URBAN DESIGN AND PLANNING OF
ROADS AND STREETS IN HONG KONG

A planning workshop report submitted for partial
fulfilment of the degree of
Master of Science (Urban Planning)

By

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University of Hong Kong
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CHAPTER ONE

INTRODUCTION

1.1 Roads and Planning

The relationship between urban form and transportation facilities, especially the roads, has always been close. Until the development of a good road system the size of the city is normally much limited. The urban structure is determined by the pattern of roads provided for the city. The roads not only provides the framework for development and the channels of communication between respective land uses, but also carries the facilities and utilities that service the buildings, both above and below the ground, as well as playing a prominent part in determining the very character and environment of the neighbourhood. It is an element of the overall plan where the town planner can exercise extensive control, and the function and location of roads and their relationship with other activities is of great consequence in the planning process.

In terms of area, roads and streets make up a significant proportion of the landuse in the urban complexes. In Hong Kong on average 18% to 35% of the total land in a complete development
will be required for access purpose in relation to zoning.

<table>
<thead>
<tr>
<th>ZONE</th>
<th>Average % of land for access purposes</th>
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<tr>
<td>Residential Zone 1</td>
<td>35%</td>
</tr>
<tr>
<td>Residential Zone 2</td>
<td>20%</td>
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<tr>
<td>Residential Zone 3</td>
<td>18%</td>
</tr>
<tr>
<td>Industrial</td>
<td>30%</td>
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From Hong Kong Outline Plan, Chapter 8

The amount of public revenue spent on road and street projects is also a very considerable figure by any standard. In 1983/84 the government spent some $1700 millions in the Public Works Programme on projects for road construction, traffic management schemes, provision of transport interchanges, street furniture, traffic studies and other transport related items (Table 1.2).
Table 1.2  **Annual expenditure on roadworks**

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<tr>
<td>Hong Kong</td>
<td>206</td>
<td>328</td>
<td>327</td>
<td>536</td>
<td>635</td>
<td>488</td>
</tr>
<tr>
<td>Kowloon</td>
<td>127</td>
<td>128</td>
<td>175</td>
<td>182</td>
<td>152</td>
<td>169</td>
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<tr>
<td>New Territories</td>
<td>263</td>
<td>352</td>
<td>689</td>
<td>682</td>
<td>872</td>
<td>849</td>
</tr>
</tbody>
</table>

**Total** 596 808 1,191 1,400 1,659 1,506

Extract from 'The 1984-85 Budget'

1.2  **Traffic Improvements Versus Environmental Implications**

With such a vast area of land and amount of public resources being spent on our roads and streets, are our society getting the full benefits of these road projects?

Within the last decade, the number of vehicles has increased from 193,000 in end 1974 to 328,000 in end 1983. Over the last few years, the volume of internal road freight and road passenger movements have grown by about 30% and 20% annually\(^1\). The continued economic well-being of our city is closely linked to the efficiency and effectiveness of the internal and external transport systems.

\(^1\) Assessed by Transport Branch in the Transport Infrastructure Development Programme 1983 edition.
The economy of Hong Kong is dependent on trade, and to stay competitive in world markets it must improve and continue to improve the efficiency of every activity that affects trade, particular internal freight and personnel transport, public and private. In addition, the dispersal of population to the suburban areas of Hong Kong Island and Kowloon and in particular to the new towns, coupled with the changing emphasis from industrial to commercial employment is leading to even greater demands for transport and that such demands are largely being catered for by our road system.

It can be admitted with little argument that to a great extent these road projects have rendered very considerable benefits to our city in terms of enhancement in mobility and accessibility, increases in our economic throughout and development of the new towns and our existing urban area. With these projects, we manage to maintain a reasonably efficient transport system within our city in spite of the rapid increase in the population and intense development in economy.

The above is however only one angle of view. With these road projects, whether we are better off in terms of the quality of the built
forms, our cultural and social context and environmental aesthetics of our urban life is not without questions.

Look at our East Kowloon Way and Ching Fung Street Flyover and consider the environment damages and visual intrusion caused by these elevated expressways just a few feet away from the windows of residential buildings (Plate 1.1). To the residents of the adjacent buildings, these roads create a 'gas chamber' next to a bed and deprive the shops and people on the ground level of fresh air, sunlight and sky-views which once they had chances to enjoy (Plate 1.2). Our newly constructed Island East Corridor with their traffic has destroyed our once memorable facade of the harbour, how the near-shore residents are now severed from the seafront (Plate 1.3). Our rural parts of the city are also suffering. Pedestrian footbridges erected across the traversing expressways are overbearing for the surroundings, hampering the rural scene. Historical temples are placed in a mismatched time context with modern highways passing in front of them. On the cultural level, many of our interesting urban fabric are destroyed to give way to local traffic management schemes. The Jade Market on Canton Road as an example. Unappealing
bus passenger shelters with ugly colour scheme are permitted to be erected at eyecatching spots on the street (Plate 1.4). The streets in the new towns up to now are little better in quality and are lack of creative design. The mass-produced traffic aids and street furniture add to the monotony of the environment and leave the streets in the locality without identity.

The above are just a few examples suggesting that roads are designed in Hong Kong without taking enough notice of the environmental, social and cultural aspects of the art, particularly in the local level. It prompts an examination of our road design system. (2)

(2) In this report, road design refers to the more localised facet of road planning which is commonly analogous to territorial wide transport/land use planning. Road design system in this report concerns the physical planning and design of the roads and their components, including traffic management and control schemes.
Plate 1.1  The Ching Fung Street Flyover

Plate 1.2  Environment under the Ching Fung Street Flyover
Plate 1.3 Visual intrusion of the Island East Corridor from the on-sore side

Plate 1.4 A bus passenger shelter not harmonious with the surrounding urban landscape
1.3 **Scope of the Report**

The objective of this report is to examine the effectiveness of planning framework in relation to road design in Hong Kong. In Chapter 2, a theoretical framework is suggested for assessing road designs, followed by an appraisal of the operating system for road design in Hong Kong. Two case studies are presented in Chapter 3 as illustrations for some of the weaknesses of the existing system. The last chapter puts forwards some suggestions for possible areas for improving our road design and the proposed changes to planning policies.
CHAPTER TWO

ROAD DESIGN SYSTEM IN HONG KONG

2.1 Theoretical Framework

Road and streets are urban space in which certain human activities take place. In the street, people may be walking, may be driving, may be shopping, sitting, eating etc. Rapoport suggested that any activity can be analysed into four components, which are :-

(1) The activity proper - walking, driving, cycling, shopping, etc.

(2) The specific way of doing it - walking with other men, driving on the bus, etc.

(3) Additional, adjacent or associated activities which become part of an activity system - exchanging gossip while walking, courting while strolling,

(4) Symbolic aspects (the meaning) of the activities - walking for fitness training, shopping as conspicuous consumption, marching as ritual, driving as pleasure - making etc.
It is the variability of 2, 3 and 4 that leads to differences in form, the differential success of various designs, acceptability and judgements of environmental quality. This typology also relates to a hierarchy of levels of meaning which the users and the designers view the built environment:

(a) concrete object - what is actually seen, such as the pavement of a road.

(b) use object - how to use it, such as walking on the road.

(c) value object - the value of the built forms, such as the road is a place where one can go shopping with his children.

(d) symbolic object - the invisible values, such as the road is a place for enjoying family life (A list of the users' environment needs and values is suggested in Appendix II).

This implies that apart from its manifest function, a built form also has its latent function, and the latent aspects of function may be the most important.
An understanding of the total system of activities and users' objects is then necessary for the designer to design the built form properly. The closer the gap between the functions, manifest and latent, and the object of the users, the more successful will be the design.

2.2 Relevance to Road Design

Up to now the main disciplines in road design in Hong Kong are the structural, geometric and traffic designs. These designs are concerned primarily with the mobility activities proper—standing, walking, driving, cycling and stopping and perhaps to some extent the specific ways of doing these activities. These disciplines only take care of the concrete and use objects of the users, and the manifest function of the road.

On a higher level of design, there is a need to design for the users' value or symbolic objects. The social and cultural aspects, aesthetic qualities and human psychology are the concerns. This falls into the scope of urban design, the current investigation of which focuses on the coincidence between the human aspects of urban form and the built environment.
It should be noted on the other hand that roads and streets are not built for one person, but for
great numbers of people, of widely varying backgrounds, temperaments, occupations and class. There is a sub-
stantial variations among these users. Furthermore
the variability increases as one moves to the symbolic
end of the scale of users' object - more people will
agree about what they actually see than about how to
use it, fewer will agree about its value and its
symbolic aspects. In this connection, it is important
to highlight that as public participation is essential
in urban design as a way to enable the designer to
understand the users' value and symbolic objects.

2.3 A critique on Road Design

The theoretical framework described above sug-
gests that road design should not be just structure or
traffic oriented. A road or a street is not just a
place for traffic and it should not be viewed only
from the utilitarian standpoint. The roads and streets
have their social and cultural context. To design
the road and street to better meet the satisfaction
of the users including their value and symbolic object,
the designer should not only require a comprehensive
knowledge of structural and traffic engineering tech-
niques, but also need to have a better understanding of
the man-environment relationship and the organisation
of built environment.
Against the theoretical principle that good road design must include urban design, let us examine how effective is our planning system in relation to road design. Three main areas of our planning system are studied:

(a) the design principles,
(b) the legal framework and
(c) the administrative framework.

2.3.1 The Design Principles

The road design principles adopted as reflected in the Hong Kong Planning Guideline and Standards, and Transport Planning and Design Manual are all traffic oriented. The roads are only classified according to a hierarchy system with which each type of road being designed or designated to fulfill a specific function in the overall road network (see Appendix III). The design principles emphasise on traffic function and standardisation. Rigid geometric standards on width and gradient are fixed for each of the described types of roads. The design principles only take care of the manifest functions of the roads and streets and concern mainly the concrete and use objects of the users.
The emphases on manifest function and standardisation also apply to the road construction and provision of street furniture. The guidelines for the road construction are listed on standard Highways Office drawings (an example is Figure 2.1) and as a result, the physical components of the street are almost completely standardised and very often our streets fail to create an image of a place and are poor in urban design quality.

Leemin, in his studies on streets in Hong Kong revealed that the streets in different localities have their individual social and cultural meanings whilst Lynch's studies demonstrates that roads are important components for forming the image of the city. Consideration for such human aspects of the design and alike are not included in the current road design principles. If one sees design as the organisation of space for different purposes to reflect the needs, values and desires of the users, our road design principles currently adopted are inadequate in that they have not yet gone beyond traffic planning.

2.3.2 The legal framework

There does not exist a comprehensive road and street design legislation in Hong Kong.
DETAILS OF TUBULAR RAILING WITH MESH INFILLING

1800

1800

-50 INTERNAL DIA. GALVANISED TUBULAR

TO BE WELDED SMOOTH

GRADE 20/40
CONC. AS SPECIFIED

30050 75/375

ALTERNATE HORIZONTAL BARS SPOT WELDED TO POST

B.R.C. WELDMESH NO 31 OR EQUIVALENT VERTICAL WIRES TO FACE FOOTWAY

GRADE 20/40
CONC. AS SPECIFIED

30050 75/375

PUBLIC WORKS DEPARTMENT HONG KONG HIGHWAYS OFFICE

REFERENCES

DRAWING No. H 27B

DIMENSIONS GIVEN IN MILLIMETRES

Figure 2.1 Example of Highways Office Standard Drawings
On the macro scale, the planning of roads is also governed by the town planning which in turn is governed by the Town Planning Ordinance, Chapter 131 of the Laws of Hong Kong (Ordinance No. 29 of 1939). This Legislation is largely devoted to the procedural requirements involving planning submissions. It contains no enforcement provisions, compensation procedures, decisions or requirements to notify the public of the commencement of statutory planning process. In practice, there are no statutory plans since government has complete discretion in the execution of amendments as desired to any approved plan and in the gazetting of statutory plans. Therefore in a newly developed area, such as the new town, the public have practically little say in determining the layout of roads in an area, and the planners have almost a free hand to design the road layout. In the developed areas, the government equally has the same free hand except occasionally when the road plan affects the interest of more influential pressure groups. It is worthwhile to point out the objection against the plan can only be directed towards the land-use zoning aspects but not design aspects. There is no legal requirements for the government to present to the public the road design plans.
Under the Roads (Works, Use and Compensation) Ordinance, the secretary for Lands and works can close a road which in his opinion does not serve any useful purpose or does not serve any lawful purpose, to close a road to use for a period not exceeding 14 days in any period of 3 months and to close a part of a road as long as it will not interfere unreasonably with normal traffic flow. For major works, although a procedure for notifying the public through gazettes and District Board is required, the scope of matters for which the public can object and claim for compensation is very restrictive, confining mainly to land rights and physical and structural damages to the land and building. One cannot object to the roadwork on environmental or aesthetic grounds.

At the more local level all the relevant legislation is mainly traffic-orientated. The placing of zebra crossing, traffic signs, bus stops are governed by the Road Traffic Ordinance and the Public Omnibus Service Ordinance. Design and standards for the street layout and street furniture setting are laid down administratively in the various traffic engineering manuals which the departmental officers invariably stick to. Publicising traffic plans is not mandatory and very often the public are informed of a traffic rearrangement plan or street
modification scheme only after it has been implemented.

The above suggests that public participation, a very essential process of urban design, is very weak in our planning system.

2.3.3 The administrative framework

Financing of road and street building comes from the general revenue and has to compete with other public works items. Under the capitalist economy of Hong Kong, the main objective of providing them is on economic grounds which is to provide a condition for labour reproduction. Concerns are placed on the functional aspect of the streets - the economic throughput and as social and aesthetic issues seldom focus on improving the economic throughput, these aspects are not being allocated any high priority.

Development control in Hong Kong relies heavily on crown lease conditions, but since land is a scarce commodity in Hong Kong, conditions on the lease are often made very liberal to facilitate land sale. As a result, lease conditions are proved to be very weak control in urban design in Hong Kong.

In this road and street design arena, the main technical actors are the planner, traffic engineers and highway engineers. Occasionally, the City Services Department comes in to put up
some amenities. The technical groups consists of salaried government officers. Planners are involved at the preliminary stage of planning. The degree of contribution by the planners at the preliminary stage cannot penetrate thoroughly enough to serve the urban design purpose. They have no authority to oversee the designing process and the implementation of the plans rests with other public officers or the private sector. The design of roads and streets are mainly the work of traffic engineers. They are experts trained in the traditional approach to civil and traffic planning. As a result they will tend to identify the problems of movements and to produce plans which advocate a traffic plan rather than a urban design plan. The highways engineers are responsible for the maintenance and construction of roads. Their achievement is often measured in terms of increased highway capacity and traffic flow improvement. The goals of these technical actors are structured by their professional interests and these interests lead to a totally traffic-biased approach in road and street design which does not necessarily meet with the needs and values of the users.

It is interested to note some of the contrast in design qualities between the roads constructed by the government and the private developers, such as Tai Koo Shing and City One, though a concern of urban design quality by the private sector is often rooted in the maintenance and enhancement of property values through improved amenity.
It can be seen that road design system in Hong Kong allows no opportunity for the contributions of urban designers, urban architects and environmental psychologists (In fact, there is no such posts under the administrative set-up of the government).

Given the above analyses, it suggests that the planning system is weak in urban design. Road design is being done at a very low level of design hierarchy. However this analysis is not complete if we leave two of the recent developments on the subject unmentioned. Firstly with the setting up of the district administration, there is a growing awareness of their neighbouring environment by the local people. There have been a increasing number of minor improvement schemes for streets introduced under the instigation of the District Board. Secondly there is a start on the urban design in the new town development. Urban design plans are included in some of the most recent planning reports prepared by the Consultants, such the Sham Tseng Development Study (Figure 2.2), although these plans are mainly landscape-oriented and without much social and cultural inputs. In the New Territories Circular Road project, also, recommendations are put forward for traffic noise protection (Figure 2.3). In a way it is a good start but whether the designs can go through the currently operating planning system to implementation successfully is yet unknown.
Figure 2.2 Urban Design Plan for Housing Site in Sham Tseng Development
Combined Crash Barrier / Noise Barrier Walls

Note: (1) The height of each individual bay shall be randomly varied within the range between 3m and 4m.
(2) Where noise barrier walls are provided, the planned U-channel type roadway drainage system shall be replaced by gully/pipe roadway drainage system (H0 standard drawing 186B refers.)
(3) Unless noted otherwise all dimensions are in millimetres.

Figure 2.3 Recommended measure for traffic noise protection for N.T. Circular Road
CHAPTER THREE

TWO CASE STUDIES

In the previous chapter we have examined some of the weaknesses of our road design system and the following two case studies may serve in precis to demonstrate some of these problems.

Case 1 is about the Tsim Sha Tsui East development which has been criticised as 'a good example of bad planning' (S.C.M.P.), and the Case 2 is the Hanoi Road bad Cornwall Avenue Shopping Street scheme. Discussion of the Case 1 centres around the administration aspects of the system while that of Case 2 is more on design principles.

3.1 Tsim Sha Tsui East Development

Tsim Sha Tsui East is bounded by Chatham Road South, Salisbury Road, Hong Chong Road and Hong Fat Path with an area of about 25 hectares on the former KCR sidings south of Chatham Road. The area was available for redevelopment in late 1974 on the removal of the KCR terminal to Hung Hom. Plans for development the area (see Figure 3.1) was prepared in 1973 to develop the area as a high class residential/commercial areas as well as a commercial centre for Kowloon with, inter alia, the following characteristics :-
(i) a 'heart' for the area which includes a public piazza, squares and other open spaces.

(ii) the area will be separated visually from the 'old Tsim Sha Tsui by a continuous stretch of open space facing Chatham Road.

A host of problems had emerged in the area when the developments were taking shape in 1980. The most serious problems are related to the roads in the area. The first problem identified is the limited road capacity and the shortage of parking spaces. The shortage of parking spaces become obvious in late 1980 upon the completion of some of the development in the area. The developers were keen to see the situation rectified as they claimed that the lack of parking spaces had inhibited motorists from frequenting the area. Most of the developments in the area are without parking spaces.

Traffic congestions began to emerge in late 1980 along Mody Road and the access road leading to the service area in front Peninsula Centre and at the junction of Mody Road and Mody Lane. The situation has become more serious following gradual intake of new development in the area. The main cases of the unsatisfactory traffic congestions are identified as lack of loading/unloading and picking up/setting down facilities. Many of the commercial/residential sites along Mody Road are developed
without loading/unloading facilities and the limited service areas are not adequate for all the developments.

The narrowness of the internal roads in the area also renders them susceptible to traffic congestion and the situation is particularly critical along Mody Road. Being the main road in the area with 10 commercial blocks on either side, Mody Road appears to be too narrow.

On the other hand, the two footbridges across Mody Road which are built to segregate pedestrian and traffic flow are grossly under-utilised. There are inherent snags in their design, for instance the footbridge near the Houston Centre cannot service those pedestrians who want to cross Mody Road as it links the north side of Mody Road directly with Salisbury Road. No escalators were provided.

The other significant complaint is the lack of good public transport facilities in the area to make it more accessible. One of the shop operators, the Millie Wholesale, has to sponsor the operation of a free shuttle bus service from December 1982 to late February 1983 to link the area with Tsim Sha Tsui MTR Station to make good the deficiencies in this respect.
There are also quite a number of street physical design problems. The most noticeable one is the two footbridge over Salisbury Road and Mody Road. They have been attracted a lot of criticism against the design, the colour scheme and the low utilisation. These two footbridges (Plate 3.1) have been criticised as too bulky, dominant and not commensurate with the development. The bulky design is seen particularly unnecessary as the footbridges are rarely used by pedestrians. The rusty colour of the footbridges is considered by many as unattractive. Many of the developers in the area consider that the design of the footbridge are not compatible with status and symbolism of their development.

Plate 3.1 Design of the Footbridge incompatible with the adjacent built form
Expectation of the developers on the area are also demonstrated by the dispute over the naming of the internal roads. Internal roads in the area were originally named as Ching Yee Road, Hing Cheung Road, Ming Kwong Road and Ching Hay Road. The names were considered too traditional for an area with a high concentration of international hotels and modern office blocks and were subsequently renamed as Mody Road, Science Museum Road, Granville Road and Mody Lane respectively. When the new names were gazetted on 1.5.81, a group of the developers had lodged objection and put forward alternative proposals (Hotel Boulevard for Mody Road and Salisbury Lane for Mody Lane). When Urban Council decided to uphold its decision, they petitioned the governor, again in vain.

The next one is about the sense of 'remoteness' created by the buffer open spaces facing Chatham Road. The planning principle adopted in the area is that the most commuters will either come by Mass Transit Railway or bus services on the periphery of area. The open space creates too strong an "edge" and the roads leading from Chatham Road fail to provide appealing "path" for the commuters. These roads are being criticised as poorly designed and landscaped and thus it is only a short 10 minutes walk from Chatham Road, yet the
Image created is that Tsim Sha Tsui East is very remote. As a result, not a few commuters or visitors to the area choose to take taxis or private cars which provide direct access into the area thus further taxing the narrow internal streets.

3.2 Analysis of Case 1

Tsim Sha Tsui East is a very new development nevertheless within such a short time, a lot of design and planning problems emerge. An analysis on the problems suggests that the design of the roads in the area not only fails to meet the value and symbolic objects of the users but also their use object. This highlights some of the deficiencies of the operation of our road design system.

Firstly it suggests that the designers in the system lose touch with the reality. The designers contend that the design principle for the area should be to provide only as much road spaces as necessary for the movement of local and service traffic. Through traffic should use the district distributor roads fringing the area. Regarding the provision of parking and loading/unloading facilities, the design concept is not to provide on-street parking or loading/unloading of goods and people. Lands
for such purposes are provided by the three service areas. The provision of these three service areas was initially applying the Radburn principle to those lots clustering around them and the parking spaces provided were intended for service vehicles only. The designers do not first question whether this principle will work in the Hong Kong context.

Secondly it suggests that the existing planning system is too fragmented and is lacking of an overall control. A lot of the problems in the area seems to be generated by the unsatisfactory programming and co-ordination of public works and government projects in the area and the gap between the time when the site is available and when it is allocated. For instance, the provisions of infrastructure and public facilities including car parks, public transport terminus etc. lag far behind private developments in the area.

Thirdly, it suggests that there is lack of co-ordination between the planners and the implementors. Special conditions/requirements should be stipulated in the sale conditions of the private lots to ensure that the area is developed properly by including the provision of loading and unloading facilities and parking spaces in their sites.
Fourthly it suggests that a lack of consultation with the affected developers. For example the disputes over the naming of the streets could probably be avoided if there was prior consultation between the developers and government.

3.3 The Hanoi Road/Cornwall Avenue Shopping Street Scheme

The proposal for pedestrian precinct in Tsim Sha Tsui was first suggested by the commissioner for Transport at an inter-government department meeting in August, 1973. On 1.7.75 a six month experimental pedestrian scheme for Tsim Sha Tsui introduced. Hanoi Road and Cornwall Avenue were selected as pedestrian precincts, with limited access for good vehicles servicing the precincts between 11.00 p.m. to 7.00 a.m. the next day only. These two streets are situated in an area of commercial/residential development east of Nathan Road in Tsim Sha Tsui with about 10 minutes' walking distance from the Star Ferry. The land use along these two streets was predominantly a residential/commercial area. The main type of residential accommodation was the self-contained apartment flats. Ground floor uses are almost exclusively commercial altogether, there were 64 retail/service premises along both sides of the street, the majority of which were shops selling wearing apparel (shoes, handbags and clothes), speciality shops and restaurants. Tourist traffic is significant in these two streets as they are situated within the main tourist centre of Tsim Sha Tsui. With
the introduction of the pedestrian system, on-street parking meters on the two streets were removed, the parking meters in the neighbouring streets was converted into short-term meters. The closure of the two streets were effected by the erection of appropriate traffic signs under the Road Traffic Regulations and removable concrete "puddings" were set up to reduce the carriageway width (Figure 3.2 and Plate 3.2).

After about 6 weeks of operation, a spate of complaints was attracted from the local shop owners in the streets complaining that their business had declined very substantially. The scheme was modified on the 1st September 1975, which had the effect of only banning private cars and motor cycles from entering the precincts at all times. Immediately after the six months experimental period of pedestrianisation, Hanoi Road and Cornwall Avenue were reopened to all traffic on 31st December 1975.
Figure 3.2 Hanoi Road and Cornwall Avenue Shopping Street (Reproduced from SCMP, June 7, 1975)

Plate 3.2 Hanoi Road and Cornwall Avenue Shopping Street (Reproduced from Sing Tao Yat Po, July 2, 1975)
3.4 Analysis of Case 2

As a street planning measure, this scheme was admitted by the government as a failure. Why did it fail? The main objection against the scheme was due to the business loss of the shop-owners because of the degrading of the accessibility into the two streets. There are however a lot of similar schemes abroad and locally and many of them are successful. Was accessibility the main reason for the failure?

A traffic survey conducted by the Highways Office about two months after the start of the scheme indicated that in fact the overall pedestrian volumes on the two streets had grown after pedestrianisation. Hanoi Road recorded a consistent pedestrian growth of 23.8% whilst Cornwall Avenue showed only a slight drop of 10.3%. Pedestrianisation had not created delivery problems for the retail/service establishment. The two streets are not long enough to make locations of shops in the street a critical factor that would affect problems of delivery. A majority of the shop-owners reported that their goods deliveries were not affected by the scheme. We therefore perhaps need a more detailed study of the case to find out the underlying reasons of the failure.

From the offset, the designer only concerned about the traffic and planned the scheme without knowing the real
need of the users, government viewed this largely as a traffic scheme. Publicity was geared to the traffic rearrangement of the scheme. Internal government consultations were concentrated mainly on the legality of the road closure and whether or not the government would face claim for compensation if the streets were closed to vehicular traffic. The scheme was organised mainly as traffic management scheme. Traffic implications was taken as the prime consideration. Major government departments involved were the Highways Office and the Transport Department. The aspatial factors, such as the social and economic implications of the scheme had not been taken into serious account.

The planners of the scheme had forgotten the other dimensions of the locality which would be essential to the planning of the scheme. Subsequent surveys disclosed the picture that most of the shops had to rely to a great extent on tourists' spending power. Speciality shops and shops selling household goods were of special significance in this respect. Shops selling leather cases in the street almost relied solely on tourists. Shops selling wearing apparel in the streets had one-third of their customers from tourists. Restaurants in the street also depended heavily on tourist business. In a shopping street scheme, commercial interest is
primary. The shopowners valued the street mainly in terms of their business, and the scheme failed to meet their object.

The pedestrianisation scheme had not created an identity for the area in the eyes of the tourists but rather on the contrary created an image of local residential street. It is interested to note that only one month after the banning of vehicular traffic into the street, children and improperly-dressed youths, probably from the nearby workshops/garages were seen playing badminton and sometimes football in the streets, especially during the hours 5-10 p.m. where tourist business for the shops and restaurants was in peak. This caused nuisances and inconveniences to the shops and pedestrians and had directly affected their business.

There was a lack of urban design expertise. From the physical design angle, the scheme left much to be desired. In term of the overall 'attractiveness' of the street, the planners of the scheme had not made enough effort to create the image of shopping mall. Pavement along both sides of the street remained unwidened in the scheme. The carriageways were still distinguishable by concrete puddings. Street furniture was not integrated with new layout. Had the streets been paved with different types of
paving slabs arranged in different patterns and curbs removed and the absence of steps to allow people to cross without distracting features of the street surface, street furniture installed in the forms of showcases, flower boxes, water sculpture, mushroom shaped shelters, seats, fountains, pavement cafes and special street lighting, a better design effect would have been created which could contribute to the informality and character of the shopping streets and the creation of an identity of the area. Rather, quite a number of the residents complained about the fear of insecurity in the area after pedestrianisation. The street were not adequately illuminated for pedestrians when motor vehicles were banned from the street.

It may be interested to compare the scheme with 'Food Street' in Causeway Bay which stands out as a better pedestrian street scheme in terms of its better urban landscape design. Fountains, artificial creek, bridge and water sculpture have been employed to create an image of 'garden type' environment. (Plate 3.3 and Plate 3.4) A 'theme' was also developed for the street. All the shops in the street are grouped to one trade - selling foods and yet a sufficient wide food variety is included. A lot of publicity efforts had been spent in fostering the image of street. A street logo was designed. In a way, the Food street had fostered its identity by its graphic symbol, the better public relations procedure and the creation
Plate 3.3 Landscaping design on Food Street

Plate 3.4 Food Street Entrance from Gloucester Road
of environmental quality and a sense of place which raises a picture and a feeling in us when one says 'Food Street'.

The planners in the Hanoi Road and Cornwall Avenue shopping mall scheme devoted too little in creating an image for the area. The physical built form failed to give the place an impression of a tourist shopping mall which is essentially to the economic well-being of the streets, but rather strengthen the impression of the street as a local street. It is interesting to note that the three shops selling household goods in the mall were reported to have some 17% increase in business during the pedestrianisation period and whereas all the shops connected with tourist business suffered business loss. This seems to suggest that one of the underlying reasons for the failure of the Hanoi Road and Cornwall Avenue scheme was that the planners had not given enough attention to economic needs, commercial interests and the urban design aspects.

From the above analysis, it seems to suggest that our existing street and road planners are weak in socio-cultural appreciation and not very much aware of the more conceptual human needs which have a necessary outlet for expression in the physical environment. They have not been able to identify the more abstract set of values and tastes of different groups of road users.
CHAPTER FOUR

IMPLICATIONS ON POLICIES

Since the historical inheritance of Hong Kong has not been conserved as an important feature in the collective memory of this area, it is critical that we now need a policy for the production of collective space and form in our city and a process by which the physical environment can be produced or reproduced to generate predictable results which are in the collective interest. Our roads and streets are very essential elements of our urban complexes and they should deserve more attention on their design in relation to social interaction and communication. The following are suggested to improve the road and street design system in Hong Kong:

(a) It seems that in our road design arena, we need to subscribe more contributions from environmental sociologist, physical designers, and landscape architects. We need to liberate road and street planning from pure traffic planning and design. The Highways Authority may need to be restructured to find a place for experts of these fields.

(b) We may need a overall urban design plan for our city, a plan dealing primarily with the social, cultural, sensuous, aesthetic and visual quality of our urban environment. A plan described the principles, policies, maps and guidelines relating to open space and landscaping,
conservation, arterial streets, street environment, the public values inherent in the retention of street space and height and bulk of building. A plan that can be used as a guide for a great variety of design decisions about our city's future and to which the road and street design guide forms a part. Since the planning is a continuous process, periodic review of the plan is necessary also.

(c) The significance of citizen participation in environmental planning decisions is critically important. In spite that the clarification and agreement on social, cultural, visual objectives and their design implementation, is, without doubt, one of the weakest stages of the planning process, this is the way in which people can become identified with the environmental action, the way in which they can possess and feel responsible for it. It reduces their alienation. Furthermore, by public participation, the designer can more easily identify the users' value attached to the design and know how to improve. Public participation helps to bridge the perception gap between the designers and users. It may
require legislation changes to make it mandatory to display road and street design drawings or models for major traffic plans for public inspection. Various computer and filming techniques are being developed in U.K. and U.S.A. to simulate the appearance of new roads and streets in the existing landscape (Slee). Such techniques can both facilitate the design and public consultation processes.

(d) Finally, the lack of urban designer expertise in our city seems to call for promotion of the urban design education. We should help those public officers dealing with the spatial issues, such as the planners, surveyors and engineers to develop an awareness of urban form and urban quality in the built environment and capacity to deal with proposals in three dimensions. 'An art of city design will wait upon an informed and critical audience. Education and physical reforms are parts of a continuous process' (Lynch).
<table>
<thead>
<tr>
<th>Location</th>
<th>Plan No.</th>
<th>Type of Area</th>
<th>Percentage of land occupied by road and pedestrian ways</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tsim Sha Tsui East</td>
<td>LKT/49B</td>
<td>Res. Zone 1</td>
<td>35.93</td>
<td></td>
</tr>
<tr>
<td>Sha Tin areas 7 &amp; 20</td>
<td>LST/58A</td>
<td>Res. Zone 1</td>
<td>44.30</td>
<td></td>
</tr>
<tr>
<td>Sha Tin area 5 (part)</td>
<td>LST/61A</td>
<td>Res. Zone 1</td>
<td>44.2</td>
<td></td>
</tr>
<tr>
<td>Sha Tin area 3 (Tai Wai)</td>
<td>PST/1</td>
<td>Res. Zone 1</td>
<td>40.11</td>
<td>Portion of village area included</td>
</tr>
<tr>
<td>Tai Po Central Area</td>
<td>LTP/28G</td>
<td>Res. Zone 1</td>
<td>33.69</td>
<td>Portion of old commercial area included</td>
</tr>
<tr>
<td>Shek Wu Hui Extension</td>
<td>LSWH/14B</td>
<td>Res. Zone 1</td>
<td>41.86</td>
<td></td>
</tr>
<tr>
<td>Tsuen Wan Central Area (Area 6)</td>
<td>LTW/108C</td>
<td>Res. Zone 1</td>
<td>36.4</td>
<td>39.5 say 40%</td>
</tr>
<tr>
<td>Broadcast Drive</td>
<td>LK18/5G</td>
<td>Res. Zone 2</td>
<td>21.98</td>
<td>say 22%</td>
</tr>
<tr>
<td>Kwun Tong</td>
<td>LK14/19C</td>
<td>Res. Zone 2</td>
<td>17.0</td>
<td></td>
</tr>
<tr>
<td>Chung Hom Kuk</td>
<td>LH19/21C</td>
<td>Res. Zone 3</td>
<td>16.31</td>
<td>say 16%</td>
</tr>
<tr>
<td>Castle Peak, Nw Town Area 20</td>
<td>LCP41C</td>
<td>Res. Zone 3</td>
<td>22.60</td>
<td>Includes some hilly land</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flat</td>
<td>21% including allowance for hilly part</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LK17/3C</td>
<td>Industrial</td>
<td>29.06</td>
<td>District open space excluded</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sha Tin Area 16</td>
<td>LST/57E</td>
<td>Industrial</td>
<td>37.46</td>
<td>Higher than normal because of river channel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tai Po Industrial Area</td>
<td>LTP/30C</td>
<td>Industrial</td>
<td>40.14</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flat</td>
<td>35.5</td>
<td>say 35%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ave.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Tsuen Wan & Kwai Chung area 10J, 25, 26 & 38

LTW/127E Industrial Hilly 24.98 say 25% Cemetery & crematorium areas excluded

From: Hong Kong Outline Plan: Chapter 8 - Internal Transport
### ENVIRONMENTAL NEEDS AND VALUES

<table>
<thead>
<tr>
<th>Needs/Values</th>
<th>Problem Environments</th>
<th>Good Environments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Survival</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 Safety/Security</td>
<td>Environments susceptible to earthquake, landslides, unfenced heights, depths, fires.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Criminal Defenseless, crime-prone environments, lack of surveillance;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Traffic: Auto, pedestrian, cycle conflicts.</td>
<td></td>
</tr>
<tr>
<td>1.2 Health</td>
<td>Lack of light, sun, pure air and water, sanitation, presence of garbage, vermin, etc.</td>
<td></td>
</tr>
<tr>
<td>2. Comfort/Lack of Stress</td>
<td>Over-protection, over-confort</td>
<td>Reasonable stress</td>
</tr>
<tr>
<td>2.1 Spaciousness</td>
<td>Overcrowding, cramped spaces, &quot;empty&quot; spaces.</td>
<td>Spatial fit, tolerance.</td>
</tr>
<tr>
<td>2.2 Quiet</td>
<td>Excessive noise, sporadic noise, indoor/outdoor noise, vibration.</td>
<td></td>
</tr>
<tr>
<td>2.3 Light</td>
<td>Glare, gloom, uniformity.</td>
<td></td>
</tr>
<tr>
<td>2.4 Cleanliness</td>
<td>Dust</td>
<td></td>
</tr>
<tr>
<td>2.5 Climate</td>
<td>Excessive wind, rain, cold, heat, fog, drought.</td>
<td></td>
</tr>
<tr>
<td>2.6 Ease of Movement</td>
<td>Long fatiguing walks (with heavy loads), uphill.</td>
<td></td>
</tr>
</tbody>
</table>

### Efficiency

<table>
<thead>
<tr>
<th>Needs/Values</th>
<th>Problem Environments</th>
<th>Good Environments</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Access to Services/Jobs/Schools/Shops/Recreation/Transportation/Churches</td>
<td>Long commutes, indirect routes, disruption of local access paths.</td>
<td></td>
</tr>
<tr>
<td>3.2 Convenience</td>
<td>Difficult travel mode changes; long waiting times, indirect routes.</td>
<td></td>
</tr>
<tr>
<td>3.3 Orientation/Information</td>
<td>Excessively confusing, disrupted, ambiguous, hidden buildings, environments, destinations, routes, intersections, etc.</td>
<td>Environments of sufficient legibility, imageability, clarity, system continuity, visual access to highly used and significant facilities and destinations, recognizable stereotypes e.g. &quot;it looks like a school&quot;.</td>
</tr>
</tbody>
</table>

### Personal Development

<table>
<thead>
<tr>
<th>Needs/Values</th>
<th>Problem Environments</th>
<th>Good Environments</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Privacy</td>
<td>Visual, auditory intrusion, strangers, distractions, one-to-one confrontations; indoor/outdoor, home, street, neighborhood intrusion.</td>
<td>Sufficient control of social inputs and outputs at individual, home, block, and neighborhood levels; a degree of anonymity.</td>
</tr>
</tbody>
</table>
4.2 Identity
Lack of an identifiable personal "place", excessive identifiability of an undesired kind, e.g., "projecto";
environments presenting an image of unfavorable low status, cheap materials, standardization, poor maintenance, and other low status symbols. Unique identifiable home, street, neighborhood; custom-design, objects, places that connect with personal identity;
environments encouraging social status, "prestige" materials, elements, objects, details, "luxury" items.

4.3 Territorial Control
Inadequate personal territory, invaded by others; disputed territories. Sufficient personal space, sensed and defined territory.

4.4 Personal Expression
Anonymous environments. Ability to demonstrate personal presence in outdoor environment through planting, painting, construction, etc.

4.5 Environmental Mastery and Scale
Rigid, hard, authoritarian, regulatory, preventive environments; oppressive, large agoraphobic, repetitive, endless environments, cute, trivial, pretty, Disney-like environments. Responsive, permissively changeable environments; human scale environments, related in site, complexity to human dimensions and comprehension (10-2 complexity levels)

4.6 Security Structure
Fragile, breakable, destructible environments. "Tough" environments, resistant to vandalism.

Lack of relationships between parts, incongruity, disruption, intrusion, clutter, visual noise, impropriety. Relationships, fit, congruence, neatness, simplicity, similarity, proximity.

Remote between places desiring proximity, isolation, suspension. Closeness, immediacy, interpretation.

Continuity
Strange, mysterious, unpredictable environments, temporal disruption of personal behavioral patterns (eviction, relocation), environmental disruption, destruction of valued places. Familiar, "honey", "natural", stable, well-worn environments, conforming with expectations, stereotypes; old, historical environments.

Subersion of valued locales under new development, ecological damage or disruption, transition areas. Planned, predictable and informed future.

Unplanned development, undecided ambiguous future change, lack of information about the future, "future shock".
4.7 Education

**Explorability**
- Closed, faceless, impenetrable, hostile, bland environments
- Inadequate choices, trivia choices, too many choices
- Initiating, explorative, "open" environments

**Diversity**
- Monotonous, drab, boring, overly simple, standardized, "floor-elite" environments, overload, excessive stimulus, trivia, variation, chaos
- Contrast, variation, surprise, differentiation, complexity, novelty, uniqueness, natural environments in the city

**Instruction**
- Instructive environments, visible social, functional, ecological systems, visible past and future, Montessori environments

5. Social Development

5.1 Equity

**Needs/Values**
- Environments dominated by one group to the exclusion and deprivation of others (e.g. poor children, aged, handicapped, housewives, etc.)

**Problem Environments**
- Equal environmental opportunity, minimum levels of environmental quality for each population group, "balance"

**Good Environments**
- between individual, public, and corporate environments

5.2 Social Interaction

**Environments which encourage excessive neighboring, alienation, conflict, isolation, loneliness, fear, defenseless environments, undeniably heterogeneous or homogeneous, segregated environments**

**Socially integrated environments**
- Environments encouraging sufficient and desirable interaction, neighboring participation in community organisations, sense of community, lowering of prejudice and misperception, help in times of trouble; sufficient heterogeneous/homogeneous interaction

5.3 Publicness

**Public equalor (private affluence), public environment dominated by private commercial interests, or public environment dominating individual identity**

**A quality public environment, adequate publicly accessible territory, not subject to private dominance or invasion**

5.4 Cultural Expression, Preservation, Development

**Environments which suppress sub-cultural identity, environments where sub-cultural symbols are suppressed, hidden, dominated by "trivial" low priority messages**

**Environments which encourage the identity expression, and continuity of sub-cultures; environments where significant functions, symbolic places are visible and evident**

5.5 Resource Conservation

**Environments which consume or destroy non-renewable or scarce resources such as energy, pure air or water, wildlife species, natural resources**

**Environments which conserve or increase natural resources**
<table>
<thead>
<tr>
<th>Needs/Values</th>
<th>Problem Environments</th>
<th>Good Environments</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Administration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.1 Economy</td>
<td>Environments which are expensive, particularly for client populations.</td>
<td>Environments with low initial and maintenance costs to public agencies, individuals, corporations.</td>
</tr>
<tr>
<td>6.2 Management Efficiency</td>
<td>Environments which require continuous attention to supervision, repair, etc. difficult to service.</td>
<td>Environments which allow reasonably efficient management, supervision, maintenance, emergency service for fire protection, police, ambulance, normal delivery services, sanitation, garbage, trash collection.</td>
</tr>
<tr>
<td>Adaptability</td>
<td></td>
<td>Environments which are adaptable to changing techniques, use patterns, etc.</td>
</tr>
<tr>
<td>6.3 Agency and Professional Image</td>
<td>Environments which detract from an agency's image, e.g., authoritarian, remote, bureaucratic.</td>
<td>Environments which enhance the development agency and professional image, e.g., responsive to its client populations.</td>
</tr>
</tbody>
</table>
Hierarchy of Roads and their geometric design

Hierarchy of Road

Roads are classified according to their function; viz., trunk roads, primary, district or local distributor roads, and certain standards are required to be adhered to according to each classification. Within the urban areas, trunk roads serve longer distance traffic movements between centres of population; primary distributor roads serve traffic between centres within the main urban areas and through traffic; district distributor roads link the primary network with environmental areas and local distributor roads give direct access to buildings and land within environmental areas. In the existing urban areas, however, some existing roads perform more than one function. This should be recognised and when improvements are being planned the aim should be to achieve the appropriate hierarchy according to functions.

In rural areas roads are classified as trunk roads, rural roads (A), rural roads (B) and feeder roads. Trunk roads are as defined above, whilst rural roads (A) connect to smaller centres of population or popular recreation areas and are often used by franchised buses or tourist coaches. Rural Roads (B) connect with villages, whilst feeder roads connect with remote settlements or installations.
The total width of a road is made up from a number of component parts which will vary according to the function of the road and type of area through which it runs. These components include carriageways, footpaths, shoulders, reserves for planting, central dividers and services and in some cases climbing lanes and cycle tracks. The main standards for each component are set out in the following paragraphs. For full details reference should be made to Civil Engineering Manual Vol. III, Traffic Engineering, prepared by the Highways Office of the Public Works Department.

**Standards for Urban Roads**

Trunk roads should normally be dual carriageway, have no direct frontage access and waiting vehicles should be prohibited. Junctions and pedestrian crossings should be grade separated.

Primary distributor roads shall be defined by the same criteria as for trunk roads.

District distributor roads can have direct frontage access if necessary and junctions would normally be signalised.

Local distributor roads give direct frontage access.
Recommended carriageway widths for roads in urban areas are as shown in Table 1.

The central reserve for dual carriageways in urban areas is normally 1.75 m, but if increased to 3.0 m or more, suitable trees and foliage may be planted. Minimum width on flyovers and restricted sites is 1.25 m.

It is policy to provide tree planting reserves along the sides of main roads in the urban area. As the tree must be at least 1.5 m from the curb, the strip should normally be at least 3 m wide.

Roads in industrial areas should be in accordance with the minimum standards given in Figure 2.

**Standards for Rural Roads**

The standards for trunk roads in rural areas should be the same as for Urban Areas, and junctions should normally be more than 400 m apart and grade separated.

Rural roads (A) should be wide enough to take buses. Frontage access and "at grade" junctions are permissible. Aim should be to design for smooth and safe traffic flow.
Rural road (B) can be narrower and have a lower design speed with frequent access and loading points.

Feeder roads connect the more remote settlements and will very often only carry very light traffic.

Recommended carriageway widths are shown in Table 2.

In rural areas the normal width of the central reserve for dual carriageways is 4.5 m, the minimum width being 3.0 m, but 1.75 m the absolute minimum in exceptionally restricted circumstances.

Locational Factors

The alignment of new roads should be selected so as to cause least disturbance to trees and other natural amenities, compatible with the design parameters for the roads.

Road projects should include provision, where possible, for the grassing of slopes and for amenity planting on pockets of land isolated by roadworks.

Other Elements of Road Design

Consideration should always be given to the provision of climbing lanes on primary distributors, trunk roads and rural roads where the grade
<table>
<thead>
<tr>
<th>Road Class</th>
<th>Single Carriageway</th>
<th>Dual Carriageway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trunk</td>
<td></td>
<td>7.30 m (2 lane)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11.00 m (3 lane)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14.60 m (4 lane)</td>
</tr>
<tr>
<td>Primary Distributor</td>
<td></td>
<td>6.75 m (2 lane)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10.00 m (3 lane)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13.50 m (4 lane)</td>
</tr>
<tr>
<td>District Distributor</td>
<td>10.30 m (2 or</td>
<td>6.75 m (2 lane)</td>
</tr>
<tr>
<td></td>
<td>3 lane)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13.5 m (4 lane)</td>
<td></td>
</tr>
<tr>
<td>Local Distributor</td>
<td>7.30 m (2 lane)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.30 m (2 or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 lane)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Road Class</th>
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<td></td>
<td></td>
<td>11.00 m (3 lane)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14.60 m (4 lane)</td>
</tr>
<tr>
<td>Rural A</td>
<td>7.30 m (2 lane)</td>
<td></td>
</tr>
<tr>
<td>Rural B</td>
<td>6.75 m (2 lane)</td>
<td></td>
</tr>
<tr>
<td>Feeder Roads</td>
<td>6.00 m (2 lane)</td>
<td></td>
</tr>
</tbody>
</table>
characteristics warrant and where there is a high proportion of buses and/or heavy commercial vehicles.

Verges and/or shoulders should be a minimum of 3.0 m from embankments and 1.25 m from cutting slopes.

Where the amount of cycle traffic justifies their provision, cycle tracks on roads should be not less than 1.80 m for one-way and 2.80 m for two-way cycle traffic.

For gradients no rigid standards can be laid down because of the involvement of practical economic considerations, but desirable standards are -

Urban areas: Trunk routes, primary distributors and double-decker bus routes: 4%
Others: 5%

Rural areas: Trunk routes and rural roads (A): 4%
Others: $6\frac{2}{3}$

(Extract from Chapter 8 of Hong Kong Planning Standards and Guidelines)
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