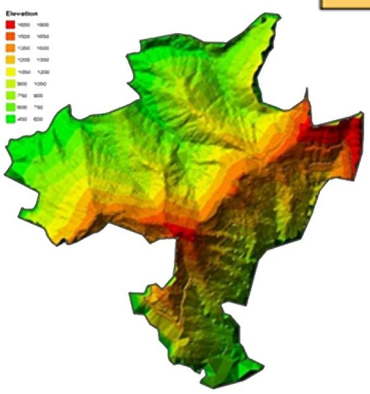
2 CASE STUDY

2.1NAMCHI

2.1.1 LOCATION :

Namchi , as it means sky high in Bhutia , nestles on the southern ridges of Sikkim at an elevation of 5500 feet.





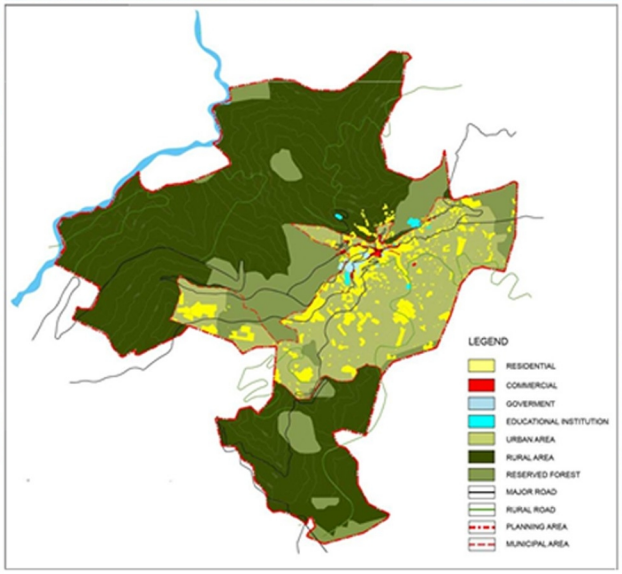
2.1.2 DEMOGRAPHY :

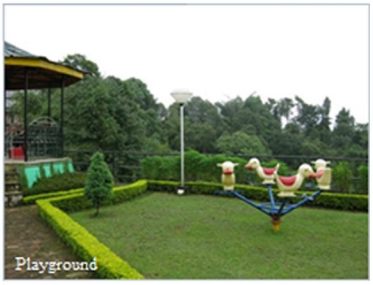
Communities	Area	Population	Density
Namchi Community 1	744	41705	5600 / sq km
Namchi Community 2	719.5	16089	2200 / sq km
Namchi Community 3	713	22136	3100 / sq km
Namchi Community 4	691	21326	3100 / sq km
Namchi Community 5	485.5	16440	3400 / sq km
Namchi Community 6	457	17455	3800 / sq km
Total	3810	135151	3550 / sq km

2 CASE STUDY

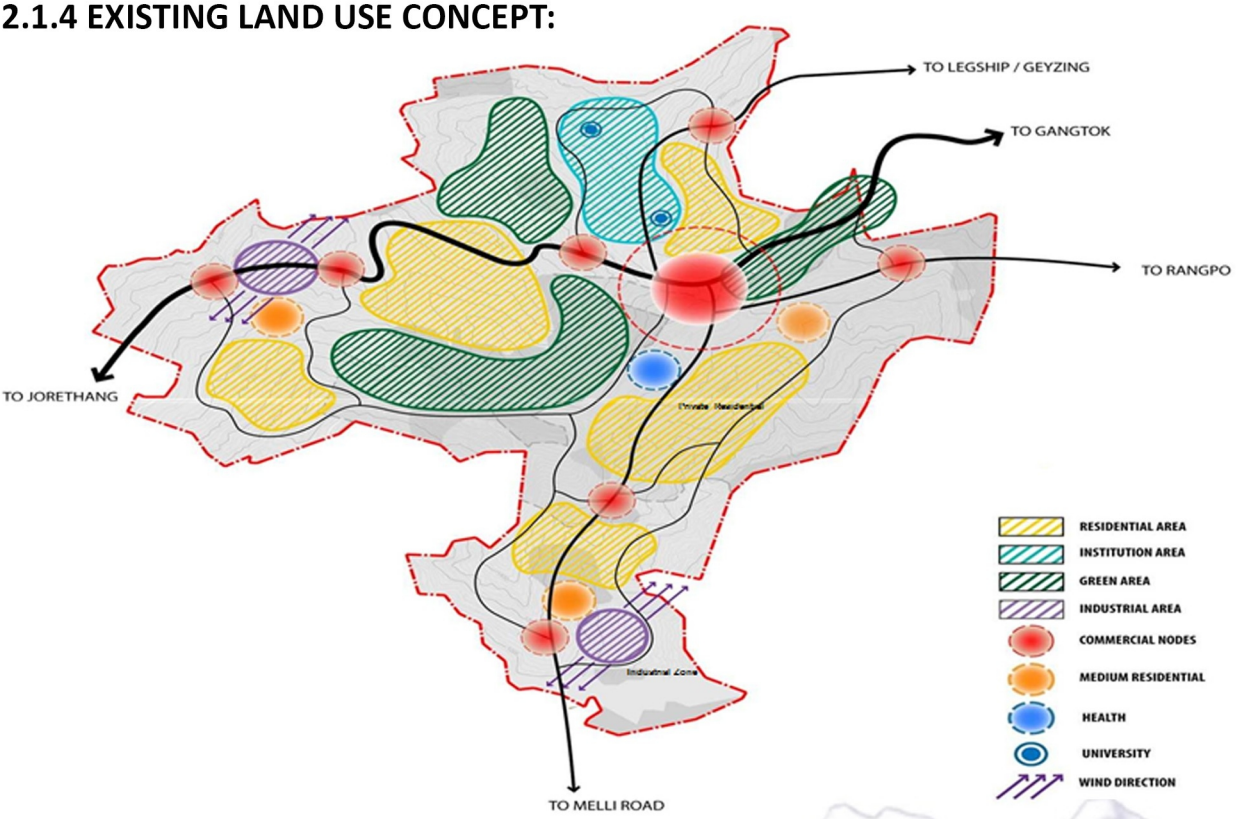
2.1NAMCHI

2.1.3 EXISTING LAND USE :





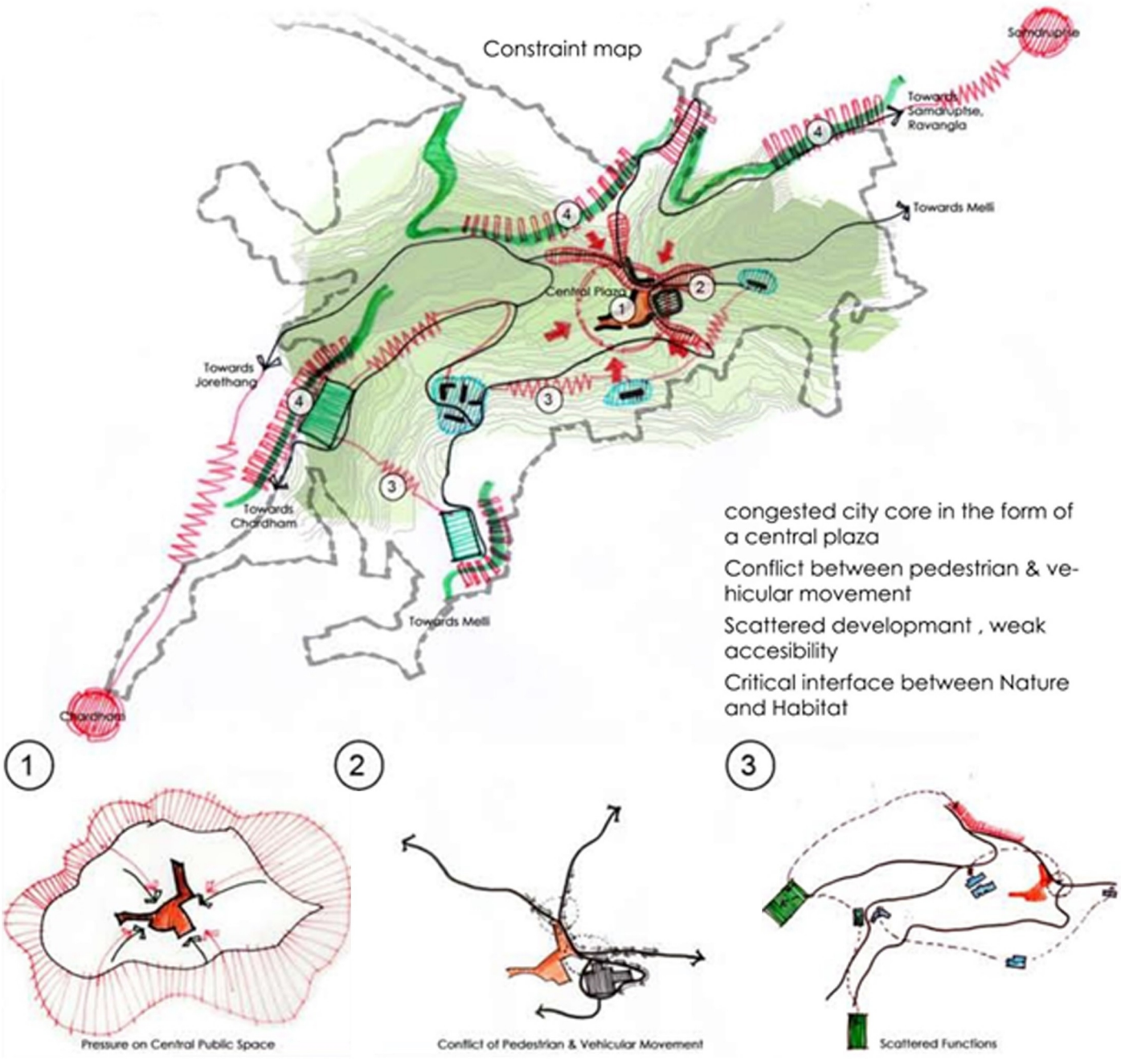
2.1.4 EXISTING LAND USE CONCEPT:



2 CASE STUDY

2.1NAMCHI

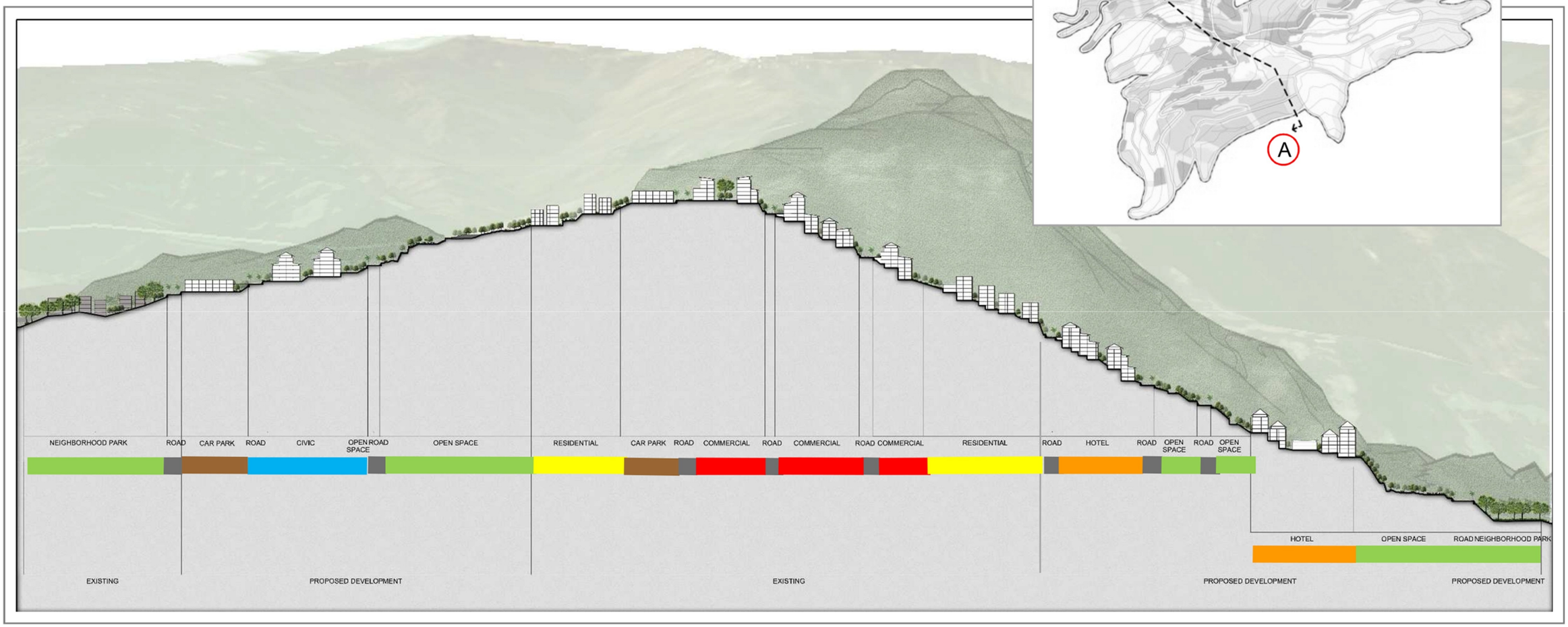
2.1.5 CONSTRAINT STUDY:



2 CASE STUDY

2.1NAMCHI

2.1.6 EXISTING DESIGN STUDY:



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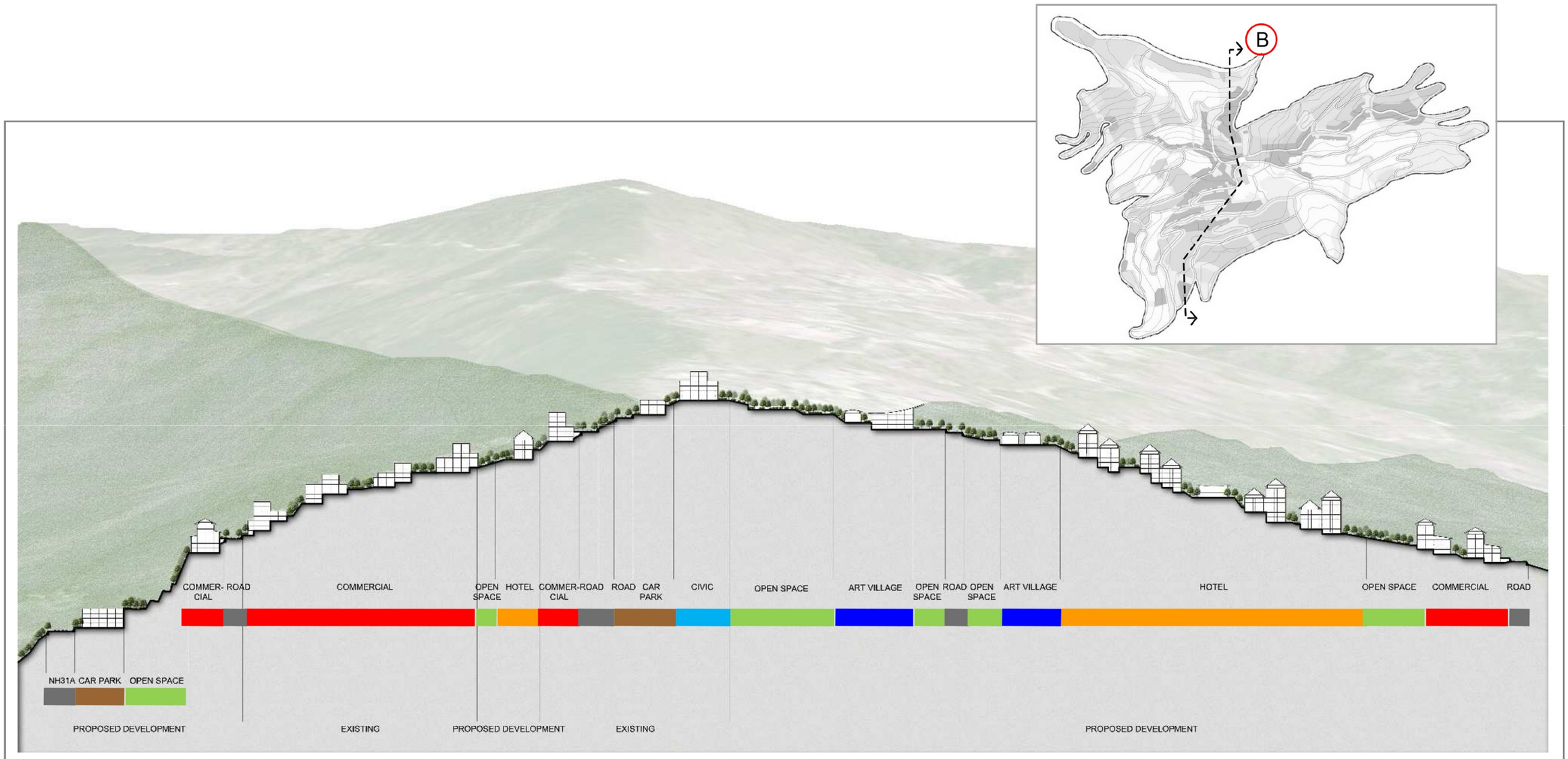
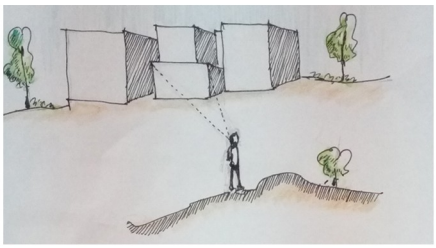


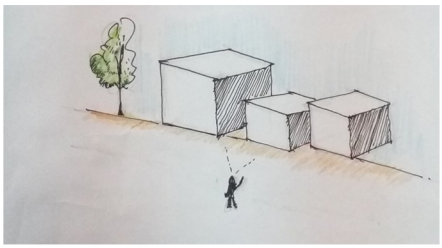
2 CASE STUDY

2.1NAMCHI

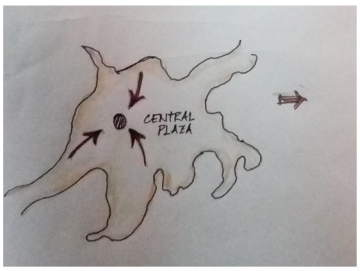
2.1.7 CONCLUSIONS :

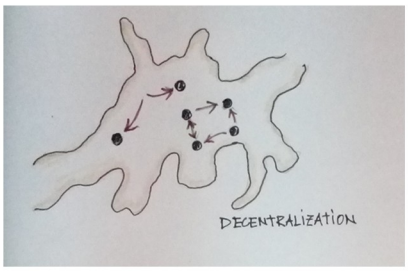
Creation of new vistas by altering heights of adjacent buildings.



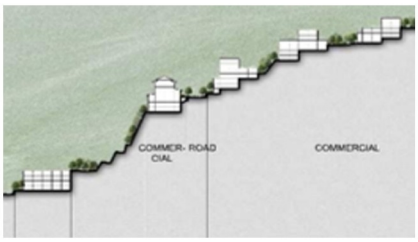


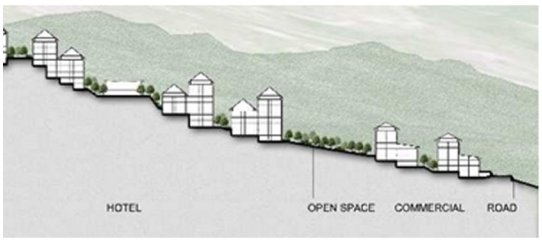
Excess footfall pressure in central plaza requiring de-centralization of node.



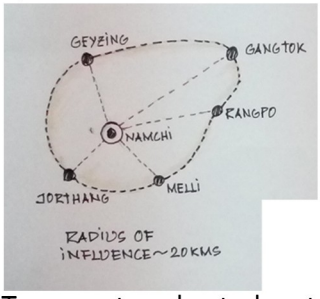


Abrupt level changes leading to more viewer-ship based commercialization (tourism).

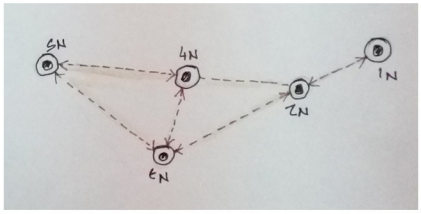


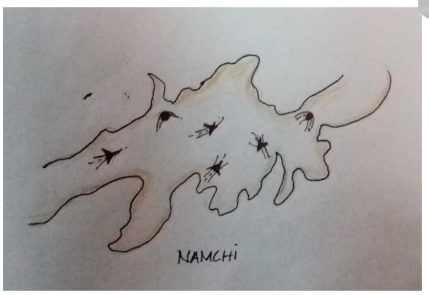


Sphere of influence is large enough to justify a proposed commercial hub.



Transport nodes to be strategically placed for tourism promotion .





Usage of landmarks to catch on-road/street-side viewership.

2 CASE STUDY

2.2 BUILDING REGULATIONS IN SHIMLA , HIMACHAL PRADESH

2.2.1 INTRODUCTION:

Building regulations are formulated for the basic reasons of 'what to develop' and 'how to develop'. They are inspired mainly from the National Building Code and Delhi Master Plans, with slight modifications.

Prevailing building regulations in Shimla are contextually inappropriate as they do not account for geo-environmental and natural context of hill towns. The in-force building regulations need to be amended in order to overcome the need for more built spaces, achieve higher standards of safety, better living conditions as well as to have an impact on the urban environment of such hill towns.

2.2.2 CONSIDERATIONS FOR BUILDING DESIGN GUIDELINES IN SHIMLA :

Population Growth : A Higher growth rate has been recorded in the past few decades , so to accommodate the ever growing population a need to undertake housing projects in different zones arises.

Tourism : A major income source for all hill town areas , need for building establishments of a commercial nature with regulated norms are required.

Scarcity of buildable land : Lack of buildable land in Shimla gives rise to need for regulations that optimize the usage of such , keeping in mind future expansion plans and current population requirements.

Increasing awareness towards environmental and social concerns : society's responsive awareness in relation to the built environment have changed significantly. Universal, barrier free designs are now in higher demand.

Occurrence and vulnerability to natural hazards : Safety against natural hazards is a critical concern in Shimla due to the proneness to different disasters. Different safety standards and technological advancements need to be incorporated in building regulations if already not present, which can be done by modifying building regulations.

2 CASE STUDY

2.2 BUILDING REGULATIONS IN SHIMLA , HIMACHAL PRADESH

2.2.3 IMPACT OF AMENDMENTS IN BUILDING GUIDELINES ON URBAN ENVIRONMENT OF SHIMLA:

Impact on Natural Environment : Cutting of slopes for development work is common practice , while affecting the ecology and environment of the region. Such adverse changes should be tackled in amendments such that the local ecology can be preserved.

Impact on Development Pattern : Systematic development is one of the main aims of any building regulation. Shimla predominantly had Low-rise building in a dense pattern , but due to Building Guidelines the mid-rise buildings are in advent. Due to this shift in Development pattern further reforms must be introduced as amendments in the building guidelines of Shimla.

Impact on Existing Buildings : The extent of development on any given plot is determined by the existing building guidelines. Modifications to these regulations have allowed increased F.A.R.'s and subsequently higher rise buildings on already developed land. In such cases the energy consumption, carbon footprint and architectural style of the building can be re-thought and improved upon.

Impact on New Development : Due to a change in building regulations use, occupancy type, Number of users and building services required are affected . Use of new and advanced technology can be allowed in such reformed regulations so as to decrease future energy consumption.

Impact on Transportation Network : Roads are the main method of transportation in Shimla. Increase in commuters creates enormous pressure in transport lines which again requires a change in guidelines for relief. Traffic design capacities of current roads are not enough for the coming future.

Impact on Open Spaces and Social Infrastructure : The need for a well thought out Design process in which open spaces can have an impact social life is intense

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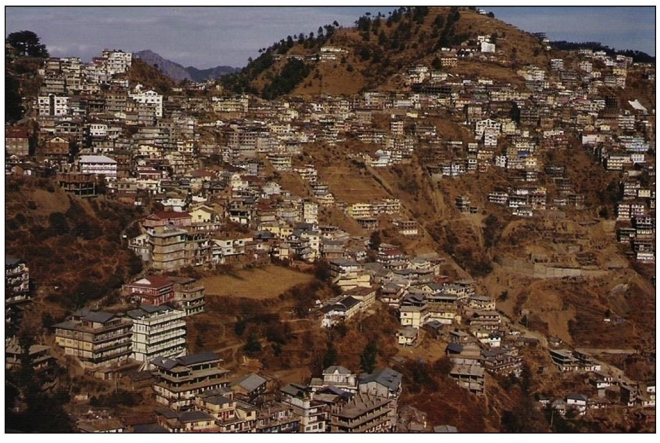

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Impact on townscape : Shima has high visibility due to its location on ridges and sloping topography , due to which more facades are visiblefrom longer distances.SkyLine , facade treatment and open spaces are alloutcomes of proper planning proposals modified by compliance with building regulations.

2.2.4 CONCLUSIONS:

There is a unique environment for Development in ecologically sensitive hill towns like shimla. As evident from the present scenario of building regulations, this unique situation is not being dealt with optimally and contextually.

Amendments in building guidelines are inevitable due to the fore-stated reasons , and as such need to develop a holistic approach in reforming said guidelines.

Various geo-environmental factors such as topography , stability , slope direction , existing vegetation , access and visual significance should be formulated for the basic premise to design in such hill towns.

Availability of land use maps ,topography maps and development ideas should be the first port of call.

3 SITE STUDY

3 SITE STUDY

3.1 AREA LEVEL STUDY:
3.1.1 PHYSICAL CHARECTERISTICS
3.1.1.1 LOCATION LAND FORM AND CLIMATE

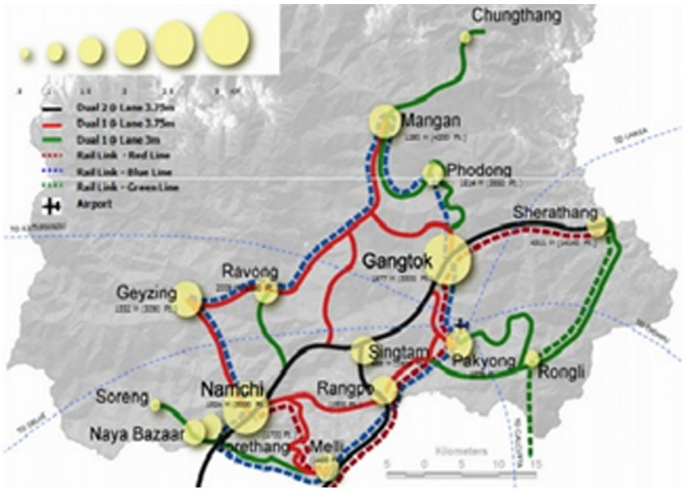
The site of the design topic is in the hill town of Rangpo, Sikkim. Rangpo is one of the main entry points into Sikkim from West Bengal(down south). Being at an influential geographical location the site is primed for rapid urbanization.

The type of soil found in this region are deep, well to somewhat excessively drained, coarse-loamy to fine with loamy surface, having slight stoniness and slight to moderate erosion.
Elevation: 300-600 m. Slope towards river.

The climate cold and humid.
The average summer temp. range is 7-21 degrees and the winter range is 1.5– 9 degrees.
The annual average rainfall is 2175 mm.

The Overall area of Rangpo is 625580 sqm.

Excluding the river the area is 554700 sqm.



3.1.1.2 DEMOGRAPHY

India’s population growth rate is 1.2%.
Population: 1.252 billion ,(2013) World Bank
Life expectancy: 66.21 years ,(2012) World Bank
Population growth rate: 1.2% annual change ,(2013) World Bank
GNI per capita: 5,350 PPP dollars ,(2013) World Bank
Fertility rate: 2.50 births per woman ,(2012) World Bank
Official languages: Hindi, English

Sikkim is India's least populous state, with 610,577 inhabitants according to the 2011 census. Sikkim is also one of the least densely populated Indian states, with only 86 persons per square kilometre. However, it has a high population growth rate, averaging 12.36% per cent between 2001 and 2011.

Rangpo has a population of 10450.
Males constitute 55% of the population and females 45%.
Male literacy is 75%, and female literacy is 68%.
In Rangpo, 25% of the population is under 6 years of age.

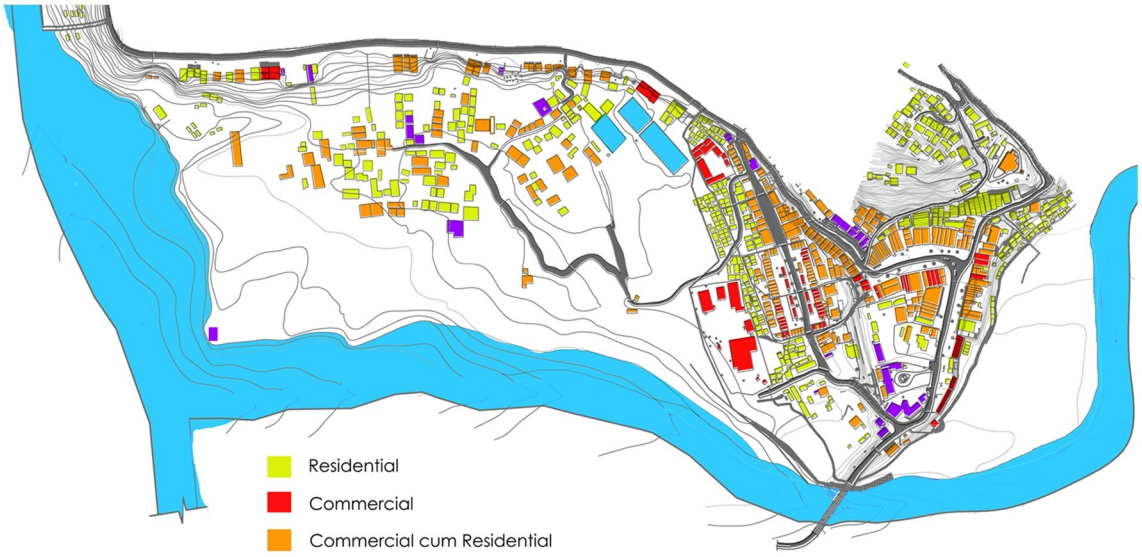
3 SITE STUDY

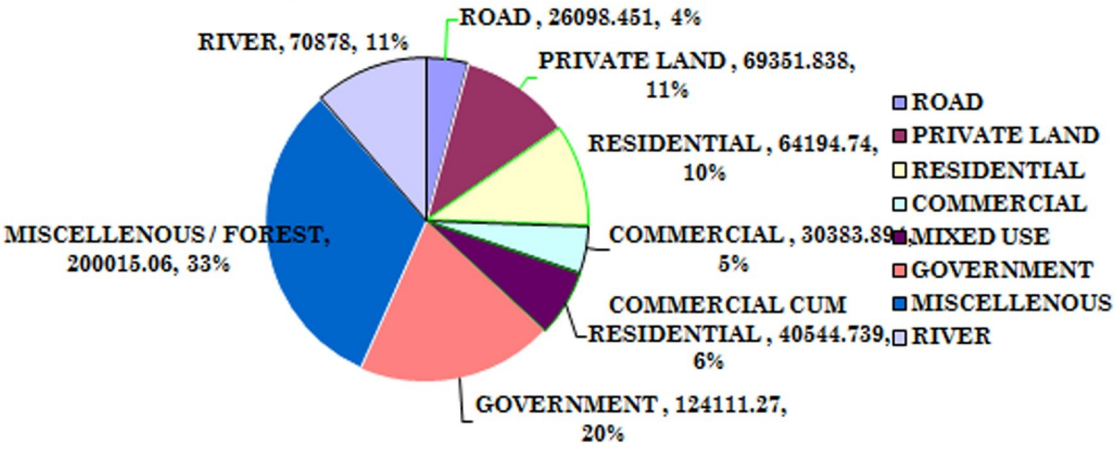
3.1 AREA LEVEL STUDY:
3.1.1 PHYSICAL CHARECTERISTICS
3.1.1.3 LANDUSE

Over the last decade, Rangpo and its adjoining settlements have extended their respective peripheral boundaries towards the formation of a collective habitation of traditional as well as contemporary manifestations of living and livelihood processes.

Present trends suggest a strong affnity of such an emerging agglomerate of erstwhile separate settlements towards the creation of a new urban centre for this region.

For a balanced growth of development, with due respect to the natural environment, a dual set of development guidelines both for ecologically identifable areas (termed as eco zones) as well as for habitation pockets (termed as development zones) are proposed.





3 SITE STUDY

3.1 AREA LEVEL STUDY:
3.1.1 PHYSICAL CHARECTERISTICS
3.1.1.5 BUILT FORM AND OPEN SPACES

Density of built-form is comparatively higher around the upper bazar.

Predominantly 2-3 Storied building is here.

Density of Built-form lowers down as it moves away from the upper bazar.

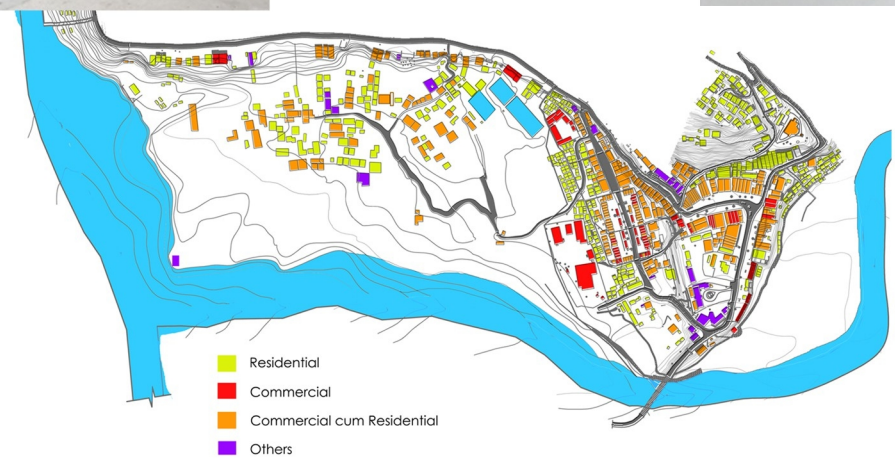
Densely placed buildings causing poor physical environment around the upper bazar.

Lots of Open space, which are not appreciated with the orientation & placement of Built-form.

The vibrancy of ther area gets enshrined in the memory of the user through its set of public spaces that allow diverse engagement and joyous participation.

Place making through design moves therefore becomes an important pre-requisite in the creation or enhancement of collective spaces of gathering and activation.

A design strategy for their respective re-vitalization and redevelopment is included as part of the place-making exercise.



3 SITE STUDY

3.1 AREA LEVEL STUDY:
3.1.1 PHYSICAL CHARECTERISTICS
3.1.1.6 GRAIN AND TEXTURE

In the whole project area mostly building has similar size in plan with the height of 2-3 storied.

But Some 4-5 storied Hotel buildings with larger ground coverage are unevenly placed in the whole urban area.

It has Coarse Grain & Uneven Texture.

3 SITE STUDY

3.1 AREA LEVEL STUDY:
3.1.1 PHYSICAL CHARECTERISTICS
3.1.1.7 FUNCTIONAL ZONES

Commercial Zone

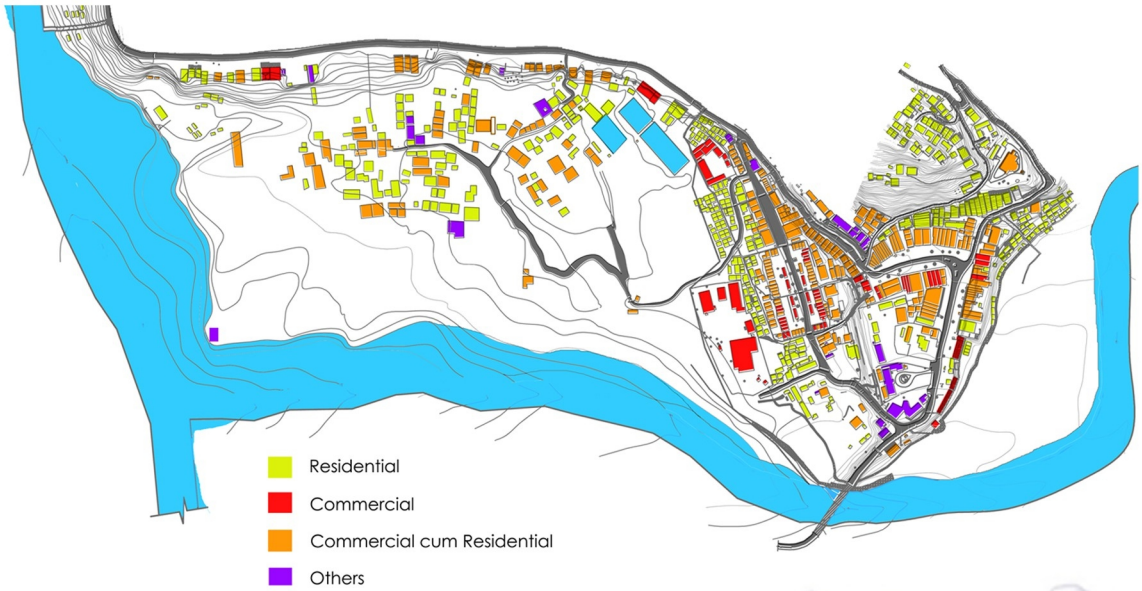
Character of various zones are very prominent with the various characteristic of Built form& activity. Though Edges of zones are not very prominent .

Residential Zone

With the high market demand various commercial activities happening into the predominant Residential Zones.

The settlement of Rangpo along with smaller peripheral habitations scattered around it in all directions are expanding in terms of its resident population thus highlighting the need for new residential growth zones. These new zones of expansion are subsequently defned predominantly by the existing landform, so as to respect the overall built form of the place.

At the unit level, the prevailing trends of replacing vernacular practices of building with alien urban imports have affected expressions of identity at all levels of the sub-region and the settlement. Three dimensional design guidelines for overall form, construction systems, façade treatment, material palette, applied decoration are all articulated to inform future development of the building unit.



3 SITE STUDY

3.1 AREA LEVEL STUDY:
3.1.1 PHYSICAL CHARECTERISTICS
3.1.1.8 ROUTES

At the local level, the emerging movement network has been the most important inducer of physical expansion in this sub-region, with intensifying development in all the settlements.

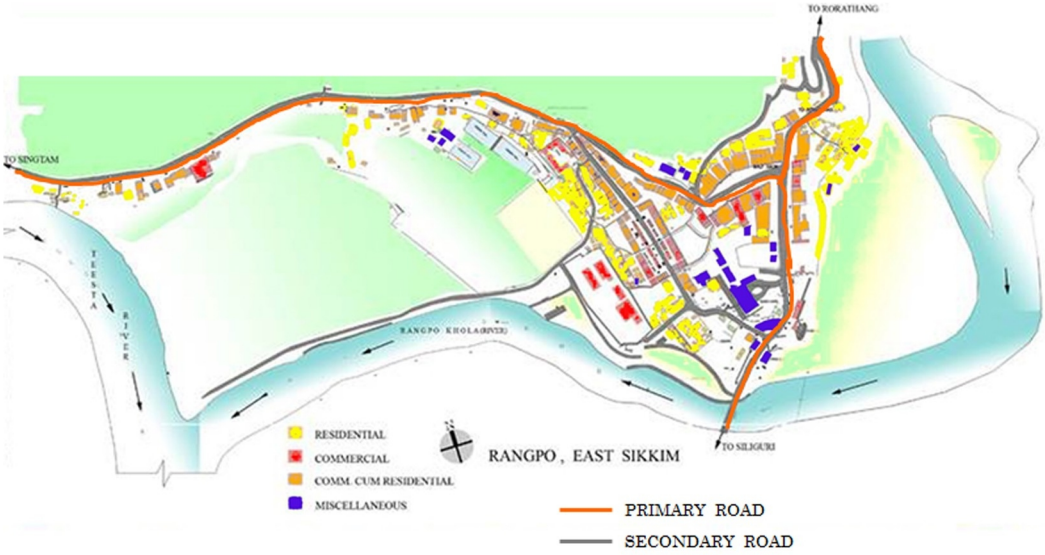
Construction related activities as well as road widening have had direct impact on natural environment particularly in terms of air quality. Growing demand for public transport in form of public buses and private taxis has also been observed in the town.

Hence, this basic public transportation system existing in the town needs to be strengthened with alternative modes of transportation such as cable cars, eco-friendly maxi-cabs or mini buses connecting Bharmour with the surrounding villages and other important destinations.

A disaggregated parking strategy is also being proposed, in order to distribute vehicles in small pool-parking lots along existing built clusters or as central points for new development. Multi-modal transit points including maxi-cab / bus stops, cable car platforms and parking facilities combined with pedestrian amenities like drinking water, seaters, public phone, toilets etc are to be positioned at various points of the settlement fabric to ensure ease and comfort of movement.

The overall strategy for movement prioritizes non-motorized and public means of transport over personalized vehicular modes.

The dependence on private motor vehicles is to be diminished through convenient point to point movement along primary desire lines.

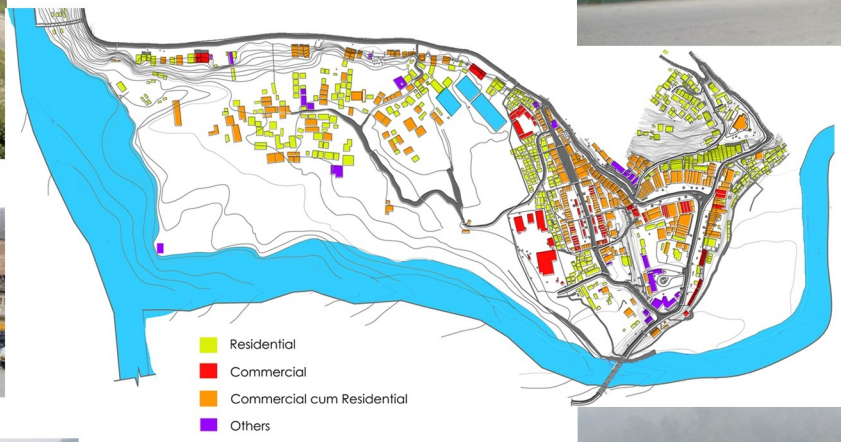


3 SITE STUDY

3.1 AREA LEVEL STUDY:

3.1.1 PHYSICAL CHARECTERISTICS

3.1.1.9 EDGES ,LANDMARKS AND NODES



At the settlement level, the sequential experience of the place as one traverses through it, is enhanced through specifc guidelines along recognized corridors of imagery that help contribute to the formation of collective memory and association with this area.

Such ‘image corridors’ get strengthened through identifable markers and nodal points with corresponding guidelines to improve sensory experiences all along them.

Views and vistas to the landscape around, especially of signifcant features and focal points, are mapped and protected through proposed guidelines.

‘Edge’ defnition along primary movement spines should be proposed. While a stretch along the river side should be developed as the ‘Village Introduction Skyline’.

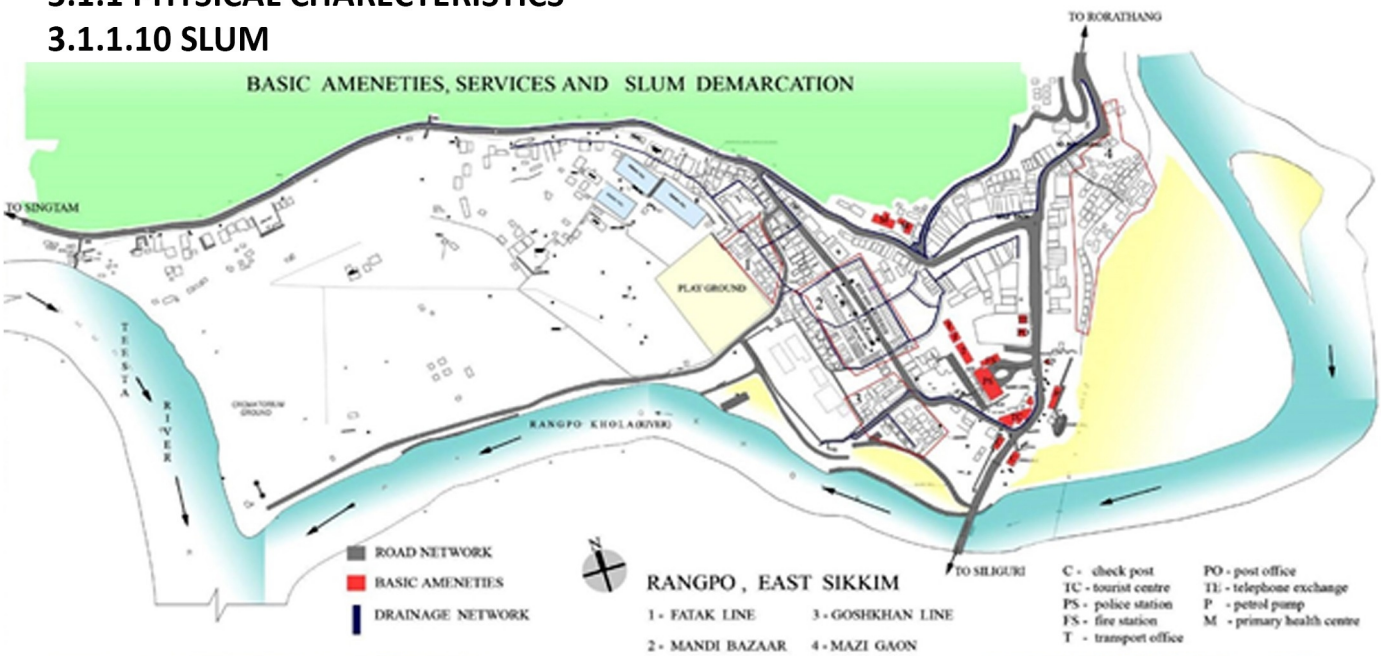
Built activity would be distributed along lines of connectivity. A graded intensity of development reducing gradually from the edge of primary movement spines up to a designated depth along it and dispersing within the natural domains that surround the natural settlement would form the future growth pattern of this area.

3 SITE STUDY

3.1 AREA LEVEL STUDY:

3.1.1 PHYSICAL CHARECTERISTICS

3.1.1.10 SLUM



3.1.1.11 WATER SUPPLY AND DRAINAGE & SEWERAGE SYSTEM

WATER SUPPLY

AREA COVERED WITH PIPED WATER SUPPLY
AREA NOT COVERED WITH PIPED WATER SUPPLY

DRAINAGE & SEWERAGE SYSTEM

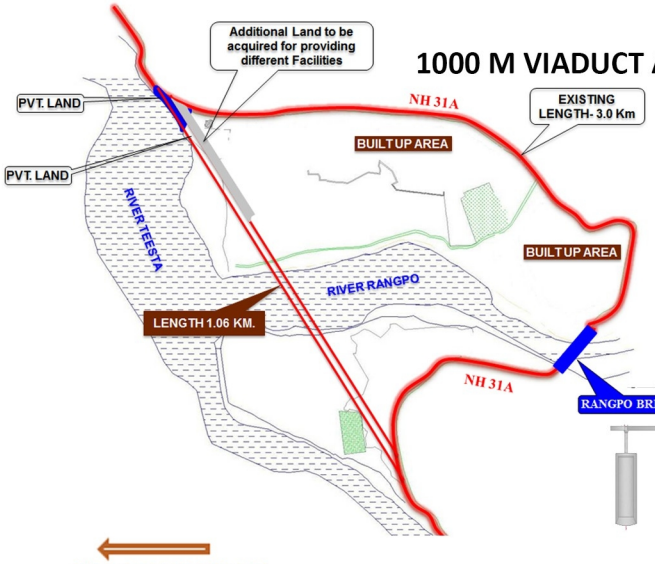
AREA COVERED WITH SEPTIC TANK CONNECTION
AREA NOT COVERED BY SEPTIC TANK CONNECTION

3 SITE STUDY

3.1 AREA LEVEL STUDY:

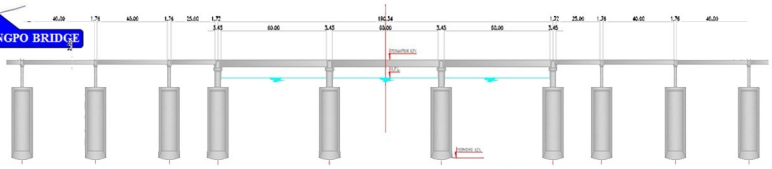
3.1.1 PHYSICAL CHARECTERISTICS

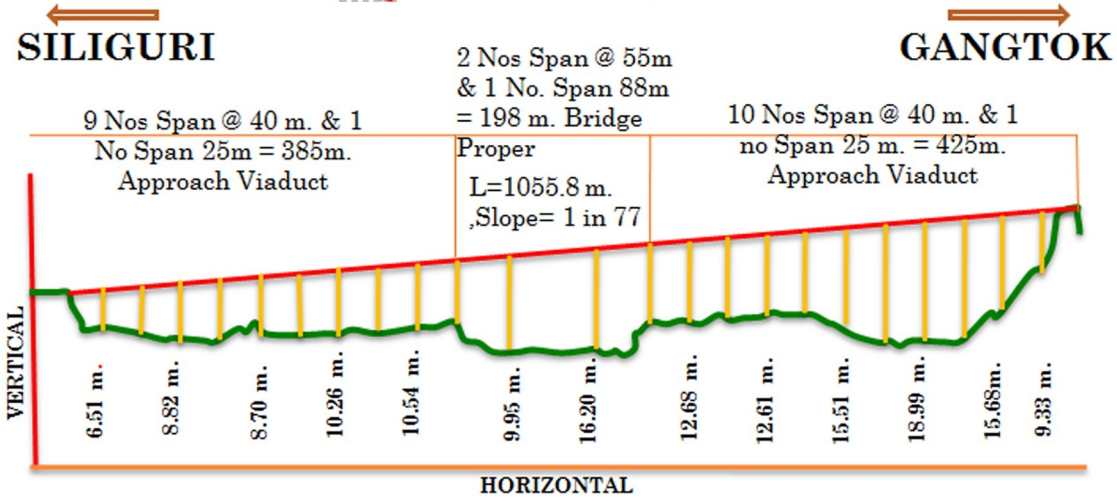
3.1.1.12 PROPOSED VIADUCT RAIL STATION



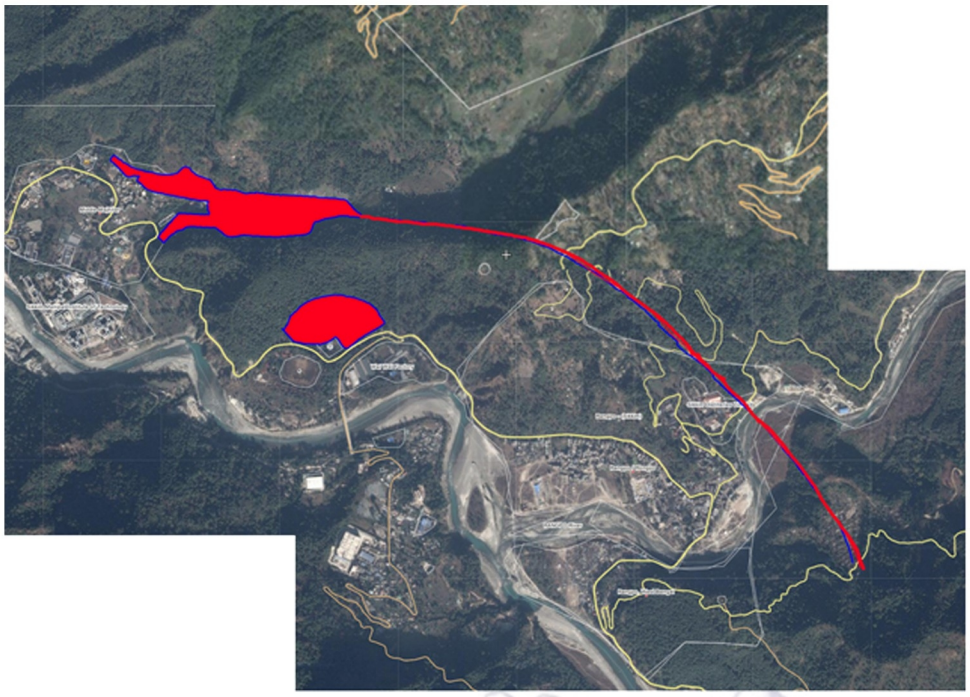
1000 M VIADUCT AT RANGPO

simply Supported Prestressed Box / Girder – slab type structure





52.7km longBroad Gauge Rail Link between Sivok in West Bengal and Rangpo in the state of Sikkim with future connectivity to Gangtok



3 SITE STUDY

3.1 AREA LEVEL STUDY:

3.1.2 CONCLUSIONS:

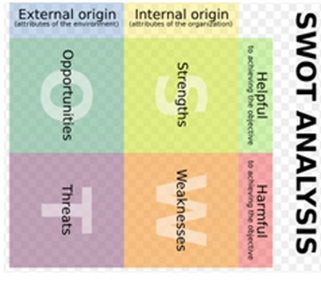
1. The poor quality of physical environment affecting the image of the town.
2. Uncontrolled growth of built form should be controlled to restrict the more congestion.
3. There are lots of vacant open spaces which are not defined for any particular activity.
4. Lack of public space for amenities and entertainment.
5. Pathways are very congested by illegal parking.
6. Riverfronts are not used for any public activities.
7. Lack of proper vista with some landmark building at the end of the vista.
8. Interesting views are not properly maintained.
9. Haphazardly placed name-plate of shops, hotels & ad-sign board creates chaotic environment in streetscape obstructing the view of buildings.

3 SITE STUDY

3.1 AREA LEVEL STUDY:

3.1.3 SWOT ANALYSIS:

	STRENGTH	WEAKNESS	OPPORTUNITIES	THREATS
Environmental				
River	The rivers are eminent landmarks	River edges act as a dumping grounds	The river has a potential for development as a recreational/ plaza space.	The riverfront can encourage encroachment, poor sanitation, and health issues.
Open spaces	Open spaces may be converted into parks for the locality, thereby enhancing the quality of spaces in the neighborhood		Open spaces can be associated as a theme for the neighborhood. Networking open spaces can integrate the area.	Open spaces are mainly used up for haphazard construction
Waste management		Poor waste management is remarkably perceptible on the street and the river edge	Waste management issues can be worked out at community level so as to make it a livable social order	Waste management if not addressed immediately may lead to more unhygienic setting
History				
Town scale		Lack of existing structures with historical importance	Adding landmarks to promote the overall image of Rangpo	
Infrastructure				
Public transit	Public transit mode is available via NH 10.	NH 10 happens to be the only interstate transport facility.	More modes of public transit will be developed	
Social infrastructure	Mandi Bazaar and Upper bazaar are interaction zones	Lack of recreational activities. Lack of public amenities	The open spaces and riverfront can be used to create public plaza	Riverfront can lose its importance if steps to improve the edge conditions are not taken
Parking		Parking is inadequate at many places.	Opportunity to create parking spaces in the secondary streets	Vehicle parking can become a serious issue if not addressed immediately and may lead to congestion
Morphological Dimension				
Built v/s open space	The presence of open spaces have a positive interface with the built envronment	Lack of connectivity between open spaces	Improving access and visibility of the open spaces	Many open spaces may remain unutilized due to poor accessibility and other reasons.
Urban block		Hotels buildings create negative edge with the street, with limited porosity	Can be made more porous	Rapid urbanization will lead to unforseen circumstances
Public realm	Visually appealing views to the rivers and hills	Most of the views towards the rivers and hills are blocked	Opportunity to provide public plazas	The inaccessible spaces may become places for unsocial activities



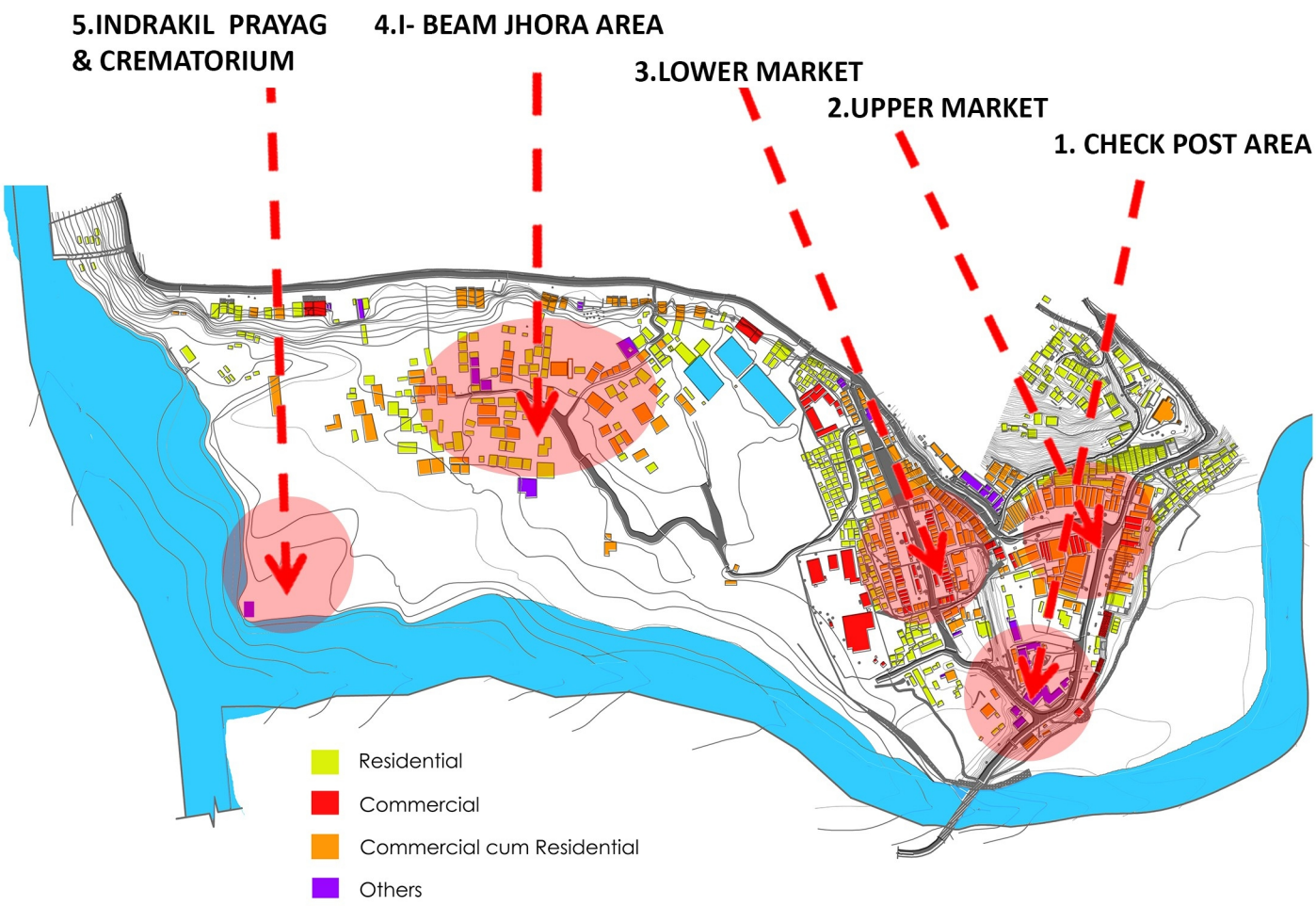
3 SITE STUDY

3.1 AREA LEVEL STUDY:
3.1.4 IDENTIFICATION OF ZONES

Understanding the existing character of a settlement is essential for its long-term sustainable development. The character of a place is an accumulation of its physical aspects but equally also of its landscape, ecological and cultural context. Various ecological and development zones have been identifed based on the varying character of the settlement.

The following development zones have been identifed on the basis of their position within the settlement, their relationship with the landscape and topographical context, their development density, character and primary land-use.

1. CHECK POST AREA
2.UPPER MARKET
3.LOWER MARKET
4.I- BEAM JHORA AREA
5.INDRAKIL PRAYAG & CREMATORIUM



3 SITE STUDY

3.1 AREA LEVEL STUDY:
3.1.4 IDENTIFICATION OF ZONES

1. CHECK POST AREA

The layer of Public buildings around check post constitutes the next character zone. Contributing to the publicness and activity in the square, these public buildings include schools, library, eateries etc. These buildings form a distinct visual vocabulary owing to their relatively larger built volumes as compared to residential or commercial buildings and building elevations imbibing urban aesthetics.

2.UPPER MARKET

Routes from all neighboring hamlets converge to the upper market, placing it at the confuence of a dense vehicular and pedestrian network that defines the internal movement pattern exceedingly utilized by locals. Its central location, superior connectivity, physical forms as a public square, together with the public buildings around check post establishes it as the nucleus for not only Rangpo but the larger agglomerate as well.

3.LOWER MARKET

Bazaar Street is a mixed use zone with primarily retail on the ground foor and residential on higher foors.The constituent buildings are exemplary examples of vernacular heritage in domestic hill architecture. The clusters formed by their grouping are also unique patterns emerging from social, topographical and climatic concerns of the region. Forces of modernization within the residential core is altering the face of architecture
with modern construction and urban aesthetic being adopted at a fast pace.

4.I- BEAM JHORA AREA

Being primary pedestrian movement lines connecting various settlements, new development is most prominent along these. Commerce in form of retail stores are visible along these paths especially along the more used ones like the one leading to lower market area. The rate of change will be most accelerated in the i - beam jhora area. Most buildings are mixed use with only a few tourist facilities and commercial buildings. Due to its position, this area will witness rapid growth with rising demand. Also, the area due to its advantageous location and public ownership has the potential to be developed as an important public node in future.

5.INDRAKIL PRAYAG & CREMATORIUM

As a social and religious space along with public functions catering to all sections of user-groups, this zone qualifes as one of the unique heritage spaces of a hill settlement like Rangpo. Developments within and around this area need to recognise, protect and complete the signifcance of this space. The need for differentiated design guidelines addressing the multiple dimensions of the space gives rise to a separate set of suggestions for future development of this sensitive precinct.

4 URBAN DESIGN APPROACH

4 URBAN DESIGN APPROACH

VISION:

1.
Protection of the natural and ecological setting while ensuring equitable access to environmental resources.

2.
Defining horizons of growth while recognizing existing domains of rural habitation and their inter-dependencies.

3.
Strengthening the multi-functional base of Rangpo while widening opportunities for livelihood choices and capacity enhancement.

4.
Establishing an efficient system of circulation and networking so as to enable free interchange and engagement within and across constituent settlements.

5.
Uphold and strengthen the identity of this tribal Himalayan settlement and nurture the spirit of this place as a unique cultural repository.

DESIGN FOR:

Boosting tourism and business.

Infrastructure- capacity building.

Uplift local economy.

Prevent haphazard growth.

Solve congested town core.

Slum development.

Create promotable images.

ELEMENTS:

PHYSICAL SETTING NETWORK AMONG PUBLIC PLACES	TO BE RETAINED
PUBLIC REALM PUBLIC PLACES SLUMS	TO BE IMPROVED
ECOLOGICAL GROTH RAILWAY AND VIADUCT RELATED ISSUES	TO BE IMPLANTED

4 URBAN DESIGN APPROACH

In order to ensure that Rangpo retains its original charm and is not reduced to a faceless, tourism-invaded town, the Design Guidelines are proposed in simple but comprehensive and enforceable language, leading to a cleaning up of existing confused façades and creation of a harmonized face with local character beftting
Rangpo.

The proposed Design Guidelines are not to be rigid, but suffciently prescriptive to generate the desired character. Design guidelines are therefore a set of simple design rules that set out design parameters for an area. Based on a thorough understanding of a settlement's intrinsic existing character, design guidelines help establish relationships between its various elements – both built and natural.

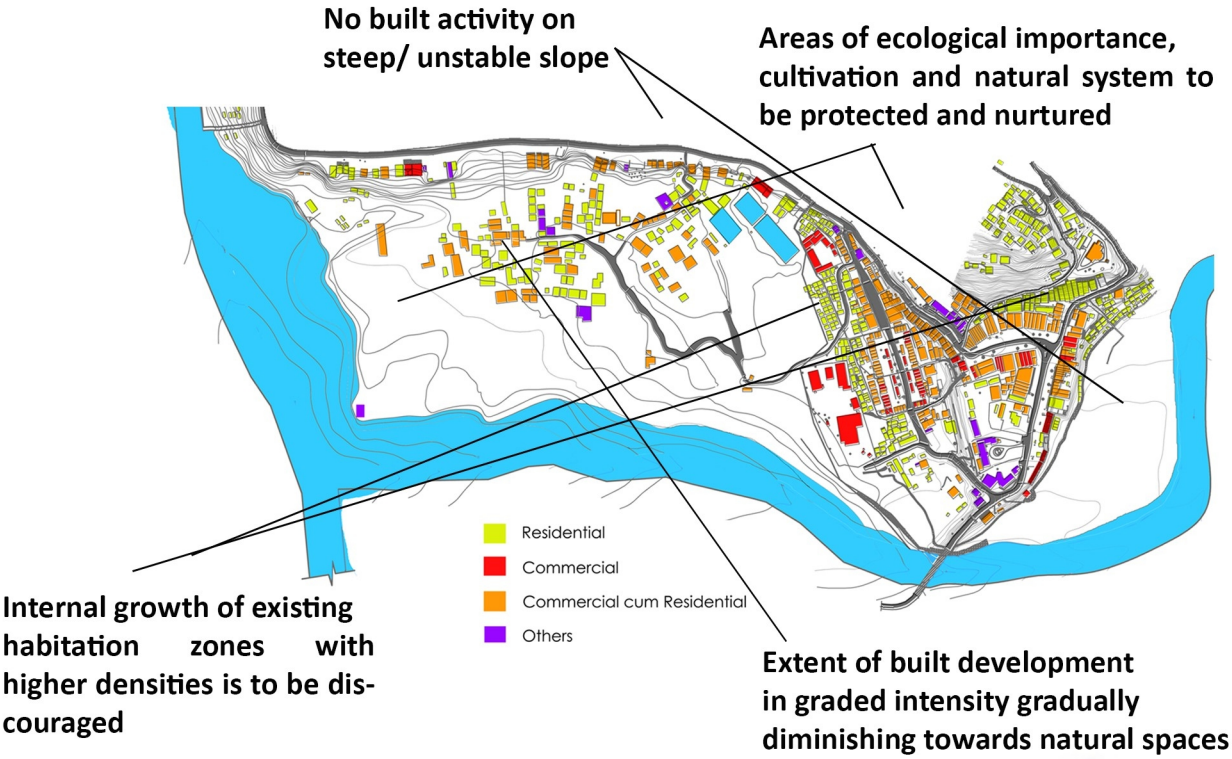
The Design Guidelines will have a varied group of users. They are to be used by individual plot owners, developers, architects as well as local planning authorities. Landowners, developers and architects are to refer to the guidelines when proposing and preparing designs for any new development or for making alterations to existing buildings.

Based on the above understanding of the traditional core, design guidelines for this zone have been formulated at two levels. Firstly, an individual component-based set of detailed guidelines with respect to built environment, spatial design, building height, architectural character etc. Secondly, visual experience-based guidelines at the larger traditional core level.

APPROACH:

1 ENVIRONMENT AND DEVELOPMENT

To restore the balance between the regional ecology of Rangpo and develop through a series of pro-active, differentiated policy and design moves from macro to micro levels that harmonize growth imperatives with natural processes.

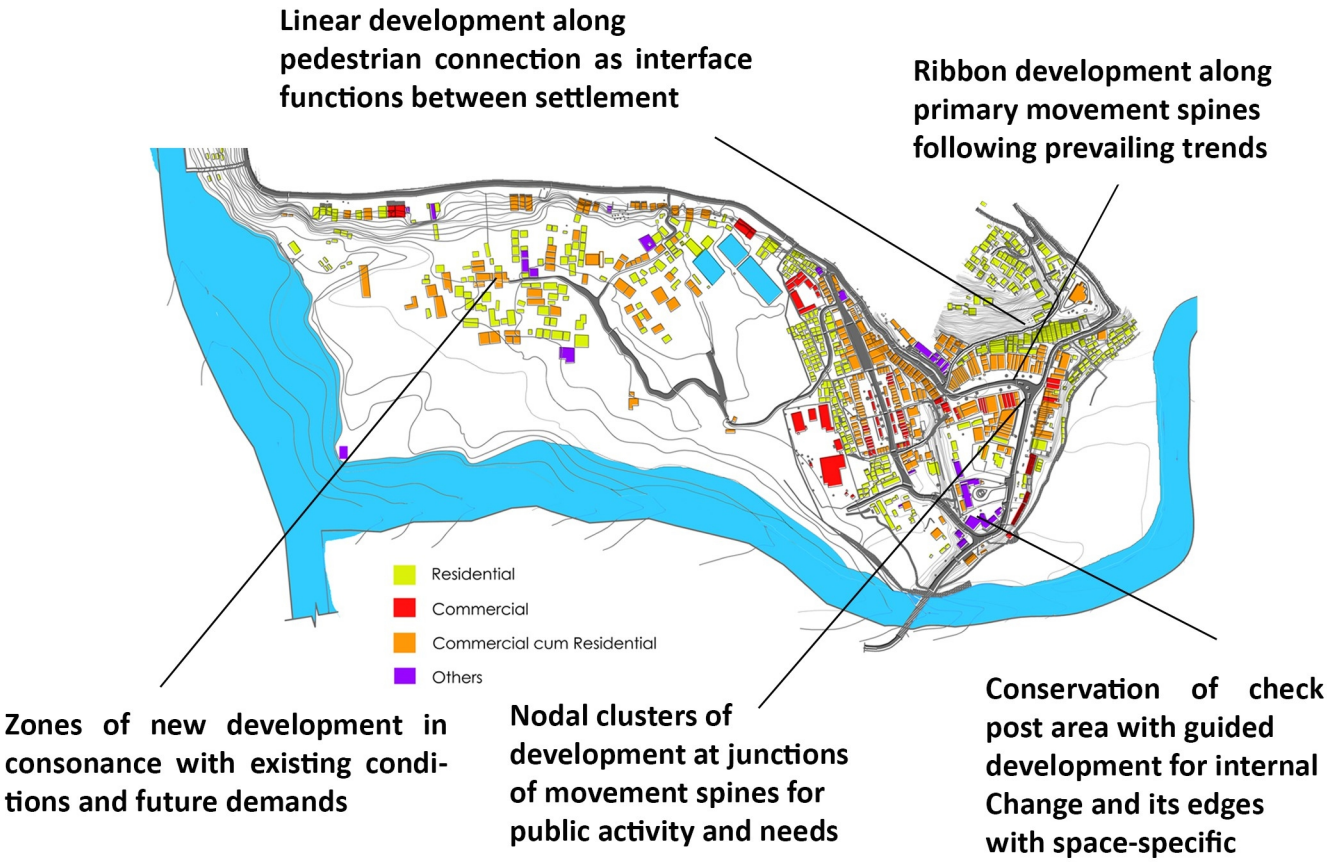


4 URBAN DESIGN APPROACH

APPROACH:

2 SUB-REGIONAL NETWORKING

To strengthen physical, cultural and socio- economic networking between Rangpo and surrounding settlements in the sub-region towards an inter-dependent collective of mutually beneficial communities.



3 BUILT CHARACTER AND IMAGE

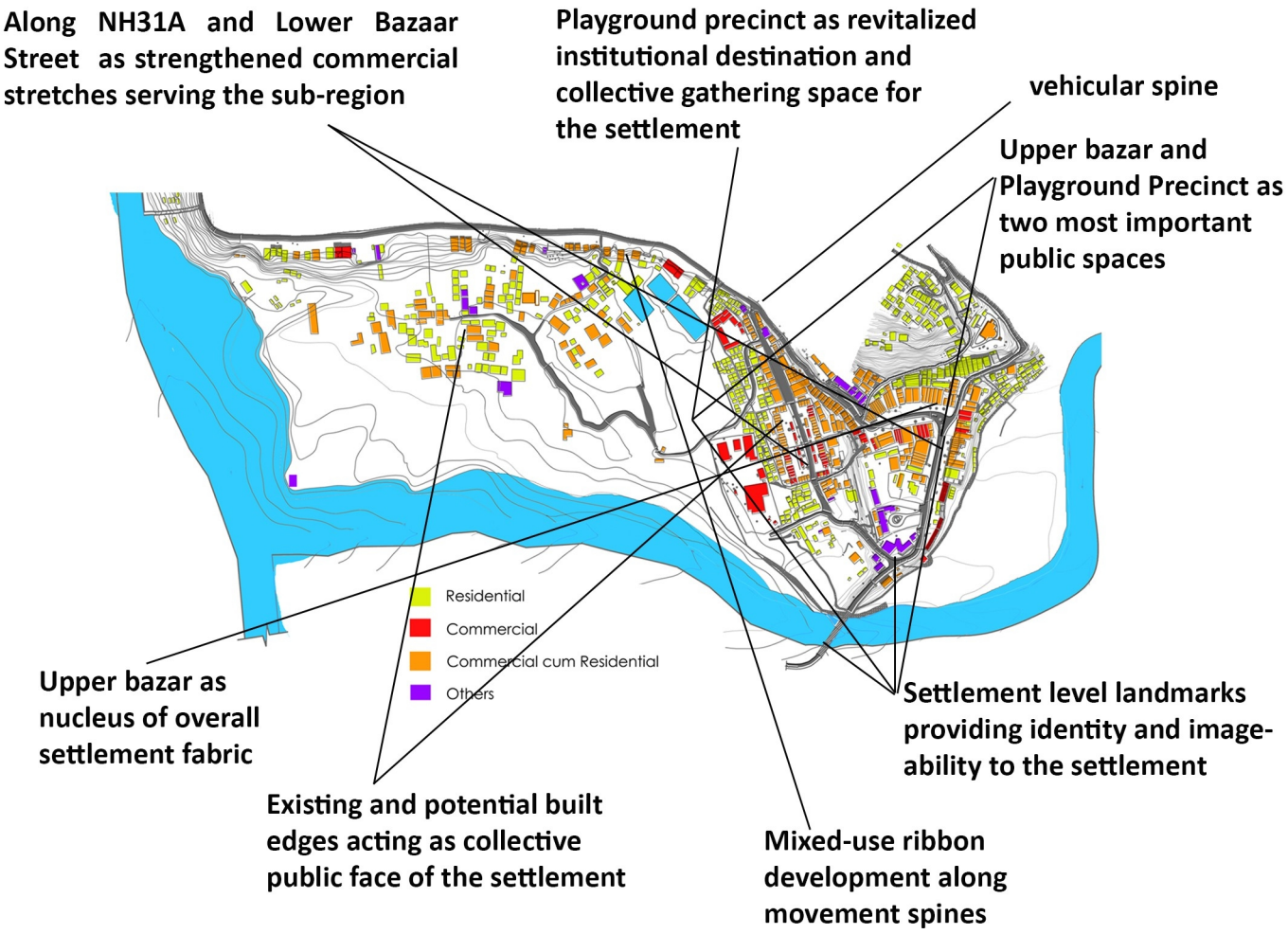
To restore the application of vernacular building principles so as to arrest present trends of loss of identity while developing new elements of image ability through creation of nodes, orientation markers and character zones.

4 URBAN DESIGN APPROACH

APPROACH:

4 FUNCTIONAL BASE

To establish a public precinct of diverse shared functions in Rangpo serving the sub-regional as a whole in compliment to the existing tourism activity so as to catalyze and reinforce inherent local productivity while ensuring diversity of economic choice.



5 CIRCULATION AND MOVEMENT SYSTEMS

To strengthen connectivity across the settlement through incorporation of an efficient, environ-friendly public transport system at the sub-regional level so as to minimize personal motor vehicle ownership while prioritizing walkability, non-motorized and public modes of transport.

5 URBAN DESIGN GUIDELINES

5 URBAN DESIGN GUIDELINES

ZONE 1: CHECK POST AREA

Entry point

The design of entry point is very much important to the overall experience of the public square for its visitors.

The entry definition could range from introduction of gateway structures, design of entrance through distinctive paving, information plaques, facade control for buildings around the entrances etc

View Corridor

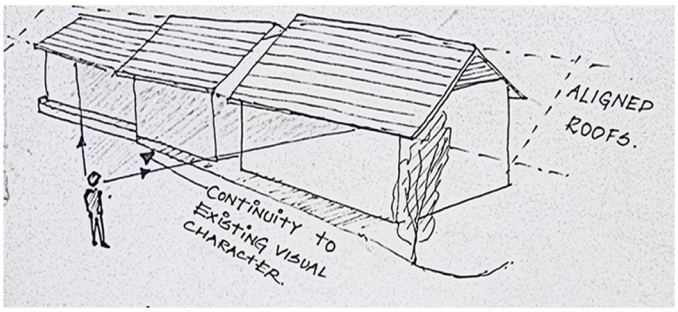
No additional development is to be introduced to obstruct some of the existing view corridors.

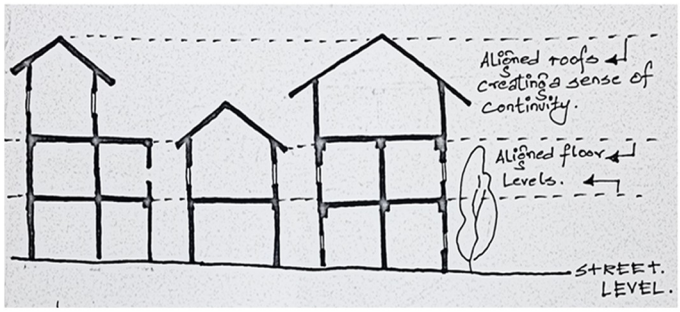
Roof forms:
The vernacular sloping slate roof is an important component of the visual experience.

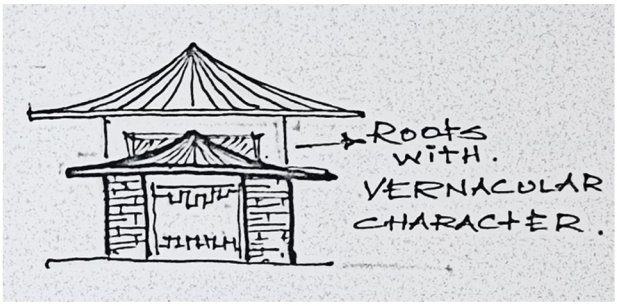
Therefore, in addition to considerations of the local climate all new buildings are to have sloping roofs so as to provide a continuity to existing visual character.

Roofs could either be aligned along the length of the street or with gables perpendicular to the street.

Roofing with metal corrugated sheets or MCR tiles are to follow the prescribed palette of shades. CGI sheet roofing without paint is not to be adopted in this area.







5 URBAN DESIGN GUIDELINES

ZONE 1: CHECK POST AREA

Building Materials and Colour palette:

To provide continuity to vernacular character of the visual experience, new buildings should follow vernacular architectural vocabulary like the enclosed balcony etc.

Reuse of traditional building materials a confluence of traditional building principles with modern materials should be encouraged.

The use of colour from a selected mineral palette is to be permitted.

Landmarks:

Within this zone the entry gate because of its scale and volume forms a landmark in the skyline.

Public architecture/ interventions like this should act as demonstration projects so as to set a positive example for future development trends in consonance with existing character.

Trees:

All mature trees to be retained as they form an important component of the

5 URBAN DESIGN GUIDELINES

ZONE 2: UPPER MARKET

Pattern of development

Built development in future along this stretch is envisioned to be a balanced outcome of built and natural domains as part of the street experience.

While the urge to build all along this main connector is understandably high, the formation of a continuous “wall” of built edge is to be avoided.

The need for associated open space alongside buildings is to be addressed through suggested distance between building blocks that allow natural spaces to foster and be nurtured.

The overall density of the built to open also diminishes gradually from the road edge to cultivation areas so as to offer graded response to the natural setting that this place already enjoys.

Town introduction Skyline

1. Two visual markers, first in the upper bazar area at one end and second at the turn of the road are to be created as anchors to mark the beginning and end of the stretch as well as to frame the view.

2. The road edge on the upper slope to be designed as a definite boundary to overcome the existing visual clutter and further enhance the view.

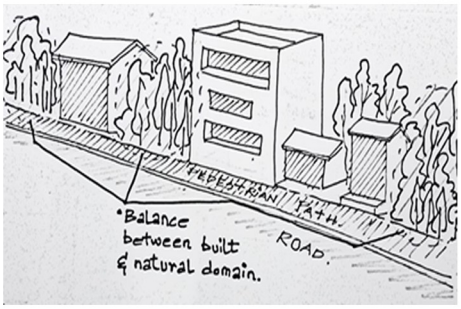
3. All new developments along this stretch to follow building proportions and principles identified in regional vocabulary to positively contribute to the town skyline.

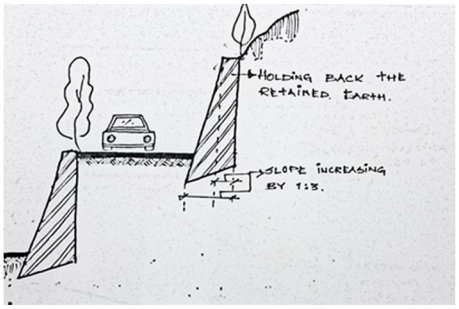
Street structure

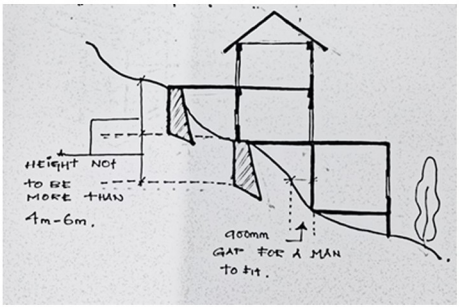
1. Entry elements to be installed to mark the junction where pedestrian paths meet the road level to add to the street experience.

2. Viewing decks along the road edge to be created at intervals to embrace the excellent view of the valley offered by this stretch.

3. Buildings to be setback by 3m from R.O.W on the lower slope and 2m on the lower slope.

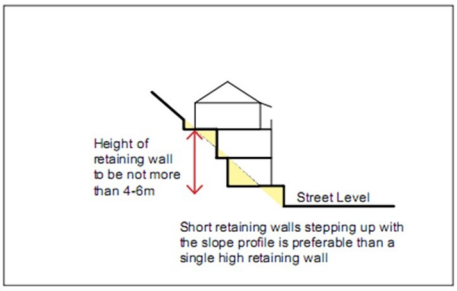






5 URBAN DESIGN GUIDELINES

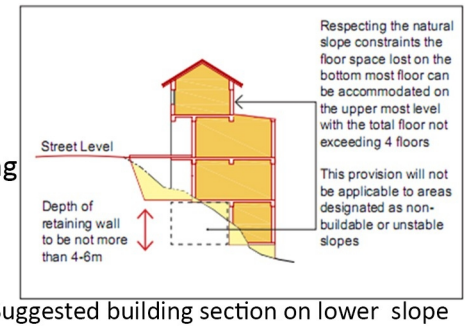
ZONE 2: UPPER MARKET



Suggested building section on upper slope

Facade treatment –
(a) Building along a slope

Using the 'cut and fill' technique is a good precedent for building along a slope and is to be followed.
The resulting stepped profile adds character and variety along the street.
The maximum height of a retaining wall should not more than 4-6m. It is however preferable to construct a stepped arrangement of short retaining walls with respect to the profile of slope.



Suggested building section on lower slope

(b) Building proportions and mass

New insertions or renovation of existing structures should follow building proportions and principles identified in regional vocabulary.

(c) Roof Form

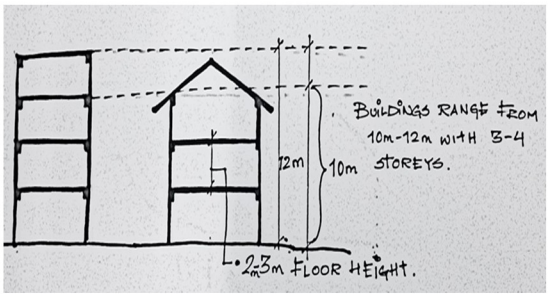
This stretch has of sloping roofs both in traditional slate and CGI. While new buildings under construction with fat RCC roof can also be found intermittently.

Since this stretch forms part of an important image corridor and addition, due to considerations of the local climate apart from reinforcing traditional building techniques and forms, all buildings are to have sloping roofs. These could either be aligned along the length of the street or with gables perpendicular to the street.

The use of dormer windows, attic gables, solar roofing panels are to be encouraged where appropriate.

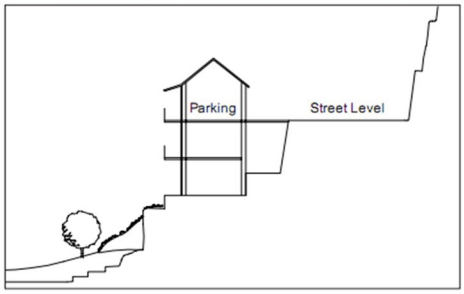
Building Height

Buildings in this zone vary in height from 2 to 4 stores.
The total height of the buildings should range from 10 meters to 12 meters with floor to floor height ranging from 2.0 meters to 3 meters.

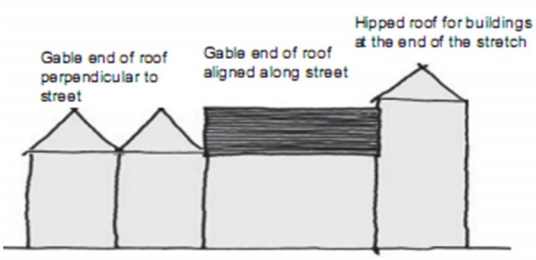


Parking

Off-street parking and Pool parking only at designated areas are to be encouraged.
However, where necessary individual parking requirements to be accommodated within the buildings.



Suggested building section - parking within the building



Sloping roofs aligned along the length of the street or with gables perpendicular to the street


Solar Panels on sloping roof

5 URBAN DESIGN GUIDELINES

ZONE 3: LOWER MARKET

Street Structure

Nodes to be developed along the Lower Bazaar Street to enhance the experiential quality of the place along with articulation of any entrances or passages to the rear side of the buildings.

Views and skyline

The view point on the Lower Bazaar Street are to be preserved and developed as a nodal space, ensuring that future construction does not obstructed the view.

The skyline of the Bazaar Street has the potential to be developed as a distinctive feature highlighting its significance to the settlement. One of the ways, this can be achieved is through ensuring all sloping roofs follow with a color palette decided by the local community.

Visual introduction of mountain from the Bazaar Street to be enhanced by improving visual permeability from the street into the complex.

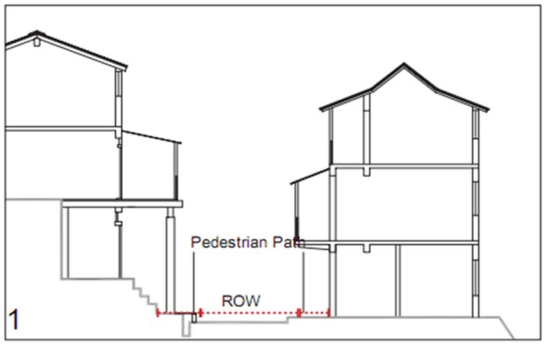
Building Frontage and Street Character

A continuous pedestrian realm will be created as far as possible along the road edge by ensuring at least 1m space is reserved for pedestrian movement.

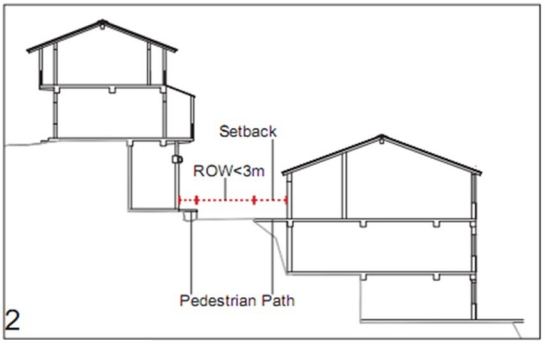
In case building plinth level and road level are vertically separated the pedestrian zone will be created at the road level, with a verandah at the building level.

In cases where ROW is less that 3m or less the buildings on the downward slope will be suitably offset (minimum 1m) to allow solar access and ease congestion.

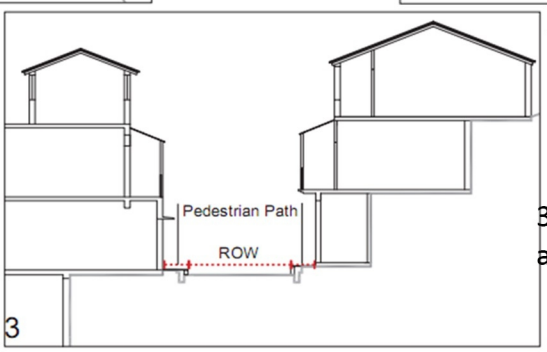
The smaller junctions on the road can be articulated using gateways, seating arrangements, landscaping etc.



1. If both the edges are at different level



2. The width of the road is less than 3ms



3. If both the edges are at the same level

5 URBAN DESIGN GUIDELINES

ZONE 3: LOWER MARKET

Pattern of development

In the absence of physical extension of this area, further densification in the zone can be expected by utilization of the vertical dimension.

This growth into be restricted to ensure solar access to the street and maintain human scale of the street.

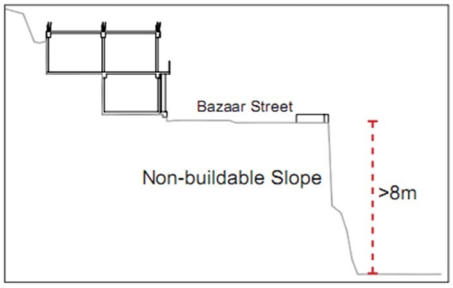
A continuous edge for the Lower Bazaar Street will be developed, with the exception of areas where steep contour does not support development.

Facade treatment –
(a)Building along a slope

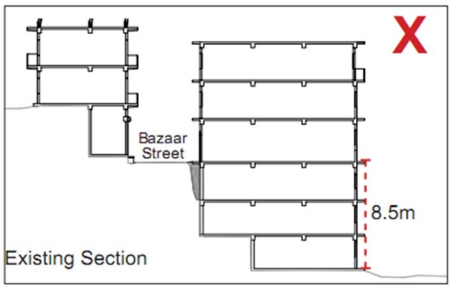
Buildings within this zone tend to step up or down along a slope.

Using the 'cut and fill' technique is a good precedent for building along a slope and will be followed. The resulting stepped profile adds character and variety along the street.

Street edges where the buildable base is lower than 8m from road level and/or where slopes are too steep and unstable, such stretches will be considered non-buildable.



Building on steep slopes is to be discouraged

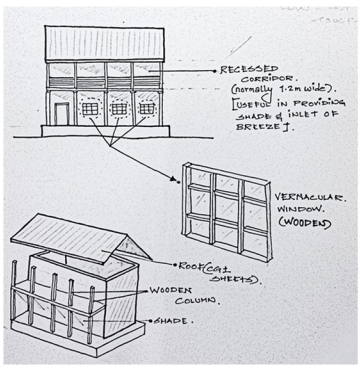


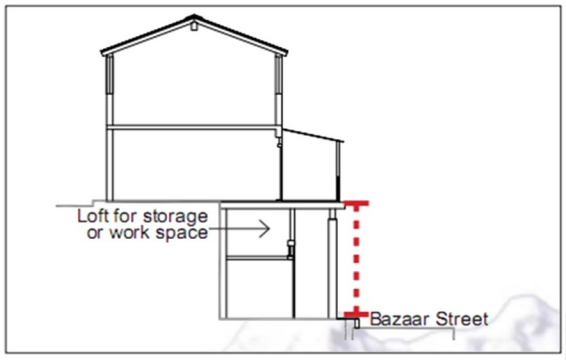
(b) Ground floor height

Ground floor height within the zone varies considerably. This visual inconsistency is aggravated by non-uniform signage.

A consistently higher floor to ceiling height for ground floor uses is recommended for this zone.

Owing to the primarily commercial nature of he Bazaar Street a higher ground floor can accommodate a loft for storage or work space





5 URBAN DESIGN GUIDELINES

ZONE 3: LOWER MARKET

(c) Higher Floors

The facade on the higher floors is defined by recessed balcony with signage or hoarding hanging on theouter surface. The balconies are typically open with only a railing and no posts.

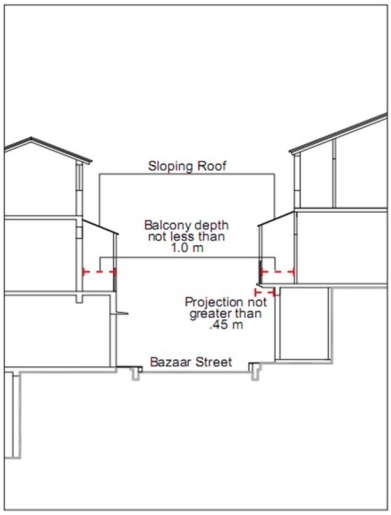
A balcony will be provided on the higher floors towards the Bazaar Street with minimum depth of 1.0m.

The uppermost balcony roof is to be a sloping roof.

The railings on the upper floor balcony will form a continuous horizontal band on the building facade.

This will be subdivided at regular intervals by introducing vertical posts extending from the top of the slab till the base of the roof.

The upper floor can extend to a maximum of .45m into the ROW.



Vertical elements in the form of posts or columns can to be added to the facade of upper floors for greater enrichment.

(d) Roof Form and Color

A majority of buildings within the zone have sloping roofs. Both CGI and slate roofing can be observed in the zone.

All buildings are to have sloping roofs. Vernacular roof forms and elements such as the gable skylight, decorated ridge beam, eaves board, facia etc. can be incorporated where ever possible even in new buildings.

Slate roofing or MCR tiles should be used wherever possible.CGI sheet roofing has to be painted in accordance with the color palette decided by the local community.

5 URBAN DESIGN GUIDELINES

ZONE 3: LOWER MARKET

(e) Openings and balconies

Vernacular buildings followed a system of closed balconies and this has been discontinued in modern constructions in favor of a system of open balconies and windows in varying sizes and proportions.

The system of closed balconies is to be encouraged utilizing the vernacular proportioning system.

The proportion of voids to solids in a facade will also need to be controlled for climatic, energy saving and aesthetic considerations. This, however, requires further study

New construction should incorporate the vernacular building proportions to arrive at a visually rich elevation; use of local motifs, traditional paintings in the building elevation is highly encouraged.

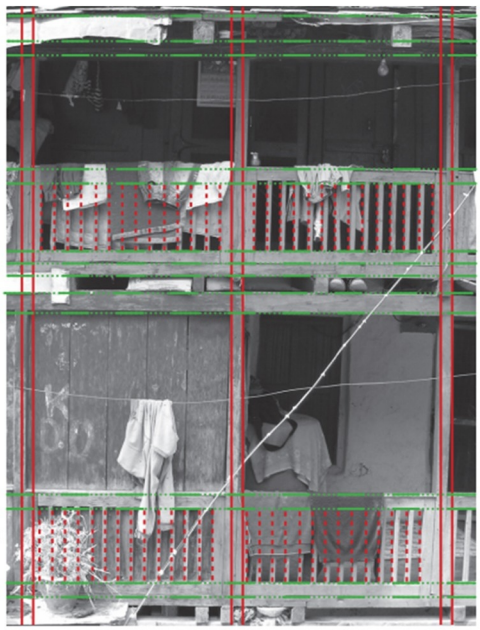
South facade should be more permeable, with windows utilizing glass to maximize sunlight penetration. While allowing for greater heating through 'green-house effect

(f) Building proportions

Large horizontal blocks are subdivided into shops on the ground floor, with continuous elevation on higher floors. Few examples on vertical blocks can also be observed.

The verticality of the building is to be underplayed by enhancing the horizontal lines in the facade and sub-dividing the vertical face using shop bays and/or with decorative components in similar proportions.

lines are to be emphasized in the elevation



The vernacular proportion system sub-divides the elevation using horizontal and vertical elements

5 URBAN DESIGN GUIDELINES

ZONE 3: LOWER MARKET

Functional Distribution

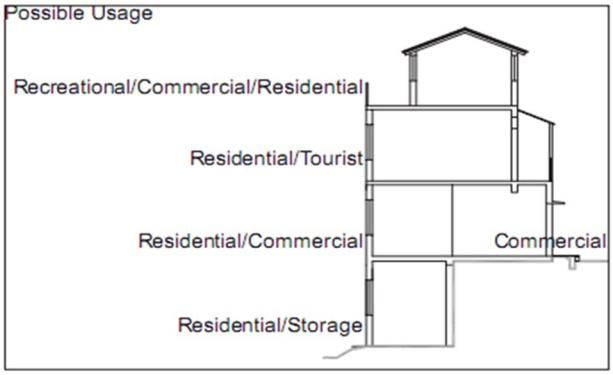
This is a mixed use zone with retail on the ground floor and residential or tourist facility on the higher floor.

The mixed use character of the zone is to be maintained. Residential use to be encouraged on the upper floors both as self use and rented accommodation.

Home stays can also be located along this stretch, by fulfilling the requirements under the State Home Stay Policy.

The top floor of the building may also be utilized for commercial purpose such as roof-top restaurants.

Complete commercialization of the building should be discouraged.



Mixed use character of the Bazaar Street is to enhanced

Building Height

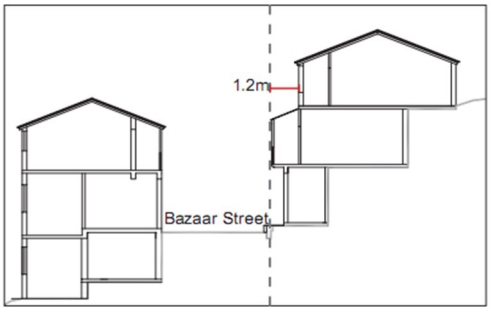
Buildings vary in height from 1 to 3 storeys, with few notable exceptions. The trend of renovations and additions to the existing buildings is evident that will see an increase in building height.

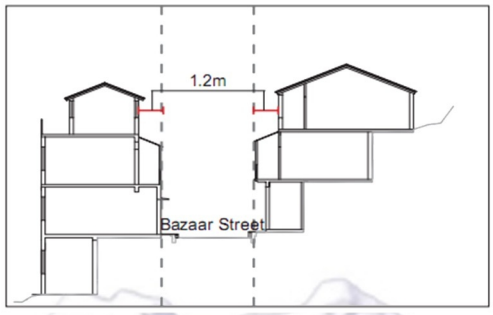
A building unit is to go up to a maximum of three levels from the base, with step back of a minimum of 1.2 m from road side after two foors. There will be a sloping roof on the balcony created below the setback.

The maximum height of the buildings excluding the roof and the plinth should not exceed 9 m with foor to foor height ranging from 2.0 -3.0 metres.

The foor facing the road can have a height upto 4.5 metres.

Increase in height of an existing building should ensure that it does not obstruct solar access for neighboring buildings or the street.





5 URBAN DESIGN GUIDELINES

ZONE 4: I- BEAM JHORA AREA

Pattern of development

1. Natural systems have to be given precedence over built development and any new construction in vulnerable or/and sensitive zones or disrupting natural systems has to be stopped/avoided.

2. Develop this space as a node for tourists and visitors as also for residents.

3. Strengthen the existing linear structure of the street while generating a consolidated space for collective use and gathering.

4. Connect the total area at different levels through pedestrian connections/steps.

Public realm design / Street Structure

1. Strengthen pedestrian public realm through landscape design.

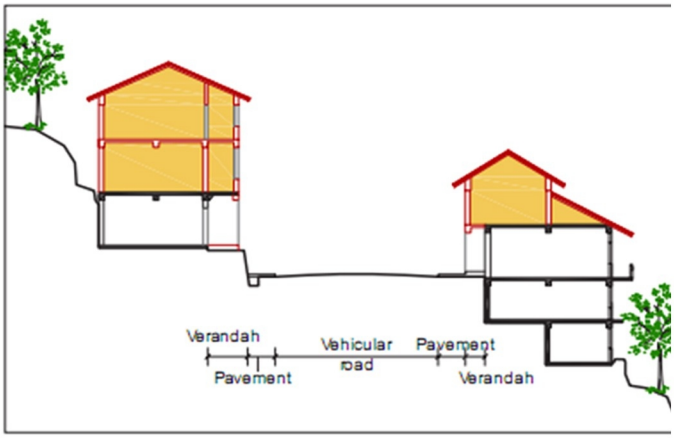
2. Reinforce street character for tourists as well as locals by streetscape design.

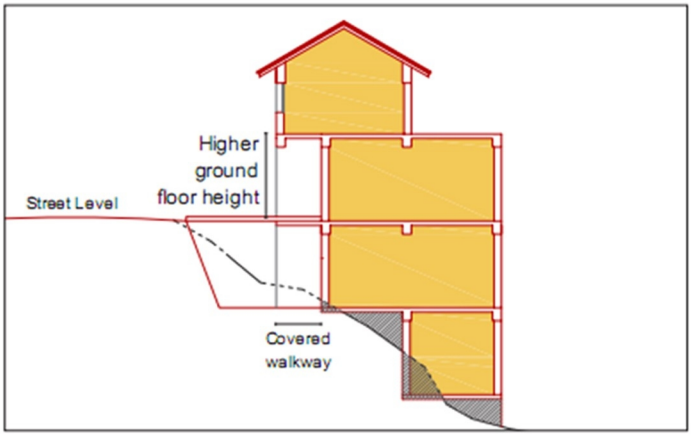
3. Generate a continuous covered pedestrian space at street level as far as possible.

4. Enhance public space character through appropriate design ofpedestrian/tourist amenities.

5. Strengthen the experience of introduction to the settlement both functionally and experientially.

6. Setback of 2m for buildings on upward slope and downward slope is suggested from the right of way for all new development.





5 URBAN DESIGN GUIDELINES

ZONE 4: I- BEAM JHORA AREA

Building Frontage and Street Character

The building fronts portray a chaotic built expression and street character with each building unit adopting individual stylistic components. Temporary structures like shacks are found dispersed within the area adding further to the lack of singular identity of this place.

To promote commercial, community and public activities on ground floor in order to create an active street frontage and encourage pedestrian movement along the built edges.

Create continuity of visual and movement experience through built form character and elevation systems of facades.

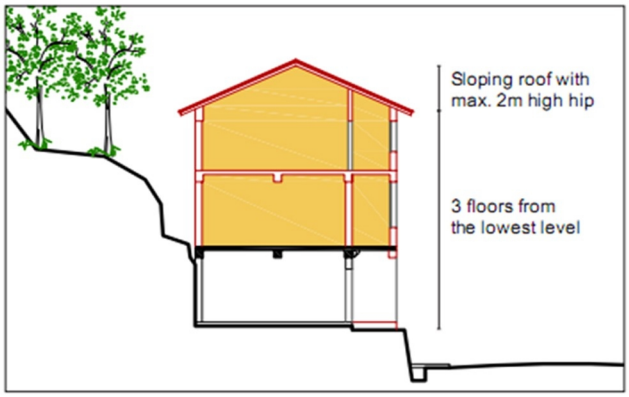
Delineate defined areas of pedestrian movement, utility and gathering through landscape design, paving, street furniture, lighting and signage.

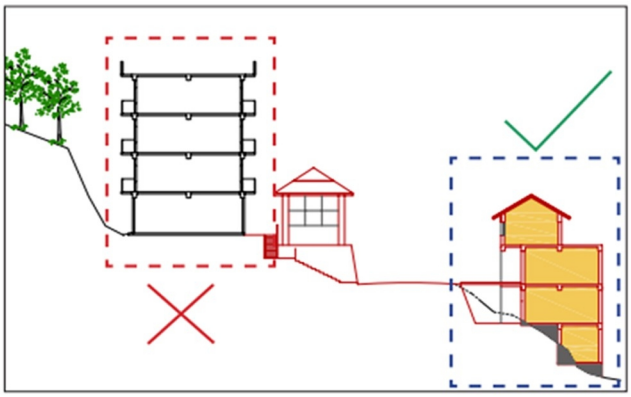
Building Height

Presently, buildings in this area are usually two to three floors high. Buildings on downward slope have a floor below the road level as well. A few single storey temporary structures or shacks can also be found intermittently.

The total height of the buildings should range from 12 meters to 15 meters with average floor to floor height 3 meters.

The total number of storeys from base level should not exceed more than 3 floors with a sloping roof on top.





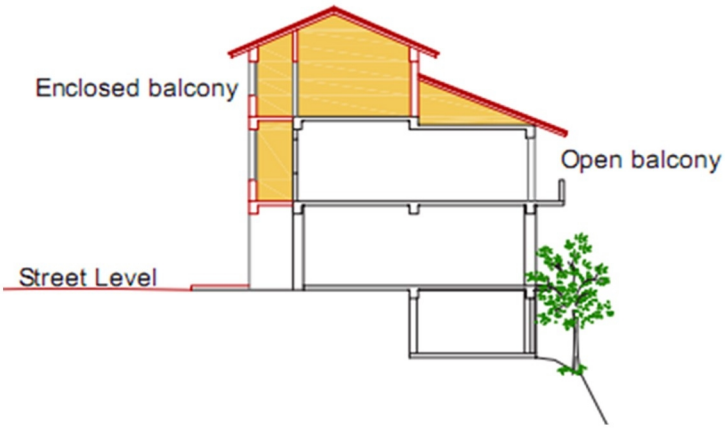
5 URBAN DESIGN GUIDELINES

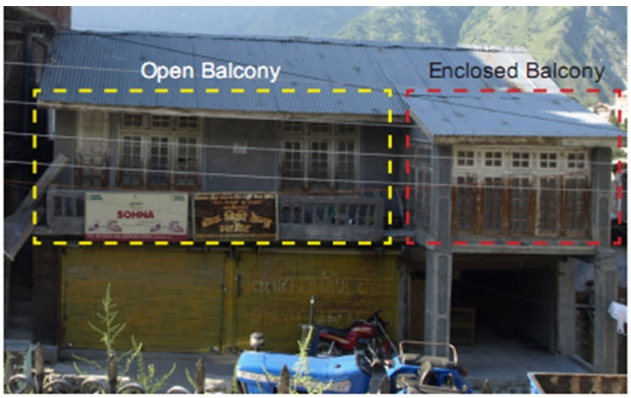
ZONE 4: I- BEAM JHORA AREA

Facade treatment –
(a) Openings and balconies

Few buildings facing the road have balconies (open and closed) on upper foors. Therear side of these buildings, facing the valley also follows a similar system as the front facade.

The system of open and closed balconies is to be encouraged, also on the valley side, incorporating traditional proportioning systems as well as post and railing systems.





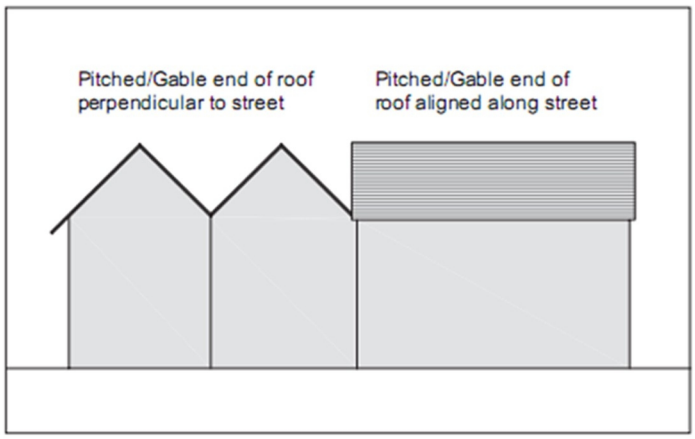
(b) Roof Form

A majority of buildings within the zone have sloping roofs. A few buildings with fat roof can also be found intermittently.

Due to considerations of local climate and to reinforce traditional building techniques and forms, all buildings are to have sloping roofs.

These could either be aligned along the length of the street or with gables perpendicular to the street.

Buildings defining the ends of the market stretch to have hipped roofs. Dormer windows and ‘solar roof’ systems to be incorporated as and when appropriate.



5 URBAN DESIGN GUIDELINES

ZONE 4: I- BEAM JHORA AREA

Facade treatment –
(c) Building proportions

Buildings in the old bus stand area are new developments that have deviated from the vernacular ordering system causing discontinuity of built fabric.

New insertions or renovation of existing structures should follow the building proportions identified in traditional buildings and establish lines of horizontal continuity through floor slabs, balcony heights, projections etc. as well as vertical rhythms of sub-divisions in elevation.

5 URBAN DESIGN GUIDELINES

ZONE 5: INDRAKIL PRAYAG & CREMATORIUM

- The riverfront acts as a vibrant space that triggers and enhances socio-cultural exchange.
- Safety level of the area is not very high.
- Presence of indrakil prayag makes the riverfront very accessible.
- The open space between main urban area and river opens up scope for more urban green.
- Trees along the river side at indrakil prayag providing shade and comfort.
- The interface of the water edge with natural slopes help generate a rich diversity of marine life that forms a valuable component of this ecosystem.

Issue: Industrial waste and religious oferings wrapped in non-degradable plastcs add large amounts of pollutants to the river.
soluton: Provision for dumping pits that are located away from the riverfront .

Issue: The absence of proper edge treatment to the river is causing scouring and soil erosion.
Plan and design for the river edge treatment and the railing.

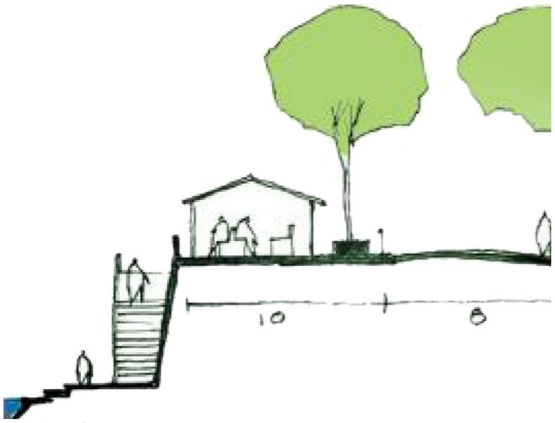
Issue: Lack of proper seatng infrastructure along the river bank .
soluton: Provision for urban infrastructure that caters to various actvites of the locality..

Issue: Dirty and unkempt ghats and steps.
soluton: Redesigning of the ghat area where unsafe or unusable conditons prevail.

Issue: Lack of provision for Drinking water.
soluton: provision for drinking water facility.

Issue: Lack of restng facilites at the crematorium.
soluton: Provide shaded waitng area with sitng facilites .

Issue: Lack of facilites for people who come for ritual bathing or for daily use.
soluton: Provision for changing rooms and lockers.



Design of the nodal space connectng the river and the crematorium.
Design for the extension of the existng ghats.
Design of signage and street furniture.
Maintenance of the existng trees and plantng of the new ones are to be planned as they are an essental component to provide shade to pedestrians and reduce solar gain.
Provide Dustbins and other public amenites at street corners for high us-ability and display maps showing the locatons .
Pedestrian scale street lightng should be provided instead of food lightng in riverfront nodes.
Stretches that are not used can be made beter accessible by the provision of proper steps.
Ramps can be provided leading to the water, for the physically challenged persons.
Traditional crematorium can be replaced with electric crematorium.

6 URBAN DESIGN PROPOSALS

6 URBAN DESIGN PROPOSALS

IMPLEMENTATION PLAN

1. details on requirements of immediate improvement of Rangpo from the UD&HD, Government of Sikkim and also developing a Concept Development Plan for the Town. – focus on land occupied by different uses, land use change, characteristic of urban land market.

2. Survey of the existing Site Conditions through Site Survey and Information from various agencies i.e UD&HD, PHE, Traffic , Proposals from various other agencies.

3. Physical Land conditions study - leading to various problem towards the low lying settlement i.e drainage leading to water stagnation, discharge etc.

4. A consolidated holistic approach as 1 st phase, 2 nd phase and 3 rd phase for various stages of implementation.

PROPOSAL SUMMARY :

1st phase

1. check post entry - welcome to Sikkim
2. upper bazaar road beautification - pedestrian walk ways, road widening, landscape elements etc
3. improvement of vegetable market in lower bazaar
4. construction & improvement of drainage system

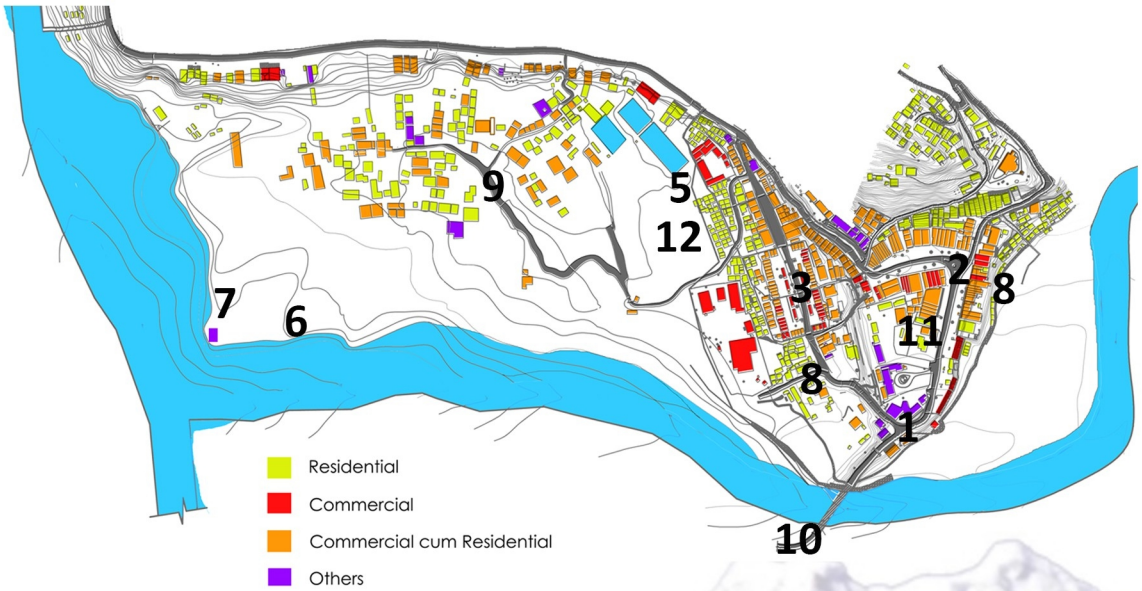
2nd phase

5. parks & community centre
6. river front development
7. indrakil prayag & crematorium
8. Housing for poor
9. improvement of internal roads and foot path

3rd phase

10. entry before the bridge – parallel bridge for heavy traffic with wider opening towards West Bengal side.
11. amenity plaza : parking, offices, commercials plaza, tourist info, banks, refreshment etc.
12. sports complex

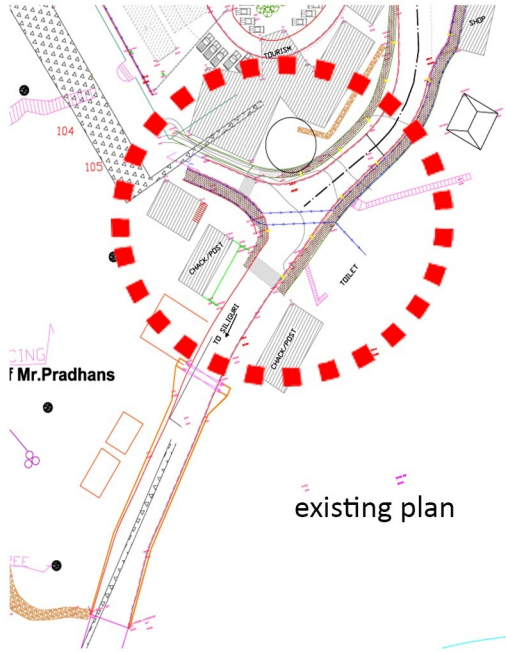
NO 3,4,5,6,8,9,10,12 ARE THE ON GOING AND UPCOMING GOVERNMENT PROJECTS



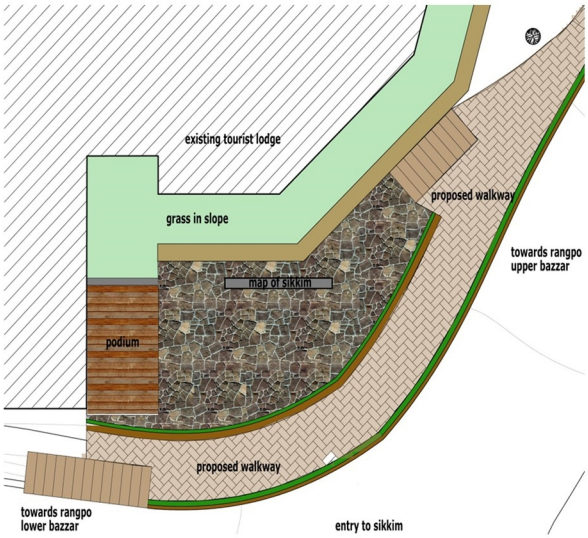
6 URBAN DESIGN PROPOSALS

ZONE 1 CHECK POST AREA

check post entry - welcome to Sikkim

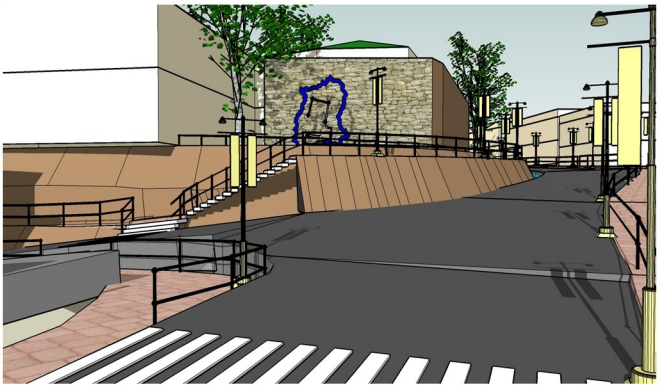


existing plan



proposed plan

proposed elevation



6 URBAN DESIGN PROPOSALS

ZONE 2 UPPER MARKET

STREET ELEVATION ALONG NH31A

1. Continuous covered pedestrian walkway at ground level to be incorporated.

2. A consistently higher floor-to-ceiling height for ground floor (Actual height to be prescribed).

3. Vertical rhythm of sub-divisions of the facade to be incorporated.

4. Openings: Timber/Metal frame widows and exposed timber or stone sills.

5. Balconies: Timber or metal balcony posts with timber or metal in-fill panels.

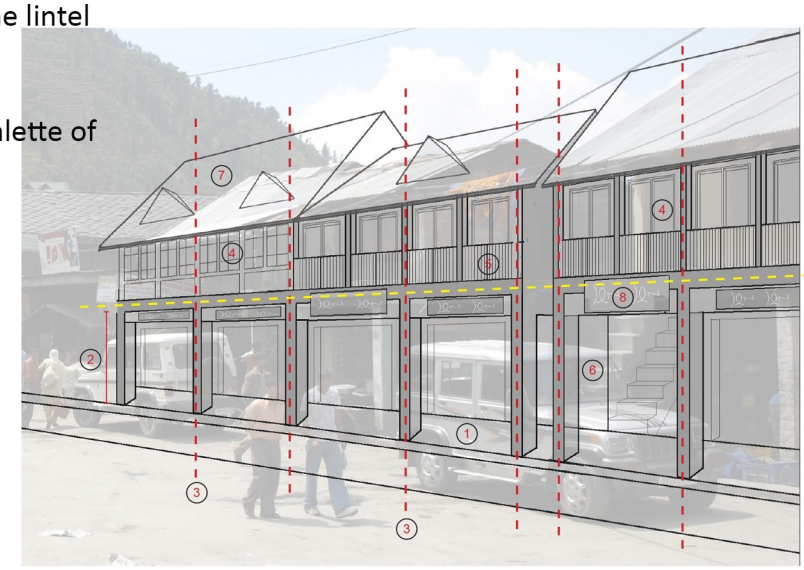
6. Wall finishes: Exposed Stone / hollow concrete or stonecrete blocks/ plaster and paint. Glass cladding systems are not permitted due to environmental and energy considerations.

7. All roofs to be sloped. Materials: Slate / Metal. Dormer windows and 'solar roof' systems to be incorporated wherever appropriate and possible.

8. Signage to be aligned with the top of the lintel and no deeper than 750mm.

9. Colour palette: To follow the mineral palette of the region.

Suggested Street Elevation for Upward slope

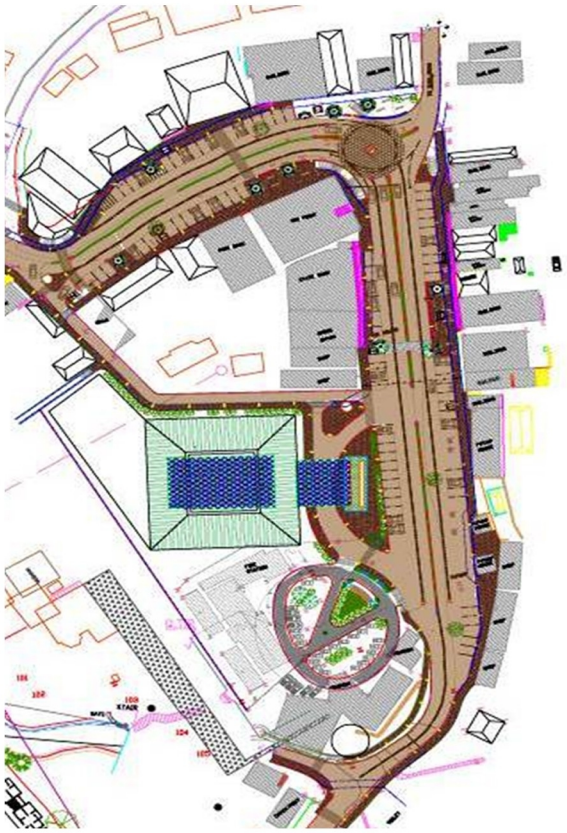


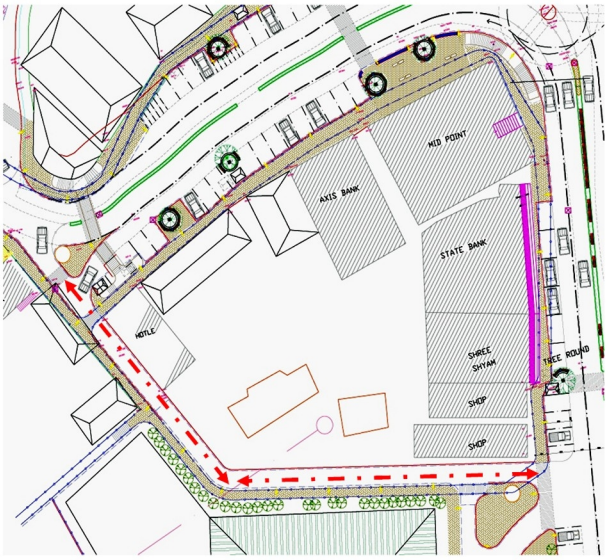
Suggested Street Elevation for downward slope

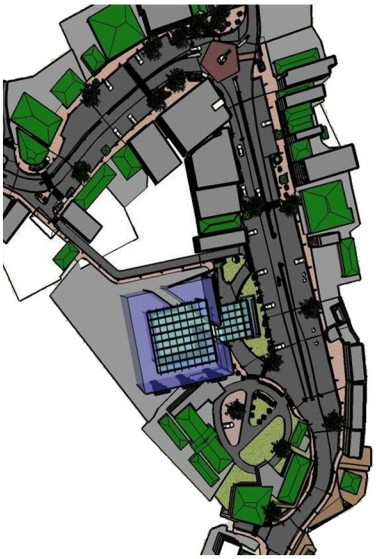
6 URBAN DESIGN PROPOSALS

ZONE 2 UPPER MARKET

upper bazaar road beautification - pedestrian walk ways,road widening, landscape elements etc





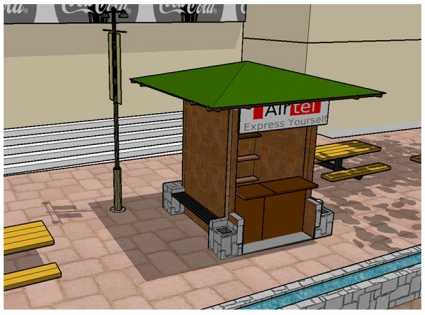


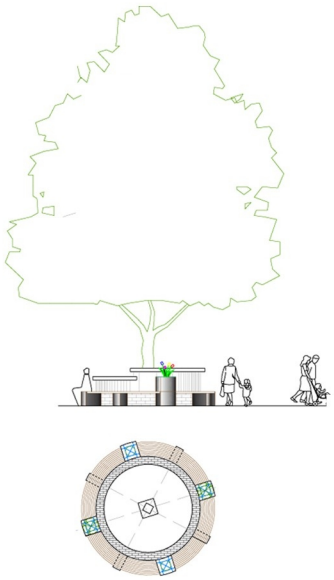
proposed plan

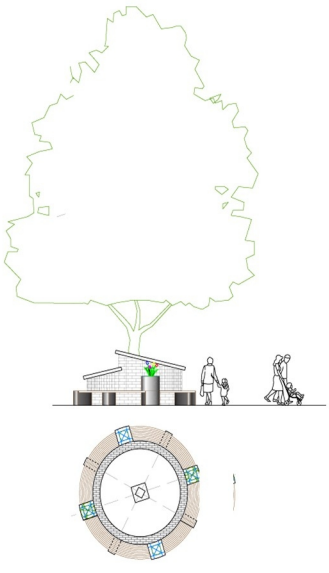
6 URBAN DESIGN PROPOSALS

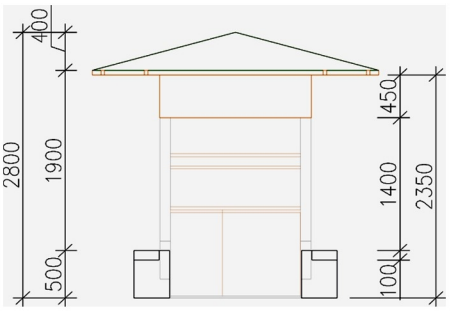
ZONE 2 UPPER MARKET

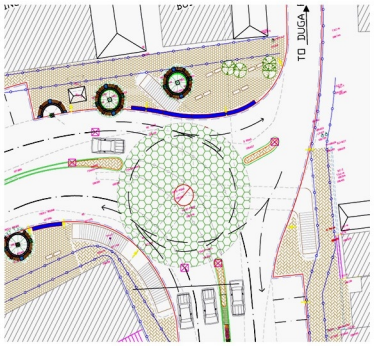
upper bazaar road beautification - pedestrian walk ways,road widening, landscape elements etc







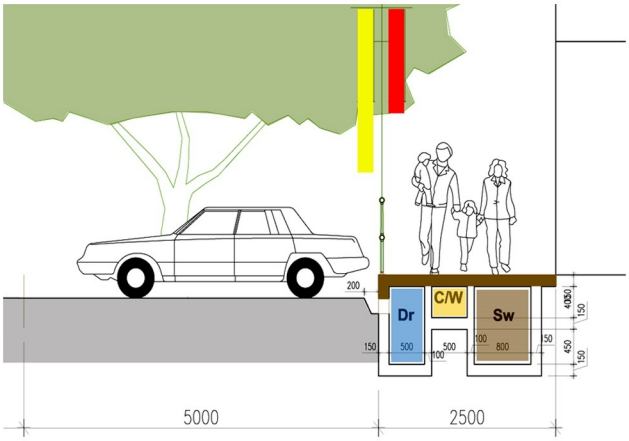




6 URBAN DESIGN PROPOSALS

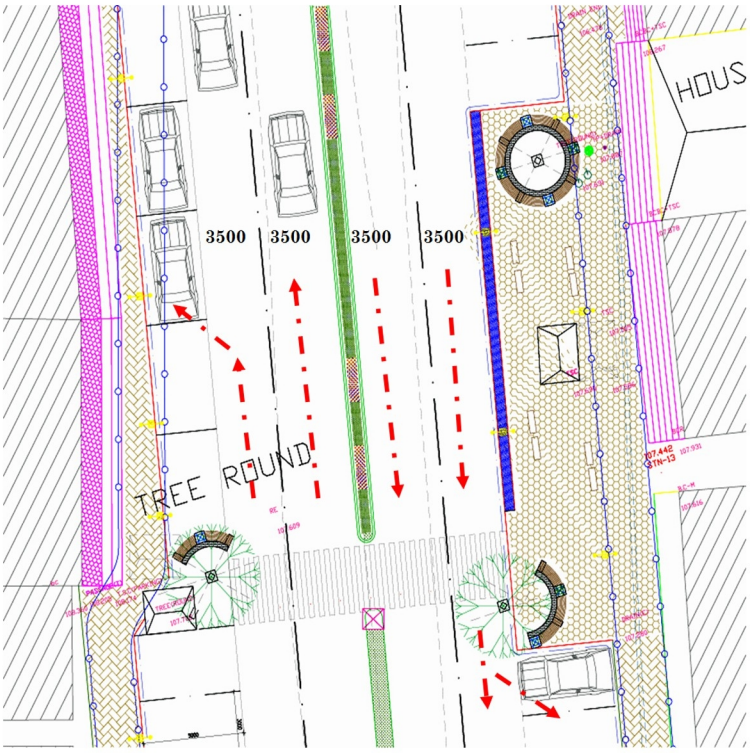
ZONE 2 UPPER MARKET

upper bazaar road beautification - pedestrian walk ways,road widening, landscape elements etc



pedestrian walk ways

Public spaces –along pedestrian walk ways



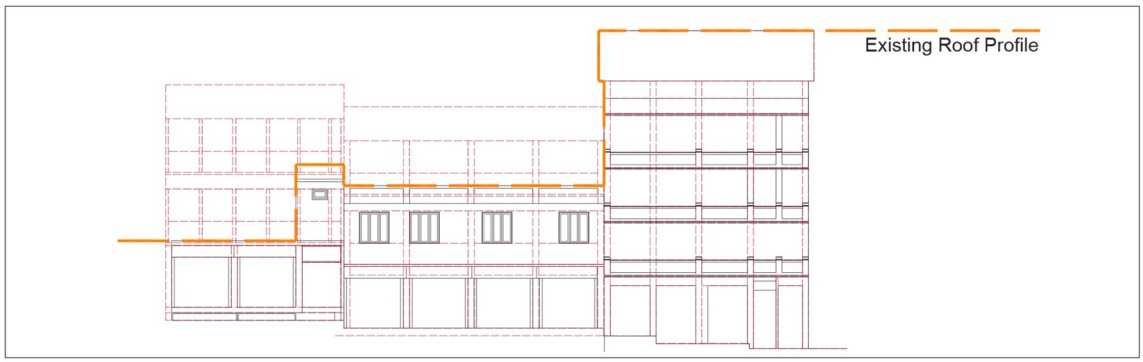
vehicular road

6 URBAN DESIGN PROPOSALS

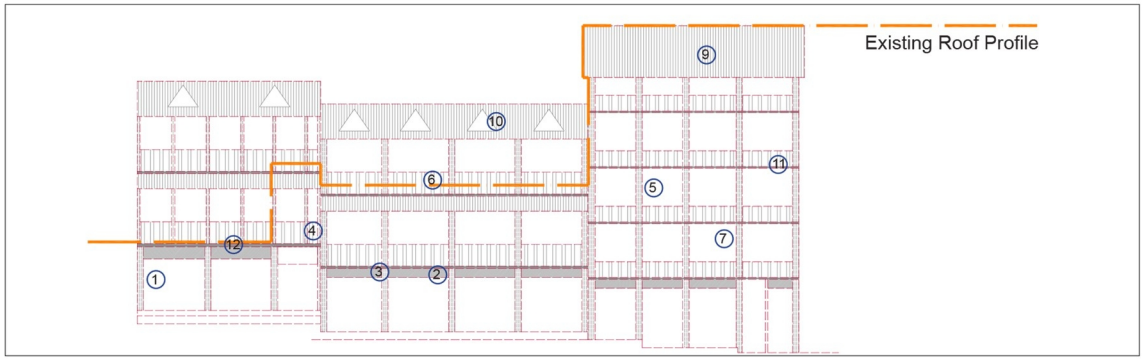
ZONE 3 LOWER MARKET

STREET ELEVATION ALONG BAZAAR STREET

Representative stretch of Existing Bazaar Street Elevation



Representative Re-articulation of the Bazaar Street Elevation By Adding Horizontal and Vertical Elements



Re-articulated Bazaar Street Elevation Showing the Expected Extension in Building Height and New Elements

1. A consistently higher floor-to-ceiling height for ground floor.
2. Signage to be aligned with the bottom of the first floor slab and no deeper than 750mm.
3. Signage can hang from first floor slab or can be placed along the wall surface.
4. Balconies to be encouraged on higher floors.
5. Posts on the balcony to extend beyond the railing height till the roof or eaves level, these vertical lines to be continued across floors.
6. Timber, metal, concrete balcony posts with timber, metal, concrete in-fill panels.
7. Wall finishes: Exposed Stone / Brick / Plaster and Paint.
8. Glass cladding systems are not permitted due to environmental and energy considerations.
9. All roofs to be sloped. Materials: Slate / Metal.
10. All roofs in the bazaar street to be painted according to colour palette decided collectively.
11. Edges of roof slab, beams and under structure should not be exposed, instead covered with horizontal running fascia.
12. Buildings of local architectural significance to be preserved and renovated.
13. The local motifs and patterns to be used wherever possible while detailing railing, fascia, columns, brackets, openings etc.

6 URBAN DESIGN PROPOSALS

ZONE 3 LOWER MARKET

STREET ELEVATION ALONG BAZAAR STREET

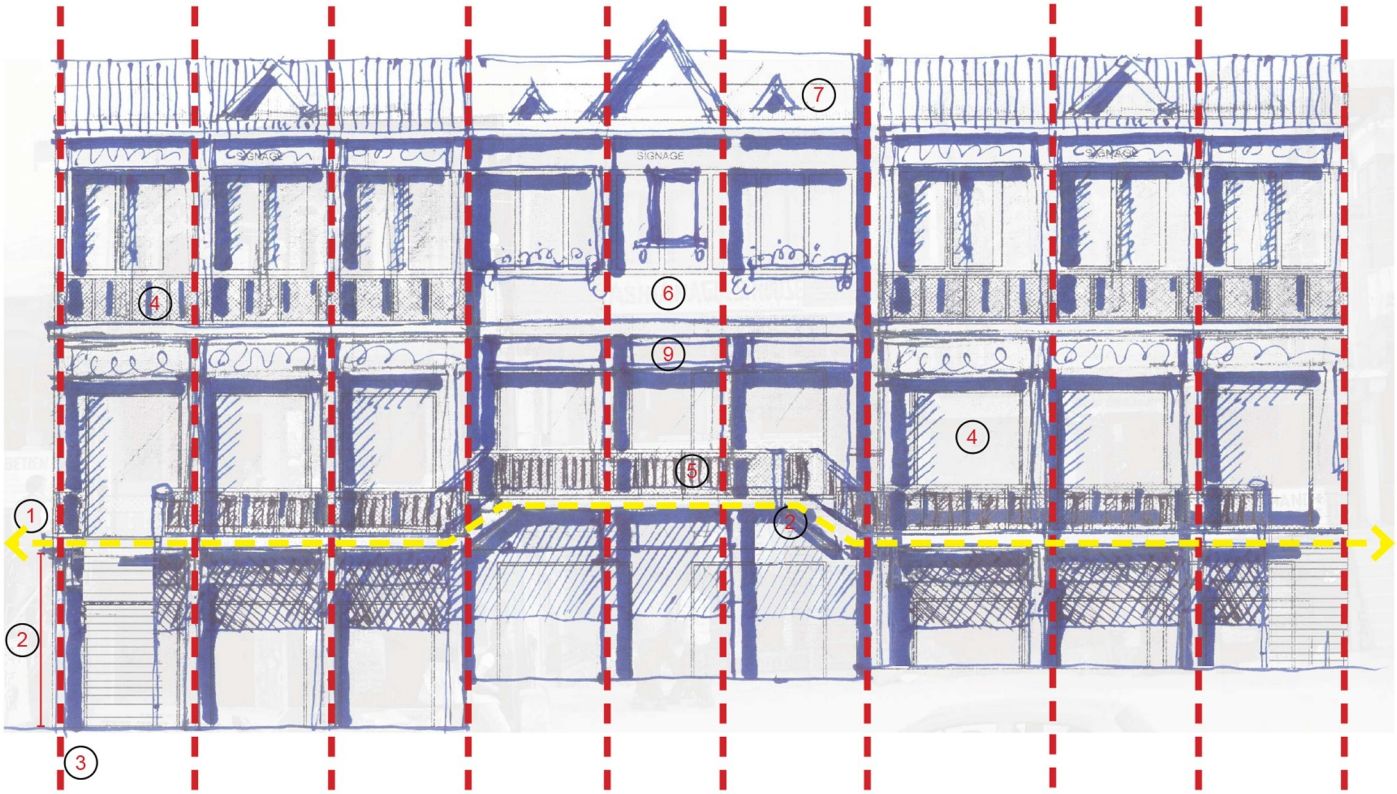
EXISTING SCENARIO

POSSIBLE FUTURE SCENARIO

6 URBAN DESIGN PROPOSALS

ZONE 4 I- BEAM JHORA AREA

STREET ELEVATION ALONG PEDESTRIAN ROAD



1. Continuous pedestrian walkway at upper ground level to be incorporated.

2. A consistently higher floor-to-ceiling height for ground floor (Actual height to be prescribed)

3. Vertical rhythm of sub-divisions of the facade to be generated.

4. Openings: Timber/Metal frame widows and exposed timber or stone sills.

5. Balconies: Timber or metal balcony posts with timber or metal in-fill panels.

6. Wall finishes: Exposed Stone / hollow concrete or stonecrete blocks/ plaster and paint. Glass cladding systems are not permitted due to environmental and energy considerations.

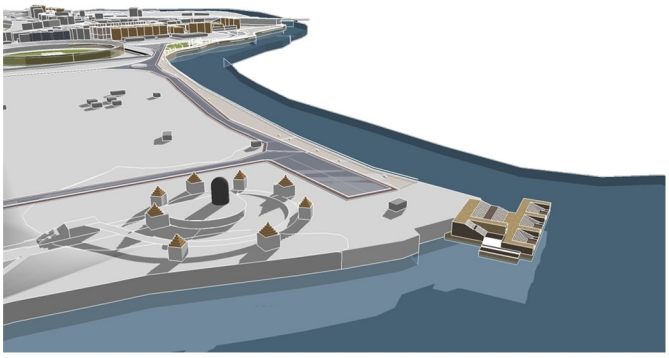
7. All roofs to be sloped. Materials: Slate / Metal. Dormer windows and 'solar roof' systems to be incorporated wherever appropriate and possible.

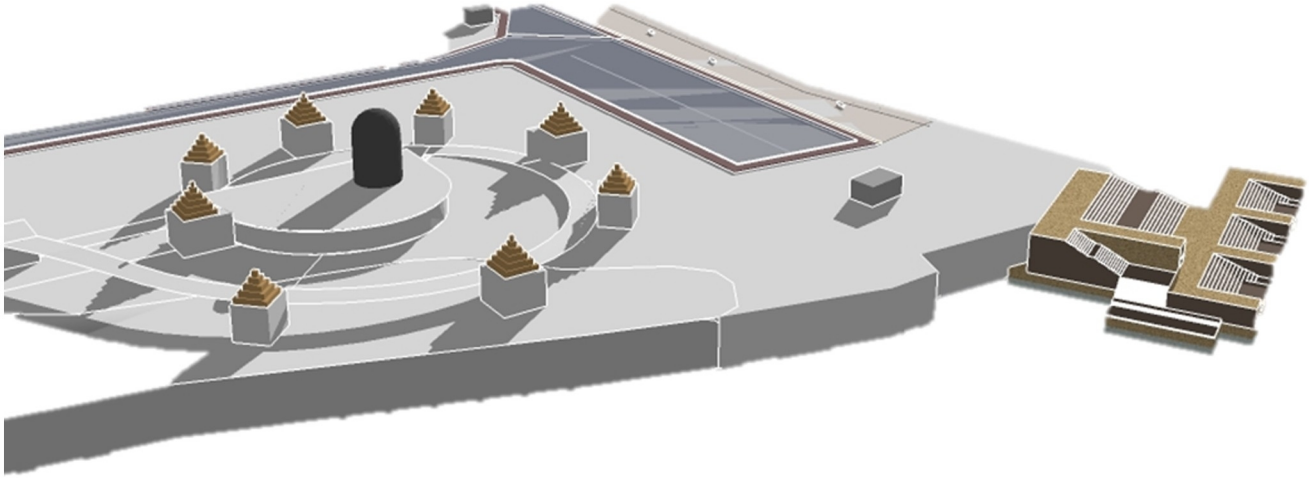
8. Colour palette: To follow the mineral palette of the region.

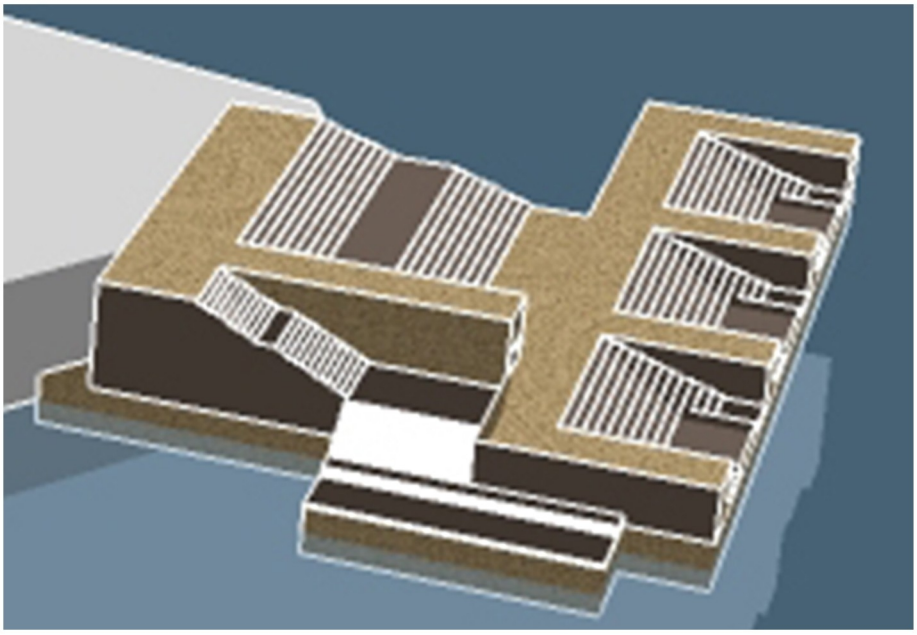
9. Signage to be aligned with the top of the lintel and no deeper than 750mm

6 URBAN DESIGN PROPOSALS

ZONE 5 INDRAKIL PRAYAG AND CREMATORIUM







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