

STATE OF SABAH

TOWN AND COUNTRY PLANNING ORDINANCE (SABAH CAP. 141)
MEMORANDUM TO PENAMPANG DISTRICT LAND USE PLANNING SCHEME

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Name of Local Authority

Notification of Intention to Prepare a Draft Scheme G.N.

Notification of Preparation of Draft Scheme G.N.

Notification of Approval G.N.

Submitted to Central Town and Country Planning Board on

.....
Chairman Local Authority

Adopted by Central Town and Country Planning Board on

.....
Chairman
Central Town & Country Planning Board

Approved

Clerk to the Cabinet

Dated at Kota Kinabalu

INTRODUCTION

DEVELOPMENT TRENDS IN PENAMPANG DISTRICT

The Introduction contains a short overview of development trends and issues for the District of Penampang.

- 1 Most of the District of Penampang falls on the steep and hilly terrain of the Crocker Range while the remainder, extending west to the coastal plain, has a predominantly low relief and comprises of broad alluvial plains with isolated outcrops of low hills. This provides two general classes of terrain; either flat floodplain land or steep hill slopes; placing severe restrictions on future development options. As a result of these constraints most land development is concentrated along the coastal strip and inland along the river floodplains and lower hill ridges. These physical characteristics have been identified as the driving force for the large amount of hill cutting and filling within the District.
- 2 The existing (Penampang and Putatan) and proposed (Babaig, Ramayah and Tansau) local plans will eventually cover most of the land areas under the most intense development pressure. These local plans coincide with the village and countryside zones, and the potential for further development is, to a certain extent, limited by the restrictions associated with the wet padi areas. The issue is complex. There are good environmental and technical reasons for maintaining padi, which by occupying the low lying flood plain regions, increase the water holding capacity of the lands and probably serve an important flood mitigation function. The cultivation of rice is also intimately linked with the cultural heritage of the district and indeed the State. Any attempt to convert the padi areas to other land uses would also run contrary to ongoing initiatives to further develop the agricultural capacity of the State.
- 3 While the Crocker Range Park importantly affords protection to the headwaters of the Moyog and Papar catchments and sub-catchments, this limits considerably the land area available for future development. However, much of the land within the park is steep, with slopes exceeding the 20 degree limit for development.
- 4 Encroachment into the Crocker Range Park is ongoing, particularly along and adjacent to Sg. Moyog and the Kota Kinabalu – Tambunan Road. Encroachment is largely in the form of vegetation clearance and the small settlements associated with semi-permanent cultivation activities. Similar encroachment patterns can be seen extending along the upper reaches of the Papar River. The encroachment is driven by increased land-use pressure, a trend that is likely to continue. As such, priority shall be given to proactive planning and management before the integrity of the park is compromised.
- 5 Encroachment into the Sg. Babagon water catchment continues and may become an issue of concern. Disturbance is currently limited to small-scale semi-permanent agricultural activities. Given the importance of the catchment in supplying treated drinking water for Kota Kinabalu, it is a matter of priority to monitor and restrict further development activities in the catchment. However, an obstacle lies in the fact that a large section of the catchment lies within the neighbouring administrative district of Kota Kinabalu. Future options include strengthening cooperative management between the two districts and/or a review/realignment of the present administrative boundaries.

- 6 A large section of the Sg. Papar catchment lies within the Crocker Range Park in the District of Penampang. Encroachment into the Park, is currently spreading upstream along the Papar River. Access to this area from the District of Penampang would be difficult and require a considerable effort given the natural barrier provided by the steep terrain of the Park. Again given the intended future potential of the catchment to provide potable water for the Town and District of Papar, proactive planning and management options shall be considered including a review/realignment of the present administrative boundaries with a possible transfer of the catchment into the District of Papar.
- 7 Given the spatial limitations that will eventually restrict development within the district, and the expected continued increase in land-use pressure due to continued population growth, both within the district and neighbouring Kota Kinabalu, proactive and careful planning shall provide realistic development options and alternatives.

PART I

GENERAL PURPOSE AND APPLICATION OF THE LAND USE PLANNING SCHEME

Part I contains a description of the general intention and coverage of the Land Use Planning Scheme. Map 1 and 2 shows the area covered by the Scheme and gives an overview of the zoning scheme applied.*

Intention

- 1 The intention of this Land Use Planning Scheme is to bring those areas of the Penampang District, which are now within the First Schedule, but not included within other Town Planning Schemes, within planning control. This is necessary in order to ensure that physical development in rural areas is carried out in a co-ordinated fashion, complies with basic standards and is appropriately located.
- 2 In accordance to Section 18(2) of the Town and Country Planning Ordinance Cap. 141 this memorandum contains provisions for regulating or prohibiting the development of land in the Penampang District Land Use Planning Scheme scheduled area to which such scheme applies, and generally for carrying out of any of the objects for which such scheme is made, and in particular for dealing with any of the matters mentioned herein.

Coverage

- 3 This Land Use Planning Scheme shall apply to the whole area of the Penampang District except those areas which are already covered by local plans (draft or otherwise), namely Putatan, Penampang, Babaig, Ramayah and Tansau areas. The area covered, and zoning applied, by the Penampang District Land Use Planning Scheme is shown on Map 1 and 2 overleaf.
- 4 It is intended that the present Scheme will cover developments in the rural areas in Penampang District until approximately the year 2020.

New plans

- 5 New or expanding urban areas might continue to be planned by means of individual local plans, and notwithstanding the foregoing paragraphs any other Town Planning Scheme formally approved under the Town and Country Planning Ordinance shall take precedence over this Land Use Planning Scheme in those areas to which it

*

Map 1 Satellite image (SPOT 4, April 14, 2000) of the District of Penampang. Green represents vegetation cover while pale pink, brown and purples represent cleared areas. The cleared areas in the upper reaches of Sg Moyog and Sg Papar can mostly be attributed to small clearings for semi-permanent cultivation. The urban areas of Kota Kinabalu and Penampang show as a continuous range of purples and whites

Map 2 Generalised zoning as proposed for the Penampang Land Use Planning Scheme

applies. Upon approval of any such new local plan it will not be necessary to formally revoke this scheme on those areas as the new one will automatically take precedence.

PART II

DEVELOPMENT PLANS

Part II outlines the conditions and requirements for Development Plan approval.

Approval required

- 1 Subject to the exceptions in para 3 below no person shall commence development of any land until a Development Plan has been submitted to, and approved by the Local Authority or the Central Board for the area within which it is situated. The definition of the term development shall be that given in S2 of the Town and Country Planning Ordinance (Cap. 141).

Approving Authority

- 2 Development Plans shall be submitted to and approved by the Local Authority, when the Land Use Planning Scheme is *final*. When the Land Use Planning Scheme is *draft*, the Development Plan shall be submitted to the Local Authority and approved by the Central Board.

Exceptions

- 3 Notwithstanding the above paragraphs the following developments in the Hill, Countryside and Village zones shall not require the approval of a Development Plan before commencement:
 - 3.1 The preparation of land, planting, harvesting and storage of *agricultural* crops
 - 3.2 The preparation and use of land for *animal grazing*
 - 3.3 The planting, growth and harvesting of *timber* products
[For the avoidance of doubt, 3.1-3.3 above shall be deemed not to include any buildings constructed in permanent or semi-permanent materials]
 - 3.4 *A dwelling house* providing it is situated on a lot of not less than 1 acre in area, is not closer than 20 metres to the nearest other building, is not within 10 metres of any boundary, is not within 20 metres from the nearest stream or river with a width of more than 3 metres and is not situated on a slope steeper than 20 degrees. Annex 4 outlines the procedure and method to be used to determine slope degree
 - 3.5 *Any residential building constructed of temporary materials* provided it is not located within 10 metres of any road reserve and does not exceed 1000 square feet in floor area, is not within 20 metres from the nearest stream or river with a width of more than 3 metres and is not situated on a slope steeper than 20 degrees.

Content of the Development Plan

- 4 The Development Plan shall contain such drawings and information as are required by the form in Annex 1, by paragraph 5 below and/or any other particulars as may be necessary to indicate with reasonable particularity whether the proposed (a) use of land, (b) erection, (c) alteration or extension of a building or (d) the carrying out of work, complies in all respect with the provisions of this Land Use Planning Scheme.

- 5 In the case of all developments requiring approval of a Development Plan this plan shall contain:
 - 5.1 *Introduction*, containing a brief description of the project background, its current status, project initiator and consultants

 - 5.2 *Project description*, containing a description of the project purpose, concept, component, location, zoning, area, magnitude, sewerage systems, schedule and activities. Furthermore indication of product, raw materials, energy, land, water, labour transportation, and infrastructure requirements to be used shall be included together with a description of any product/waste produced by the project. For more details on project description see paragraph 6 below

 - 5.3 *Description of existing environment*, containing a description of the terrain, landform, existing land use, existing and proposed development of adjoining land, water bodies, vegetation covers, protected areas, communities, economic activities and infrastructure/services facilities within one kilometre of the proposed project site

 - 5.4 *Proposed mitigation measures*, containing a general description of measures proposed to be taken to mitigate the negative impacts of the projects, e.g.: (i) Site planning, (ii) Technical measures, e.g.: process selection, recycling, pollution control and treatment, containment (e.g. siltation trap), and (iii) Aesthetic and ecological measures, e.g.: mounding, design, colour, landscaping, revegetation, turfing, etc. brief description of the project background, its current status, project initiator and consultants

[Maps, diagrams, recent photographs and other illustrative material shall be included in item 4.1-4.4 above]

- 6 Details on the project description shall include the following:
 - 6.1 The dimensions and location of the site and the proposed development drawn to a suitable scale. The dimensions shall include the land or each subdivided lot, the area and the finished surface level. The location shall be drawn to a scale of 4 chains to an inch showing the proposed development and be shown by the coordinates (longitude-latitude) for the extremes of the boundaries. Recent photographs of the area and location shall be provided

 - 6.2 The purpose for which the land or each subdivided lot is intended to be used. The lots, within the development, to be clearly numbered

- 6.3 When in a plan of application for approval of a proposed subdivision, there is shown lands reserved for roads, open spaces or public utilities, the owner of the land shall specify on the plan the manner of disposition of the title to such land
- 6.4 Existing services, e.g. roads, electricity and water supply, drains, sewers
- 6.5 Gradient of proposed roads and drains and their cross-sections, and the alignment, width, gradient and level of all existing and proposed new road reserves, including widening of existing roads on the area to be developed and on adjoining lands
- 6.6 The topography and natural drainage of the whole of the area to be developed
- 6.7 The alignment, cross-section and gradient of all existing and proposed new drainage reserves or easements on the area to be developed and on adjoining lands
- 6.8 Where the buildings are to be erected, their layout, design and external appearance, hill slope gradient from the building to the first sharp break in slope above and below or at least a minimum 500 m upslope and downslope of the building site, distance to stream or river with a width of more than 3 metres, means of access thereto and any proposals for landscaping or tree planting

Approval, approval with conditons or non-approval

- 7 Following consideration of the development plan submitted the Local Authority or the Central Board may:
 - 7.1 Approve the Development Plan
 - 7.2 Approve the Development Plan subject to conditions
 - 7.3 Refuse the Development Plan.

Approvals

- 8 The following land uses will normally be permitted in principle within the Village and Countryside zones of the Land Use Planning Scheme subject only to the submission of suitable details:
 - 8.1 Buildings, including dwelling houses, required to develop land for agricultural or forestry purposes
 - 8.2 Industrial developments required for the processing of local agricultural and forestry products
 - 8.3 Development for the extraction and processing of local natural resources
 - 8.4 Minor rural townships, camps, jetties and other facilities to encourage the development of rural resources.
- 9 The owner of any land in respect of which a plan of subdivision has been approved by the Local Authority or the Central Board shall deposit with the Local Authority a copy

of the Survey Plan of subdivision within one month of the original survey plan having been deposited with the Director of Lands and Surveys or the District Surveyor under the Surveyors (Conduct of Title Surveys) Regulations, 1962.

Approvals with conditions

- 10 Where a Development Plan is approved subject to conditions such conditions may include restrictions and prohibition as to location, height, yards, position of buildings on sites, coverage drainages, disposal of effluents, and preservation of amenities and to such special conditions, restrictions, and prohibitions (whether in respect of the same matters or other matters) as the Local Authorities or the Central Board may think fit to impose.
- 11 Standards for for example space around buildings, car parking and roads are contained in the Part IV of the Land Use Planning Scheme. These standards should be adhered to in all cases where they are appropriate and may also be included in the form of conditions to approval.
- 12 Where the Development Plan incorporates a road, footpath, drainage channel, water supply, sewerage, electric power supply, tree planting, landscaping or recreation area, the Local Authority or the Central Board shall specify which of such works are to be constructed by the developer at his cost or on his behalf at his cost and shall inform the developer in writing accordingly.
- 13 Where the local Authority or the Central Board approves a Development Plan such approval shall be subject to the conditions that the developer shall:
 - 13.1 Submit to the appropriate authority; plans and specifications in respect of all public works to be constructed by him on his behalf including roads, footpaths, drains, water supply, electric power, street lighting
 - 13.2 Obtain a certificate of approval from the appropriate authority of such plans specifications of the public works specified and that such certificates together one set of such approved plans and specifications shall be lodged at the Local Authority
 - 13.3 Enter into a bond with the local Authority for the satisfactory completion of construction of works specified in paragraph 14.
- 14 Where the development involves a change in the land use, approval is required from The Central Town and Country Planning Board to rezone the land on which the construction will be carried out under Part I, Section 3 of Town and Country Planning Ordinance 1950.

Non-approvals

- 15 The following land uses will normally be refused permission within the Village, Countryside and Hill zones of the Land Use Planning Scheme:
 - 15.1 Industrial developments not utilising local agricultural or forestry products or local natural resources
 - 15.2 Residential estate developments serving workers in urban rather than rural areas

- 15.3 Commercial developments including godowns not connected with locally produced products or solely serving the local area.
- 16 The term 'local' as used in paragraphs 15 above refers to an area which shall not in any case exceed the area of the Local Authority concerned.
- 17 The Local Authority or the Central Board may also refuse to approve a Development Plan where *general standards and zoning regulations*, some of which are stipulated in Part IV and V, have not been complied with. This would for example be the case, when:
- 17.1 The land shown thereof, is liable to inundation by tidal, drainage or flood waters
 - 17.2 There is no provision, or insufficient provision, for the safe and efficient drainage and disposal of storm water from the land or any part thereof
 - 17.3 The plan does not provide for reserves or easements (right of way) necessary for water supply, sewerage or drainage purposes
 - 17.4 A water supply sufficient for domestic purposes is not available to the land and any allotment defined therein
 - 17.5 Sewerage cannot be disposed of from the land and any allotment defined therein without risk to health
 - 17.6 The land, or any part thereof, is unsuitable for the purpose for which it is to be developed whether because of the instability of soils, the proximity of the land to an airport or otherwise
 - 17.7 There is no provision for useable open space, or the provision made for such open space is unsatisfactory or insufficient having regard to the open space in the locality
 - 17.8 Access from any, allotment defined therein to the carriageway of any existing or proposed road, street or thoroughfare is unsafe and inconvenient
 - 17.9 Access from any allotment or lot defined therein to a road classified as an Urban Highway or a District Distributor is prohibited under the provisions of this Scheme and the plan of subdivision does not show any alternative access
 - 17.10 Any proposed road, street or thoroughfare is not so graded or so capable of being graded as to be capable of being safely and conveniently connected with any existing road, street or thoroughfare
 - 17.11 Any proposed road, street or thoroughfare is unsafe or inconvenient for traffic, or does not provide for convenient inter-communication with neighbouring localities
 - 17.12 Adequate provision for roads is not made on the plan

- 17.13 A road is not shown on the plan, which is necessary or convenient for the access to or from any road through land adjoining the land depicted on the plan, or to or from any road shown on a plan approved by the Road Authority
 - 17.14 A road is not shown on the plan for safe and convenient inter-communication with land adjoining the land depicted on the plan
 - 17.15 In the opinion of the Local Authority acting on the advice of other Government Departments, the land to be developed or land immediately adjacent thereto, will be subjected to undue erosion from surface or underground waters or to landslides or excessive cost of construction and maintenance of public works by reason of the character of the proposed development.
 - 17.16 The development of the site in a piecemeal basis will preclude the satisfactory, layout of a larger area. Proposals for the whole of such areas should be submitted before approval is given to the layout of individual lots
 - 17.17 The layout or designs of buildings are out of character with the area in which they are situated and will thereby detract from the visual amenity or will have adverse impact on the neighbours or surrounding areas
 - 17.18 Insufficient provision is made for tree planting and landscaping having regard to the type of buildings or uses and the amenity of the surrounding area
 - 17.19 The proposed mode of development would prevent the satisfactory future development of the land depicted on the plan or any part thereof.
- 18 Where the Local Authority or the Central Board refuses approval to a Development Plan the Local Authority or the Central Board, shall, when notifying the owner of the refusal of such approval, inform him of the reasons for refusing such approval.

Exsiting or ongoing developments

- 19 No provision of the Land Use Planning Scheme shall be construed as preventing the continuing use of any land or building for the purpose of which the land or building was being lawfully used at the date this Land Use Planning Scheme took effect or as preventing the carrying out or completion on any land of any work for which every consent, approval or permission under any law or Approved Scheme authorising the work to be carried out had been obtained and was current.

PART III

APPLICATION PROCEDURES AND ADMINISTRATION

Part III contains a description of the application procedures and administration as per January 2001. These procedures may be amended and changed from time to time, and the Project Proponents are required to seek updated information on the procedures at the Regional Town and Country Planning Department or the Local Authority.

Application procedure

- 1 An overview of the application and approval procedures for Development Plans as per January 2001 is given in Figure 1 and summarised below:
 - 1.1 Applicants must prepare a Development Plan proposal by qualified person(s) and submit this to the Local Authority. The proposal shall include the details as required in the form contained in *Annex 1, paragraph 4, 5 and 6 in Part II and other requirements* as per the relevant By-laws, Enactments, Rules, Regulations and Guidelines as specified by the Local Authority
 - 1.2 The Local Authority shall check the Development Plan for completeness and accordance with the zoning in the Land Use Planning Scheme
 - 1.3 The Local Authority shall refer the Development Plan proposal to the relevant departments for technical comments. If the technical comments require the Development Plan to be amended, the Local Authority will return the Development Plan to the Developer for the necessary amendments
 - 1.4 If the land has to be rezoned for a different land use other than specified in the land title, the Local Authority shall submit the application and a planning brief to the Central Town and Country Planning Board for approval to rezone the site
 - 1.5 If the Development Plan falls within the Conservation of Environment (Prescribed Activities) Order 1998, the Local Authority shall secure that the Project Proponent undertake an EIA before commencement of activities
 - 1.6 Development Plans will be approved by the Local Authority depending on, for example, comments and approval from the Central Town and Country Planning Board and other relevant technical departments
 - 1.7 A decision on an application for planning permission to use the land under this scheme shall be notified to the applicant in the form contained in *Annex 2* within a period of six (6) months of the date of receipt of the application by the Local Authority or the Central Board and in the case of a permission: (i) Being granted subject to conditions which shall be set out in full, (ii) Being refused, a summary of the reasons therefore shall be given.

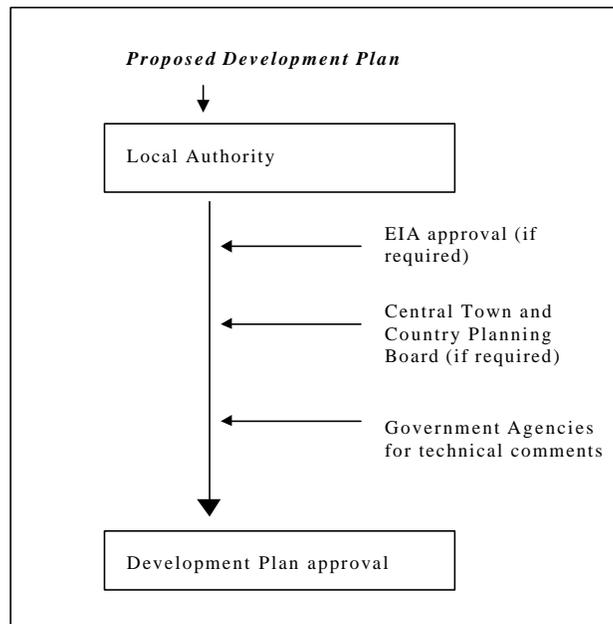


Figure 1. Overview of Development Plan application and approval procedures

Administration requirements

- 2 The Local Authority shall maintain, for public inspection without fee during its ordinary hours of business, a Register of Applications for planning permission made under this Land Use Planning Scheme. There shall in relation to each application be recorded in this Register the following matters:
 - 2.1 The serial number of the application
 - 2.2 The name of the applicant
 - 2.3 The date of the application
 - 2.4 A description of the land affected by the application
 - 2.5 A brief summary of the matters, acts, or things in respect of which permission is sought
 - 2.6 The decision thereon; whether the application was approved (together with a statement of conditions, if any) or was refused together with a brief statement of reasons therefore.

- 3 The Local Authority shall maintain a Register of Applications for subdivision in which shall be recorded:
 - 3.1 The serial number of that application
 - 3.2 The date of the application
 - 3.3 A description of the land affected by the application
 - 3.4 A brief summary of the purposes of the application
 - 3.5 Whether the application was approved or rejected
 - 3.6 A brief description of the works to be constructed by the owner of the land and whether certificates of approval have been granted by the appropriate authority in respect of such works
 - 3.7 The serial number -of the survey plan of subdivision deposited with the Local Authority in accordance with paragraph 4 of this Part.

- 4 The Local Authority shall maintain for public inspection without fee during its ordinary hours of business a copy of this Land Use Planning Scheme including all the Schedule thereto.

PART IV

GENERAL STANDARDS AND REGULATIONS

Part IV contains general standards and regulations that have to be adhered to by the development plan regardless of the proposed location

SCHEDULE 4.1: STANDARDS AND REGULATIONS FOR BUILDINGS

This schedule refers to xxx of the xxx, JKR and xxx.

- 1 Residential Buildings
 - 1.1 Adequate Open Space should be provided around all residential buildings. This should be not less than 20 feet (6 meters) set back on all sides or on three sides in the case of semi-detached buildings. In circumstances where terraced buildings are permitted a minimum of 20 feet (6 meters) at front and rear set back should be provided, and the total length of the building should not exceed 300 feet (90 meters)
 - 1.2 All residential units built in permanent or semi-permanent materials shall be provided with adequate means for the disposal of sewerage. This will normally be by means of septic tank
 - 1.3 The maximum depth of any residential building shall not exceed 40 feet (12 meters), measured between external walls.
- 2 Commercial Buildings
 - 2.1 All commercial buildings shall be constructed in semi-permanent or permanent materials
 - 2.2 The maximum length of any commercial building shall not exceed 300 feet (90 meters)
 - 2.3 Provision for rear access to all commercial buildings which front onto a through road shall be 50 feet (15 meters) minimum
 - 2.4 Where residential accommodation is provided in commercial buildings the provision of paragraph 1 above shall apply.
- 3 Industrial Buildings
 - 3.1 The front yard shall be 40 feet (12 meters) for General and Special Industrial use and 20 feet (6 meters) for Light Industrial and Warehouse use and shall be reserved for parking and landscaping
 - 3.2 Not more than two entrance/exit drives shall be permitted on to any public road
 - 3.3 Side yards (applicable to end units of terraces and one side of semi-detached units only) shall be 20 feet (6 meters)

- 3.4 Rear setback should be at least 20 feet (6 meters) from boundary
- 3.5 Provision for rear access to terraced industrial buildings shall be 40 feet (12 meters) minimum
- 3.6 Adequate provisions shall be made for the treatment of all industrial effluents or waste products within the site
- 3.7 Residential units may not be included within an industrial development except, where the nature of the industry is such that the residential units will not be affected by it. Where such units are permissible the provisions of paragraph 1 above shall apply.

4 Rural Housing

- 4.1 Within the area covered by this planning scheme a development application must be submitted of any new dwelling or other structure, including those associated with agricultural use of land subject to paragraph 3.3 in Part II of this Scheme
- 4.2 Planning permission for new dwellings in the Countryside Area will normally only be granted if any or all of the following criteria are met:
 - (a) the proposed dwelling is for use in association with the agricultural use of land
 - (b) it is within an established kampung area
 - (c) it is on the edge of an established kampung area
 - (d) it replaces an existing dwelling on the same site or on a site immediately adjacent to that dwelling
 - (e) it is required to house members of the same family group as another dwelling on the same lot or adjacent lot
 - (f) it makes no encroachment on productive agricultural land and does not involve the loss of mature trees.
- 4.3 The Authorities may impose conditions on the demolition or restoration of existing dwellings referred to in planning applications and on the structure, materials, finish and/or layout of the new building and its site
- 4.4 The Authorities may also impose conditions on the occupation by or leasing of the dwelling to persons not engaged in agricultural employment or their dependants.

SCHEDULE 4.2. CAR PARKING STANDARDS

This schedule refers to xxx, of the xxx, Town and Regional Planning Department, 19xx.

- 1 Adequate provisions for off street car parking shall be made in all developments to which road access is available or proposed.

- 2 The number of such spaces required is as follows:
 - 2.1 Residential buildings
 - For each residential unit 1 space

 - 2.2 Commercial Buildings
 - Shops below 1000 sq. ft. area 1 space
 - Shops above 1000 sq. ft. area 2 spaces
 - Cinemas and other places of public entertainment. 1 space per 10 seats or 100 sq. ft of floor area, whichever is the greater.
 - Hotels 1 space of every 2 rooms.
 - Restaurants and Cafe 1 space for every 100 square feet

 - 2.3 Industrial Buildings
 - Minimum 1 space for cars and one for lorries per unit. 2 extra spaces for every 1500 sq.ft. of floor area over the first 1500 sq. ft.

 - 2.4 Public Buildings
 - Public Halls, Clubs and places of Worship 1 space for every 100 sq. ft. of public floor area.
 - Schools 1 space for every 2 staff members.
 - Offices 1 space per every 500 sq. ft. of floor area.

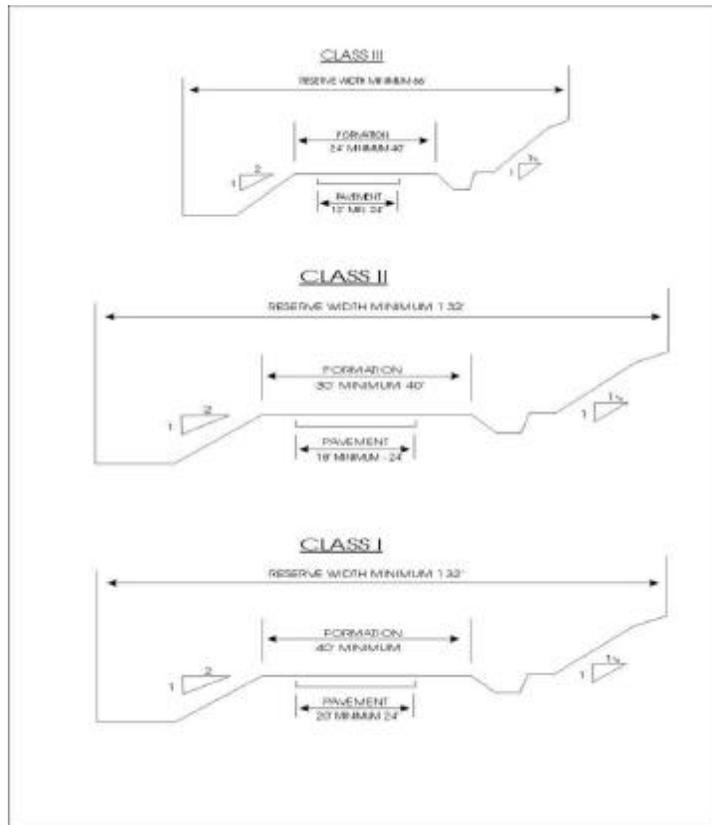
- 3 Parking bays for cars shall not be less than 17' 6" x 8' for angular parking and not less than 20'-00" x 7' 6 " for longitudinal parking parallel to a kerb line. Aisle widths additional to the space required for parking in conjunction with parking bays shall not be less than:
 - 12 feet for parallel parking
 - 15 feet for 45 degrees angle parking
 - 18 feet for 60 degrees angle parking
 - 20 feet for 90 degrees angle parking.

- 4 Parking bays for lorries shall not be less than 24' x 10' for angular parking. loading and unloading bay shall be provided (except where the Local Authorities consider unnecessary) for each occupation and shall not be less than 25' x 12'.

SCHEDULE 4.3. ROAD STANDARDS AND REGULATIONS

This schedule refers to xxx, of the xxx, JKR, 19xx.

- 1 Access from any, allotment defined therein to the carriageway of any existing or proposed road, street or thoroughfare should be safe and convenient.
- 2 Access from any allotment or lot defined therein to a road classified as an Urban Highway or a District Distributor is prohibited under the provisions of this Scheme and the plan of subdivision shall show any alternative access.
- 3 Any proposed road, street or thoroughfare is graded or capable of being graded as to be capable of being safely and conveniently connected with any existing road, street or thoroughfare.
- 4 Any proposed road, street or thoroughfare is safe and convenient for traffic, and provide for convenient inter-communication with neighbouring localities.
- 5 Adequate provision for roads is made on the development plan.
- 6 A road is shown on the development plan, which is necessary or convenient for the access to or from any road through land adjoining the land depicted on the plan, or to or from any road shown on a plan approved by the Road Authority.
- 7 A road is shown on the plan for safe and convenient inter-communication with land adjoining the land depicted on the plan.
- 8 The following road standards should be applied:



SCHEDULE 4.4. RIVER RESERVE STANDARDS

This schedule refers to xxx, of the xxx, Drainage and Irrigation Department, 19xx.

- 1 No construction, clearing or removal of vegetation within 20 metres from a stream or river with a width of more than 3 metres is allowed.

SCHEDULE 4.5. CONSTRUCTION ON HILL SLOPE STANDARDS AND REGULATIONS

This schedule refers to the Conservation of Environment Enactment 1996, Environmental Conservation Department, the Conservation of Environment (Prescribed Activities) Order 1999. Reference should be made to the EIA guideline for 'Construction on Hill Slopes, Environmental Conservation Department, 2001, and 'Guidelines for Construction in Hilly Areas', Ministry of Local Government and Housing, 1997.

- 1 Development proposals for construction on hill slopes should follow 'Guidelines for Construction in Hilly Areas, Ministry of Local Government and Housing, 1997' and 'EIA guideline for 'Construction on Hill Slopes', Environmental Conservation Department, 2001'.
- 2 On hills with slopes having a gradient of 20 degrees or more, a mandatory Environmental Impact Assessment is required for construction of buildings for commercial purposes; buildings exceeding 4 storeys high for residential purposes; construction of parks or resorts, and other recreational facilities or major roads that could lead to avoiding unwanted impacts on the environment. The EIA has to be submitted to the Environmental Conservation Department, and an Agreement of

Environmental Conditions has to be signed by the Project Proponent before any activity can commence.

- 3 Any slope of 20 degrees or steeper, or any other slope the Authorities may specify, must be retained. If disturbance is approved, as far as possible, the existing vegetation cover must be retained, or if disturbed, the site must be re-vegetated.
- 4 If a building is near or on a major or minor ridge or ridgeline the planting scheme must include species that will grow taller than the building within 5 years of development. Development Plan applications may be required to include cross-section drawings showing the relationship between finished site levels, building height and the height of existing and proposed trees.
- 5 The removal from the area of all waste material resulting from clearing, felling, earthworks or construction will be required.
- 6 Applicants seeking to develop sites wholly or partly within a steep area will be required to submit an up-to-date detailed topographic, geologic and vegetation survey at a scale of not less than 1:2,500.
- 7 All applications for development within steep areas must include a comprehensive landscaping and planting scheme at the scale of 1:2,500, indicating: Areas where existing vegetation is to be retained; areas of new planting with species proposed; any alteration to the land formation; and appropriate measures to protect slopes from erosion temporarily and in the longer term.
- 8 Any construction on slopes shall be designed for the purposes not leading to erosion or instability of the slope.

SCHEDULE 4.6. ACTIVITIES REQUIRING EIA

This schedule refers to the Conservation of Environment Enactment 1996, Environmental Conservation Department and the Conservation of Environment (Prescribed Activities) Order 1999, Environmental Conservation Department.

- 1 Activities that may significantly affect the environment may according to Conservation of Environment (Prescribed Activities) Order, 1999, be due to an Environmental Impact Assessment. Activities and projects mandatory for an EIA include:

| Section | Paragraph |
|-----------------------------|---|
| 1. Agricultural Development | <ol style="list-style-type: none">i. Development of agricultural estates or plantations covering an area of 500 hectares or more – (a) from land under secondary or primary forests; (b) which would involve the resettlement of more than 100 families or more; or (c) which would involve modification in the use of landii. Conversion of mangrove swamps and other wetland areas into agricultural estates having an area of 50 hectares or moreiii. Development of agricultural area adjacent to any conservation area, park or sanctuary declared under any written law |
| 2. Forestry | <ol style="list-style-type: none">i. Extraction or felling of timber covering an area exceeding 500 hectares or more |

- ii. Extraction or felling of timber within or adjacent to any water catchment area whether it has or has not been declared under any written law
 - iii. Development of forest plantation having an area exceeding 500 hectares
- 3. Development of commercial, industrial and housing estates
 - i. Development of commercial, housing or industrial estates covering an area exceeding 50 hectares or more
 - ii. Development of industrial estates with factories to accommodate medium or heavy industries
 - iii. Conversion of mangrove swamps or other wetland areas into industrial, commercial or housing estates covering an area of 30 hectares or more
 - iv. Reclamation of land, whether by the sea or along river banks, for housing, commercial, or industrial estates
 - v. Development of industrial, commercial or housing estates within 1000 metres from the high-water mark of the coastal areas and within the foreshores of the State
 - vi. Construction of buildings for commercial purposes or buildings exceeding 4 storeys high for residential purposes on hills with slopes having gradient of 20 degrees or more
- 3. Activities which may pollute inland water or affect sources of water supply
 - i. Development of groundwater with a supply capacity of 4500 cubic metres or more per day
 - ii. Construction of dams, artificial lakes or reservoirs with a surface area of 50 hectares for impounding of water
 - iii. Irrigation schemes covering an area of 1000 hectares or more
 - iv. Creation of lakes, ponds for the rearing of fish or prawns, covering an area of 50 hectares or more
 - v. Mining pursuant to any Mining Lease issued under any written law covering an area exceeding 50 hectares or more or where mining involves the use of chemicals (including explosives) of any nature
 - vi. Diversion of watercourses, streams or rivers or the excavation of sand and other rock materials there from
- 5. Fisheries and activities which may endanger marine or aquatic life, plants in inland waters or erosion of river banks
 - i. Fish culture and other forms of fishing on a commercial scale which involve the setting up of fishing appliances and equipment in the rivers, watercourses or coastal sea
- 6. Extension and removal of earth, rock materials and mining

Quarrying of aggregates, limestone, silica, quartzite, sandstone, sand, marble or stones within 3 kilometres of any existing residential, commercial or industrial areas, or which may cause damage or have an adverse impact on fragile ecosystem

 - i. Open cast mining for minerals or any form of mining for minerals which is likely to affect the landscape of the mining area so as to require rehabilitation thereof upon the cessation of mining activities; or
 - ii. Extraction or removal of earth with a volume of 50,000 cubic metres or more from any area on State land, Forest Reserve or alienated land for any purpose

- | | |
|--|--|
| 7. Any other activities which may damage or have an adverse impact on quality of environment or natural resources of the state | <ul style="list-style-type: none"> i. Construction of parks, resorts or other recreational facilities or major roads on hills with slopes having gradient of 20 degrees or more ii. Construction of golf courses iii. Construction of port facilities (including warehouses, godowns, container yards and cargo storage facilities) or open jetties with a length of 100 metres or more or closed landing jetties for commercial use along any of the rivers or sea front iv. Development of recreational or resort facilities within 1000 metres from the high-water mark of the coastal area and within the foreshores of the State v. Creation of parks, resort or recreational facilities having an area of 30 hectares or more for commercial purposes vi. Any development activity intended to be carried out within a water catchment area declared under any written law vii. Development of tourism-related facilities having an area of 30 hectares or more |
|--|--|

SCHEDULE 4.7. SITE CLEARANCE AND EARTHWORKS STANDARDS AND REGULATIONS

This schedule refers to the xx 19xx, Penampang District Authority.

- 1 Developers will be required to submit, with any planning application for a site exceeding one hectare, a plan, or plans showing landscape proposals and the extent of proposed earthworks in relation to existing tree cover and topography. Site clearance and earthworks may only be undertaken after the planning application is approved and must then be in accordance with the approved plan. If site clearance or earthworks do not comply with these requirements, the developer will be obliged, as a condition of obtaining building permission, to deposit with the Authorities a bond equivalent to the cost of reinstatement of the site and/or approved planting. Release of the bond will occur when the required works have been completed.

SCHEDULE 4.8. MINERAL EXTRACTION REGULATIONS

This schedule refers to the xx 19xx, xxx Department, Jabatan Geosains xxx.

- 1 Brick clay and coarse aggregate are currently extracted from deposits in the scheme area. The extent of the brick clay beds is not known. Should it be found that there are workable mineral reserves under any of the areas in the municipality, extraction will be encouraged wherever practicable.
- 2 The extraction of coarse aggregates from hills covered by the Hill Policy will be discouraged.
- 3 Planning permission must be applied for all proposed land clearance and extraction outside designated quarrying areas.

PART V

SPECIFIC LAND USE ZONE REGULATIONS

Part V contains specific regulations for the different land use zones within the Penampang District Land Use Planning Scheme, namely Village zones, Countryside zones, Hill zones, Water Catchment zones and Protected Areas.

For each of the five zones an overview map is included in the Memorandum. Detailed map(s), showing the zones for the Penampang District Land Use Planning Scheme area, accompanying this Memorandum at a scale of 1:12,500.

The zoning is based on an analysis of the existing and expected land use development trends and pressures in the district, including the present level of vegetation disturbance, environmental concerns and issues for example hill slope gradients, soil erosion hazard, function of land as a water catchment, and park and landscape protection services. Examples of maps used for these analysis are presented in Annex 5.

SCHEDULE 5.1. VILLAGE ZONES

An overview of the village zones in the Penampang District are shown (Map 3). For this zone, the following planning policies and guidelines apply:

Village Policy

- 1 The aim of the Village policy is to:
 - 1.1 Provide for planned and appropriate development of rural villages
 - 1.2 Prevent the establishment of industrial and semi-industrial development within relatively densely populated rural village areas
 - 1.3 Prevent informal settlements.

Village zone: Predominant Use

- 2 Predominant use within the Village zone include:
 - 2.1 Detached house (minimum land area of 8,712 sq. ft. per lot for subdivision of individual private land)
 - 2.2 Padang
 - 2.3 Kindergarten
 - 2.4 Primary School
 - 2.5 Community Hall
 - 2.6 Religious Centre
 - 2.7 Clinic
 - 2.8 Police Station
 - 2.9 Local Shops
 - 2.10 Any other building related to community activities.

Village zone: Prohibited Use

3 Prohibited use within the Village zone include:

- 3.1 General industry
- 3.2 Light Industry
- 3.3 Warehouse/Godown
- 3.4 Poultry farm
- 3.5 Pig Farm
- 3.6 Timber Yard/Sawmill
- 3.7 All Refuse Dumps
- 3.8 Any other building or development detrimental to village community
- 3.9 Mining and quarrying.

SCHEDULE 5.2. COUNTRYSIDE ZONES

An overview of the Countryside zones in the Penampang District is provided (Map 3). For this zone the following planning policies and guidelines apply:

Countryside Policy

1 The aim of the Countryside policy is to:

- 1.1 Protect land not required for development from haphazard or premature development
- 1.2 Protect the most productive agricultural land
- 1.3 Protect the rural environment that provides a scenic contrast to the city.

2 The Kota Kinabalu and Penampang Districts currently produce about 10 per cent of Sabah's annual rice crop. The State Government of Sabah through the Department of Agriculture and the National Padi Board are committed to promoting an increase of this crop by bringing additional land under cultivation and by raising productivity in established rice growing areas through irrigation, subsidies and other methods. Existing padi fields shall be conserved in order to:

- 2.1 Preserve the most productive padi land in the Land Use Planning Scheme area for continued use in growing rice
- 2.2 Protect the investment in irrigation works, undertaken with I.B.R.D (World Bank) financial assistance in recent years, from becoming prematurely redundant
- 2.3 Prevent the piecemeal filling or development of land that is difficult to drain.

Countryside zones: Predominant Use

3 Predominant use within the countryside zones include:

- 3.1 Cash Crop (rubber, cocoa, etc.)
- 3.2 Orchards
- 3.3 Vegetables farm
- 3.4 Animal Grazing
- 3.5 Poultry farm, pig farm and other animal farm are permitted provided the authorities are satisfied that they are not polluting nearby streams or rivers; and located away from existing village.

Countryside zones: Prohibited Use

4 Prohibited use include:

- 4.1 General Industry
- 4.2 Light industry
- 4.3 Warehouse/godown not storing local agricultural/forestry products.
- 4.4 The filling-in of padi fields so that they are no longer usable for the growing of rice
- 4.5 Any structure, which would inhibit use of padi fields or of the irrigation system.

5 The Authorities will in general not grant permission for a change of use away from agricultural use within the Countryside zones.

6 Specifically it shall be noted that permission in the Countryside zones is required for:

- 6.1 The excavation, reclamation or clearance of land for any purpose or use whatsoever including the filling in of padi fields
- 6.2 The cutting down, topping, lopping, uprooting, wilful-damage or wilful destruction of trees
- 6.3 The construction on land used for the purposes of agriculture of a dwelling house or any other development, subject to 3.3 of Part II in this Scheme
- 6.4 The change of use of land - part thereof or building or any part thereof
- 6.5 The deposit of refuse of waste materials
- 6.6 Development and construction on slopes with a gradient of more than 20 degree.

Map 3 (Overleaf). The Village and Countryside Zones (undifferentiated). While some small Village and Countryside zones occur along the Sg Moyog and Kota Kinabalu – Tambunan road, most of these zones fall within the areas proposed for local plans.

SCHEDULE 5.3. HILL ZONES

An overview of the Hill zones in the Penampang District is provided (Map 2 and Map Annex 5.2). For this zone the following planning policies and guidelines apply:

Hill Policy

- 1 The aim of the Hill policy is to:
 - 1.1 Conserve areas of visually significant landform and vegetation
 - 1.2 Protect hill slopes and valleys from clearance, cutting and over-development
 - 1.3 Secure appropriate development in water catchment areas of Sungai Moyog and Sungai Papar that are located within the Hill zones.
- 2 In the District of Penampang, development of hill slopes is becoming increasingly evident near urban centres and in hilly areas with tourism potential such as Gunung Emas. The types of structures erected on such slopes range from residential houses to commercial condominiums/apartments and chalets; other structures include temples, water storage reservoirs and telecommunication/transmission towers.
- 3 The major adverse environmental impacts of construction on hills are:
 - 3.1 Soil erosion due to removal of vegetation creating bared surfaces, and cutting the hill slope creating steeper slope and increasing surface runoff
 - 3.2 Slope stability due to removal of foot slope, change in stress conditions of rock underlying the slope, change in groundwater conditions and increasing load on slope section where structures will be sited
 - 3.3 Landscape impacts due to the direct physical change to existing physical features.
- 4 While it is not intended that all development should be prohibited in the hill zones, the Authorities will impose more stringent additional conditions when granting approvals to ensure that the visual characteristic of the slopes, woods, valleys and ridge lines are not substantially altered, and to ensure that important water catchment areas are not destroyed.

Hill zones: Predominant Use

- 5 Predominant use within the Hill zones include:
 - 5.1 Recreational or restaurant use
 - 5.2 Residential use for a single detached dwelling or multiple dwelling units
 - 5.3 Tourism development such as hotel, chalet and golf course.

Hill zones: Prohibited Use

6 Prohibited use include:

- 6.1 A building on or near a major or minor ridge line that will be higher than surrounding trees when viewed from below will normally not be approved
- 6.2 The use of heavy earth moving and/or clearing equipment may be prohibited
- 6.3 In Hill zones of outstanding visual and environmental quality, development will normally not be permitted on any site within the policy boundary, as within any site divided by the boundary and having less than 100 square metres outside it, except where development approval has been granted prior to the date of this scheme and has not subsequently lapsed.
- 6.4 If the application is for recreational or restaurant use the site must be 5 hectares or more in area and not more than 10 percent of the site may be cleared
- 6.5 If the application is for residential use for a single detached dwelling the site must be 1 hectare or more in area and not more than 20 per cent of the site may be cleared or developed
- 6.6 If the application is for residential use with multiple dwelling units the density may not exceed one unit per hectare and not more than 20 per cent of the site may be developed (applications for subdivision into lots averaging less than 1 hectare will not be approved)

SCHEDULE 5.4. WATER CATCHMENT ZONES

An overview of the Water catchment zones in the District of Penampang is provided (Map 2 and Map 4). For these zones the following planning policies and guidelines apply:

Water Catchment Policy

- 1 The aim of the Water Catchment Policy is to:
 - 1.1 Protect the catchment of the Babagon River, which serves as the most important drinking water reserve for the Penampang District and Kota Kinabalu
 - 1.2 Protect undisturbed portions of the Papar River catchment outside of the Protected Areas, which serves or has the potential to serve as a drinking water supply for the Papar District
- 2 The implementation of the Water Catchment Policy shall result in the avoidance of impacts that could adversely influence the water quality of the part of the rivers used for drinking water supply. This shall include any construction or activity that could impact water quality e.g. housing development, clearing of vegetation, agriculture, shifting cultivation, logging, quarrying and road building.

Water catchment zones: Predominant Use

- 3 Predominant use within the Water Catchment Zones include:
 - 3.1 Undisturbed natural land

Water catchment zones: Prohibited Use

- 4 Prohibited use within the Water Catchment zones include:
 - 4.1 Any construction or activity that will or might have an adverse impact on the water quality.

Map 4 (Overleaf) The Sg Babagon Water Catchment Zone. Disturbance in the form of land clearance continues to encroach into the catchment area.

SCHEDULE 5.5. PROTECTED AREAS

An overview of the Protected Areas in the Penampang District is provided (Map 2 and Map 5). For these areas the following planning policies and guidelines apply:

Protected Area Policies

- 1 The aim of the Protected Area policy is to:
 - 1.1 Protect the natural habitat within the Protected Area
 - 1.2 Protect important parts of the water catchments contributing to the Moyog and Papar Rivers, which serves as the most important drinking water reserve for the District of Penampang, Kota Kinabalu and District of Papar
 - 1.3 Establish and maintain smaller parks or forest reserves for landscape protection, recreation and other purposes.
- 2 The implementation of the Protected Area policy shall result in the avoidance of any human impact on the natural habitats within the Protected Areas. This shall include any construction or activity that could have an impact on the habitat such as for example housing development, clearing of vegetation, agriculture, shifting cultivation, logging, quarrying and road building.

Protected Areas: Predominant Use

- 3 Predominant use within the Protected Areas include:
 - 3.1 Undisturbed natural land

Protected Areas: Prohibited Use

- 4 Prohibited use within the Protected Areas include:
 - 4.1 Any human construction or activity.

Map 5 (Overleaf). Protected Areas. While the Crocker Range Park continues to protect important habitat (green areas) and steeplands, there are signs of encroachment (red and pink areas) into the park.

ANNEXES

ANNEX 1

APPLICATION FOR CONSENT TO USE LAND/BUILDING
PENAMPANG DISTRICT LAND USE PLANNING SCHEME (CAP. 141)

To: Executive Officer,
Penampang District Council

APPLICATION FOR CONSENT TO USE LAND/BUILDING
PENAMPANG DISTRICT LAND USE PLANNING SCHEME (CAP. 141)

I/WE HEREBY APPLY for consent to use the land/building described in this application and on the attached plan Ref. No:

Date : Signed :

1. (a) Name of Applicant:.....
(b) Address (to which notice of decision is to be sent):.....
2. Particulars of applicants interest in the land (e.g. owner tenant, prospective purchaser, or agent thereof):.....
3. (a) Location of land; to be developed:.....
(b) Title or lease number:.....
(c) Area of land:.....
(d) Details of title restrictions:.....
4. (a) Existing use of land:.....
(b) Proposed use of land:.....

OWNER'S CERTIFICATE

5. Where the applicant is not, the owner the concurrence of the owner must be evidenced by his executing the following:

I/WE L/C No:
Of the owner(s) of the above described land hereby concur in the above application.
Dated the day of 19
Signature of Owner(s)
Name of Witness I/C No:
Signature of Witness.....

11 copies of the development plan should be submitted with this application.

ANNEX 2
DECISION ON APPLICATION FOR CONSENT TO USE LAND/BUILDING
PENAMPANG DISTRICT LAND USE PLANNING SCHEME (CAP. 141)

To: (Name and address of applicant)

DECISION ON APPLICATION FOR CONSENT TO USE LAND/BUILDING:
PENAMPANG DISTRICT LAND USE PLANNING SCHEME (CAP. 141)

Your application under the above mentioned Approved Scheme was considered by the Council at a meeting held on and you are hereby notified that consent was granted subject to the following conditions:

.....
.....

or refused on the grounds that:

.....
.....

2. The decision is recorded in the minutes of the Board/Council Ref.

No:

.....
Chairman
Penampang District Council

C.C.
Director,
Town and Regional Planning Department,
KOTA KINABALU

ANNEX 3
GLOSSARY

Dwelling house. xxxx

Development. Xxxx as per Ordinance cap 141.

Residential building constructed of temporary materials. xxxxxx

ANNEX 4

METHOD FOR DETERMINATION OF SLOPE GRADIENT

Area of influence. To determine whether a proposed site is located on a slope with gradient of 20 degrees or more, representative slope profiles should be drawn from a contour map. The slope profiles should include the area of influence to the first sharp break in slope above and below the site or at least a minimum 500 m upslope and downslope of the site, whichever is applicable. Topographic features might, however, indicate modifications to this general axiom.

Map scale. The accuracy of slope measurement is dependent on map scale and contour interval. A detailed topographic survey of the proposed site is normally carried out as part of the planning process. Such detailed site topographical maps are produced on scales ranging from 1:1,500 to 1:500. These maps should be used in conjunction with the 1:12,500 (contour intervals of 10 m) for the upslope and downslope areas produced by the Lands and Survey Department to construct slope profiles. Such Lands and Survey maps are available for most parts of Sabah.

Section Lines. Section lines of representative profiles should be selected so that they intersect the locations of all proposed structures to be erected on the site and also existing land use features (e.g. road, houses, telecommunication tower, etc.) upslope and downslope of the site. The section lines should be orientated perpendicular to the steepest slopes. The number of section lines will be dependent on the proposed site development and existing land use in the vicinity.

Suggested Method. Construction of slope profiles involves plotting the elevations of contour lines where they intersect the section lines. The suggested method of slope profile construction is as follows:

1. Determine the alignment of the section lines. The section lines should start from the area of influence upslope and follow the steepest gradient onto the site and across the proposed constructions at the site and on to the area of influence downslope of the site. It is recommended to construct multiple slope profiles, each profile across each proposed construction at the site
2. A line is drawn on the contour map from upslope of the site and across the proposed construction at the site and onto the downslope area as shown in the figure below. This line provides the baseline ABC (attached example) for the graph; the length of this baseline is equivalent to the length of area of influence as defined above
3. The points at which contour lines intersect the baseline are marked and their elevations recorded. The vertical axis of the graph is scaled for elevation and constructed perpendicular to the baseline; preferably, the vertical and horizontal scales should be similar to show the true gradient of the slope. Points of elevation may now be plotted at the appropriate distances along the baseline. For precise plotting, intersecting lines may be drawn from the corresponding values on the distance and elevation scale. Connecting the points, a line profile of the slope is produced. The site boundaries, location of each proposed construction on the site and existing construction on the upslope and downslope areas, are marked on the profile

4. The profile may show sections of slope with varying gradients. The gradient of each slope section should be measured. This can be easily determined by measuring directly with a protractor the gradient of each slope section at the point of each slope break along the profile
5. Repeat steps 2 to 4 to plot the slope profiles of the other section lines, in this example, ADF and ADEG
6. If any of the slope section of the profiles has gradient of 20 degrees or more, then it is concluded that the site is located on slope with gradient of 20 degrees or more.

Computer Analysis. Calculation of slope may also be determined by using commercially available computer software. The topographical base map can be converted into digital form from which representative slope profiles can be constructed.

ANNEX 5
MAPS USED FOR ANALYSIS AND ZONING

For a district scale of analysis and zoning a satellite image taken on the 14th April 2000 (SPOT 4), was used in conjunction with a digital terrain model derived from digitised 1:50,000 produced by Pemetaan Negara Malaysia.

Map Annex 5.1 shows generalised landuse as represented by a simple 5 group classification. A noticeable feature of the map is that although there is encroachment into the Crocker Range Park, by a large, the boundary remains intact. The outward spread from Kota Kinabalu of urban/rural areas, along the flanks of river valleys, is clearly evident

Map Annex 5.2 is a generalised slope map identifying slopes of over 20 degrees and above. Most of the steep lands fall within the Protected Areas and Hill zone, reflecting in part, the natural constraints and order that topography places on settlements. Also important to notice is the extreme lack of available land that does not fall within a 'steep' classification.

Slope was derived using the Spatial Analyst (v.2.0) Model Builder; an extension of Arc View (3.2). It is important to note that slope was derived from 100 feet contour intervals abstracted from 1:50,000 topographic maps and therefore important local detail will be missing.

Table 1. Zoning and Development types