JABAL AJLOUN DEVELOPMENT COMPANY

JABAL AJLOUN DEVELOPMENT AREA (JADA)

CONCEPTUAL MASTER PLAN – DESIGN REPORT

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INTRODUCTION

This report combined by the power point presentation and drawings represents the work done to produce a conceptual master plan for a Resort Community in the Anjara Military Base, which is the first early action project identified by the "Master Plan, Environmental & Economic Study, and Institutional Setup for Jabal Ajloun Area" Report prepared by PA Consulting Group and Business Insights Consultants.

This report is based on the above-mentioned study and includes extracts from its text and illustrations at no intention to jeopardize the intellectual rights of authors.

As per the scope of work- the mission aims at analysis, verification and development for implementation the a Community Resort in Anjara Military Base by developing a conceptual master plan for the study area including land subdivision, access networks and infrastructure concept and cost to enable JADA attract investments.

PROJECT METHODOLOGY INCLUDED THE FOLLOWING STEPS

- Study & investigation and evaluation of background data base including PA-BI Report
- Study and analyze design input from market study
- Verification of previous concept against new requirements
- Preparation of Draft Conceptual Master Plan
- Discussion and obtaining guidance from JADA
- Revision according to feedback
- Finalization of conceptual ideas
- Preparation of Infrastructure requirements and cost
A RESORT COMMUNITY ON THE ANJARA MILITARY BASE

The Anjara Military Base is among the most important developments within the Ajloun Development Area. The land is of adequate size and configuration to develop a New Town or a New Resort Town that will be a place to live, work, recreate, and visit. It will be the place where shopping areas are festive and shops are world class, hotels cater to frequent individual tourists, homes are designed to meet the needs of holiday residents, and recreational amenities are readily available. In addition to being an anchor for tourism development, it will also be one of the first developments to be made available to the investment community.

EXISTING CONDITIONS

The existing military base is nestled among a series of moderately to densely wooded hills that includes the highest part of the Study Area, with the tallest peak – Jabal Um ad-Daraj – measuring 1,239 meters above sea level. The 2,340 dunums of land currently within military ownership and use lie just east of Ajloun town/Anjara urban areas. For the New Town, this is augmented by 9,180 dunums of land in private ownership extending east to Souf, as well as south and north to bands of Haraj.

This highland drains into a number of wadis from the center of the plateau, and which carve their way along the Ajloun dome to the surrounding lowland watersheds. Directly to the east, Wadi Souf (or “Apricot Valley”) drains eastward into the Jerash watershed, eventually draining into the Zarqa Valley along the southern boundary of the Study Area. Wadi Um al-Jaloud drains to the southeast, splitting into two forks, one of which descends past Sakib to Jerash, while the other forms the head of scenic Wadi Sifsaf, eventually becoming Wadi Rajib and draining into the Jordan Valley.
The hilltops are moderately to heavily wooded, with some orchards and rain-fed agriculture in the ravines surrounding the base. The base itself is relatively ungrazed, and though the Jordanian military has a number of structures and installations, including a substantial set of radar towers on a southern hilltop, the footprints of these areas are generally limited and have not required substantial clearing. The area to the northwest slopes slightly toward the town of Ajloun, and contains thick though fragmented forests. The area to the east is characterized by the dramatic Wadi Souf and contains large village of Souf. The area to the south consists of more thick but fragmented woods circumvented to the south by Sakib and the main Jerash-Ajloun highway. The western edge of the area drops rather steeply into the town of Anjara, the sprawl of which is creeping up the slope outward from the town center.

The base occupies the highest plateau in Ajloun, yet the mix of hills and slopes which make up that plateau lend the area a somewhat introverted, secluded feeling, as opposed to the grandiose prominence one might expect from the roof of Ajloun. However, the views from the edges of the plateau are often commanding, particularly to the west overlooking the city of Anjara and Ajloun castle and to the east overlooking Wadi Souf. The views of land within benefit from the substantial vegetation and relative intactness of the landscape. Furthermore, a large amount of the land within the base has slopes of 20%-30%, which create dramatic views over short distances.

Access to the base is currently restricted, though the base is served by a well-maintained road leading from the Ajloun-Jerash highway. The current access point is in the middle of a horizontal curve and primary access will need to be better located and designed for higher volumes of traffic.

The surrounding agricultural lands are served by small, often unpaved and meandering farm roads that generally lead to surrounding villages and population centers. Land tenure is characterized by a large mass of contiguous government land, with small enclaves of restricted Haraj. The surrounding lands are largely private, but with highly fragmented plots of Haraj forest interspersed therein. These lands are predominantly agricultural, though the steeper slopes unsuitable for farming have remained forested.

Outside of the base the land is a mix of agriculture and forest with almost continuous “bands” of Haraj defining the southern and northern limits of land included in the New Town. To the east and the west are urbanized villages, making this a logical place for additional development. To the north and south are belts of forest, most of which are restricted Haraj.
ANALYSIS

The analysis of land suitable for development places land in three general categories.

Land within the existing Military Base is highly suitable for development, being within government ownership. Within that area, and the land around it, areas that are previously disturbed (such as existing military facilities), with slopes less than 30% have high opportunity for development. Good views also qualify land in this category, and the best land on south facing slopes has views of the Ajloun Castle. These areas present opportunities for more intense development of village and town center or resort center.

Good development opportunities are on land with slopes less than 30%, but undisturbed by development and lacking good views. These present opportunities for residential land uses arranged in clusters of development and conserving high value forests. These lands occur primarily to the east and south of the Military land.

Limited development opportunities are on land with slopes greater than 30%. These present opportunities for low density residential land uses that can be located and designed to minimize impact on natural systems, but to capitalize on distant views created by sloping land. They are also suitable for conservation.

Restricted development opportunity is with Haraj areas and areas with very steep slopes. These areas are kept in conservation.

This will guide the identification of areas for development, but choosing the right sites for development of particular products should also be guided by the principles of clustering new development in between open space conservation areas. So, large contiguous areas of land suitable for development may best be considered for a town center, whereas smaller areas may be suitable for development types of diminishing intensity – villages, resorts, and residential clusters. This should sound familiar to anyone conscious of the geography of the Study Area. This hierarchy of urbanization resonates with the historic settlement patterns of the region, giving any new development a sense of place within the history of the region.

In between these clusters, conservation may be in high quality farmland or in Restricted Haraj, and should be networked as much as possible, to create an amenity of natural areas through which walking paths may connect all corners of the community.

New Resort Community Option-the Original Concept

There is a hierarchy of land use areas tailored to resort use. It also responds to the land analysis as described above. The Town Center is in an area with good views and with existing development that has resulted in the clearing of forest. It is planned with a greater concentration on hotels, festive retail, and serviced residential units. The organization is more spontaneous and organic, providing a relaxed atmosphere where time can and should be taken to navigate by car or by foot. On the two highest hills, resort hotels and associated serviced residential units are designed in an intimate village form. These take advantage of the views available from the hilltops and should be landmark buildings that provide identity to the Resort.

The village at the entrance to the community is designed to “announce” entry into the resort, and also provide an alternative cluster of retail, restaurant and mixed uses in an intimate setting. Similarly, at the western entrance to the community, a cluster of mixed use facilities creates a village feeling that also announces entry into the resort.
Between the Entrance Village and the hotels area, residential developments of villas, attached villas and townhouses are organized in more than one plot to offer diversity of character and different orientation and views.

In areas where trees are more dense, villas are planned. In final design, it will be important for the homes in these areas to be sited between major tree clusters, to minimize tree cutting as much as possible.

The open space network is anchored by the existing restricted Haraj. This is augmented by additional dedicated natural areas forming a complete network around the community through which trails will connect to all of the areas of development. To the east of the site, this network is enhanced by a major interactive green area or a park that may contain recreational and landscape features that service the entire community.

Access is shown at the existing intersection of the road to the Military Base and the Ajloun/Jerash road. Alternative access is from the east where interior roads connect to an existing unpaved right of way. Both of these access points are “gated”, and both will connect to the project’s developments on their respective sides. The main entrance from the west will be flanked by forested open space between the village and the developments area, providing strong contrast between settled and natural areas.

Building height is restricted to two to three stories in the residential areas, hotels, and one to two stories in the cultural and mixed use areas.

DEVELOPMENT PROGRAM

This program was originally based on the program included in the previous study, developed to meet the new requirement to subdivide developments into separate diverse plots easily being availed to more than one developer at different phasing and timing.

Number of keys and components areas have been subject to discussion with the JADA board of directors in more than one session and have developed into the final shape included in this report and used for the conceptual design of the site.

Subdivisions areas were calculated relative to the developments within, however once the conceptual layout was developed; subdivisions were shaped according to land circumstances and location, which lead to differences in areas from the set program. Subdivisions uses and areas are illustrated in the conceptual layout.
<table>
<thead>
<tr>
<th>Number in Master Plan</th>
<th>Component</th>
<th>No. of Units</th>
<th>No. of Rooms</th>
<th>Area/Unit</th>
<th>Total Area sqm</th>
<th>Gross Floor Area sqm</th>
<th>Building Footprint</th>
<th>Designed Residential Floor</th>
<th>Designed Residential Percentage</th>
<th>Designed Commercial Floor</th>
<th>Designed Commercial Percentage</th>
<th>Designed Land Area</th>
<th>Percentage of Total Land</th>
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<td>Hareg Land</td>
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<td>29969.69</td>
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<td>Hotels</td>
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<tr>
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<td>7</td>
<td>Cultural &amp; Mixed Use</td>
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<td>8</td>
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<td>11</td>
<td>Eco-lodges</td>
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<td>12</td>
<td>Interactive Green</td>
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<td>2218327.00</td>
<td></td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
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<td>2218327.00</td>
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USAID Jordan Economic Development Program (SAEIQ)
INFRASTRUCTURE CONCEPT STUDY

Infrastructure includes basic services including roads, waste water treatment, water supply, power, and telecommunications, as well as other facilities, such as fire station, post office, security center, schools, health services and libraries that aim to meet the needs of the community and businesses.

The provision of infrastructure is a key tool in determining the future direction of urban growth. The early provision of access and services can facilitate or accelerate growth. Infrastructure must be directly responsive to the economic development needs of the city rather than the non-wealth creating demands of the residential development market.

To make Jabal Ajloun development attractive for developer's comprehensive and efficient infrastructure facilities must be well planned, and to highest standard with up to date modern facilities reliable, available and workable.

Infrastructure facilities in any new development must be capable of providing all modern essential services to developed areas. The engineering of infrastructure facilities is a complex and expensive task that is beyond the scope of this land use study. However, the size and capacity of these facilities needs to be planned in coordination with the anticipated demand and should be defined to be compatible with the anticipated patterns of uses.

1. Electricity

Any successful tourism development requires stable and continuous electrical supply. Along with power supply, it is important to control the visual impact of electrical facilities on the landscape. Such as avoid running high tension lines to cross over the Development Area, reducing as much as possible high tension lines around the developed site which might include relocating and modifying existing and future power medium and high tension lines.

This also requires coordination at the highest level with national electricity power transmission and distribution company to relocated high tension towers. It is recommended that the electrical towers that are currently planned for the study area, including the high voltage line to Jabal Ajloun development be very carefully planned and located to diminish the environmental impact including negative visual impact on the landscape.
<table>
<thead>
<tr>
<th>No. of Floors</th>
<th>No. of Keys</th>
<th>Area (sqm)</th>
<th>Total Area (sqm)</th>
<th>General Hospital Beds</th>
<th>Building Purpose</th>
<th>Budgeted Cost (USD)</th>
<th>Budgeted Cost (USD)</th>
<th>Allocated Land Area</th>
<th>Designed Land Area</th>
<th>Percentage of Total Land</th>
<th>Person/ Bed</th>
<th>Person/ Sqm</th>
<th>Population</th>
<th>Power Consumption</th>
<th>Water Consumption</th>
<th>Telecommunication Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>150</td>
<td>160000</td>
<td>520000</td>
<td>500</td>
<td>300</td>
<td>300000</td>
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<td>100</td>
<td>500</td>
<td>150</td>
<td>150000</td>
<td>500</td>
<td>500</td>
<td>500</td>
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</table>

**Grand Total:** 2218327.00, 150000
2. **Wastewater treatment**

A wastewater treatment plant (WWTP) is considered the ideal solution for each sub development since Jabal Ajloun development will be phased over many years which makes it difficult to predict the interest of various investors, development strategies, the hotel zone of the study area could be prime candidate to utilize wastewater treatment plant (WWTP). Reclaimed wastewater discharged by the WTP could be reused for landscaping irrigation, or could be safely discharged to Wadis.

Wastewater treatment plant (WWTP) would be designed, built, operated and maintained by each developer on the designated lot approved by master developer and meets with local laws and regulations and in compliance with environmental guidelines insuring safe and environmentally friendly operation.

3. **Storm water Management**

A comprehensive study on integrated storm water management is necessary to be conducted for the Study Area including research on new “green methods” of accommodating storm water flow and structures. Recommendations should take into account storm water as part of initial site planning. Currently there is no proper procedure to manage storm water in the study area.

Flood control measures consisting of diversion dykes, flood protection channels, pipe culverts, box culvert and other structures that may be needed for the protection of individual sites.

4. **Water supply**

A comprehensive water management study should address the anticipated Ajloun development needs based on the development components including a five stars hotel, with separate grand villas and attached villas, four stars hotel with additional separate villas, town houses, and apartments, three stars hotel,with separate villas, town houses, and apartments, residential district, mixed use shopping center with restaurants, coffee shops, conference halls and entertainment, as detailed in the development program.

A great emphasize on water conservation strategies with incentives by governmental bodies for developers to go green and to adopt all available techniques to save on recourses with water as prime concern due to its scarcity in Jordan.

Water supply is not available continuously in the study area and due to interrupted water supply in addition to inadequacy, it will be advisable to encourage providing additional source of water such as developing water tank with storage capacities with multi compartments with adequate size for site uses such as hotels and residential developments.

Coordination with Jordan Water Authority (WAJ) and the supplying company in Ajloun is necessary to investigate water quantities and quality available or could be made available for Jabal Ajloun development. Anticipated daily water demand is tabulated in the following table:
5. Telecommunication

The purpose of this section is to identify the basic systems requirement, according to the existing services, conditions and their interrelation with the site conditions and the Local Authorities Requirements/Recommendation.

5.1. Design Standards:

Telecommunication works are designed to the following standards and regulations.

(a) The General and Specific Requirements of the Local Authorities (Jordan Telecommunication - JTC).

Telecommunication works will be designed according to the latest safety requirements and standards related to persons, installations, and easy equipment maintenance and to the reliability of the system supply.

5.2. Design Criteria, Description of Network & Connection to Utility Source

One main expandable telecommunication center is proposed to serve the whole project, in accordance with different phases of development.

The main telecommunication center should be designed to serve the Ajloun Development Area first phase and will be upgraded/expanded as per the project needs.

Jabal Ajloun development main Telecommunication center will be constructed and fed in close coordination with JTC, in order to check any existing Telecommunications cable in the project area.

It is proposed to coordinate with JTC to use fiber optic cables for the entire projects telecommunication network, which will be totally in underground conduits. Service manholes will be introduced as per JTC regulations.

Each zone will be served by a fiber optics cable, which will be connected to each building in that zone.

Telephone, data signals will be transmitted through separate fibers in the same fiber optic cables to the whole project.
6. Roads

Road network within the development was planned integrating the existing alignment of roads used previously by the military, with the new roads needed to provide access to all the proposed subdivisions and developments.

It was also taken into consideration to link the site with the surroundings through allowing connection with planned roads in the east and north sides of the area in addition to the main entry from the west.

Operational requirements in the future will determine the level of controls to be exerted on entry points according to functions and phasing.

Length of existing and proposed roads was measured as follows:

Existing road alignments that will be incorporated within the proposed network is approximately 2760m, other existing parts should be demolished.

New proposed main roads connecting the site's subdivisions is approximately 8200m.

Road lengths along with development population were used as a base for infrastructure utilities cost estimate, as all main runs will be within the roads right-of-way.
Road and Circulation Matrix

Based on the guidelines of the previous study, two types of roads where selected for the vehicular network within the development, seeking to keep travel lanes narrow and roads and streets more intimate. This will result in traffic calming, as well as minimal intrusion into the landscape with more narrow rights of ways.

Alignment of roads through the landscape, of both horizontal and vertical alignments are proposed in an articulation that is sensitive to topography and high value landscapes.

The table below describes and illustrates the types of roads that are proposed to meet both the form and the transportation needs of the development area and shows the dimensions of the street types incorporated into the conceptual design of the site:

Following are descriptions of the scale and form of each type of road or street

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Width in meters</th>
<th>RoW</th>
<th>Typical Travel Lane</th>
<th>Median</th>
<th>Shoulder</th>
<th>Sidewalk</th>
<th>Landscape</th>
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<tbody>
<tr>
<td>Urban Street</td>
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<td>15</td>
<td>3.5</td>
<td>n/a</td>
<td>1</td>
<td>1.5</td>
<td>1.5</td>
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<tr>
<td>Settlement Road</td>
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<td>7</td>
<td>2.5</td>
<td>n/a</td>
<td>1</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

1. Urban Street

Urban streets standard dimension of 15m was selected to govern the proposed right-of-way for the street network connecting various subdivisions within the site, with different treatment of edges depending on the surrounding, whether urbanized or open landscape. Basically they are two lane roads and have pedestrian-oriented streetscapes with sidewalks, planting, and site furnishings.

2. Settlement Road

Within the subdivisions, Settlement Roads were proposed to link the different development components; hotel, residential units…etc. These roads carry minimal traffic, and are used to limit impacts on natural landscape. Wider vehicles may have to use the shoulder to fit by.

Certain sections of the above road types can be considered scenic routes, if they traverse an area of natural significance.
Edges can be treated to deal with adjacent terrain and can also avail for storm water drainage where needed.
7. **Infrastructure Cost Estimate**

As explained above the following cost estimate is based on:

- Estimated development population including guests, visitors and daily users in addition to workers and staff.
- Given cost is only for utilities provided by the master developer not including any infrastructure within the development subdivisions which is part of the sub developers responsibility. This includes electrical substations, waste water treatment units and on site utilities.
- Roads lengths calculated from the conceptual designed layout proposed for the development.
- Estimate assumptions that utilities lengths are equal to roads lengths although actual planning and design may save unnecessary runs through proper coordination and phasing thus saving in the implementation cost.
- Common market prices for utilities taking into consideration they may vary depending on bidding conditions, projects duration construction climate at the time of actual implementation.
- Cost of certain components such as power and telecommunication mains highly depend on availability of district services nearby the development area. Accordingly, coordination with utility suppliers is needed to establish more accurate rates for installation.
- A contingency of 20% over the whole estimate based on the fact that estimates are done in this early stage of design.

### INFRASTRUCTURE COSTS:

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<th>Utility</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Total</th>
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<tbody>
<tr>
<td>1- Roads:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-1- Existing Roads: Widening and finishing existing alignment</td>
<td>M 2</td>
<td>JD</td>
<td>JD</td>
</tr>
<tr>
<td></td>
<td>2760 m run X av. 12m wide</td>
<td>12</td>
<td>397440</td>
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<tr>
<td>1-2- New roads</td>
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<tr>
<td></td>
<td>8200 m run X 15m wide</td>
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<td>1845000</td>
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<tr>
<td>1-3- Storm water provisions, cut and fill + limited culverts as needed</td>
<td>L.S.</td>
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<td>440000</td>
</tr>
<tr>
<td>Total Roads</td>
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<td>2682440</td>
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<td>2- Water Network</td>
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<td></td>
<td>M run 10960</td>
<td>150</td>
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<td>3- Electrical Network</td>
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PLANNING SPECIAL CONSIDERATIONS

Topography

What makes land suitable for development is a low slope, which results in reduced cost of construction and fewer environmental impacts. Cost consequences of the development of steep land include:

- Increased need for earth moving
- Stabilization requirements
- Retaining walls and structures required for building on steep ground.

Environmental impacts of building on steeper slopes may include:

- Erosion of disturbed land due to stormwater runoff
- Sedimentation of adjacent watersheds as a result of erosion
- Visual impacts of earth disturbance
- Slumping of the land when its natural compaction is disturbed.

The following table classifies slope according to suitability for development and vulnerability to environmental degradation. It should be acknowledged that building often occurs in Jordan on slopes in excess of 30% and 40%, but it comes at a monetary cost to mitigate the potential environmental disturbance. This practice is generally not acceptable in conservation areas, and occurs in other areas only when the price of land creates social and financial imperatives for development.

### Development Suitability and Environmental Vulnerability by Slope

<table>
<thead>
<tr>
<th>Class of slope</th>
<th>Gain in elevation for each 100 meters</th>
<th>Suitability for development</th>
<th>Vulnerability to disturbance</th>
<th>Potential development types</th>
<th>Potential environmental vulnerabilities that require mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 10%</td>
<td>0 to 10 meters</td>
<td>High</td>
<td>Low</td>
<td>All types, including golf and field sports</td>
<td>Flooding</td>
</tr>
<tr>
<td>11% to 20%</td>
<td>11 to 20 meters</td>
<td>Good</td>
<td>Medium</td>
<td>Medium density building and golf</td>
<td>Erosion</td>
</tr>
<tr>
<td>21% to 30%</td>
<td>21 to 30 meters</td>
<td>Acceptable</td>
<td>High</td>
<td>Low density building and roads sparingly</td>
<td>Erosion, sedimentation</td>
</tr>
<tr>
<td>31% to 40%</td>
<td>31 to 40 meters</td>
<td>Low</td>
<td>Very high</td>
<td>Buildings adapted to steep slopes, but with difficult access</td>
<td>Erosion, sedimentation, land slippage and visual impacts</td>
</tr>
<tr>
<td>Greater than 40%</td>
<td>41 meters and above</td>
<td>Not acceptable</td>
<td>Difficult to mitigate</td>
<td>Conservation</td>
<td>Erosion, sedimentation, land slippage and visual impacts</td>
</tr>
</tbody>
</table>
Another detail of development analysis is “aspect,” or the direction that sloped land faces. This is relevant with respect to sun angles and prevailing breezes and is best assessed at a project specific site planning and design. However, there are master plan level considerations that come to bear in assessing suitability for development or conservation. With respect to sun angles:

- The south facing slopes are most suitable for residential and hotel development.
- North facing slopes are most suitable for conservation and are often forested.
- Slopes from 20% to 30%, and sometimes higher, with aspects ranging from northeast to west (around the compass from 60 degrees to 270 degrees) are most suitable for orchard agriculture.

With respect to wind direction, the prevailing winds in the area are shown below as compass points pointing towards the wind source. The pattern is for warm summer winds to be from the west and cooler winter winds to come from the south. Therefore, the best orientation to take advantage of summer breezes is the west (which is also, it should be noted, the aspect facing the sunset).

**Tree Protection**

Going hand in hand with clustering, the protection of trees and forest is essential to the implementation of this conceptual design. Protection of masses of trees in dedicated open space and the protection of individual trees in a site plan are both relevant.

- Preserve the integrity of the site and in particular the native trees in order to enhance the sense of place and connection to the site.
- Oversee potential removal and prevent damage or willful destruction of protected trees to enhance or maintain tree cover on unimproved or improved property.
- Prevent the unpermitted removal of native trees on a parcel prior to application for a development plan.
- Encourage the protection of native trees through education and enforcement.
- Manage construction to limit site disturbance of any kind as it increases stress on trees that have been undisturbed for years, creating a greater possibility of their decline.
<table>
<thead>
<tr>
<th>Open Space Type</th>
<th>Width (range in meters)</th>
<th>Length (range in meters)</th>
<th>Use</th>
<th>Appropriate Land Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trail</td>
<td>0.5 – 1</td>
<td>Varies</td>
<td>Recreational walking</td>
<td>Conservation, Buffer, Special Purpose Areas</td>
</tr>
<tr>
<td>Path</td>
<td>1 – 2</td>
<td>Varies</td>
<td>Connecting facilities</td>
<td>All</td>
</tr>
<tr>
<td>Promenade</td>
<td>5 – 10</td>
<td>Varies</td>
<td>For a particular view or along a boulevard</td>
<td>New Town, Village</td>
</tr>
<tr>
<td>Sidewalk</td>
<td>2 – 4</td>
<td>Varies</td>
<td>Pedestrian movement along a road or street</td>
<td>New Town, Village</td>
</tr>
<tr>
<td>Pedestrian Way</td>
<td>3 – 5</td>
<td>Varies</td>
<td>Pedestrian movement between facilities. Defined by buildings or walls on either side</td>
<td>New Town, Village</td>
</tr>
<tr>
<td>Courtyard</td>
<td>5 – 10</td>
<td>5 – 10</td>
<td>Pedestrian gathering place defined by buildings and walls,</td>
<td>New Town, Village</td>
</tr>
<tr>
<td>Plaza</td>
<td>10 – 50</td>
<td>10 – 50</td>
<td>Public gathering place with adequate area for special events. Needs buildings for definition on two/preferably three sides</td>
<td>New Town, Village</td>
</tr>
<tr>
<td>Park</td>
<td>50 – 20</td>
<td>50 – 200</td>
<td>Active recreation and gardens</td>
<td>New Town, Village</td>
</tr>
<tr>
<td>Pedestrian Network</td>
<td>NA</td>
<td>NA</td>
<td>Combination of all of the above to provide alt. means of mobility and recreation</td>
<td>New Town, Village, Hotel, Conservation</td>
</tr>
<tr>
<td>Open Space Network</td>
<td>NA</td>
<td>NA</td>
<td>Conservation within a project to connect natural and agricultural conservation into a contiguous and continuous network.</td>
<td>New Town, Village</td>
</tr>
</tbody>
</table>

Open Space and Pedestrian Network
The potential use for each of these is shown in the following table:

Open Space Typology and Use
The following descriptions and illustrative showcase this pedestrian and open space typology:
1. **Trail**

Trails may be paved or unpaved, but generally they are aligned through undeveloped areas in agriculture or conservation. They may be designed to reveal particular views, or to connect special features such as historical sites.

**Indicative Section of a Trail**

![Indicative Section of a Trail](image)

2. **Path**

Paths are pedestrian ways within settled areas that may connect features within a resort, such as pool areas to hotel buildings. They are generally paved and may accommodate electric vehicles and bicycles.

**Indicative Section of a Path**

![Indicative Section of a Path](image)

3. **Promenade**

This is a linear park, which is usually sited along a particular view or amenity. It may form the edge of a park, or be joined to the edge of a street.
4. Sidewalk

The sidewalk is really part of a street – Urban or Neighborhood – but it is also part of the Pedestrian and Open Space Network. It should be an area that is landscaped and has the amenity of retail or habitable space along one side. It is best served by slow moving, or “calm” traffic on the other. Sidewalks may also be seen as connectors between Pedestrian and Open Space typologies.

**Indicative Section of a Sidewalk**

5. Pedestrian Way

These are within urbanized areas and are defined on either side by buildings and walls. They generally connect one gathering place to another or separate facilities.
Illustrative Section of a Pedestrian Way

6. Courtyards

These are intimate, landscaped areas for gathering or single purpose uses such as dining. They are defined by walls or buildings on all sides.

Indicative Section of a Courtyard

7. Plaza

Plazas are urban spaces with buildings defining its side on at least two, and generally three sides. It may be landscaped, but should have adequate space for gatherings and special events, such as markets.
8. Park

Parks have organized areas for gardens and active recreation. They may be of various sizes, configurations and purposes.

9. Buffer and Open Space

These are natural or agricultural areas that are used as transitions between incompatible land uses, to protect viewsheds from villages or other facilities to high value landscapes, or to conserve high value natural or agricultural resources.

Illustrative Section of a Buffer Area

10. Pedestrian Network

Pedestrian networks are in urbanized areas and reflect ways to navigate a village or town by foot, without, or with minimal conflicts with motorized vehicles. They may include a combination of sidewalks, trails, paths, and pedestrian ways, and generally have nodes where plazas or courtyards may occur.

11. Open Space Network

These networks consist of connections between similar or different types of undisturbed areas in forest, agriculture, or grazing. The purpose is to create a continuous and contiguous area for trails and conservation of particular resources.
12. Streets and pedestrian ways

Street Types. The recommended Street Typology is covered in detail above.

13. Building Configuration and Placement

- **Maximum Building Height.** For simplicity's sake, building height is measured in stories above existing grade. Four stories is the maximum recommended allowable height, though two stories is a more common limit, which should keep all buildings close to the height of the existing forest or only slightly above.

- Building height, in addition to being a visual indicator of development intensity, also affects the economic feasibility of development. In addition, it is often said that it is not how tall or dense you make a building or a district, but how you make it tall or dense. This means that design quality will mitigate height, and it may become the case where building height bonuses will be awarded to good design.

**Measurement of Building Height**

- **Build-to Lines.** Build-to lines are intended to maintain the edge of an urban street – to keep the buildings close to the sidewalk or edge of Right of Way. The reason is clear in the case of retail districts, where store windows are best next to the sidewalk. There is also an urban design issue of keeping the street feeling like a space that welcomes pedestrians. The following illustration shows both Build-to lines as well as setbacks. Build-to lines may also be understood as maximum setbacks, whereas setbacks simply stated refer to minimum distance from a property line.
Build To Lines and Setbacks

- **Setbacks.** Setbacks are a typical measurement of a minimum distance from a property line that a building may be. Front setbacks refer to distance from the edge of a street right of way that provides vehicular access to the building. Side may also be from a street on a corner lot, but is usually from a common property line with the adjacent properties on either side. Rear setbacks are from the opposite side of the front.

14. Open Space

- **Open Space Requirements.** Open Space is an essential defining issue of development in the Study Area. This Study was instituted to preserve forest and other types of open space. In general, the less intense development may be, the greater the percentage of property area needs to be in open space.

- Open space may be either natural forest, open land, or in urban locations such as paved plazas. Measurement of dedicated open space is usually in a percentage of property area. However, in urban areas where the form of spaces is critical, it may be expressed in a maximum area in which a minimum amount of open space may be. For example, in a Town Center Core, a requirement of 1 plaza per 10 dunums is enforced. The minimum size of a plaza is 1 dunum, which would mean that the minimum open space would be 10%. Each of these is included in a column on the Regulating Matrix below.