



香港地產建設商會

THE REAL ESTATE DEVELOPERS ASSOCIATION OF HONG KONG

香港中環德輔道中十九號環球大廈1403室

Room 1403, World-Wide House, 19 Des Voeux Road Central, Hong Kong.

Tel: 2826 0111 Fax: 2845 2521

31 October 2009

CB(1) 589/09-10(03)

Mr. Bernard Chan, GBS, JP
Chairman
Council for Sustainable Development
c/o Sustainable Development Division
Environment Bureau
M/F Murray Building
Garden Road
Hong Kong

Dear Bernard,
**Invitation for Response Document 2009 on
Building Design to Foster a Quality and Sustainable Built Environment**

I am pleased to enclose with this letter a REDA Position Statement in response to the subject consultation.

Since this is such an important subject to REDA and the community, we have taken the initiative to commission a multi-disciplinary study to look at the various issues in some detail in order to broaden the debate. A fairly substantial report entitled "Building a Quality and Sustainable Hong Kong" has now been produced by the consultants and alternative ways have been proposed to address those issues. It should be noted that the views expressed in the report are those of the independent consultants and not necessarily REDA's. I shall be pleased to send you a copy of the report once it becomes available from the printers.

If you would wish to have a presentation by the consultants or further discussion with us, please let me know.

Yours ever,

Keith Kerr
Chairman, Executive Committee



香港地產建設商會

THE REAL ESTATE DEVELOPERS ASSOCIATION OF HONG KONG

香港中環德輔道中十九號環球大廈1403室
Room 1403, World-Wide House, 19 Des Voeux Road Central, Hong Kong.
Tel: 2826 0111 Fax: 2845 2521

Position Statement on the “Building Design to Foster a Quality and Sustainable Built Environment” Consultation

The Real Estate Developers Association of Hong Kong (REDAs) strongly supports the systematic implementation of Sustainable Development in Hong Kong. Many Hong Kong developers and building professionals work outside Hong Kong in places where a more positive approach is taken towards encouraging quality and sustainable development than exists in Hong Kong. REDAs urges the Council for Sustainable Development and the Government to put in place a holistic and systematic approach to developing Hong Kong in a sustainable manner.

Need for a Sustainable Development Strategy

There is no clear framework or a set of objectives for developing a sustainable built environment. Instead there is a focus on the detailed design and development of buildings without first establishing a context where the various economic, social and environmental factors can be coordinated to achieve clear targets.

The “First Sustainable Development Strategy for Hong Kong” produced by the Government in May 2005 is not broad-based or holistic. It focuses on pilot areas which will not have a significant impact on improving the lives of Hong Kong citizens. It is time that Hong Kong had a Sustainable Development Strategy that truly reflects the complexity of the subject.

The current approach of addressing topical issues on a piecemeal basis has the danger of resulting in unintended and undesirable consequences. There is a need to clearly establish common goals, objectives and targets so that both the public and private sectors can work towards achieving the targets. The need for this type of approach has been pointed out in the “Consultancy Study on Building Design that Supports Sustainable Urban Living Space in Hong Kong” undertaken for the Buildings Department.

The fundamental problems identified in the above-mentioned study have been largely ignored in carrying out the present consultation on “Building Design to Foster a Quality and Sustainable Built Environment”.

Fundamental Principles

There are a number of fundamental principles that should be applied when addressing this subject.

1. Protection of Property Rights

The ownership of private property is a fundamental component of Hong Kong society and a very important part of the economy. The rights of every landowner are protected by the



香港地產建設商會

THE REAL ESTATE DEVELOPERS ASSOCIATION OF HONG KONG

香港中環德輔道中十九號環球大廈1403室
Room 1403, World-Wide House, 19 Des Voeux Road Central, Hong Kong.
Tel: 2826 0111 Fax: 2845 2521

Basic Law. The introduction of any measure which may impact negatively on rights of ownership needs to be considered carefully, and only implemented if no alternative is available.

2. *Society is Demanding a Better City*

Hong Kong people are demanding a better environment to live, work and play in. Only a small portion of these demands can be met in the construction of new buildings by the private sector. The majority of these demands for an improved environment relate to what can be achieved in the public realm. The main focus of action should be on improving the public realm so as to meet society's demands in a quicker and more effective manner.

3. *Wise Use of Community Land Resources*

Government holds land for the people of Hong Kong. It is the most important public resource and must be used sensibly and carefully. Sustainable Development calls for a long term approach to the management and use of land. An improved quality of urban environment may mean that less land or land with reduced development potentials should be sold for development purposes and more should be used for open space and community uses. However, Government land sales have historically been an important source of public revenue used for infrastructure development. Recent history has shown only a few pieces of Government land being sold. The Government could take this opportunity to review the appropriate use of these Government sites for the best long term community interest.

4. *Address Known Problems Directly and Anticipate Likely Changes*

There is wide international and local acceptance of major issues which relate to the environment, most of which are supported by scientific study. These include :-

- Global warming
- Increasing urban heat island effect
- High levels of air pollution, particularly at street level
- Increasing demand for energy
- Demand for better housing and associated amenity
- An increasing public awareness of conservation and 'green' issues.

There should be a broad approach to addressing these known issues, as the causes and effects are multi-dimensional and cannot be effectively addressed by a single topic approach as in the Consultation Document.

5. *An Efficient, Fair and Certain Development System*

The development system should be efficient in the use of resources, fair to all participants and provide certainty to those who invest in it as developers or end users. It should also provide a high quality product which is sustainable on a long term basis. In terms of certainty



香港地產建設商會

THE REAL ESTATE DEVELOPERS ASSOCIATION OF HONG KONG

香港中環德輔道中十九號環球大廈1403室

Room 1403, World-Wide House, 19 Des Voeux Road Central, Hong Kong.

Tel: 2826 0111 Fax: 2845 2521

for investment, gradual changes are more likely to ensure that potential negative economic impacts are minimised.

6. *Government Determines Development Content*

Landowners are required to develop in accordance with the regulatory framework, controlled by the Buildings Ordinance, Town Planning Ordinance and land leases. As land premium is determined by Government on maximum development potential, it is usually only commercially viable to develop each site within the narrow flexibility permitted by the regulatory framework. If Government would accept a lower land sale premium and set lower limits on the development potentials when selling land, then the bulk and height of the development will be less.

General Responses to the Consultation Document

1. Scope of Document could be more Holistic and Addressing the Significant Issues Directly

The Consultation Document only focuses on the design of buildings within their own site and then concentrates on only three issues. While recognising some of the limitations of the approach, the Consultation Document has not properly addressed the known problems mentioned above. Instead it has focussed on building separation, impact of GFA on building bulk and energy efficiency in buildings, which are likely to have indirect and minimal effect.

2. Need to look at Solutions in the Neighbourhood and on Community Basis

The approach adopted only looks for solutions on private land. It does not look at the neighbourhood and the fundamental significance that public spaces, such as roads, community uses and open space, have in creating space around buildings, air ventilation corridors and large areas of significant greening. Given the small size of many lots in Hong Kong, the relationship and spacing between buildings must be addressed outside the private land holdings if a genuine attempt is being made to address these known problems.

3. Must Distinguish between New Development Areas and Existing Built-up Areas

The issues for new development areas are different from those in existing areas, but there is no distinction made in the Consultation Document.

In new areas the Government determines the extent and amount of development, the requirements for roads, greenery and public open space. Modern requirements for sustainable development can be incorporated into the planning of the layout of the new area. Lots are sold for development subject to conditions which all potential purchasers are aware of, and this can be taken into consideration when buying the land. In new development areas



香港地產建設商會

THE REAL ESTATE DEVELOPERS ASSOCIATION OF HONG KONG

香港中環德輔道中十九號環球大廈 1403 室

Room 1403, World-Wide House, 19 Des Voeux Road Central, Hong Kong.

Tel: 2826 0111 Fax: 2845 2521

there is no reason why all of the requirements and proposals mentioned in the Consultation Document cannot be built into the total development process by Government.

In developed areas the opportunities for introducing significant changes are constrained by the existing city fabric - large areas of private land holdings, existing road network and existing building development. A different approach is therefore required. Changes can only be introduced slowly and in a piecemeal basis. Adequate incentives need to be provided to private landowners to give up part of their existing rights to provide desirable public benefits.

4. Need to Distinguish Between the Character of Different Areas

The Consultation Document makes proposals which are of general application. This does not relate to the reality of the urban environment. There is a need to identify the different characteristics of areas and propose specific measures to address clearly identified problems. For instance, the continuous shopping street frontage of older areas such as Mong Kok and Causeway Bay are vital components of the character of the area. There are many small lot sizes there, and the introduction of ineffective gaps between buildings on redevelopment may negatively impact on the character of these areas and create management problems in spaces between buildings. Alternatively, some of the concerns over podium coverage may not be applicable to lower density residential areas where space is provided outside the lot. Different solutions need to be identified for different areas.

5. Need Incentives for Urban Renewal

When the existing Buildings Ordinance was introduced in the 1960's it completely changed the approach to building design from the former 'volume' approach to the 'tower on podium' approach. Under the previous controls development was permitted with high site coverage and part of the building protruding over the street. Many of the buildings built under these controls remain and create the 'canyon effect' in areas such as Mong Kok, North Point and Wan Chai. The lack of change after 40 years indicates the difficulty and time required to change the physical environment. It also indicates the lack of incentive to redevelop these high density buildings.

The introduction in the Building (Planning) Regulations of plot ratio, site coverage and building height controls, was designed to provide space around the building for light and ventilation. The same issues are being discussed today. However, they are being directed at the existing controls rather than at buildings built under the previous controls when many of the problems were created and still remain.

The Consultation Document proposes the removal of incentives which are already inadequate to encourage redevelopment of these 'undesirable' buildings. One of the unintended consequences of the current discussion on removing incentives is that redevelopment of buildings built more than 40 years ago will be even slower. This will not be conducive to the urban renewal process.



香港地產建設商會

THE REAL ESTATE DEVELOPERS ASSOCIATION OF HONG KONG

香港中環德輔道中十九號環球大廈1403室

Room 1403, World-Wide House, 19 Des Voeux Road Central, Hong Kong.

Tel: 2826 0111 Fax: 2845 2521

6. Environmental Quality at Street Level

The quality of the environment at the pedestrian level has been identified as a major area of concern. However, the Consultation Document has ignored possible solutions in the public areas of streets and open spaces, and focuses on intrusion into private land. The need to increase space for pedestrians and greening should first focus on re-designing and re-prioritising use of public space for vehicles, people and planting. The removal of pollution at street level by removing or controlling polluting vehicles would more effectively achieve improved air quality than introducing measures to reduce podium heights and provide space between buildings in old developed areas.

7. Costs and Value

The Consultation Document asks questions about costs and value. A more sustainable built environment has long term benefits and value for Hong Kong, and for this reason, a comprehensive approach should be adopted as soon as possible. Hong Kong people value good quality. Studies have shown that they value good quality open space more than the income received from the sale of government land. It is therefore important to re-assess the planning and development of our community land so as to provide the best quality urban environment.

The Hong Kong property market operates on a value basis rather than a cost basis. The largest cost component is the land cost and not building costs. New measures to improve building sustainability are unlikely to have a significant increase in the cost of property, but may result in an increase in value. Any increase in costs would only have impact on new buildings and not significantly on the main stock of existing private buildings. New requirements introduced into sale sites, such as underground car parking, may result in a reduction of land premium to Government, but this short term loss in revenue would be balanced by a long term increase in value, and quality of life.

8. Building Height and Bulk Already Controlled

The Consultation Document contains unsubstantiated information relating to excessive building height and bulk arising from GFA concessions. Meanwhile the Government is systematically introducing building height restrictions on Outline Zoning Plans so that 'excessive building height' is no longer an issue. Also, in most cases the bulk of development is restricted by plot ratio controls on Outline Zoning Plans or in lease conditions. The whole discussion of the impact of GFA concessions in the Consultation Document does little to contribute to the implementation of a sustainable built environment. One of the unintended consequences of the discussion on GFA concessions would be the provision of less sustainable buildings, and the removal of building quality components, such as recreational facilities and balconies, which have become accepted by Hong Kong people as an integral part of a quality and sustainable development.



香港地產建設商會

THE REAL ESTATE DEVELOPERS ASSOCIATION OF HONG KONG

香港中環德輔道中十九號環球大廈1403室

Room 1403, World-Wide House, 19 Des Voeux Road Central, Hong Kong.

Tel: 2826 0111 Fax: 2845 2521

9. Need to Reassess Development Content of Sale Sites

The report of the Independent Committee of Inquiry on the Grand Promenade case published in April 2006 suggested that the Government planning and land sales process should no longer sell sites with:-

- excessive development requirements,
- inclusion of floor space for public facilities,
- provision of public open space in private developments.

If Government seriously wants to address the bulk and size of development, then the maximisation of land revenue from excessive development is no longer an appropriate policy. Also the provision of government facilities and public open space should be provided separately by Government, and not included in sale sites. By adopting this approach a significant improvement in the urban environment would be immediately apparent with better open space provision and less bulky development.

Specific Responses to Consultation Document

While REDA has significant reservations about the Consultation Document because it does not take a holistic approach, the following comments are made on the detailed questions asked. These are made in the context of the general points made above.

1. *Sustainable Building Design Guidelines*

Building Separation

- (a) Separation in new areas should be built into a sustainable masterplanning approach to new development areas by Government, so that flexibility is provided within development sites for good building design and development.
- (b) In developed areas Government should minimise sale of land, so as to avoid increasing development density and provide more space between existing buildings. Sites on the sales list which would create problems should be replaced by sites in new development areas, and be rezoned for public open space and community uses.
- (c) Major public parks should be created at Hung Hom, North Point and other areas so as to meet open space requirements, improve greenery, improve air ventilation and improve the sustainability of these densely developed areas.
- (d) The proposed building separation provisions are unlikely to be effective in sites in old areas, so other measures for improving the public realm should be given a priority.



香港地產建設商會

THE REAL ESTATE DEVELOPERS ASSOCIATION OF HONG KONG

香港中環德輔道中十九號環球大廈1403室

Room 1403, World-Wide House, 19 Des Voeux Road Central, Hong Kong.

Tel: 2826 0111 Fax: 2845 2521

Building Setback and Podium Form

- (e) Building setback for public passage has been effective under the existing arrangements. The provisions should be retained.
- (f) Building setback for amenity purposes is not part of the existing system and if it is to be implemented then it should be on a similar incentive basis to that for public passage. Amendments to the Building (Planning) Regulations should be made.
- (g) Priority should be given to improving the public realm.
- (h) There may be scope for reducing the height of podiums in certain locations, allowing better ventilation, less building adjacent to pedestrian areas, while retaining the character and development value. This needs further investigation.

Greenery

- (i) Greenery should be looked at on a neighbourhood basis and specific targets in percentage of green coverage from public and private land established. Government should take steps to urgently provide new green areas on public land as this would have the greatest and fastest impact.
- (j) Public open space provision should be increased to at least meet the minimum standard of 2m² per person. In some areas a greater provision should be achieved so as to reflect public demands for more green and recreational space. Government should establish a priority for implementing open space requirements.
- (k) Greenery requirements in private developments will have an insignificant impact in developed areas and should only be seen as complementary to what can better be achieved in the public realm. Green roofs and podium should be encouraged.

2. *GFA Concession Policies*

- (a) Generally the GFA concession system is considered to be working well by providing a means within the regulatory system for desirable facilities of a sustainable nature. There is no proven argument that the system is resulting in unacceptable building bulk or height.



香港地產建設商會

THE REAL ESTATE DEVELOPERS ASSOCIATION OF HONG KONG

香港中環德輔道中十九號環球大廈1403室

Room 1403, World-Wide House, 19 Des Voeux Road Central, Hong Kong.

Tel: 2826 0111 Fax: 2845 2521

- (b) Mandatory features should continue to be provided on a concessionary basis and provisions up-dated to provide certainty to government officials, developers and future owners so that suitable provision will be made.
- (d) Car parking provision is exempt from GFA calculation under the Buildings Ordinance and should remain so. The amount of parking provision is a matter of transport policy and the developer must provide what is required by the standards. For new land sale sites, a requirement to provide car parking underground on suitable sites could be included in sale conditions, if considered necessary.
- (e) Provisions for the dedication or surrender of areas for public passage and road widening should remain in place to encourage private landowners to make available part of their land for public use. If these provisions are removed, then it is unlikely that this important public provision would be provided and there would be less incentive to redevelop existing buildings.
- (f) The GFA concessions for other facilities have a significant benefit in the management and use of buildings. Rather than being exceptional features, some such as building management facilities, sky gardens, utility platforms, etc, should now be included as features for which concessions are granted.
- (g) Ancillary Recreational Facilities are essential parts of modern living in Hong Kong and should be encouraged to be provided as they improve the living qualities and contribute to the overall provision of community facilities.
- (h) A concession cap overall is considered undesirable as each concession is capped in its own way. Provision of all benefits should be encouraged where appropriate.

3. *Energy Efficient Building Design*

- (a) REDA fully supports the promotion of energy efficiency in buildings but does have concern over obtaining a balance between environmental sustainability and cost effectiveness.
- (b) REDA supports the adoption of EMSD's Building Energy Code in new buildings, but recognition should also be given to other schemes such as HK-BEAM.
- (c) REDA agrees that existing buildings should be required to improve their energy efficiency performance.



香港地產建設商會

THE REAL ESTATE DEVELOPERS ASSOCIATION OF HONG KONG

香港中環德輔道中十九號環球大廈1403室

Room 1403, World-Wide House, 19 Des Voeux Road Central, Hong Kong.

Tel: 2826 0111 Fax: 2845 2521

Conclusion

The Consultation Document asks the significant question “What factors make for a better Sustainable Built Environment?” but then does not allow it to be properly addressed. REDA considers the achievement of a Sustainable Built Environment will not be accomplished unless a full Sustainable Development Strategy is prepared for Hong Kong.

There are real issues that need to be addressed and Hong Kong lags behind other progressive cities such as Tokyo, in taking sustainable development seriously. Government must make significant changes in the way it plans and develops our city. It should consider forgoing development in certain locations so that significant new areas of public open space and greening are urgently provided to address the heat island effect, improve air quality and provide a more liveable city.

REDA has commissioned a multi-disciplinary consultancy study to support this Position Statement and to make a contribution to the development of a fully sustainable approach to urban development.

The Real Estate Developers Association of Hong Kong
31 October 2009

Building a Quality and Sustainable Hong Kong

A Study Prepared in Response to the Council of Sustainable Development's Consultation on "Building Design to Foster a Quality and Sustainable Built Environment"

Prepared by
CK Lau & Associates
Civic Exchange
Knight Frank
Masterplan Limited
Wong & Ouyang (HK) Limited

Commissioned by
The Real Estate Developers Association of Hong Kong

October 2009

Disclaimer

The Real Estate Developers Association of Hong Kong (REDA) has commissioned this study in response to the consultation document issued by the Council for Sustainable Development on “Building Design to Foster a Quality and Sustainable Built Environment”.

This study has been used to provide the background for the preparation of a separate Position Paper by REDA. It has also been prepared to assist in the development of a holistic approach to the establishment of a Sustainable Development Strategy for Hong Kong.

The findings of this study are provided to support the on-going work of the Council for Sustainable Development as it addresses the many issues relating to the Built Environment in Hong Kong. It is also provided for the use of others who are interested in the study and implementation of sustainable development initiatives.

This report has been prepared by independent consultants and does not necessarily reflect the views of REDA or of its members.



This report is printed on recycled paper.

Team Of Consultants:

CK Lau & Associates

CK Lau

Civic Exchange

Christine Loh

Andrew Lawson

Mike Kilburn

Bill Barron (HKUST)

Jimmy Fung (HKUST)

Knight Frank

Alnwick Chan

Masterplan Limited

Ian Brownlee

Kira Brownlee

Anna Wong

Wong & Ouyang (HK) Limited

Robert Lam

Margaret Wong

Winnie Hui

Synopsis

S.1 This Study Report has been prepared in response to the Invitation for Response Document (IRD) issued by the Council for Sustainable Development (CSD). A multi-disciplinary approach has been taken to look at the issues raised in the document, and to look beyond these at the real problems that need to be addressed, and how effective the measures being discussed are likely to be in addressing the identified problems. In doing so the lack of a Sustainable Development Strategy for Hong Kong within which these can be properly considered is seen as a major shortcoming.

The Real Issues

S.2 The real issues which led to the consultation are complex and supported by scientific studies. They are :-

- (1) Poor air quality and air ventilation in the Urban Area,
- (2) Increase in the Urban Heat Island Effect and adverse impact on quality of life,
- (3) Global warming and the impact of energy use on carbon dioxide emissions.

S.3 The IRD addresses areas of topical concern relating to the public perception of "walled buildings" and "excessive building height and bulk". To address these perceived problems the IRD has focused only on buildings on an individual site, building set-back on streets, enhancing the amount of greening in buildings, control of GFA concessions and energy efficient building design. The main purpose of the consultation appears to be to obtain public comment on removing the features which currently promote sustainable and quality buildings. However, these are not the real causes of the problems.

Developed and New Sites/Areas

S.4 Government land policy has been to maximise development potential and to achieve the maximum land revenue. In many sites the Government also requires the provision of Government facilities such as Public Transport Terminals. These make the height and bulk of the developments even greater. However, recently the Government has reduced development densities on railway development sites. Reduction of densities on new Government land sale sites is one of the most effective ways of preventing unacceptable density of development.

S.5 In all new land sale sites the Government sets the development criteria, and these could relate to spacing of buildings, set-backs, maximum GFA, parking requirements, etc. When the land is sold every potential purchaser will be able to assess the cost implications and will bid accordingly. This is a fair and open system.

S.6 It is therefore necessary to distinguish between (1) new Government land sale sites and privately owned sites; and (2) new development areas and existing built-up areas. Property rights are protected under the law and this places considerable constraint on what can be done in areas which have already

been developed or sites which are privately owned. The well established street network and development pattern also constrain opportunities.

- S.7 The measures in the IRD, other than set-backs, are not applicable to the developed areas, but can be readily implemented in the new areas. Developed areas contain the main built up areas and are the worst affected by the three problems identified above. They need to be provided with significant and direct measures to quickly stop further deterioration and start a process of improvement. These include:-
- (1) No further land sales in areas along the harbour which will: prevent air flows into the inland areas, unnecessarily increase densities, prevent greening and create a wall effect;
 - (2) Directly prevent air pollution at street level from vehicles by emission controls, excluding polluting vehicles, creating pedestrian areas, etc;
 - (3) Dramatically introducing significant green areas by quickly implementing existing open space zones and creating new open space zones; and
 - (4) Sell land in the New Territories along railway lines so that the population moves away from the Urban Area and the density does not increase.

Cost and Value

- S.8 The inclusion of green features in buildings will not have a significant impact on the cost of flats as they are traded on a value basis rather than a construction cost basis. Also new requirements will only affect new flats and not existing buildings which are the main building stock.
- S.9 There are studies which show that the selling of Government land for the highest development densities may provide the highest land revenue but result in long term costs in term of poor living environment and public health issues. A lower overall density of development with more open space for greening and air corridors would be of greater advantage in the long term. There is evidence that the public place a high value on public open space and more recreation facilities, yet many of the old areas do not have the minimum provision of public open space and very little greening. This should become a priority for Government to address.

Need to Look Outside Existing System for Solutions

- S.10 The proposals in the IRD look at minor changes to the existing development control framework, but do not look outside. The issues of poor quality urban environment are very significant and need new approaches. The proposals in the IRD would take many decades to have even minimal effect. The IRD does not look at more effective and quicker solutions. Creation of new linear parks in developed areas by resuming old properties would create green areas, improve air ventilation, reduce urban heat island effect and reduce overall densities.

Height and Bulk not Related to GFA Concessions

- S.11 The limited information provided in the IRD does not prove the link between GFA concessions and excessive bulk and height of buildings. The fundamental height and bulk restrictions are in most cases set on the OZPs or in lease conditions. The small proportional increase in bulk because of GFA concessions can be taken into account when these fundamental development controls are set.

Cap on Concessions Already Exist

- S.12 There are already controls on the amount of GFA that may be permitted for concessionary GFA, either by stated maximums or by controls on design. All of the existing concessions are beneficial, and it is undesirable to require a choice between types of desirable facilities to meet an artificial cap. An overall cap on concessions is considered unnecessary.

Scope to Reassess Some Concessions

- S.13 International practice has shown that an incremental approach to change should be taken with a balance between controls and incentives. There is scope to review and fine tune some of the concessionary provisions and how they are administered. However, this requires the setting of clear objectives and further technical study. Those features which have become standard should be encouraged by removing discretionary processes. The GFA involved should remain as 'disregarded GFA'. Other concessionary provisions such as the amount of car parking, the extent of podium coverage and the size of ancillary recreational facilities in large developments could be subject to further study.

Unintended Consequences

- S.14 Hong Kong developers and designers have considerable experience in working in other countries where sustainable building design requirements are more advanced and more innovative. The approach in the IRD is not progressive, and could have the unintended consequence of removing some of the current sustainable design features, resulting in a lower quality of building. The removal of incentives would also result in a slow down of urban renewal initiatives by the private sector.

Need to Focus on Specific Problems in Old Areas

- S.15 This Study has identified the main problems as being in the developed urban areas. It is a fact that the vast majority of the private buildings existing today will be there for another 50 years. The natural rate of change will be slow, yet in the lifetime of these buildings the urban environment is likely to deteriorate significantly. There is a need to identify incentives for retro-fitting these buildings so that they are more energy efficient and sustainable. It is also imperative that nothing be done to make the situation worse, such as selling land by Government for development in critical areas. The measures in the IRD will not have a significant and immediate impact. More direct measures focusing on the neighbourhood and the public realm need to be considered.

S.16 This Synopsis has only briefly touched on important issues raised by the IRD. The Study Report takes a closer look at the IRD itself, brings together issues raised in technical research relating to Urban Heat Island Effect, Land Sales, Valuation and Building Design. It includes three case studies in Appendix 3 which provide opportunities for quick and effective improvements to the problems in the urban area. These question the standard approach to urban improvement and the role of Government Land in providing a 'Quality and Sustainable Built Environment'. The Study Report makes it clear that Hong Kong has the technical, professional and business capabilities to make significant changes in the way urban development and quality of life are addressed. Some of these changes must be made urgently, as continuation of the existing processes will only make the existing situation worse. The following pages in the Study Report will provide understanding as to how and why this is critically important.

Building a Quality and Sustainable Hong Kong

A Study Prepared in Response to the Council of Sustainable Development's Consultation on "Building Design to Foster a Quality and Sustainable Built Environment"

Synopsis

Contents	Page
1. Introduction	1
2. Background	3
3. A Vision of a Quality and Sustainable Built Environment For Hong Kong	5
4. The Invitation for Response Document: Observations	7
5. Value and Costs: a Broad Perspective	13
6. The Role of Sustainable Town Planning	22
7. Role of Public Land in A Sustainable Built Environment	27
8. Improving Street Environment and Public Realm: Better Air Quality and Air Ventilation	32
9. Improving Street Environment and Public Realm: Greening and Space for Pedestrians	39
10. Green, Energy Efficient and Sustainable Building Design	46
11. Sustainable Building Design and Incentive Systems	51
12. Conclusion	60

Appendices

1. Key facts and Extracts from the Report of the Independent Committee of Inquiry on the Grand Promenade Development.
2. Assessment of Urban Land Sales Sites
3. Case Studies:
 - (a) Hung Hom
 - (b) North Point
 - (c) Sham Shui Po
4. Answering the Questions in the Invitation to Response Document
5. References

1. Introduction

- 1.1 In July 2009, the Council for Sustainable Development (CSD) commenced a four-month consultation process on issues related to “Building Design to Foster a Quality and Sustainable Built Environment”. The CSD has prepared and issued an “Invitation for Response Document” (IRD) and members of the public were invited to submit responses on the subject matter.
- 1.2 The Real Estate Developers Association of Hong Kong (REDA) considers the subject to be very important in shaping the physical environment of Hong Kong which affects the lives of both the present and future residents. A multi-disciplinary team of consultants has been commissioned to provide a considered response to the many issues raised. The response in this document is based on relevant research and the consultants’ practical experience of developing the urban environment in Hong Kong.
- 1.3 REDA considers that views from people who are involved in designing and building our city are particularly relevant as they have a technical knowledge and experience that are important in providing a sound basis for the discussion.
- 1.4 The users of our built environment, such as residents of both new and old developments, also have a direct personal knowledge of many of the issues that have been raised for discussion and their experiences are as important as more generalized public views.
- 1.5 While the IRD provides a good starting point for the discussion of the built environment, it does not attempt to address all of the issues involved. Undertaking the consultation in this disjointed way may lead to unintended consequences. REDA has taken the view that a broader approach is needed for the discussion of the topic raised.

Structure of this Report

- 1.6 This report first looks at the background and reasons for the IRD and then at the need for a Sustainable Development Strategy for Hong Kong. The IRD is then analysed to see what it is trying to achieve and how it looks at the questions it raises.
- 1.7 The following sections then address in more detail the important components raised by the IRD, such as value and costs, the role of sustainable town planning, the importance of public land as a potential solution, improving the street environment quickly, and sustainable building design. In addressing these issues, the important distinctions to be made between existing development areas and new development areas, and between new buildings and existing buildings are examined.

- 1.8 The appendices provide additional supporting information, including an assessment of urban land sales sites, and case studies of alternative proposals for Hung Hom, North Point and Sham Shui Po which illustrate how a more sustainable built environment could be achieved. A detailed response to the questions asked in the IRD is included in Appendix 4.

2. Background

Recent Government Initiatives

- 2.1 This consultation has arisen from a number of papers put to the Legislative Council Panel on Development by the Development Bureau since 2008. In November 2008, a Paper was presented on “Measures to prevent new developments from creating a wall effect and reduce development intensity in developed areas” (CB(1)232/08-09(10)). The paper looked at, amongst other things:-
- Reduction in development densities and heights at West Rail Nam Cheung and Yuen Long Stations;
 - The review of Outline Zoning Plans by the Town Planning Board to include height restrictions and development density restrictions;
 - Review of development density in Government land sale sites;
 - Redevelopment of private lots to impose greater controls on development density and form;
 - Air Ventilation Assessments and formulation of wind standards; and
 - A Sustainable Built Environment.
- 2.2 A Paper on the consultation process for the Sustainable Built Environment exercise was presented in 28 July 2009 to the Development Panel (CB(1)2342/08-09(01)). Mention was made of the “Grand Promenade Incident” or the development at Sai Wan Ho Inland Lot No. 8955 and the “Report of the Independent Committee of Inquiry” on that development. Since the Incident, the Government has been imposing statutory height restrictions on Outline Zoning Plans and reviewing car parking standards. Also a “Consultancy Study on Building Design that Supports Sustainable Urban Living Space in Hong Kong” has been commissioned by Buildings Department.
- 2.3 It appears that there is a consistent theme that ‘tall’ and ‘dense’ developments are undesirable. This is quite different from the long established philosophy of property development and ownership in Hong Kong where the compact city is treasured for the convenience it offers.
- 2.4 The Grand Promenade development at the Sai Wan Ho waterfront provides a very high standard of living environment for its residents and includes “Green Features” and all of the other requirements such as car parking and ancillary recreational facilities. It was deliberately intended by Government to be developed to the maximum density possible.
- 2.5 It follows from this that, **if the changes to the regulatory system currently being considered in this consultation are implemented they would reflect a change in philosophy from maximising development potential and revenue from sale of Government land.** An alternative approach to land sales based on achieving a sustainable built environment would apply, and this approach is yet to be developed or rationalised. This is one issue which this submission tries to address.

- 2.6 However, the Grand Promenade has been frequently attacked for its height and bulk which has led to an Inquiry on the development. Some key facts and extracts of the Inquiry Report by an Independent Committee are included in **Appendix 1**. The following points arise from the development:-
- (a) The Government decides which new sites are to be sold, and the form and content of the development;
 - (b) The Government approach has been to maximise revenue from sale sites within the general planning context. For example, the development densities for Kowloon and Hong Kong are generally higher than those for the New Towns;
 - (c) The Government approach has been to maximise development potential, and where appropriate, to require the private sector to include public facilities within a development; and
 - (d) On new sale sites the developer has limited choice on the form and density of a development and must develop what is permitted under the zoning, the Buildings Ordinance, and what is required under the lease. There is very little flexibility.

Consultancy Study on Building Design that Supports Sustainable Urban Living Space in Hong Kong (the Building Design Study or the Study)

- 2.7 The Building Design Study, commissioned by the Buildings Department, is extensively referred to in the IRD. In particular, the sections on Urban Greenery (IRD p.29), Building Separation (p.31) and Building Setback (p.33) have been based on the findings of the Study. However, the fundamental problems identified in the Study have been largely ignored or repeated in carrying out the present consultation. For instance, the IRD only focuses on building gaps and building setbacks, there is little mention of the following key priority urban problems highlighted for investigation in the Study's Stakeholder Engagement Process:-
- Undesirable Air Ventilation and Urban Heat Island Effect;
 - Undesirable environmental quality of pedestrian level/public space (especially in Metro urban area); and
 - Lack of Greenery. (p.59 of the Study)
- 2.8 The findings of the Study are quite comprehensive. In particular, it considered that:-
- Performance standards should be used more than prescriptive standards;
 - There is a need to establish indicators and benchmarks;
 - There is a need to be proactive to promote greening of buildings and effective skygardens;
 - Should set measurable targets for greening and include planting in public space at the pedestrian level; and
 - A 2-3% increase in building costs is seen as acceptable in other places.

3. A Vision of a Quality and Sustainable Built Environment For Hong Kong

A Comparative View

- 3.1 The members of REDA have the benefit of working in Hong Kong and many other countries. This experience not only relates to the regulatory system for development, but also to the different economic circumstances, social systems and environmental concerns. Increasingly, other countries are addressing sustainable development issues in a direct and positive way, so as to achieve a better living environment for their future generations. In this context, Hong Kong is increasingly seen as falling behind.
- 3.2 The development industry finds that the Hong Kong planning and building codes do not readily accept innovations and improvements. Accompanying this are increasingly longer time periods for obtaining approvals, and uncertainty as to:-
- (a) what is required to obtain approvals;
 - (b) what is initially seen as a 'good' component becomes a 'bad' component of a development;
 - (c) application of changes in technology;
 - (d) changes in design standards; and
 - (e) application of efficient building construction, building services systems and building management.

Better environments elsewhere for doing good quality and economic development are increasingly making Hong Kong less attractive for Hong Kong developers.

- 3.3 Yet, Hong Kong developers and designers are seen as leaders in the development of an efficient and liveable high rise city. If the components that make Hong Kong a successful high rise city are being questioned by its residents, then the reasons for this happening need to be clearly identified. One of the difficulties in doing this is that there is no clear vision of the city that people want for the future.

Need for a Sustainable Development Strategy

- 3.4 In Hong Kong, there is no clear framework or set of objectives established within which a sustainable built environment can be systematically developed. The "First Sustainable Development Strategy for Hong Kong" was prepared by the Government in May 2005. It is neither broad-based nor holistic and it focuses only on pilot areas. It is considered inadequate for the sustainable future development of Hong Kong.
- 3.5 The Building Design Study clearly pointed out that Hong Kong urgently needed a comprehensive Sustainable Development Strategy which enables economic, social and environmental factors to be coordinated to achieve clearly stated objectives and targets. The Study further pointed out that with

these objectives and targets, both the public and private sectors could collectively work towards achieving them.

- 3.6 However, such objectives and targets, or the framework to achieve them, are lacking in both the Study and the IRD. The current approach of addressing topical issues on a piecemeal basis will not put in place the framework that is required. It is time that effort be spent to provide Hong Kong with a Sustainable Development Strategy that truly reflects the complexity of the subject.

4. The Invitation for Response Document: Observations

- 4.1 This section includes some observations on the IRD and sets the scene for the more detailed discussions that follow.
- 4.2 The IRD covers a narrow range of topical issues within the context of the design of buildings within their own site boundary. This limited approach will not trigger the pace, scale, scope and depth of change that is needed to make development sustainable.

How does the IRD look at 'Sustainable Development'?

- 4.3 The CSD considers that a 'sustainable built environment' is one that **"is well balanced for the needs of the present and the future from the economic, social and environmental perspectives"**. However, the IRD does not provide a definition of a sustainable building. This is presumably because the consultation's primary focus is to deal with a few topical issues as a response to public concerns in recent years with a new generation of tall and bulky buildings, many of which are located on podiums. In other words, the IRD's purpose is primarily about dealing with issues rather than "Sustainable Built Environment" per se.
- 4.4 The problems noted in the preceding paragraph are perceived to partly arise from policy changes in 2001 and 2002 to improve environmental performance during the construction and throughout the life cycle of new buildings. The changes have encouraged property developers to improve the method and technology of the building construction through GFA concessions for better amenities and environmental features in buildings. The question raised is whether those changes resulted in sustainable buildings, which in turn enhanced Hong Kong's overall built environment (IRD para 2.1.4). While there may be more amenities for residents, the locations (often by waterfronts) and size of the structures are seen to not serve the wider public interest (IRD para. 2.1.5).
- 4.5 The green and innovative features covered under the revised Practice Notes issued in 2001 and 2002 are limited when one takes a more holistic approach as to what sustainable buildings should be. **A sustainable building is one that increases the efficiency of resource use for energy, water and materials while reducing impacts on human and ecological health during the building's lifecycle, through better siting, design, construction, operation, maintenance, and ultimate decommissioning.**¹ The reason given for the IRD taking a very narrow approach is that it would be "too substantial, complex and simply impracticable" to do more (IRD para 3.1.4). Yet, it is impossible to have a 'sustainable built environment' if the buildings are unsustainable.

¹ The elements here are typical of the many definitions there are for green buildings, see for example, Anne B Frej, *Green Office Buildings: A Practical Guide to Development*, Urban Land Institute, 2005, pp. 4-8.

How does the Approach of the IRD achieve 'Balance'?

- 4.6 The CSD sees achieving "balance" as a matter of "trade-offs" (IRD para 2.7) and that these are seen essentially within the current regulatory framework concerning the built environment and buildings.² By not questioning the current framework and approaches, the IRD in effect accepts them as the foundation of the way forward.³ This is a fundamental problem of the whole consultation exercise, which can be illustrated by looking at how the document discusses the balancing of the economic, social and environmental perspectives.
- 4.7 On the economic front, the IRD states that better building design will affect housing affordability, implying that a sustainable built environment would cost much more than what is being built today (IRD para 3.1.6). This is a "fallacy common to many uninformed developers" that green buildings cost a lot more to erect contributing to an unsustainable built environment.⁴ In fact, a sustainable building should be designed using the least resources principle to produce the highest post-construction performance outcomes, without having to sacrifice on design. Moreover, it is cheaper to maintain and manage in the long-term.⁵
- 4.8 On the social front, sustainability assessments are made from the perspective of provision of recreational facilities for residents of a building, and for the immediate neighbourhood through creating more space by means of building separation, setbacks and adding greenery. However, broader social issues of town planning and mobility, as well as regeneration in some areas of Hong Kong, are not discussed. The document accepts that the benefit to the broader community derived from the current approaches "is limited" (IRD para 4.4.3), but leaves the problem unaddressed.
- 4.9 On the environmental front, the IRD acknowledges existing approaches have led to negative impacts on the environment, in particular poor air quality and the urban heat island effect (IRD Table 4 p.36). In assessing the benefits of greenery, the document envisages the increased use of fertilizers, pesticides and other chemicals but does not discuss whether and how sustainable landscaping can be implemented⁶ or how to extend nature back into urban life.⁷ This is a surprising omission since greenery is a major part of the

² IRD, paragraph 4.3.2, and in particular reference is made to the Buildings Ordinance, Practice Notes for Authorized Persons and Registered Structural Engineers and Joint Practice Notes, and the regulatory regime and policies relating to energy efficiency.

³ The problem with the IRD is that it is framed in a way that it does not propose major changes to the relevant policies and legislation. It envisages adjustments mainly to administrative practices, which is insufficient to drive the scale and pace of change that is necessary to achieve sustainable development.

⁴ Construction Industry Institute, statement from the Executive Board, *Research Summary: Green Building: Costs and Financial Benefits of Undertaking Green Building Assessments*, 2008.

⁵ IRD, paragraph 3.1.6 and page 48. It isn't till the end of the document on page 48 that there is acknowledgement green features in a building may lower operating costs.

⁶ Sustainable landscaping is about planting the right plants in the right places that prevents pollution, recycles green waste, minimizes runoff, provides cooling and takes ecological value into account.

⁷ Innovative ideas would consider weaving together stream/water/harbor management and habitat protection/restoration as part of creating sustainable built environments.

consultation, but could be related to the limitations of the single site approach that has been adopted.

What should be done to Achieve Sustainable Development?

- 4.10 As noted above, the Government and CSD interpret sustainable development for Hong Kong to mean “finding ways to increase prosperity and improve the quality of life while reducing overall pollution and waste; and meeting the needs and aspirations of the current generation without doing damage to the prospects of future generations”. The IRD recognises that a change of mindset is needed to bring about the full integration of the needs for economic and social development with the need to conserve the environment, but that has not been done. The document cannot change mindset because it starts and ends from the present. Thus, even the proposed Approach 3, which the document sees as representing “major change” is in fact quite minor.
- 4.11 The IRD accepts the need to conduct inclusive and transparent processes to engage stakeholders in dialogue to realize sustainable development. However, by starting from the present, the view of the future remains constrained, which in turn puts public engagement within the confines of the present. The IRD could have looked outside the current constraints, and this report will try to suggest ways outside the constraints that the IRD has imposed on itself.
- 4.12 The CSD could have stated that its intention is to promote a sustainable built environment where the ‘trees-and-forests’ are considered together, using sustainability principles so that economic returns could be improved, environmental impacts reduced, community benefits improved and amenities extended.

The Most important Question: What do you consider to be the Characteristics of a Quality and Sustainable Built Environment and Why?

- 4.13 The IRD asks the important question of what are the important characteristics of a quality and sustainable built environment. This is more important than dealing with the detailed questions and deserves some discussion. The definition used in the IRD of a “Sustainable Built Environment” is important in this respect as it is wide and includes many of the fundamental aspects not dealt with in the IRD:-

“Built Environment refers to the man-made surroundings that provide the setting for human activity, ranging from large-scale civic surroundings to personal space. It addresses the design, management and use of these man-made surroundings and their relationship to the human activities that take place within them.” (IRD, p.12)

How to focus the discussion so as to Address the Question regarding the Characteristics of a Quality and Sustainable Built Environment?

- 4.14 A fundamental issue that the IRD is indirectly addressing is air pollution and impact on public health (IRD para 2.5). A discussion of a sustainable built environment for Hong Kong should naturally start from the point of view of the city as a whole, rather than from the point of view of a single building in isolation from the rest of its neighbourhood. Issues such as setback and separation need to be placed in the context of the airflow across a whole neighbourhood airshed. Therefore, suitable discussion topics would include:-
- How do we envision the sustainable built environment of Hong Kong at the neighbourhood, district and city scale, as opposed to an individual building site?
 - How do we plan to create adequate networks and corridors of spaces for air flow throughout whole neighbourhoods and districts?
 - How do we monitor and account for the environmental efficacy of building measures on the overall urban environment?
- 4.15 A discussion of a sustainable built environment should acknowledge that our understanding of environmental issues, the process of environmental degradation itself, and the building industry's responses and innovations are in a state of constant flux. In terms of policy and regulations, the discussion needs to focus on such issues as:-
- What are the projections for environmental impacts over the life of contemporary buildings and are we giving consideration to these impacts?
 - What processes can be built into consultation, policy and regulation to ensure that we keep up with a changing environment and the latest developments in science and technology, as well as developments in green building philosophy and practice?
- 4.16 A discussion of a sustainable built environment should not neglect existing buildings and the need to adapt old buildings to a changing physical environment, changing economic and social situations, as well as changing public expectations of the role of buildings. Issues of interest include:-
- How do we recognize in policy and regulation the fact that buildings have an environmental impact beyond their immediate construction, and in fact, can be a burden on the city's urban environment for decades?
 - How do we adapt old buildings, and what policies can encourage developers to see retrofitting as a commercially feasible business?
- 4.17 A discussion of the sustainable built environment should give at least as much attention to energy efficiency in buildings, as to GFA concessions and setback and separation. Issues for discussion in this context include:-
- The costs and benefits (including long term costs and benefits and those not amenable to financial costing) of energy efficiency measures; and

- An analysis of the impacts of having and not having energy efficient structures.

Population Growth and Land Sales Revenue

- 4.18 The IRD does not include any discussion on population growth and the likely impact certain assumptions would have on land requirements. There is also little discussion of impact on Government land revenues. It does not include mention of uncertainty about future population growth, nor of the potential for accommodating part of the pressure for larger living spaces per family.
- 4.19 One way Hong Kong could quickly move toward a more sustainable built environment is for Government to not sell development sites in congested areas. By so doing, there would be substantial benefits in terms of air circulation, provision of more local open space, greening, lower noise and traffic. In areas where the standards of Hong Kong Planning Standards and Guidelines (HKPSG) for urban open space are not met, the Government should investigate options to buy up old buildings so they can be demolished and converted into open space. Three case studies using Hung Hom, North Point and Sham Shui Po as examples are attached at **Appendix 3**).

Building Bulk and GFA Concessions

- 4.20 The IRD does not distinguish the situation where the Government can control the bulk of new buildings through new land sale conditions and the situation where there are existing buildings. In this sense, the document depicts a picture where the only possibility that exists at present is large and bulky buildings.
- 4.21 The information on the GFA concessions in Table 5 (IRD p.39) is generalised and devoid of explanation as to be misleading. Also the basic information from which these conclusions have been reached has not been released for analysis. Similarly, the simplistic presentation of the impact on building height and bulk of the various GFA concessions on pages 24 to 25 of the IRD presents a totally negative impact whereas there are other design solutions available and adopted by the industry which do not result in the impacts as illustrated.

Quality of the Living Environment

- 4.22 Better quality buildings with the various 'green features' and concessions are not given sufficient weight in the IRD to reflect the preference of Hong Kong people which is evident in their market choices. Yet, there is a theme running through the discussion in pages 37 to 42 that the provision of such facilities has a negative impact on the neighbourhood and cost of building management when this is not necessarily the case.

4.23 A good quality modern building need not be excessive in height and bulk as design could ensure that it is similar to other buildings built with similar provisions. All of these new buildings with the benefit of these facilities are likely to be similar in scale where the Outline Zoning Plan height restrictions apply in a consistent manner.

5. Value and Costs: a Broad Perspective

- 5.1 This section addresses the complex issues of cost and value. One of the problems in this discussion is that costs can usually be quite readily established, but the more intangible value of many sustainable development components of urban development is difficult to assess.

Social and Economic Issues

- 5.2 One of the questions that the IRD raises and does not really address is the issue of cost and who pays. It also does not really address the more important issue of value. A more sustainable built environment has long term benefits and value for Hong Kong and for this reason alone, a comprehensive approach to sustainable development should be adopted as soon as possible. **Hong Kong people value good quality.** Studies have shown that they value a good quality environment more than the income received from the sale of land. It is therefore important to **re-assess the planning and development of our land so as to provide the best quality urban environment.**
- 5.3 The Hong Kong property market operates on **a value basis rather than a cost basis.** The largest cost component is the land cost and not building costs. **Measures to improve building sustainability are unlikely to have a significant increase in the cost of property, but may result in an increase in value.** New requirements introduced into sale sites, such as underground provision of car parking, may result in a reduction of land premium to government, but this short term loss in revenue would be balanced by a long term increase in value and quality of life. These issues are discussed below.

Forum on Sustainable Built Environment

- 5.4 Property development and ownership is an important economic and social activity. In April 2009 the Hong Kong Polytechnic University held a forum entitled "*Towards a Quality and Sustainable Built Environment*" which included a discussion of socio-economic matters. Some useful points were raised by the speakers and participants, including Investment Managers, Valuation Experts and Economists.

From the Investment Perspective

- (a) **Sustainable and green real estate and cities are good for business.** In the long run, the value of assets will be higher in those cities with these characteristics than in those that do not have them. There is a need to look at the long term value and the returns these features have for investors;
- (b) The big question is the conflict between sustainability objectives and investment performance. **It is important that the right balance be obtained between regulations, incentives and investment returns, then the sustainability features and sustainable investment work together;**

- (c) Investors look to maximise return within a defined set of risks, and radical changes to regulations and uncertainty create risks. When risks go up, they need higher returns. Higher risks affect investment decisions. Investment will tend to go to projects and places with the least risk;
- (d) Need to specify minimum standards and provide incentives for creativity beyond the minimum requirement. **Too much regulation discourages investment opportunities whereas incentives encourage investment;**
- (e) Private sector investment in urban renewal is very important. Removal of 30% of the concessionary GFA as is proposed in the IRD would deter investment as that 30% is currently part of the investment calculation;
- (f) Transition of investment from one set of risks (or controls) to another needs to be gradual and have the right balance of regulations, incentives and mandates, then it can be achieved successfully;
- (g) **GFA concessions should be used as a tool to encourage sustainable features, not to control bulk and height;** and

From the Economic Perspective

- (a) 15% of GDP and 12% of employment are linked to property. **A healthy property industry is in the best interests of the Hong Kong economy;**
- (b) Land policy and land generated government income is an important part of the economy. The income from land and property is a reason why Hong Kong has a low tax base with only 15% of workforce paying tax. The income from land and property provides around 33% of Government revenue;
- (c) **There is a potential conflict of objectives between selling land at the highest possible prices and the improvement of the built environment.** Maximum development could have detrimental environmental outcomes;
- (d) The Hong Kong community is now asking to improve quality not the quantity. It is all about space, design, environmental quality and liveability;
- (e) The economy has changed radically. Yet, our planning and land system has been too slow to react and we have large areas of obsolete industrial buildings; and
- (f) **In Hong Kong, land use planning is a fiscal policy because of the link to Government revenue.** This system is no longer providing the optimal use of resources. It is inherently inflexible and unresponsive, and the underlying costs are very high.

Value not Cost

- 5.5 The discussion of costs of property development in Hong Kong needs some clarification. The largest cost component is the land cost, not the building

costs. Land values vary from location to location. Broadly the prevailing Accommodation Value for urban land with potential for high rise development is, say, \$10,000/sq ft. The current construction cost for high rise development (high quality) is approximately 1,400/sq ft plus. For house type development, the cost could vary from \$800/sq ft (NTEH) to \$1,800/sq ft plus (villa) depending on quality. The land cost is always the most costly component of a development while the construction cost takes up only a small portion.

- 5.6 If there were a 2%-3% increase in the construction cost because of the inclusion of sustainable building features, it would not impact much on the property market, as building costs do fluctuate in any case, due to material cost, labour cost, demand and supply of skilled labour, etc. This can be seen in the Building Cost Index at **Figure 5.1** which shows cost goes up when the property market is booming. **The inclusion of sustainable features and facilities in new buildings is therefore not likely to be a significant factor in the cost to the end user who is purchasing a new property.**

Base : December 1968 : 100

Index	3rd Quarter 2007	1,535	3rd Quarter 2008	1,865
	4th Quarter 2007	1,595	4th Quarter 2008	1,750
	1st Quarter 2008	1,680	1st Quarter 2009	1,630
	2nd Quarter 2008	1,810	2nd Quarter 2009	1,605

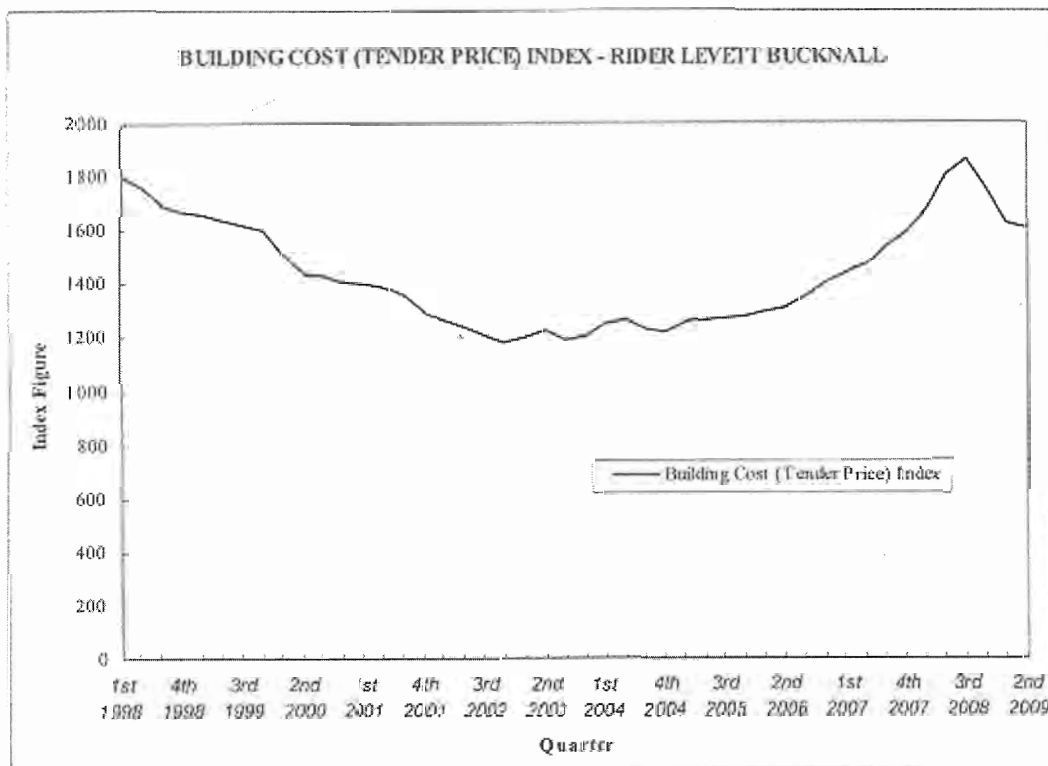


Figure 5.1: Building Cost Index
Source: Rider Levett Bucknall

Public Housing Proportion is Significant

- 5.7 A further factor that would minimise the impact of the introduction of sustainable features in new buildings is the large proportion of Hong Kong people living in subsidised housing. 46.1% of households in Hong Kong lived in public housing in 2009. (29.6% in public rental housing, 16.5% in subsidized sales flats). Because of this, any additional cost of requiring the private sector to include sustainable development features in new buildings would have no impact on 46% of the households in Hong Kong.

Limited Impact of New Development on Market

- 5.8 Even if there is an increase in the cost of including sustainable building features, the impact would only be on new buildings. **Table 5.1** shows that the number of new flats in relation to the existing stock is between 1%–2.5%, or around 20,000 each year. The new flats, which are the ones which would include sustainable building features, would therefore add variety and additional choice to the market, but would be unlikely to have any significant impact on the price of flats in the overall market.

Table 5.1: Stock and Completions in HK Private Residential Sector in Last 5 Years

Year	Completions	Stock	New supply as a % of stock
2004	26,036	1,034,971	2.5%
2005	17,321	1,053,246	1.6%
2006	16,579	1,068,898	1.6%
2007	10,471	1,079,243	1.0%
2008	8,776	1,085,922	0.8%

Source: Knight Frank Research/Rating and Valuation Department

Value of Green Features

- 5.9 One question which is often asked is what is the recognised value for any of the green features. The approach taken by Lands Department is that flats without club house facilities would command a 3%-5% lower value in the unit flat price. Also, green features like balconies, are normally assessed at a value equivalent to 2/3 of the unit value of the premises proper. The approach taken recognises that the purchaser of a flat with green features or recreational facilities is prepared to pay for the provision of such facilities as it represents a better living environment. The market response to the provision of these green features could be taken as an indication of their value and acceptability.

Cost of Underground Car Parking

- 5.10 One of the proposals being discussed in the IRD is the requirement to put car parking underground. There would be some difficulties in defining "underground" on sites that are sloping, but this could be sensibly resolved. The construction of underground car parks would be an additional cost when compared with the provision of ground level or podium car parks. Podium car parks cost approximately \$540/sq ft to build bearing in mind each private car parking space takes up approximately 450 sq ft to 500 sq ft including circulation area. Basement car parking however costs approximately \$1,000/sq ft for one level, \$1,010/sq ft for two levels and \$1,150/sq ft for three levels assuming 450 sq ft to 500 sq ft per space. Everything being equal, 1/F car park will command higher market value than basement level 1 car park because of natural lighting, fresh air, less humid, no flooding hazard, etc. Therefore, the cost of constructing a basement car park and the market value of the car park would be taken into account when the developer bids for a site and will reduce the land premium paid to Government because of the higher cost and lower market value.

Affecting Valuation and the Property Market

- 5.11 The Government controls the supply of land in Hong Kong and controls the bulk, height and GFA. Lot owners develop land based on what is permitted. Developers assess the development potential inclusive of the concessions and calculate their bid on the same basis. If the concession GFA is reduced or modified by whatever means, the land premium will be adjusted accordingly.
- 5.12 It may be useful to briefly explain the valuation process. Within the framework of the conventional Residual Method of Valuation commonly adopted for assessing land values, the developer takes a percentage on the construction cost and a percentage on the land value as his profit. With the variation in both construction cost and land value, the rate of return will not be varied, but the aggregate sum in real money terms will be less. However, these percentages are the investment return reflecting the business risk, **the actual impact to the developer is negligible so long as they are adequately rewarded in percentage terms on the investment.**
- 5.13 Therefore, careful introduction of measures reducing these GFA concessions may be acceptable to developers in new development areas, but the reasons for doing so and its effectiveness in achieving sustainable development objectives must be questioned. The actual effect of removing these concessions may be the construction of a lower quality environment and less sustainable buildings.
- 5.14 **The real fear for the property owners and developers is when Government applies new measures to lots sold before the new policies came into effect.** In fact, a quality and sustainable built environment can be planned in new development areas such as Lantau, Kai Tak or NWNT with all the setback, space planning, building separation, streetscape and generous greenery,

etc, and the market will respond correspondingly. Flat prices and land value may actually increase in response to the enhanced living environment.

External Costs and Tradeoffs

- 5.15 The IRD mentions pros and cons and trade offs for various issues (IRD para 2.7, Table 4). Perhaps **no point is more crucial than that of government's willingness to accept the possibility of lower land revenues in exchange for a more sustainable built environment.** For new development areas where sites are to be sold or premium paid, if Government sets out clear mandates for things like building separations, setbacks, sun shading, green roofing, etc. and accept that, depending on prevailing market conditions, there may well be lower land revenue as a consequence. However, if the concern is for a much better built environment, Hong Kong would need a very long time achieving this objective with a scope as narrow as that presented in the IRD.

Mandates versus Incentives

- 5.16 Most of the examples from other cities cited in the IRD (see section 4.5) relate to mandates (controls) and prohibitions. The high reliance elsewhere on mandates/prohibitions is not merely a matter of Government philosophy. It stems from the need to limit the external costs imposed on others when private parties pursue their own interests in dense settings, where the actions of one so strongly impact on the others.
- 5.17 In Hong Kong, the Government's primary concern has traditionally been to maximize revenue from land sales which results in considerable external costs imposed on society. The Government imposes terms on buyers that make it difficult for the private sector to build in a manner that keeps external costs within acceptable limits. One could reasonably argue that mandates are needed to protect the broader public interest against the Government's hunger for land revenue.

Market Failure

- 5.18 The presence of considerable externalities usually represents market failure requiring Government intervention. Governments may intervene with structured incentives, but these are often too slow and insufficiently effective. When the problem of an unappealing built environment is deemed truly considerable and prominent, strong Government requirements are typically imposed (elsewhere).
- 5.19 The focus given to incentives in the IRD rather than mandates suggests that the market failure is not sufficiently urgent to warrant mandates being given higher priority than prohibitions or incentives.

Distribution of Benefits & Costs In The Trade-off Assessment

- 5.20 The IRD talks about benefits and costs (para 2.19) but the distribution of the benefits and who bears the costs are not considered. When specific private interests receive much of the benefits the costs are mostly borne by the public

at large, it is inappropriate to merely note there are tradeoffs without considering the distributional impacts.

Assessing Tradeoffs at the Margin

- 5.21 In assessing tradeoffs, changes at the margin are key (i.e., one can only assess the acceptability of a particular trade-off with an understanding of the context of supply and demand for the things being traded off). When the air is unhealthy, opportunities for passive cooling have long been disregarded, and we face a warming city with the prospect of higher energy costs in future. **The assessment of tradeoffs should favour redressing existing imbalances rather than being neutral.**

Lack of Attention to the Likelihood of a Warming Local Climate

- 5.22 The IRD briefly mentions climate change, in the context of Hong Kong's responsibilities with respect to mitigation (i.e., in help reducing global greenhouse gas emissions). However, there is no mention that Hong Kong will also face challenges for adaptation given the projections by the Hong Kong Observatory. A warming local environment will aggravate the consequences of any reduction in air flow due to inadequate space between buildings and the blocking of natural air corridors from the waterfront. In addition, there is the considerable likelihood of higher prices for carbon-based electric power generation as the world seeks to 'price carbon' in some manner so as to bring about a vast reduction in carbon emissions. **The Urban Heat Island Effect and gradual warming of Hong Kong are the fundamental issues that should be addressed, rather than the space between buildings.** There is a need to urgently redress the existing imbalances and those that have been predicted, on a much broader scale.

How might Achieving Greater Sustainability Impact Government Revenue?

- 5.23 The IRD emphasizes that a sustainable built environment would reduce Government revenue from land sales, land premium and property taxes. This implies that for Hong Kong to enjoy a less densely built-up environment, the Government would not be able to squeeze maximum value from land. **This is another example of the mindset of the current approach, where the Government's maximisation of land revenue is an essential economic consideration.**
- 5.24 The statement: "Land premium may be adjusted to reflect reduced value of developable space" (IRD para 5.5.6) requires a discussion of land revenues, how they are being used and what financial and non-financial public benefits may be derived if the system is changed. There is no consideration in the IRD of the possibility that the inclusion of green features and development of **a better and more sustainable environment may result in an increase in the value of properties, and may not have a significant impact on Government revenue from property, particularly if rates are taken as part of the equation.**

Contingency Valuation

- 5.25 One of the difficulties in assessing the costs and benefits of sustainable development initiatives is that many of the factors to be valued lie outside the normal costs and benefits of a development in that they are intangible costs and benefits. There are methods whereby the value of these intangibles can be quantified. A study of this nature was undertaken by the Harbour Business Forum (HBF's Study) in relation to the value of harbour improvements on the Central Reclamation. The purpose was to demonstrate the value of community preferences that lie outside consideration simply of the costs and revenues of development.
- 5.26 The findings of the HBF's Study (para 5.1) state:-
- "The Study has demonstrated public preferences for environmental and recreational improvements in the future planning and development of the Harbour. **People in the community want these kinds of improvements and are willing to pay for them.**"
- "The Central Reclamation case study investigates the potential trade-off between public amenity and land sales revenue. It shows that the trade-off of providing less GFA and more recreation and greening on the waterfront is not necessarily as costly as it appears to be under the current system, which looks only at the costs of providing public amenity but not the value."
- "But **additional public amenities have a high dollar value**, about \$70 billion as demonstrated by this study. Considering the wider benefits, to give up some GFA for additional amenities might not be a net dollar value loss, but a gain. So where does this evidence lead to in policy terms?"
- "It clearly suggests that **parks and recreational areas along the Harbourfront should be a policy priority**. The provision of such amenities are not necessarily unaffordable because they are considered valuable by the community, they contribute to the overall attractiveness and future competitiveness of the City and **the public is willing to pay for them.**"
- "To date Cost Benefit Analysis and Sustainability Assessment studies in Hong Kong have been constrained by the very limited information provided to the decision-maker since most of the intangible costs and benefits have not been valued in dollar terms."
- 5.27 The concept and techniques of Contingency Valuation have wider applicability and are directly relevant to the issues that should be addressed when looking at what makes a quality and sustainable built environment in the holistic sense which is advocated in this submission.

Recapitulation

- 5.28 New measures to improve building sustainability are unlikely to have a significant increase in the cost of property, but will result in an increase in value. Any increase in costs would only have impact limited to new buildings and not on the main stock of existing private buildings. New requirements introduced into sale sites, such as underground provision of car parking, may result in a reduction of land premium to Government, but this short term loss in revenue would be balanced by a long term increase in value and quality of life. **There is a need to take a wide and long term view of the value of improving the quality of the living environment in Hong Kong.**

6. Role of Public Land in a Sustainable Built Environment

- 6.1 Hong Kong is in a situation where all land is held on leases from the Government. Up until the time that a lease is sold to a private land owner, the Government has the opportunity to determine the best long term use of the land. Once the land becomes private land, the Government can only remove or reduce the ownership rights by way of resumption (compulsory purchase) or other forms of non-monetary compensation.

Wise Use of Community Land Resources

- 6.2 Community land is held in trust by the Government for the people of Hong Kong. It is not 'Government land', but the most important public resource and must be used sensibly and carefully. Sustainable Development calls for a long term approach to the management of land, and an improved quality of urban environment may mean that less land should be sold for development purposes. As explained in the previous sections, Government land sales have historically been an important source of Government revenue used for infrastructure development. However, recent history of land sales shows little demand for Government sales sites and this can be seen in **Table 6.1**.

Table 6.1: Government Land Sales : Application List Facts 2006 – 2009

Application List	Number of Sites on List	Site area (ha)
2006-07	45	38.30
2007-08	47	38.20
2008-09	62	59.73

Application List	Number of Sites Sold	Site Area (ha)	No. of Estimated Flats	HK Government Land Premium (Bil.)
2006-07	8	6.69	3,353	\$37.0
2007-08	9	11.65	5,019	\$62.3
2008-09	1	0.02	1	\$19.9

Application List	Number of Unsuccessful Applications
2006-07	24
2007-08	42
2008-09	4

Source : Lands Department

- 6.3 This is possibly indicative of a changing approach to development land. There is possibly an excess of land for development, given the existing zoned private land in the New Territories yet to be developed and private redevelopment opportunities that exist in the Urban Area. With these significant changes, there needs to be careful consideration given to the best short and long term use of community land.

Society's Demand for a Better City Should be Reflected in Land Utilisation

- 6.4 It is clear that Hong Kong people are demanding a better environment to live, work and play in. Only a limited amount of these demands can be met in the construction of new buildings by the private sector. **Many of these demands for an improved environment relate to the public sector and the use of the public realm. The main focus of action should be on improving the public realm** so as to meet society's demands in a quicker and more effective manner. This impacts on the use of Government land and it is clear from the information in **Table 6.2** that the **under-provision of open space in accordance with the HKPSG minimum requirement has a significant impact on the quality of the built environment.** The sale of additional land for development in the urban area instead of being used for open space and greening needs to be carefully reconsidered and given a status of urgency.

Table 6.2: Provision and Requirement of Open Space in different Outline Zoning Plan Areas

Outline Zoning Plan Area	Planned Population (1)	Requirement of open space (ha) (2)	Provision of Open space (ha) (1)	Open space Deficit (ha)
Kennedy Town & Mount Davis	80,400	16.08	5.34	10.74
Sai Yung Pun & Sheung Wan	118,090	23.618	13.10	10.518
Wan Chai	72,100	14.42	3.85	10.57
Causeway Bay	36,100	7.22	6.07	1.15
North Point	188,000	37.6	34.49	3.11
Hung Hom	147,640	29.528	13.40	16.128
Cheung Sha Wan	250,000	50.00	26.79	23.21
Mong Kok	149,200	29.84	8.62	21.22
Lai Chi Kok	53,000	10.60	20.07	9.47
Kwun Tong North	73,000	14.60	3.00	11.60
Kwun Tong South	351,900	70.38	42.19	28.19

Notes:

(1) Planned population and provision of open space are information from the Explanatory Statement of the relevant Outline Zoning Plan.

(2) Requirement of open space is based on the HKPSG of 2sqm/person.

Reconsideration of the Government Land Sales Program

- 6.5 **The most significant way in which space can be made available for improving the urban environment is to reconsider the proposed use of significant areas of Government land.** The Government has taken a small step in this direction by removing the Central Market site from the Land Sales Program as announced by the Chief Executive in his Policy Address 2009. Attached as **Appendix 2** is a review of the current land sale application list sites and their suitability for urban development given the main concerns raised in the IRD. There are currently 59 sites on the application list of which 26 are in the Urban Area. These 26 sites have been assessed against the following 5 criteria. Would the development of the site:-

1. Add to the wall effect;
2. Block air ventilation gaps;
3. Remove opportunities for greening and open space in high density area;
4. Negatively impact Harbourfront areas; and
5. Unnecessarily increase density in the neighbourhood?

6.6 This assessment indicates that 16 sites should be removed from the Application List as they are not suitable for development given the other priorities that exist for the neighbourhood. It is therefore proposed that these sites be withdrawn from the Land Sales List and rezoned to open space purposes. Three sites in Hung Hom Bay and a site occupying part of the ex-North Point Estate on the land sale list are suitable for the purpose. **Figures 6.1 and 6.2** show comparisons of conceptual diagram of property development versus waterfront park at Hung Hom Bay and the whole ex-North Point Estate sites. In addition, there are other Government land sites in the Urban Area which are not yet on the Land Sales List and these potential sales sites should be subject to similar assessment and where appropriate rezoned to open space or possibly GIC uses.

6.7 If these 16 sites were removed from the Land Sales List there still remain 43 sites for application. On recent historical trends these 43 sites would meet demand for the next 6 to 8 years. Additional sites could be added to replace these 16 sites, either from the New territories or from Kai Tak.

The Public Realm

6.8 In addition to the need to readjust the balance between development and open space there should be a much more careful consideration of the design and use of the public realm – our streets and public buildings. The attempts to address this through the Greening Master Plans now being considered and implemented are a step in the right direction, but the design, management and use of these areas need to be reconsidered in the context of the Urban Heat Island Effect, long term sustainability issues and the need to soften the hard environments of the older development areas.



Hung Hom CDA Development

Image based on Government Proposal of Hung Hom Study



Proposed Conceptual Hung Hom Waterfront Park

Figure 6.1: Conceptual Diagram of Property Development on CDA sites vs Waterfront Park at Hung Hom Bay



ex-North Point Estate Property Development
Image based on controls in Planning Brief prepared by Planning Department for Town Planning Board



Proposed Conceptual North Point Waterfront Park
Figure 6.2: Conceptual Diagram of Property Development vs Waterfront Park at ex-North Point Estate

7. The Role of Sustainable Town Planning

7.1 The IRD and its limited approach to a sustainable built environment requires a consideration of the wider role of town planning. There is a need to re-assess the process of planning, designing and implementing areas for new development, and also the way the future redevelopment of the existing areas is undertaken.

7.2 The significant changes in public perception as to what makes a quality and sustainable development requires a re-assessment of some of the accepted approaches to planning and development of Hong Kong. As mentioned in the previous sections, the demand from the community is for quality and not quantity and the IRD has in a very limited way tried to address some of these issues. However, the need for sustainable development to be an integral part of the whole urbanisation process requires an objective analysis of what is being achieved in town planning terms.

Sustainable Master Planning

7.3 There has been a major change in the planning and development approach in other cities in the context of achieving sustainable development objectives. This new approach needs to be taken on board with a seriousness and enthusiasm when looking at the planning and development of new areas such as Kai Tak, and the new development areas in the New Territories.

7.4 Sustainable master planning is a systematic process which requires a move away from the typical civil engineering approach adopted in Hong Kong. The priorities that relate to minimising Heat Island Effect and reducing resource use stimulate the need to address master planning in a different and more sensitive manner. There are many international examples of how this process can be applied. The fundamental points include:-

- Clear goals established and then targets set to achieve them across a wide range of sectors;
- Purpose is to reduce energy consumption, reduce water consumption, reduce carbon footprint, and enhance human well-being;
- Assess micro-climate: affects fundamentals of subsequent later design such as building energy efficiency, heat island effect, sun/shadow, wind, internal and external living comfort; and
- Integrated resource management.

7.5 A more in-depth consideration of the Kai Tak development using this approach would enable achievement of a much more sustainable environment. One matter to address would be the orientation of the development sites in terms of achieving energy efficiency. The orientation and layout of development sites, streets and open spaces have a fundamental impact on the ability to easily provide energy efficient buildings.

Open Space Provision

- 7.6 **One of the clearly identified requirements from the community is a greener environment and more space for recreation.** New Towns and new development areas have been prepared with the advantage of Master Landscape Plans, and the positive impact is evident. However, the shortage of public open space in the urban area is a problem inherited from the past.
- 7.7 There have been opportunities made available from reclamation, or arising from redundant government uses that provide opportunities for increasing the provision of open space, but often these are zoned for development.
- 7.8 There are a number of issues relating to open space arising from the current situation in the urban areas:-
- (a) Provision of open space and recreational facilities is not given a high priority and there is no comprehensive planning of an open space network in the city;
 - (b) Many of the areas, such as Hung Hom and North Point, are not planned to provide adequate open space to meet the minimum open space standards (see **Table 6.2**), but they include sale sites which would intensify development and make the open space deficit even worse;
 - (c) There are many areas zoned as open space which have not been implemented and are often used for other temporary uses. There is no priority given to the creation of these open areas for public enjoyment;
 - (d) There is reluctance from the Leisure and Cultural Services Department (LCSD) to take on additional areas of open space to manage as they are concerned more about management cost and difficulties than the improvement of the city and quality of life; and
 - (e) Public open space provides the best means for achieving green corridors and for effective air ventilation in the urban area.
- 7.9 Perhaps the most significant problem is, that while public expectations for greater provision of open space have risen, the planning standards for open space in Hong Kong have not been revised for more than 40 years. The provision is minimal and based on a time when public priorities were focused on providing basics like safe housing and jobs during times of rapid population growth. The standards for open space are only 2 square metres per person in residential areas and these can be seen in **Table 7.1** extracted from Chapter 5 of the HKSPG. A recent urban climatic study commissioned by the Planning Department indicates that there is a strong correlation between areas of inadequate open space provision and high, and very high thermal loading (**Figure 7.1** refers). This low level of provision is no longer appropriate given the need to address issues such as Urban Heat Island

Effect, high levels of air pollution and an increased demand for public recreation.

Table 7.1: Standards for Provision of Open Space

Open Space Category	Provision Standard	Remarks
Regional Open Space	No standard	- 50% counts as District Open Space in the Metro Area
District Open Space	10 ha per 100,000 persons (i.e. 1sqm / person)	- Subject to slope correction factor - Active/passive ratio is applied - Not applicable to industrial, industrial-office, business and commercial areas, rural villages and small residential developments in the rural areas
Local Open Space	10 ha per 100,000 persons (i.e. 1sqm/ person)	- Subject to slope correction factor - No active/passive ratio - Primarily for passive use - In industrial, industrial-office, business and commercial areas, the standard is 5 ha per 100,000 workers (i.e. 0.5sqm per worker)

Source: Chapter 5 of HKPSG

7.10 There are several things that should be done:-

- (a) There is a need to **concentrate Government efforts on implementing the existing zoned open space sites** that have not yet been developed, as a matter of urgency;
- (b) Areas of **Government land suitable for open space development need to be rezoned so that the minimum standards for an area can be achieved in a short period of time;**
- (c) **Open space development should be given as high a priority as other engineering-based infrastructure projects, such as roads and railways;**
- (d) **Adequate funding and staff should be provided to encourage LCSD to positively develop and manage open space;** and
- (e) The open space standards should be increased, to 4 square metres per person.

Greening Standards

- 7.11 Greening of cities has been shown to have a significant impact on the quality of life. There are no real standards for greening in Hong Kong other than the provision of open space, which is shown to be inadequate. **To increase the proportion of greening in the urban area is a matter of policy, but there is no identified approach for achieving any specific objective.** If a percentage of green area, say 40%, was set as a target then the policies involving both the public and private sector could be put into action. The current approach in the IRD towards achieving greening only in private sector development sites is completely inadequate. In conjunction with an increase in public open space, there should be a parallel process of increasing greening in other public spaces such as streets and public sites.

Public Facilities in Private Development

- 7.12 One of the approaches adopted in urban planning by Government is to sell land to developers with a requirement to provide public facilities. The inclusion of the Government, Institutional and Community facilities within private developments adds to the overall height and bulk of these buildings. Such facilities include post offices, library, market, public open space, elderly home and Public Transport Terminus (PTT). PTT is designed to accommodate double deck buses, therefore the ceiling height allowed is normally about 6 metres which is equivalent to 2 storeys of domestic floor. There are over 50 PTT built underneath private developments as required by the land sale conditions.
- 7.13 There has been criticism of this approach, but the current planning of areas continues to include such facilities within private developments. **The provision of open space within private developments has raised access and management issues.** Many of the Government departments involved in the management and maintenance of these facilities often do not want to take them over as they often have greater operational costs than a discrete facility provided on its own site. Also, **separate sites for these public facilities provide variation and interest in the form of the neighbourhood.** The public, the developers, future flat owners and the operators would all be better off if Government facilities were not provided in private developments.
- 7.14 **Future planning of areas should therefore not be based on the inclusion of public facilities in private developments. Also, sale sites in Comprehensive Development Area Zones should be discouraged in favour of proper planning of an area by Government and implementation of public projects under their own funding process.**

8. Improving Street Environment and Public Realm: Better Air Quality and Air Ventilation

8.1 Two of the reasons for introducing building separation and set-back are poor ventilation and high pollution levels for pedestrians (IRD Para.4.2.3). This section looks at alternatives for addressing air pollution and the importance of a technical approach to solving air ventilation problems.

Hong Kong's Built Environment Suffers Health and Hazardous Air Pollution

8.2 Studies on Hong Kong's high pollution levels and their impact on public health have been published by leading air and public health scientists. The principal threat to public health in the urban environment is from toxic roadside emissions, mainly from diesel vehicles. Roadside pollution is mentioned in the IRD as one of the negative aspects of our vertical built environment. However, no mention is made of why these negative impacts are fundamentally unsustainable and must be addressed with urgency. Some key facts are set out below:-

- Hong Kong experienced just 41 days of healthy air in 2006 when measured against the WHO AQG. In other words, Hong Kong's air quality failed to meet WHO standard for healthy air on over 320 days that year;⁸
- Roadside pollution poses a much greater threat to public health than other kinds of pollution, as the source of emissions is nearby and the concentration of pollutants are correspondingly much higher;⁹ and
- The commercial diesel vehicles are responsible for 90% of RSPs (i.e. small air-borne particles that have the ability to penetrate deep into the lungs) and 80% of nitrogen dioxide emissions from the entire road transport sector.¹⁰

Measures to Control Air Pollution in the Built Environment

8.3 Rather than relying mainly on improved space between buildings, the most effective way is to control vehicle emissions by setting emissions standards on the vehicles themselves. The Hong Kong Government has set minimum standards (Euro IV) for vehicles on first registration, and requires all vehicles to use ultra low sulphur diesel or equivalent fuels. However, once they are registered there are no controls on either the lifetime or emissions of vehicles, except for those emitting black smoke.

⁸ Lau et al *Relative Significance of Regional vs Local Sources: Hong Kong's Air Pollution* Civic Exchange, March 2007

⁹ Lai et al. "Should population exposures to air pollution in Hong Kong be estimated only on the basis of general monitoring stations?" (unpublished) June 2009.

¹⁰ Lau et al *Relative Significance of Local vs Regional Sources: Hong Kong's Air Pollution*, Civic Exchange, March 2007

8.4 A Sustainable Development approach stresses use of multiple approaches to achieve an objective. A number of measures can be implemented to reduce air pollution, such as emissions control measures which include:

- Impose progressively greater costs of ownership on older and more polluting vehicles for example through increasing licence fees;
- Setting an age limit on the lifespan of all vehicles (as in Singapore and the Mainland China);
- Set emissions standards that must be met for annual licences to be renewed;
- Insertion of emissions standards into the bus franchise agreements and tenders; and
- Retrofitting of catalytic converters (already used in Hong Kong).

8.5 The above measures are related to control/mitigation at source. There are other measures which adopt the transport planning approach. These include:

- Restriction of the most highly polluting vehicles from the most densely populated and congested areas. This might range from full exclusion of all vehicles (pedestrianisation of some streets currently adopted in Hong Kong), to low emissions zones (as in London), to exclusion from especially congested roads at specific times of day (as in Tokyo);
- The introduction of dedicated bus lanes also reduces emissions by allowing buses to move more swiftly and to reduce stopping and starting, which generates the most emissions (as in London); and
- Reduction of numbers of buses on congested urban routes (as in Seoul). In particular, the reduction of inter-city buses on inner city routes is essential.

Limiting Exposure to Pollutants through Reducing Densities and Increasing Distances

8.6 In tandem with effective measures to control roadside pollution, it is also important to reduce hazard by **keeping people as far away from pollution sources for as long as possible, and to look for opportunities to improve airflow**. Possible approaches may vary according to the location.

Old Neighbourhoods

Reducing Neighbourhood Densities

8.7 On a broader level, exposure to air pollution could be controlled by reducing the number of people living in congested, densely populated districts. This can be done by restricting the development intensity of lots, perhaps to ground-level, low-rise GIC or passive recreational facilities. Apart from the ventilation benefits, a reduction in the number of residents will correspondingly reduce demand for public transport, parking and supply of goods and services, thereby reducing transport-related pollution, and making a highly polluted area more liveable. It will also remove the possibility of more

intense buildings being introduced to what are already intensely developed areas.

Measures to improve Airflow

- 8.8 In the most polluted and unhealthy districts, planners might look for opportunities to improve airflow by careful selection of sites where old structures could be demolished, and the land left undeveloped in order to proactively improve ventilation in the district. Such an approach would not necessarily refer to every site, but is a measure that might be employed when a key air choke point can be unlocked. This would be a bold step, but might be one way to begin to reduce the canyon and wall effects that have been driven by the maximum utilization of plots in order to generate maximum revenues. Some of the possibilities for achieving this can be seen in the Case Studies for Sham Shui Po, Hung Hom and North Point in **Appendix 3**.

Linking Pedestrianised Areas with Open Areas

- 8.9 Other planning initiatives might include temporary or permanent pedestrianisation of streets, particularly with narrow commercial streets. When coupled with the decision to reduce population and the associated traffic, linking of open areas and pedestrianised areas could reduce emissions without affecting flows on important trunk roads. An example is the conversion of Des Voeux Road Central to a pedestrian and tram precinct, with extensive planting and has been proposed by the Hong Kong Institute of Planners (2002) as a means for improving air quality and improving the amenity of the Central Business District (see **Figure 8.1**).



Figure 8.1: Des Voeux Road Central is subject to some of the highest recorded pollution levels in Hong Kong. Removal of all vehicles other than trams, and planting of trees, would completely change the Central Business District, reducing pollution, heat and improving the pedestrian environment. Implementation of the Central-Causeway Bay By-pass will make it feasible in traffic terms.

Buses at Public Transport Interchanges

- 8.10 Another important consideration is that Public Transport Interchanges are a source of very high concentrations of roadside pollution. Concentrations are even greater in covered facilities that are incorporated into a podium structures of another developments (e.g. Grand Promenade, Exchange Square). Such concentrations may pose a specific health threat to residents, so moving them out of private developments would serve to remove residents' exposure to this pollution source. Research on roadside emissions from HKUST shows that even distances of just a few metres from the tailpipes of vehicles can make a significant difference to concentrations of pollutants.

Low Emission Zones

- 8.11 Many cities limit the impact of emissions from goods vehicles by controlling access during certain times of day. For example, Tokyo has banned all diesel vehicles from the city centre during business hours. In Hong Kong, there is considerable scope to expand provision of bus lanes or to exclude buses from especially congested roads. A good example of the latter would be to exclude goods vehicles and buses from Queens Road Central between Chater Garden and Wyndham Street.

Reducing Exposures within Buildings

- 8.12 More specifically, within developments **the higher people live, the further they are away from the greatest concentrations of roadside emissions** (either at ground or flyover level). This is not intended as a justification for tall buildings, but simply to note that proximity to the source carries increasing risk.

New Towns and New Development Areas

- 8.13 The great benefit of new towns, and new development areas such as Kai Tak, lies in the opportunity to put into effect the lessons learned from the problems that have negatively impacted the liveability of the old neighbourhoods.

Avoidance of Street Canyons and Wall Effect

- 8.14 The ability to start with a blank sheet and more space allows for the planning of ventilation corridors and green open space without narrow street canyons and wall effects. Wider roads allow space for tree-lined pavements.

Separation of Sensitive Uses and Polluting Uses

- 8.15 Sensitive Uses, such as residential development and schools could be planned at safe distance from potential pollution generating uses, thus, avoiding expensive pollution mitigation measures to protect public health.

Improving Street Environment and Public Realm: Air Ventilation Assessments and Technical Solutions

Air Ventilation Assessments

- 8.16 There is a general trend to move from purely prescriptive controls to use performance standards, particularly where the technical processes exist. Air Ventilation Assessment (AVA) is an accepted tool in Hong Kong and in other countries. It is an objective and factual examination of the current airflow situation in a specific area and the changes that may be imposed on the neighbourhood if a given development is built.
- 8.17 AVAs allow the objective identification of major breezeways and air paths towards the prevailing wind within our dense urban environment. These can ensure that both the community within the new development receives enough wind ventilation and that the new development does not degrade the wind environment for the wider community.
- 8.18 AVAs can also identify specific trouble spots within a new development when design actions need to be taken. They provide an invaluable tool for Government, planners, engineers, architects, designers and industry stakeholders to better optimize air ventilation for both new developments and the city as a whole.
- 8.19 AVAs are now included within the HKPSG. However, the largest pitfall of the AVA system at present is the lack of a benchmark that new developments must attain.

Street Canyons

- 8.20 Street Canyons are formed when dense developments consist of tall buildings leaving little chance for wind to penetrate to pedestrian levels. This problem is often **compounded by high traffic levels emitting pollutants that are trapped and are unable to be dispersed**.
- 8.21 Potential mitigation measures mentioned in the IRD include **setbacks and street widening, but these are only effective if the prevailing wind direction is taken into consideration. More significant action may be needed to create new air paths by reducing development intensity, removing some buildings, or changing land use to open space**. Three conceptual examples are included in the case studies in **Appendix 3**.
- 8.22 In short, breezeways can be in the forms of roads, open spaces and low-rise building corridors, through which, air reaches the inner parts of urbanized areas largely occupied by high-rise buildings.



Figure 8.2: This conceptual image illustrates the possibility of creating a linear park through Sham Shui Po by removing existing buildings and linking existing open sites. This would help reduce the deficit of public open space, green a densely developed area of the city, provide an air ventilation corridor, reduce population density and help reduce the Urban Heat Island Effect.

Wall-effect Development

- 8.23 There are a number of recent projects with multi-tower residential developments on the fringe of existing communities and along waterfronts, many on Government sale sites. These developments form “walls” which block wind from flowing into the inner urban fabric.
- 8.24 **Waterfront sites are the gateways of inland breezes.** Positioning of buildings on these sites should be carefully considered to avoid blockage of sea/land breezes and prevailing winds. Measures should be put in place to discourage or avoid a series of multi-tower developments formed by contiguous sites.

Podiums in Contemporary Hong Kong Developments

- 8.25 The podium development with towers on top are an outcome of the Building (Planning) Regulations (B(P)R) which allow 100% site coverage for the non-domestic section of developments up to 15 metres high. This form of development is popular because the buildings potentially increase desirability of residences. The design also provides a practical solution to accommodate the functional parts of the building and retail shops. In some cases they also provide protection against excessive traffic noise impact.

- 8.26 With regard to wind speeds at pedestrian levels, podiums are often seen as a significant contributor to the reduction of wind speeds. Their low-level bulk stops the movement of wind into areas behind for some distance beyond the podium itself. **They are particularly detrimental when placed along the fringes of existing communities.**
- 8.27 It is, therefore, critical to increase permeability of the podium structure at the street levels by **providing ventilation corridors or setbacks parallel to the prevailing wind.**
- 8.28 Even though multi-towers and large podiums are often regarded as detrimental to good wind flow, they are not the only factors at a particular site that cause ventilation problem. The variability of the factors and features at specific sites means that **no mandated check-list can replace a site-specific AVA. In this respect, the likely benefits of the proposals in the IRD are likely to provide sub-optimal solutions.**
- 8.29 Setback in narrow street is advantageous to the pedestrian environment from a ventilation perspective. **However, setting back a single building may not have a large improvement to the wind environment at pedestrian level. The environmental, social and aesthetic benefits provided by setbacks necessitate a serious look at measures to help introduce and implement them.**
- 8.30 Strategic gaps between buildings are very important in developments on the fringes of existing communities, but the location and alignment of these gaps are crucial and can only be determined on a case by case basis. **The minimum gaps mentioned in the IRD would seem to be too small to achieve any major goals.**

AVA and Design Flexibility

- 8.31 The breaking up of podiums and allowance of wind gaps are generally good measures, but their positive impact needs to be confirmed by technical analysis. Set-backs, particularly for (re)developments in already built-up areas are considered quite advantageous and the addition of AVA analysis to justify concessions to encourage this is worth further consideration. **The move towards a performance standard approach would allow for quantification of benefits for specific site locations and characteristics. This in turn will allow for design flexibility and encourage innovation to achieve the desired objectives.**

9. Improving Street Environment and Public Realm: Greening and Space for Pedestrians

Use of Public Realm First

- 9.1 The quality of the environment at the pedestrian level has been identified as a major area of concern. However, the approach taken in the IRD has been to ignore possible effective solutions in the public areas of streets and open spaces, and to focus only on intrusion into private land. **The need to increase space for pedestrians and greening should first focus on re-designing and re-prioritising use of public space for vehicles, people and planting.**
- 9.2 The question is not just one of quantity, it is also one of quality. The standard of design and use of street furniture, tree planting and landscaping in public areas are generally considered inadequate by the public. **The second focus should be on designing and managing the public parts of streets so that they achieve suitable levels of amenity and comfort to meet pedestrian needs.** This also includes measures where appropriate to reduce air pollution and noise from vehicles.

Contribution from Private Land

- 9.3 **The principles of protection of private rights of land ownership** and of compensation for any loss of those rights are of paramount importance. If there is a need for widening of a street, then provisions under the **Roads (Works Use and Compensation) Ordinance should be used.** This allows for rights of objection and also provides a basis for fair compensation. It usually applies when a substantial portion of land is required and involves a process of public notification, objection and consultation. This will ensure fair compensation for the loss of private land.
- 9.4 **The alternative method is the provision for dedication of part of a private site for public passage under B(P)R 22.** This provides for an incentive GFA of 5 times for land dedicated at the Ground Level and at 2 times for other levels. **This is a well-tested system which operates effectively and can be implemented quickly.** It generally does not result in a significant increase in building height or volume and is implemented without public funds. The difference in compensation levels also reflects the difference in value of the Ground Floor and other levels. This is demonstrated in the following example.

Redevelopment at No. 100, Queen's Road, Central

- 9.4.1 The merits of this system are illustrated by an example at No. 100 Queen's Road, Central. The situations before and after the dedication and construction of the areas for public use are shown by the photographic records below:-

Before Situation

Building at No.100, Queen's Road, Central was being reconstructed, the escalator occupied substantial space of the pavement.



Photo 9.1: Photo taken on the other side of Queen's Road Central: Escalator takes up pedestrian space.



Photo 9.2: Photo taken on Cochrane Street: Pedestrians walk on street.
Source: Knight Frank

After Situation

Construction of building at No.100, Queen's Road, Central is completed. The escalator on the pavement is demolished and reprovisioned within the new building.



Photo 9.3: New escalator in the new building



Photo 9.4: By reprovisioning the escalator within the building, a much more spacious pedestrian environment is created at ground level.

Source: Knight Frank

Note: Premium was paid to enable a footbridge connection over Government land.



Photo 9.5: Photo taken on Cochrane Street: Through site pedestrian route within the new building provides much convenience to the public and increase public safety.

Source: Knight Frank

9.4.2 When the site was to be redeveloped, the architect applied to set-back the building along Queen's Road, Central and to relocate the public escalator which was on the public pavement into the building. This was then connected to a pedestrian area within the building which allowed the linking of the building to the Mid Levels Escalator system, the movement from Queen's Road level to Stanley Street level and provided more open area along Cochrane Street. Effectively, the public pedestrian movements now take place within the private lot.

9.4.3 The area of incentive GFA granted for this public provision was the equivalent to 4 floors. In the context of Central and the overall height of the building of 29 floors, this has no significant impact on bulk and height. The dedication scheme offers huge public benefit in alleviating congestion problems on footpaths in the densely developed older urban areas.

Widening For Amenity Purposes and Air Ventilation

9.5 The proposal in the IRD to widen streets for general improvement of ground level amenity and for the purposes of improving air ventilation are acceptable in principle as long as there is a mechanism to allow for the incentive system to be operated. At present, the restrictions on the systems under the B(P)R limit the use of the system to "Public Passage" and there is a well established system for justifying the area to be dedicated for it to be accepted by the Building Authority. The system therefore imposes controls.

- 9.6 For this process to be introduced in the public interest, there is the need to amend the relevant parts of the Buildings Ordinance and Regulations and to establish a clear and open process whereby such set-backs can be compensated with incentives. This is addressed in Section 11.

Proposal For Set-back on Streets of less than 15 metres in Width

- 9.7 The IRD includes a proposal for the set-back of buildings on streets less than 15m in width (para. 5.2.6). **This proposal is acceptable in principle as long as the incentive GFA scheme is applied automatically rather than by specific justification.** Also, as pointed out in the Buildings Department Study (p.75), there needs to be a system of exemption available where the sites are so small that there is some provision of discretion to accept a lower standard to suit specific cases.

Limited Benefit in a Short Period

- 9.8 The slow pace of redevelopment will only result in gradual improvements to the street environment through the provision of set-backs. The relatively slow redevelopment of buildings of around 60 years of age is anticipated to become more of a feature as building height restrictions and plot ratio restrictions are more generally applied. **Photo 9.6** shows the large scale high density development at Man Wui Street/Ferry Street, Jordan; while **Photo 9.7** shows buildings at Queen's Road East, Wanchai with overhanging part of the structure over the public street which were common in the 50's and 60's. Redevelopment of these buildings is extremely difficult due to the lack of financial incentive under the prevailing building height and plot ratio restrictions, regardless if it is done through Urban Renewal Authority or by private developers. Therefore, the most significant improvements at street level are likely to come from improvements to the public realm rather than relying on this slow process of redevelopment. Likewise, **the improvement on air quality should not be reliant on progressive redevelopment but on more direct means of achieving a better quality of air and ventilation.**



Photo 9.6: High density development at Man Wui Street/Ferry Street, Jordan. The canyon effect on the streets between these buildings will not be changed for many years by the proposals for setback and space between buildings in the IRD. Removal of concessionary GFA will discourage redevelopment.



Photo 9.7: Buildings built under old building controls extend over the public street. They are likely to remain for many years. Improvement to the street environment needs to be made in the public areas outside the private lot.

Conclusion

- 9.9 The dedication mechanism under the current B(P)R is an efficient measure to provide the desperately needed space for street widening for public passage. It is not a time consuming process and it encourages lot owners to surrender valuable ground floor space in return for upper floor area. The regulatory framework is the only viable solution to provide buffer space in the old areas where most land leases are unrestricted and owners are free to build to their preferred form. With due regard to private property rights, there is in place the mechanism to facilitate mutual agreement between the lot owner and the Government in providing setback to enable street widening. This scope needs to be expanded to include amenity space if the objectives of increasing air flow and improving street amenity are to become a specific objective.

10. Green, Energy Efficient and Sustainable Building Design

- 10.1 This section looks at four areas raised in the IRD from the perspective of sustainable buildings.

Single Site Approach

- 10.2 The scope of the IRD is specifically limited to “the design of buildings within their own site boundary”. One single environmentally focused building in isolation doesn’t constitute the sustainable development of Hong Kong. How buildings relate to each other and their position in relation to services and facilities can affect the sustainability of the built environment as a whole. In this regard, the IRD seems to start at the wrong end of discussion – from a narrow, single building starting point, rather than an overall vision of the whole of Hong Kong as a high quality, green, low carbon living city.

Trends in Both Environmental Understanding and Green Building Development

- 10.3 The art, science and practice of green building design are moving quickly. What was once considered the cutting-edge of sustainability is now considered standard or has even been surpassed. The features required for a high rating under current environmental accreditation schemes (e.g. BEAM or LEED) will be conventional in a few years. Similarly, the environmental sustainability scene even five years into the future will have progressed far beyond contemporary standards.
- 10.4 Internationally, the discussion on sustainable buildings has moved from ‘green buildings’ to ‘intelligent buildings’, ‘net zero buildings’ and ‘regenerative buildings’ (buildings that generate their own power and water supplies) with the aim of not merely stabilizing carbon and other emissions but reducing them. **There is a shift in emphasis from mere compliance with a checklist of ostensibly environmental features in the design and construction phases to ensuring that the building actually lives up to expectations in the operational phase: in other words, that it performs well as a building.** Again, the emphasis has changed from purely focussing on green features and techniques to more focus on operational efficacy, health and productivity.¹¹

Responses to Climate Change

- 10.5 The IRD closely follows a narrow range of contemporary local concerns, rather than leading the Hong Kong public in an important discussion on the serious messages coming from science on the state of the environment. There is a fairly limited approach to sustainability¹² and a sustainable built environment, and only a cursory acknowledgement of trends in environmental understanding of key issues such as climate change.

¹¹ Rocky Mountain Institute (2008) ‘Cooling the Warming’ <<http://bet.rmi.org/our-work/cooling-the-warming.html>>

¹² E.g. the emphasis on the costs and trade-offs (IRD, page 13, para 3.2.3) for the current generation.

10.6 Responses to climate change, both at a national level and through international protocols on carbon emissions, will affect the legality and economics of resource use and energy consumption in the future. The building sector will be under some pressure to play a leading role in the climate change arena for three reasons:-

- Firstly, the challenge of reducing greenhouse gas (GHG) emissions may have been underestimated. While far from settled, debate has centred around a threshold of 2°C¹³. There are two difficulties:
 - (a) even this target is immensely challenging, requiring GHG reductions of between 25 and 80 per cent over the coming century; and
 - (b) some eminent researchers think that even this target is too lax and are suggesting a response requiring action 'sooner and harder'.
- Secondly, the building sector has more opportunity than any other sectors to reduce carbon emissions cost-effectively with available technologies. **Four of the five most cost-effective measures for reducing GHG emissions are building related: better insulation, air conditioning, lighting and water heating systems¹⁴.** Hence, energy efficient buildings represent one of the easier ways in creating the low carbon economy.
- Thirdly, global warming has meant people seldom use natural cooling and ventilation. However, the Government and the public will be under the pressure to stabilize, if not reduce, carbon emissions. With the increasing temperature, the old solution of turning up the air conditioner will not be acceptable. **A change in building design to incorporate sustainable features and operations is the fundamental solution.**

Energy Efficiency Consideration

10.7 Energy efficiency is not treated with the same level of analysis as the other two items in the IRD. This may be an indication that the Government is about to legislate mandatory standards for building energy efficiency.

10.8 Energy efficiency measures are the easiest and most promising part of the low carbon economy story. The IRD could have led a more serious discussion of the various measures and innovations that might be applied in this regard. Two measures are discussed below by way of example – metering and benchmarking:-

- (a) Standard electromechanical meters, of the type developed in the 1930s, are typically used in Hong Kong developments. Metering encourages occupants to identify their electricity consumption and relate their own behaviour with any increase or decrease in cost or environmental impact. In the future, we could see wall-mounted

¹³ A threshold of 2°C means to prevent the earth's average temperature from rising more than 2°C above pre-industrial levels. It is thought to equate to an atmospheric concentration of GHGs of 450–550 parts per million.

¹⁴ The fifth measure is improved efficiency in commercial motor vehicles.

displays inside every residence, to provide overall electricity consumption information. To make this information even more motivating, a comparison against other units in the same building could also be easily provided.

- (b) Even now, it is perfectly feasible to provide real-time, daily, weekly, or monthly benchmarking of units' electricity consumption. Such an effort would:-
- Continuously quantify the savings unit owners/tenants achieve;
 - Provide rapid feedback on the results of occupants' practices and changes;
 - Encourage friendly competition between occupants;
 - Engage occupants in the energy efficiency universe; and
 - Form the basis of a dialogue between occupants as to what efforts bring the best outcomes.

What about Old Buildings

10.9 Only a tiny percentage of the total building stock of Hong Kong will be built in the near future. In 30 or 40 years time, the vast majority of buildings in Hong Kong would have already been in existence in 2009. **If we had to rely on new buildings to manage the urgent environmental issues, such as poor air quality and climate change, we would be waiting for a century or more, because that is the time it would take for building measures enforced now to have an effect across the entire building stock.** This gives rise to two considerations:-

- (a) The importance and urgency of building high performing buildings now. A poorly designed and constructed building will have environmentally damaging impacts for several decades.
- (b) New buildings are the lesser part of the discussion 'to foster a quality and sustainable built environment'. **Existing buildings are the greater and more challenging part.**

Retrofitting Existing Buildings

10.10 The IRD has concentrated on a narrow range of issues in the design and construction of new developments and ignored the greater challenge of retrofitting and dealing with old buildings. Yet, public policy could be implemented to make retrofitting a comparable option, either through regulation and taxes, or **through incentives and financial schemes that reduce the cost and increase the viability of retrofitting.**

10.11 This is already happening in other parts of the world. For example, the City of Berlin has pioneered in partnership with Berlin Energy Agency a model for retrofitting energy efficiency measures in public and private buildings to reduce emissions. So far, 1,400 buildings have been upgraded, achieving CO₂ reductions of more than 60,400 tonnes per year.¹⁵

¹⁵ C40 Large Cities Climate Summit New York (2007) case study
<http://www.nycclimatesummit.com/casestudies/energy/energy_berlin.html>

- 10.12 Hong Kong does not have broad scale programmes for tackling the retrofitting challenge. The Government's 'Building Energy Efficiency Funding Scheme' is a positive move but relatively small in scope. This scheme offers subsidies to owners' corporations, owners' organisations or residents' organisations of residential, commercial, or industrial buildings. The scheme has two parts: an audit scheme for assessing a building's energy efficiency ('Energy-cum-Carbon Audit Projects') and a works scheme to accelerate actual building improvements that enhance energy efficiency ('Energy Efficiency Projects'). The scheme only applies to communal areas of the building and covers lighting, electrical, air-conditioning and lift and escalator installations. The building owner must absorb ongoing maintenance costs. The Government will offer up to 50% of costs, capped at \$150,000 for audits, and \$300,000 for works.¹⁶
- 10.13 At the regional scale, the 'Cleaner Production Partnership Programme' offers subsidies of up to HK\$190,000 for energy saving or air pollution reduction projects for Hong Kong owned factories in Pearl Region Delta (PRD) region.¹⁷
- 10.14 The Urban Renewal Authority (URA) and Hong Kong Housing Society (HKHS) are implementing 'Operation Building Bright', a HK\$1 billion scheme that will provide subsidies to about 1,000 buildings for carrying out repair work to 'upgrade building safety and beautify the cityscape'.¹⁸ There are no specific environmental objectives, such as increasing building energy efficiency.
- 10.15 The URA itself does have some retrofitting objectives but these are not linked specifically to environmental outcomes. For example the URA's charter covers rehabilitation of dilapidated buildings to prevent urban decay; and maintaining and restoring buildings of historical and architectural value.
- 10.16 Retrofitting for environmental outcomes should be integrated into overall energy planning for Hong Kong, and into a Sustainable Development Strategy.
- 10.17 There appears to be a general acceptance in principle of the need to build and manage more energy efficient buildings. There is more concern about how these measures will be introduced and monitored in the construction of new buildings. There is even more concern about how the owners of existing buildings will be incentivized to improve the energy efficiency of their existing buildings. The current system being promoted by the Environmental Protection Department is too complicated and constrained to be efficient and effective.

Adaptive Reuse of Old Buildings

- 10.18 Many cities around the world, like Hong Kong, have experienced a shift of their economic base from industry to services, and this shift leaves a reserve of older industrial buildings. Many of them have been successfully redeveloped

¹⁶ www.building-energy-funds.gov.hk/en/about/index.html

¹⁷ <http://www.cleanerproduction.hk/en/main.asp>

¹⁸ <http://www.devb.gov.hk/en/secretary/press/press20090507.htm>

for a multitude of uses, such as loft apartments which are sought-after residences.

- 10.19 In the UK, many cities, especially in the north of England around Manchester, Bradford and Liverpool, were faced with the problem of abandoned industrial areas and large unused building stock. Private sector initiatives have shown that building reuse is not only possible, but also profitable,
- 10.20 Hong Kong has had positive experiences in adaptive reuse. For example, the air cargo terminal built by HACTL was adapted as the head quarters of Electrical and Mechanical Services Department after the relocation of the Kai Tak Airport. Conversion was preferable to demolition for both environmental reasons and cost saving. The conversion prevented the production of about 100,000 cubic metres of construction waste; saved about HK\$700 million construction cost; and saved the energy that would have been used in constructing a new building. The initiatives proposed in the Chief Executives Policy Address 2009 for rehabilitating and re-use of old industrial buildings are a major positive step in addressing this issue.

Recapitulation

- 10.21 To give the rightful consideration to this very important topic of sustainable built environment, there must first be a vision that drives the definition for sustainable buildings that the Government wishes to adopt and implement. The Government should articulate **the business case for Hong Kong to build, retrofit and operate high performance buildings that drive a new set of building and energy codes with legislative backing.**

11. Sustainable Building Design: Control and Incentive Systems

- 11.1 This section looks at the existing controls and incentives for developing sustainable buildings and how some of these could be improved or modified. Some examples are provided of obstacles in achieving the ideas discussed in the IRD.
- 11.2 The fundamental starting point in the discussion of mandatory requirements and the use of incentives is the need to balance the rights of property ownership and development, with the need to constrain or modify those rights in the interest of the general public. **There is also the need to distinguish between the characteristics of different areas and to ensure that controls are suited to the locality.**

Building Design Study

- 11.3 This issue has been discussed in the Building Design Study commissioned by the Buildings Department (paragraphs 3.1.5 & 5.3.1 to 5.3.3). There it was stressed that :-

- For the society as a whole the benefits of strong and early action for promoting a more sustainable urban living space far outweigh the economic costs of not acting;
- **International experience always follows an incremental process coupled with "quick fix" measures to yield immediate progress;**
- A softer approach should be taken before a regulatory approach being adopted in the long run;
- It is very important for a **city to firstly establish its overall goal** so that the public and private sectors can work together;
- Regulations should be accompanied by **provisions for exemptions when practicality, design constraints such as in smaller sites, mean that regulations cannot be applied;**
- The existing incentive / relaxation process could be strengthened;
- BEAM and CEPAS systems provide an advisory approach for achieving good practice; and
- For effective transformation of the mainstream market, **a multitude of implementation strategies should be adopted in an incremental and interactive way.**

- 11.4 Much of the information used in the IRD regarding set backs and building separation is derived from this Study which confirmed that **the use of regulations, incentives and an advisory approach should be applied.** However, the specific proposals made relate to large sites and new development areas. They cannot be wholly applied to the existing urban area where the main problems exist. There is no fundamental problem in applying new regulations in new areas through lease conditions and planning controls, but **there are concerns where they are to be applied on a general basis without distinguishing between old and new areas.**

Building Height and Bulk Impact

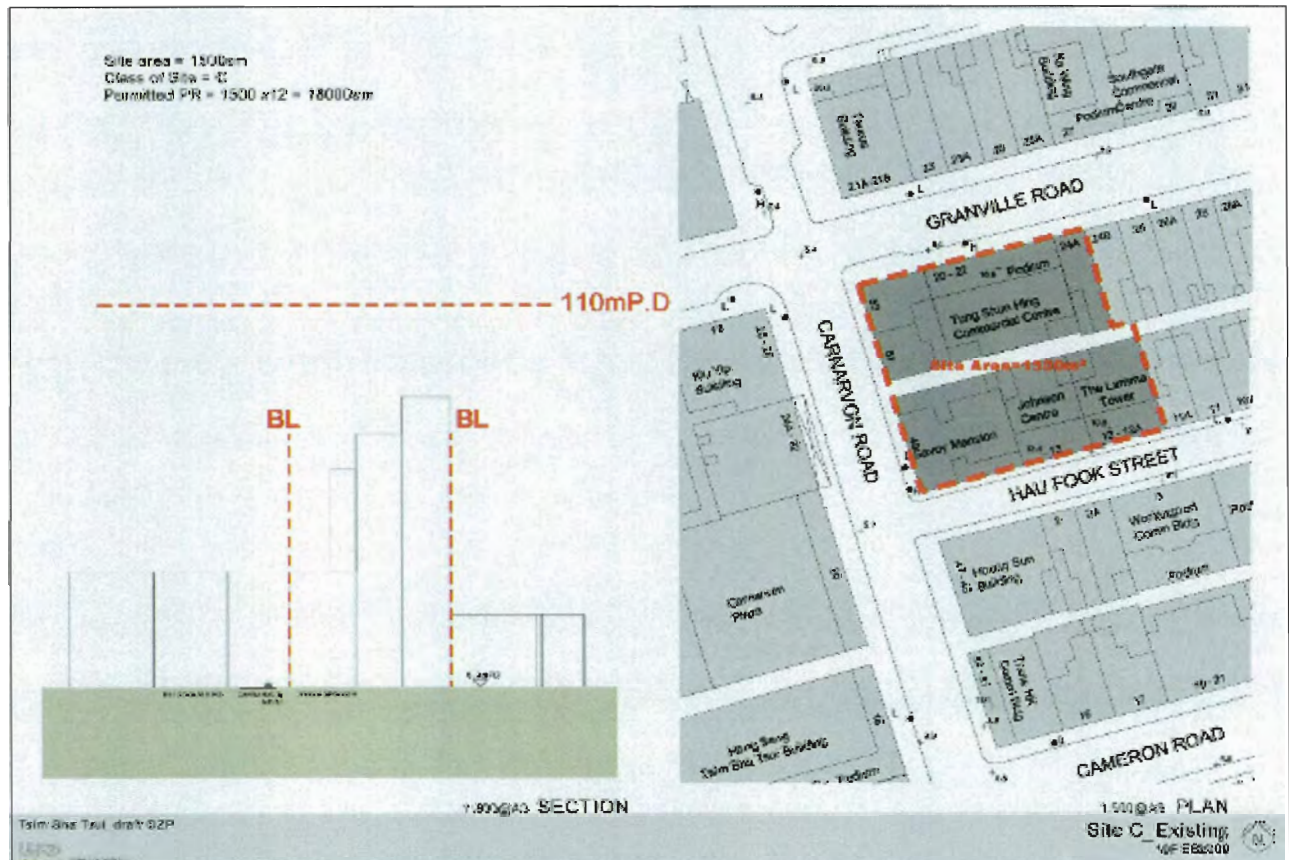
- 11.5 The context in which the impact of GFA incentives needs to be considered is now largely determined by the Building Height Restrictions that have been progressively included on the Outline Zoning Plans. This will ensure that there are no “Excessively tall and out-of-context buildings” in areas. These height restrictions have primarily been set to permit buildings of 20 to 30 storeys in height. **Any increase in height or bulk through GFA concessions would be consistent to all buildings within a particular height band and this is therefore no longer an issue.**

GFA Incentives for Public Passage and Open Space at Ground Level: An Example

- 11.6 At present the B(P)R provide incentives of incentive GFA for set back of buildings to allow for public passage. It is proposed in the IRD that buildings be set back for greening and open space. If this is to be adopted it is necessary that a similar incentive GFA system be provided. To illustrate the relatively small effect this would have on building height, an example of a site in Tsim Sha Tsui under the existing plot ratio and building height restrictions is provided.

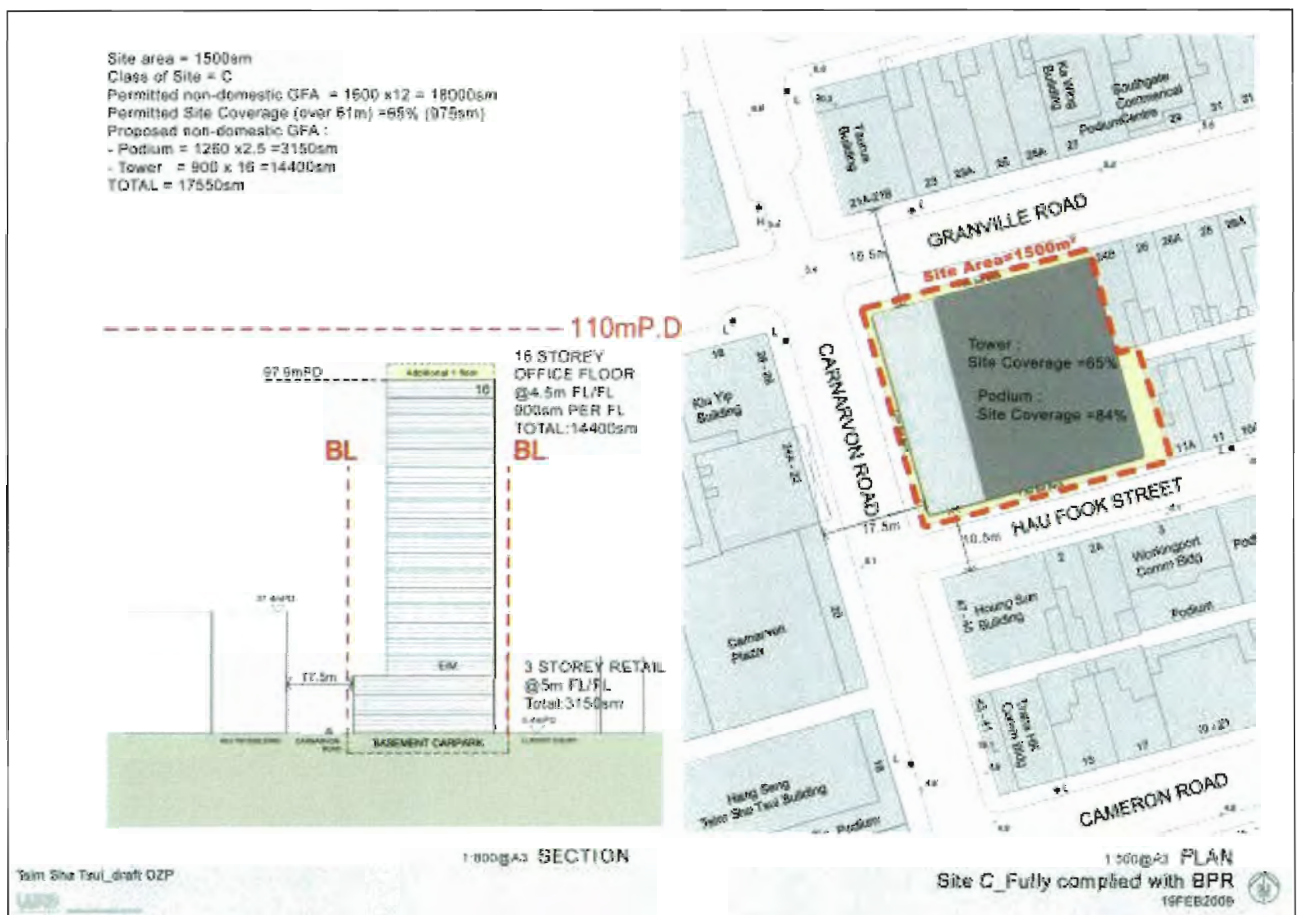
An Existing Site on Carnarvon Road, Tsim Sha Tsui

Figure 11.1 illustrates that to get a reasonable development site where significant improvements to the street amenity can be achieved, amalgamation of several existing lots and inclusion of a back lane would be necessary.



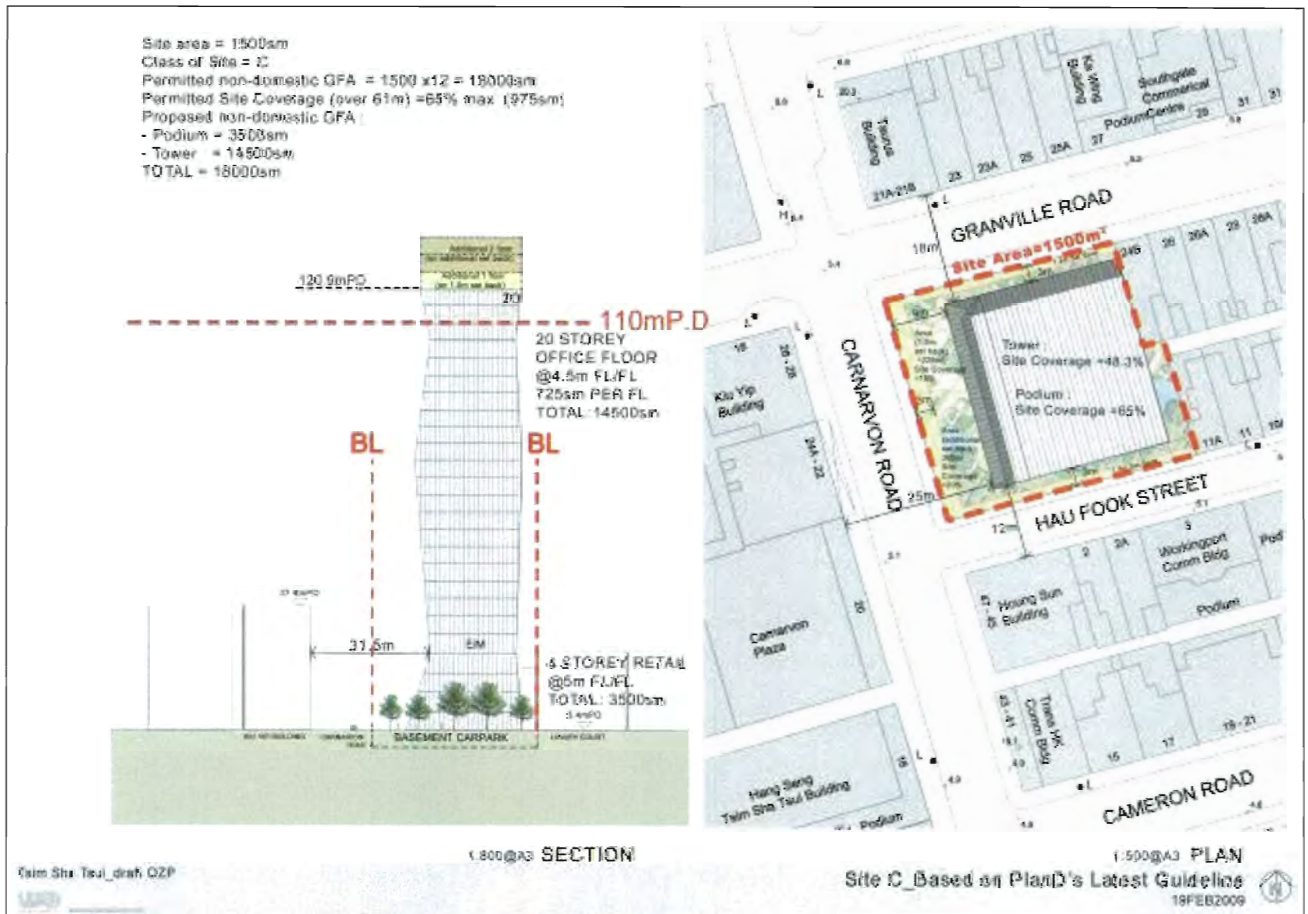
A Development Option Complying with Plot Ratio and Building Height Restrictions, and providing set-back for public passage.

Figure 11.2 shows that a building with a PR of 12 and a building height of 19 storeys could be built on the site. The incentive GFA for a 1.5m setback on all street frontages would result in 1 extra storey. The total building height would then be 20 storeys with a basement car park. The building would be below the 110mPD Building Height Restriction stipulated on the relevant Outline Zoning Plan and should be readily approved by the Buildings Department.



A Development Option which Includes Bonus GFA for both Open Space and Public Passage

Figure 11.3 shows how 15% of the site is set back for public passage and 20% for open space/greening. Site coverage for the podium is only 65% and for the tower is only 48.3%. The incentive GFA is equivalent to 1 storey for 1.5m public passage set back and 2 storeys for open space/greening set back. An additional 3 floors in height makes the building only 27 storeys tall, but not excessively tall or out of character. Approval for minor Relaxation of Building Height Restriction would be required from Town Planning Board which provides a control system. The Buildings Department does not have the authority under the B(P)R to grant a bonus for open space/greening. Therefore suitable provisions should be included in the B(P)R on OZP.



11.7 It is therefore proposed that **an incentive is required to provide the open space/greening at ground level** as the developer always has the option of building a complying scheme with no open space as shown in Figure 11.2, providing only the required 1.5m widening along the street frontages. This is likely to be the cases where sites are not amalgamated.

Podium Coverage

- 11.8 A significant focus of the IRD is on the adverse impact of 100% site coverage of podium development. B(P)R 20(3) allows for the percentage site coverage in the First Schedule to be exceeded up to a height of 15 metres above ground level. It does not indicate that the coverage exceedance shall be up to 100%. The reasons being put forward for not having 100% coverage mainly relate to air ventilation but also include amenity reasons.
- 11.9 There may be locations where 100% site coverage may not be a problem, such as:-
- in new development areas where the space between buildings is designed into the planning layout for the neighbourhood;
 - the site is isolated with no other buildings in close vicinity;
 - where the space to be provided by a smaller site coverage would be of no useful purpose in terms of amenity or air ventilation; and
 - where the character of the area is a continuous shopping street, or similar environment, where gaps would adversely affect the character and amenity of the area.
- 11.10 It is possible to consider a range of control mechanisms which could be introduced in a PNAP issued by the Building Authority. These could be related to the character of specific areas, and would need further study and consideration:-
- (a) Permitting 100% site coverage in shopping streets and similar areas but not necessarily to 15 metres in height. These areas could be defined as being zoned on the relevant Outline Zoning Plan as "Commercial" "Commercial/Residential", "Residential (Group A)", "OU (Business)" or "Comprehensive Development Area", or similar zones where commercial uses are permitted on the lower 3 floors of a building. This would allow for the provision of retail shopping while not excessively blocking air ventilation or dominating the street environment.
 - (b) In areas which are zoned residential on an Outline Zoning Plan there may be situations where coverage of less than 100% may be desirable, but this needs to be subject to further study and consultation.
 - (c) There is a general concern expressed in the IRD, and in the public consultation that has taken place, over the lack of space between buildings. This can apply to the tower above 15 metres. The First Schedule of the B(P)R designed so that as the building gets taller there is a requirement for more space around the building, by requiring a smaller site coverage. There is an advantage in having taller buildings. However, the concern appears more related to where the space around the tower is located. Often it is at the rear of the building which has no benefit for the public users of the street. If air ventilation and street amenity requirements are now considered so critical, it may be desirable to study where this space around the building should be provided to achieve defined objectives.

Car Parking Provision

- 11.11 **Car parking requirements are stipulated in the HKPSG and are therefore under a separate control regime.** It is understood that the parking standards are being reviewed. This consultation regarding the GFA concessions on car parking could neither address public concern about building height and bulk nor contribute to the achievement of a sustainable built environment.
- 11.12 Under B(P)R 23(3)(b), the GFA of car parking provision may be disregarded as part of the policy of providing ancillary parking within a site. **The amount of parking provision is determined by the HKPSG and varies from type of use to location of the site. It is not possible to verify from the information provided in the IRD that the impact is generally unacceptable or excessive in any circumstances.** It is considered that the information provided is not representative of the actual situation and the conclusions therefore cannot be substantiated.
- 11.13 The possibility of requiring car parking to be provided underground is discussed in the IRD and the likely additional construction costs and operational costs are mentioned. There is no objection to this approach in new development areas where the impact of this requirement can be taken into account at time of purchase of the property or lease modification.
- 11.14 However, the general application of an underground parking policy needs to be considered in relation to the practicality of providing it. **There may be geotechnical constraints on excavation or the site may be too small.** The provision of car parking should also be related to the suggestions in relation to the extent of podium development as suggested above. If the car parking could be provided within the stipulated podium or tower site coverage, then there is no particular adverse impact. There may be design solutions above ground which result in an acceptable form of the development in relation to bulk and height concerns. **Design flexibility should be provided and where appropriate the parking, or a large portion of the parking, could be provided in basements. This could be included in a PNAP but the principle of car parking being "disregarded GFA" should be retained.**

Electrical & Mechanical Plant Room

- 11.15 The provision of adequate plant rooms for Electrical and Mechanical Equipment is essential for the efficient operation of a modern building. This floor space should always be considered a practical requirement of buildings and the amount of provision is closely monitored by the Buildings Department to ensure that excessive space is not provided. Space to ensure good provision of essential equipment in buildings is necessary and it should remain as non-accountable GFA.

Ancillary Recreational Facilities

- 11.16 The provision of ancillary recreational and communal facilities within modern developments is now **an accepted part of a quality living environment.** These

facilities meet a real need for recreational facilities for the residents and removes demand from public facilities. They are provided and managed without public funding and provide a basis for the development of a community spirit within a development. In many developments, they are provided in such a way that they do not contribute any additional bulk or height to buildings, and are integrated with podium open space. These ancillary facilities contribute significantly to the quality of life in a high density environment and should be retained. However, in some situations they are not suitable and it is therefore not appropriate for them to become compulsory provisions.

- 11.17 The provision of ancillary recreational facilities is closely monitored so as to be no greater than a floor area equivalent to 5% of the GFA permitted on the site. There is some concern that the application of 5% to very large sites results in excessive provision of recreational facilities, and these become a burden on the eventual owners of the property. There is scope for reconsidering this ratio in relation to large developments, but this should be subject to detailed study.

Green Features

- 11.18 The Green Features promoted by the Joint Practice Notes (JPN) have made a significant, but cautious step, towards making buildings more environmentally friendly and better to live in. There is a need to reconsider the content of the JPN and some of **those which have become accepted provisions should be adopted as mandatory provisions and become 'disregarded GFA' in the context of B(P)R 23(3)(b). This could relate to such things as pipe ducts, wider corridors and lift lobbies, noise barriers, acoustic fins, sunshades and reflectors, wing walls, wind catchers and funnels.**
- 11.19 There is a need to move towards the inclusion of performance standards in relation to the provision of some of these features, such as in the design and location of communal sky gardens. There may be new features arising out of this consultation which could be included in a revised JPN.
- 11.20 **Photo 11.1** shows two residential developments in Gold Coast, Australia. The integrated provision of balconies and utility areas are extensions of a comprehensive provision of solar shading. All areas outside the main walls of the building could be considered as disregarded GFA to encourage such desirable sustainable feature. There is a need to promote and facilitate better provision of shade features in new buildings.



Photo 11.1:
**Extensive and Effective Provision
of Solar Shading, Gold Coast
Australia.**

Integrated provision of balconies and utility areas which are extensions of a comprehensive provision of solar shading.

All areas outside the main walls of the building could be disregarded in terms of GFA as they provide internal-external living space and help increase the energy efficiency of the building.



Non-Structural Prefabricated External Walls

- 11.21 The inclusion of off-site prefabrication as a green feature is somewhat different to the other green features, but is an important provision. The inclusion of this in the JPN list of features has resulted in a complete revolution in the construction industry. Whereas previously almost all walls were constructed on site with the related problems of quality control and pollution of water from construction runoff, etc, the off-site prefabrication allows for the walls to be constructed in factory-like conditions where quality control processes can be enforced and pollution control implemented. **This important provision should remain because of its impact on building quality and the general environmental benefits.** It should also be noted that prefabricated walls are subject to payment of land premium in certain circumstances.

Cap on Incentive GFA

- 11.22 The amount of GFA concessions is already capped at present. For instance, the provision of Ancillary Recreational Facilities is capped at a maximum equivalent to 5% of the total GFA, car parking is provided in accordance with the HKPSG standards and anything considered 'excessive' is counted for GFA. Areas for public passage are subject to justification and a maximum of 20% of permissible plot ratio, and some Green Features are limited to 8% of the total permitted GFA. The remainder is basically on a design basis to meet practical and technical requirements.
- 11.23 Capping on incentive GFA would unnecessarily force architects/developers to choose among the essential/desirable features which should not arise as all of them have their distinctive and beneficial aspects. **In the context of the controls being implemented on the Outline Zoning Plans, there remains no scope for excessive height and bulk being achieved and the buildings that will result will be acceptable buildings for the location under the Outline Zoning Plan.**

Scope for Change and Improvement

- 11.24 There is scope to change and improve the existing control and incentive system based on recent experience. There first needs to be a clear definition and agreement on any problems that may exist before any changes are made. As mentioned in the opening paragraphs, there needs to be a combination of incentives, controls and advisory measures adopted in tandem and adjusted over time to meet the desired outcome. **There is no one feature of the current system which does not add to the objective of achieving "Quality and Sustainable Buildings" and creating a better and more liveable environment.** There is an opportunity to amend and fine-tune the system as outlined above. **One outcome of doing this would be to provide more certainty for the developers, future owners and the general public as to what can be built on a particular site.**

12. Conclusion

- 12.1 This study has been commissioned by REDA so as to provide an independent assessment of the issues raised in the IRD, and to provide a basis for REDA to prepare a separate Position Statement. One of the concerns identified by REDA was the rather narrow focus of the IRD when addressing the issues of a Sustainable and Quality Built Environment by looking at buildings within an individual site. This study has taken a wider view than the IRD and looked at the context within which the specific issues should be considered.
- 12.2 This study has shown that there is a need to urgently establish a holistic Sustainable Development Strategy for Hong Kong so that the issues raised in the IRD could be considered in a broad context and that they can be addressed from many different approaches. This Strategy is also necessary to help coordinate the efforts of the Government and the private sector. This is an urgent matter that the CSD should address.
- 12.3 When a holistic approach is taken, as has been attempted in this study, it makes clear that the issues raised in the IRD regarding space between buildings and building set-back are relatively small components of a wider issue relating to the Urban Heat Island Effect, poor air quality and inadequate provision of public open space. The need to address these bigger issues directly has been identified in many scientific studies, including those of the Hong Kong Observatory. It is clear that the provisions discussed in the IRD will have limited impact on solving these problems and a more direct approach must be taken.
- 12.4 It is also clear that different approaches need to be taken to address these issues in different areas. Given the land development framework in Hong Kong, the Government can determine the environment in new development areas through introducing a Sustainable Masterplanning approach and by including specific control measures in new plans and in the sale conditions for new sites.
- 12.5 However, the study has identified the main concern as being how to deal with the old developed areas. Here there is an existing pattern of development, existing rights of private land ownership and existing controls which are the basis of significant private investment decisions. The reality is that the proposals discussed in the IRD will have very limited effect in these old areas as the life of existing buildings gets extended and redevelopment becomes slower because incentives are progressively being reduced. The main issue is how to retrofit these old buildings and to bring these old urban neighbourhoods up to an acceptable standard.
- 12.6 The old urban areas have the worst environments in terms of urban heating, and air pollution. There is evidence to show that large new developments around the fringes of these areas are making them worse, and that internally they are lacking open space and significant areas of greenery. To address these issues, the zoning and use of Government land on the fringes need to be reconsidered and an emphasis placed on meeting minimum public open

space requirements. This means that instead of selling land for development in these areas, sale sites should be identified in new development areas and in the New Territories and the sites in the urban area land converted to public open space.

- 12.7 The IRD does not provide adequate justification for the argument that GFA concessions are resulting in tall and bulky buildings. Instead the minimal information provided indicates that the main focus on building bulk should be on the basic height and density controls included in the lease conditions and the Outline Zoning Plans. This may require the Government to accept that in new development areas maximising development potential and land revenue has negative consequences with long term costs that far outweigh the benefits of achieving a high land premium.
- 12.8 Scope has been identified in this study for the fine tuning of the various GFA concessions discussed in the IRD, but these need more detailed technical study and discussion. There is also a concern that introduction of many of the changes discussed in the IRD will have the unintended consequence of resulting in less sustainable buildings with a poorer quality of living environment.

Appendix 1

Key Facts and Extracts from the Report of the
Independent Committee of Inquiry on the
Grand Promenade Development

Appendix 1: Key facts and Extracts from the Report of the Independent Committee of Inquiry on the Grand Promenade Development

- 1 The "Grand Promenade Incident" is fundamental to the issues raised in the IRD. A number of facts arising from the Inquiry Report prepared by the Independent Committee are stated below for reference:
 - (a) The lot where the Grand Promenade is located was originally Government land and sold by tender subject to lease conditions prepared by Government to ensure that the maximum form of development was achievable on the site;
 - (b) The site configuration was specifically designed to ensure that the maximum development density permitted under the Buildings Ordinance was achievable;
 - (c) The fundamental objective was to achieve the maximum revenue from the sale of the site, and measures were included (or excluded) from the lease conditions to ensure that this happened;
 - (d) The developer was required to include Government Accommodation within the development for a Public Transport Terminus and Marine Police facilities which resulted in an increase in the height and bulk of the development;
 - (e) Planning Department recommended to the Town Planning Board that there be no restriction on building height or GFA when rezoning the site to permit the development, so as to ensure that the maximum development potential (and revenue) was achieved;
 - (f) When the public objected to the lack of height restrictions and plot ratio restrictions on the new zoning, the Planning Department recommended to the Town Planning Board that the objections be over-ruled and the Board followed that advice. No height restrictions were imposed before the site was sold; and
 - (g) The development was completed by the developer in accordance with the statutory Outline Zoning Plan, the lease conditions and the provisions of the Buildings Ordinance. The development therefore meets the intention of the Government for the development of the site.

- 2 Extracts from the Committee's Report are attached.

SUMMARY OF REPORT

Introduction

1. This is not an executive summary. It is not a substitute for the text of the report. It is provided to assist the reader with a broad overview of events so that the detail may be more easily understood.

Identifying the Site for Residential Development

2. In 1998 under the Chief Executive's policy of building 85,000 flats each year Inland Lot No. 8955 (the Site) was identified as suitable for residential accommodation as well as for government and community use. It was zoned on the Quarry Bay Outline Zoning Plan (OZP) as "Government, Institution or Community" ("G/IC"). In due course the Site was rezoned "Other Specified Uses" ("OU") on the Quarry Bay OZP and annotated "Residential cum Public Transport Terminus, Commercial and Community Facilities".

Planning Intention

3. The Planning Department, the Lands Department and the Buildings Department are principally involved in the sale and control of the development of government land. From the outset the intention was to develop the Site to the maximum potential under the Buildings Ordinance (BO) and the regulations made under it.

Control of Development

4. There is a three tier control of the development of government land :

- (a) The Planning Department working with the Town Planning Board arranges for any planning intention or restrictions to appear on the relevant OZP. If there is a planning intention for a particular site the Planning Department arranges with the Lands Department to have that reflected in the Special Conditions;

- (b) The Lands Department sells the land as landlord and drafts the Special Conditions which become the conditions of the lease. Any lawful restriction may be imposed; and
- (c) The BO and the Building (Planning) Regulations (B(P)R) provide legislative control of the gross floor area (GFA) which may be built. This by implication controls the height, bulk and density of the development. This control is imposed by regulating site area, site coverage and plot ratio. Under B(P)R23(3)(b) specified parts of a building may be exempted from the maximum GFA. Also under B(P)R22(1) a developer may dedicate areas of his site for public passage but only if the Building Authority (BA) agrees to accept. In compensation the developer may be awarded bonus plot ratio of five times the GFA if the area dedicated is on the ground floor.

5. Section 42 of the BO is also relevant. If “special circumstances make it desirable” the BA may modify the provisions of the Ordinance and the regulations under it. By this means features not exempted under B(P)R23(3)(b) may be exempted. A Joint Practice Note (PN) of the three departments and other Practice Notes for Authorised Persons and Registered Structural Engineers (PNAPs) of the Buildings Department provide for certain green features, amenity features, recreational provisions and the like to be considered for exclusion from the maximum GFA of a building as a matter of policy.

Special Conditions

6. The Special Conditions for the tender drafted by the Lands Department provided for a minimum of 80,000m² for residential accommodation and 1,500 m² net operational floor area for the Marine Police Operational Area (MPOA). Otherwise the Special Conditions were silent upon maximum GFA for the development, the area to be occupied by the Public Transport Terminus (PTT) and the dimensions of areas on the ground floor reserved for lifts and other facilities to the upper floors. The Control Drawing provided a layout of the ground floor but was not to scale.

7. From the outset the Lands Department’s intention was that the Site should be developed as a Class C site to maximise its potential.

The Tender

8. The successful tenderer paid HK\$2,430 million. This was 31% higher than the reserve price or HK\$580 million. Later the developer paid a small premium of HK\$6 million for approval of the plans which did not comply with the Control Drawing to accommodate variations in the plans in respect of the PTT and the MPOA.

The Decision and Exercise of Discretion by the Building Authority - The Subject of this Inquiry

9. The developer put in plans which were disapproved by both the Buildings Department and the Lands Department.

10. The developer's Authorised Person (AP) made applications and the BA made the following relevant decisions upon them :

- (a) That the Site was a Class C site on the basis that a strip of government land over 4.5m wide designated as open space but also an emergency vehicular access (EVA) to Marine Fuelling Stations was a "street". This satisfied the requirements. The Lands Department's intention was that the Site should be developed as Class C but with the Pink Hatched Black Area as the necessary street;
- (b) That the "Reserved Areas" encroached upon by the PTT in the developer's plans should be accepted for dedication. The developer was compensated with bonus plot ratio. As designed the PTT was more environmentally friendly, more open and more pleasant for public use than it otherwise would have been. It was in the public interest to accept the dedication;
- (c) That part of the Pink Cross Hatched Black Area adjacent to a pedestrian access to the PTT should be accepted by the government and dedicated by the developer for public passage in return for bonus plot ratio. The public had no right-of-way over the Pink Cross Hatched Black Area;

- (d) That the PTT should be excluded from GFA calculation for the Site under B(P)R23(3)(b); and
- (e) That the MPOA should be included in the GFA calculation for the Site.

11. In taking these decisions the BA was advised initially by a Building Authority Conference (BAC) on 1 August 2001. This BAC was augmented. The AP and his team were invited to make a presentation of his applications and two independent advisers were invited to attend to increase the transparency of the process.

12. The BA adjourned his decision on the application for exemption of the PTT for the assistance of legal advice. The BAC was reconvened on 22 October 2001. He exempted the PTT after considering the legal advice and the advice of the meeting.

The Committee's Conclusion

13. Having examined these decisions and the reasons in some detail the Committee's opinion is that apart from the decision to exclude the PTT the remaining decisions were reasonably and properly taken both on the facts and in the exercise of discretion.

14. The application for exemption of the PTT caused difficulties to the BA because :

- (a) The treatment of PTTs in the past had been inconsistent;
- (b) The GFA of PTTs had been excluded from time to time under B(P)R23(3)(b); and
- (c) The legal advice which indicated that if he found as a fact that the PTT was constructed solely for the parking of motor vehicles, loading or unloading of motor vehicles B(P)R23(3)(b) applied.

15. Although the Committee thinks this decision was wrong Mr C M Leung as BA is neither to be blamed nor criticised in the particular circumstances. Others might have decided differently but from previous cases

and the legal advice it was open to him to apply B(P)R23(3)(b) to exclude the PTT. With this important background the decision was reasonable.

16. The Committee recognises that views can differ widely upon the interpretation of ordinances and regulations but considers that B(P)R23(3)(b) applies only when the relevant facility is provided (and not excessively provided) for the parent building or its occupants. Even if the decision was reasonable on the facts the PTT was not provided for the parent building or its occupants. A PTT is outside the scope of the regulation. In any event the provision was wholly excessive.

The Consequence

17. These decisions made 19,937m² additional GFA available to the developer. In practice this increased the bulk and density of the development by approximately eight floors on each of the five towers or roughly a total of 280 flats.

The Decision in Perspective

18. It is necessary to put these decisions of the BA into perspective. As one of the perceived detrimental effects of the decisions is to increase the height, bulk and density of the buildings it has been necessary for the Committee to look in a general way at whether there are other contributing factors. Apart from necessary exemptions under B(P)R23(3)(b) there were other exemptions granted by the BA under a joint policy of the Buildings, Lands and Planning Departments to encourage developers to provide “green and innovative buildings” by excluding from GFA balconies, wider common corridors, bigger lift lobbies, communal sky gardens, communal podium gardens and the like. Also, there was a policy to encourage other amenities, recreational areas such as clubhouse, play areas and so forth. These also were exempted from GFA. These features were exempted from GFA by the use of section 42 of the BO. Without question this is praiseworthy policy which will improve the lives of many who live in the buildings concerned. But there are consequences. The more exemptions are given the higher, the more bulky and the more dense the building will become.

19. In this case more GFA was exempted under the provisions of this policy than was granted or allowed by the BA in the decisions under review.

20. The relevant point under the Committee’s terms of reference is that the legislative control of the development was relaxed, not only by the

misapplication B(P)R23(3)(b) to the PTT by the BA, but also by the watering down of the control under section 42 for praiseworthy motives.

Recommendations

21. If the height, bulk and density of this development were too great then the reason was lack of legislative control. Control of the maximum GFA should be restored.

22. This may be done in several ways. One way would be to review the legislation and amend B(P)R23(3)(b) to include the green, amenity and similar features so that they can be excluded under the regulation. This would also have the effect of avoiding the use of section 42 of the BO in a routine way. The legislation could then be strictly applied.

23. Control should be imposed by the Planning Department in cooperation with the Town Planning Board so as to place appropriate restrictions on the OZP. Further, planning policy should be reflected in the Special Conditions of the lease. Close consultation and cooperation between the departments involved in the development of government land and its control is necessary. Imposing a cap on GFA exemptions, granting of bonus GFA and a maximum GFA in the lease conditions are measures being actively considered. We agree that this should be pursued.

24. The exercise of discretion by the BA would be considerably assisted by the drafting of Special Conditions which clearly set out what is required of the developer. If the intention is that the Site should be developed as a particular class this should be clearly stated. Also, if the intention is that Government Accommodation should be included or excluded in the GFA this should be clearly stated. The principle should be that the Special Conditions are drafted with as much certainty and clarity as possible.

25. The action already undertaken to examine the imposition of maximum GFA and capping the amount of GFA which may be exempted as means of control should be urgently pursued.

26. Finally, in controlling development of this kind increased coordination and cooperation between the departments involved should be promoted under the guidance of the Bureau. Steps are already being taken to this end.

Appendix 2

Assessment of Urban Land Sales Sites

Appendix 2: Assessment of Urban Land Sales Sites

An assessment of the appropriateness of removal of some sites in the urban areas from the “Land Sale Program, List of Sites for Sale by Application March 2009 to March 2010” is undertaken.

There are 59 sale sites listed in the Land Sale Program. Of these, 26 sites are located within the urban areas of Hong Kong Island and Kowloon. These 26 urban sites have been assessed on the basis of the following 5 criteria.

Would the development of the site:

1. add to the wall effect;
2. block air ventilation gaps;
3. remove opportunities for greening and open space in high density areas;
4. negatively impact harbourfront areas; and
5. unnecessarily increase density in the neighbourhood?

Of those 26 sites, 16 are regarded as appropriate to be considered for removal from the sales list.

Total Number of Sale Sites	59
Total Number of Sale Sites in Urban Areas	26
Number of Urban Area sites appropriate to be considered for removal from the sales list	16
Number of Urban Area sites appropriate to remain on the sales list	10

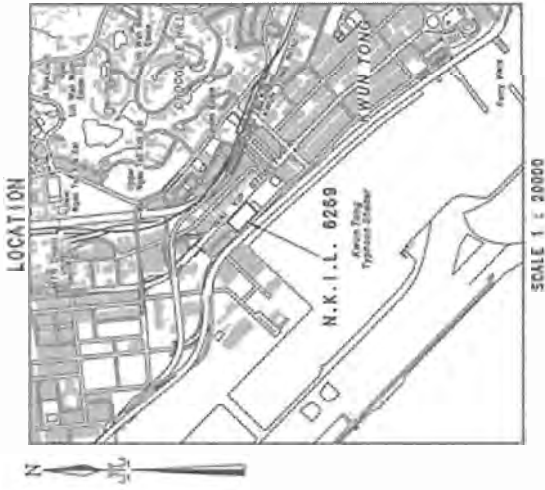
The evaluation table, as well as, a plan of each site suggested for removal are attached.

Criteria		Add to the Wall Effect?	Block Air Ventilation gaps ?	Remove opportunities for greening and open space in high density areas?	Negatively impact harbourfront areas?	Unnecessarily increase density in the neighbourhood?	Conclusion
Sites	Lot Number						
Junction of Sheung Yuet Road, Wang Tai Road and Wang Yuen street, Kowloon Bay	NKIL 6311	No	No	Yes	No	No	Keep
Junction of Kai Cheung Road and Wang Kwong Road, Kowloon Bay	NKIL 6314	No	No	Yes	No	Yes	Keep
Junction of Wai Yip Street, Shun Yip Street and Hoi Bun Road, Kwun Tong	NKIL 6269	Yes	Yes	Yes	Yes	Yes	Remove
Ex-Government Supplies Depot, Oil Street, North Point	IL 8920	Yes	Yes	Yes	Yes	Yes	Remove
Western part of Ex-North Point Estate, North Point	IL 9020	Yes	Yes	Yes	Yes	Yes	Remove
373 Queen's Road East, Hong Kong	IL 8970	Yes	Yes	Yes	No	Yes	Remove

Criteria		Add to the Wall Effect?	Block Air Ventilation gaps ?	Remove opportunities for greening and open space in high density areas?	Negatively impact harbourfront areas?	Unnecessarily increase density in the neighbourhood?	Conclusion
Sites	Lot Number						
Junction of Hung Luen Road and Wa Shun Street, Hung Hom Bay Reclamation, Kowloon	KIL 11205	Yes	Yes	Yes	Yes	Yes	Remove
103 Mt. Nicholson Road, The Peak, Hong Kong	IL 9007	No	No	No	No	No	Keep
1 Ede Road, Kowloon Tong	NKIL 6306	No	No	No	No	Yes	Keep
Lin Shing Road, Chai Wan	CWIL 175	Yes	No	Yes	No	Yes	Remove
Hospital Road, Hong Kong	IL 8872	Yes	Yes	Yes	No	Yes	Remove
Ex-CAS Training Centre, 204 Argyle Street, Kowloon	KIL 11125	Yes	Yes	Yes	No	Yes	Remove
Near 110 Repulse Bay Road, Hong Kong	RBL 1165	Yes	No	Yes	No	Yes	Remove
Near 35 South Bay Road, Hong Kong	RBL 1168	No	No	No	No	No	Keep
3 and 5 Ede Road, Kowloon Tong	NKIL 6423	No	No	No	No	Yes	Keep

Criteria		Add to the Wall Effect?	Block Air Ventilation gaps ?	Remove opportunities for greening and open space in high density areas?	Negatively impact harbourfront areas?	Unnecessarily increase density in the neighbourhood?	Conclusion
Sites	Lot Number						
Ex-Ko Shan Road Customs & Excise Service Married Quarters, 7 Ko Shan Road, Hung Hom, Kowloon	KIL 11184	Yes	Yes	Yes	No	Yes	Remove
Junction of Fat Kwong Street and Chung Hau Street, Homantin, Kowloon (Ex-Valley Road Estate Ph 2)	KIL 11175	Yes	No	Yes	No	Yes	Remove
Hung Hom Bay Reclamation Site D1, Junction of Oi King Street and Hung Luen Road, Kowloon	KIL 11120	Yes	Yes	Yes	No	Yes	Remove
21, 23 and 25 Borrett Road, Mid-Levels West	IL 8949	No	No	No	No	No	Keep
Hoi Fung Path, Stanley	StIL 91	No	No	No	No	No	Keep
Inverness Road, Kowloon Tong	NKIL 6493	No	No	No	No	No	Keep
62 Begonia Road, Yau Yat Chuen, Kowloon Tong	NKIL 6498	No	No	Yes	No	Yes	Keep

Criteria		Add to the Wall Effect?	Block Air Ventilation gaps ?	Remove opportunities for greening and open space in high density areas?	Negatively impact harbourfront areas?	Unnecessarily increase density in the neighbourhood?	Conclusion
Sites	Lot Number						
Cha Kwo Ling Road, Kwun Tong	NKIL 6195	Yes	Yes	Yes	No	Yes	Remove
Junction of Wang Chiu Road and Lam Lee Street, Kowloon Bay	NKIL 6312	Yes	No	Yes	No	Yes	Remove
Cheung Yip Street, Kowloon Bay	NKIL 6313	Yes	Yes	Yes	No	Yes	Remove
Junction of Hung Luen Road and Kin Wan Street, Hung Hom Bay Reclamation, Kowloon	KIL 11111	Yes	Yes	Yes	Yes	Yes	Remove



SCALE 1 : 20000

SIDE	DISTANCE IN METRES	BEARING	PI.	CORNER MARKED BY
A B	6.460	66 51 30		
B C	105.880	132 55 35		
C D	82.481	224 27 00		
D E	105.019	313 55 30		
Centre	16.478	208 35 02		
F A	51.178	43 54 20		

CURVE DATA
 Arc EF = 11.830m Radius = 7.411m Δ = 88°08'01"

X4.7 SPOT LEVEL IN METRES AS AT 09-05-2008

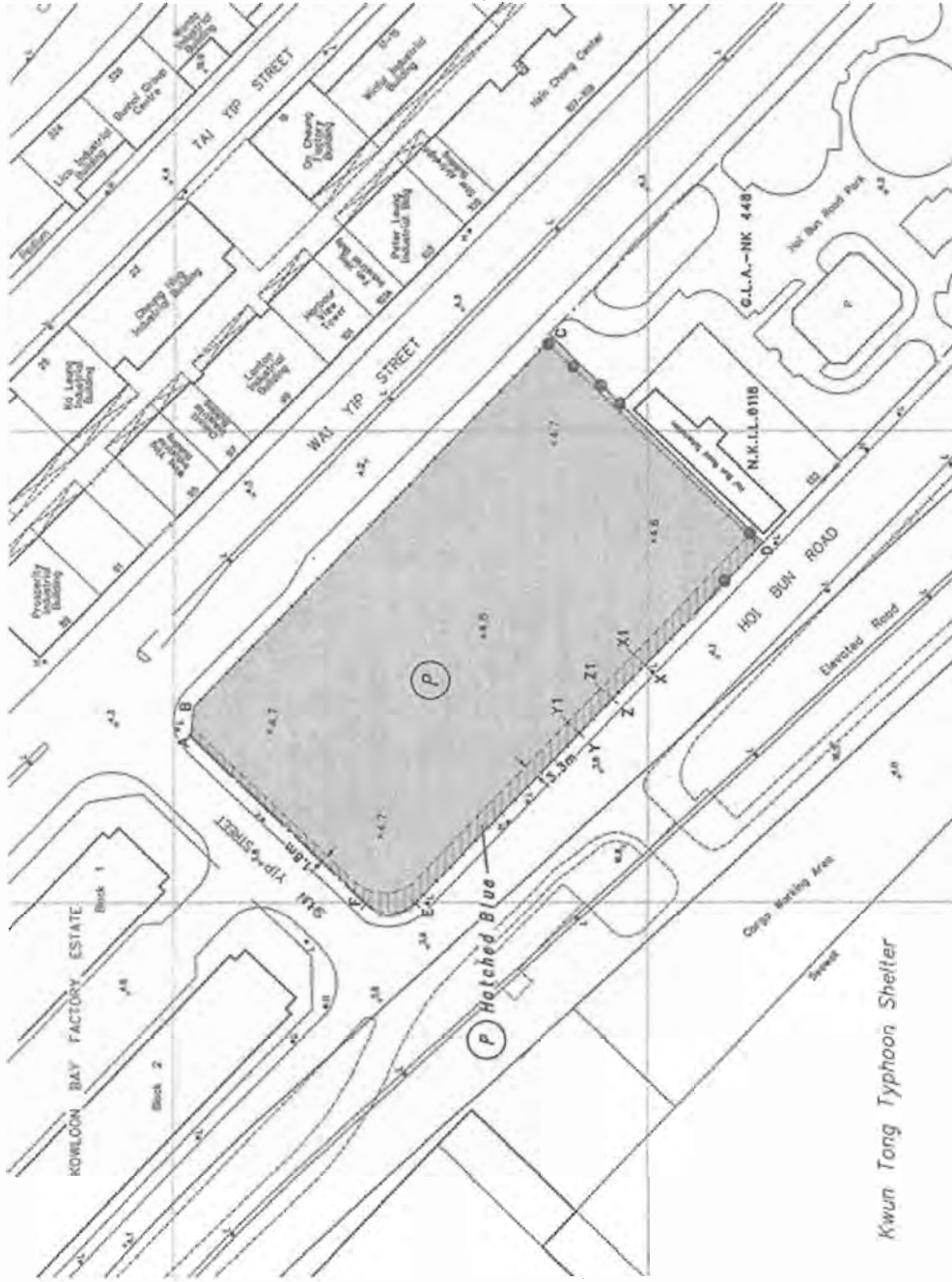
X, Y, Z

X1, Y1, Z1

SPECIAL CONDITIONS REFER



TREE



COLOURED PINK AND PINK HATCHED BLUE AREA 7 083 SQUARE METRES (ABOUT)

METRES 20 0 20 40 60 80 100 METRES

DRAFT

District Survey Office, Kowloon
Lands Department

NEW KOWLOON INLAND LOT No. 6269

File No. 245/KPA/KE(A), DSO/K 149/96
 Survey Sheet No. 11-NE-170
 Layout Plan No. D/K14A/1E
 Reference Plan No.
PLAN No. KL4516a-Ca

Date : 30/06/2008

維多利亞港

VICTORIA HARBOUR



內地段 8920

I.L. 8920

NORTH POINT

ISLAND EASTERN CORRIDOR

東區走廊

北角

North Point

英皇道

KING'S ROAD

ELECTRIC ROAD

Fortress Hill

炮臺

配水庫 Ser Res

配水庫 Ser Res

寶西湖大廈

Braemar Hill Mansions

Ser Res

配水庫 Ser Res

銅鑼灣避風塘

Causeway Bay Typhoon Shelter

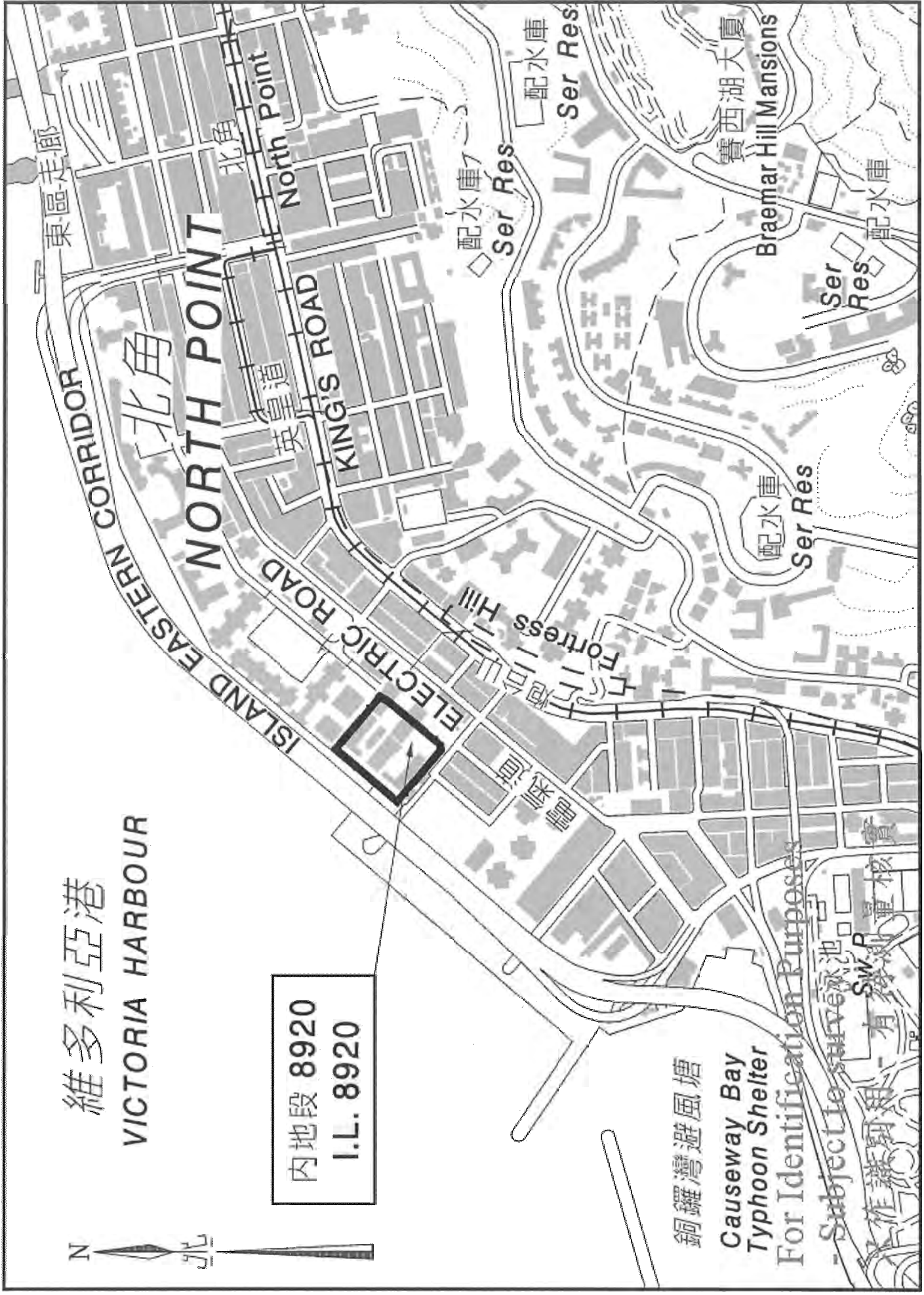
For Identification Purposes

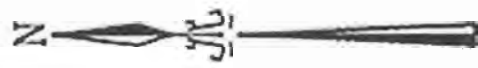
- Subject to survey

SWP

量核實

作識別用





維多利亞港
VICTORIA HARBOUR

For Identification Purposes

- Subject to survey

只作識別用 - 有待測量核實

內地段 9020
I.L. 9020

渡輪碼頭
Ferry Piers

北角

NORTH POINT

ISLAND EASTERN CORRIDOR

東區走廊

北角
North Point

KING'S ROAD

英皇道

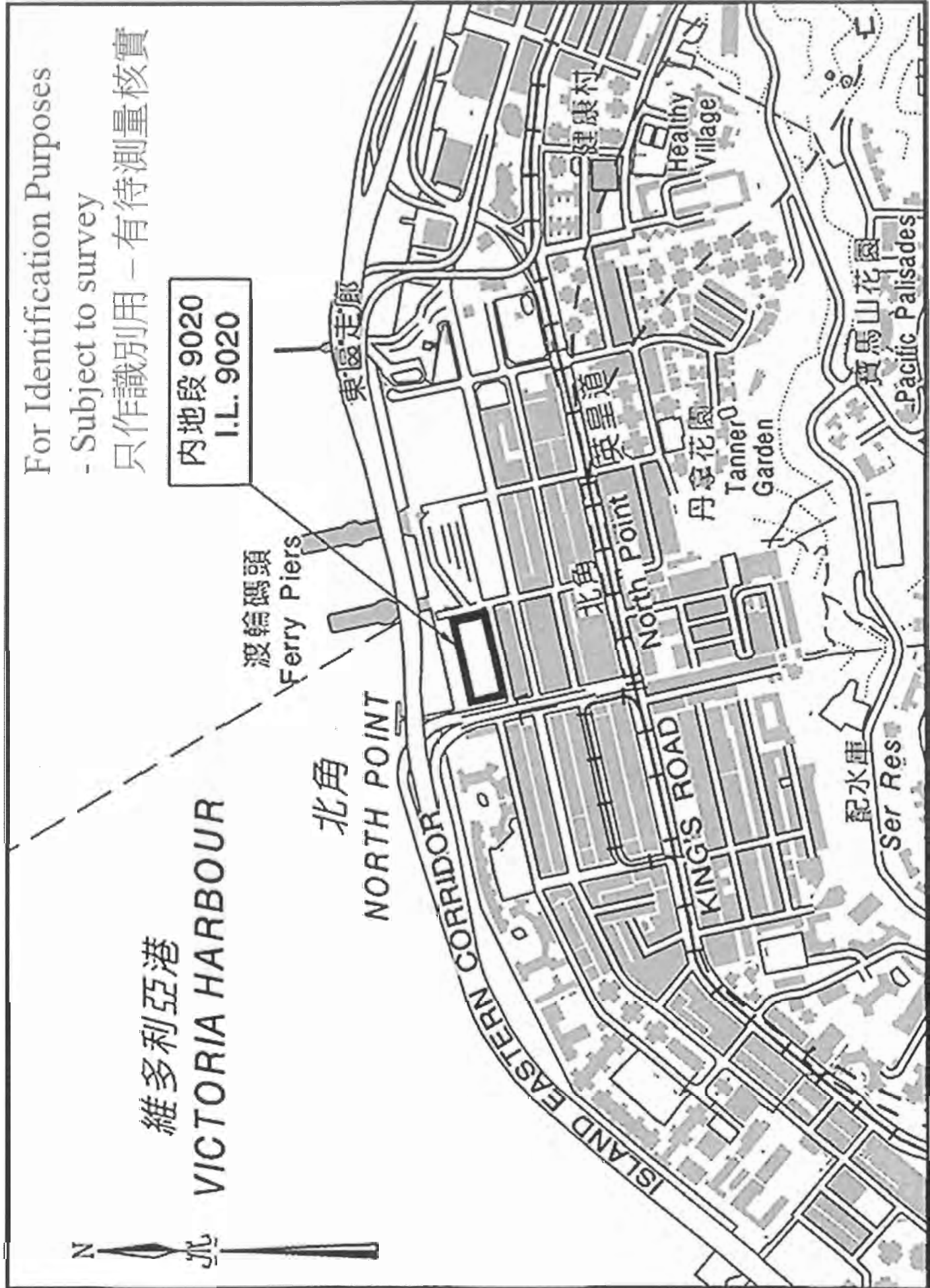
丹拿花園
Tanner's Garden

健康村

Healthy Village

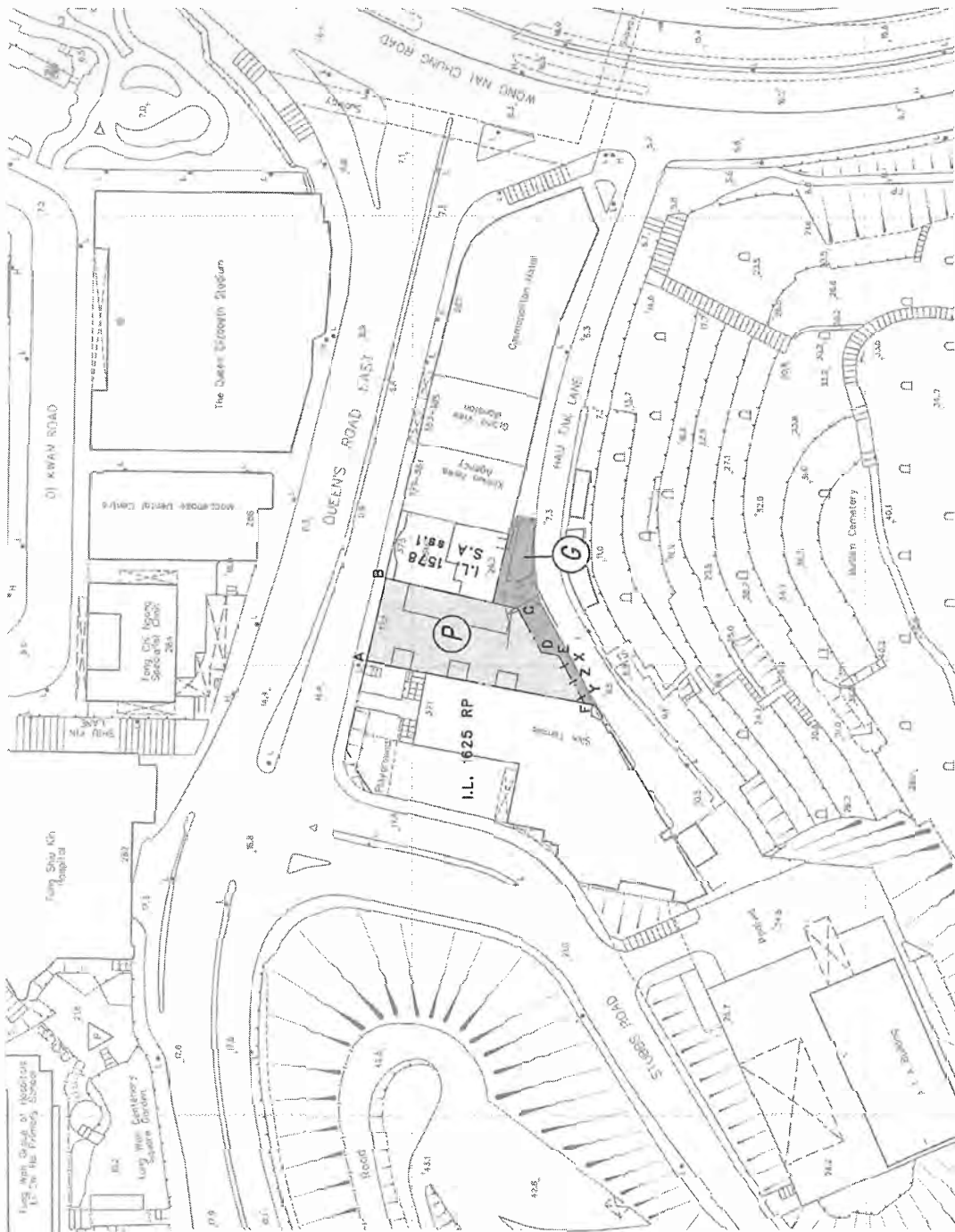
配水庫
Ser Res

寶馬山花園
Pacific Palisades





LOCATION



COLOURED PINK AREA 717.0 SQUARE METRES (ABOUT)

DRAFT

METRES 20 0 20 40 60 80 100 METRES

File No. DLO/HE L/M 98/NHPA/82
 Survey Sheet No. 11-SW-15A
 Layout Plan No.
 Reference Plan No.
PLAN No. HK5716-SP

INLAND LOT No. 8970

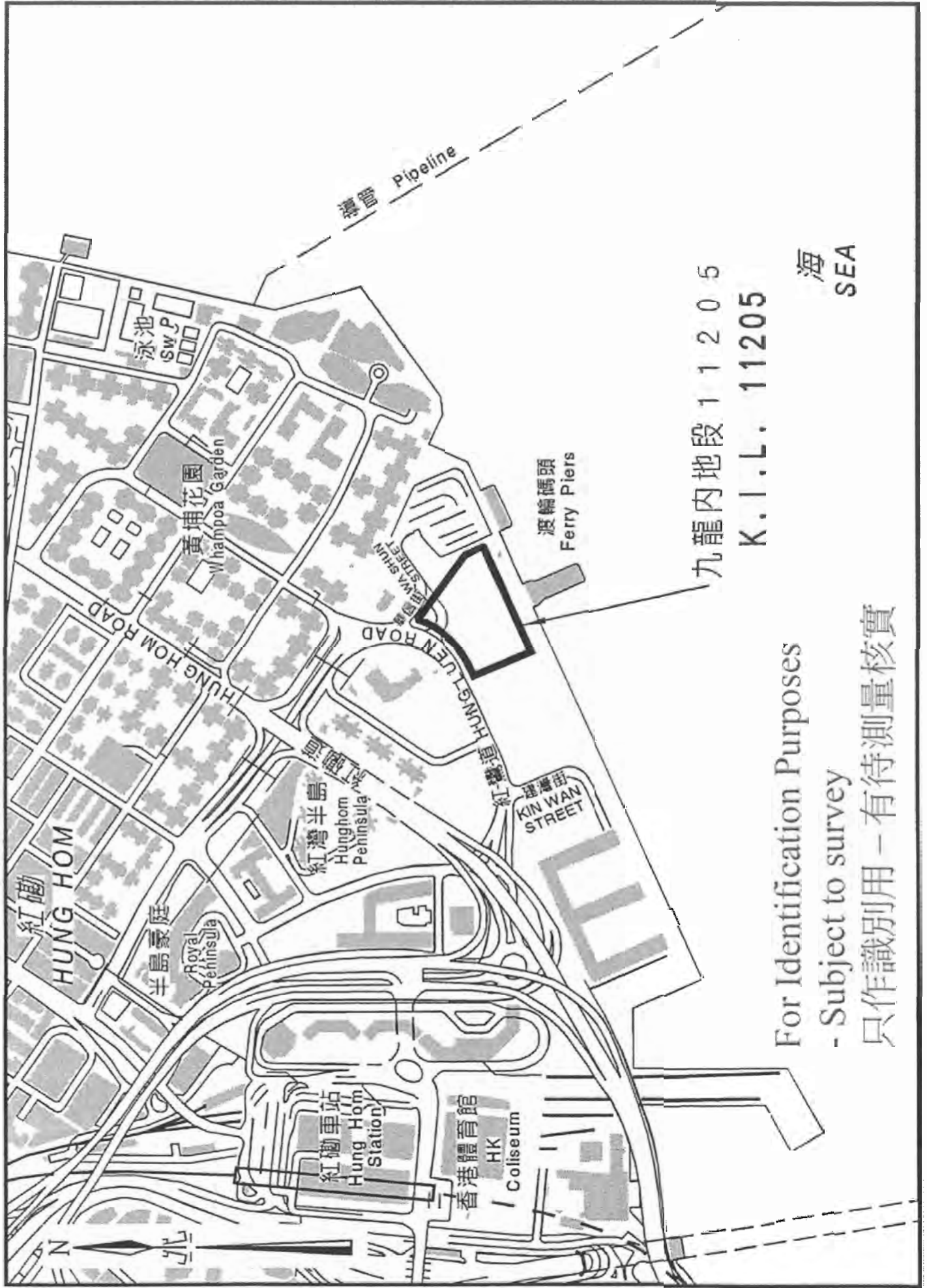
SIDE	DISTANCE IN METRES	BEARING ° ' "	PL.	CORNER MARKED BY
A B	18.851	103 03 80		
B C	29.584	193 09 80		
C D	10.939	241 30 17		
D E	3.888	190 59 00		
E F	12.000	241 30 17		
F A	48.989	10 59 00		



EXISTING WATER MAINS

District Survey Office, Hong Kong
 Lands Department





九龍內地段 11205

K.I.L. 11205

海
SEA

For Identification Purposes

- Subject to survey

只作識別用 - 有待測量核實



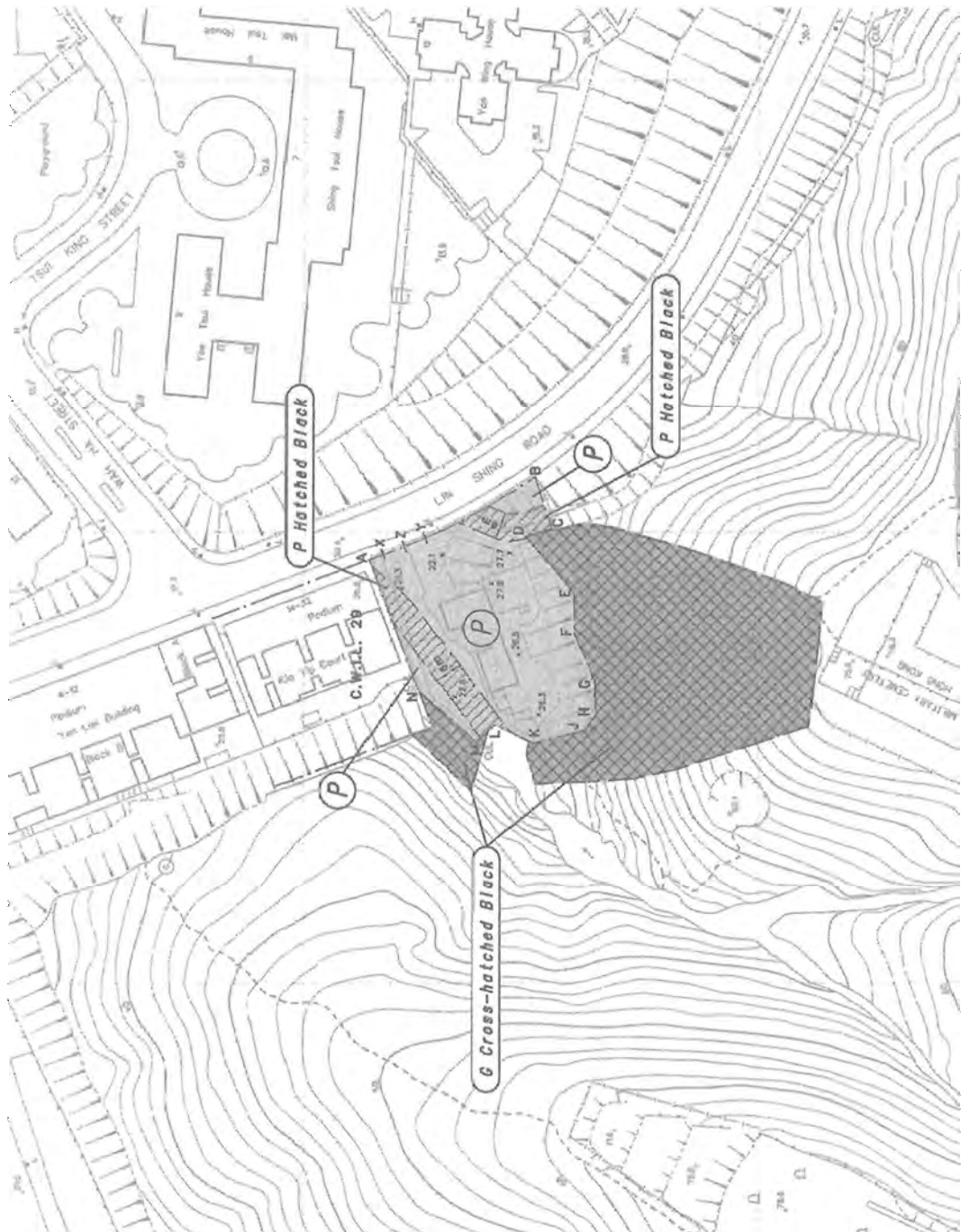
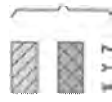
LOCATION



SCALE 1 : 20000

SIDE	DISTANCE IN METRES	BEARING	PT.	CORNER MARKED BY
Chord A B	40.927	153 10 59		
B C	15.121	251 48 03		
C D	5.108	344 00 27		
D E	15.015	329 14 29		
E F	5.005	208 55 03		
F G	11.089	248 07 27		
G H	7.301	209 44 28		
H J	3.000	308 34 00		
J K	11.522	346 08 36		
K L	5.236	25 48 26		
L M	5.422	317 40 51		
M N	16.842	41 40 05		
N A	31.080	89 00 30		

Curve Data
 Arc AB = 41.080m Radius = 143.810m Δ = 18°21'37"
 * 29.9 SPOT LEVEL IN METRES AS AT 28-02-2008



COLOURED PINK AND PINK HATCHED BLACK AREA 1 804.0 SQUARE METRES (ABOUT)

DRAFT

File No. DLO/NE L/M 52/EHPA/87 III
 Survey Sheet No. 11-SE-19C
 Layout Plan No.
 Reference Plan No.
PLAN No. HK5747-SPb

CHAI WAN INLAND LOT No. 175

District Survey Office, Hong Kong
 Lands Department

Date : 27/05/2008

LOCATION



SCALE 1 : 20000

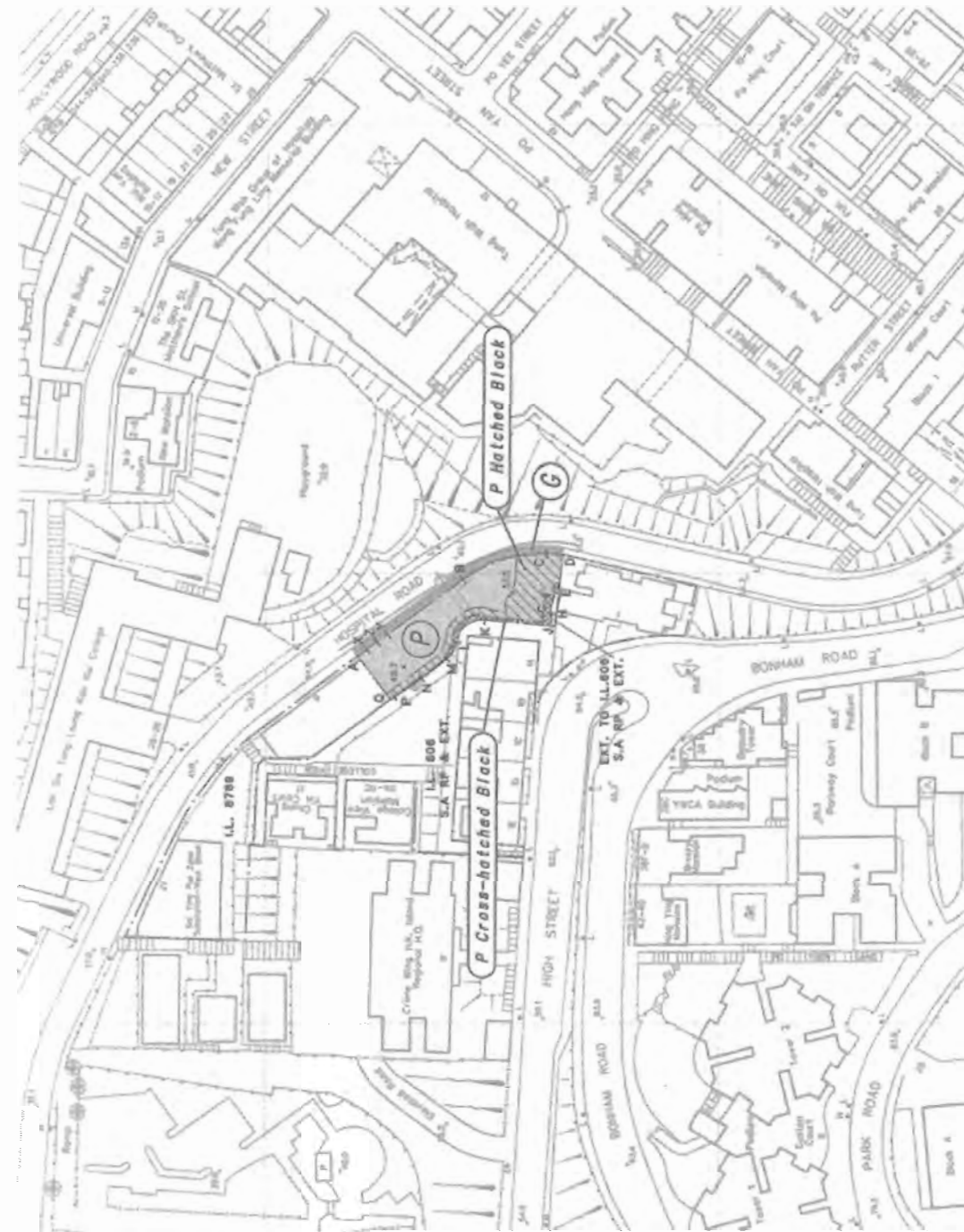
SIDE	DISTANCE IN METRES	BEARING	PI.	CORNER MARKED BY
A-B	28.728	143 28 48		
B-C	19.244	162 53 02		
C-D	3.753	132 04 40		
D-E	6.175	276 26 27		
E-F	1.089	238 40 08		
F-G	3.681	286 09 28		
G-H	1.022	248 41 25		
H-I	2.311	274 41 48		
I-J	16.705	8 08 27		
J-K	7.869	251 15 21		
K-L	4.366	238 43 49		
L-M	6.886	232 05 27		
M-N	7.274	325 27 27		
N-O	6.851	325 58 22		
O-A	12.090	08 52 41		

CURVE DATA			
Area BC	18.405m	Radius	29.252m
Area CD	5.781m	Radius	5.728m
Area DE	4.471m	Radius	5.728m

± 51.6 SPOT LEVEL IN METRES AS AT 18/01/2006



GOVERNMENT WATER MAINS



COLOURED PINK, PINK HATCHED BLACK AND PINK CROSS-HATCHED BLACK AREA, 573.4 SQUARE METRES (ABOUT)

DRAFT

File No. DLO/HW L/M 71/NHPA/82
 Survey Sheet No. 11-SW-8A
 Layout Plan No.
 Reference Plan No. RH1059B
PLAN No. HK4828-SP

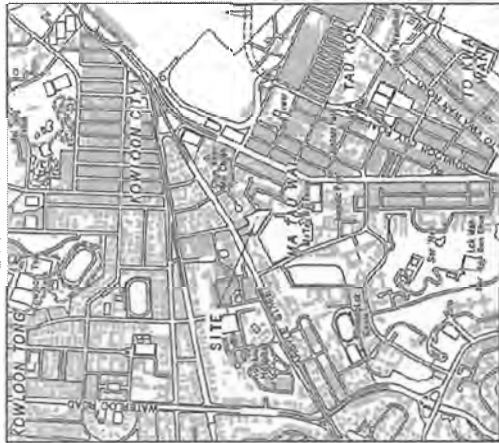
INLAND LOT No. 8872

District Survey Office, Hong Kong
 Lands Department





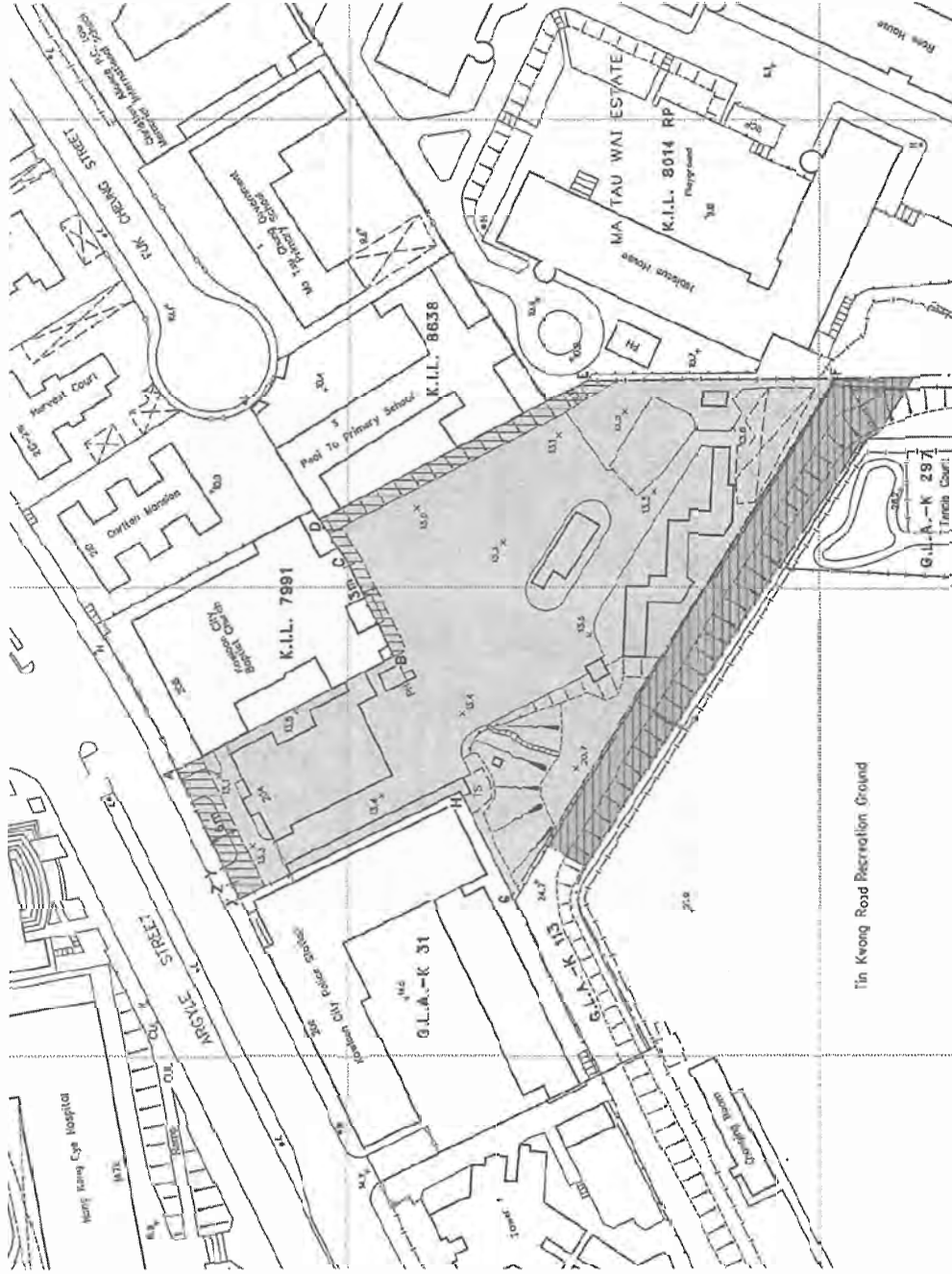
LOCATION



SCALE 1 : 20000

SIDE	DISTANCE IN METRES	BEARING	PT.	CORNER MARKED BY
X A	35.422	65 18 30		
A B	51.617	52 08 51		
B C	51.416	63 54 43		
C D	11.711	57 37 17		
D E	85.872	152 15 30		
E F	55.698	178 28 18		
F G	125.887	201 48 57		
G H	24.887	64 02 18		
H X	51.745	332 53 17		

X 18.3 SPOT LEVEL IN METRES AS AT 24-04-2006



COLOURED PINK AND PINK HATCHED BLACK AREA 7 326 SQUARE METRES (ABOUT)

DRAFT

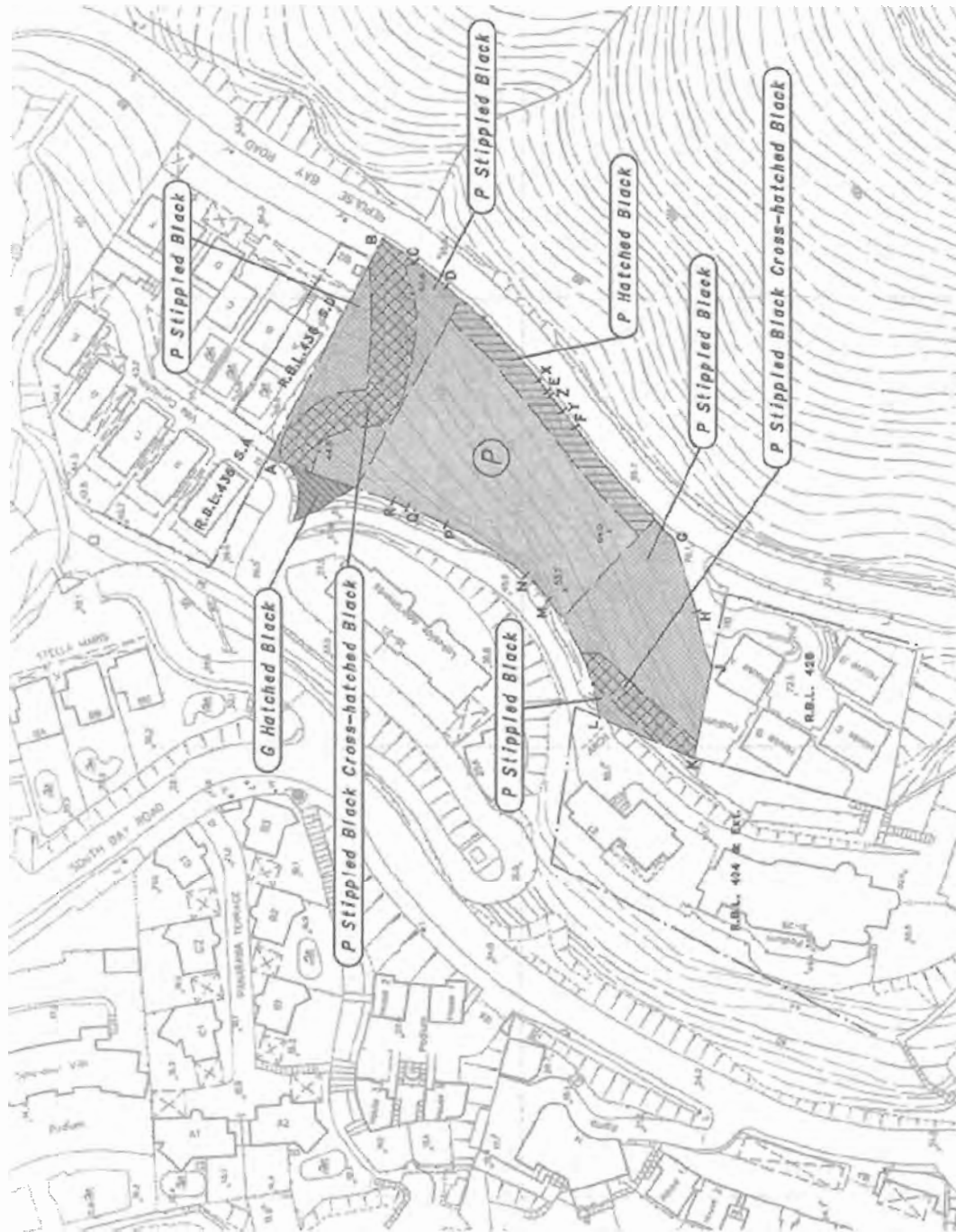
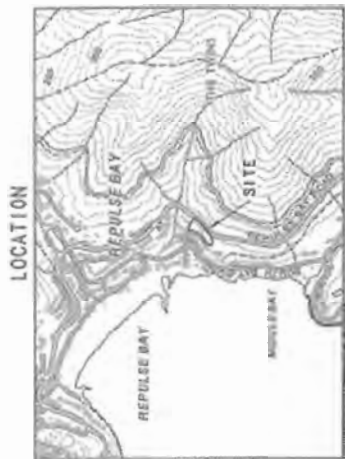


KOWLOON INLAND LOT No. 11125

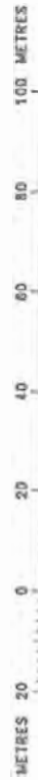
File No. DSO/K 098/99, 86/KPA/KW(P)
 Survey Sheet No. 11-NW-150
 Layout Plan No. S/K10/19
 Reference Plan No.
 PLAN No. KL4930-SP_DRAFT2

District Survey Office, Kowloon
 Lands Department

Date : 14/04/2006



COLOURED PINK, PINK HATCHED BLACK, PINK STIPPLED BLACK AND
PINK STIPPLED BLACK CROSS-HATCHED BLACK AREA 4 250 SQUARE METRES (ABOUT)



DRAFT

X 15.1 SPOT LEVEL IN METRES AS AT 20/02/2004



SIDE	DISTANCE IN METRES	BEARING ° ' "	PT.	CORNER MARKED BY
A B	54.703	117 17 30		
B C	6.337	218 12 23		
C D	6.598	118 07 26		
D E	32.170	325 55 40		
E F	10.340	332 43 53		
F G	23.185	228 18 06		
G H	16.895	332 47 34		
H I	13.644	254 52 18		
I J	20.482	181 07 35		
J K	22.708	23 38 31		
K L	28.406	66 41 07		
L M	7.562	48 08 30		
M N	30.661	32 25 44		
N O	6.091	24 46 00		
O P	2.509	22 13 21		
P A	58.583	19 38 32		

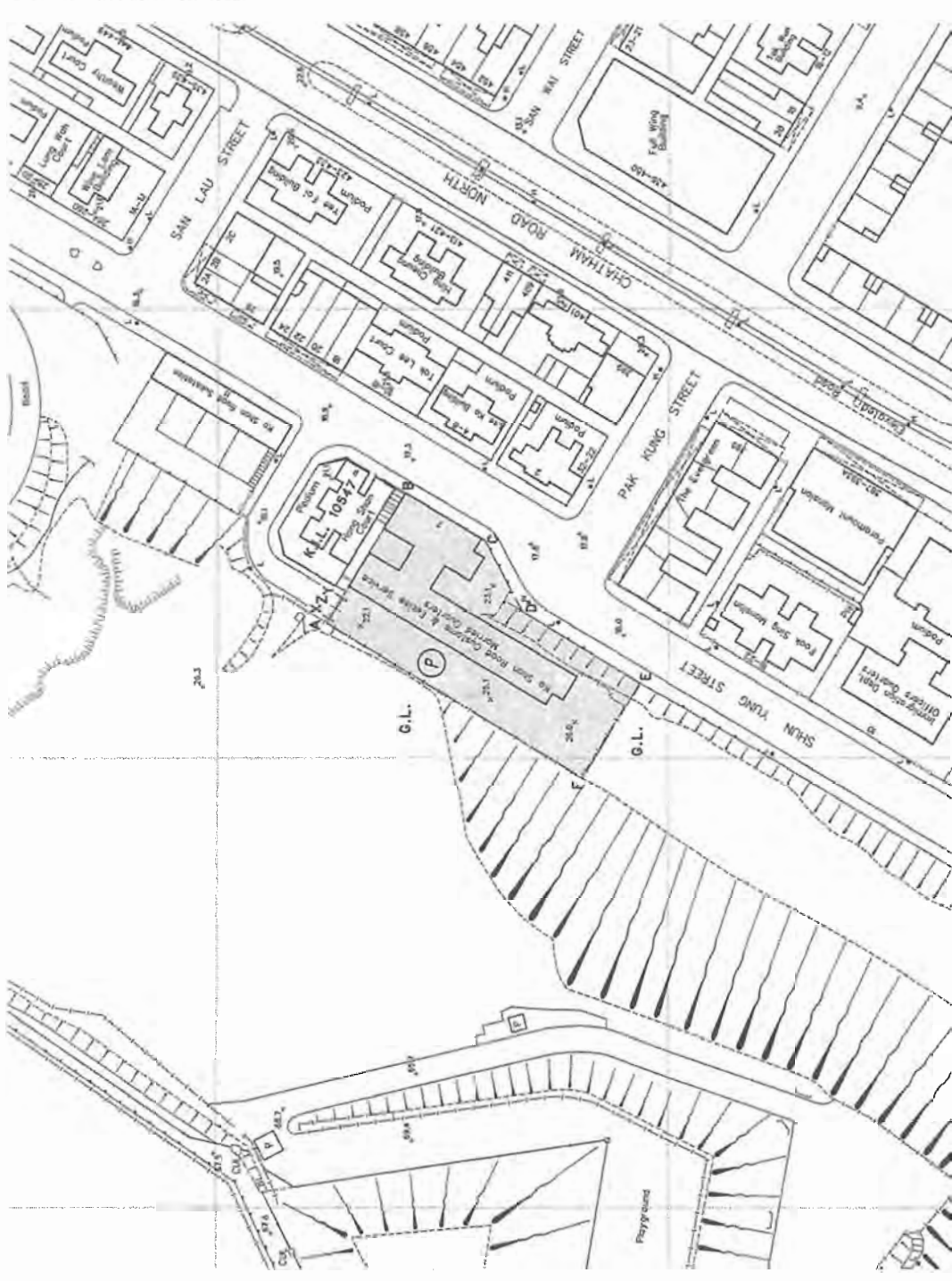
CURVE DATA	
Are DE	32.246m Radius = 135.780m Δ = 15°35'29"
Are FG	33.183m Radius = 214.677m Δ = 08°51'27"
Are HI	15.086m Radius = 45.345m Δ = 16°32'12"
Are LM	28.210m Radius = 56.805m Δ = 28°15'13"
Are MN	7.877m Radius = 35.725m Δ = 12°09'40"
Are NP	21.093m Radius = 78.217m Δ = 13°17'10"
Are OP	3.518m Radius = 59.246m Δ = 08°07'30"

District Survey Office, Hong Kong
Lands Department

RURAL BUILDING LOT No. 1165

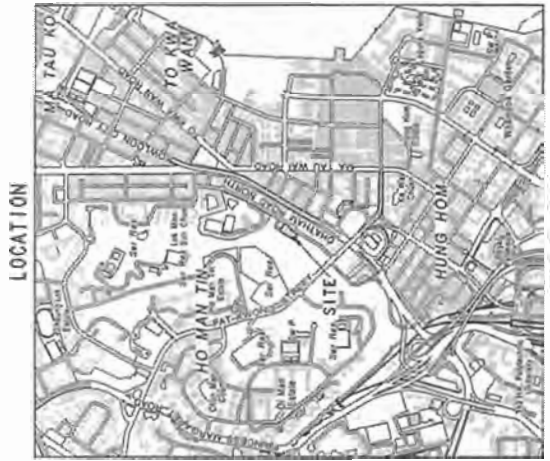
File No. DL0/HS L/M 85/SHPA/82
Survey Sheet No. 15-NE-6B
Layout Plan No.
Reference Plan No.
PLAN No. HK5490-SPb

Date : 07/05/2008



COLOURED PINK AREA 1 901.7 SQUARE METRES (ABOUT)

DRAFT



SCALE 1 : 20000

SIDE	DISTANCE IN METRES	BEARING	P.L.	CORNER MARKED BY
A B	33.831	120 54 00		
B C	20.728	210 59 20		
C D	17.611	242 31 21		
D E	30.753	211 38 08		
E F	24.589	200 59 20		
F A	66.437	31 18 10		

X 25.1 SPOT LEVEL IN METRES AS AT 11-03-2006

X.Y.Z SPECIAL CONDITIONS REFER

File No. LD 050/K 085/2005, 117/KPA/KW(P)
 Survey Sheet No. 11-NW-20D
 Layout Plan No. S/K9/18
 Reference Plan No.
PLAN No. KL5685-SP

KOWLOON INLAND LOT No. 11184

District Survey Office, Kowloon
 Lands Department



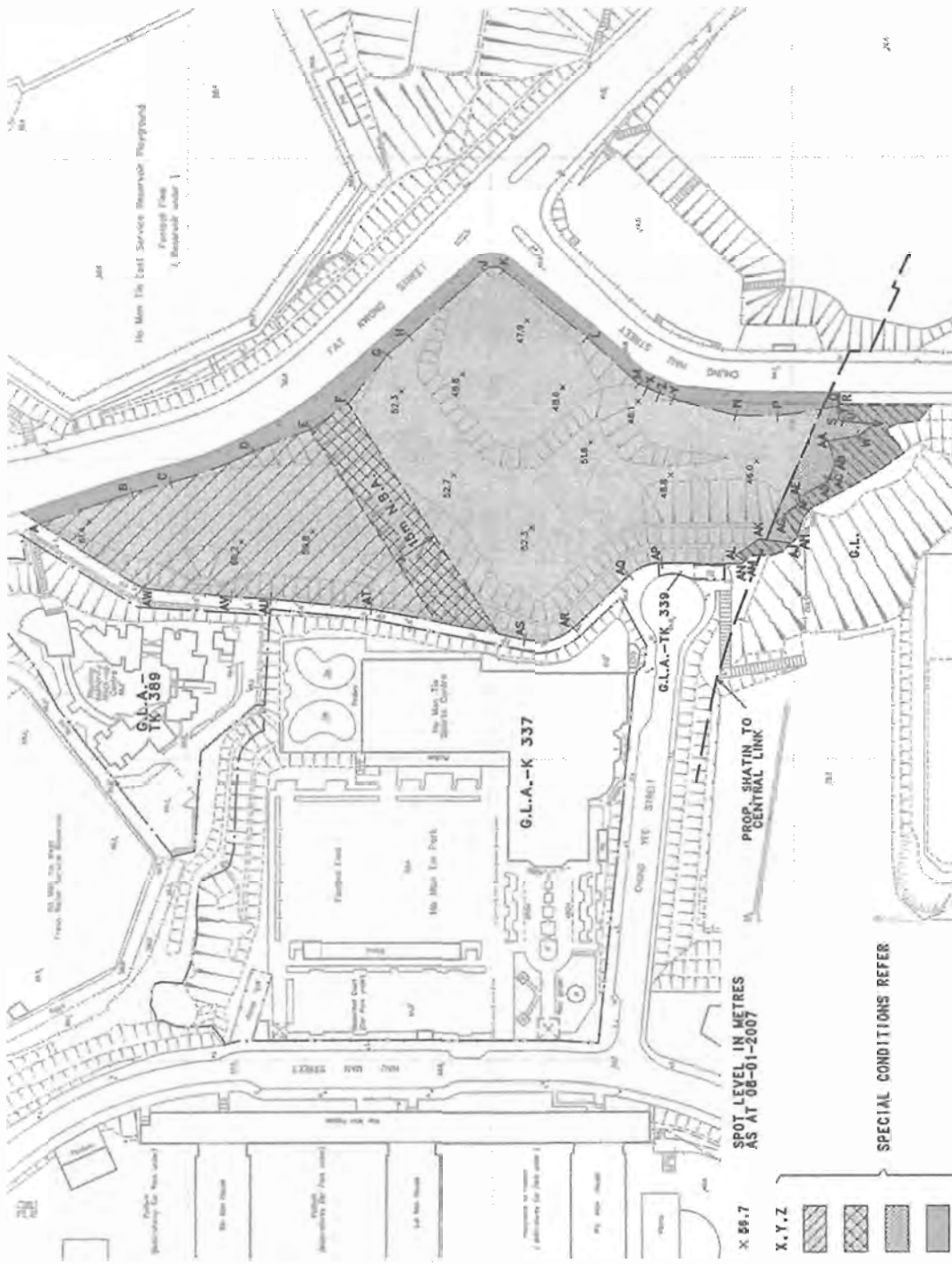
LOCATION



SCALE 1 : 20000

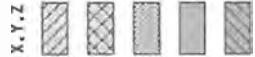
SIDE	DISTANCE IN METRES	BEARING	PT.	CORNER MARKED BY
A B	32.133	161 22 34		
B C	13.489	165 20 32		
C D	29.015	159 30 14		
D E	20.878	168 40 30		
E F	14.452	143 58 20		
F G	20.877	139 12 11		
G H	9.528	139 07 01		
H J	33.284	138 49 16		
J K	6.202	178 01 04		
K L	35.797	218 12 57		
L M	23.140	238 05 53		
M Y	12.255	203 16 27		
Y H	91.498	194 18 58		
H P	13.903	190 37 28		
P O	20.282	171 23 41		
O R	0.698	190 38 22		
R S	4.388	274 55 16		
S T	1.452	192 13 26		
T U	0.455	205 54 29		
U V	10.133	185 21 23		
V W	8.404	333 42 03		
W A A	10.313	300 16 08		
A A B	7.977	252 27 48		
B A C	6.248	291 58 08		
C A D	0.958	307 18 31		
D A E	12.629	330 33 28		
E A F	1.848	341 48 40		
F A G	5.839	305 02 34		
G A H	6.680	237 48 16		
H A J	3.083	316 03 03		
J A K	10.508	8 07 48		
K A L	9.708	328 28 28		
L A M	3.674	213 41 24		
M A N	1.288	320 12 33		
N A P	26.424	1 05 53		
P A Q	11.695	338 57 14		
Q A R	25.143	316 46 25		
R A S	16.895	344 08 38		
S A T	51.808	11 28 40		
T A U	32.970	6 08 16		
U A V	13.052	4 00 34		
V A W	29.533	5 20 54		
W A X	40.226	32 20 11		

CURVE DATA
 Arc CD = 28.080m Radius = 142.437m Δ = 11°40'31"
 Arc DE = 6.742m Radius = 4.302m Δ = 90°23'40"
 Arc ADAG = 11.981m Radius = 10.500m Δ = 44°17'18"
 Arc ADAS = 17.051m Radius = 18.500m Δ = 34°40'04"



SPOT LEVEL IN METRES AS AT 08-01-2007

SPECIAL CONDITIONS REFER



COLOURED PINK, PINK HATCHED BLACK, PINK CROSS-HATCHED BLACK AND PINK STIPPLED BLACK AREA TO 151 SQUARE METRES (ABOUT)

DRAFT



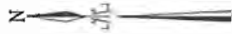
KOWLOON INLAND LOT No. 11175

District Survey Office, Kowloon
 Lands Department

File No. DSO/K 158/2004, T14/KPA/KWP(P)
 Survey Sheet No. 11-NW-20C.20D.25A.25B
 Layout Plan No. S/K7/19
 Reference Plan No. M/K7/07/16, M/K7/08/138
PLAN No. KL5514-SP_DRAFT4

Date : 09/07/2005

LOCATION



SCALE 1 : 20000

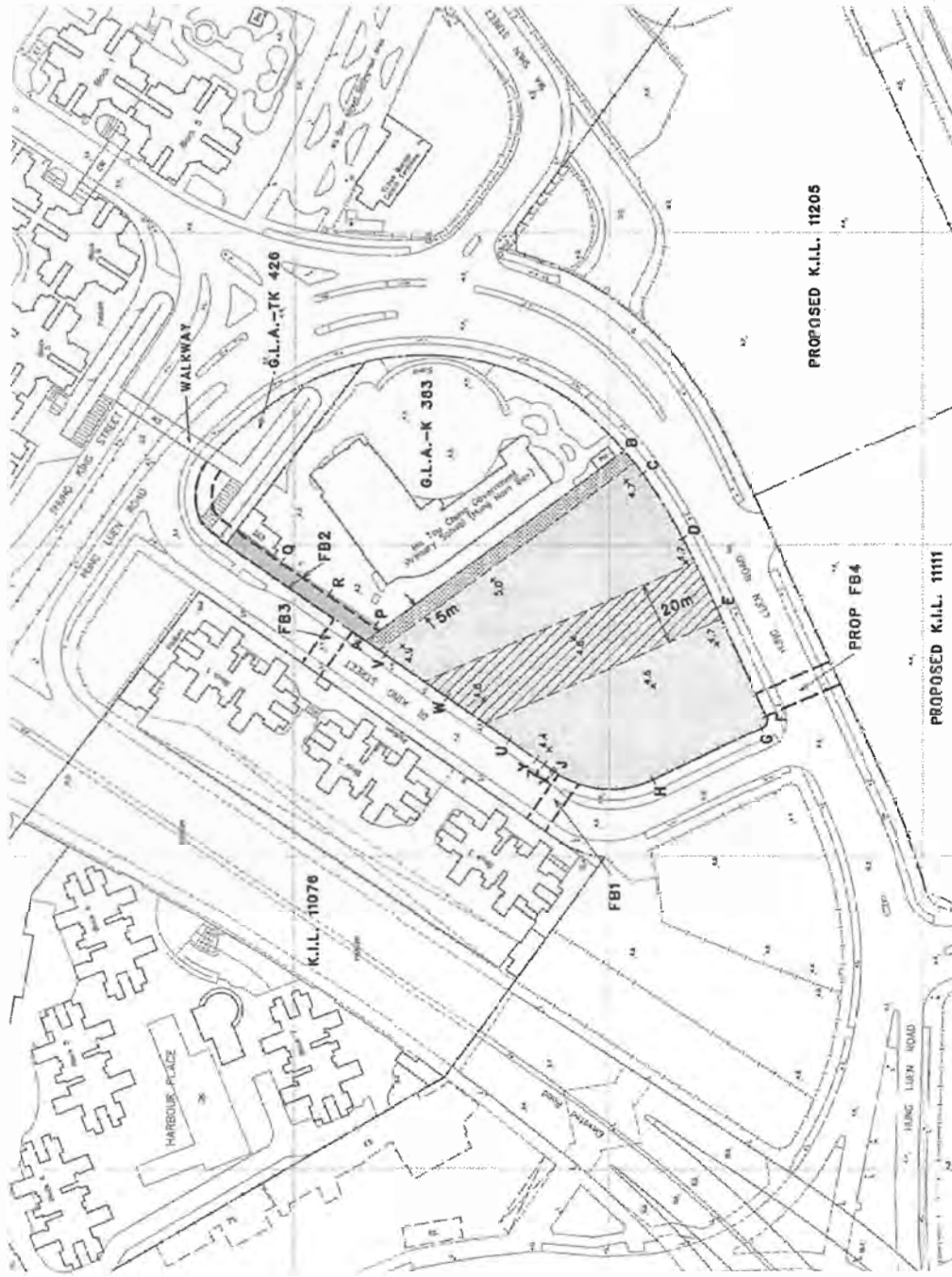
SIDE	DISTANCE IN METRES	BEARING	PT.	CORNER MARKED BY
A B	102.397	143 30 26		
Curve A	9.339	231 28 44		
B C	24.311	238 04 37		
Curve B	24.860	243 51 05		
E F	37.887	245 29 43		
Curve C	4.186	289 54 10		
G H	39.501	334 17 32		
Curve D	31.043	4 39 23		
J A	73.022	35 01 00		

CURVE DATA			
Arc BC	9.3111	Radius = 102.177m	$\Delta = 4^{\circ}04'20''$
Arc CD	24.332m	Radius = 106.858m	$\Delta = 8^{\circ}15'23''$
Arc DE	24.864m	Radius = 432.811m	$\Delta = 3^{\circ}17'27''$
Arc FG	4.660m	Radius = 3.000m	$\Delta = 88^{\circ}47'38''$
Arc HJ	33.364m	Radius = 31.800m	$\Delta = 60^{\circ}43'19''$

X 4.4 SPOT LEVEL IN METRES AS AT 03-10-2008

- X 4.4
- P, Q, R
- U, V, W
- X, Y, Z

SPECIAL CONDITIONS REFER



COLOURED PINK, PINK HATCHED BLACK AND PINK STIPPLED BLACK AREA 7 551 SQUARE METRES (ABOUT)

DRAFT

File No. D50/K 213/2003, L/M 131/KPT/KW(P)
 Survey Sheet No. 11-NW-250
 Layout Plan No. S/K9/21
 Reference Plan No. S333/SK/044A, S333/SK/044B, S333/SK/044C, S333/SK/044D
 PLAN No. KL5483-SP_DRAFT4

KOWLOON INLAND LOT No. 11120

District Survey Office, Kowloon
 Lands Department



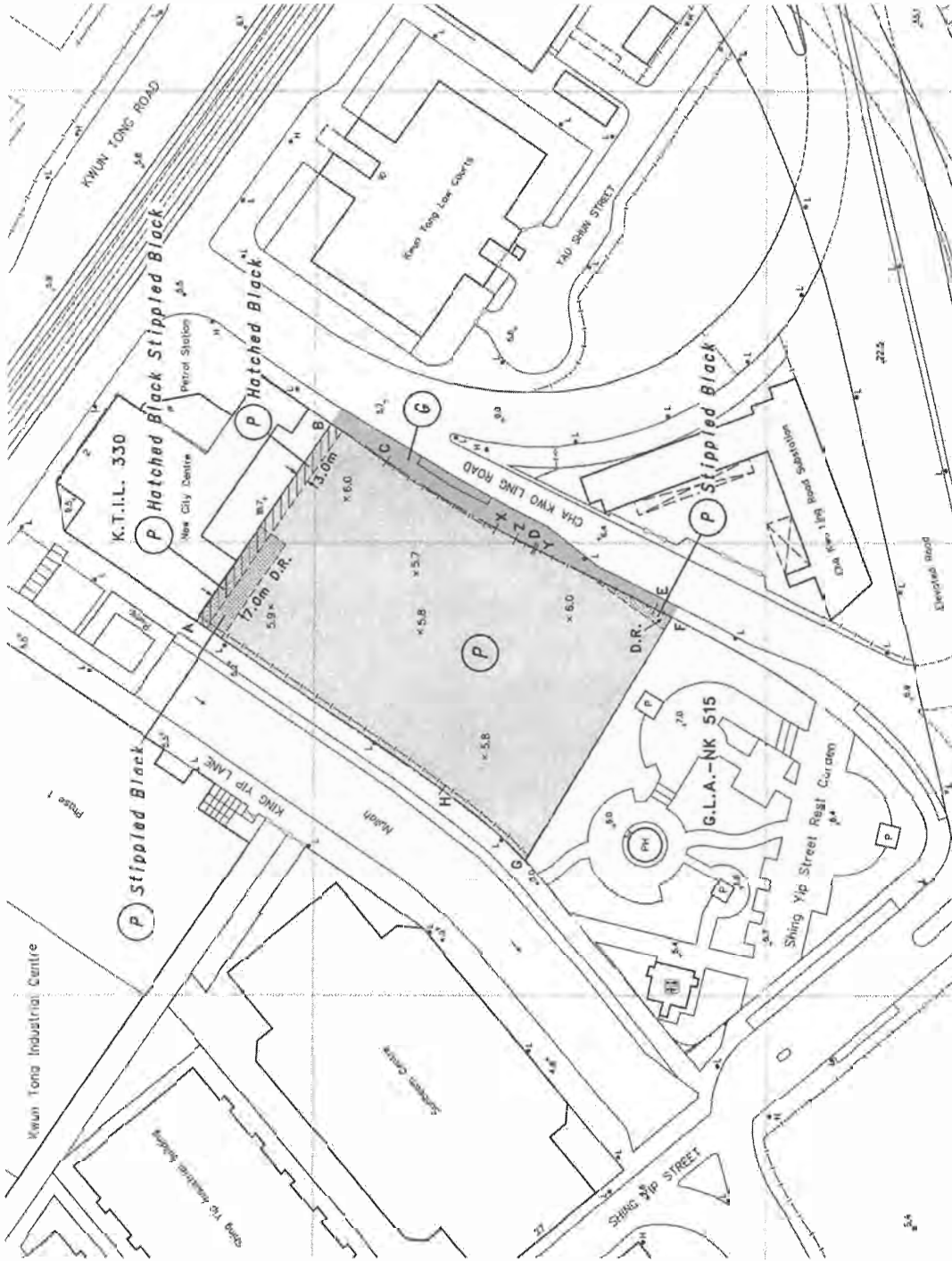


SCALE 1 : 20000

SIDE	DISTANCE IN METRES	BEARING	PT.	CORNER MARKED BY
A.B.	92.680	124°29'50"		
B.C.	14.764	216°27'30"		
Chord C.D.	37.834	210°18'42"		
D.E.	30.081	208°00'04"		
Chord E.F.	4.244	208°16'33"		
F.G.	63.009	301°13'50"		
Chord G.H.	23.879	10°44'18"		
H.A.	89.200	34°28'50"		

CURVE DATA		
Arc CD	= 37.870m	Radius = 251.670m Δ = 8°37'30"
Arc EF	= 4.244m	Radius = 428.184m Δ = 8°34'04"
Arc GH	= 24.027m	Radius = 109.426m Δ = 15°34'51"

x5.8 SPOT LEVEL IN METRES AS AT 30-01-2008
D.R. DRAINAGE RESERVE



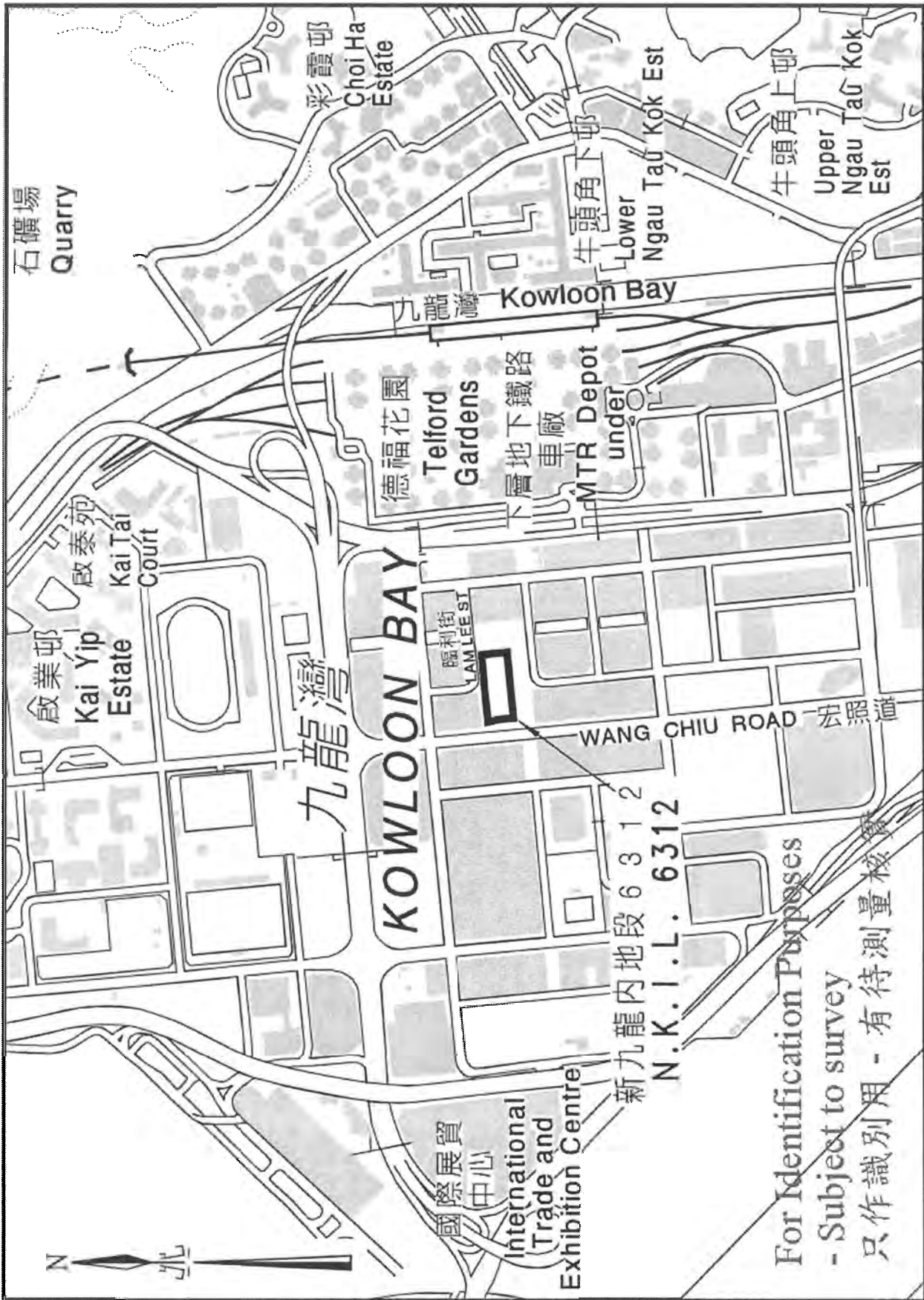
COLOURED PINK, PINK HATCHED BLACK, PINK STIPPLED BLACK AND PINK HATCHED BLACK STIPPLED BLACK AREA 4 878 SQUARE METRES (ABOUT)

DRAFT

File No. (20) in LD L/M 235/KPA/KE
Survey Sheet No. 11-NE-23B
Layout Plan No.
Reference Plan No.
PLAN No. KL3838-SP4_DRAFT2

NEW KOWLOON INLAND LOT No. 6195

District Survey Office, Kowloon
Lands Department



For Identification Purposes
- Subject to survey
只作識別用 - 有待測量核實

LOCATION



SCALE 1 : 20000

SIDE	DISTANCE IN METRES	BEARING	PL.	CORNER MARKED BY
A B	3.475	38 13 20		
B C	15.988	85 13 40		
C D	4.720	117 12 47		
D E	28.411	175 09 21		
E F	7.548	85 08 21		
G H	61.875	158 05 18		
H I	25.890	181 01 25		
I J	0.788	140 07 40		
J K	80.381	280 15 45		
K A	109.558	353 13 00		

Area FD = 52.012m² Radius = 204.981m Δ = 14° 32' 15"

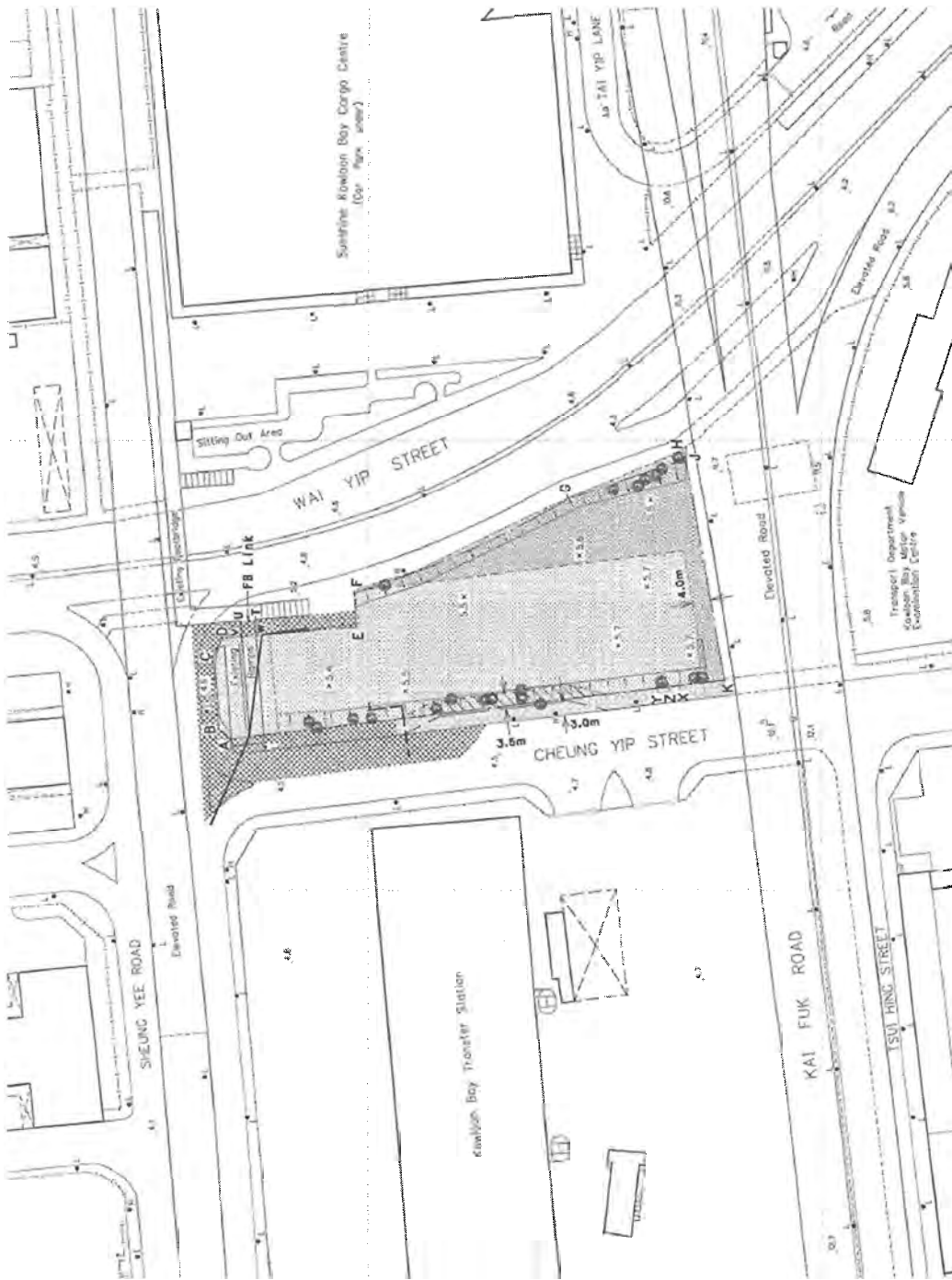
0.0 0.5 1.0 SPOT LEVEL IN METRES AS AT 21-10-2005

Y.W SPECIAL CONDITIONS REFER

X.Y.Z

- PROPOSED LAYOUT
- EXISTING SALT WATER MAINS
- EXISTING STORM WATER DRAIN
- TREE

- CODE FOR COLOURS REFERRED TO ON PLAN
- PINK
 - PINK STIPPLED BLACK
 - PINK HATCHED BLUE
 - GREEN
 - GREEN STIPPLED BLACK



COLOURED PINK, PINK STIPPLED BLACK AND PINK HATCHED BLUE AREA 3 795 SQUARE METRES (ABOUT)

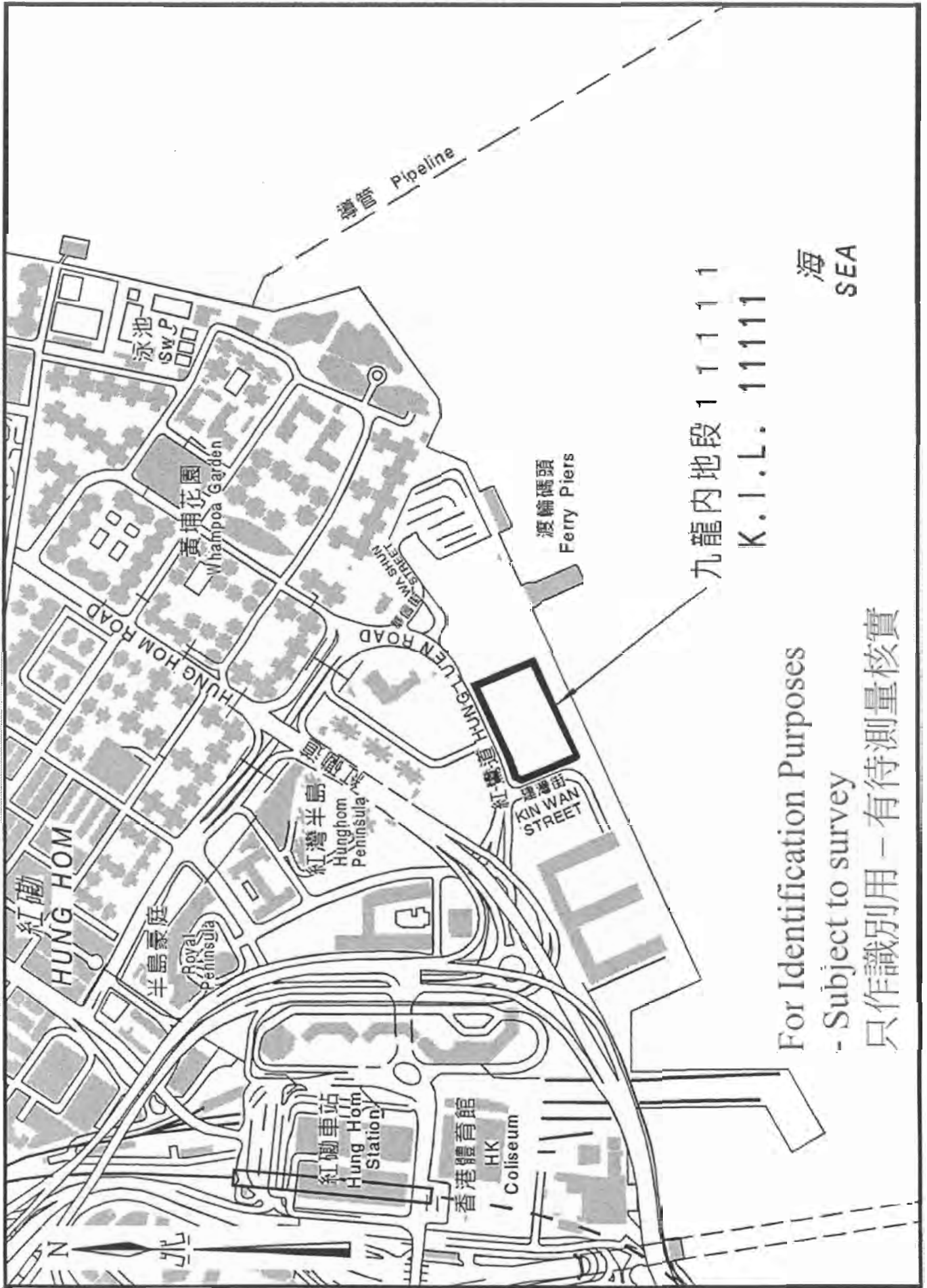
METRES 20 0 20 40 60 80 100 METRES

DRAFT

NEW KOWLOON INLAND LOT No. 6313

District Survey Office, Kowloon
Lands Department

File No. LD DSO/K 109/99, 253/KPA/KE(A)
Survey Sheet No. 11-NE-17B
Layout Plan No.
Reference Plan No.
PLAN No. KL5244-SPo



九龍內地段 1 1 1 1 1 1

K.I.L. 111111

海
SEA

For Identification Purposes

- Subject to survey

只作識別用 - 有待測量核實

Appendix 3

Case Studies:

- (a) Hung Hom
- (b) North Point
- (c) Sham Shui Po

Appendix 3: Case Studies

a) Hung Hom

- a.1 Hung Hom is a densely developed area. The area has been identified as one of the urban areas that are experiencing serious heat island effect¹.
- a.2 Hung Hom is typical of the evolution of the urban area in Hong Kong, where smaller buildings in the older area are surrounded by taller and denser development located at the fringe of an existing community or at the newly formed waterfront.
- a.3 The oldest inner area to the west of Po Loi Street is characterized by development built some 50 years ago with basically no public open space at all. To the east of this oldest area are Whampoa Estate and Whampoa Garden which were built some 20 to 30 years ago. Their heights were restrained by the then Airport Height Restriction and the provision of open space is also limited. The more recent developments are Laguna Verde, The Harbourfront and those on the Hung Hom Bay Reclamation. These new developments surround the older neighbourhood affecting air ventilation of the inner area.
- a.4 The air ventilation and heat island problems are a result of development pattern described above and the under provision of open space in the area². To solve the problems by piecemeal improvement in the form of setback and greenery within private sites is by no means an effective and efficient way as gradual redevelopment of the existing properties will take a long time. A quick way to solve the problems is take a bold step to change government land to open space or low-rise G/IC uses.
- a.5 As mentioned in Section 6, a review of land sales sites (attached as Appendix 2) has been undertaken based on the following 5 criteria.

¹ Hung Hom, North Point and Sham Shui Po are some of the areas identified as having heat island effect. *Developers urged to undo their damage – Mapping team acts to turn down the city heat, SCMP, 6 October 2009*

² The Hung Hom OZP Planning Area has a planned population of 147,640, and with a planned open space provision of 13.4ha. The open space deficit is 16.128ha calculated on the basis of 2sqm/person in accordance with HKPSG.

Would the development of the site:-

1. Add to the wall effect;
2. Block air ventilation gaps;
3. Remove opportunities for greening and open space in high density area;
4. Negatively impact Harbourfront areas; and
5. Unnecessarily increase density in the neighbourhood?

a.6 Three Government sites at the waterfront of Hung Hom Bay³ (**Figure A3.1** refers) have been assessed and recommended to be removed from the land sales list. These sites are therefore proposed for open space. The quality of the neighbourhood would be significantly improved. A large Hung Hom Bay Waterfront Park, probably with terraced garden to accommodate a PTT, could be developed together with the adjacent planned open space. The proposal would help open up the dense urban area and allow southerly and easterly sea breeze to penetrate into the urban fabric.

a.7 As the Hung Hom OZP Planning Area has a serious open space deficit of 16.128ha, even with this proposed change providing an additional, open space in the Planning Area is still under provision, though it will help ease the deficit by about 3 ha. **Figure A3.2** shows a conceptual diagram for the proposed Hung Hom Bay Waterfront Park.

³ The Government sites include K.I.L. No. 11120, K.I.L. 11111 and K.I.L. No.11205 on the land sales list.

b) North Point

- b.1 North Point is a densely populated area on Hong Kong Island. Property development has largely been guided by the street pattern which is characterized by streets running parallel to the coastline. The number of streets perpendicular to the coastline is significantly less resulting in limited corridors for sea breeze to enter into the dense urban area. It is therefore not surprising that the area is also experiencing heat island problems.
- b.2 It appears from the outline zoning plan provision, that North Point has an open space deficit of only 3.11ha⁴. However, the largest open spaces in the Planning Area are far away from the core North Point area. For example, Victoria Park is located in Causeway Bay and Choi Sai Woo Park is uphill. They are unable to cater for the daily needs of the residents living in the core North Point area.
- b.3 As in the case of Hung Hom, a quick way to solve the heat island problem is to change government land to open space. The ex-North Point Estate which is currently vacant, is considered suitable for such purpose.
- b.4 Even though only part (I.L. 9020) of the ex-North Point Estate site (**Figure A3.3** refers) is on the land sales list at present, a similar assessment has been applied to the whole ex-North Point Estate site. The whole site has been assessed all "Yes" against the 5 criteria. Converting the site to a park, partly terraced to accommodate a PTT underneath, will help open up the dense urban area and allow northeasterly sea breeze to penetrate into the urban fabric. **Figure A3.4** shows a conceptual park for the site.
- b.5 The conversion of the whole ex-North Point Estate site to a park will add about 3ha open space to the Planning Area, barely sufficient to address the deficit.

⁴ The North Point OZP Planning Area has a planned population of 188,000, and with a planned open space provision of 34.49ha. The open space deficit is 3.11ha calculated on the basis of 2sqm/person in accordance with HKPSG.

c) Sham Shui Po

- c.1 Sham Shui Po is a high density area with many of the buildings built some 50 years ago. **Figure A3.5** is an aerial photograph showing the closely knitted grid of buildings in the area.
- c.2 Sham Shui Po is covered by the Cheung Sha Wan Outline Zoning Plan. The planned population of the planning area is about 250,000, but with a provision of open space of only 26.79ha. The open space deficit within the planning area amounts to 23.21ha. In addition, the provision has included many small land parcels (see **Figure A3.6**). These small pieces, many of which are bound by roads, offer limited recreational and amenity value to the public.
- c.3 A district park is considered necessary to help address the large open space deficit in the Planning Area. As a concept, it is proposed that a linear park be developed by resuming properties between Maple Street and Wong Chuk Street from Bedford Street to Berwick Street (**Figure A3.7** refers). The existing land owners would be compensated in the usual manner and where appropriate re-housing provided in accordance with Government's usual policies and procedures.
- c.4 The new linear park would link the existing Tung Chau Street Park and the Maple Street Playground and extend further to the knoll at the northeast forming a green corridor for the dense urban area. The alignment of the park would also allow for the southwesterly and northeasterly winds to enter into the dense urban fabric to improve air quality and ventilation, and to lower the city heat.
- c.5 **Figure A3.8** shows the conceptual Sham Shui Po Linear Park. The implementation of the park would ease the open space deficit in the Planning Area by about 2.6ha.

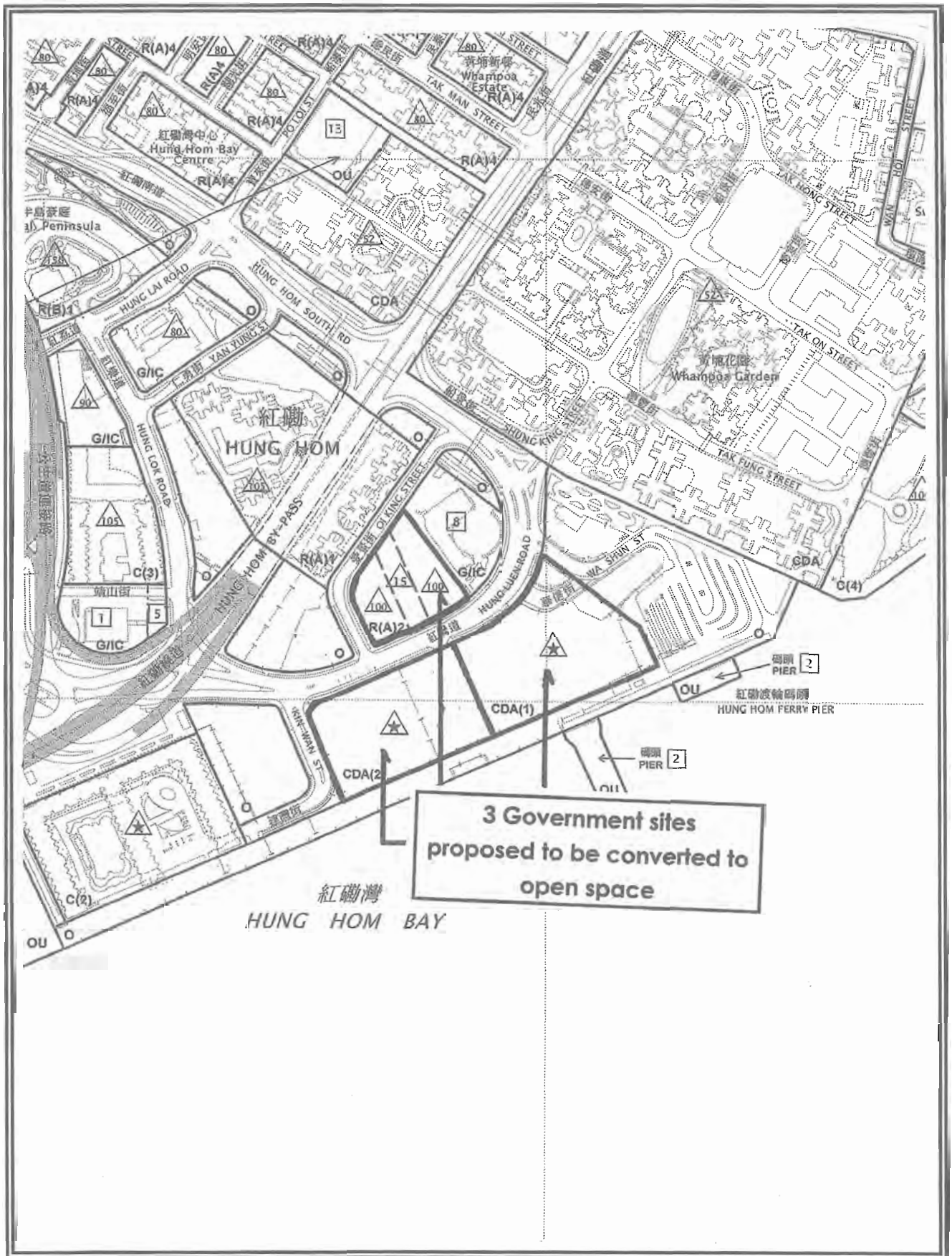


Figure A3.1: Three Government sites on Hung Hom Bay shown on the Hung Hom Outline Zoning Plan



Hung Hom CDA Development

Image based on Government Proposal of Hung Hom Study



Proposed Conceptual Hung Hom Waterfront Park

Figure A3.2: Conceptual Diagram of Property Development on CDA sites vs Waterfront Park at Hung Hom Bay



ex-North Point Estate Property Development

Image based on controls in Planning Brief prepared by Planning Department for Town Planning Board



Proposed Conceptual North Point Waterfront Park

Figure A3.4: Conceptual Diagram of Property Development vs Waterfront Park at ex-North Point Estate

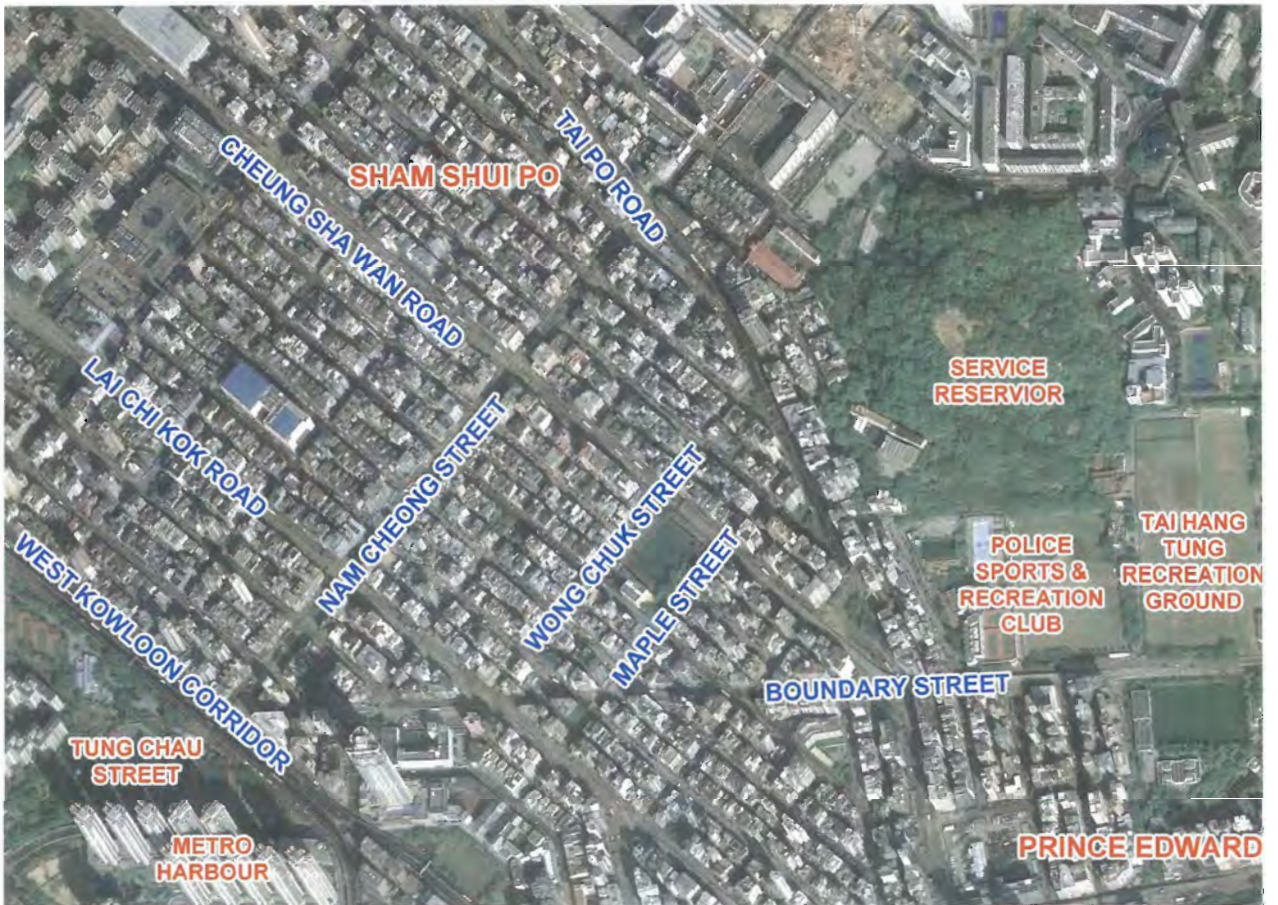


Figure A3.5: Aerial Photograph of Sham Shui Po

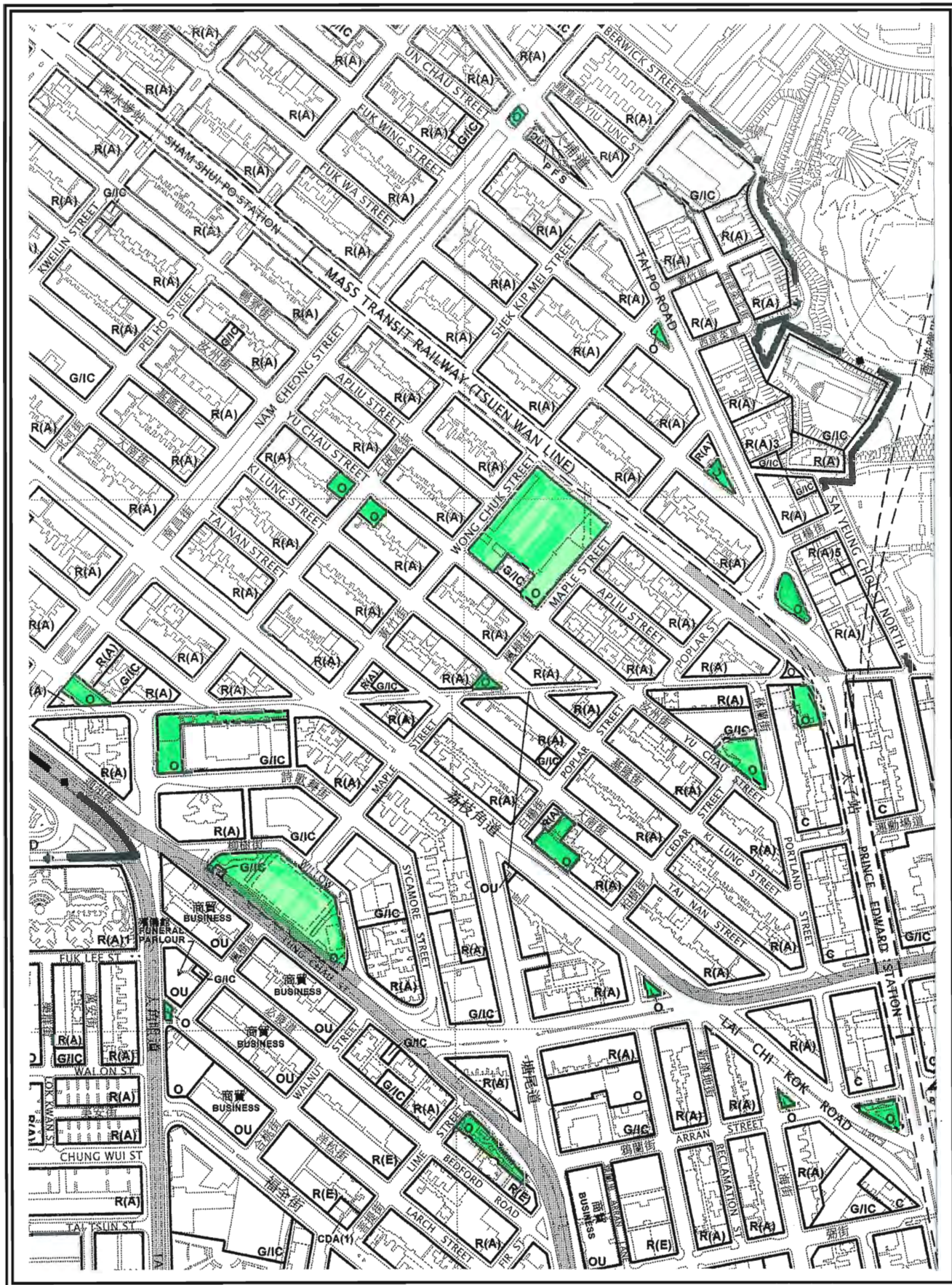


Figure A3.6: Small land parcels of open space colored green scattered in Sham Shui Po

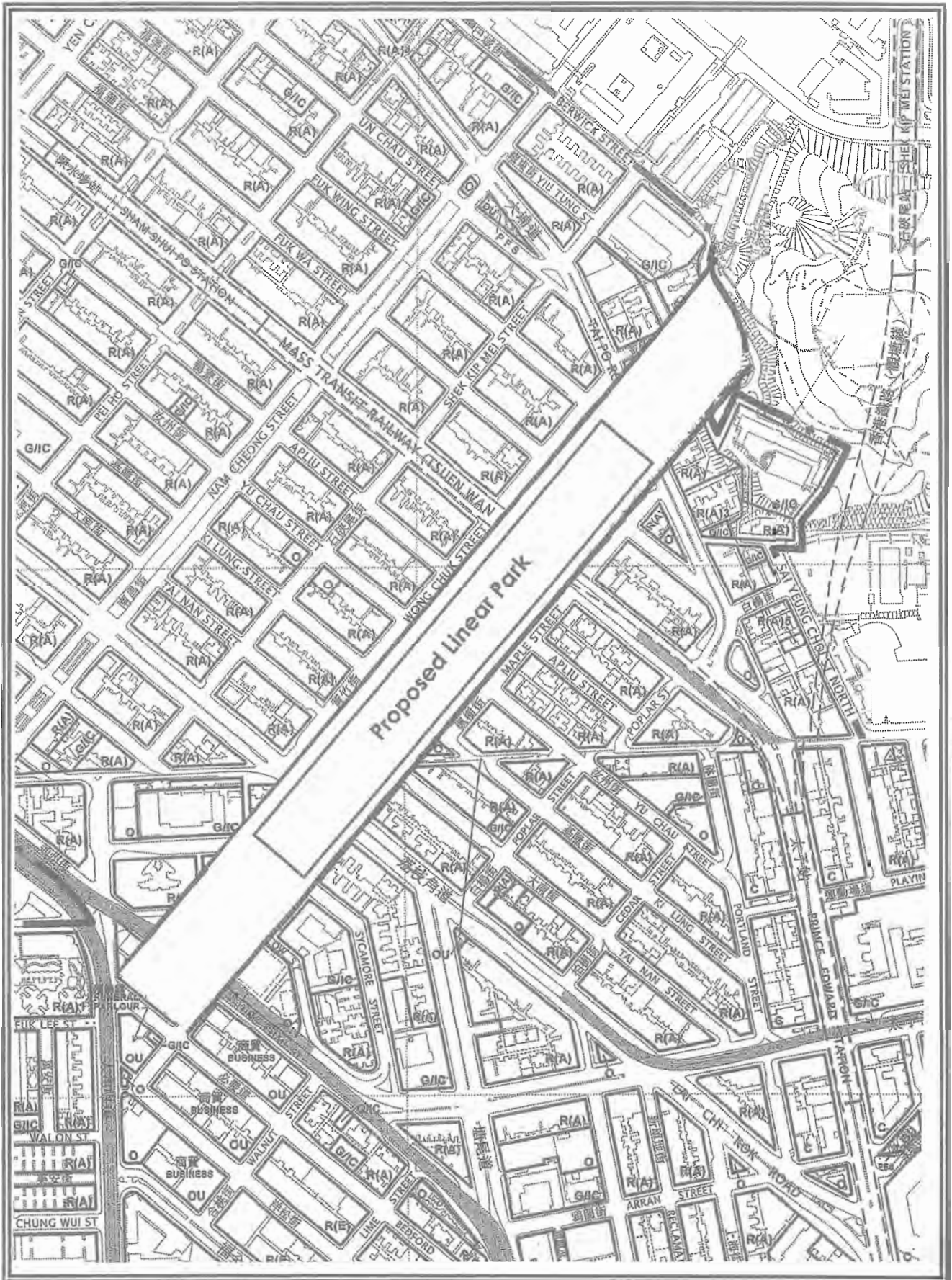


Figure A3.7: A Possible Location of the Conceptual Sham Shui Po Linear Park



Figure A3.8: Conceptual Diagram of Sham Shui Po Linear Park

Appendix 4

Answering the Questions in the
Invitation to Response Document

Appendix 4: Answering the Questions in the Invitation to Response Document

- 1 In this Appendix, the many points raised in the main text are brought together to address the specific questions raised in the IRD. In doing so, it is important to stress the inadequacies of the approach that have been identified, and the way that these could be considered. Also there is no conceptual framework within which the IRD can be considered and the need for a Sustainable Development Strategy for Hong Kong is an urgent matter.

Matters of Principle

- 2 There are significant matters of principle that relate to the discussion of building a quality and sustainable built environment and these provide a fundamental framework:-

Protection of Property Rights

- 3 The ownership of private property is a fundamental component of Hong Kong society and a very important part of the economy. Any measure which may impact on that private right of ownership needs to be considered carefully, and only implemented if no alternative is available. Alternatives include the use of resumption by Government to buy back land because it is in the public interest to do so, and the use of incentives.

Society is Demanding a Better City

- 4 It is clear that Hong Kong people are demanding a better environment to live, work and play in. Only a small portion of these demands can be met in the construction of new buildings by the private sector. The majority of these demands for an improved environment relate to the public sector and the use of the public realm. The main focus of action should be on improving the public realm so as to meet society's demands in a quicker and more effective manner.

Wise Use of Community Land Resources

- 5 Community land is the most important public resource and must be used sensibly and carefully. Sustainable Development calls for a long term approach to the use and management of land. Given the large deficit of open space provision in the Urban Area and the high concentration of buildings, serious consideration should be given to rezoning development sites to open space.

Address Known Problems and Anticipate Likely Change

- 6 There is wide international and local acceptance of issues which relate to the environment, most of which are supported by scientific studies and these include :-

- Global warming;
- Increasing heat island effect in urban areas;
- High levels of air pollution, particularly at street level;
- Increasing demand for energy;
- Demand for better housing and associated amenity; and
- An increasing public awareness of conservation and 'green' issues.

7 There should be a broad approach to addressing these known issues, as the causes and effects are multi-dimensional and cannot be effectively addressed by a simplistic approach.

An Efficient, Fair and Certain Development System

8 The development system should be efficient in the use of resources, fair to all participants and provide certainty to those who invest in it as either developers or end users. It should also provide a high quality product which is sustainable on a long term basis.

Government Determines Development Content

9 Land owners are required to develop buildings in accordance with the regulatory framework which is established by Government. Developers have no alternative but to build in accordance with the controls.

Need to Distinguish Areas

10 These principles are relevant to the following explanation:

New Areas and Old Areas

11 The IRD does not distinguish between New Development Areas such as Kai Tak, where Government can define the planning and layout of a whole district, and the existing built up areas where private ownership rights and existing buildings are serious constraints.

12 In New Development Areas, the Government is urged to take a Sustainable Masterplanning Approach to the planning and development of the areas so that specific objectives can be achieved. In these areas, the sale of land is subject to a set of new lease conditions and all parties will bid on an equal basis. In the Old Development Areas, the pace of change will be limited if it is only dependent on the private sector making improvements on a site by site basis. The government should not sell land that makes these problems worse, and must realise that there is a need to balance controls with incentives.

Different Character of Areas

13 Not all areas in Hong Kong have the same characteristics, and there is no recognition of this in the IRD. For instance, there needs to be different controls for podium development in areas with high commercial street

- frontage such as in Tsim Sha Tsui and Causeway Bay. The character of these areas needs to be retained, such as the almost continuous shopping frontage.
- 14 The approach can be different when considering lower density residential areas such as rural developments and the southern parts of Hong Kong Island where development is of a much lower density.
 - 15 In view of this the responses to the questions need to be different for different areas.

Responses to Questions in IRD

Characteristics that Define a Quality and Sustainable Built Environment:

a. **What do you consider to be the most important characteristics of a quality and sustainable built environment and why?**

This needs to be answered in the context of a Sustainable Development Strategy for Hong Kong. The framework that is required for a holistic consideration of the issues involved need to be clearly and logically established. Having done that, then specific and identifiable goals and targets can be established. These then provides a basis for the private and public sectors to work together to achieve the same ends but often in different ways.

The current approach of taking topics and focusing on isolated components is considered inappropriate.

b. **Should green and sustainable building design features be made mandatory?**

It is considered that the current system is generally operating effectively but could be modified and fine tuned. There needs to be a balance between those that are mandatory and those that are based on incentives. **There is a danger that the removal of incentives from old development areas will further remove the incentive to redevelop run down properties.** Given the large number of existing buildings this would create major problems. This question of incentives needs to be considered in the context of imposition of Height Restrictions and Plot Ratio Controls which have already significantly affected the rate of redevelopment.

It is considered that many of the features which are currently considered green features, but are regularly considered in new buildings could be made mandatory but they should be classified as "non-accountable or disregarded GFA" such as pipe ducts, larger lift shaft areas,, areas for building management and security purposes, wider common corridors, sunshades, acoustic fins, mail delivery room, wing walls, wind catchers and funnels. Air conditioning plant rooms, horizontal area of staircases and lift shaft through floors where GFA is disregarded.

By making these mandatory and by disregarding the GFA for these features, it is recognising that they are now becoming standard features in most buildings and should not require the exercise of discretion. Also, it provides certainty to the developer and to the general public as to what is considered necessary and desirable for a modern sustainable and well-managed building. It also minimises the exercise of discretion by the

regulatory authority allowing time to be spent on other matters which require more detailed consideration.

c. What are your views on the proposed guidelines for separation between buildings, setback of buildings abutting narrow streets, and provision of greenery according to site area?

The guidelines for separation were developed in the Buildings Department's study in relation to new development areas and are proposed as an alternative to a more desirable performance standard approach. There needs to be a process for exemption or modification if a performance standard approach is not adopted. It is considered that these guidelines cannot be applied to the built-up areas as the sites are generally too small. **These need to be applied by the Planning Department to the layout of a whole district, using the public roads and open space to provide the necessary separation, rather than relying on the private lot owners.**

The setback of buildings abutting narrow streets and in busy pedestrian areas is supported as long as the existing incentive system of bonus GFA is applied.

The provision of greenery according to site area is seen as problematic in areas of small sites and where there are streets with a commercial character. There needs to be an incentive system to provide greenery at ground level similar to that which exists for public passage. Provisions for green roofs and podiums of up to 20% on larger sites may be acceptable, as many buildings already accommodate such provision.

d. When considering a trade-off between the bulk and the height of a building, should we try to strike a balance of both, or give priority to one or other of the two aspects?

There is a confusion in the IRD that building height is a significant problem. However, when considering the intention to provide space between building height is not an issue. **The creation of space is more important. Therefore, there is no particular issue for building height as long as it meets the overall planning objectives which are being included on Outline Zoning Plans.** There is concern that the Building Height Restrictions in many areas have been set so low as to prevent the creation of space between buildings and this unintended consequence is a result of not addressing issues and proposing controls in a comprehensive manner.

e. Do you have any concerns related to the design of buildings and their ability to deliver a quality and sustainable built environment?

Hong Kong is a leader in the design and construction of high rise buildings. The developers and professionals are capable of producing buildings that meet the highest standards of design and quality. Not all developments will be of the highest standard as they will be designed and built to meet

different sectors of the market. The regulatory system however tends to discourage innovative and sustainable design features that are accepted as normal in other places. There is a need to adopt a more proactive approach and move towards a performance standard approach rather than a prescriptive approach. **The Buildings Ordinance provisions need to be revised and modernised.** A more coordinated approach needs to be adopted between the Buildings, Planning, and Lands Departments so as to achieve sustainable objectives.

The Conflict in Providing GFA Concessions for Desirable Environmental and Social Features and Controlling Tall and Bulky Buildings:

It is not accepted that there is a conflict between GFA concessions and tall and bulky buildings. The fundamental issue has arisen when the Government sells a new development site without including adequate controls on building height and development intensity.

- a. **How can we resolve the conflict that arises when we grant extra GFA for the provision of essential, green and amenity features in buildings, and the public concerns about building height and bulk?**

In all new development areas or where there is a height limit and or plot ration restriction there is no conflict. The restrictions can be set with the knowledge that there are exemptions permitted under the lease, Outline Zoning Plan and the Buildings Ordinance.

- b. **Should we continue to grant GFA concessions for such features? If yes, what should we do to control building height and bulk?**

GFA concessions are an integral part of most regulatory systems and when properly administered they do not create tall and bulky buildings. Height and bulk restrictions should be set on the Outline Zoning Plan and in the lease.

- c. **Are there any features you feel that should not be awarded with GFA concessions, and if so, why?**

None.

- d. **What other considerations or controls would you wish to see placed on the award of GFA Concessions?**

The system is very technical and difficult for the general public to understand. It would be better if less concessions were discretionary.

- e. **Should a limit (a cap) be placed on the total amount of GFA concession to be granted?**

Each concession is limited in scope and therefore the total is already 'capped' by the maximum permitted for each aspect. A cap is, therefore, not required. Each component has a beneficial effect and therefore one should not be discarded at the expense of another beneficial feature.

- f. Should GFA concession continue to be controlled administratively (i.e., as a discretionary power) or by a statutory (mandatory) requirement?**

It is preferable that most be provided by statute. However, there needs to be scope for a discretionary provision to exempt requirements where it is genuinely impossible to achieve or where through a performance standard approach a better design achieves the same purpose.

- g. Do you feel emphasis should be placed on other means to control building design such as alternative incentives and disincentives e.g. land premium adjustments, fiscal incentives/levies.**

There is no reason why these could not be applied in a systematic manner.

In Relation to Energy Efficiency:

These questions will be replied together.

- a. What energy efficient building design features should be encouraged and promoted?**
- b. How should such energy efficient building designs be promoted?**
- c. Should GFA concessions for green and amenity features also include concessions for energy efficiency or renewable energy features?**

There appears to be general community agreement that measures should be included to encourage the implementation of new buildings which are more energy efficient. The Government is already proposing legislation to require this to be incorporated into the building design. The manner in which the legislation requires this to take effect, and the monitoring system to be proposed during the life of the building, are matters which will need careful consideration.

There is a need to use both new regulations and new incentives as part of the package. The regulations will impose the minimum requirement but there should be incentives to go beyond the minimum, and they do not need to be GFA incentives. This will allow for changes in technology to be adopted.

There also need to be incentives to encourage the retro-fitting of old buildings to improve their energy performance. The ones which have been introduced so far are limited in scope and difficult to implement.

There may be a role for the URA in implementing these new provisions, similar to the 'Operation Building Bright' program. Incentives should be of a financial nature (tax concessions, rates, subsidies) and there are many overseas examples which show how this could be done.

Costs, Benefits and Willingness to Pay:

These questions over-lap so much that they will be replied as one.

- a. **How can wider appreciation and support for such measures be promoted in the building industry and among the general public?**
- b. **Do you believe that only features that will generate economic benefits should be included in buildings?**
- c. **Would you be willing to bear the additional recurrent cost of green features that provide environmental or social benefits?**
- d. **Are you willing to pay more for green or amenity features in buildings either through purchase or rental prices? For example if a flat costing HK\$6,500 per sq. ft. was to increase in price to accommodate the green features, by how much would you be willing to pay extra (nothing, 1%, 2%, 5%, 10%, more than 10%)**

The Government is about to implement mandatory provisions in new buildings to reduce energy usage. It is unsure why this topic was included in the consultation document as it is to be implemented in any case. The additional costs will be absorbed by the market. The long term savings in energy usage would be of advantage to the users of these new buildings. The more difficult issue which is not addressed is how to retrofit existing buildings, particularly those in multiple ownership. In these cases, a range of fiscal incentives may assist.

Way Forward:

Three possible scenarios: "Status Quo", "Moderate Change" and "Major Change" were introduced as possible approaches to address the issues laid out in the IR document. Which, if any, of these scenarios do you prefer? And why?

Urgent action is required to establish a Sustainable Development Strategy for Hong Kong so that a proper framework exists to consider the many alternative approaches that can be adopted. This document has outlined many of the other issues that the IRD has raised which are not part of the specific focus of the consultation. Only by establishing this framework can a full sustainable approach be taken in addressing the

over-riding issues. The need for this has been clearly indicated in previous Government studies and by the CSD. **It cannot be continually ignored.**

Once that framework is established it would then be appropriate to identify what measures need to be undertaken to address the clearly identified issues.

The present consultation has raised important questions but it has an underlying agenda of simply addressing current public concerns without finding the most effective and efficient way of solving the problems.

Appendix 5

References

Appendix 5: References

Anne B Frej, *Green Office Buildings: A Practical Guide to Development*, Urban Land Institute, 2005

Construction Industry Institute, statement from the Executive Board, *Research Summary: Green Building: Costs and Financial Benefits of Undertaking Green Building Assessments*, 2008.

Edward Ng, Ren Chao, Lutz Katzschner, Raymond Yau, "Urban Climatic Studies for Hot and Humid Tropical Coastal City of Hong Kong" in The Seventh International Conference on Urban Climate, 29 June - 3 July 2009, Yokohama, Japan

Lam C.Y., "On Climate Changes Brought About by Urban Living" in Hong Kong Meteorological Society Bulletin, Volume 16, Number 1/2, 2006, Hong Kong Observatory

Lau et al. "Relative Significance of Regional vs Local Sources: Hong Kong's Air Pollution" Civic Exchange, March 2007

Lai et al. "Should population exposures to air pollution in Hong Kong be estimated only on the basis of general monitoring stations?" (unpublished), June 2009.

Mortimer B, Cheng H. K., Chan A. K. K., *Report of the Independent Committee of Inquiry on the Grand Promenade Development*, 2006

Ronald Lu and Partners Limited, *Consultancy Study on Building Design that Supports Sustainable Urban Living Space in Hong Kong*, Buildings Department, 2009

Building Design to Foster a Quality and Sustainable Built Environment Invitation to Response Document 2009, Council for Sustainable Development, 2009

SCMP, *Developers urged to undo their damage – Mapping team acts to turn down the city heat*, 6 October 2009

LegCo Paper No. (CB(1)232/08-09(10)) "Measures to prevent new developments from creating a wall effect and reduce development intensity in developed areas", November 2008

LegCo Paper No. (CB(1)2342/08-09(01)) "Public Engagement Process on "Building Design to Foster a Quality and Sustainable Built Environment" of the Council for Sustainable Development", July 2009

Making Choices for Our Future, Report on the Engagement Process for a First Sustainable Development Strategy, Council for Sustainable Development, 2005

C40 Large Cities Climate Summit New York (2007) case study
<http://www.nycclimatesummit.com/casestudies/energy/energy_berlin.html>

Cooling the Warming, Rocky Mountain Institute, 2008)
<<http://bet.rmi.org/our-work/cooling-the-warming.html>>

Study on Sport for All – the Participation Patterns of Hong Kong People in Physical Activities, Leisure and Cultural Services Department, 2009
<http://www.lcsd.gov.hk/specials/sportforall/pdf/fact_sheet_e.pdf>

The Harbour Values Study, Harbour Business Forum, August 2006
<http://www.harbourbusinessforum.com/en-us/page/show/report_hvs>

Website of Council for Sustainable Development
<<http://www.susdev.gov.hk>>

Hedley Environmental Index – Measuring Hong Kong's Air Pollution Costs
<www.hedleyindex.sph.hku.hk>

Building Energy Efficiency Funding Scheme
<www.building-energy-funds.gov.hk/en/about/index.html>

Cleaner Production
<<http://www.cleanerproduction.hk/en/main.asp>>

Operation Building Bright
<<http://www.devb.gov.hk/en/secretary/press/press20090507.htm>>

Hong Kong Energy Efficiency Registration Scheme for Buildings
<<http://www.emsd.gov.hk/emsd/eng/pee/eersb.shtml>>

Building (Planning) Regulations
<<http://www.hkliv.org/hk/legis/reg/123F/>>

Green and Innovative Buildings
<<http://www.bd.gov.hk/english/documents/joint/JPN01.pdf>>

Second Package of Incentives to Promote Green and Innovative Buildings
<<http://www.bd.gov.hk/english/documents/joint/JPN02.pdf>>

Various Outline Zoning Plans, Town Planning Board

Hong Kong Planning Standards and Guidelines, Planning Department

Forum titled "*Towards a Quality and Sustainable Built Environment*" held at Hong Kong Polytechnic University in April 2009