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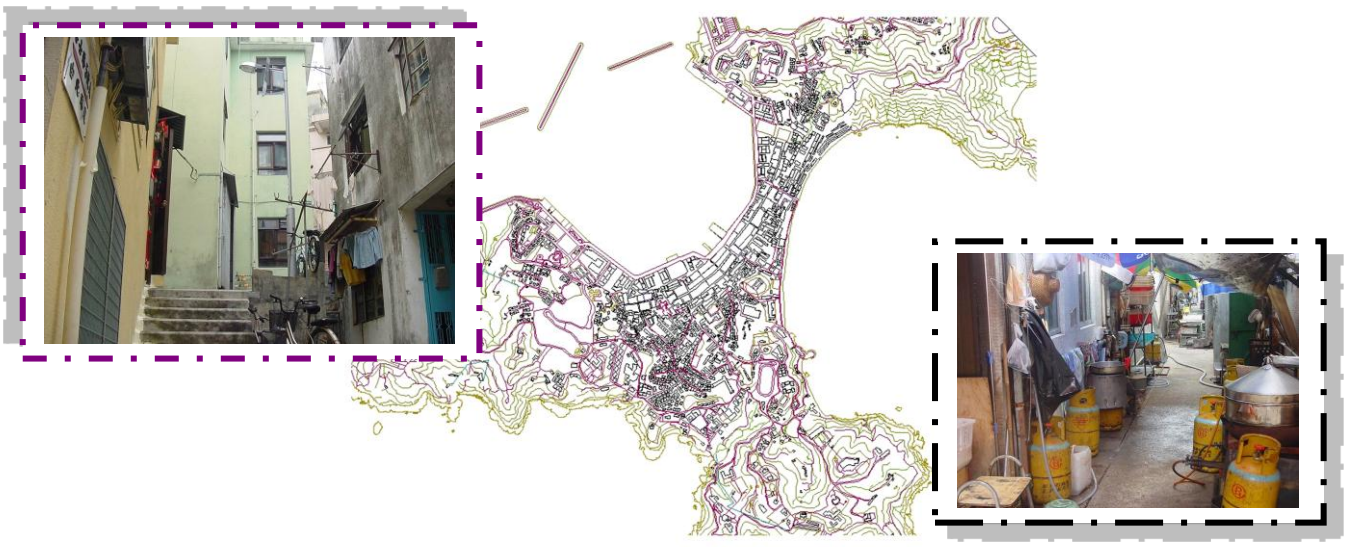

Exploring Urban Environment

Course Objectives

1. To apply the concept of 'distance decay' in the context of 'urban environmental quality'.
2. To understand the statistical techniques and their applications in geographical phenomenon.
3. To use Geographic Information System (GIS) in analyzing the data collected

Student Name: _____

School Name: _____

Course Date: _____

Relevance to the curriculum

Building a Sustainable City — Are environmental conservation and urban development mutually exclusive?

Fieldwork Skills

1. Classification of land use
2. Environmental quality assessment
3. Field observation
4. Point, Line Transect and quadrat sampling

A. Planning and Preparation

1. Discuss the reasons of employing transect sampling to study the urban environment of the study area.

   _____
   _____
   _____

2. What are the expected differences in building appearance, environmental conditions and socio-economic conditions along the three sections of the same transect?

   _____
   _____
   _____

Tasks

1. Assess the environmental conditions of the locations or buildings along transect.
2. Record the land uses of the studied buildings along transect.
3. Analyze the data by using the Geographic Information System (GIS)

B. Data Collection

Methodology

1. Four transects, AB, CD, EF and GH, are specified within the study area on base map (Refers to P.7).
2. Each group is assigned to study along one of the transects.
3. Assess the building appearance and its environmental conditions for 30 locations or buildings (10 for each section) along the transect according to the assessment chart for urban environment below.
4. For each transect, three sections are further divided. In the first section, there are ten fixed locations to be assessed. In the second section, students have to choose ten locations along the transect, and in the third section, locations to be chosen among the designated area.
5. For each section of the transect, also rate the socio-economic conditions.
6. Record the locations or the buildings on the map given accordingly.

ASSESSMENT CHART FOR URBAN ENVIRONMENT				
BUILDING APPEARANCE	**None**	**Little**	**Some**	**Much**
A. Surface deterioration, paint peeling, wall stains(e.g. graffiti)	5	3	1	0
B. Broken glass, leaking water pipes	8	4	2	0
C. Displaced tiles/roof units, roof sag, unstable structure	7	3	1	0
D. Illegal structures	11	6	3	0
E. Building material: Concrete + 10, Brick/stone + 5, paper/zinc/wood + 1 **If there is no buildings in the accessing location, please rate highest score for the building appearance items				
ENVIRONMENTAL CONDITIONS	**None**	**Little**	**Some**	**Much**
F. Air pollution (e.g. offensive smell)	3	2	1	0
G. Noise pollution (e.g. noise from main roads)	3	2	1	0
H. Litter, rubbish dump heaps, harmful insects (e.g. mosquito, vermin and rats)	3	2	1	0
I. Overcrowding (inadequate open space)	3	2	1	0
J. Light penetration (sunlight)	0	1	2	3
K. Grass or trees (green belt)	0	1	2	3
SOCIO-ECONOMIC CONDISTIONS**				
L. Social environment (public and neighbourhood facilities nearby; social harmony; availability of open space, park)	0	1	3	5
M. Economic conditions (business activities)	0	1	3	5

***** For Social and Economic conditions, students only have to assess social environment (item L) and economic conduction (item M) for each section instead of each building along the transect.***

7. Record the land uses of the studied buildings. ***(GROUND FLOOR ONLY)***

Type	Code	Colour
Commercial	Com	Red
Residential	Res	Blue
Industrial	I	Black
Government/Community/Institution (e.g. hospital, school, library)	G/C/I	Yellow
Recreational	Rec	Green
Vacant land	V	Purple
Work in progress	WIP	Orange
Transportation	T	Brown

8. Take photographs of the appropriate buildings to help your analysis.

9. Record all data in the Data Sheet on P.5.

Data Sheet (Transect ____)

Building away from the Town Centre	Land use (ground floor only)	Appearance of the Buildings					Environmental Conditions						Total A-K	Social and Economic Conditions	
		A	B	C	D	E	F	G	H	I	J	K		L	M
1															
2															
3															
4															
5															
6															
7															
8															
9															
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24															
25															
26															
27															
28															
29															
30															
													Item total score		
													Item average score		
													Transect total score		

C. Data Processing and Presentation

Data Processing

1. Calculate the assessment score of each transect.
   - Calculate the total score for **each** location or building.
   - Calculate the total score of **all 30** locations or buildings.
   - Calculate the average score for **each aspect** (building appearance, environmental conditions, and socio-economic conditions)

2. Input the data collected into the GIS map for analysis (Refers to the GIS manual)

D. Data Interpretation

Discussion Questions and Analysis

Referring to your fieldwork results,

(i) describe the environmental quality of transects AB, CD, EF and GH respectively (including environmental, socio-economic conditions).

(ii) to what extent does the environmental quality vary with the distance from the town centre?

(iii) to what extent does the environmental quality vary with the land uses?

Extended Session

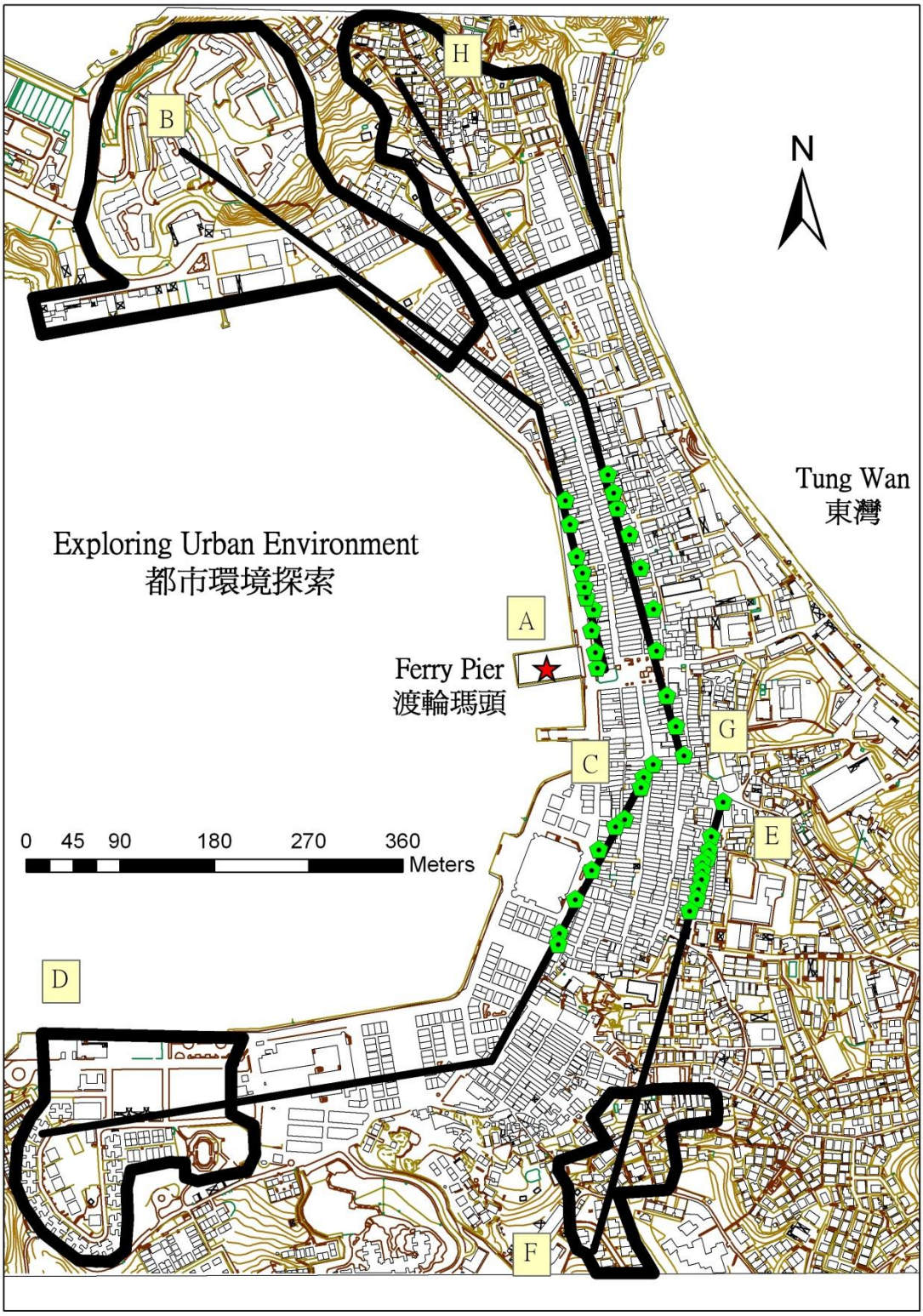
(iv) '*Cheung Chau is a declining town in terms of building quality.*' Justify this statement with field evidence.

(v) Suggest the appropriate method(s) for urban renewal in your study area(s).

E. Evaluation

(vi) In this fieldwork, what are the advantages and disadvantages in using environmental assessment chart to evaluate the building appearance and environmental quality? Suggest how to improve in order to collect data more effectively.

(vii) Suggest how to **(a)collect first hand and (b)use second hand** data and information necessary for further study on the socio-economic conditions. Explain your suggestions.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B
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Tung Wan
東灣
Exploring Urban Environment
都市環境探索
A
Ferry Pier
渡輪瑪頭
G
C
E
0 45 90 180 270 360
Meters
D
F