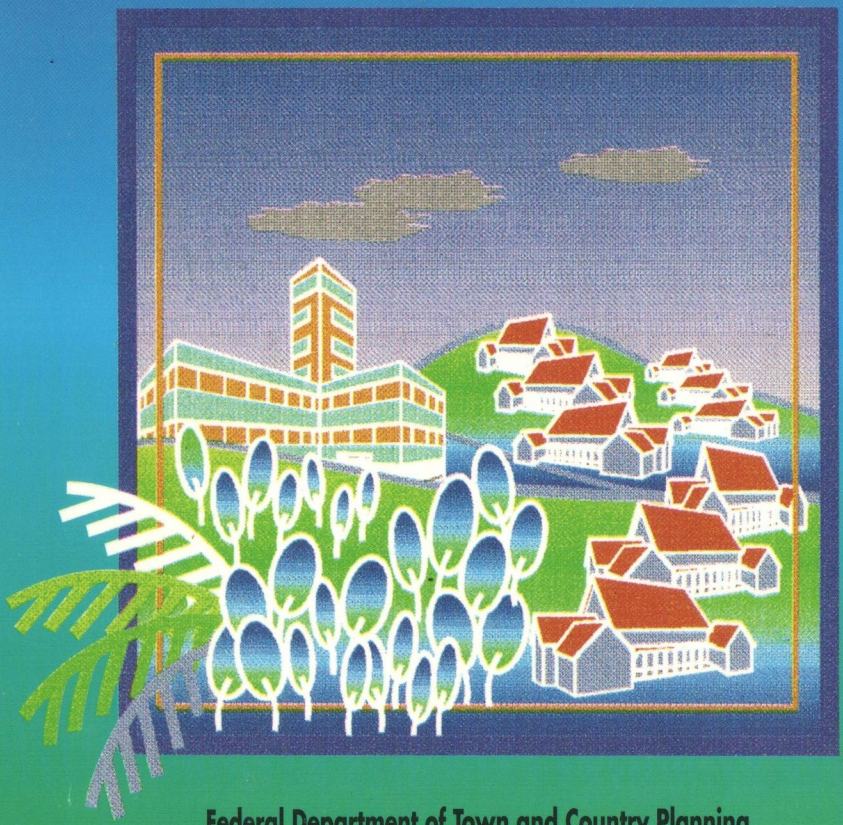
PLANNING MALAYSIA

An Urban and Regional Planning Journal of Malaysia

Issue No. 5 Desember 1997

ISSN 1394 - 3987



Federal Department of Town and Country Planning
Peninsular Malaysia

PLANNING MALAYSIA

Issue no. : 5 December 1997

Published by

Department of Town and Country Planning
Peninsular Malaysia
Jalan Cenderasari
50646 Kuala Lumpur

December 1997

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EDITORIAL

PLANNING for physical environment is one of the aspect in development. We have heard reports on environmental degrading in the urban areas, and children being deprived of their playing spaces. Development have ruined the natural environment, the very valuable asset for sustainable quality of life for the present and future population.

In this issue we would like to share some views on the planning approaches and planning mechanism to shape our physical environment for quality living. It is hope that these articles will be of great benefits to those that deals with developments especially the consultants and the developers.

The board would like to acknowledge Mr. Mohd. Ali Bin Abu Bakar as a new member to the committee. His wide experience in planning could contribute for the improvement of the journal.

Lastly, I would like to take opportunity to thank all the contributors and special thanks goes to the editors and the production assistants for compiling, editing and producing this issue.

Thank you

Chief Editor
Planning Malaysia
December 1997

PENGURUSAN DAN PENGEKALAN - KAWASAN TANAH TINGGI

by

Dato' Haji Zainul Bin Ayob

PENDAHULUAN

Perbincangan kertas ini akan ditumpukan kepada masalah yang boleh timbul akibat pembangunan ke atas tanah tinggi, yang mana mempunyai banyak potensi alam semulajadi yang boleh dipelihara bagi kepentingan umum dan generasi yang akan datang. Sebagai contohnya, di Negeri Pahang terdapat kawasan tanah tinggi yang menjadi tumpuan kunjungan pelawat seperti Cameron Highlands, Fraser's Hill dan Genting Highlands. Pengurusan dan pengekalan di tanah tinggi adalah amat penting bagi tujuan mencapai pembangunan yang berterusan dan memerlukan kerjasama dari semua pihak yang menggunakannya.

PEMBANGUNAN DI KAWASAN TANAH TINGGI DAN KESANNYA

Kawasan-kawasan tanah tinggi adalah menjadi kawasan tarikan kepada pelancong kerana iklim dan udaranya yang nyaman. Dengan itu juga menyebabkan tempat-tempat ini membangun dan perlu menampung keperluan pertumbuhan penduduk dan pelawat seperti perbandaran/komersial, kemudahan penginapan/hotel/chalets, kemudahan sosial dan awam, tempat rekreasi, perumahan/apartments, rumah persinggahan, institusi, pengangkutan awam dan sebagainya. Tempat-tempat ini bertambah sesak terutamanya dimusim-musim cuti persekolahan.

Kawasan-kawasan tanah tinggi yang mempunyai banyak keindahan yang semulajadi dengan bukit dan cerun juga lembah dan plateau, pokok-pokok tumbuhan yang menghijau dan segar di samping flora dan fauna akan terjejas sekiranya pembangunan yang mengambil tempat dari masa ke semasa tanpa kawalan yang berkesan.

Oleh itu pembangunan di kawasan tanah tinggi perlulah seiring dengan pengekalan serta pengurusan yang kemas dan baik. Sekiranya pengekalan kurang diberi perhatian, maka akan timbul masalah kepada alam sekitar dan akan memberi kesan yang negatif kepada kawasan hutan semulajadi, terhadap iklim dan cuaca, hidupan liar, kualiti udara, kualiti air dan sebagainya.

Pembangunan yang tidak terkawal boleh menyebabkan kawasan hutan akan berkurangan. Dengan penjejasan ini, boleh menyebabkan kekurangan spesis-spesis asal serta fungsi vigitasi. Walau bagaimanapun, setakat ini satu kajian menyeluruh tentang aspek hutan serta flora dan fauna terlalu berkurangan untuk dibuat kesimpulan yang muktamad.

Adalah dijangkakan juga dengan perubahan yang drastik akan memberi akibat kepada perubahan iklim, perubahan ke atas pusingan hidrologi, kekurangan hutan bagi simpanan air dan penstabilan suhu. Iklim dan cuaca setempat akan berubah.

Jangkaan kasar ialah kekurangan hujan kira-kira 200mm, jika jumlah hutan yang hilang adalah seluas jumlah kawasan tanah yang akan dibangunkan. Jumlah hujan tahunan dijangka akan berkurangan kira-kira 260mm setahun. Jumlah hari hujan akan berkurangan dengan sebanyak 3 hingga 5 hari sebulan.

Akibat daripada berkurangannya hujan dan penambahan permukaan yang menyerap haba, maka suhu udara pada siang hari dijangka akan meningkat kira-kira 2° hingga 3° selsius, paling tinggi di antara jam 1300 - 1600 dan pada malam hari

sekadar 1° - 2° selsius. Juga dijangkakan kekuatan angin akan meningkat akibat kekurangan tumbuhan hujan penimpal.

Hidupan liar, reptilia dan mamalia dijangka akan berpindah ke kawasan pamah dan bukit pergunungan yang berhampiran kecuali spesies-spesies dari jenis kecil yang mempunyai lindungan di kawasan hutan-hutan simpanan.

Pempupusan mungkin tidak berlaku kerana terdapat kawasan-kawasan hutan lain di negara ini yang menempatkan spesies-spesies tersebut.

Kualiti udara juga akan berubah dengan penambahan kenderaan yang meningkat terutama di musim percutian. Adalah dijangka pusat-pusat utama di tanah tinggi akan menerima pencemaran dari kenderaan khususnya TSP, SO2 dan HC serta Pb jika minyak-minyak kenderaan berplumbum masih terus dipasarkan.

Pengurusan dan pemuliharaan yang kurang cekap juga boleh menyebabkan mendakan ke dalam sungai-sungai di kawasan tanah tinggi dengan banyak dan boleh menyebabkan banjir. Di samping itu juga pembuangan kumbahan dan buangan pepejal dari penambahan manusia akan mengurangkan lagi kualiti air.

Pembangunan di sesuatu tempat di kawasan tanah tinggi juga perlulah selaras dengan daya menampung (carrying capacity) seperti bekalan air, kemudahan penginapan pelancong, aksesibiliti serta keperluan-keperluan kemudahan sokongan dan sebagainya.

Kemampuan daya menampung (carrying capacity) membekalkan keperluan bekalan air adalah amat penting. Kapasiti air yang dapat dibekalkan seharusnya menjadi penentu kepada saiz dan bilangan atau jenis projek yang mampu dilaksanakan.

'Psychological capacity' para pelancong juga boleh sampai ke tahap maksima. Para pelancong terutamanya ke kawasan tanah tinggi oleh kerana terpikat dengan keadaan iklimnya yang sejuk. Tetapi sekiranya pembangunan berleluasa tentu sekali suhu cuaca akan naik dan ini boleh mengurangkan daya tarikan dan motivasi untuk melawat dan melancong ke tanah tinggi dan bosan untuk tinggal lebih lama.

Penambahan bilik penginapan yang berlebihan juga akan mengakibatkan krisis 'low accupancy rate' yang merugikan. Sebagai contoh di Cameron Highlands purata bilik hotel pada tahun 1992 hanya 53.3% sahaja dengan jumlah bilangan bilik 1,018. Ini memberi indikasi bahawa Cameron Highlands hanya menggunakan setengah sahaja daripada 'capacity' bilik penginapan. Sekiranya pembangunan tambahan dilakukan, tahap 'capacity' penginapan mungkin akan turun lagi di bawah tahap 40% setahun dan akan merugikan.

Kawasan tanah tinggi lazimnya adalah menjadi tarikan sebagai tempat pelancongan dan bergantung kepada empat komponen utama produk pelancongan iaitu tarikan pelancongan, kemudahan penginapan, kemudahan tempat makan dan kemudahan pengangkutan/eksesibiliti. Jalan perhubungan/eksesibiliti adalah amat perlu. Walau bagaimanapun, cadangan jalan-jalan baru ini hendaklah memberi penekanan kepada kepentingan penjagaan dan pemuliharaan alam sekitar supaya tidak memberi impak yang negatif juga kepada penempatan orang-orang asli yang banyak mendiami di sekitar kawasan tanah-tanah tinggi.

Tanah-tanah tinggi sering juga digunakan untuk pertanian seperti sayuran dan bungaan. Kadangkala tanah-tanah di lereng bukit dicerobohi dan ditarah sehingga menyebabkan hakisan dan juga tanah runtuh. Keadaan sebegini bukan sahaja menjejaskan alam sekitar tetapi juga menyebabkan kehilangan nyawa akibat tertimbus.

Kepesatan pertambahan penduduk setempat memerlukan keperluan yang kian meningkat seperti perumahan dan lain-lain perkhidmatan sokongan seperti kemudahan perubatan, bomba, polis, kemudahan masyarakat dan sebagainya. Tidak ketinggalan juga keperluan tambahan bagi tenaga letrik dan talian perhubungan telekomunikasi.

Sungguhpun begitu, tambahan kepada keperluan-keperluan ini hendaklah berpaksikan kepada daya menampung (carrying capacity) supaya tidak 'over-loaded'.

PENGURUSAN DAN PENGEKALAN DI KAWASAN TANAH TINGGI

Bagi mempastikan kawasan-kawasan tanah tinggi terpelihara dan tidak terancam, kawasan yang bercerun melebihi 20° adalah tidak digalak dibangunkan bagi mempastikan alam sekitar terpelihara dan keselamatan terjamin.

Bagi tujuan pengawalan pembangunan kawasan-kawasan di tanah tinggi boleh di zon mengikut kegunaan, sebagai contoh di Cameron Highlands, Kerajaan Negeri telah bersetuju menggubal Pelan Induk Perkawasan Gunatanah Utama seperti Kawasan Pengekalan, Kawasan Pemuliharaan dan Pembangunan Terhad, Kawasan Pertanian dan Kawasan Pembangunan Aktif. Pelan ini adalah sedang diserapkan dalam penyediaan Rancangan Struktur.

Kawasan Pengekalan adalah bagi jangka panjang dalam memastikan supaya kepentingan ekologi dan alam sekitar tetap terpelihara. Pihak Kerajaan perlu mewartakan kawasan pengekalan sebagai Hutan Simpan Kekal dan berfungsi sebagai 'Protection Forest', di mana tidak dibenarkan sebarang bentuk pembangunan fizikal dilakukan kecuali aktiviti yang berkaitan dengan penyelidikan dan pembelajaran yang tidak merosakkan segala hidupan dan rupabumi.

Kawasan Pemuliharaan dan Pembangunan Terhad adalah kawasan simpanan hutan yang dicadangkan supaya diwartakan sebagai 'Amenity Forest'. Dalam kawasan ini beberapa bentuk pembangunan yang tertentu adalah dibenarkan di kawasan yang sesuai kepada kegiatan pelancongan/ rekreasi, penyelidikan dan pendidikan yang tidak merosakkan sistem ekologi hutan.

Kawasan Pertanian adalah kawasan yang dibenarkan aktiviti pertanian dijalankan. Kawasan pembangunan pertanian adalah lebih berfungsi sebagai sektor penyokong dan akan diintegrasikan dengan sektor pelancongan melalui kaedah dan aktiviti pembangunan pelancongan yang berasaskan pertanian. Pembangunan secara berleluasa akan memberi kesan negatif kepada kualiti alam sekitar dan seterusnya boleh menggugatkan pembangunan sektor pelancongan.

Kawasan Pembangunan Aktif adalah merupakan gabungan keseluruhan kawasan pembangunan sedia ada serta cadangan kawasan-kawasan pembangunan baru bagi menampung perkembangan keperluan pembangunan masa hadapan.

Bagi mempastikan keharmonian pembangunan dengan kawasan sekitar, kawalan ketinggian bangunan boleh diselaraskan dengan 'skyline' dan ketinggian pokok-pokok sekeliling bersesuaian dengan keadaan setempat. 'Plinth Area' juga digunakan pada kadar 35%. Bentuk bangunan juga boleh diserasikan dengan kawasan lereng dan bangunan bersejarah dan berseni lama bolehlah dipemuliharakan.

Pembangunan bangunan tinggi adalah tidak digalakkan di lereng bukit di kawasan-kawasan tanah tinggi dan sekiranya perlu, syarat-syarat yang ketat hendaklah dikenakan seperti

mana yang diputuskan oleh ***Mesyuarat Jawatankuasa Khas Kabinet*** pada tahun 1994 iaitu :-

i) ***Bagi cadangan pembinaan bangunan yang melebihi 5 tingkat di atas mana-mana tapak, Pemaju mestilah mengemukakan Laporan Geoteknikal dan di mana perlu Laporan Geologikal yang disediakan oleh orang yang berkelayakan;***

ii) ***Bagi semua bangunan yang melebihi 1 tingkat yang dicadangkan di bina di kawasan yang mempunyai kecerunan melebihi 20° dan ketinggian cerun melebihi 3 meter atau kawasan yang kurang daripada 20° tetapi ketinggian cerun melebihi 10 meter, Pemaju dimestikan mengemukakan Laporan Geoteknikal dan di mana perlu Laporan Geologikal yang disediakan oleh orang yang berkelayakan; dan***

iii) ***Perlaksanaan kerja-kerja penyediaan tapak seperti penanaman rumput, penstabilan kecerunan tanah, penyediaan saliran, crusher run road surfacing, penyediaan dan penyenggaraan kolam takungan hujan dan perangkap lumpur mestilah dijalankan terlebih dahulu sebelum memulakan kerja-kerja binaan.***

Selain daripada syarat-syarat di atas, bagi memastikan sesuatu tapak dan bangunan yang akan didirikan adalah selamat dan stabil, syarat-syarat tambahan yang berikut mestilah dilaksanakan :-

i) ***Pemaju projek yang berkaitan hendaklah melantik Juruperunding bertauliah bebas yang lain untuk menjalankan penilaian semula bagi mendapatkan pandangan pihak kedua mengenai kestabilan dan***

keselamatan bangunan dan tapak bagi bangunan melebihi 1 tingkat yang telah dicadangkan untuk dibina di lereng bukit;

ii) ***Di dalam membuat penilaiannya, Juruperunding bebas hendaklah mengambilkira perkara-perkara berikut :-***

a. Kajian tapak persekitaran dan perparitan;

b. Kajian geoteknikal dan geologikal;

c. Rekod cerucuk dan ujian beban; dan

d. Kekuatan struktur bangunan.

Di peringkat perlaksanaan, Pihak Berkuasa Tempatan juga hendaklah memastikan bahawa :-

a) ***Pemotongan tanah yang minimum dan setakat mencukupi sahaja untuk kerja-kerja binaan dilaksanakan;***

b) ***Kerja-kerja pemotongan pokok dan tumbuhan-tumbuhan di tapak berkenaan hendaklah dijalankan pada tahap yang minimum.***

Pengawalan dan perlindungan alam sekiatar adalah tertakluk kepada beberapa akta seperti ***Akta Kualiti Alam Sekeliling 1974 (Pindaan) 1985, Akta Pestisid, Akta Pemuliharaan Tanah 1960***.

Manakala peraturan dan garispanduan yang berkaitan dengan pengawalan alam sekitar ialah :-

- ***Kajian Impak Ke Atas Alam Sekitar (EIA);***
- ***Peraturan Bahan Kumbahan;***
- ***Garis Panduan Pengawalan Kecerunan;***
- ***Garis Panduan Pelupusan Sampah;***
- ***Garis Panduan Kawalan Hakisan; dan***
- ***Polisi Pemuliharaan Tanah Negara.***

Bagi mengatasi atau mengurangkan impak-impak pembangunan kepada alam sekitar di tanah tinggi, pengawasan di peringkat pembangunan boleh dilakukan di tiga peringkat iaitu Peringkat Pra Pembinaan, Peringkat Pembinaan dan Peringkat Operasi.

Pada peringkat Pra Pembinaan/Perancangan, setiap cadangan pembangunan perlulah mengemukakan Laporan Cadangan Pembangunan (LCP) yang mengandungi :-

a. Hakmilik Tanah dan Sekatan-Sekatan (jika ada);

b. Analisa Gunatanah dan Intensiti Pembangunan;

c. Analisa Isu dan Potensi Tapak;

d. Analisa Pembangunan Sekitar;

e. Dasar Rancangan Struktur dan Rancangan Tempatan (jika ada); dan

f. Garis Panduan dan Polisi Pembangunan Jabatan Perancangan Bandar dan Desa serta Kerajaan Negeri.

Aspek tambahan lain yang perlu dimasukkan ke dalam LCP ialah :-

a. Perancangan susunatur yang disediakan di atas pelan kontor sela 2 meter berskala 1 : 1000;

b. Pelan Analisa Tapak yang menunjukkan elemen-elemen penting seperti kedudukan pokok-pokok yang perlu ditebang dan yang perlu dikekalkan, elemen estetika dan sejarah, flora dan fauna yang penting di kawasan tanah tinggi serta kedudukan kawasan tadahan dan punca-punca air; dan

c. Menyedia Pelan Kerja Tanah dan Laporan Kiraan Hakisan dan langkah-langkah tebatan hakisan.

Pada peringkat Pra Pembinaan ini juga Kajian Impak Alam Sekitar (EIA) adalah amat diperlukan bagi semua pembangunan seperti pembukaan tanah, pembinaan hotel dan lain-lain projek yang mempunyai potensi impak kepada alam sekitar di kawasan tanah tinggi.

Pada peringkat pembinaan pula, tiga perkara perlu diberi perhatian iaitu :-

a. ***Keperluan Mengenai Maklumat Struktur Tanah***

Di mana kajian tentang struktur tanah yang mendalam perlu dilakukan untuk mengetahui sifat-sifat tanah bagi tujuan perancangan kerja-kerja tanah semasa peringkat pembinaan. Juga meliputi aspek-aspek geofizikal dan fizikal tanah, air bawah tanah, potensi hakisan dan lain-lain sifat tanah. Dengan keadaan cuaca dan hujan yang banyak di musimnya, keadaan tanah (soil properties) mudah bertukar dengan cepat.

b. ***Pelan Pembukaan Tanah dan Pengawalan Hakisan***

Pihak kontraktor perlu diminta membentangkan pelan pembukaan dan kerja-kerja tanah serta kaedah-kaedah cara kerja, masa dan jangkamasa kerja dan semua kaedah pengawalan hakisan dan mendakan. Pelan ini perlu diluluskan oleh Kerajaan Tempatan sebelum kerja-kerja diluluskan.

c. ***Cukai Hakisan***

Pengawalan kepada aktiviti-aktiviti pembukaan dan kerja-kerja tanah boleh juga menggunakan denda berdasarkan hakisan yang berlaku. Denda ini bolehlah dalam bentuk 'Cukai Hakisan', iaitu berasaskan hakisan yang berlaku akibat kerja-kerja tanah yang tidak sistematik dan mengakibatkan

kehilangan tanah. Cukai ini boleh dilaksanakan oleh Kerajaan Tempatan berdasarkan garispanduan yang dipersetujui dan diluluskan oleh Kerajaan Negeri.

Di Peringkat Operasi beberapa perkara perlu diberi perhatian seperti :-

a. ***Pelupusan Air Buangan Dan Kumbahan***

Untuk menepati perundangan Jabatan Alam Sekitar, 'Peraturan Kualiti Alam Sekeliling' (Kumbahan dan Efluen-Efluen Perindustrian, 1979), melalui rawatan-rawatan tertentu, air buangan dan kumbahan boleh dirawat dan disalur semula untuk kegunaan.

b. ***Penggunaan Air Bawah Tanah***

Terutamanya bagi pengairan pertanian perlu diharamkan kerana ianya mengganggu paras dan pengairan air bawah tanah, aliran air sungai dan seterusnya pusingan hidrologi setempat. Di samping itu juga, penggunaan air bawah tanah telah membuktikan timbul masalah garam yang berlebihan di permukaan tanah ladang pertanian.

c. ***Pelupusan Dan Pembakaran Sampah***

Tempatnya perlulah dikenalpasti di peringkat awal dan tertutup bagi mengelakkan pemandangan yang 'eye-sore'. Juga tidak terletak di bahagian atas kawasan tadahan air dan juga tidak berpotensi memasuki saluran air melalui resapan ke dalam air bawah tanah atau memasuki laluan air. Pencemaran ke dalam air bawah tanah perlu dielak sama sekali. Pembakaran secara terbuka juga perlu diharamkan, selari dengan perintah umum Jabatan Alam Sekitar.

d. ***Pengawalan Dan Pengurusan Trafik***

Kegunaan kenderaan akan meningkat, oleh itu memerlukan perancangan bagi mengadakan kawasan letak kereta, laluan kenderaan, kawalan had laju, laluan pejalan kaki dan lain-lain aspek pengurusan trafik.

e. ***Pengurusan Kawasan Lipur Dan Rekreasi***

Penambahan penduduk dan pelancongan yang menggunakan kawasan lipur dan rekreasi boleh memberi kesan dan tekanan kepada kawasan ini. Oleh itu, ia memerlukan satu perancangan dan pengurusan yang cekap dan teratur oleh pihak yang berkenaan.

Bagi tujuan kawalan pembangunan, aspek-aspek berikut adalah disyorkan diambilkira iaitu :-

a. Ketinggian bangunan;
b. Orientasi bangunan;
c. Rekabentuk bangunan;
d. Ciri-ciri bangunan;
e. Nisbah plot (plot ratio);
f. Kawasan tepubina (plinth area);
g. Kecerunan; dan
h. Kawasan lapang.

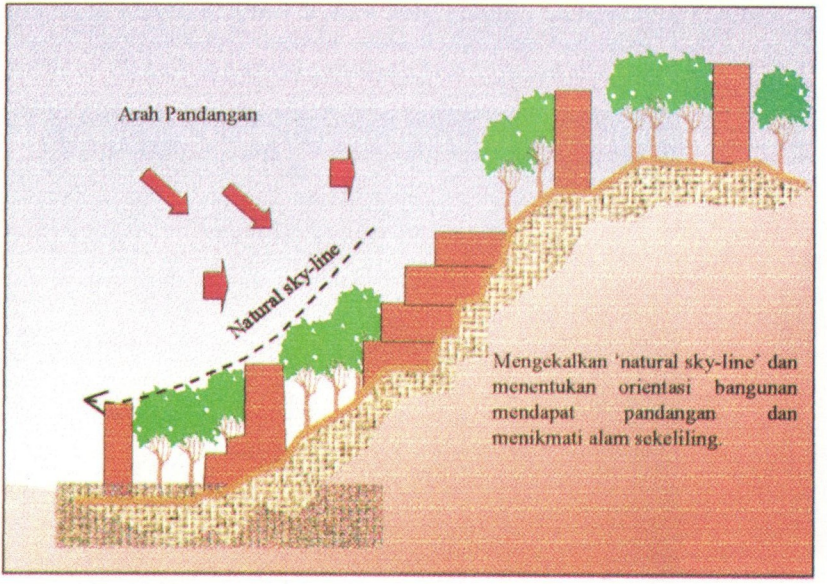
A. KETINGGIAN BANGUNAN

i. Disesuaikan dengan elemen-elemen semulajadi seperti topografi, pokok-pokok untuk mengekalkan panorama kehijauan serta 'natural skyline' yang sedia ada.

ii. Maksima 5 tingkat.

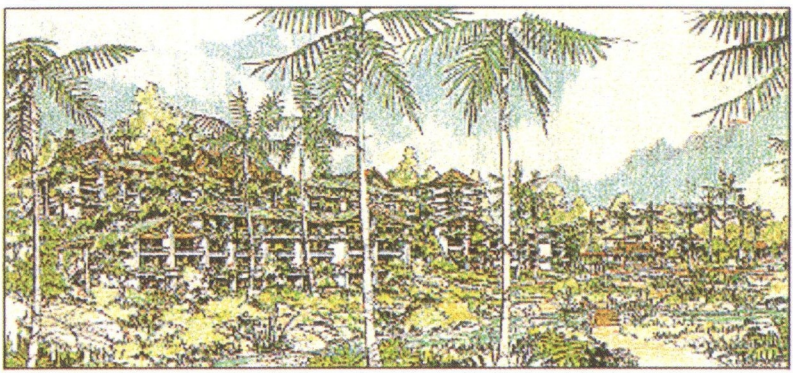
iii. Bangunan-bangunan perniagaan dan bersejarah dikekalkan 2 tingkat.

iv. Bangunan sekitar padang golf maksima 3 tingkat.



B. ORIENTASI BANGUNAN

Bangunan-bangunan yang dibina hendaklah menghadapi lereng bukit.

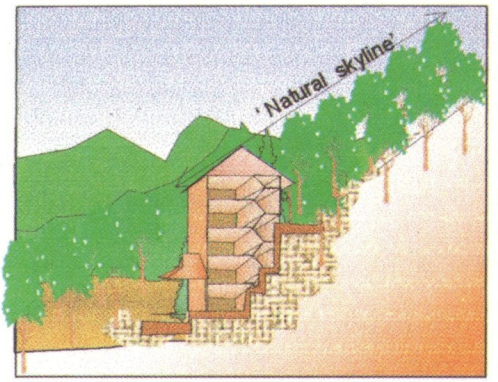


Rekabentuk bangunan yang sesuai di lereng bukit. Aras ketinggian bangunan meningkat mengikut keadaan topografi dan ketinggian bangunan adalah berharmoni dan disesuaikan dengan keadaan dan elemen sekeliling.

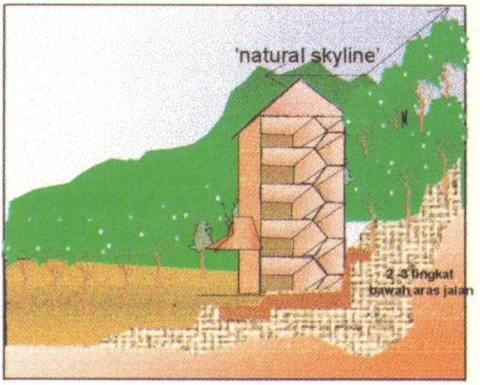
Contoh rekabentuk bangunan dipuncak bukit atau lereng bukit. Bangunan disyorkan supaya disesuaikan dengan pokok-pokok bukit bagi menjamin 'natural sky line .

C. REKABENTUK BANGUNAN

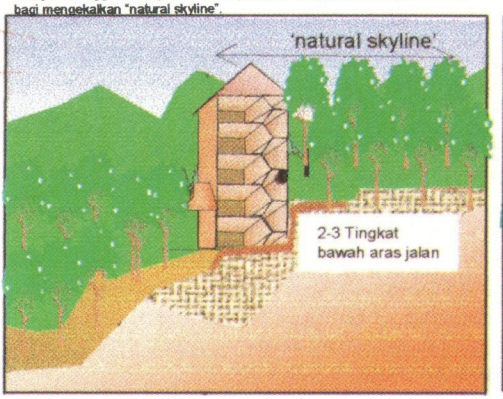
Rekabentuk bangunan yang bertingkat mengikut alunan cerun adalah digalakkan.

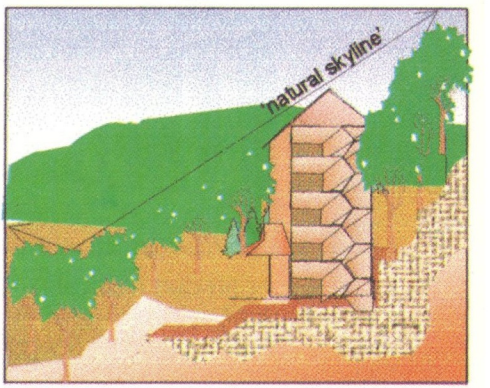


A. Cadangan bangunan di lereng bukit yang curam di syorkan kerja-kerja tanah- dihadkan dengan mencadangkan rekabentuk bangunan, teres bertingkat dan ketinggian bangunan yang di syor antara3 hingga 5 tingkat sahaja. Ketinggian bangunan ini disesuaikan dengan elemen persekitaran bagi mengekalkan "natural skyline".



B. Cadangan bangunan dilereng bukit yang curam disyorkan kerja tanah dihadkan dengan mencadang rekabentuk bangunan 2 hingga 3 tingkat atas jalan dan 2 hingga 5 tingkat bangunan masih disesuaikan dengan elemen persekitaran untuk menjamin 'natural skyline yang indah'.





C. Cadangan bangunan di lereng bukit ataupun ditanah rata disyorkan bangunan diantara 3 5 tingkat sahaja. Ketinggian bangunan di sesuaikan dengan elemen persekitaran bagi mengujudkan suasana yang berharmoni dengan alam persekitaran.

D. CIRI-CIRI BANGUNAN

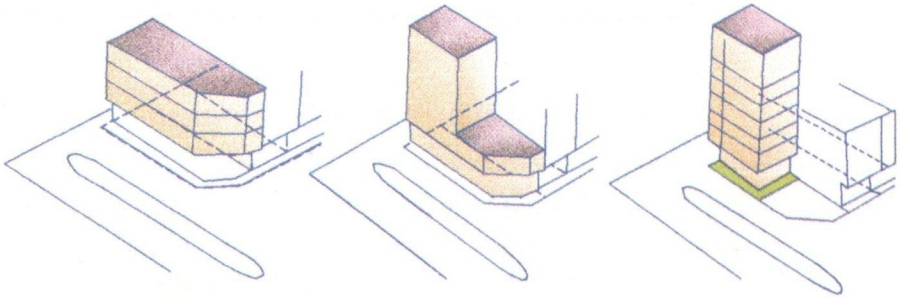
Setiap bangunan yang akan di bina atau kerja-kerja baikpulih bangunan perlu mengekalkan ciri-ciri asal bangunan berkenaan

BANGLO

RUMAH BERKEMBAR

CIRI-CIRI REKABENTUK 'TUDOR' (BANGUNAN PERNIAGAAN)

E. NISBAH PLOT (PLOT RATIO)



Nisbah plot 1: 4
bagunan 4 Tingkat

Nisbah plot 1: 4
bagunan 5 Tingkat

Nisbah plot 1: 4
bagunan 8 Tingkat

Luas plot bangunan - 2048kp (19026p)
jumlah luas ruang lantai
2048(19026)x 4 = 8192 kp (7510mp)

Definisi :-

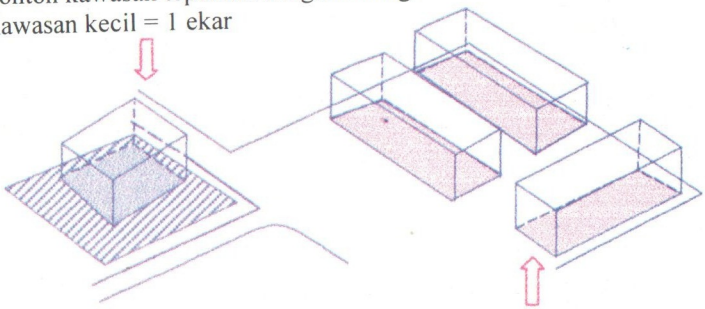
- Nisbah Plot adalah nisbah diantara jumlah luas lantai sesuatu bangunan tidak termasuk kawasan petak letak kereta dengan luas bangunan sebagaimana diukur antara garis-garis sempadan.
- Luas Lantai bermakna jumlah luas ruang lantai dalam sesuatu bangunan sebagaimana diukur dari sebelah luar dinding dan berkenaan dengan dinding kongsi diukur dari tengah-tengah dinding itu.

F. KAWASAN TEPUBINA (PLINTH AREA)

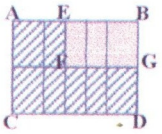
Plinth Area 30 – 35%

KAWASAN TEPUBINA (PLINTH AREA)
Plinth Area 30 – 35%

Contoh kawasan tepubina bangunan bagi
Kawasan kecil = 1 ekar



Contoh kawasan tepubina bangunan bagi
Kawasan kecil = 5 ekar



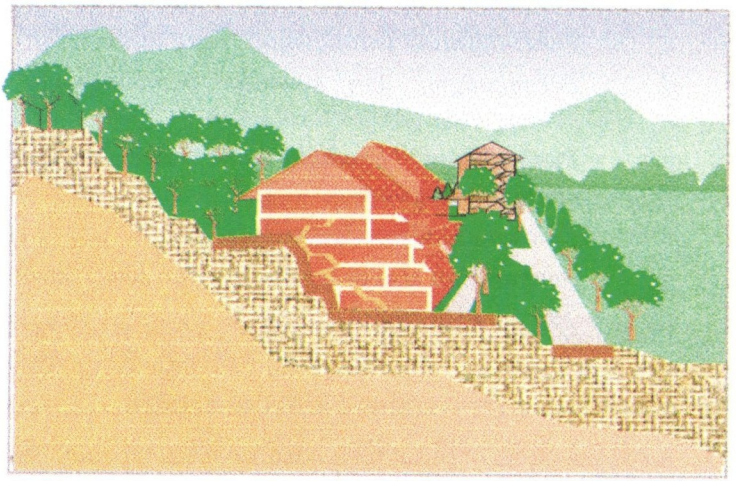
Kawasan tepubina
definisi-adalah bahagian kawasan dan sesuatu lot yang akan diliputi oleh bangunan

Contoh:
1-Keluasan plot ABCD-1 ekar (435600kp(4046724mp)
2-Kawasan tepubina yang disyorkan -30%
3-Kawasan pembinaan yang dibenarkan bagi plot ABCD adalah 30/100 (03)X43560 kp X = 13068kp(1214mp)
= EBFG (kawasan)

G. KECERUNAN

Bangunan lebih satu tingkat mempunyai kecerunan lebih 20° dan ketinggian cerun lebih 3 meter atau kecerunan kurang 20° dan ketinggian cerun lebih 10 meter

- Laporan Geoteknikal adalah penting



H. KAWASAN LAPANG

i. Diperlukan di zon perumahan mengikut piawaian

ii. Ciri-ciri dan kualiti landskap semulajadi perlu dipelihara

iii. Landskap di kawasan terbuka perlu diutamakan

LANGKAH-LANGKAH PERLU BAGI PENGEKALAN DAN PEMBANGUNAN DI TANAH TINGGI

Bagi pencapaian pembangunan yang mampan di kawasan tanah tinggi, langkah-langkah penjagaan perlu diambil dari segi :-

a. ***Pengekalan hutan dan pemeliharaan flora dan fauna***

b. ***Pengawalan dan pembangunan pertanian***

c. ***Pembangunan pelancongan yang terancang***

d. ***Perancangan dan kawalan pembangunan pusat penempatan dan pertumbuhan***

e. ***Peningkatan pembangunan infrastruktur dan kemudahan awam***

f. ***Kawalan hakisan dan mendapan***

g. ***Pengawalan sisa pembuangan dan pencemaran***

Dalam pengekalan hutan dan pemeliharaan flora dan fauna, kawasan-kawasan hutan penyelidikan hendaklah dikekalkan seperti Hutan Penyelidikan FRIM dan MARDI.

Kawasan hutan di pusat sempadan kawasan tepubina sedia ada dan kawasan pembangunan baru, hendaklah diwartakan sebagai kawasan Hutan Simpan.

Hanya tumbuhan-tumbuhan yang perlu ditebang untuk mendirikan bangunan dan pembinaan infrastuktur boleh dibenarkan manakala tumbuhan-tumbuhan asli perlulah dikekalkan sebagai penstabilan curam dan tanah, penstabilan iklim dan juga sebagai elemen kecantikan alam semulajadi dan landskap.

Tumbuhan-tumbuhan yang eksotik dan berciri setempat perlulah dikekalkan seberapa banyak yang boleh bagi mengekalkan ciri-ciri semulajadi flora. Begitu juga dengan

habitat semulajadi dikekalkan bagi mempastikan keseimbangan spesies fauna.

Haiwan dan hidupan liar dikawal dari apa-apa pemusnahan oleh manusia terutamanya semasa pembukaan tanah dan pembukaan tanah perlulah mengikut arah supaya hidupan liar boleh melarikan diri ke kawasan hutan berhampiran dan tidak mengakibatkan mereka terkepung.

Dari segi pembangunan pertanian tidak lagi diperluaskan kawasannya bagi mengelakkan serta memburukkan lagi kualiti air sungai-sungai.

Penggunaan kimia dalam pertanian perlu dikurangkan sebaliknya menggunakan kawalan biologi.

Galakan juga perlu diberikan dalam penggunaan teknologi baru bagi meningkatkan hasil pertanian tanpa melibatkan kawasan yang luas.

Aktiviti dan kawasan pertanian boleh juga diekspoitasikan sebagai produk pelancongan.

Ke arah Pembangunan Pelancongan yang terancang, keutamaan perlulah diberi kepada pembangunan pelancongan yang berteraskan pemeliharaan alam sekitar dengan mengenalpasti kawasan-kawasan yang sesuai, di samping itu memberi penekanan kepada kawalan pencemaran, hakisan tanah, pemuliharaan hutan dan ekosistem serta sistem rawatan pembentungan.

Dari segi pembangunan pusat pertumbuhan, permohonan perancangan perlulah menunjukkan perancangan terperinci yang disediakan di atas pelan topo serta pelan kerja tanah dan pengiraan kesan hakisan juga laporan keperluan air yang diperlukan kepada pihak yang berkenaan.

Bagi projek yang dikenalpasti sebagai 'Prescribed Activities' yang ditetapkan oleh Jabatan Alam Sekitar, maka Laporan Penilaian Alam Sekitar perlulah dikemukakan.

Di samping itu, pelan senitaman bagi setiap pembangunan mestilah disediakan sebagai syarat kelulusan pembangunan. Lain-lain aspek kawalan pembangunan adalah seperti digariskan di para di atas.

Bagi peningkatan pembangunan infrastruktur dan kemudahan awam, sistem jalan yang efisyen perlulah diadakan serta pengurusan trafik dan kenderaan awam yang berkesan. Juga kemudahan sistem perparitan, pembentungan dan pelupusan sampah hendaklah ditingkatkan.

Bagi pengawalan hakisan dan mendapan, kawasan yang mempunyai kecerunan melebihi 20° (36% kecerunan) hendaklah diwartakan sebagai Kawasan Pengekalan. Pembangunan hanya dibenarkan di kawasan yang berkecerunan kurang dari 20°.

Kaedah pengawalan hakisan dengan menggunakan kaedah vegetatif dan mekanikal hendaklah dikuatkuasakan bagi semua bentuk pembangunan pembinaan dan pertanian.

Bagi Pengawalan Sisa Buangan dan Pencemaran, kawasan pembuangan sampah yang baru perlulah dijauhkan dari kemasukan air larian ke mana-mana sungai atau anak sungai.

Kerja-kerja permonitoran kualiti air sungai-sungai hendaklah diperluas dan dipertingkatkan memandangkan kepada perubahan persekitaran yang sedang giat berlaku. Sebarang bentuk perindustrian yang boleh membawa pencemaran udara di kawasan tanah tinggi hendaklah tidak dibenarkan.

Di kawasan-kawasan bandar perlulah diperbanyakkan dengan tumbuh-tumbuhan berjenis daun rendang yang dapat

mencairkan serta menyerap sekurang-kurangnya sebahagian dari pencemaran yang dikeluarkan dari kenderaan.

Sistem rawatan air kumbahan perlulah mengikut keperluan Peraturan Kualiti Alam Sekeliling dan kawasan bagi rawatan kumbahan perlulah dikenalpasti dalam perancangan jangkamasa panjang dan menjauhi dari kawasan perumahan.

Begitu juga kawasan-kawasan baru bagi tapak pembuangan sampah perlulah dipilih supaya berjauhan dari kawasan perumahan, kawasan tadahan dan apa-apa kemungkinan larian air memasuki sungai atau anak-anak sungai setempat.

Akhirnya sistem pembuangan sampah perlu diperhebatkan supaya masalah sampah sarap dan pembiakan roden serta serangga pembawa penyakit boleh dielakkan.

PENUTUP

Kawasan-kawasan di tanah tinggi hendaklah diurus dan dipelihara dengan sebaik-baiknya bagi generasi akan datang.

Bagi tujuan pembangunan hendaklah berasaskan kepada 'threshold' dan 'carrying capacity'.

Semua pihak dan di semua peringkat hendaklah memberi segala sumbangan supaya kawasan-kawasan di tanah tinggi terpelihara.

Sebagai akhir kata, marilah kita bersama-sama merenungi maksud ayat-ayat suci Al-Quran :-

> ***Surah Qaf, Ayat 7*** *"Dan bumi Kami bentangkan dan Kami letakkan di atasnya gunung-gunung untuk menjadi pasak dan Kami tumbuhkan di atasnya segala macam (tanaman) yang indah permai".*
>
> ***Surah Ar-Rum, Ayat 41 :*** *"Telah kelihatan kerosakan di darat dan di laut disebabkan perbuatan tangan manusia*

kerana Tuhan hendak merasakan kepada mereka sebahagian dari (akibat perbuatan mereka supaya mereka kembali kepada kebenaran)".

ANGGARAN NILAIAN TANAH - DI KAWASAN TANAH TINGGI NEGERI PAHANG DARUL MAKMUR

Kawasan	Anggaran Kos Dalam Ringgit Malaysia (RM)		
	Banglo (kaki per segi)	Kawasan Potensi Pembangunan	
		Hektar	*Ekar*
Cameron Highlands	50 - 60	150,000 - 200,000	61,000 - 81,000
Genting Highlands	-	321,230	130,000
Bukit Fraser	5 - 10 (Banglo) +- 20 (Apartment)	25,000	10,000

Nota :-

Nilaian kos tercatit adalah secara kasar di mana nilaian terperinci bergantung kepada keadaan lokasi, keadaan muka bumi, pembangunan sekitar dan sebagainya.

Sumber : Jabatan Penilaian

Contributor's Biography

Dato' Haji Zainol bin Haji Ayob is presently the Director of Department of Town and Country Planning, State of Pahang. He first served the Department in 1972 as a Technical Assistant and left for further studies at United Kingdom. When he returned in 1975, he served as Assistant Director in the Department of Town and Country Planning, State of Perak. Prior to the present position he has also served as Director of Town and Country Planning, State of Terengganu, Kedah and Kelantan.

URBAN ENVIRONMENTAL PLANNING: SOME PROBLEMS OF IMPLEMENTING SOCIO-ECONOMIC ASPECTS OF EIA STUDY IN URBAN AREA IN MALAYSIA

by

Dr. Abd. Rahim Md. Nor

Introduction

The decade of 1990s has been earmarked as the year of great environmental concerns where human adverse impacts on earth surface gained global recognition and opinion of people from diverse backgrounds and interests merged. High level meetings where academic, politicians and administrators came face to face with environmentalist, including the big one like those in Rio in 1992, are testimonies of a growing common interest among opposing groups towards a better approach for managing the environment.

Environmental damage resulting from development actions is a matter of universal concern to human being because the environment has both intrinsic and extrinsic values to mankind (World Development, 1994) which means environmental degradation will adversely affect the livelihood and well-being of the population. Pollution of air causes premature mortality and ill health which will reduce human welfare and lower their economic productivity; environmental degradation reduces the productivity of many resources on land and sea and polluted air denies human beings of living in clean air.

One of the biggest challenges shared by many contemporary nations is the problem of matching socio-economic

development with sustainable environment. While economic progress is inevitable to support population growth and to maintain quality of life, over exploitation and indiscriminate use of natural resources particularly fossil energy sources, and uncontrolled production processes lead to environmental damage and resource depletion.

In response to this challenge many countries have introduced and legalised methods of abating adverse impacts of development projects on the environment. One of such methods, the one which will be the focus of this paper, is the environmental impact assessment or globally known as EIA, a standard procedures adopted in modern nations as a means to combat environmental degradation and planning for better living.

The Nature of Environmental Impact Assessment

Basically environmental impact assessment is a set of procedures which acknowledges and informs developers of the likely adverse impacts of their proposed development projects on physical and human component of the environment. This broad statement matches Munn's (1979) definition of EIA as the need "to identify and predict the impacts on the environment and on man's health and well-being of legislative proposals, policies, programmes, projects and operational procedures and to interpret and communicate information about the impacts". In the United Kingdom where this procedure comes under the jurisdiction of the Department of the Environment, the operational definition of the procedure takes a narrower view describing it as "a technique and process by which information about the environmental effects of project is collected both by the developer and from other sources, and taken into account by the planning authorities in forming their judgements on whether the development should

go ahead" (Department of the Environment, 1989). The United Nations, on the other hand, uses even a more general definition to the concept stating that EIA is simply "an assessment of the impacts of a planned activity on the environment" (United Nation, 1991).

It can be safely implied then that environmental impact assessment is, in essence, a systematic process that examines the environmental consequences development actions, in advance. This procedure is unique and differs from other mechanisms for environmental protections because it emphases on prevention. Although it is common for planners and developers to assess and estimate the impacts of their development project generally theirs were not done in a systematic, holistic and multi-disciplinary way compared with what is required by procedures implicit in an EIA.

Origin and Development

Environmental impact assessment method as commonly practised by planners in the present days has its origin from the United States Natural Environmental Policy Act of 1969 or more popularly known as NEPA, the world's first legislation to require environmental impact assessment to be carried out prior to the take-off of a proposed development project. Since its enactment the legislation has had much influences on how human beings from diverse interest groups face each other in the course of carrying out activities on earth surface. Internally, it has influenced many decisions in the development of new projects and has brought into contact groups of different interests i.e. developers, legislator, politicians, academic, environmentalists and experts from other non-government organisations. Abroad, the United States' EIA model has been adopted by many countries starting first from the developed countries such as Canada

(1973), Australia (1974), West Germany (1975) and France (1976) among others, and later to less developed nations including China (1988). The United Kingdom formalised its EIA only recently, in 1988, in the form of several laws that implement European Community Directive 85/337 EEC mainly because the government felt that its existing planning system is more than adequate to control environmentally sensitive and damaging development projects.

Environmental Impact Assessment Practice in Malaysia

In Malaysia the legal enforcement of EIA began in late 1980s when the government enacted the Environmental Quality (Prescribed Activities) (EIA) Order 1987 where activities subject to EIA were prescribed in the Order. This law was drawn from the Environmental Quality (Amendment) Act, 1985. The amendment Act, 1985, contains a new section, 34A, which empowers the Ministers to prescribe any activity considered to produce significant adverse impact on the environment as prescribed activities on which assessment of its impact according to the EIA standard procedure is mandatory. Under the provisions of the Section, any person intending to carry out any of the activities which are prescribed shall be required to submit to the Director General of the Department of the Environment, for approval, a report containing an assessment of the impact such activity is likely to have on the surrounding physical and socio-economic environment. The EIA report should contain proposed measures to be undertaken to prevent, reduce or control the potential adverse impacts on the environment (Department of the Environment, 1989). The Department of the Environment has an overall responsibility to administer and enforce the provisions related to EIA in the country. However, it is envisaged that various other relevant government supervising and approving agencies will assist the Department in ensuring

the prescribed activities undergo EIA prior to their approval and implementation. These agencies may be operating at Federal or State government.

There are two types of EIA currently being practised in Malaysia, the preliminary and detailed assessments. The preliminary assessment relates to the initial assessment of the impact due to those activities that are prescribed. This is basically an assessment at the pre-feasibility study stage of the development of an activity. At this stage project options are identified and any significant residual environmental impacts are made known to the project' proponent. The preliminary assessment report should be prepared by consultant experts registered with the Department of the Environment according to their respective field of expertise and will be reviewed by a technical committee in the Department of the Environment internally.

The second type, the detailed assessment, is undertaken for those development projects for which significant residual environmental impacts have been predicted in the preliminary assessment. Should the predicted impact in the preliminary assessment report are considered damaging which require further examinations and more stringent mitigating measures, the Director General of the Department of the Environment will appoint an ad-hoc review panel which will study the report. The detailed EIA that will be undertaken by the proponent should be based on specific terms of reference issued by this expert panel.

Socio-Economic Aspects of EIA

Basically there are two impact of man's activities on earth surface on their surroundings, the physical and human component. The physical component relates to the damages caused by development project on natural resources in

particular water sources, bio-diversity and ambient air, while the human component concerns with the likely degradation such activities will have on the livelihood and social and psychological well-beings of the affected population. Some of the most common direct impact on human beings are demolition of houses and buildings and land acquisition to make way for a project, community segregation caused by closed toll system expressway, disturbed tranquillity caused by noise from traffic or manufacturing processes once the project is operational, impaired scenery and serenity of previously beautiful landscape and relief, loss of job due to relocation and higher risk of accident. In addition employment opportunities, service such as education and health and community structures, lifestyle and values may also be adversely affected as a result of development actions. These socio-economic impacts are conventionally regarded as an integral part of an EIA process although some countries regarded it as separate process sometimes parallel to the formal assessment (Carley and Bustelo, 1984; Finsterbusch, 1985).

Although it is apparent that the dividing line between the two impact components is necessarily blurred the proposed study, to be carried out in Cambridge under the Smuts program, will focus on the socio-economic impact of the EIA process and will be comparative in nature taking procedures, models and experiences of EIA in Commonwealth member countries into consideration.

As background knowledge the study will begin with examinations of the general EIA procedures of selected Commonwealth countries covering both the physical and human aspect of the assessment. From this on the study will be narrowed down to concentrate on assessment of the human and socio-economic impact of development project with full

awareness of the fact that impact on the physical component are always mixed up and overlapping with those of the human and socio-economic element.

Some Problems Of Implementing EIA In Urban Area

The first conventional step in conducting an EIA for a proposed project is the gathering of a pool experts in various fields related to the likely impacts of the proposed project would likely have on the surrounding environment. The selection depends on the nature of the proposed project. For infrastructure such as road or highway experts in public transport studies, traffic engineering, botany, hydrology, geotechnic, and air quality are the likely persons to be involved in the study. On top of this, a socio-economist with strong background in land use analysis commonly found in economic geography courses is an inevitable component who will be assigned with the task of soliciting people's feeling and opinion about the proposed project. He will also be responsible for the description of the land use and economic activities within some 5 kilometre radius of the site where the project is to be located.

Focusing on the socio-economic and human aspects of the EIA one has to recognise that a socio-economist is an important element in any such study. The person is expected to have a wide and in-depth knowledge on land use of the area adjacent to the proposed project, population distribution, density and structure, and adequate understanding of some of the common economic issues arising from the implementation of a project.

He or she will also be responsible for mapping the land use, population distribution and facilities and infrastructure available within some distances from the proposed project. Proficiency in the use of statistical software should be made compulsory because the data collected from survey interviews

of the population and other sources will have to be computerised and analysed using statistical tools commonly employed in scientific socio-economic surveys.

One of the main task assigned to a socio-economist in an EIA study is consultation with residents living in the proximity of the proposed project. For a single-site project such as factory, airport, port or golf course, residents likely to be impacted by the project are normally defined as people living within 5-7 kilometre radius of the site of the project. For a linear infrastructure such as road, highway or rail track the impacted population would cover the area about 1-2 kilometres from either side of the infrastructure's right-of-ways. The length of the infrastructure will normally render more people are considered to be likely impacted compared with a single-site or clustered project, thus requires more people to be consulted.

Consultation with affected residents is normally undertaken by means of household survey interviews conducted by the consultant socio-economist who is assisted by research assistants and enumerators using a pre-tested interview-questionnaire in each meeting with carefully selected respondents. It should also in the mind of the consultant to take into account the diversity of the affected population by selecting residents of various socio-economic background, gender and ethnic groups for interviews.

During fieldwork the socio-economist is expected to face respondents of diverse background, interest and political bending and have divergent views of the proposed project either because the project is seen as a potential threat to his or her interest, or simply arising from inadequate information about the purpose, ownership and benefits likely to be generated from the project. This is exemplified by an EIA study of the then proposed land reclamation in Pantai Kundur, Melaka (Abd Rahim,1990) in which the consultant

socio-economist has to face somewhat hostile residents who mostly claimed that the reclamation of the coastal area will prevent them from using the beach as a landing area for their fishing boat and sampans. More than 80 percent of the residents interviewed were against the project and they would like their villages to be left as it was than be developed by a project they perceived as threatening their very livelihood. Subsequent EIA studies for other projects including a pier and an oil refinery to be located exactly on the site of their villages faced even stronger resistance from the affected residents. Prior to construction, the residents made their stand and refuse to move out of the area claiming that it is their right to stay in their traditional villages while the compensation offered by the proponent of the project were inadequate and did not commensurate with the lost of houses and properties and psychological sufferings resulting from relocation and resettlement.

In another study (Abd. Rahim et al. 1995) the socio-economist consultants has to deal with affected residents who came from various way of life from Indonesian illegal immigrants in squatter areas to managers of multi-milion shopping complexes located right in the heart of the Kuala Lumpur city. The proposed project, the first elevated highway in the city stretching some 7 kilometres on top of Sungai Klang and Sungai Ampang from the CBD to Ampang, was seen by the squatters whose houses have to be demolished as a threat to their survivals. This was against the views of shop and stall owners in nearby shopping malls such as Ampang Shopping Complex, Yow Chuan Plaza and Empires Tower who welcomed the project and saw that the project will ease access to the city centre especially for population in dense residential areas of Ampang and Lembah Keramat which can enhance shopping activities in the area. Disquiet also surfaced from the

low-income residents whose main mean of mobility was motorcycles because the project's proponent proposed that the tolled elevated highway should prevent motorcycles of any size from using it due to excessive noise emission from this type of motorised vehicle. A private hospital located at the Ampang side of the highway raised their concerned about the possible impacts on the patients in general and on surgery works in operation theatres in upper levels which were just about 5 meters from the project's alignment. Consultation with the hospital authority resulted in a consensus whereby the proponent would resolved the problem by fitting noise barrier along the affected stretches with material, design and colour that is appealing to the public and blend well with the geomorphic component of the landscape surrounding the hospital.

There were cases where a proposed project is to be sited on government land that has for a long time been occupied by illegal farmers who depend on the land to supplement their income by growing vegetables and fruits. In a study in Rasah, Selangor (Abd. Rahim et al, 1990) a group of Chinese illegal farmers who grew vegetables, chillies, papaya and other fruits on river reserve lands have to be relocated to make way for a proposed industrial estate. The socio-economic expert was unable to administer the questionnaires on the selected farmers for soliciting their views because of their meagre knowledge in spoken and written Malay language and they were quite hostile to outsiders and not very approachable. The socio-economic surveys were finally carried out with the help from their community leaders who conducted the household interviews themselves after consultation and briefing by the researcher. Follow-up consultation include a meeting between the socio-economist consultant with the affected farmers mediated by the area's State Assemblyman.

There is also the problem of assessing the economic impacts of a proposed project. In a normal practice a cost benefit analysis will be conducted to assess what are the likely impact of the project on the surrounding area in economic terms. In the majority of the cases, however, this procedure was not conducted due to lack of data from the proponent for the reason that the EIA study is the planning process which take place at the beginning of the project and at this stage the proponent is unlikely to have detailed knowledge and figures on the financial cost and revenues expected from the project. The proponents are unwilling to commit to the costing because the feasibility of the project is yet to be determined by the EIA and any commitment and estimates on cost at this stage is likely to be inaccurate. It should also remember that the likely economic impact of a proposed project can be envisaged from many point of views in terms of employment generation, government revenues from company taxes, linkages with other industries and enterprises and the overall spill-over effect. Experiences in Malaysia show that these impacts are more likely to be more significant that the narrow and project-specific impacts conventionally handled by an economic or financial feasibility study. In such a situation, it is quite unrealistic to rely on a single feasibility study as a basis of approving the likely economic benefits of a proposed project.

Related to this is the problem of judging the overall benefits of the project on the surrounding residents in particular and the population at large in general. Viewed at micro level the relocated residents and the demolished buildings, houses, shop, stalls etc might be seen as the adverse impact that the proponent should avoid. However at macro level the proposed project might benefit residents in areas far from the project or the population at large or it may not be generating benefits now but will be generating positive economic effects in the

long run. The problem lies in striking the balance between adverse impacts that the project will produce and the short and long terms gains to be reaped.

Conclusion

Malaysia is fast developing economically, and it is to be noticed that not all the development stages that this country is experiencing necessarily followed what took place in the capitalist economies of the western tradition a century ago. Neither has the country to blindly follow the so-called standard EIA research procedures although interest of other economies in this field is high (see, for example, Abd Rahim et al, 1989). Initiating a development project requires environmental impact study that is increasingly becoming more difficult to accrete its economic and financial benefits to be accrued on the society at large especially in a multi-rethink and diverse population such as found in this country. The problem of undertaking socio-economic study for an EIA and in determining project's likely economic impacts are more difficult in urban areas where resistance from the affected population is stronger, and positive and adverse impacts of a project are likely to blend well compared in rural and isolated areas.

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Contributor's biography

Dr. Abd. Rahim is a senior lecturer at the Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia specialising in public transport, statistical analysis and human geography. He is also a consultant to UKM for the socio-economic studies, EIA and transport studies. He received his B.A. (Economics and Geography) from UKM, Diploma in Education from Universiti Malaya, M.A. in transport studies from University of Keele, PhD from University of Sheffield and Certificate in Databases from University of Cambridge. He wrote articles for national and international journals and has conducted 16 EIA studies.

"PLANNING METHODS TOWARDS ACHIEVEING SUSTAINABLE COMMUNITY"

by

Dato' Prof. Zainuddin Bin Muhammad

Prepared with the assistance of
Shamsinar binti Habib

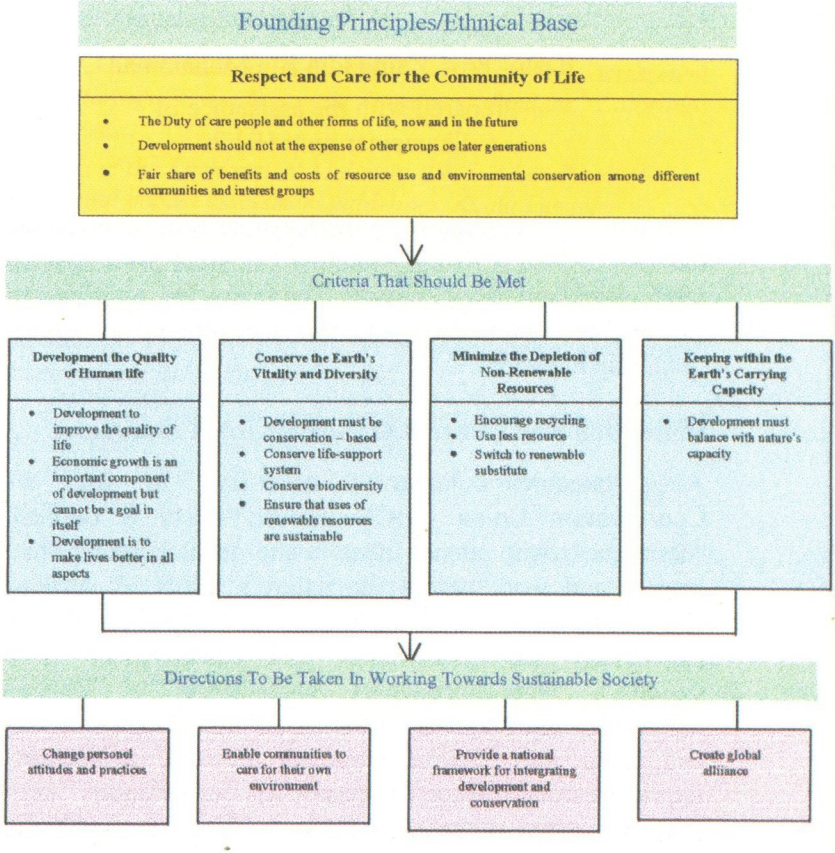
This paper is extracted from the Keynote address prepared for the 15th EAROPH World Planning Congress 3 - 7 September 1996, Auckland, New Zealand. The theme for this Congress is sustainable communities and this Keynote is on sub-theme 'planning methods'.

Defination And Concept Of Sustainable Community

A sustainable community according to the World Conservation Union (IUCN et. Al, 1991) is defined as "community who adopts lifestyle and development paths that respect and work within the nature's limits. A sustainable community shares with each other and cares for the earth, particularly the maintenance and enhancement of eco-systems". Nine principles characterise a sustainable community; the founding principle is the existence of respect and care for the community of life in terms of intergenerational needs, emphasis on social equity and fair share of resources. To realise a sustainable community, there are criterias need to be met, namely: improvement of the quality of human life; conservation of the earth's carrying capacity, the direction that needs to be taken in working towards sustainable society includes changing the personal attitudes and practices, enabling the communities to care for their own environment and lastly, providing the national framework for integrating development and conservation (refer to Diagram 1).

Diagram 1

PRINCIPAL OF A SUSTAINABLE SOCIETY



The above definition is further supported and complemented by an international community institution which suggests that "communities are unlikely, therefore, to prove prosperous and sustainable unless they take into account the spiritual dimension of human reality and seek to foster a culture in which the moral, ethical, emotional intellectual development of the individual are of primary concern". It also expounds that "sustainable

that "sustainable community must move towards more participatory, knowledge-based and value-driven systems of governance in which people can assume responsibility for the processes and institutions that affect their lives". Consultations become their primary mode of decision-making, and therefore education, training and access of information are pertinent components.

The definition of a sustainable community is closely related to the thinking of sustainable development, i.e. development that provides real improvement in the quality of human life, and simultaneously conserve the vitality and diversity of the earth. Whilst sustainable development is a development concept, sustainable community is the actors who adopt and apply the concept. The correlation between these two definitions reaffirm ***that a sustainable community can only exist or be developed in system which practices sustainable development. In another meaning a sustainable community is a community who practices sustainable development. Consequently, sustainable development and sustainable communities are mutually supportive and interdependent.***

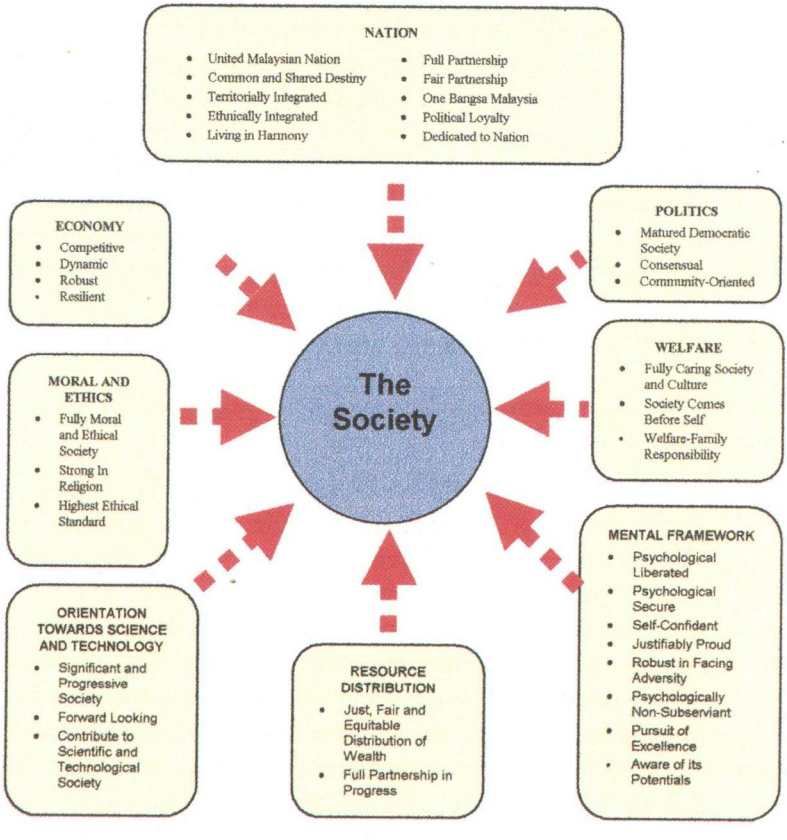
Malaysian Concept Of Sustainable Community : Vision 2020

In consistent with the definitions above, the Government firmly believes a sustainable community in the Malaysian context can be equated with the kind society that Malaysia intends to foster and create by the year 2020 through the Malaysia Vision 2020, i.e. "confident Malaysia society that is infused by strong moral and ethical values, living in a society that is democratic, liberal and tolerant, caring, economically just and equitable, progressive and prosperous, and full possession of an economy that is competitive, dynamic, robust and resilient" (Diagram 2) Vision 2020 is not just an option, but an imperative, both in developmental and environmental

the value of its people and the resilience, competence and discipline of its workforce. Here again, the focus of Vision 2020, is centred on the people and the community. With the successful achievement of the Vision 2020. I am optimistic that the future Malaysia society would be a fully sustainable community. Towards this end, the Malaysian government currently is making concerted efforts towards developing the necessary mechanisms in realising the objectives of the vision 2020.

Diagram 2

VISION 2020 AT A GLANCE : THE SOCIETY



Key Planning Instruments and Mechanism

Malaysia has formulated several key planning instruments and mechanism which direct the nation towards economic growth with equity but stresses environment to achieve sustainable community.

Vision 2020

Malaysia has its long-term vision to become a fully developed nation by the year 2020. Vision 2020 sets the framework for the type of community in the year 2020. Vision 2020 stresses the need for economic development in which the idea of development is mutually reinforced, as indeed it has been since the early 1970s, with the concept of an economically just society. Thus, although economic growth is important, the desire for growth has to be related to questions of stability, control of inflation, sustainability, raising the quality of life and other social objectives.

Within the framework of vision 2020, Malaysia has formulated the National Development Policy (NDP). The trust of the (NDP) is balanced and sustained development, with emphasis on growth with equity. The NDP seeks to continue efforts to correct economic imbalances and to created a more just and prosperous society. Emphasis will, therefore, continue to be given to poverty alleviation and reduction of economic imbalances, benefiting all ethnic and income groups as well as urban and rural dwellers.

The NDP is detailed out in the five year development plan for the country. In theSeventh Malaysian Plan (1990-2000), the Government takes appropriate action to ensure that environment and conservation considerations is integrated in development planning. In addition, high priority is placed on human resource development as well as equal access to

adequates affordable basic services, e.g. low-cost housing, infrastructure and open spaces, particularly to the low-income and disadvantaged groups. The National Conservation Strategy will be used as the framework for a comprehensive approach to natural resource development.

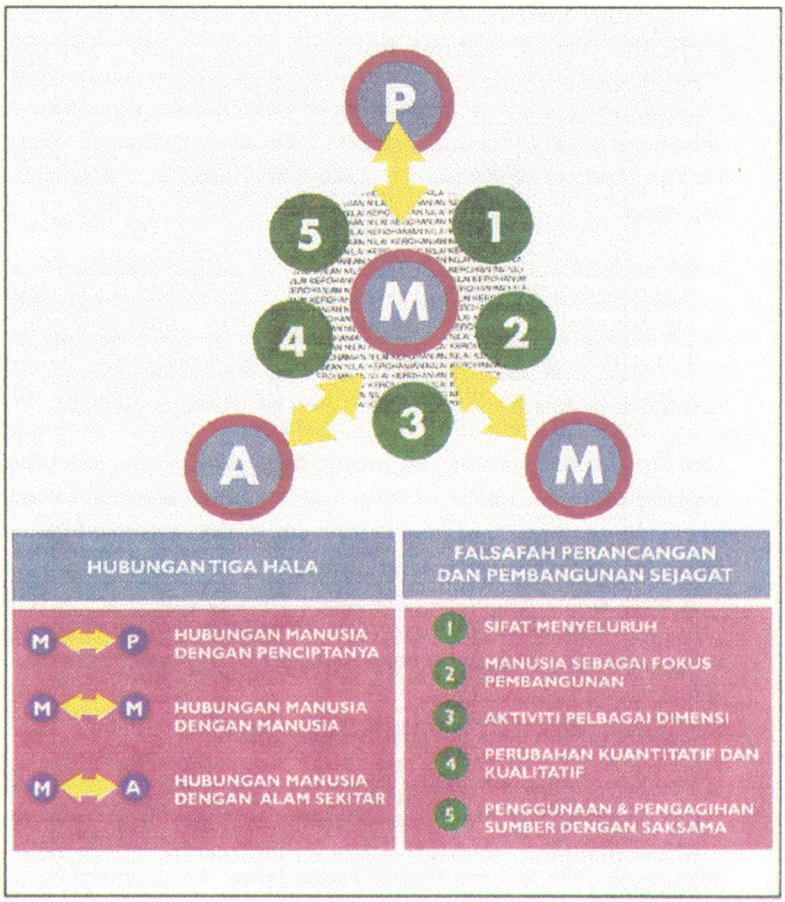
Total Planning Doctrine : The Planning Philosophy

To achieve Vision 2020, embedded with the underlying premise of attaining sustainable communities, Malaysia has formulated a comprehensive and universal planning doctrine as guiding principle in development planning processes called the "Total Planning Doctrine". This Doctrine calls for the maintenance of the relationship between Man and his Creator, Man and Man, and Man and Environment (Diagram 3) in order to attain balanced and sustained development economically, socially, spiritually and environmentally.

This Doctrine postulates that man is the focus for development, and building of an individual person and family institution become a critically important component in any sustainable development programme. Failing to maintain any one of the three relationships would inevitably jeopardise the effort towards developing the kind of society envisaged. Being universal in nature, this Doctrine can justifiably applied to all, regardless of differences in religion, geographic location, ethnicity and culture. It should be noted that principles of this Doctrine is fully recognised and accepted by major religions as the fundamental basis for the development of sustainable communities.

Diagram 3

TOTAL PLANNING DOCTRINE



Integrated Planning and Resource Management : The Planning System

Past experience reveals that there has been a lack of explicit spatial dimension in national socio-economic development planning and

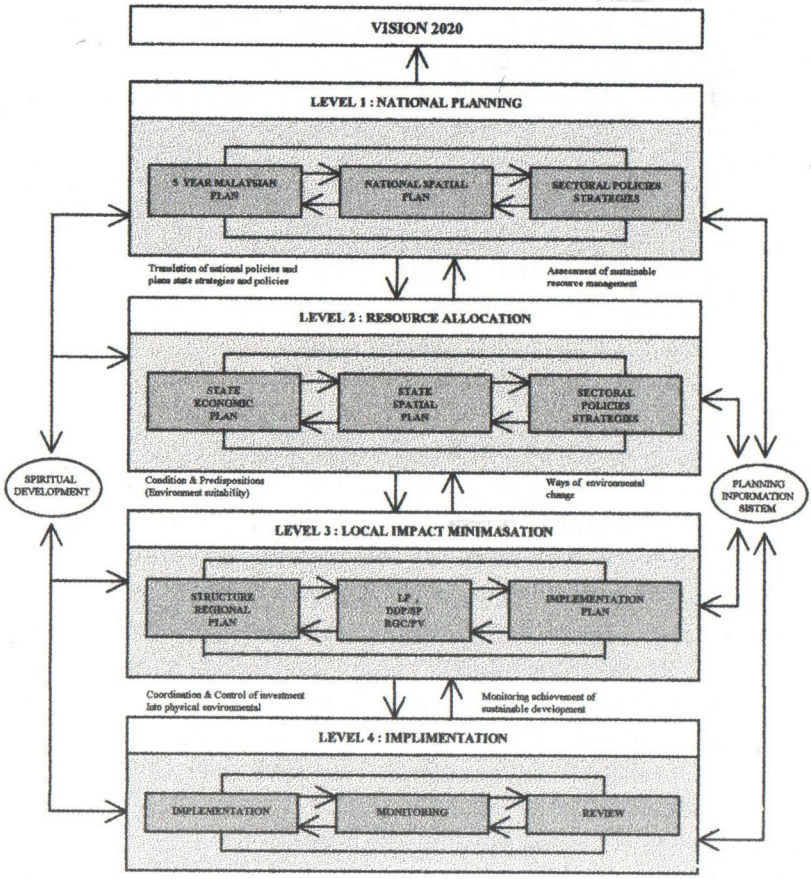
planning and environmental resources management. This has made the development process less effective in terms of efficient use of natural resources, and conservation of the build-environment. In rationalising the inadequacies of the planning system in this country, an Integrated Planning and Resource Management (IPRM) approach has been designed and adopted. The objective of this system is to ensure explicit spatial dimension in national socio-economic development planning and environmental resources management. The main characteristics of this system are the emphasis on the spatial components of the national strategies and policies, the integration of environmental management and socio-economic planning in landuse planning, the inclusion of human development, and the timely access to decision-support information system in the processes of development planning at all levels of government administration (Diagram 4). As a whole. This system involves multi-intersectoral considerations, broad-based public participation and consultations, flexibility for adaptation to changes, continuous review for relevancy, and accountability for all stages of activities at all levels, both horizontally and vertically.

Conservation and Public Participation

The key feature of policy formulation in Malaysia is the active public participation and consultations at certain critical stages of the planning process for all actors based on the principle of consensus and moderation. Within the overall government machinery, various councils and committees are set up at different level of government machinery (refer chart enclosed). Between public and private sector, consultation process is performed at various levels through the establishment of national, industrial and departmental level as a platform to jointly discuss issues of global and national importance and their implications to the country.

Diagram 4

INTEGRATED PLANNING AND RESOURCE MANAGEMENT SYSTEM



LP	Local Plan	PV	Planned Village
DDP	District Development Plan	SRDP	State Rural Development Plan
RGC	Regional Growth Centre	RDSPI	Rural Development Strategies and Philosophy are Included
SP	Special Project		

At the local level, the participation mechanism has been made possible through the Town and Country Planning Act. For the Structure and Local Plans, the public, especially Community Based

Based Organisations (CBOs), is given the opportunity to comment on the findings of the report of survey through a public participation program, including holding an exhibition and public hearings. All plans prepared under this Act are the products of dissemination of full, timely information as well as extensive public consultation and engagement before finally determining the contents of plans. To strengthen the system, the Town and Country Planning Act has been updated and strengthened in 1995 to accommodate modern needs and conditions for better quality living environment for the community, which includes,

* Preservation of natural topography,
* Preservation of trees,
* Provision of adequate open spaces,
* Conservation of "Development Proposal Report" in planning application, and
* Inspection of owners of adjoining land.

In planning for sustainable development the ICPD has identified landuse planning criteria for sustainable development at two levels. Firstly, is the identification of landuse planning criteria for sustainable development. In this aspect, the goals of sustainable development use are resource conservation, built-environment in harmony with natural environment, environmental quality and social equity. Secondly, is the identification of landuse planning criteria for sustainable community. To this end, the principles of sustainable community, as described earlier, has been chosen. Basically, the two sets of criteria are used as indicators to assess sustainability of development plans. These criteria however are only qualitative, yet to be developed in quantitative form.

For all intent and purposes, carrying capacity of an environmental system should be used to derive indicators for

measuring sustainability, which implies the existence of limits to development and economic activity. However, this task requires an understanding of how much of the resource is available, information which extremely difficult if not impossible to derive. In addition, carrying capacity is complex and dynamic, and it maybe affected with technological innovations and advancements. This poses the main challenge in any attempt to integrate environmental management in landuse planning. To undertake this immense task, Malaysia is currently seeking foreign technical co-operation and assistance in this area.

Conclusion

Sustainable community will certainly be an important Agenda in the next millennium, world-wide. Malaysia Vision 2020 is not short of its present and future commitments towards sustainable human settlements. The future of our environment will rest largely upon the capacity and capability of all Malaysians in establishing themselves as a society of high moral and ethical values. To realise sustainable community, balanced development is necessary not only economically, environmentally and socially, but more important is the spiritual aspect. In this, the building of a strong individual and family unit will provide a concrete foundation and consequently, necessitates the formulation of appropriate strategies, policies, planning philosophy, planning system and programmes that are human focused, with extensive participation from all levels of the community groups affected.

In Malaysia context, sustainable community is a fundamental objective of the Malaysia Vision 2020. Malaysia, considered a model for its harmonious multi-religious and cultured community to be emulated, has been successfully practising consultative and community participatory process based on

moderation and consensus principles in decision-making towards realising sustainable community.

Malaysia has also formulated its Total Planning Doctrine on which its planning system is developed and implemented. This is consistent to the global need for sustainable development. The success of realising sustainable community, however, is largely dependent on the extent of commitment of the community and its local government. People empowerment and decentralisation of power to the local government are the major agenda that need to be addressed urgently.

Contributor's Biography

Dato' Prof. Zainuddin bin Muhammad has served in the Malaysian Government at both State and Federal levels for more than 30 years. In his current appointment as Director General of Town and Country Planning, he is responsible for town planning policies, standards and development plans for all towns. He serves on several committees including the National Council for Environment, National Housing Council and Committees for the new Kuala Lumpur International Airport and Putrajaya Administrative Centre in Sepang, the Cybercity and the Multimedia Supercorridor (MSC). Dato' Prof. Zainuddin has a Master degree in Regional and Community Planning from the Kansas State University, USA and a Diploma in Housing, Planning and Building, Rotterdam and Diploma in Town and Regional Planning from Melbourne University, Australia. He is a Chartered Town Planner and is a member of the Royal Australian Planning Institute, American Planning Association and Vice President of the Malaysian Institute of Planners.

He has won many outstanding awards including Planner of the year by MIP 1995, Paul Harris Fellow Rotary International 1996 and Alumni Fellow of Kansas State University 1997.

SOME OVERVIEW OF LEGISLATIONS AND GUIDELINES FOR CHILDREN'S PLAY SPACES IN RESIDENTIAL ENVIRONMENT

by
Melasutra Md. Dali

Introduction

The importance of physical environment to the development of children can never be questioned. Economic, social and educational circumstances are indisputably more significant in determining the growth and development of children. Since children spend large amounts of their time outdoors as compared to adults, they are vulnerable to the conditions of the physical environment and its quality affects their overall behaviour patterns.

The intention of the paper is to look at the efforts done by responsible bodies in planning play space for children and to look at different approaches in attending to their needs. It also provides an overview of some legislations and regulations regarding the planning of children's play space in other countries in relation to Malaysia.

The Importance of Play

Throughout history, children from all backgrounds have demonstrated the need for play, which is a major factor contributing to their total development. The degree to which children's play has been provided for or restricted to, in human settlements is a reflection of society's expectations and perceptions of the importance of play (shivers, 1971). It is no longer a matter of dispute. Educators, psychologists, parents and many planners do recognise that play makes a vital contribution to the social, emotional, intellectual and physical development of children.

A child's play is an important part of his or her cognitive, physical development space (Frost, 1992). Through play, a child learns about himself and his world. Further, the opportunity to play enhances one's ability to initiate independent activities which is crucial to the exploration and construction of one's autonomy, identity and self image as a constructive force.

The opportunity for play, therefore is an important focus for investigation. Social and environmental changes influence these opportunities especially in cities. Specifically, social factors have diminished the freedom to use available opportunities. Obviously parents are more cautious in allowing their children to go out by themselves. Pedestrian density discourages children from using sidewalk space for their games and heavy traffic precludes playing in the street. Moreover, the available opportunities diminish with higher-density development couple with decreasing open space. As plans for development continues, one may ask, *"Where and when can children play?"* Unfortunately, this inquiry often meets with inadequate answers. Open spaces around residential areas are planned more for the aesthetic value and landscape features rather than for use by children.

What happens to the children as these opportunities diminish? As their choices and play opportunities become more and more limited especially in urban areas, how do they learn about themselves and their abilities, about their world and their relationship to it? What are the possibilities that exist for children in the city in finding places to meet others, to explore their environment, to aid in constructing an image of themselves and the world? A study done by Fahmy 1980, has systematically demonstrated that adults (designer, park officials) are quite insensitive to the play preferences of school-going age children. Therefore, play space planned by adults may pose questionable relationships to opportunities desire by children.

Planning For Children

Physical planning for children in a residential environment has almost always meant the planning of playgrounds. Playground planning is certainly a critical component, but we should not assume that children only resort to established playgrounds with swings, slides, climbing structures and see-saws. Children play everywhere throughout the residential community. Planning for children's play must recognised this phenomenon and accept the fact that tidy playgrounds meet the needs of adult, but hardly respond to the needs of children. The provision of adequate open or recreational space for adults and children are rare. Adults, however can make their needs understood, but not children.

Developing legislation and guidelines for play spaces and play opportunities in the residential environmental has become critical with conflicting demands for spaces in urban areas. Legislation is therefore needed at the national, regional and local levels stating clearly the legal rights of children within the residential domain. These rights of childhood are affected when standards are developed. Standards are not to be confused with excelence under any circumstances, for as a regulatory tool they are designed primarily to establish minimally acceptable criterias (Knight 1980). In fact, standards can do little more than require that spaces be provided for a variety of play activities.

Some International Example

Legislation reflects the attitudes and priorities of society towards the nature and importance of children. The fact that some nations are more prepared to articulate their attitudes towards children and to state their belief in the value of play than others reflects the diversity of approaches found in comparing legislations of several countries.

Canadian Experience

In Canada, 55% of all new housing since 1961 has been financed through the National Housing Act NHA), administered by the Canada Mortgage and Housing Corporation (CMHC). The NHA standard relating to the provision of children's play spaces in residential development is applicable only to new housing financed through the NHA, however the NHA standard often serve as the model for the municipal or provincial authorities in developing standards either similar to or more stringent than CMHC's. The current NHA criteria for the provision of children's play spaces are stated in the Site Planning criteria published by CMCH.

> *In comprehensively planned developments of over 20 family units (two bedrooms or more) appropriately located, designed and landscape play spaces shall be provided for preschool and school age children. A minimum of of 2.5m^2 per bedroom (excluding master bedroom) shall be provided as part of the minimum amenity are.*

The effect of this standard is to provide 5sq. meter per unit for play spaces for preschool and school age children in developments consisting of three-bedroom units. The NHA standards administered by CMHC do not provide criteria for such areas governing community play spaces. Requirements for such areas in canada are specified by municipalties or provinces.

It should be noted, however that the requirements for 'minimum amenity areas' in the NHA Site Planning Creteria are sufficient to require play spaces for preschoolers, school age children, and community play areas to be designated and developed within the residential setting.

Specific information concerning the organisation, design, construction, landscaping and size of the equipment in specific play spaces can be provided through guideline. In Canada, this approach has been adopted to help developers, planners and the general public better understand detailed issues of design, organisation and landscaping of play spaces.

Swedish Experience

The Swedish experience Norms for Building enacted in 1975 (implemented in 1976), state that children must have equal play opportunities regardless of the density of the residential miliue (Smith, 1976). In fact, in areas of multi-family housing, the builder is required to provide a variety of spaces for children to play in, including spaces for young children close to dwellings. In single-family detached housing, municipal authorities and the builder may establish a contract which requires the homeonwers to form a cooperative association to maintain and manage a communal play area for young children. In addition, for play spaces located close to houses, there are requirements for municipally-built and operated park playground which are not governed by the above-mentioned regulation. These general notes reflect in part some of the attention given to planning for children's play in Sweden.

Denmark

The essential components of the legislation concerning play and leisure areas in Denmark are identified in the 1977 Building Norms and Regulations (Knight, 1980). These regulations apply to all of Denmark with the exception of the Faero Islands and Greenland.

The requirements for children's spaces and clearly itemized within the regulation governing open space planning for residential developments. The criteria state that when a

project is planned for more then eight families, a portion of the open space must be developed as play space for children. This also applies to existing developments, where possible.

The essential components of legislation concerning play and leisure areas in Denmark are identified in the 1997. Building Norms and Regulations (Knight, 1980). These regulations apply to all of Denmark with the exception of the Faero Islands and Greenland.

Finland

Urbanization in Finland was for a long time much slower than in the other northan Europen countries. There are still many remaining small towns mainly with wooden houses. In 30 to 40 years ago, children could still watch adults at work, move freely and find exciting places to play. Life has changed since then, whereby people travel to their work places, the courtyards are are crowded with cars and traffic renders the whole town dangerous to small children. The Government then launched environment for some building regulation. However, the building laws contained no definite regulations concerning the safe and stimulating environment for children. Planner, municipalities and welfare organizations reacted by arranging various programs for children and seminars for planners, school teachers and decision makers. In 1974, the Ministry of the Interior published 'Planning Instructions for Children's Playgrounds' which underlined several general standards :-

a. Flat playgrounds – within an immediate radius of 50 meters from the main entrance to any dwelling, space should be allocated for small children to play.
b. Neighbourhood park – there should be a recreation area for every block, the distance to the neighbourhood

park in apartment areas should not be more than 150 meters.

c. Main recreation area - at a maximum of 500 meters from any housing area, there should be a larger, unified park.

These guideline are not legally binding, they are however usually followed in the planning of new areas. There are also some additions to Finland's building legislation, concerning children's playgrounds on lots consisting of more than two dwellings (Rosengren 1980). A play area of at least 10 sq. meter for small children is now required. It also should be sheltered from noise, dust and air pollution. In consequence,it should not be near, for example, parking areas, traffic, garbage containers or areas set aside for cleaning household furnishing. The play area should be varied with its natural setting by taken into consideration; the sun and shade. In addition, the play area should also have adequate facilities for adults.

Singapore

A survey in Singapore in 1967 recorded the amount of public open spaces which is 0.5 acre per thousand population for the Island as a whole and 0.3 acre per thousand population for the city area. This amount compare rather unfavourably with western cities, which enjoy a standard of 5 to 7.5 acre per thousand population (Ling, 1989). However in the Singapore case, the shortage of land in the island should be borne in mind. In respect of local children's playground, the provision per thousand is 0.04 acre, with a catchment radius of a quarter to half mile so that it is accessible to children. In planning for children's play space, the planner's task does not stop at determining the standard and locating an adequate site, he also needs to identify the level involved in providing the facilities. The primary training ground for example involves the casual

nurturing of future sportsmen whereby the emphasis is on convenience and accessibility to densely populated estates.

Malaysian Experience

The Malaysian Town Planning Act 172 (enacted in 1976) states that a minimum requirement ate to be reserved as open space for recreation, sports and environmental beautification, based on a standard of 10% of the gross development area also includes 30% of the reserve for power substation and transmission lines, river reserve, drainage and irrigation reserves, school field, oxidation ponds etc, This 10% of open space can be located or distributed over the whole area of the housing scheme based on a hierarchy of open spaces.

Legislation for the provision of open spaces in development areas also exists the Federal Territory of Kuala Lumpur. The legal requirement is found in Part V (Preservation and Planting of Trees) of the Federal Territory Act 1982 i.e. Act 267. The Act requires developers to submit a beautification plan for open spaces within a project in addition to the normal layout application. The parks and Recreation Department of City Hall Kuala Lumpur processes this plan and check the landscaping details and plus the provision of recreational facilities proposed in the beautification plan Amendments will be made when nesessary (Zainuddin, 1993). With the implementation of the Act, there has how been a greater commiment on the part of developers to provide a pleasant environment and a better quality of living.

The review on legislations indicates that there are so many methods to implement in the provision of children's playground's all over the world. However, the important point to highlight here is that there are numerous possibilities to accommodate for our young ones. As demontrated by the Danish regulation, emphasis can be

made of size, location and accessibility to these facilities. Alternatively, very general space requirements are laid down, as in the current Canadian regulations. In our country this provision is made through the submission of layout plans certified by a Town Planner, whereby an area of a certain significant size will be allocated for. However, the problem lies in the provision and maintenance of the equipments and are poorly maintained.

The playground should be able to provide the type of environment which will facilitate the children's development process, and where children can do what they need to do and not what adults think they ought to do. If the foregoing is agreed it will be readily understood that the need for play provision is just as great for chldren in rural as well as urban areas. Although there will be differences, the basic needs remain the same.

Conclusion

Children need and will use spaces that are set aside for their play. If these do not exist, then they will necessarily use non-designated areas, such as streets, wasteground etc. This is also apply to areas which not do match the needs of the children, and perhaps hard surface and rugged areas, loose elements for building etc. The decision on what to provide for children should be based on a full consideration of the existing and lacking facilities in their local environment.

Legislation governing play spaces may provide details regarding size, location and accessibility or provide general information on space requirements as demontrated by some of the countries. Whatever provision or legislation is made, it must be designed to protect the child's right to play. Fundamental to the provision and legislation is to ensure that there are opportunities for children to manipulate and explore the environment. As human settlements increase in

density, urbanization encroaches upon natural and residential areas. Therefore it is necessary that the development of a reasonable child-oriented legislation and guideline be enforced at the national, regional and municipal levels. This will ensure the provision of sufficient, well-sited and designed spaces respond to the play needs of future generations. Looking at the legislation and guidelines of all these countries, they present encouraging signs that children are prime consideration when planning the environment in which both have to live, while children have to play.

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Contributor's Biography

Melasutra Md. Dali graduated from the University of Wisconsin with a BSC in Urban Studies and Environmental Planning in 1986 and she obtained her MSC in Urban and Regional Planning in 1988.

Presently she is a lecturer in planning at the faculty of Art and Social Science, University of Malaya.

NOTES FOR CONTRIBUTORS

The Editorial Board accepts articles relating to urban development, in particular to the Malaysian scene. Urban development encompasses a wide range of topics. The present Editorial Board have not placed any definite theme so as to encourage a wider choice of topics to be included.

Given the pace of development in our country, there should be no lack of suitable topics to be written. We encourage planners, academicians, sociologists and related professionals concerned over the physical environment to write.

Submissions could be in the form of articles, book reviews viewpoints, policy reviews, debates, technical reports or research notes. Headings are not fixed.

The preferred length of article should ideally be within the range of 5 and 5 to 10 pages, typed double spacing on A4 sized paper. Contributorsare encouraged to submit articles together with IBM-compatible diskettes (preferrably 3.25 inch). Please mention the word processing software used and its version to facilitate usage of the diskettes. Currently, articles are produced using Microsoft Word 6.0. Alternatively, articles can be sent to us via electronic mail no. : ubdjpbdip@tm.net.my or jpbdip.@po.jaring. my

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Jalan Cenderasari
50646 Kuala Lumpur

ISSN 1394-3987

9 771394 398004