CHAPTER 6 :

ABANDONED HOUSING – ISSUES AND RELATED CAUSATIVE FACTORS

6.0 INTRODUCTION

Abandoned housing is a new phenomenon in Malaysian housing industry. The scale of the problem is serious as the number of buyers is high and a substantial amount of money is wasted.(c.f Figure 2.8 pp31 and Appendix 4C Photographs, pp281). The picketing of affected buyers pressured the Government to look into a way of reviving these abandoned projects. (Appendix 5 Newspaper cuttings pp282-3). The scale of abandoned housing project recorded by the Ministry may be higher as many abandoned projects may not be recorded.

Abandoned housing*[1] refers to incomplete or unbuilt housing projects approved by the Housing Authority and abandoned by the housing developers. The clear cut definition applies to those incompleted housing units where developers have gone into receivership and the affected purchasers have lodged a report with the Ministry of Housing and Local Government. Figure 6.1 shows the development process of a housing estate project from approval to occupation of residents and the development status of housing stock. In the case of Malaysia, the development status of housing projects are usually grouped as completed with Certificate of Fitness for Occupation, Under-construction and Committed development.

The 'grey area' lies in those outstanding housing projects which were not developed*[2] after a 'reasonable period of time' and were not reported to the Ministry. Based on the above and the current abandoned housing stock, it can be further classified into 3 different categories as follows :

a) totally unbuilt after planning permission approval stage (TYPE 1)

(1) DEFINITION

THE MINISTRY OF HOUSING AND LOCAL GOVERNMENT DEFINES ABANDONED HOUSING AS PROJECTS WHERE THE THE CONSTRUCTION WORK HAS BEEN STOPPED/ DELAYED FOR MORE THAN 6 MONTHS FROM THE DATE WHICH IS SPELLED OUT IN THE SALE AND PURCHASE AGREEMENT BETWEEN THE DEVELOPER AND BUYERS.
These projects are usually at construction stage and have buyers. These buyers had lodged complaints on project stoppage against the developer at the Ministry of Housing and Local Government.

THE AUTHOR DEFINES ABANDONED HOUSING AS INCOMPLETE HOUSING PROJECTS OR TOTALLY UNBUILT HOUSES BY DEVELOPERS. This also includes outstanding approved housing projects which had been approved and remained unbuilt after more than 5 years.

IN BROADER TERM, ABANDONED HOUSING INCLUDES BOTH ABANDONED AND COMMITTED HOUSING (PENDING FLOW). This means that all the non feasible projects should be removed from the housing record to ensure housing supply planning. Abandoned and Committed Housing are 'unstable stock' and within the control of the Authority i.e revoke the development approval.

Others similar terms are PROJECT STOPPAGE, PROJECT DELAY and OUTSTANDING HOUSING APPROVAL PROJECTS.

2) PROCESS

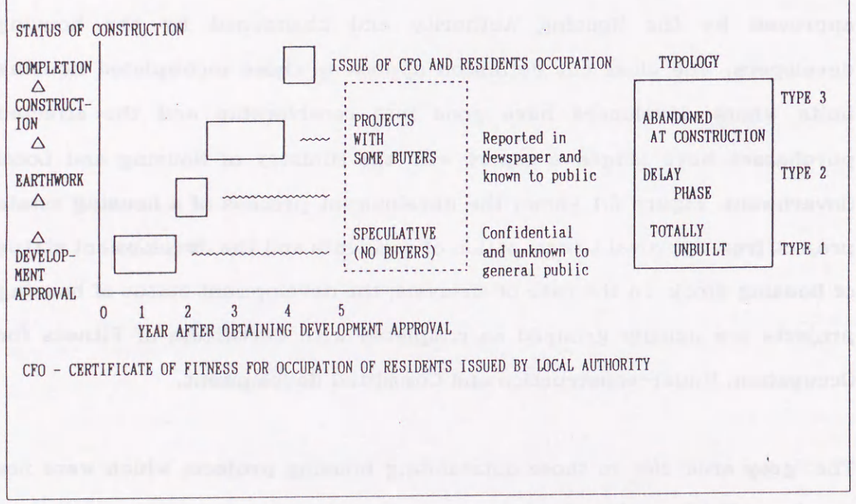


Figure 6.1 The development status of housing estate projects.

b) completed earlier phases but delay later phases (TYPE 2)

c) abandoned at construction stage (TYPE 3)

In this Study, the definition of abandoned housing is much wider as it includes not only approved housing projects abandoned at construction stage but also projects which had been approved but not developed after 5 years from approval time.*3

The coexistence of the problem of abandoned housing and overdue committed housing projects with the shortage of Low Cost houses made it difficult for the Housing Authority to decide whether to approve future new projects. On one hand, there is an oversupply situation and on the other, projects approved were not built over a long period of time whilst some built were abandoned.

6.1 ABANDONED HOUSING UNITS

Based on the data from the Sixth Malaysia Plan 1991-95 (1991), the State of Johor topped the list of abandoned housing projects and there were a total of 14,747 units reported which had been purchased. There was no detailed information about the status of construction of these housing projects, but it can be assumed that they were at construction stage and had been purchased because the Ministry's data was based on cases where buyers had lodged a report.

Based on the above observation, detailed information on the categories of committed housing projects need to be sieved out. A reclassification of the status of housing projects is required to ensure more effective forward planning. An understanding of the reasons for the mismatch in housing supply and demand is important to prevent future occurrence and subsequent problems.

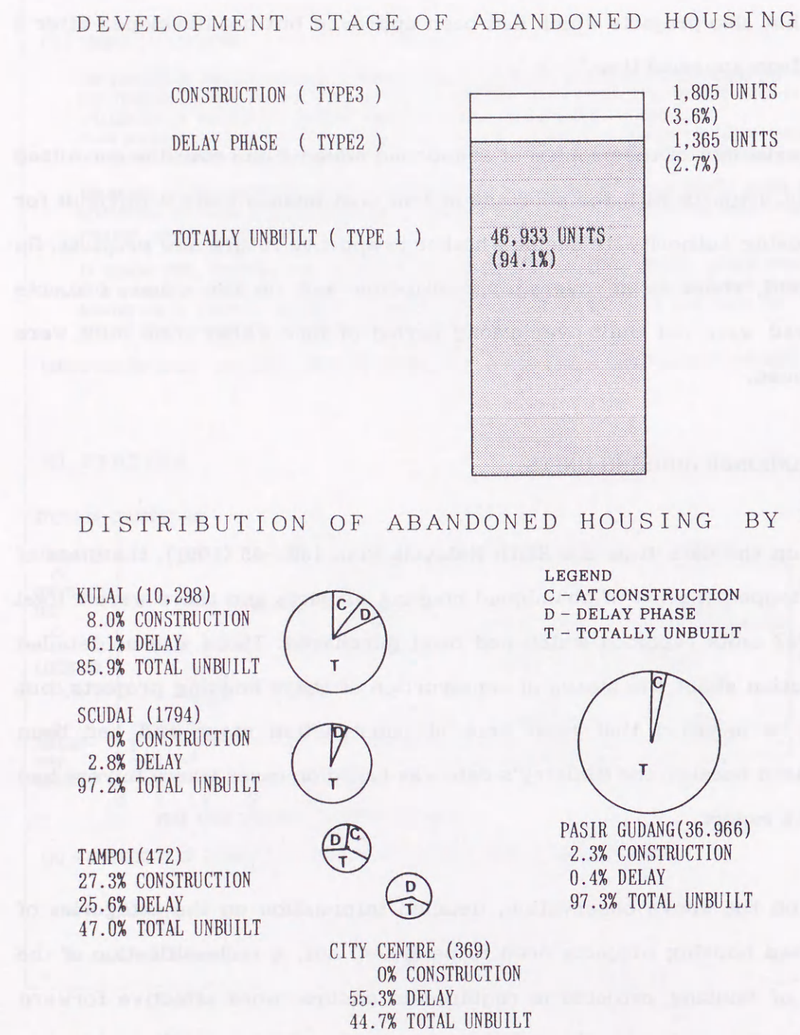


Figure 6.2 Distribution of abandoned housing by development status

The data obtained from documented housing projects showed that 49,900 units were classified as abandoned housing units. Figure 6.2 shows the different categories of abandoned housing projects. From this total, different categories of development status can be classified according to construction status ; 46,933 units (94.1%) were totally unbuilt, 1,365 units (2.7%) had later phases delayed, 1,805 units (3.6%) were underconstruction and committed. The TYPE 1 category (totally unbuilt) projects are speculative in nature because the projects were approved but not developed even after a 5 year period. The TYPE 2 category (later phases delayed) are projects where developers intentionally delayed their implementation due to poor market conditions. The TYPE 3 category (abandoned at construction) are projects which are the most serious and need the Authority's intervention to revive them because the developers may have problems financing them.

In terms of the distribution of abandoned housing by zones and abandoned housing type, Pasir Gudang/Plentong zone (Zone D – 20 km east from city centre) is the most serious with 36,966 units (74.1%) followed by Kulai zone (Zone E – 30km from city centre) with 12,089 units (24.2%). From the above data, approved housing projects at the outer fringe are larger in size and hence abandoned housing involved massive units of houses. On the other hand, in the city centre and inner fringe zones such as Tampoi (Zone B – 10km from city centre), abandoned units are much smaller in number.

6.2 REGRESSION ANALYSIS ON ABANDONED HOUSING

Although abandoned housing problem is viewed as a serious issue , there are not many studies on them. This is probably due to the problem of data availability because little information can be gathered from absent bankrupt developers. Confidentiality of planning information and the vague definition

of abandoned housing makes it more difficult to study them.

There are several questions raised about the abandoned housing problem. Is this problem temporal due to economic cycle or is it a structural problem due to weaknesses in the housing supply system? This question is difficult to be answered. The statement reported in the Sixth Malaysia Plan 1991-95 (para 14-07, page 364) was as follows:-

'... The slow progress in the implementation of housing programmes, including Special Low Cost Housing Programme (SLCHP), was attributed to several factors. These included unsuitability of sites or locations, financial, management, problems of developers, misuse of funds collected from house buyers, incompetent contractors and delays in getting plan approvals. These resulted in many housing projects being delayed or abandoned, of which 80% were Medium cost houses involving 36,130 house buyers.....'

The above report stated that abandoned housing is attributed by several factors and it is not temporal or caused solely by economic cycle during the recession period. Undoubtedly, apart from non economic factors, housing demand will slow down during recession period.

The factors can be regrouped into 2 categories based on legislative power to control future abandoned housing problem (1) Federal Government related factors (misuse of funds, incompetent contractor and problem of developers) and (2) State Government related factors (poor location and delay in approval). It is difficult to analyse all the above listed causative factors and study their weightage because different projects have different backgrounds.

In order to carry out a regression test[*4] on the some of the possible causative factors of abandoned housing projects, the above findings can be

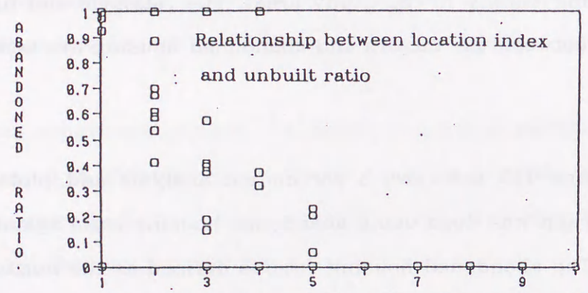
used as a theoritical guide to choose the parameters for the analysis. Based on the documented data gathered from the Director of Lands and Mines office, factors related to abandoned housing projects can be formulated i.e. based on four main aspects:- economic performance, project size, Low cost ratio and location.

Other than the economic performance factor, the other three factors (project size, low cost ratio and location) are within the control of the State Government in approving housing projects.[*5] This test also examines whether the problem is temporal as caused predominantly by the slow down in economy or other factors which are within the control of the State Government(i.e.by improving the housing approval system to facilitate and control housing supply in the Study area). The rationale and hypothetical relationship between the factors and abandoned housing are summarised in figure 6.3

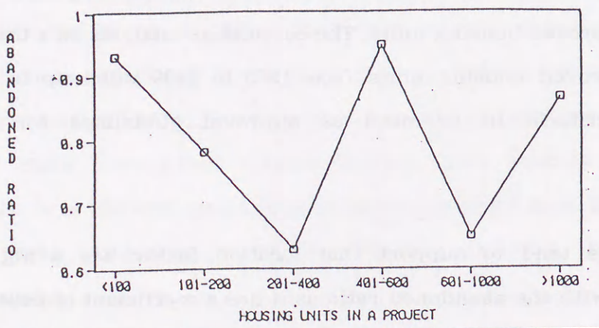
By using Lotus 123 software, a correlation analysis and plotting of the dispersion graph was done using abandoned housing ratio against the four parameters. The abandoned housing ratio is defined as the number of units completed and issued with Certificate of Fitness for Occupation (CFO) over the total approved housing units. The correlation analysis on a total of about 200,000 approved housing units from 1973 to 1989 will help to single out pertinent criteria to be used as approval guidelines for the State Government.

The findings tend to support that location factor has a higher linear correlation with the abandoned ratio as it has a coefficient of determinant of 0.6. Although the other indicators do not support linear correlation, the analysis of project size tends to suggest that the optimal housing project size in the Study area is at 200 to 400 units and also at a size of more than

PARAMETERS	INDICATORS	HYPOTHETICAL RELATIONSHIP
1) ECONOMY PERFORMANCE Poor Economy affects housing demand and fund raising.	GROSS NATIONAL PRODUCT	GNP ▲ >>> HOUSING DEMAND ▲ >>> ABANDONED RATIO ▼
2) SIZE OF PROJECT Size affects the economies of scale	TOTAL UNITS/AREA	SIZE OPTIMALITY ▲ >>> PROFIT ▲ >>> ABANDONED RATIO ▼
3) LOW COST HOUSING RATIO High ratio incurs high cost of cross subsidy and affects profit	PERCENTAGE OF LOW COST IN EACH PROJECT	LOW COST RATIO ▲ >>> PROFIT ▼ >>> ABANDONED RATIO▲
4) LOCATION OF PROJECT Good location easier to market.	ACCESSIBILITY TO SERVICES, AMENITIES AND JOB	ACCESSIBILITY ▲ >>> PROFIT ▲ >>> ABANDONED RATIO ▼



Relationship between location index and unbuilt ratio



Relationship between project size and unbuilt ratio

Figure 6.3 Abandoned housing analysis

1,000 units.

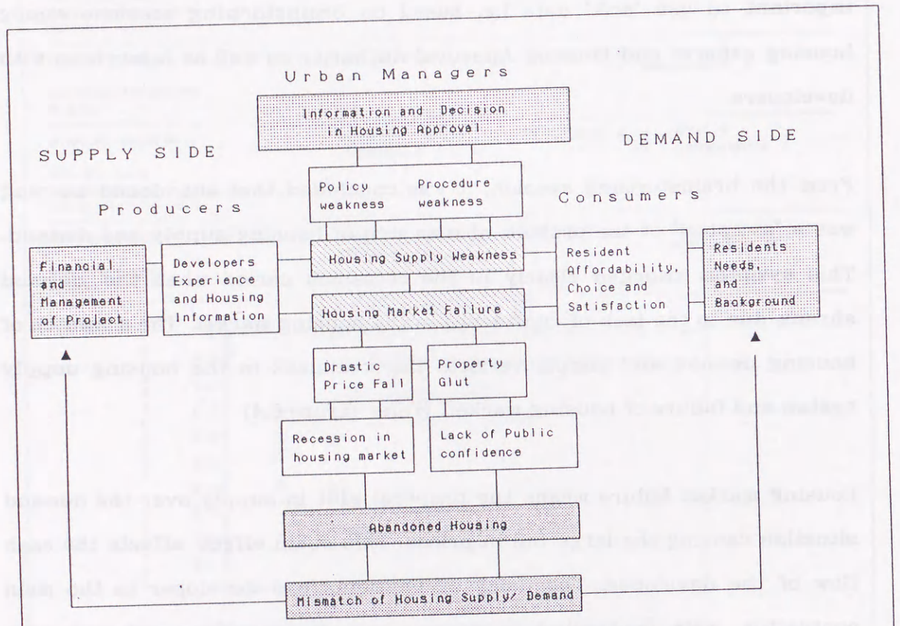
6.3 BRAINSTORMING ON CAUSES OF ABANDONED HOUSING AMONG EXPERTS

After analysing 'hard' statistical data of approved housing, it is also important to use 'soft' data i.e. based on brainstorming sessions among housing experts and Housing Approval Authority as well as interviews with developers.

From the brainstorming session, it was concluded that abandoned housing was a 'symptom' of the problem of mismatch of housing supply and demand. This symptom emerged clearly in the recession period when the demand shrank due to the lack of confidence in the housing market. The mismatch of housing demand and supply reflects the weakness in the housing supply system and failure of housing market. (refer figure 6.4)

Housing market failure means the temporal glut in supply over the demand situation causing the large fall in prices. This chain effect affects the cash flow of the developer. The delay of payment from developer to the main contractor, main contractor to sub-contractors, suppliers and labourers caused the project to stop. Once the developer disappears or is being declared bankrupt, the project is abandoned. Purchasers who had paid the progress payments and had committed loan arrangements with the bank were at a loss.

Based on the brain storming discussion, the possible causes of abandoned housing are categorised into 3 groups : (i) Finance and management weaknesses of developers (ii) Housing approval decision making and monitoring weaknesses. (iii) Mismatch of housing supply with residents



FACTORS RELATED TO ABANDONED HOUSING		
a) Financial matter	b) Information and decision	c) Residents Needs and Affordability
- Weakness in finance system over misuse of project fund - Commercial miscalculation due to inexperienced developers - Speculative approach	- Lack of monitoring - Administrative weakness of approval process - Lack of information in approval decision due to poor data management	- Lack of knowledge and information on the residents choice of housing. - Complexities of housing market due to mixed living and foreign ownership(since it's near Singapore)
FEDERAL GOVERNMENT ACTION - Developers licencing control . - Financial ruling in developer account	STATE GOVERNMENT ACTION - Control Housing Supply through effective approval - Monitoring of construction - Information improvement	STATE AND FEDERAL GOVERNMENT ACTION - Setting up data bank on housing development for monitoring and evaluation - funding R & D in housing

Figure 6.4 Result of brainstorming session on causes of abandoned housing

preferences. The solution to the First Category (Finance and Management) requires attention from the Federal government in terms of financing and licensing of developers. The solution to the Second Category (Housing approval decision making) requires attention from the State Government in terms of objective decision making and monitoring process. The Third Category (mismatch of needs of residents preferences) requires the detailed study of residents characteristics, satisfaction level and housing preferences

(a) Finance and Management Weaknesses

(i) Present weaknesses in finance system

Prior to the recent introduction of the Project Account System, the relatively easy and ready source of finance for projects from the purchasers' deposits and banks can be easily misused by the developers. They are used for their own private business investment instead of the housing project. This was reported as one of the main causes of abandoned housing of TYPE 3 category (abandoned at construction stage).

(ii) Commercial miscalculation of developers

This happens when inexperienced developers especially the smaller and new entrepreneurs who have little knowledge in the construction industry become housing developers. The poor management of cash flow result in a high gearing situation and when houses cannot be sold, developers do not have sufficient cash to pay the bank interest.

(b) Housing Approval Decision Making and Monitoring weaknesses

The Housing approval decision making weaknesses are due to the massive approval of houses without monitoring the phases of implementation.

(i) Lack of monitoring system of Housing Authority

The lack of monitoring at implementation stage has resulted in many developers carrying out projects based on demand. The demand driven information is usually speculative and temporary only. As such when many developers decided to build at the same time and speculative buyers decided not to invest in houses, a real excess of supply of houses was created.

(ii) Lack of information for objective decision

The lack of information is apparent in the Housing Approval Authority and developers. In the case of the Housing Authority, the data may be available but cannot be retrieved due to poor data storage and management system. In addition, vital data (mapping information and construction status of projects) is lacking for monitoring purposes and decision making in future housing approval consideration.

(iii) Administrative weaknesses in approval process

The approval system is still lengthy although efforts have been made to improve it since 1983 with a new approval procedure commonly known as the One Stop Agency. In the past, the approval process had to go through about 12 Government departments to obtain technical approvals from individual departments before being finally approved by the State Executive Council. The old system did not have a fixed time frame for approving a project. It could take as long as 3 to 12 years for approval of a project depending on the complexity of land titles and developers' competency. The One Stop Agency system adopted by the State Government aims to reduce processing time to a maximum of 3 years and streamline the application procedure for housing projects. This approval system required 2 main committees with 2 approval status; Principal Approval (Technical committee) and Final Approval (State Executive Council). Although the One Stop Agency has been implemented for quite a long time now, most housing developers are skeptical

about its effectiveness. (refer Chapter 8 on developers' interview)

(c) Mismatch of Housing Supply and Residents needs

(i) Lack of information on residents' housing preferences

As there is no study on housing estate residents satisfaction and preferences, it is not possible to understand the residents' needs and problems faced by the residents. In the 1970's, the shortage of houses in the housing market had created a situation for speculative buying where any houses built were sold immediately. However, the massive supply of housing estate construction in the late 1980's had provided an opportunity for the buyer to choose houses of their own preference. Therefore it is important to understand what the main preferences, satisfying factors of residents and affordability are.

(ii) Complexities of mixed dwelling

The housing market in the Study Area is heterogenous by ethnicity, house category , project size, location from main employment centres and sometimes nationality (Singaporean and Indonesian). Therefore it is important to understand the residents satisfaction and housing preference to formulate future policy.

6.4 VIEWS OF DEVELOPERS AND PROFESSIONALS ON THE CAUSES OF ABANDONED HOUSING

In this interview, the causes of abandoned houses refer to aspects where the Federal and State Government can control in order to prevent abandoned housing i.e. through policy regulation such as licensing and approval conditions. They do not refer to general causes such as misuse of funds, developers poor management and cash flow problems.

The causes of abandoned houses are divided into 5 main factors (1) Economy and finance (economy climate, housing finance policy and high land cost) (2) Feasibility (project location, oversupply and site problem) (3) Equity Policy (Low Cost house and Bumiputra discount) (4) Approval procedure and rules(high planning standards, long approval time for development order and building plan)

(a) Overall Rank

Figure 6.5 shows that the main causes of abandoned houses are economic recession (mean rank=1.17) followed by poor project location (mean rank=1.70) and gross oversupply of approved houses (mean rank=2.39) in the Study Area. Economy , Housing Finance and Project Feasibility factors are the key factors of the causes of abandoned housing. The other factors are policies such as Low Cost and Bumiputra policy which may affect the profitability and marketability of developers.

(ii) Developers

Generally, the sequence of importance of factors contributing to abandoned houses was quite similar among the developers. Developers of Medium and Small size projects considered the high Planning Standard requirements and long approval time as the main contributing factors of abandoned housing compared to developers of large size projects. However, developers of large size projects considered the Bumiputra policy as an important factor contributing to abandoned housing.

(iii) Professionals

The sequence of importance of factors contributing to abandoned houses were fairly similar. The Public sector professionals rank had less variations (with more ties). Public sector professionals ranked housing finance as the

RANKING ON CAUSATION FACTORS '1' - Most contributing to '11' - Least contributing Factors		Developer Categories				Professional Groups by Public and Private		Over-all
		L	M	S	Mean	Public	Private	Mean
Economy and Finance Aspects	Economy climate	1.0	1.0	1.0	1.0	1.0	2.0	1.17
	Housing Finance	4.0	6.0	5.0	5.0	2.0	8.0	4.70
	High Land Cost	5.0	4.0	4.0	4.3	3.0	10.0	5.09
Project Viability	Project Location	2.0	2.0	2.0	2.0	1.0	2.0	1.70
	Gross Oversupply	2.0	4.0	3.0	3.0	1.0	3.0	2.39
	Site Problem	5.0	7.0	5.0	5.7	5.0	9.0	6.17
Policy Matters	Low Cost Houses policy	3.0	4.0	4.0	3.7	3.0	4.0	3.43
	Bumiputra policy	3.0	3.0	4.0	3.3	3.0	5.0	3.61
Procedure and rules imposed by the Authority	Planning Standard	4.0	4.0	3.0	3.7	3.0	6.0	3.96
	Development approval	4.0	4.0	3.0	3.7	3.0	6.0	4.09
	Building Plan Approval	4.0	5.0	4.0	4.3	3.0	7.0	4.65

Note : L - Large, M - , S - Small project's developer
1.0 Top 3 most contributing factors of abandoned housing

Source : Author's fieldwork August 1991

FACTORS	DEVELOPER	PROFESSIONALS PUBLIC	PROFESSIONALS PRIVATE
1 ECONOMY & FINANCE (Economy slow down)	High	High	High
2 PROJECT VIABILITY (Project Location) (Gross Oversupply)	High	High	High
3 POLICY MATTERS	Low	Low	Low
4 PROCEDURE AND RULE	Low	Low	Low

All the three parties agreed that the 3 main contributing factors of abandoned housing are the SLOW DOWN IN ECONOMY, POOR LOCATION of approved housing projects and GROSS OVERSUPPLY of houses caused by sudden overbuilding of approved housing projects in the mid 1980's.

Figure 6.5 Ranking of causes of abandoned housing in the Study Area.

fourth most important factor after economy, project location and gross oversupply.

6.5 CONCLUSION

The main findings drawn from this chapter are as follows :-

(a) The documented housing data showed that 3 types of abandoned housing projects can be classified -TYPE 1 (totally unbuilt), TYPE 2 (Delay phase of implementation) and TYPE 3 (Abandoned at construction stage). Among these 3 categories, TYPE 3 is the most serious to the Authority because these projects have committed buyers and many of these projects went bankrupt. Although, TYPE 3 is the most serious, fortunately the number is much less(3.6%) than that in TYPE 1(94%).

(b) The Study tends to support the Government's view on the causes of abandoned houses i.e. due to slow down in economy, poor location and developer's mismanagement. Other factors such as oversupply situation, Low cost and Bumiputra policy which resulted in additional built-in costs(due to subsidy required) to the developer were also cited as causes of abandoned housing.

(c) The regression analysis showed that location has a fairly high correlation with abandoned ratio. In addition, project size was also related to the abandoned ratio. A detailed study is required to study this relationship.

(d) The brainstorming session concluded that a comprehensive understanding on the needs of the 3 main parties in the housing market is important for future planning of housing development as abandoned housing is a symptom of mismatch of housing demand and supply.

However, it is difficult to single out individual reasons or place weightage on certain factors. As the economic climate is not within the control of the Government, the attention of Government should be aimed at improvement in the approval process and housing supply planning in terms of project location, project size and low cost housing policy so that a better match between demand and supply of housing is achieved.

NOTES

1) The definition of abandoned housing is vague as other terms such as project stoppage (projek terhenti) and delayed housing projects (projek tergendala) are also commonly used interchangeably. The Ministry of Housing and Local Government defines abandoned housing projects as projects where construction work has been stopped for more than 6 months as spelled out in the Sale and Purchase Agreement between the developer and buyers. However, the definition in this Study follows the State Government's definition of abandoned housing where approved projects are not developed for more than 5 years after the approval date.

2) The word 'develop' as used in the terminology of development refers to all building or engineering operations being carried out.

3) This definition was used by the Director of Lands and Mines Johor, which is different from the definition by the Ministry of Housing and Local Government. The author is of the opinion that the former definition is more practical as housing planning should sieve out non feasible projects to determine the effective housing supply.

4) Regression test is indicative but not deterministic because the phenomenon of abandoned housing may not be linear in function.

5) Economic factors such as global recession is not within the control of Government. However, the Federal government may use fiscal or monetary policies to stimulate the housing industry.

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CHAPTER 7:

ANALYSIS OF FACTORS OF GOOD APPROVAL SYSTEM FOR IDEAL HOUSING ESTATE DEVELOPMENT.

7.0 INTRODUCTION

The research findings from Chapter 5 and 6 indicated that abandoned housing and overdue committed housing problems reflected weaknesses in the housing approval process. The assumption that encouraging a 'perfect housing market' by deregulation and approval of massive housing projects will benefit the general public (buyers specifically) was unfortunately not realisable as reflected in the abandoned housing problem (Ho C.S.and Konno A, 1992). There is thus a need for the Housing Authority to regulate the housing industry and improve the data base and management information system in order to ensure a more objective decision making process. In order to achieve these, a good housing approval system is urgently needed.

By adopting a problem solving approach, firstly, it is important to define the housing approval issues faced in the housing industry. Based on the issues, a framework towards an ideal housing development model may be established to formulate parameters used in the ideal housing estate model. Parameters for the model can be formulated from the results of the fieldwork survey of developers, Housing Authority and residents.

7.1 EVALUATION OF CURRENT HOUSING ESTATES DEVELOPMENT ISSUES

This evaluation of housing estate development analyses the housing development issues related to urban management based on demand and supply factors. The evaluation is based on a 4 point degree of seriousness (1-least serious.....4-very serious)

The demand factors are Market conditions and outlook. The supply factors are divided into 'Urban Manager/Authority related factors' (1) Housing Approval Procedure (Development order approval and building approval) (2) Housing Approval Policy (Low Cost housing policy of 40% of total units and Bumiputra policy of 40% of total units and 15% discount of sale price) and 'Producer/Developer related factors' (1) Housing land supply (2) Housing Finance (3) Housing Construction (Infrastructure, General contractors, Construction Workers and Construction Material).

(a) Overall evaluation of seriousness of problem

Figure 7.1 shows that the development approval procedure is the most serious problem (3.00) followed by Low Cost Housing policy(2.96) and Bumiputra policy (2.91). Generally the mean of all the 12 listed factors is 2.92 which is below the satisfaction level of 2.0 except for Housing finance (1.96), Housing supply market(1.13) and Housing demand market (1.22) in the Study Area. The good housing market in 1990 as found in the above survey was contributed by the deregulation of the State policy in lifting foreign ownership on residential and commercial properties. This deregulation and strong Singapore dollar against Malaysia Ringgit (S$1.00 = MR$ 1.50) had caused an influx of buyers from Singapore.

Based on the distribution, there were 3 distinct groups of opinion towards the housing issues. Among them were:-

i) The developers

The developers viewed the current Government policy and procedure as serious housing issues (score > 2.5) where attention should be given.

	EVALUATION FACTORS Measurement 1- very satisfactory 4- very serious issues		Developer Categories L	M	S	Mean	Professional groups by Private and Public Public	Private	Over-all Mean
AUTHORITY	Approval Procedure	Development Approval	2.5	3.5	3.7	3.2	2.0	3.6	3.00
		Building Plan Approval	2.7	2.0	3.2	2.6	2.0	3.2	2.96
	Policy Matters	Low Cost Housing	3.0	2.7	3.5	3.1	2.3	3.4	2.91
		Bumiputra Discount	3.0	2.7	3.7	3.1	2.0	3.4	2.70
DEVELOPER	Construct-tion Matters	Construction Labour	2.0	2.2	2.5	2.2	3.3	3.0	2.65
		Construction Material	2.2	2.5	2.2	2.3	3.0	3.0	2.61
		Housing Contractor	2.0	2.0	2.2	2.1	2.5	2.8	2.35
		Infrastructure	2.0	2.5	2.2	2.2	2.0	2.8	2.30
	Land Cost	Housing Land Supply	2.0	2.5	2.2	2.2	2.5	1.8	2.22
MARKET	Finance	Housing Finance	2.5	2.0	2.8	2.4	1.5	1.4	1.96
	Market Condition	Housing supply market	1.0	1.8	1.0	1.2	1.3	1.0	1.13
		Housing demand market	1.0	1.7	1.0	1.2	1.0	1.0	1.22
		Mean (Column)	2.5	3.1	2.9	2.8	2.2	3.7	2.92

Note : L - Large, M - Medium, S - Small developer
3.0 Score more than 2.5 (as serious housing issue)
Source : Author's fieldwork August 1991

FACTORS	DEVELOPER	PROFESSIONALS PUBLIC	PROFESSIONALS PRIVATE
APPROVAL PROCEDURE	Serious	OK	Serious
POLICY MATTERS	Serious	OK	Serious
CONSTRUCTION MATTERS	OK	Serious	Serious
HOUSING LAND COST	OK	OK	OK
DEVELOPMENT FINANCE	OK	OK	OK
MARKET CONDITION	OK	OK	OK

Developers considered current APPROVAL POLICY AND PROCEDURE as issues . However, the Public professionals think otherwise , that housing CONSTRUCTION MATTERS is the current issue. The Private professionals considered both should be considered as current issues.

Figure 7.1 Housing estate issues in the Study Area

ii) The Public Professionals

The public professionals viewed the current housing construction matters as serious (score >2.5). Attention should therefore be focused on labour, material, contractor and infrastructural matters.

iii) The private professionals

The private professionals groups viewed current Government policy and procedure as well as the above housing construction matters as serious (score >2.5). Therefore attention should given to both in order to improve the housing industry in Malaysia.

(b) Developers by different size

Among the developers, the developers of Large projects tended to view present Development and Building approval procedure as less serious than other developers. However, Low Cost Housing policy and Bumiputra policy were viewed as serious to developers of Large size projects and not to developers of Medium size projects perhaps because the cross subsidy in larger projects was less optimal than that in the medium size ones. Generally, the developers of Small size projects viewed current Government policy and Procedure as serious issues. This is logical as smaller size projects were less flexible in terms of cross subsidy from Non Low Cost to Low Cost housing units.

Overall, the developers of Large size projects (score=2.49) viewed the current housing issues as less serious than developers of Medium size projects (score=3.14) and Smaller size projects (score=2.86). The main reason is probably due to the following i.e. to quote the developers:-

' the size of housing development does not affect the approval time or procedure and expenses incured. In most cases,the larger housing estates

have the advantage of economies of scale in terms of production and provision of social facilities as compared with Medium or Small size housing estates'.

(c) Professionals by public and private sectors

Professionals from Private firms were generally not satisfied with all the factors as compared with the Public sector professional group except on the factor of land supply (score=2.5). Among the factors, approval procedure and policy were the least satisfactory. In a way, private professionals will tend to be less bias in their judgement as compared with developers(being businessmen) and public professionals (being public servants). Logically the public sector professionals were less vocal or critical towards their own Government work. Their views will probably reflect more the public and their own organisational interest.

(d) Ranking of housing development issues

The ranking of current housing issues in Figure 7.2 supported that 'Authority factors' such as Approval procedure (mean rank= 1.09) and Government Low Cost policy and Bumiputra quota (mean rank= 2.0) were ranked the most serious issue in the Study Area. The housing land supply (mean rank=2.87) was ranked as the third most important issue for housing estates development in the Study Area. This was probably due to the shortage of prime residential land in inner city and suburbs.

Ironically, the public professional groups also ranked development approval procedure as the most important factor. This tends to show that they also seriously considered that the current approval system needed improvement.The differences in ranking are as follows :-

WHOSE POWER TO CONTROL?	RANKING FACTORS(mean) Measurement 1 - Most important to 6 least important	Developer Categories				Profession groups by public and private		Over-all
		L	M	S	Mean	Public	Private	Mean
AUTHORITY	Approval Procedure	1.0	1.5	1.0	1.2	1.0	1.0	1.09
AUTHORITY	Government Policy	2.0	1.8	1.8	1.9	2.5	1.8	2.00
MARKET	Housing Land Supply	4.0	3.5	3.0	3.5	1.3	3.2	2.87
MARKET	Housing Finance	3.5	3.5	3.0	3.3	2.3	3.2	3.04
DEVELOPER	Housing Construction	3.0	2.8	4.0	3.3	4.0	4.2	3.65
MARKET	Housing Market	4.8	4.0	4.8	4.5	3.7	5.0	4.39

Note : L - Large, M - Medium, S - Small develop
) Top three most important housing issues.
Source : Author's fieldwork, August 1991

PERCENTAGE DISTRIBUTION OF RANK BY DEVELOPER SIZE AND FACTOR

RANK	1	2	3	4	5	6
OVERALL%	91	9	0	0	0	0
LARGE	100	0	0	0	0	0
MEDIUM	50	50	0	0	0	0
SMALL	100	0	0	0	0	0
PRIVATE	100	0	0	0	0	0
PUBLIC	100	0	0	0	0	0

APPROVAL PROCEDURE

RANK	1	2	3	4	5	6
OVERALL%	0	9	39	30	22	0
LARGE	0	0	100	0	0	0
MEDIUM	0	25	75	0	0	0
SMALL	0	0	50	50	0	0
PRIVATE	0	20	20	60	0	0
PUBLIC	0	0	100	0	0	0

CONSTRUCTION MATTERS

RANK	1	2	3	4	5	6
OVERALL%	0	26	48	22	4	0
LARGE	0	50	50	0	0	0
MEDIUM	0	25	25	25	25	0
SMALL	0	25	50	25	0	0
PRIVATE	0	0	80	20	0	0
PUBLIC	0	67	33	0	0	0

HOUSING FINANCE

RANK	1	2	3	4	5	6
OVERALL%	13	74	13	0	0	0
LARGE	0	100	0	0	0	0
MEDIUM	25	75	0	0	0	0
SMALL	25	75	0	0	0	0
PRIVATE	20	80	0	0	0	0
PUBLIC	0	50	50	0	0	0

GOVERNMENT POLICY

RANK	1	2	3	4	5	6
OVERALL%	22	17	26	25	4	4
LARGE	0	0	25	50	25	0
MEDIUM	25	25	25	25	0	0
SMALL	0	25	50	25	0	0
PRIVATE	0	20	40	40	0	0
PUBLIC	57	33	0	0	0	0

HOUSING LAND SUPPLY

RANK	1	2	3	4	5	6
OVERALL %	0	4	22	35	9	30
LARGE	0	0	0	50	25	25
MEDIUM	0	25	25	25	25	25
SMALL	0	0	25	25	50	0
PRIVATE	0	0	20	20	60	0
PUBLIC	0	0	33	67	0	0

HOUSING MARKET

Figure 7.2 Ranking of current housing development issues

i) Generally the sequence of ranking is the same but the developers of Large and Medium size projects placed construction as more serious issues than land supply and finance aspects as compared with developers of Small size projects. This is because developers of Large and Medium size projects usually have large land banks and receive better support from financial institutions.

ii) The Public professional groups placed Government policy related factors as less serious issues than other factors (such as Land supply, finance and market) as compared with other respondent grouping probably due to the relative ranking.

The above survey result confirmed that the present housing approval system of the Authority and its policy requires improvement. The next section (7.2) will elaborate on one of the possible approaches in improvement of the housing approval system.

7.2 MODEL OF IDEAL HOUSING ESTATE AS BASIS FOR HOUSING APPROVAL EVALUATION

Besides the above developers and professional interview result, the abandoned housing (refer Chapter 6) also showed that a good evaluation system is required to evaluate future proposed housing projects. One of the approaches to improve the housing approval system is based on identifying criteria towards an ideal housing estate development. From the viewpoint of urban management, the questions posed are:-

1) What constitutes a good housing approval evaluation system for an ideal housing estate development? And this question leads us to the second question;

2) How does one determine parameters of ideal housing estate development?

A good housing approval evaluation system can be measured by criteria of EFFECTIVENESS and EFFICIENCY of development control.

The measurement of EFFECTIVENESS of housing approval evaluation process is the objectives achievement (i.e. achieving an IDEAL HOUSING ESTATE DEVELOPMENT) related to the Housing Strategy and Goal of the State and Local Government. This effectiveness leads us to the question of ' WHAT CONSITUTES AN IDEAL HOUSING DEVELOPMENT?'

In the absence of a concrete housing policy in the Case Study, the developers and professionals interview survey and brain storming sessions with the Housing Authority provided us with their ideas on a good housing estate. These survey findings aim mainly to ascertain the parameters of an ideal housing development.

The developers and professionals are direct 'producers' of housing supply as they design and build them. The Housing Authority are the urban managers who facilitate and control housing development via development approval and monitoring process. In order to gain insights into their aspirations, several surveys were carried out to obtain the views of developers and professionals and Housing Authorities on the general housing issues and aspirations in an ideal housing development project. Finally, the aspirations of the consumers or residents should also be considered in the model. Figure 7.3 shows the conceptual model of an ideal housing development from the urban management's point of view.

7.3 PARAMETERS OF AN IDEAL HOUSING ESTATE

The aspirations of the main parties ; developer, Housing Authority and

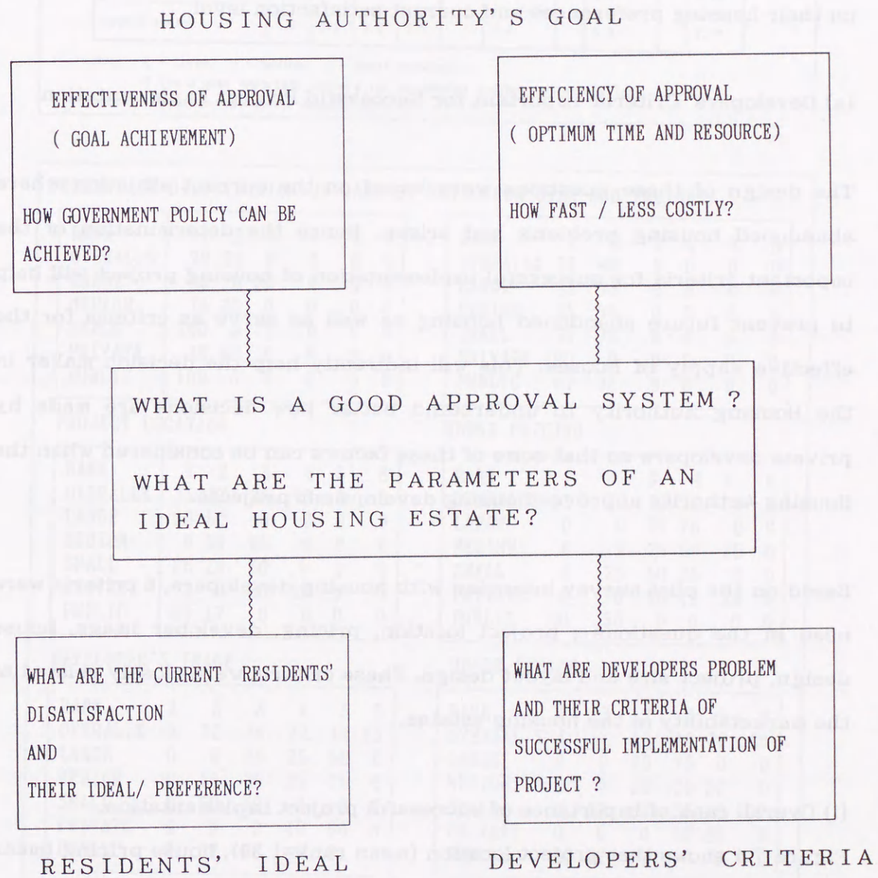

Figure 7.3 A Conceptual model of an ideal housing estate development

(Parameters Identification)

residents will be converted into parameters and incorporated in the approval system for future housing development. The developers' aspirations were expressed as developers' criteria which were important for successful project implementation. The Housing Authority's aspirations were based on the current housing policy and discussions with the Housing Authority. Housing estates' residents data were based on fieldwork survey on their housing preferences and current satisfaction level.

(a) Developers' Criteria-Important for Successful Project Implementation

The design of these questions were based on the current situation where abandoned housing problems had arisen. Hence the determination of the important criteria for successful implementation of housing project will help to prevent future abandoned housing as well as serve as criteria for the effective supply of houses. This will indirectly help the decision maker in the Housing Authority to understand better how decisions are made by private developers so that some of these factors can be considered when the Housing Authority approves housing development projects.

Based on the pilot survey interview with housing developers, 6 criteria were used in the questions ; project location, pricing, developer image, house design, project size and layout design. These criteria were closely related to the marketability of the housing estates.

(i) Overall rank of importance of successful project implementation.

Figure 7.4 shows that project location (mean rank=1.39), house pricing (mean rank=1.48) and developer image or records of 'successful projects' (mean rank=2.26) are the 3 most important factors in determining successful project implementation. Figure 7.4 also shows the distribution of ranking of importance of factors for successful project implementation by different

RANKING FACTORS Measurement '1' most important to '6' least important	Developer Categories				Profession groups by public and private		Over-all
	L	M	S	Mean	Public	Private	Mean
Project Location	2.0	1.3	1.0	1.4	1.0	1.8	1.39
House Pricing	1.8	1.0	1.8	1.8	1.3	1.0	1.48
Developer's Image	1.5	3.5	2.3	2.4	1.2	3.2	2.26
House Design	3.8	4.0	3.0	3.6	1.5	3.6	3.04
Project Size	4.8	4.0	3.5	4.1	2.3	4.6	3.74
Layout design	4.8	5.3	3.8	4.6	2.0	5.8	4.17

Note : L - Large, M - Medium, S - Small developers
▨ Top 3 most important factors for successful project implementation
Source : Author's fieldwork, August 1991

PERCENTAGE DISTRIBUTION OF RANK BY DEVELOPER SIZE AND FACTOR

RANK	1	2	3	4	5	6
OVERALL%	70	22	9	0	0	0
LARGE	50	0	50	0	0	0
MEDIUM	75	25	0	0	0	0
SMALL	100	0	0	0	0	0
PRIVATE	20	80	0	0	0	0
PUBLIC	100	0	0	0	0	0

RANK	1	2	3	4	5	6
OVERALL%	52	48	0	0	0	0
LARGE	25	75	0	0	0	0
MEDIUM	25	75	0	0	0	0
SMALL	25	75	0	0	0	0
PRIVATE	100	0	0	0	0	0
PUBLIC	67	33	0	0	0	0

PROJECT LOCATION

RANK	1	2	3	4	5	6
OVERALL%	35	17	35	13	0	0
LARGE	50	50	0	0	0	0
MEDIUM	0	50	50	0	0	0
SMALL	25	25	50	0	0	0
PRIVATE	0	0	80	20	0	0
PUBLIC	83	17	0	0	0	0

HOUSE PRICING

RANK	1	2	3	4	5	6
OVERALL%	13	22	22	35	9	0
LARGE	0	0	25	75	0	0
MEDIUM	0	0	25	50	25	0
SMALL	0	25	50	25	0	0
PRIVATE	0	20	20	40	20	0
PUBLIC	50	50	0	0	0	0

DEVELOPER'S IMAGE

RANK	1	2	3	4	5	6
OVERALL%	0	22	26	22	17	13
LARGE	0	0	25	25	50	0
MEDIUM	0	25	25	25	25	0
SMALL	0	50	50	0	0	0
PRIVATE	0	0	0	40	60	0
PUBLIC	0	67	33	0	0	0

HOUSE DESIGN

RANK	1	2	3	4	5	6
OVERALL %	4	17	13	13	26	26
LARGE	0	0	25	75	0	0
MEDIUM	0	0	25	25	50	0
SMALL	0	50	25	25	0	0
PRIVATE	0	0	0	20	80	0
PUBLIC	17	67	17	0	0	0

PROJECT SIZE

LAYOUT DESIGN

Figure 7.4 Criteria important for successful project implementation

developers and professional groupings.

(ii) Developers

Developers of Large size projects placed more importance on the image of the developer(mean rank=1.5) as compared with developers of Medium and small size projects. Housing developers with a good record of quality construction and successful completion of project gave buyers a sense of security for their life long investment decision in buying a house. Developers of Medium and small size projects placed similar sequence of importance on criteria for successful project implementation i.e. project location followed by house pricing and developer's image.

(iii) Professionals

The private professionals placed importance on pricing followed by location and developer's image. However, the public professionals emphasised location followed by developer's image and pricing.

(b) Housing Authority's View towards an ideal Housing Estate Development

Broadly, the Housing Authority aims at the Housing democracy policy i.e. to ensure that every Malaysian has the opportunity to own decent and quality houses particularly the low income population. It also plays the role of the protection of public interest and prevention of non delivery by the developers as well as matching demand and supply of houses. The main objective differs according to the different levels of Government. The National level aims at the eradication of poverty and restructuring of society. The State level aims at regional balance, promoting economic growth and matching demand and supply of houses. The Local Government emphasises design and engineering aspects of houses. (figure 7.5)

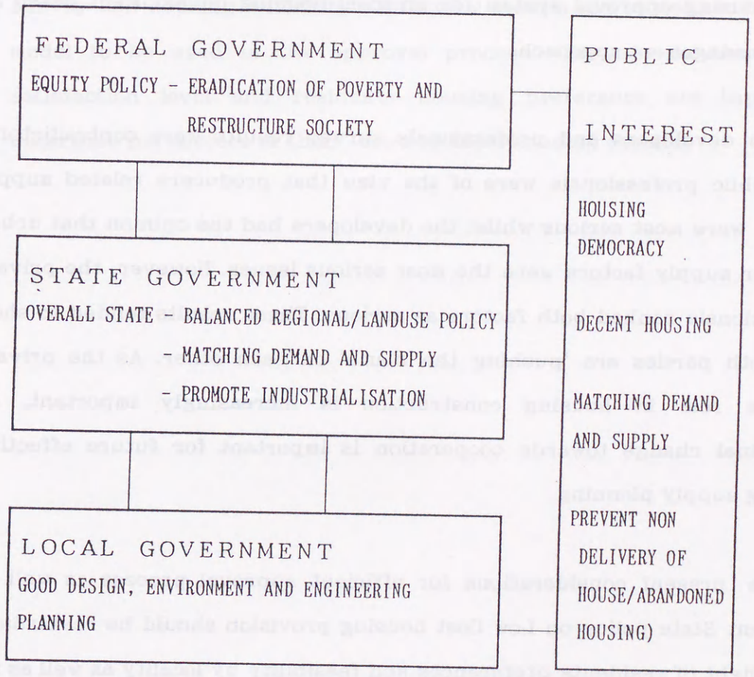

Figure 7.5 Authority's view towards an ideal housing development.

(c) Residents' Aspiration

This section will be analysed in the following Chapter 9 (Residents satisfaction and housing preferences)

7.4 CONCLUSION

The main conclusion drawn from this Chapter is as follows:-

(a) The 3 main parties in the housing market i.e. Producers, Urban managers and Consumers were used to establish a framework for understanding the ideal housing approval system for an ideal housing development based on urban management approach.

(b) The developers and professionals survey results were contradictory. The public professionals were of the view that producers related supply factors were most serious whilst the developers had the opinion that urban manager supply factors were the most serious issues. However, the private professionals ranked both factors as serious. These results tended to show that both parties are 'pushing the blame' on each other. As the private sector's role in housing construction is increasingly important, an attitudinal change towards cooperation is important for future effective housing supply planning.

(c) The present considerations for efficient approval process as well as stringent State policy on Low Cost housing provision should be reexamined in the light of residents preferences and feasibility by locality as well as its effectiveness. In addition, the close monitoring of project implementation should also be carried out.

(d) The survey showed that developers chose successful criteria for project implementation as project location, pricing, developer image and house design. These factors may be used as parameters in housing approval.

(e) On the other hand, the Government placed great importance on public interest. Different levels of Government stressed different aspects of public interest but broadly it consisted of the ensuring of the Housing Democracy goal, the matching of demand and supply and the provison of decent and quality housing with good locations.

In order to ensure that a good housing model is being used, the developers survey and Housing Authority's interview results can be used to formulate a model to be used in the approval process. Surveys on the residents satisfaction level and residents housing preference are important to determine parameters of their views on ideal housing estates.

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CHAPTER 8 :

CHARACTERISTICS OF RESIDENTS OF HOUSING ESTATES

8.0 INTRODUCTION

In developing countries, it is difficult to understand the actual housing problem because there are statistical data limitations*1. Presently, there is no satisfactory accumulation of housing data to understand housing estates and their residents so that policy issues and basic studies can be understood.

Inspite of difficulties in housing data collection and limitation of data on private housing estates development and their residents, the study of urban housing demand and supply requires information on the residents' demand profile. This Chapter reports the results from the analysis of questionaire survey on the residents household characteristics (ethnicity, tenure, occupation, house, reasons for migration, income and expenses) where Life Cycle Matrix(LCM) and Social Status Matrix (SSM) analysis was also used.

8.1 RESIDENTS QUESTIONAIRE SURVEY METHODOLOGY

Figure 8.1 shows the questionaire survey particulars on the housing estates residents.

(a) Sample Size of the Questionaire Survey

From the survey of 208 housing estates, 36 of them were identified to be surveyed. A total of 1,200 households (about 2% of total households)*2 were selected as samples for questionaire interview, and the responded questionaire was 999 (83%). The criteria used in the selection of the housing

FIELDWORK BACKGROUND

TOTAL RESPONDENTS n=999 RESPOND RATE- 83%(1200 SAMPLES)
TOTAL HOUSES N=60,000 SURVEY RATIO - 2%

Respondents selected in the Questionaire Survey.		TOTAL n Sample size	ZONE(Distance from CBD) A < km 10	B km 10 W	C km 20 W	D km 20 E	E km 30 E
Project Size	Large	174	19	26	38	91	0
	Medium	482	144	59	70	189	20
	Small	342	69	15	79	16	63
Housing Categories	Low Cost	525	110	51	101	13	50
	Medium	378	92	38	64	154	30
	High Cost	94	22	11	22	29	3
Project Year	1970's	205	178	0	0	25	0
	Early 1980's	574	29	43	170	249	83
	Late 1980's	197	1	57	17	22	0
Ethnicity	Malay	573	77	80	114	264	38
	Chinese	275	112	11	50	70	32
	Indian	145	39	9	22	62	13
Monthly Income	< MR$500	251	66	26	44	94	21
	MR$501-1500	571	101	59	113	244	54
	>MR$1500	175	64	15	30	58	8
Age Cohort	<30years old	175	23	11	31	88	22
	30 to 55	757	185	81	146	289	56
	>55years old	65	23	8	10	19	5

QUESTIONAIRE CONTENTS

1 IDENTIFIER

2 HOUSEHOLD CHARACTERISTICS
- a) Ethnicity
- b) Tenurial Status
- c) Nos of household
- d) Nos of families
- e) Nos of persons
- f) Nos of bedrooms
- g) nos of person employed
- h) Vehicles owned
- i) Nos of school going children
- j) details of residents < 17 yrs age, sex, birthplace, school
- k) details of working residents age, sex, marital, workplace
- l) migration information

3 EXPENDITURE
- a) Shopping habits
- b) House price/ mortgage House rental

4 OPINION SURVEY
- a) Ranking of Factors in Choosing Place of Residence
- b) Evaluation of current amenities/ utilities
- c) Evaluation of environmental pollution and safety (burglary & robbery)

HOUSING ESTATES BY ZONES

ZONE A (CITY CENTRE)
- 13 BKT CAGAR
- 14 LUMBA KUDA
- 15 KIM TENG PARK
- 16 TAMAN MAJU JAYA
- 17 TAMAN PELANGI
- 18 TAMAN SRI TEBRAU
- 19 TAMAN SENTOSA
- 20 TAMAN CENTURY

ZONE B (TAMPOI)
- 9 TAMAN PERLING
- 10 SEDC TAMPOI
- 11 TAMAN KOBENA
- 12 BANDAR BARU UDA

ZONE C (SCUDAI)
- 1 TAMAN SRI SKUDAI
- 2 TAMAN UNIVERSITI
- 3 TAMAN JAYA
- 4 TAMAN SRI PULAI
- 5 TAMAN SRI PUTRI
- 6 TAMAN SKUDAI BARU
- 7 TAMAN TUN AMINAH
- 8 TAMAN SELESA JAYA

ZONE D (PGUDANG/PLENTONG)
- 21 TAMAN DAYA
- 22 TAMAN JOHOR JAYA
- 23 TAMAN ZAMRUD
- 24 TAMAN INTAN
- 25 TAMAN NORA
- 26 TAMAN PERMAS JAYA
- 27 TAMAN PLENTONG
- 28 TAMAN RINTING
- 29 TAMAN KOTA PUTERI
- 30 TAMAN PASIR PUTIH
- 31 PASIR GUDANG FLAT
- 32 PASIR GUDANG HOUSE

ZONE E (KULAI/SENAI)
- 33 TAMAN KULAI
- 34 TAMAN SRI SENAI
- 35 TAMAN DAWANI
- 36 TAMAN SALENG

Figure 8.1 Residents Questionaire particulars

estates were approval year, project size and location whilst the selection of households in each housing estate was based on housing categories and ethnic groups.

(b) Scope of the Questionaire

The questions were kept to its shortest possible length to ensure good response from the respondents. Most urban residents may not tolerate lengthy questionaires of more than 15 minutes. To ensure consistency,the questionaire format followed closely the one used in the Johor Bahru structure Plan to ensure that the data collected can be compared with the 1982 survey by the Structure Plan Unit. The main headings of the questionaires were:-

(i) Identifier (address by survey zone, house estate and house category)

(ii)Household characteristics(age, ethnicity, tenure, vehicle ownership, household number and size, occupation, workplace, migration)

(iii) Expenditure pattern (shopping, rental and mortgages)

(iv) Residents evaluation on current housing estate environment and housing preference.

8.2 RESIDENTS CHARACTERISTICS OF HOUSING ESTATES.

The analysis focused on the following main characteristics of residents in the housing estates namely ; demography, ethnicity, income and expenses and other vital socio-economic data. The Findings from the questionaire survey were as follows:

(a) Demography, Income and expenses and house profile

The mean age of the head of household is 38 years old. Generally the Low

Cost residents and Zone D (Plentong/Pasir Gudang–new development area) had a lower mean age than the overall mean age. However, Zone B (Tampoi), Medium Cost and High Cost residents were of higher age group. (figure 8.2)

The average household size fell from 5.2 persons in 1982 (Structure Plan, 1982) to about 4.6 persons in 1990. This average was slightly lower than the national average of 5.1 persons probably due to its urban characteristics of nucleated families. However, the Medium Cost houses, Malay ethnic group, Zone D (Pasir Gudang) and Zone B (Tampoi) zones recorded a higher than average household size. The Low Cost residents tended to be younger (average age of 37 years) or were newly married couples as compared with Medium (39 years old) and High Cost residents (42 years old). The Malay ethnic residents had a higher household size (4.7 persons) and household number (1.4 household) indicating that they had a larger household size and higher tendency for extended family than the other ethnic groups.

The number of persons in a household who were employed was 1.86 with a standard deviation of 1.16 persons per household. The ratio was much higher in urban fringe such as Zone E (Senai–Kulai).

The mean Monthly income was $1,093 per month. The Chinese , Medium Cost and High Cost housing category as well as Zone A (City Centre) residents had higher income than the mean average.

The average monthly shopping expenses on Convenient goods was $360, Durable goods were $198 and Recreation goods were $150. Among the ethnic groups, the Chinese had higher expenditure than the other races. The City centre and the High Cost residents' expenses on convenient goods and durable goods were much higher than the average due to the higher purchasing power and cost of living in the Zone A (City centre) and High

Questionaire survey General heading		ETHNICITY			HOUSE CATEGORIES			ZONES (DISTANCE FROM CBD)				
	Mean	Mal	Ch	In	Low	Medm	High	A	B	C	D	E
1) DEMOGRAPHY												
Age of respondents	38	38	38	39	37	39	42	39	41	38	37	38
Household size	4.6	4.7	4.5	4.6	4.5	4.8	4.6	4.5	4.7	4.5	4.8	4.4
Nos of Household	1.2	1.4	1.2	1.2	1.2	1.1	1.2	1.1	1.4	1.3	1.4	1.2
Nos persons employed	1.9	1.9	1.8	1.9	1.8	1.9	1.8	1.9	1.9	1.8	1.9	2.0
2) INCOME AND EXPENSES												
Monthly Income ($)	1093	1036	1300	933	783	1311	1948	1284	1126	779	1006	978
Convenient goods ($)	360	339	419	325	320	374	528	429	346	360	331	329
Durable goods expenses	198	191	215	184	174	217	262	222	221	160	206	163
Recreation expenses	150	146	162	145	138	152	244	150	126	168	153	121
3) HOUSE AND TENURE												
Nos of Bedroom Mean	2.6	2.6	2.8	2.4	2.2	3.1	3.5	2.6	2.5	2.6	2.7	2.7
House Rent ($)	259	223	324	277	194	397	750	317	252	160	218	250
Mortgage Payment($)	371	375	382	322	238	422	590	464	361	270	369	272

Notes : Ethnicity groups Mal- Malay Ch - Chinese In - Indian
House Category Low - Low Cost Housing, Medm-Medium Cost Housing, High-High Cost housing
Zone A -<10km from CBD, B-10 to 20km West, C-20 to 30km West, D-20 to 30km East, E>30km East
Source : Author's fieldwork July/August 1991

Figure 8.2 : Demography, Income and expenses and house profile

Cost housing areas. The expenditure followed quite a normal pattern of distribution where the higher income group tends to have higher expenses on convenient and durable goods and recreation activities.

The average number of bedrooms per house in a housing estate was 2.6 rooms which ranged from 2 room houses (Low Cost with average of 2.2 rooms) to 5 room ones (High Cost houses with average of 3.5 rooms). Based on the above aggregate data, the mean number of persons per bedroom is 1.21 indicating that there was no problem of overcrowding as compared with the national average of 1.62 (1980).

(b) Distribution by ethnicity, Zones and House Category

Malays were the majority ethnic group (57%) reflecting the national average of 58% in the Study area followed by Chinese (28%) and Indians (15%). They were not evenly distributed by zones (distance from City centre). This distinctive social area concentration (Utaka Y, Ho C.S. et al.,1993) showed that the majority of Malay population were in new development areas e.g. Zone B (Tampoi)(80%),Zone C(Scudai)(61%) and Zone D (Pasir Gudang)(67%) and Chinese and Indian population were in older areas such as Zone A (City centre)(48%) and subcentre such as Zone E (Kulai/Senai)(39%). (figure 8.3)

In terms of distribution by house category, a higher percentage of Low Cost houses were found in the outer fringe and High Cost houses were in the City Centre (Zone A) and inner fringe (Zone B and C). A higher percentage of Medium cost houses were located in the city centre in new towns like Pasir Gudang and Plentong (Zone D). The distribution by ethnicity and house category showed that the Malay population was fairly even distributed (about 57%). There was a higher percentage of Chinese population in Medium (42%) and High Cost houses (12%).There was a higher percentage of Indians

Criteria \ Zones		Over-all Mean	A < 10km	B West 10km	C West 20km	D East 20km	E East 30km	Row Total	A < 10km	B West 10km	C West 20km	D East 20km	E East 30km
		Criteria Mean =100%						Zone Total= 100%					
Total (Mean)		100	100	100	100	100	100	100	21	10	19	40	10
RACE	Malay	57	35	80	61	67	45	100	14	14	20	46	6
	Chinese	28	48	11	27	17	39	100	40	4	18	26	12
	Indian	15	17	9	12	16	16	100	27	6	15	43	9
HOUSE	Low Cost	53	47	51	54	54	60	100	20	10	19	41	10
	Medium Cost	38	40	38	34	39	36	100	24	10	17	41	8
	High Cost	9	13	11	12	7	4	100	31	12	23	26	8

Source : Author's fieldwork, July/August 1991

House Category / Ethnicity	House Category Total = 100%				Ethnicity Total =100%			
		Low Cost	Medium Cost	High Cost		Low Cost	Medium Cost	High Cost
Mean	100	100	100	100	100	53	38	9
Malay	57	59	56	56	100	54	36	10
Chinese	28	23	31	39	100	46	42	12
Indian	15	18	13	15	100	63	35	2

Source : Author's fieldwork, July/August 1991

Figure 8.3 Distribution by ethnicity, Zones and House Category

in Low Cost houses (63%).

(c) Distribution of income, employment and vehicle ownership

The income distribution showed a monthly income of MR$500 to MR$1,000 as modal group and a mean monthly income of MR$1,093 (equivalent of JPY 50,000) with a high standard deviation of MR$761.20 (equivalent of JPY 38,000) indicating a wide range between the higher and lower income group. This high deviation was partly contributed by existing mixed dwelling pattern and the 'Singapore factor'(about 7% of the residents worked in Singapore). Malaysians working in Singapore can earn significantly higher income in Singapore than in Johor Bahru due to the currency difference i.e. 150% to 160% higher in Singapore than Malaysia. The relatively higher percentage of residents working in Singapore were from the Zone A(City Centre), Zone C(Scudai) and Zone E (Kulai-Senai) due to the relatively better rail accessibility to Singapore.

Figure 8.4 shows that the majority of them were in the Private Sector (54%) followed by Self Employed (25%) and Public Sector (21%). There was a significant variation in occupation and workplaces by ethnicity. In general, the Malay ethnic group had since colonial time been more involved in public sector (28%) and the Chinese in the self-employed (47%) sector. The figure also shows that there was a higher percentage of Low income group (monthly income of less than MR$500)(29%) were in Zone A (City centre) and Zone E (Kulai/Senai). Low Cost residents were fairly evenly distributed (about 25%) in the other zones. The majority of them lived in the Low Cost houses and were Indians. On the other hand, the Higher income group (monthly income of more than MR$2000) was also found in the City centre (13%). The majority of them stayed in High Cost houses (31%). In terms of ethnicity, the majority of the High Income group was Chinese (11%).

Questionaire survey General heading Column total%		Mean	ETHNICITY			HOUSE CATEGORIES			ZONES (DISTANCE FROM CBD)				
			Mal	Ch	In	Low	Medm	High	A	B	C	D	E
INCOME	INCOME AND EXPENSES												
	Monthly Income	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	MR$ 500 and less	25	26	17	36	36	14	10	29	25	23	23	26
	MR$ 501 ~ 1000	42	43	39	41	49	38	16	28	38	47	45	37
	MR$ 1001 ~ 2000	25	24	33	19	14	37	43	30	23	20	26	23
	MR$ 2001 and more	8	7	11	4	1	11	31	13	4	8	6	4
EMPLOYMENT	EMPLOYMENT SECTOR	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Public	21	28	9	13	17	17	20	18	5	21	21	5
	Private	54	56	44	64	62	66	47	36	68	50	64	68
	Self Employed	25	16	47	23	21	17	33	46	27	29	15	27
	WORKPLACE	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Singapore	7	4	12	9	7	6	18	12	5	11	3	10
	A - JB City Centre	54	53	59	49	49	59	63	87	85	52	35	13
	B - Tampoi	2	2	1	2	2	2	2	0	3	6	0	0
	C - Skudai	5	3	5	3	2	5	3	0	1	29	0	0
	D - Pasir Gudang	23	30	14	31	32	20	8	1	1	2	60	0
	E - Senai /Kulai	9	8	9	6	8	8	6	0	2	0	2	77
TRANSPORT	Vehicle Ownership	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Car	47	45	56	34	36	53	70	59	43	46	41	43
	Bike	31	34	23	46	45	21	6	21	28	35	37	28
	Others (Van, truck etc)	22	21	21	20	19	26	24	20	19	19	22	29

NOTES : House Price (Price at purchase) , Malaysian Ringgit MR1= ¥50
Pasir Gudang data (include Plentong)
: Ethnicity Mal - Malays Ch - Chinese In - Indian
House Category Low - Low Cost housing ,Medm - Medium Cost Housing, High - High Cost housing
Zone A - City Centre, B - Tampoi, C - Scudai, D - Plentong and Pasir Gudang, E - Kulai
Source : Author's Fieldwork survey, July/ August 1991

Figure 8.4 Distribution of income, employment and vehicle ownership

In terms of workplace, the main employment centres were Zone A (Johor Bahru City Centre)(54%) and Zone D (Pasir Gudang/Plentong)(23%). Singapore was also another important employment centre (about 7% of the residents in the Study Area worked there). This figure will be much higher because a high percentage of Johor Bahru residents working in Singapore are not daily commuters and therefore the questionaire interview could not account for this group. As Zone D (Pasir Gudang) and Zone E (Senai-Kulai) are further from the City centre (20 km to 30 km), a higher percentage (>50%) of residents in these zones worked in their respective subcentres as compared with Zone B (Tampoi) and Zone C (Scudai)'s residents. There is a higher percentage of High Cost housing residents working in Singapore compared to the Low and Medium Cost residents.

In terms of vehicle ownership, a high percentage (47%) owned either a car or a motorbike (31%). The relatively high percentage was due to the poor public transportation and fairly high percentage of number of persons employed per household (1.9 per household).

(d) Distribution of House tenure, Price, mortgage and moving reasons

Broadly, 58% were house owners, 41% tenants and 1% (other tenure such as company quarters etc.) Among the ethnicity, Malay and Chinese had a higher percentage of house ownership (about 60%) than the Indians (43%). In terms of zones, the city centre had the lowest percentage of house ownership (46%) as compared with other zones. This was probably due to the higher migrants (job seekers) staying in the city centre compared to the fringe areas. High Cost and Medium cost houses had a relatively higher percentage of ownership than Low Cost houses. In terms of Government regulation, the Low Cost residents must be house owner occupier because Low Cost owners cannot rent out their house to others. This survey result which showed that

44% were tenant occupiers in Low Cost houses indicated that there was an abuse of the Low Cost housing allocation. In addition, the questionaire interview also showed that residents with large household size (household size >4 persons) complained of overcrowding in 2 room Low Cost houses.

The house prices data was based on Purchase price (not current market price). As the survey involved housing estates of different age, the newer purchasers would pay a much higher price and mortgage than purchasers of houses built in the 1970's. It was apparent that except for Low Cost houses, there was a higher percentage of houses priced above MR$75,000 in the City Centre and Tampoi due to the higher land cost nearer the city centre. Similarly, the monthly house mortgage followed a fairly similar pattern of higher mortgage in city centre zone.

The main reasons for migration to housing estates were mainly 'Purchase of new house' (33%), 'Job transfer' (31%) and 'Job seeking' (22%). The 'Purchase of new house' reason showed a 'filtering effect' of informal houses (village house, shophouses) or probably from tenants to house ownership. The number of residents who gave 'Job transfer' as a reason was high in the Study area probably due to the shifting of the main campus University Technology Malaysia from Kuala Lumpur to Johor Bahru in 1985 (it involved about 2,000 university families and a multiplier of about 20% in supporting services employment). In addition, the high growth in industrial sectors in the late 1980's had contributed to increased demand for housing for manual labourers as well as high executives (including expatriates from Singapore, Japan, Taiwan and Hongkong). This rapid increase in work opportunities had attracted many 'job seekers' outside the Study Area (including those outside Johor State).(Figure 8.5)

Questionaire survey General heading (%) Column total%		Mean	ETHNICITY			HOUSE CATEGORIES			ZONES (DISTANCE FROM CBD)				
			Mal	Ch	In	Low	Medm	High	A	B	C	D	E
H	House Tenure	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
O	Owner	58	61	60	43	45	69	92	46	60	63	58	60
U	Tenant	41	37	40	57	55	29	7	53	40	37	40	40
S	Others	1	2	0	0		2	1	1			2	
E													
	House Price'000	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
T	< MR$ 25	33	35	25	42	77	2	2	10	52	40	30	52
E	MR$ 25 ~ 50	21	19	21	31	21	29	2	27	18	20	25	18
N	MR$ 50 ~ 75	23	26	20	14	2	47	9	21	26	19	27	26
U	MR$ 75 ~ 100	17	15	22	11	0	22	46	19	4	15	18	4
R	> MR$ 100	6	5	12	2	0	0	41	23	0	6	0	0
E													
	Monthly Mortgage	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	< MR$ 100	21.9	22	22	21	28	7	0	52	7	2	13	7
	MR$ 101 ~ 200	48.5	52	39	52	57	19	0	0	63	62	69	63
	MR$ 201 ~ 300	13.8	15	14	12	9	29	0	10	27	18	11	27
	MR$ 301 ~ 400	8.4	9	9	6	5	21	17	12	0	12	5	0
	MR$ 401 ~ 600	2.8	2	14	5	1	20	33	13	0	6	2	0
	> MR$ 600	4.6	0	2	4	0	4	50	13	3	0	0	3
M	REASONS OF MIGRATION	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
O	Seeking Job	22	18	29	29	26	19	11	28	43	15	21	42
V	Job transfer	31	33	25	31	31	32	22	25	19	30	36	19
I	To join Family	13	11	16	15	14	12	8	17	4	10	13	4
N	Children education	1	1	0	1	1	1	1	0	1	3	0	1
G	Purchase new house	33	37	30	24	38	36	58	30	33	42	30	32

NOTES : Ethnicity Mal - Malays Ch - Chinese In - Indian
House Category Low - Low Cost housing ,Medm - Medium Cost Housing, High - High Cost housing
Zone A - City Centre, B - Tampoi, C - Scudai, D - Plentong and Pasir Gudang, E - Kulai
Source : Author's Fieldwork survey, July/ August 1991

Figure 8.5 Distribution of house tenure, price, mortgage and reasons of moving.

8.3 LIFE CYCLE MATRIX AND SOCIAL STATUS MATRIX ANALYSIS

(a) The Analysis Frame

The life cycle of a household affects the household characteristics in terms of household size and income. These changes affect housing needs, demand and preferences of the household. Therefore this life cycle analysis attempts to divide the housing market based on the demographic age cohort factor to identify the submarkets. This is because at each stage of a person's life cycle, housing decision changes for instance from single to married, married with children then school going children and working children and moving in with children or empty nest. Therefore,this Life Cycle Matrix analysis is based on the hypothesis that housing needs pattern depends on the age of the head of household.Hence, in this analysis, the head of household is used as a proxy for life cycle stage.

To carry out this analysis, the life cycle is divided into 6 categories with intervals of 5 and 10 years i.e.less than 30 years old, 30–34, 35–39, 40–44, 45–54 and more than 55 years old.*4 The household size is again divided into 6 categories ; 1 and 2 persons, 3, 4, 5, 6 and more than 6 persons per household. Ultimately, it forms a 6 X 6 matrix of households with age groups.

The Social Status Matrix (SSM) Analysis is also based on the same assumptions used in the Life Cycle Matrix except that it emphasises housing demand rather than housing needs. In this analysis, the age groups follows the same intervals as in the Life Cycle Matrix and the monthly income intervals are:- less than <MR$250, MR$250–MR$500, MR$501–MR$750, MR$751–MR$1,000, MR$1,000–MR$1,500 and >MR$1500. Again this is also a 6 X 6 matrix of monthly income with age groups.

(b) Study Area's Life Cycle Matrix and Social Status Matrix

The Life Cycle matrix in figure 8.6 shows a natural sequence of increasing age group with increasing household size. The majority of population who were less than 35 years old had less than 5 persons per household. On the other hand, population group of more than 35 years old had more than 4 persons per household. However, there was a higher percentage of the population who were more than 54 years old and had small household sizes showing that their children were not staying with them. In other words, the small household size showed that there was a tendency for nuclear family.

In general, the life cycle sequence starts from single, married, couples with children and extended family or nuclear family pattern. Based on the standard of 2 persons per bedroom, the results also showed that the younger population (<34 years old) required a minimum of 2-bedroom living quarter whilst the older population age group required a minimum of 3-bedroom living quarters. Overall, living quarters with more than 6 persons per household i.e. 12.6% may be considered as overcrowding in the Study Area.

The Social Status Matrix (SSM) showed that the majority of age group less than 35 years old had a monthly income less than MR$1,000. On the other hand, the population group more than 34 years old had a monthly income of more than MR$1,000. Young population with high income (>MR$1500) were mainly local 'yuppies' (Young professionals) and older population(>54 years old) with low income were mainly the unskilled returnees from Singapore seeking jobs in the Study Area. This was due to the recent stricter Singapore employment policy. Figure 8.7 shows that the SSM distribution follows a logical sequence of income based on resident's age.

Sample n= 998 Criteria	Criteria Mean =100%							Zone Total= 100%						
	Over -all Mean	1 AND 2	3	4	5	6	MORE THAN 6	Row Tota	1 AND 2	3	4	5	6	MORE THAN 6
Total (Mean)	100	100	100	100	100	100	100	100	8.4	17.0	26.4	20.8	14.8	12.6
< 30YRS OLD	17.5	38.6	30.6	18.6	12.5	6.1	5.6	100	18.3	29.7	28.0	14.9	5.1	4.0
30-34YRS OLD	18.4	20.5	26.5	19.8	15.4	15.5	11.9	100	9.2	24.5	28.3	17.4	12.5	8.1
35-39YRS OLD	24.6	14.5	16.5	32.7	29.3	20.3	22.2	100	4.9	11.4	35.1	24.9	12.2	11.4
40-44YRS OLD	15.7	3.6	11.2	12.9	20.2	22.3	20.6	100	1.9	12.1	21.7	26.8	21.0	16.6
45-54YRS OLD	17.2	10.8	8.8	12.2	17.3	27 7	31.0	100	5.3	8.7	18.6	20.9	23.8	22.7
MORE THAN 54	6.5	12.0	6.5	3.8	5.3	8.1	8.7	100	15.4	16.9	15.4	16.9	18.5	16.9

LEGEND : Number Percentages Figure which are higher than mean average

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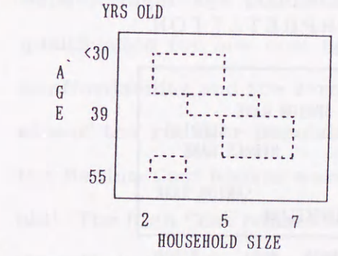
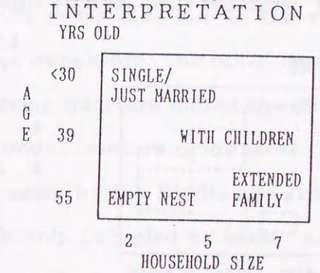


INTERPRETATION



THE LIFE CYCLE MATRIX SHOWED HIGHER % POPULATION WITH AGE LESS THAN 35 YEARS OLD HAVE HOUSEHOLD SIZE ABOUT 1-4 PERSONS/HOUSEHOLD.
- A HIGHER % OF 35-39 YEARS OLD POPULATION HAS HOUSEHOLD SIZE OF 4-5 PERSONS/HOUSEHOLD
- A HIGHER % OF MORE 40 YEARS OLD POPULATION HAS POPULATION OF MORE THAN 5 PERSONS/HOUSEHOLD.
- A HIGHER % (12%) OF POPULATION MORE THAN 55 YEARS OLD ALSO 1-2 PERSON/HOUSEHOLD .

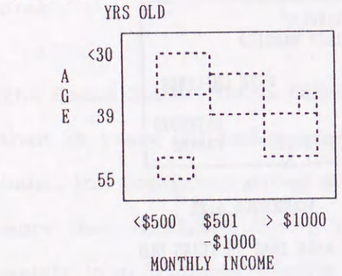
DATA SUPPORTED LOGICAL LIFE CYCLE PATTERN
SINGLE - MARRIED - WITH CHILDREN - EXTENDED FAMILY OR EMPTY NEST

Figure 8.6 Study Area's Life Cycle Matrix.

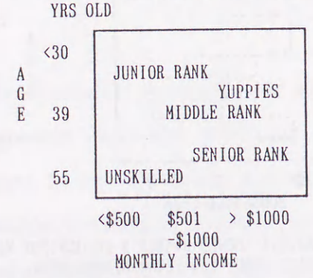
Sample n= 999 Criteria	Criteria Mean =100% Over -all Mean	LESS $250	$250 TO $500	$501 TO $750	$751 TO 1000	1000 TO 1500	MORE THAN 1500	Zone Total= 100% Row Tota	LESS $250	$250 TO $500	$501 TO $750	$751 TO 1000	1000 TO 1500	MORE THAN 1500
Total (Mean)	100	100	100	100	100	100	100	100	5.7	19.4	16.6	25.3	15.4	17.5
< 30YRS OLD	17.5	7.0	34.5	21.7	13.8	14.9	5.7	100	2.3	38.3	20.6	20.0	13.1	5.7
30-34YRS OLD	18.4	1.8	19.6	22.3	20.2	15.6	18.9	100	0.5	20.7	20.1	27.7	13.0	17.9
35-39YRS OLD	24.6	1.8	17.5	21.7	34.0	28.6	25.7	100	0.4	13.8	14.6	35.0	17.9	18.3
40-44YRS OLD	15.7	7.0	10.8	15.7	15.8	18.2	21.7	100	2.5	13.4	16.6	25.5	17.8	24.2
45-54YRS OLD	17.2	29.8	10.8	15.1	14.6	18.8	24.6	100	9.9	12.2	14.5	21.5	16.9	25.0
MORE THAN 54	6.5	52.6	6.7	3.6	1.6	3.9	3.4	100	46.2	20.0	9.2	6.2	9.2	9.2

LEGEND : Number Percentages Figure which are higher than mean average

PATTERN



INTERPRETATION



A DIRECT PROPORTIONAL RELATIONSHIP BETWEEN INCOME AND AGE WITH THE EXCEPTION OF POPULATION OF AGE 45-54 AND MORE THAN 55 YEARS OLD.

HOUSING AFFORDABILITY - LOW COST HOUSES 41.9% ($501-1000)
- MEDIUM/HIGH COST HOUSES 32.9% (>$1000)
- CANNOT AFFORD TO OWN A HOUSE 25.1% (<$500)

Figure 8.7 Study Area's Social Status Matrix

Broadly , the Social Status Matrix pattern showed that the age cohort increased with income due to seniority in working. In terms of affordability, housing demand for Low cost house was 41.9% (those residents who earned a monthly income between MR$500-MR$1,000) and Medium and High cost houses was 32.9% (those with monthly income more than MR$1,000)*5. Residents who earned less than MR$500 were expected to be house renters (about 25.1%).

(c) Residents characteristics by age group

The analysis used the Life Cycle Matrix framework to analyse the residents characteristics by housing category,house tenure, zone distribution from city centre, vehicle ownership, last place of residence and reasons for moving.

(i) House category

The overall distribution by house category is 52.4% Low Cost, 37.9% Medium Cost and 9.4% High Cost residents. Generally, the Low cost housing residents were younger age population (<34 years old) due to the requirements of qualification for Low cost housing ownership. The other reason may be due to affordability and the 2-room living quarters suited the smaller household size of the younger population (young renters or owners). The majority of the Medium Cost houses were occupied by the Middle age group (35-53years old). The High Cost houses were mainly occupied by senior age group (more than 44 years old). Figure 8.8 shows the distribution of housing category by age group.

(ii) House tenure

A higher percentage (75.3%) of younger population (<35 years old) were housing renters. The majority (74.9%) of house owners were in the age group of more than 35 years old. A higher percentage of company housing was

Sample n= 999 Criteria	Criteria Mean =100%				Zone Total= 100%			
	Over -all Mean	LOW COST HOUSE	MEDIUM COST	HIGH COST HOUSE	Row Tota	LOW COST HOUSE	MEDIUM COST HOUSE	HIGH COST HOUSE
Total (Mean)	100	100	100	100	100	52.4	37.9	9.4
< 30YRS OLD	17.5	22.4	13.7	5.3	100	67.4	29.7	2.9
30-34YRS OLD	18.4	19.2	17.9	8.2	100	54.9	37.0	8.2
35-39YRS OLD	24.6	24.0	25.9	23.4	100	51.2	39.8	8.9
40-44YRS OLD	15.7	15.2	16.1	17.0	100	51.0	38.9	10.2
45-54YRS OLD	17.2	13.1	19.5	30.9	100	40.1	43.0	16.9
MORE THAN 54	6.5	6.1	6.9	7.4	100	49.2	40.0	10.8

LEGEND : Number Percentages Figure which are higher than mean average

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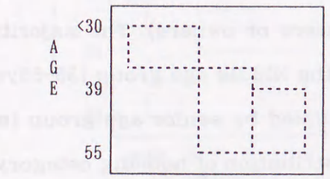
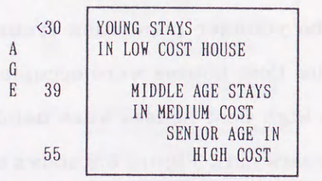


INTERPRETATION



OVERALL THE DISTRIBUTION IS 52.4% LOW COST HOUSE, 37.9% MEDIUM COST AND 9.4% HIGH COST HOUSE.
MOST OF LOW COST HOUSING RESIDENTS ARE OF YOUNGER AGE (LESS THAN 34 YRS OLD)
MAJORITY OF MEDIUM COST HOUSING ARE OF MIDDLE AGE POPULATION (35-54 YRS OLD)
MAJORITY OF HIGH COST HOUSING RESIDENTS ARE SENIOR AGE (> 44 YRS OLD)

Figure 8.8 House category distribution by age group

occupied by middle age group (30–39 years old).This pattern of housing has recently began to gain popularity as employers tried to attract workers to their company by providing company housing benefit. The distribution of house tenure status as shown in figure 8.9 shows the relationship of age group and house tenure. The young age group were usually house renters while majority began to own a house after 35 years old.

(iii) Zone distribution

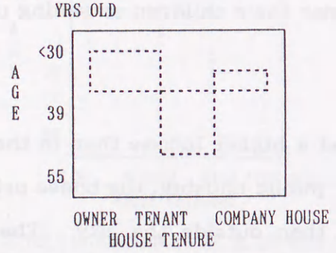
The distribution of residents tended to show a distinctive pattern based on age group where the majority of older age group (> 40 years old) lived in inner city, Middle age group (30 – 39 years old) stayed in Inner Fringe and younger population (< 30 years old) stayed in the Outer Fringe. This pattern of distribution may be due to housing estate development pattern where the 1970's housing were concentrated mainly in city centre and slowly moving into inner fringe and then outer areas in 1980's because of residential land shortage and larger size housing projects. Hence, the senior age residents had bought their house in the city centre in the 1970's and middle age population bought their house in 1980's. However, there was an exception in that a higher percentage of older age (40–54 years old) residents stayed in the Outer fringe. This may be due to the suburbs movement of senior age group to outer suburbs area to stay near their children or selling of their house to buy cheaper suburbs house.

Generally, the Inner city population had a higher income than in the Inner and Outer fringe population. Except for public housing, the house price and rental was higher in the city centre than outside the city . Therefore, affordability influenced the distribution of residents by zone (distance from city centre). The other reason was that many of new industrial estates are located at the Outer Fringe area and required many young workers. Figure 8.10 shows the zone distribution of residents by age group.

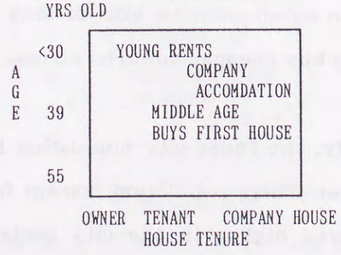
Sample n= 997 Criteria	Criteria Mean =100% Over -all Mean	TENANT	OWNER	OTHERS	Zone Total= 100% Row Tota	TENANT	OWNER	OTHERS
Total (Mean)	100	100	100	100	100	40.8	58.1	1.1
< 30YRS OLD	17.5	30.7	8.3	0.6	100	71.8	27.6	0.6
30-34YRS OLD	18.5	44.6	16.8	45.5	100	44.6	52.7	2.7
35-39YRS OLD	24.6	23.8	24.7	45.5	100	39.6	58.4	2.0
40-44YRS OLD	15.7	9.8	20.2	0	100	25.5	74.5	0
45-54YRS OLD	17.0	11.3	21.8	0	100	26.7	73.3	0
MORE THAN 54	6.5	4.2	8.3	0	100	26.2	73.8	0

LEGEND : Number Percentages Figure which are higher than mean average

PATTERN



INTERPRETATION



HIGHER % YOUNG POPULATION (< 34 YEARS OLD) ARE TENANTS

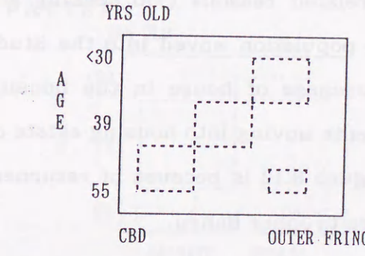
HIGHER % MIDDLE /SENIOR AGE ARE HOUSE OWNER BECAUSE OF AFFORDABILITY.

Figure 8.9 House tenure distribution by age group

Sample n= 999 Criteria	Criteria Mean =100% Over -all Mean	A < 10km	B West 10km	C West 20km	D East 20km	E East 30km	Zone Total= 100% Row Total	A < 10km	B West 10km	C West 20km	D East 20km	E East 30km
Total (Mean)	100	100	100	100	100	100	100	23.2	10.0	18.7	39.7	8.3
< 30YRS OLD	17.5	9.9	11.0	16.6	22.2	26.5	100	13.1	6.3	17.7	50.3	12.6
30-34YRS OLD	18.4	17.2	33.0	17.1	16.9	14.5	100	21.7	17.9	17.4	36.4	6.5
35-39YRS OLD	24.6	24.1	23.0	29.4	24.4	18.1	100	22.8	9.3	22.4	39.4	6.1
40-44YRS OLD	15.7	16.8	14.0	16.0	15.4	15.7	100	24.8	8.9	19.1	38.9	8.3
45-54YRS OLD	17.2	22.0	11.0	15.5	16.4	19.3	100	29.7	6.4	16.9	37.8	9.3
MORE THAN 54	6.5	9.9	8.0	5.3	4.8	6.0	100	35.4	12.3	15.4	29.2	7.7

LEGEND : Number Percentages Figure which are higher than mean average

PATTERN



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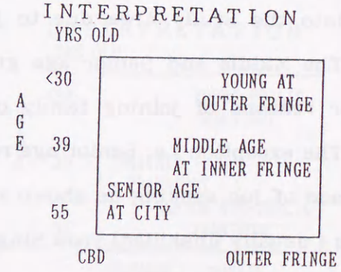


DISTINCTIVE PATTERN OF DISTRIBUTION BY AGE SHOWED THAT YOUNG POPULATION (<30 YEARS OLD) STAYED IN OUTER ZONES ESPECIALLY NEW TOWNS. THE OLDER POPULATION (>40 YEARS OLD) STAYED IN THE INNER CITY ZONE.MIDDLE AGE POPULATION ARE FOUND TO BE HIGHER IN INNER SUBURBS.

Figure 8.10 Zone Distribution by age group

(iv) Vehicle ownership

The vehicle ownership is generally high (81.3%) in housing estate as compared with the overall Johor Bahru Metropoiltan area (including non housing estates and rural area was 23.3% in 1984). The car ownership in housing estate was fairly high i.e. 46.9%. The distribution of vehicle ownership in Figure 8.11 shows that the Middle age group (30-44 years old) had a higher percentage of vehicle ownership.

As for car ownership ('My Car'), majority of them were of age group of (30-34 years old) and (40-54 years old). There was a higher percentage of public transportation users among the younger population (<30 years old) and senior age population (>44 years old). As majority of this group (young and senior age) lived in outer fringe (refer figure 8.10), the provision of good public transportation is important.

(v) Reasons for moving

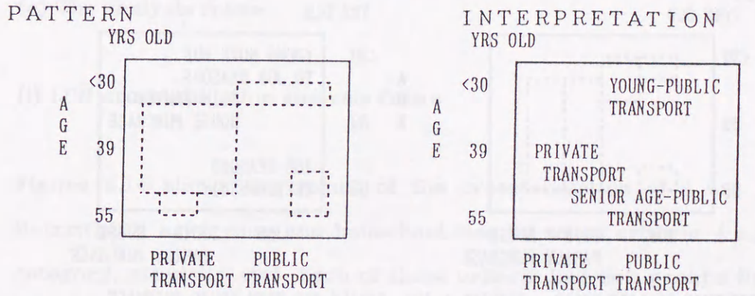
The data collected on 'reason for moving' attempted to analyse the moving pattern of residents. The majority of younger population (<30 years old) moved into the Study Area due to job related reasons (job seeking and offer). The Middle and Senior age group population moved into the Study area for reasons of joining family or purchase of house in the housing estate. The exception i.e. Senior age residents moving into housing estate on the reason of job seeking as shown in Figure 8.12 is because of returnees workers (usually unskilled) from Singapore to Johor Bahru.

This pattern of distribution supported the logical sequence of migration which first starts from finding a job, to joining family and then purchasing house. As the 30 years old limit was used as the qualification for Government housing loan as well as financial capability, the majority of residents who gave reason as 'house purchase 'were more than 30 years old.

Sample n= 998 Criteria	Criteria Mean =100 %					Zone Total= 100%				
	Over-all Mean	VEHICLE OWNERS	CAR	WITHOUT VEHICLE (NO CAR)		Row Tot	VEHICLE OWNERSHIP CAR		WITHOUT VEHICLE NO CAR	
Total (Mean)	100	(100)	100	(100)	100	100	(46.9)	81.3	(53.1)	19.7
< 30YRS OLD	17.5	(10.9)	15.8	(23.4)	25.0	100	(29.2)	73.1	(70.8)	26.9
30-34YRS OLD	18.4	(20.0)	19.2	(17.0)	14.9	100	(51.1)	84.8	(48.9)	15.2
35-39YRS OLD	24.6	(23.5)	25.6	(25.7)	20.2	100	(44.7)	84.6	(55.3)	15.4
40-44YRS OLD	15.7	(19.0)	16.2	(12.8)	13.8	100	(56.7)	83.4	(43.3)	16.6
45-54YRS OLD	17.2	(21.1)	17.0	(13.8)	46.8	100	(57.6)	48.8	(42.4)	51.2
MORE THAN 54	6.5	(5.5)	6.2	(6.0)	7.9	100	(94.0)	76.9	(6.0)	23.1

LEGEND : Number Percentages Figure which are higher than mean average

NOTE : VEHICLE OWNER - OWNS EITHER MOTORCYCLE, MOTOR CAR, VAN , LORRY
CAR OWNER - PERSONAL CAR ('MY CAR)
WITHOUT VEHICLE - DEPENDENT ON PUBLIC TRANSPORT
WITHOUT CAR - NO PERSONAL CAR OWNERSHIP



A HIGH PERCENTAGE (81.3%) OF VEHICLE OWNERSHIP. HOWEVER, 'MY CAR' OWNERSHIP IS 46.9%.
MOST (84%) OF MIDDLE AGE POPULATION (30-44 YRS OLD) HAS VEHICLE.
PUBLIC TRANSPORT DEPENDENTS ARE THE YOUNG AND SENIOR AGE POPULATION.

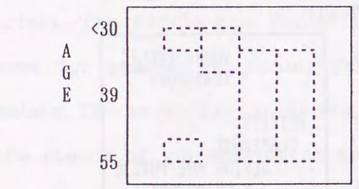
Figure 8.11 Vehicle ownership distribution by age group

Sample n= 888 Criteria	Criteria Mean =100%					Zone Total= 100%				
	Over -all Mean	JOB SEEK -ING	JOB OFFE -R	JOIN FAMI -LY	HOUS -E BUY	Row Total	JOB SEEK -ING	JOB OFFE -R	JOIN FAMI -LY	HOUS -E BUY
Total (Mean)	100	100	100	100	100	100	22.3	30.7	12.7	33.1
< 30YRS OLD	18.4	30.3	23.1	14.2	7.5	100	36.8	38.7	9.8	13.5
30-34YRS OLD	18.2	13.1	21.2	19.5	18.4	100	16.0	35.8	13.6	33.3
35-39YRS OLD	24.7	20.7	27.5	22.1	25.9	100	18.7	34.2	11.4	34.7
40-44YRS OLD	16.0	12.6	13.6	20.4	18.4	100	17.6	26.1	16.2	38.0
45-54YRS OLD	16.6	18.7	10.6	15.0	21.4	100	25.2	19.7	11.6	42.9
MORE THAN 54	6.2	4.5	4.0	8.8	8.5	100	16.4	20.0	18.2	45.5

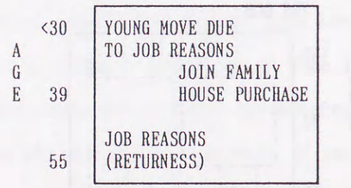
LEGEND : Number Percentages Figure which are higher than mean average

NOTES : Missing observations is 111
: Education is also mentioned as a reason (but low perecentage 0.9%)

PATTERN



INTERPRETATION



LOGICAL SEQUENCE OF LIFE CYCLE ; FINDING A JOB, FAMILY AND THEN HOUSE PURCHASE. ABOVE FINDINGS SUPPORTED THE LOGICAL SEQUENCE. AS 30 YEARS OLD AGE LIMIT IS USUALLY USED AS QUALIFICATION FOR HOUSING LOAN, MAJORITY OF RESIDENTS WITH > 30 YEARS OLD GAVE HOUSE PURCHASE AS REASON FOR MOVING.

Figure 8.12 Reasons for moving distribution by age group

(vi) Last place of residence

In terms of the last place of residence, there was a distinctive pattern of relationship between the last place of residence and age group. Figure 8.13 shows that majority of younger age group (<30 years old) were from outside Johor Bahru district, Middle and Senior age population were from within Johor Bahru district. It also showed that a higher percentage of Senior age population (more than 54 years old) were from the Johor Bahru City Hall Area (within city centre vicinity).

These results tended to show that majority (53.8%) were inter district migration. Suburbs movement of residents (mainly the Senior age population) move from city centre to suburbs was about 16%. Majority of the reasons for suburbs movement were to join family and house purchase (refer figure 8.12).

8.4 CROSSTABULATION OF LIFE CYCLE MATRIX AND SOCIAL STATUS MATRIX ANALYSIS.

(a) The analysis frame

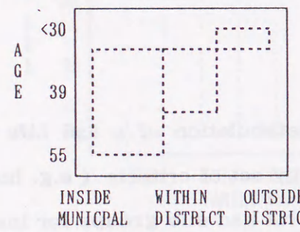
(i) LCM crosstabulation analysis frame

Figure 8.14 shows the result of the crosstabulation of a 6x6 Life Cycle Matrix(LCM) age group and household size by set of criteria (e.g. housing category, ethnicity etc). Each of these criteria had sub groups for instance housing category was divided into variables (e.g. p=Low Cost housing, q=High Cost housing). The distribution of overall percentage, row mean and column mean of the 6 X 6 matrix were obtained for the purpose of pattern of distribution analysis by different criteria. Figure 8.14c shows the result of the pattern of distribution of variables(e.g. p = Low cost housing) and (q =

Sample n= 888 Criteria	Criteria Mean =100%				Zone Total = 100%			
	Over -all Mean	JB MUNICIPAL	JB DISTRICT	OUTSIDE JB DISTRICT	Row Tota	JB MUNICPAL	JB DISTRICT	OUTSIDE JB DISTRICT
Total (Mean)	100	100	100	100	100	16.0	30.1	53.8
< 30YRS OLD	18.4	7.7	13.5	24.3	100	6.7	22.1	71.2
30-34YRS OLD	18.1	19.7	19.9	16.7	100	17.4	32.9	49.7
35-39YRS OLD	24.8	23.9	26.6	24.1	100	15.5	32.3	52.3
40-44YRS OLD	16.0	18.3	15.0	15.9	100	18.3	28.2	53.5
45-54YRS OLD	16.6	19.7	19.5	13.8	100	19.0	35.4	44.9
MORE THAN 54	6.2	10.6	5.6	5.2	100	27.3	27.3	45.5

LEGEND : Number Percentages Figure which are higher than mean average

PATTERN



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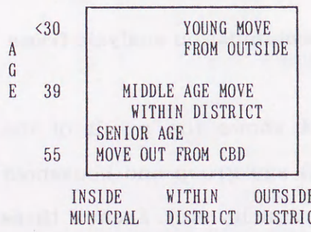


THE MOVING PATTERN OF RESIDENT SHOWED THAT MAJORITY (53.8%) ARE FROM OUTSIDE THE JOHOR BAHRU DISTRICT (INTER MIGRATION). 30.1% FROM WITHIN JOHOR BAHRU DISTRICT (INTRA MIGTATION).
MAJORITY OF THE MIGRANT FROM OUTSIDE ARE YOUNGER AGE (24.3%) ARE BELOW 30 YERAS OLD
THE SENIOR AGE POPULATION MOVED FROM MUNICIPAL TO OUTSIDE (SUBURBS MOVEMENT)

Figure 8.13 Last Place of residence distribution by age group.

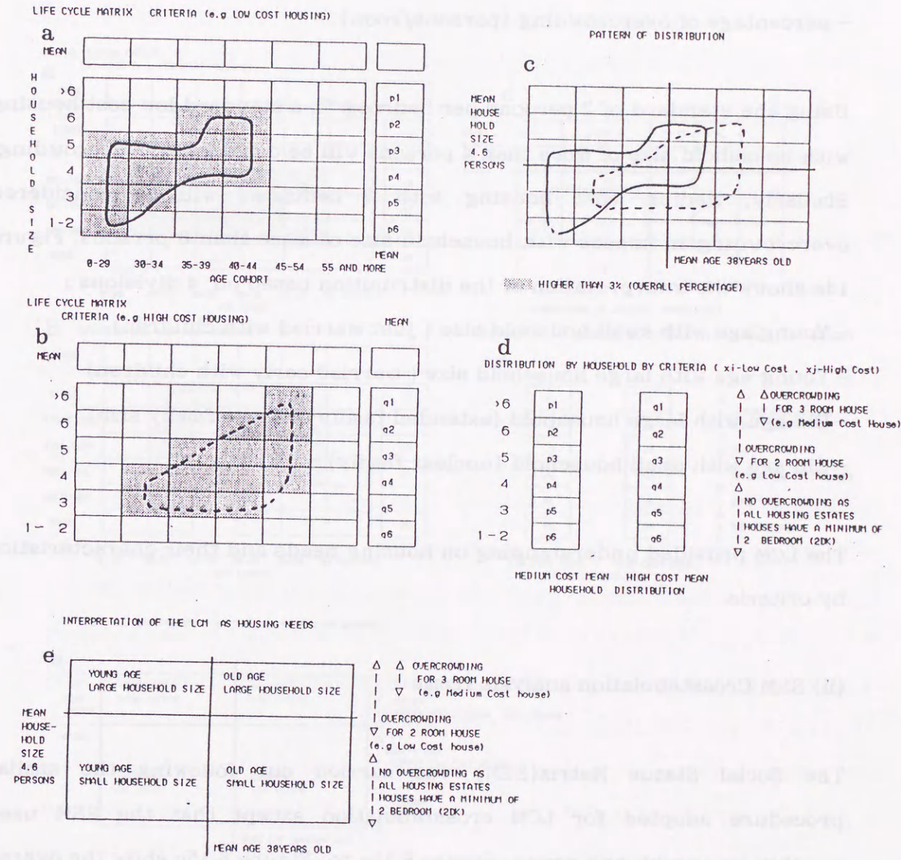


Figure 8.14 LCM Crosstabulation Analysis Frame

High cost housing) derived from high percentage (more than 3%) points.

Figure 8.14d shows the mean distribution of residents by criteria (e.g. Low Cost, High Cost housing) by household size. This LCM distribution enabled the following analysis:-

- relative distribution of household size by criteria
- percentage of overcrowding (persons/room)

Using the standard of 2 persons per bedroom*6, a standard low cost housing with household size of more than 4 persons will be considered overcrowding. Similarly, Medium cost housing with 3 bedrooms will be considered overcrowding in houses with household size of more than 6 persons. Figure 14e shows the interpretation of the distribution based on 4 divisions ;

- Young age with small houshold size (just married with children)
- Young age with large household size (married early with children)
- Old age with large household (extended family or large family size)
- Old age with small household (nuclear family)

The LCM provided understanding on housing needs and their characteristics by criteria.

(ii) SSM Crosstabulation analysis frame

The Social Status Matrix(SSM) was carried out following the similar procedure adopted for LCM crosstabulation except that the SSM used monthly income by age group. Figure 8.15a to Figure 8.15c show the overall procedure and tables used in the analysis. Figure 8.15d shows the mean distribution of residents by criteria (e.g. Low Cost, High Cost housing) by household size.

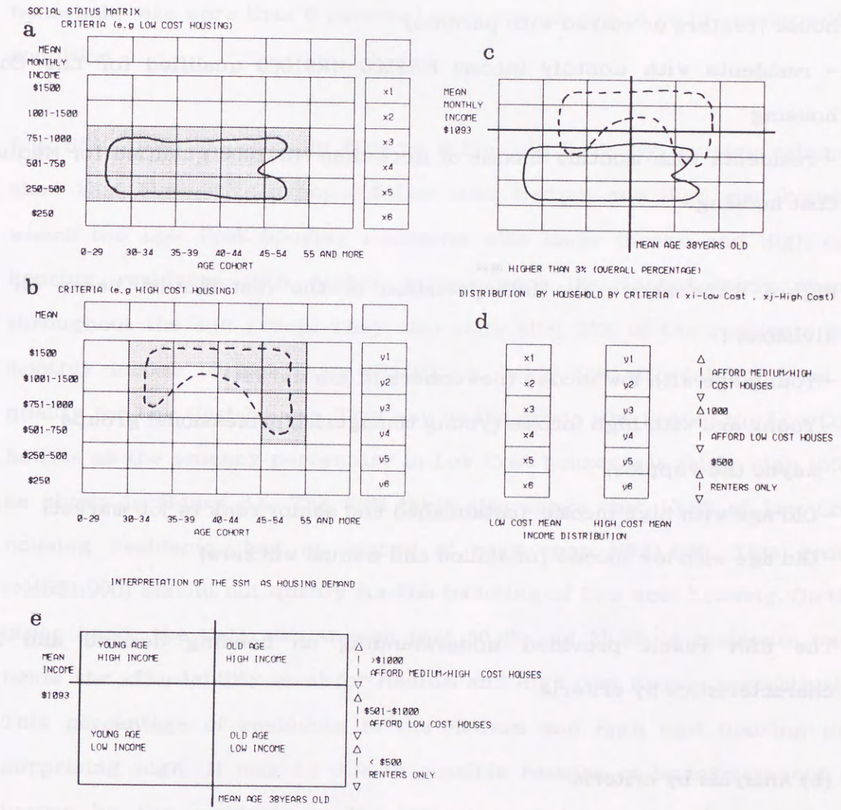


Figure 8.15 SSM Crosstabulation analysis frame

This SSM distribution enabled the following analysis:-

- relative distribution of income by criteria (e.g. housing category)
- percentage of residents and affordability by housing category.

Based on the minimum income requirement and loan repayment , the housing demand categories by population were as follows:

- residents with monthly income less than MR$500 could not afford to buy a house (renters or stayed with parents)
- residents with monthly income MR$500-MR$1000 qualified for Low Cost housing
- residents with monthly income of more than MR$1000 qualified for Medium Cost housing.

Figure 8.15e shows the interpretation of the distribution based on 4 divisions ;

- Young age with low income (newcomers in job market)
- Young age with high income (young managerial/professional groups maybe the yuppies)
- Old age with high income (established and senior rank in job market)
- Old age with low income (unskilled and manual workers)

The SSM result provided understanding on housing demand and its characteristics by criteria.

(b) Analysis by criteria

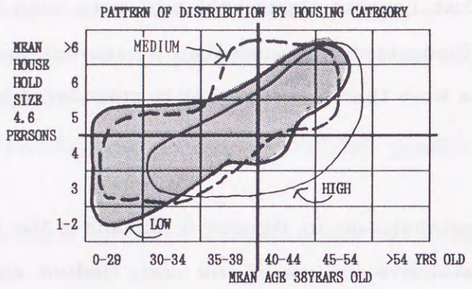
This analysis focused mainly on three aspects ; housing category, ethnicity and zones. Analysis result will be based on the summarised findings from LCM and SSM crosstabulation by above criteria on the following aspects ; housing category, ethnicity and zones.

(i) Housing category.

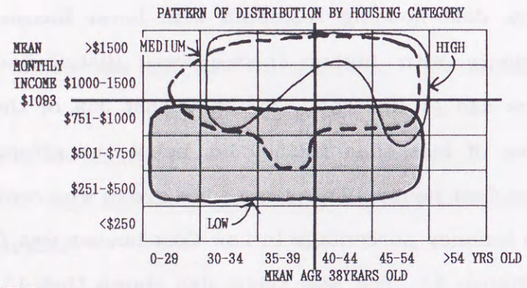
The LCM by housing categories in Figure 8.16a shows that Low cost housing residents were younger and had smaller household size as compared with Medium and High Cost housing residents. In terms of percentage, about 45.1% of the Low Cost housing (household size more than 5 persons), 14.4% of Medium Cost (household size more than 6 persons) and 12.7% of High Cost (household size more than 6 persons) were considered to be in overcrowding condition.

The SSM crosstabulation in figures 8.16b and 8.16c by housing category show that distinctive groups of Low cost, Medium and High cost housing where the Low Cost housing residents with lower income and High cost housing residents with higher income were distributed fairly evenly throughout the age group. They also show that 36% of the residents had monthly income of less than MR$500 i.e. below the affordability level to qualify for Low Cost houses. This may be the group who rented the Low Cost houses as the tenancy percentage in Low Cost houses was fairly high (55%) as shown in figure 8.5. The SSM table also shows that 13.9% of Low Cost housing residents had an income of more than MR$1,000. This group (>MR$1,000) should not qualify for the balloting of Low cost housing. On the other hand, the data also showed that 50.6% and 25.6% of residents were below the affordability level for Medium and High cost houses respectively. This percentage of residents in the Medium and High cost housing was surprising high. It may be due to possible reasons of understatement of income by the residents in the interview. It is common that residents understated their income in fear of income tax enquiry or safety reason. The other possible reason of low income is due to the fact that senior residents of the Medium and High Cost houses bought them in the early 1970's at a lower price. As a result, affordability based on current pricing was not realistic.

(a) LCM



(b) SSM



(c) INTERPRETATION

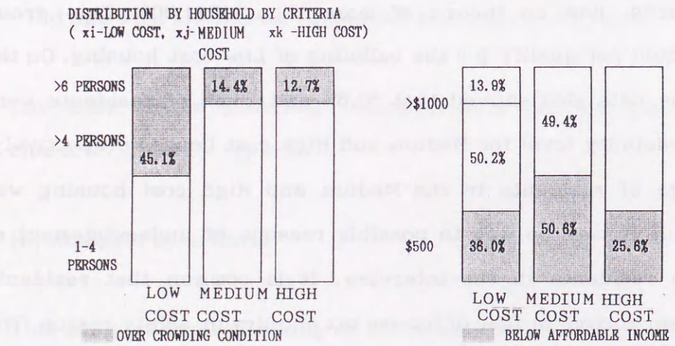


Figure 8.16 Distribution of LCM and SSM by housing category

(ii) Ethnicity

The LCM distribution of household size by ethnicity in figure 8.17a and 8.17b show a distinctive pattern where Malay population was younger and had larger household sizes (i.e. 51.6% had a household size of more than 5 persons). 42.2% of Chinese had households of more than 5 persons and 41.7% Indians had households with more than 5 persons/household. The distribution of Malays and the Indians had quite a similar pattern of distribution i.e. older population with household size of more than 5 persons.

The SSM crosstabulation analysis in figures 8.17b and 8.17 c show that a higher percentage of Chinese (44.3%) had a higher monthly income of more than $1,000 than the Malays (30.4%) and Indians (22%).The pattern of distribution tended to show that there was a higher percentage of lower income and young Malays and Indians as compared with the Chinese. It was also found that Indian groups had 2 main characteristics ; general pattern (young and low income) and unusual group (aged with low income).

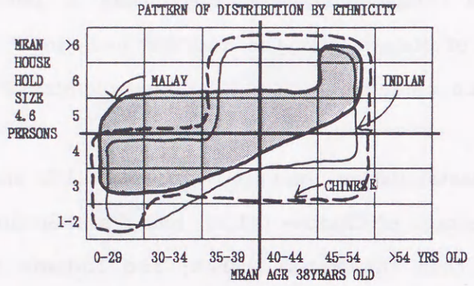
(iii) Zones

In analysing the zones (distance from city centre) the Study Area was divided into 3 main categories, City centre, Inner suburbs and Outer suburbs. LCM distribution in Figure 10.18a shows that the general distribution pattern was that the younger age group had smaller household sizes and older residents had larger household sizes. Figure 10.18b shows that among these zones, the Inner suburb showed a higher percentage (72.2%) of residents with higher than average household size.

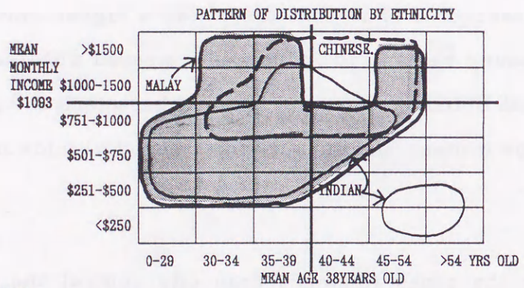
The SSM analysis in Figure 10.18c shows that the distribution pattern of City centre consisted of 2 distinct groups, middle age with fairly high income (>MR $1,000) and middle age and senior aged with low income (<MR$500).

The Inner suburbs tended to reflect a general pattern of young with low

(a) LCM



(b) SSM



(c) INTERPRETATION

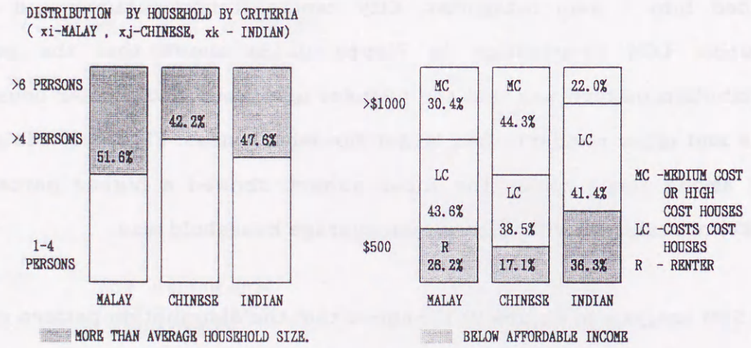
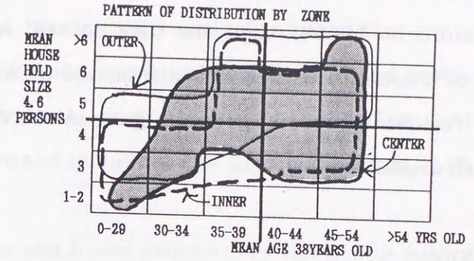
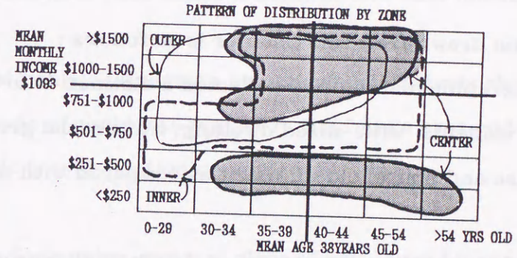


Figure 8.17 Distribution of LCM and SSM by ethnicity

(a) LCM



(b) SSM



(c) INTERPRETATION

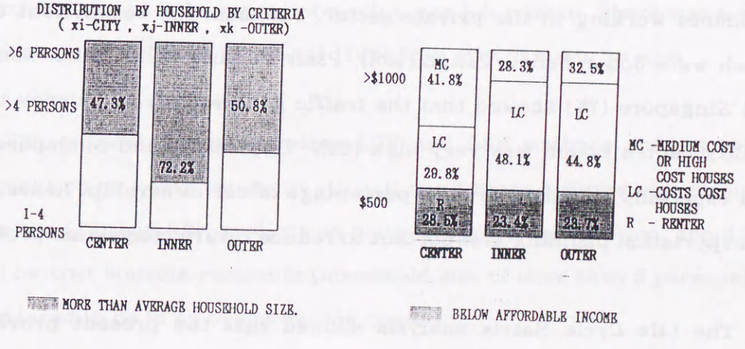


Figure 8.18 Distribution of LCM and SSM by zones

income and senior age with high income. On the other hand, the Outer suburbs reflected young with fairly high income residents(>MR$1,000). In terms of affordability, residents below the affordability level for home ownership was fairly even distributed i.e. about 24% to 29%.(Figure 10.18d) Residents who could afford Low Cost housing were higher in Inner (48.1%) and Outer suburbs (44.8%) than the City centre. As there was a higher percentage of residents with a monthly income of more than MR$1,000, the 'affordable' residents percentage was higher in the City centre (41.8%) than in the suburb areas.

8.5 CONCLUSION

The conclusion drawn from this Chapter is as follows :

(a) The demographic distribution reflected a distinctive urban characteristic of housing residents with mixed dwelling, multi racial grouping and smaller household size and household number (as compared with national average).

(b) The employment pattern showed a fairly high percentage of persons employed per household (1.86 per household) and high percentage (54%) of residents working in the private sector. The main job employment centres which were Johor Bahru/Tampoi(55%), Pasir Gudang (22%), Kulai-Senai (9%) and Singapore (7%) showed that the traffic generated from journey to work to City centre bound was very high (62%- City centre and Singapore). This was especially so with the high percentage of car ownership. Hence, public transportation planning is important to reduce future congestion problems.

(c) The Life Cycle Matrix analysis showed that the present provision of 2-room Low cost housing was insufficient for residents with larger households size (>4 persons/household). The overcrowding condition had led to some Low Cost housing owners letting out their flats illegally and

moving to other houses. Although these owners abused their privilege, the house owners were unable to sell their Low cost houses under the present ruling. Therefore, the Government should reconsider the possibility of the Government buying back the Low Cost houses at market price.

(d) The Social Status Matrix (SSM) analysis showed that for housing demand based on affordability, there were about 32.9% of the residents who could afford to buy a house in the open market (other than Low Cost housing). The effective housing demand including Low Cost houses was 74.9%.

(e) The house tenure and house category by age group analysis showed that the younger population were house renters or Low cost housing owners.

(f) The zone and vehicle ownership by age cohort analysis also showed that a higher percentage of residents stayed in the fringe area and the majority of them were public transportation dependents.

(g) The reasons for moving and last place of residence by age group analysis showed that the majority of the residents were migrants from outside Johor Bahru district and the reason of moving was job related. There was a smaller percentage of Suburbs movement (16%) from city to suburbs area.

(h) The crosstabulation by using LCM and SSM methods showed that the distribution by house category, ethnicity and zones differed significantly. From the LCM and SSM analysis on house category distribution, about 55% of the Low cost housing residents (household size of more than 5 persons) were considered to be in an overcrowding condition.

By ethnicity, the LCM results showed that young Malay population had higher household sizes than the other ethnic groups. Therefore, the future

Malay population in housing estate will increase at a higher rate than other ethnic groups. However, income distribution by ethnicity showed that the Chinese population tended to have higher income (in higher age group).

In terms of zone distribution, the outer suburbs had a higher percentage of residents with larger household size than city centre and inner suburbs' residents. In terms of affordability, there was a fairly even distribution of residents with less than MR$500 (renters group). The Outer(44.8%) and Inner suburbs(49.1%) had a higher percentage of residents who qualified for Low cost housing . On the other hand, the city centre had a higher percentage of residents who could afford to own Medium cost and High Cost houses.

NOTES

1) Population and Housing Census data was mainly from Statistical Department which is carried out every 10 years. In many cases, small area statistics (SAS) was not readily available.

2) The documented housing survey result provides the basis for the sampling survey because without it, we could not determine the existing total stock (or statistical Population) for estimating representative sample size. Unlike Japan, detailed housing information to the extent of information on resident or owner of the house or apartment are printed on the layout plan and is available to the public. The Japanese detail housing information is updated annually.

3) The difference between housing needs and housing demand is that housing demand considered the affordability and purchasing power of the planned population.

4) The classification maintained 5 year intervals except for the open end bracket (<30 and > 54 years old) and the 10 year interval of 45-54 due to effective sample distribution requirement of not less than 30 samples per cohort.

5) This is based on the assumption of loan requirement, expenditure pattern (20% for house mortgage of monthly income) and house price in 1990. The house price is Low Cost < $22,000, Medium Cost/High Cost house > $75,000.

6) If habitable room is used instead of bedroom, the number of persons per habitable room will be lower as it includes the living rooms.

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CHAPTER 9 :

THE SATISFACTION AND PREFERENCES OF HOUSING ESTATE RESIDENTS

9.0 INTRODUCTION

This Chapter discusses the satisfaction level and housing preferences of residents. It aims to understand both residents' satisfaction and their housing preferences. Results from the satisfaction study will help in understanding the residents problems whilst the results of the preference study will help in understanding their 'ideal housing choice' and 'priority of factors' perceived*[1] by residents with different characteristics. By analysing the gap between satisfaction levels and current preferences, directions for future housing planning can be outlined. (Figure 9.1)

Both these studies are the first attempt in Malaysia to study housing estates residents' (consumers') needs as there are no previous studies carried out on this subject. However, the studies' results are important because:-

(a) The results from the satisfaction and preference studies will help in understanding the current problem of mismatch of housing needs and supply.

(b) The provision of decent homes at affordable prices for various income groups as spelled out in the Malaysian housing policy should not only refer to houses which conform with Town Planning and Bye law requirements but also to those that fullfill the residents' needs and preferences.

9.1 PROPOSED ANALYSIS FRAME

As there are no other references on residential satisfaction and preference

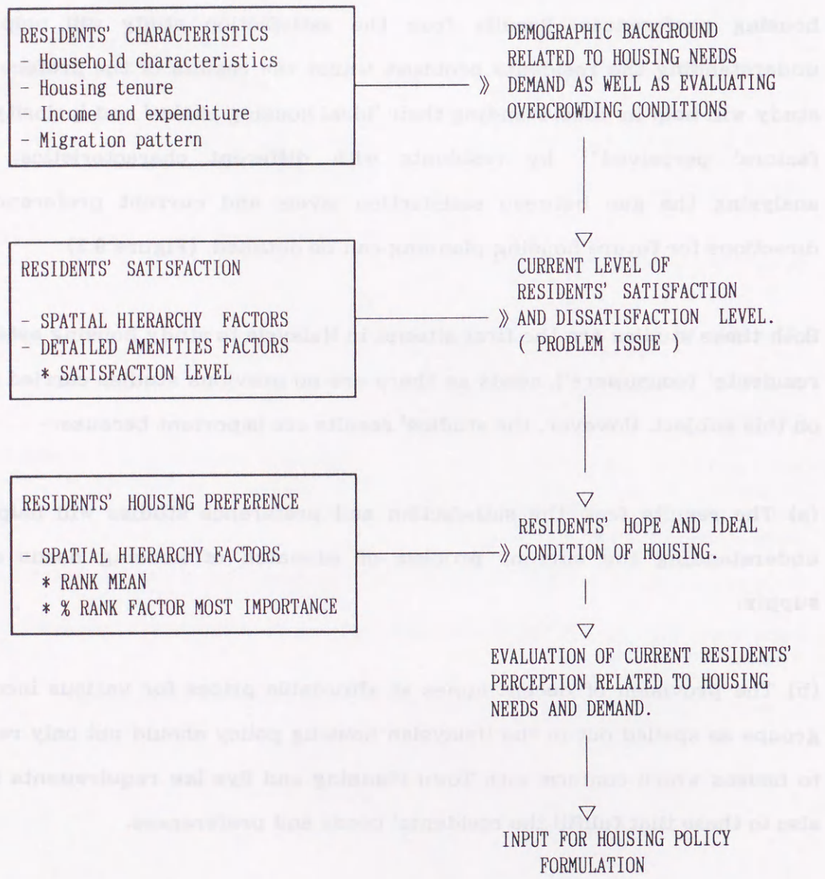


Figure 9.1 Satisfaction and Preference Study relationship

study[*2], the author had to propose a logical and new model of housing satisfaction and preference Study analysis in this Study.

(a) Local context

Housing preference and satisfaction factors of residents vary from one country to another due to different physical, socio-economic and political conditions. For instance, in the case of Japan, the duration of sunlight and being prone to earthquake are among the main considerations in housing preferences. However, these factors may not be relevant in Malaysia because of the long duration of sunshine experienced throughout the year and the absence of earthquakes.

Therefore in order to determine the housing satisfaction and preference factors in the Malaysian context, it is important to refer to the knowledge of local experts and local residents.

(b) Determination of Factors for analysis

A brainstorming session in identifying important factors followed by a pilot survey was carried out to finalise satisfaction and preference factors to be used in the questionaire interview survey. The brainstorming session on housing preference factors identified that these should include social aspects(kinship, community, amenities, aesthetics, safety) and financial cost (travelling cost and distance, house maintenance cost and house price). Based on these aspects, corresponding factors such as NEAR WORKPLACE, NEAR PARENTS HOUSE, NEAR CHOICE SCHOOL, TRANSPORTATION, SAFETY, AMENITIES, RELIGIOUS FACILITIES, NEAR SAME ETHNIC NEIGHBOUR /ETHNICITY, HOUSING LAYOUT, HOUSE DESIGN, CONSTRUCTION QUALITY and HOUSE PRICE were identified. All the above 12 factors were pretested in a

pilot survey with 10 samples of residents and it was later found that only 9 factors out of 12 were relevant.

These 9 factors were NEAR WORKPLACE, NEAR PARENTS HOUSE, NEAR CHOICE SCHOOL, SAFETY, AMENITIES, NEAR SAME ETHNIC NEIGHBOUR / ETHNICITY, HOUSE DESIGN, CONSTRUCTION QUALITY and HOUSE PRICE. They were used in the questionaire interview on 999 samples of residents.

(c) Use of spatial hierarchy

These 9 factors were then logically grouped into three main hierarchies of space : Urban level followed by Neighbourhood (housing estate level) and finally Building or house level. The reasons for this spatial hierarchy grouping is for the purpose of housing planning considerations at policy level. For example, factors under the Urban and Neighbourhood levels require more attention from the State Town and Country Planning Department while the Building level factors require attention from the Local Planning Authority level.

The social aspects and financial cost of housing preference were grouped under the 3 levels and 9 corresponding factors were used in the analysis*3. (i) Urban level (NEAR WORKPLACE, NEAR CHOICE SCHOOL*4, NEAR PARENTS HOUSE) (ii) Neighbourhood level(SAFETY*5, AMENITIES and NEAR SAME ETHNICITY) (iii) Building level (HOUSE DESIGN, HOUSE PRICE, CONSTRUCTION QUALITY *6). Figure 9.2 shows the analysis framework used in the survey.

(d) Determination of criteria of the analysis

The criteria of analysis adopted here was based on the rationale of

FACTORS OF SATISFACTION AND HOUSING PREFERENCE OF RESIDENTS

(1) BY SPATIAL HIERARCHY

- URBAN LEVEL
  - NEAR WORK PLACE
  - NEAR CHOICE SCHOOL
  - NEAR PARENTS HOUSE
- NEIGHBOURHOOD LEVEL
  - OVERALL SAFETY
  - AMENITIES
  - NEAR SAME ETHNICITY (RACIAL AFFINITY)
- BUILDING LEVEL
  - CONSTRUCTION QUALITY
  - HOUSE DESIGN
  - HOUSE PRICE

(2) BY DETAILED FACTORS OF AMENITIES USED IN SATISFACTION STUDY

SOCIAL FACILITIES (Religious, Recreation, Education, Shopping)
UTILITIES (Water supply, Electricity, Telephone, Garbage, Sewage, Road maintenance, public transport)
ENVIRONMENT (Smoke, Smell and Noise pollution)
SECURITY (Burglary and Robbery)

(3) CRITERIA OF ANALYSIS

- PROJECT SIZE
  - SMALL
  - MEDIUM
  - LARGE
- PROJECT YEAR
  - 1970'S
  - EARLY 1980'S
  - LATE 1980'S
- ZONE
  - CITY CENTRE
  - 10-20KM
  - 21-30KM WEST
  - 21-30KM EAST
  - > 30KM
- HOUSE CATEGORY
  - LOW
  - MEDIUM
  - HIGH COST HOUSES

(4) MEASUREMENT USED IN THE SURVEY

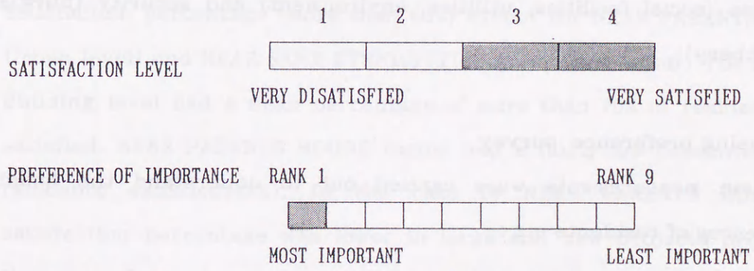


Figure 9.2 Analysis frame – Factors and criteria used

development control. The criteria can assist Housing Authority decision makers to understand the different characteristics to approve future housing projects and revoke non-implemented projects. In other words, these criteria was Authority controllable variables. These criteria included Zone, Housing Category, Project Size, and Project year. Out of these criteria, Project size (number of units), Zone (location) and Housing category (Low cost housing policy) can be directly controlled by the Authority in approving future housing projects. The other criteria of 'Project year' was used as an intervening factor (for analysing the influence of approved year).*7

(e) Measurement of Factor

(i) Satisfaction survey

The measurement used for degree of satisfaction ranged from 1 point to 4 points where 'dissatisfaction= 1 point' to 'very satisfied =4 points'.The criteria used were project size, zone, house category and project year.

Firstly , the overall mean of the residents satisfaction on 9 factors by spatial hierarchy were cross tabulated by using project size, zone, housing category and project year. This was also done on detailed factors of amenities (social facilities, utilities, environment) and security (burglary and robbery) .

(ii) Housing preference survey

Two main measurements were carried out to understand the housing preferences of residents viz :-

- Mean Rank of each factors

In the questionaire interview, the residents were asked to rank the 9 factors

by priority of importance. Rank 1 would be the most important and Rank 9 the least important as perceived by the residents. The mean rank of each factor by different criteria was calculated based on the rank (1 to 9) made by all the residents (999 samples). This mean rank measured the relative position of importance of the factors by different criteria.

- Percentage of residents rank factor as most important(Rank No. 1).

This percentage measures the percentage of residents who had chosen a factor as the most important factor (or Number One factor) in their choice of place of residence. In this way, this percentage can be used to measure the weightage of each preference factor

9.2 HOUSING RESIDENTS SATISFACTION FINDINGS

Figure 9.3 shows the results of the overall satisfaction levels of residents by housing Project size, Zone, House category and Project year. (cross tabulation)

(a) Overall Satisfaction of residents - spatial Hierarchy levels

Generally, all factors in the 3 spatial hierarchy levels had a fairly high satisfaction percentage (more than 60%) except for NEAR PARENTS HOUSE (Urban level) and NEAR SAME ETHNICITY(Neighborhood level). The factors in Building level had a mean percentage of more than 70% of residents being satisfied. NEAR PARENTS HOUSE factor had a fairly low percentage of the residents satisfied(42%). In the case of NEAR PARENTS HOUSE, the satisfaction percentage was lower in large and new projects probably as they were further away from established residential areas. The city centre and inner suburbs (Tampoi) also recorded lower percentage of satisfaction in terms of NEAR PARENTS HOUSE. The satisfaction percentage on the

ANALYSIS FROM QUESTIONAIRE INTERVIEW FACTORS BY 3 LEVELS OF SPATIAL HIERARCHY		SATISFACTION LEVEL BY SPATIAL HIERARCHY								
		URBAN LEVEL			NEIGHBOURHOOD			BUILDING LEVEL		
		1 NEAR WORKPLACE	2 NEAR CHOICE SCHOOL	3 NEAR PARENTS	4 SAFETY	5 AMENITIES	6 NEAR SAME ETHNICITY	7 CONSTRUCTION	8 HOUSE DESIGN	9 HOUSE PRICE
PROJECT SIZE	SMALL	83	72	50	74	74	46	73	75	74
	MEDIUM	88	70	43	74	82	49	72	64	80
	LARGE	67	66	34	83	62	59	84	79	83
	MEAN	79	69	42	77	73	51	76	73	79
ZONE	CITY CENTRE	87	71	38	74	85	71	84	78	72
	TAMPOI	81	56	32	58	73	25	47	47	77
	SKUDAI	71	67	39	78	47	48	72	63	77
	P GUDANG	86	67	47	89	82	47	75	71	81
	KULAI	84	74	67	80	80	35	89	90	87
	MEAN	82	67	45	76	73	45	73	70	79
HOUSE CATEGORY	LOW	85	60	45	76	79	46	64	70	83
	MEDIUM	82	79	43	73	74	54	78	80	73
	HIGH	72	73	38	76	80	54	80	83	81
	MEAN	80	71	42	75	78	51	74	78	79
PROJECT YEAR	1970'S	89	75	41	75	81	70	86	80	69
	EARLY 80'S	83	65	49	78	79	41	71	66	81
	LATE 80'S	72	47	30	67	66	51	79	77	82
	MEAN	81	62	40	73	75	54	68	74	77
OVERALL	MEAN	81	67	42	74	75	50	75	73	78

NOTE : 49 - 49% of residents interviewed are satisfied
(hatching marks are those percentage less than 50%)

Figure 9.3 Residents Satisfaction by spatial hierarchy.

NEAR SAME ETHNICITY factor was also lower in small projects than large projects. Small projects tended to promote closer community among the same ethnic group than large projects. For the NEAR SAME ETHNICITY factor,it was found that older projects built in the 1970's had a higher satisfaction percentage(70% of residents satisfied) than new projects built in the 1980's(less than 50% of residents satisfied). Hence newer projects in Tampoi zone(25%) and Kulai zone(35%) had a lower satisfaction percentage comparatively.

(b) Detailed breakdown of amenities factors(Social facilities, utility, Environment and Security)

Figure 9.4 shows the distribution of residents satisfaction in the Study Area by detailed amenities factors.

(i) Social Facilities

Among the social facilities, RECREATION had the lowest satisfaction percentage (60%) followed by RELIGIOUS facilities (70%). The other social facilities had higher satisfaction percentages of more than 70% ; in particular the SHOPPING and EDUCATION facilities. This was partly because these two facilites were usually built first(early phases) in the area reserved for social facilities. Other social facilities such as RECREATION, HEALTH and RELIGIOUS units were built at a much later phases and did not exist at the time of survey.

(ii) Utilities

Generally, more than 50% of residents were satisfied with all the utilities. The WATER SUPPLY, ELECTRICITY, ROAD MAINTENANCE and PUBLIC TRANSPORT had more than 70% of residents satisfied. Less than 70% of residents were satisfied in general with TELEPHONE SERVICES and GARBAGE COLLECTION.

ANALYSIS FROM QUESTIONAIRE INTERVIEW		SATISFACTION LEVEL BY DETAILED SOCIAL FACILITIES												
		SOCIAL FACILITIES					UTILITIES							
FACTORS OF AMENITIES (SOCIAL FACILITIES AND UTILITIES)		1 HEALTH	2 RELIGIOUS	3 RECREATION	4 EDUCATION	5 SHOPPING	6 WATER SUPPLY	7 ELECTRICITY	8 TELEPHONE	9 GARBAGE	10 SEWERAGE	11 ROAD MAINTENANCE	12 PUBLIC TRANSPORT
PROJECT SIZE	SMALL	72	60	50	75	77	95	96	82	57	63	81	70
	MEDIUM	68	73	65	76	79	91	92	59	72	76	71	76
	LARGE	60	67	62	61	68	95	88	58	53	75	78	81
	MEAN	67	67	59	71	75	94	92	60	61	71	77	76
ZONE	CITY CENTRE	88	86	77	90	97	92	90	55	51	64	78	90
	TAMPOI	86	71	65	83	69	96	99	69	72	82	87	82
	SKUDAI	45	47	40	65	69	87	84	55	59	66	67	66
	P GUDANG	62	68	60	69	66	95	96	61	71	76	76	70
	KULAI	66	51	39	48	94	96	99	69	64	70	82	66
	MEAN	69	65	56	71	79	93	94	62	63	72	78	75
HOUSE CATEGORY	LOW	64	63	60	75	74	93	95	62	67	69	73	77
	MEDIUM	68	69	56	67	77	93	90	58	59	78	79	72
	HIGH	88	80	68	87	87	91	90	55	62	80	85	85
	MEAN	73	71	61	76	79	92	92	58	63	76	79	78
PROJECT YEAR	1970'S	85	81	69	89	96	91	90	56	52	64	77	90
	EARLY 80'S	61	55	47	66	71	93	93	62	66	80	71	68
	LATE 80'S	67	84	81	87	70	96	96	80	65	90	89	80
	MEAN	71	73	66	77	79	93	93	59	62	74	79	79
OVERALL	MEAN	70	69	60	73	78	93	93	60	62	73	78	77

NOTE : 69 - 69% of residents interviewed are satisfied

(hatching marks are those percentage less than 70%)

Figure 9.4 Residents Satisfaction by detailed amenities factors (Social facilities and utilities.)

(iii) Environment

Figure 9.5 shows that pollution problems especially SMOKE, SMELL and NOISE pollution were apparent in the Study Area as supported by the satisfaction percentage of less than 30%. SMOKE pollution caused by the workshops and traffic was prevalent in all except in Tampoi and Pasir Gudang zones. The Interview survey showed that SMELL pollution in housing estates were contributed by the oxidation ponds, poor garbage collection system, choked drains and factories. The older small size projects usually did not have good drainage systems and the choking of drains caused bad odour. Factories (especially rubber and palm oil mills) in Pasir Gudang and Kulai were the main sources of smell pollution in the Study Area. The relatively large number of workshops (welding, hardware and heavy machinery repairs) were usually found in shophouses in housing estates in Tampoi, Skudai and Kulai. These workshops had contributed to noise pollution in these zones.

(iv) Security

Although the overall Safety factors at Neighbourhood level was relatively high (74%), the BURGLARY and ROBBERY factors had very low percentages of satisfaction (less than 30%) from the residents. The satisfaction percentage was slightly higher in the older estates (1970's) and City Centre probably due to the better social control or community formation in established residential areas compared to the newer areas.

(c) Overall conclusion and analysis by criteria of Project size, project year, zone and house category

Figure 9.6 shows the main findings from the satisfaction analysis. They are as follows:-

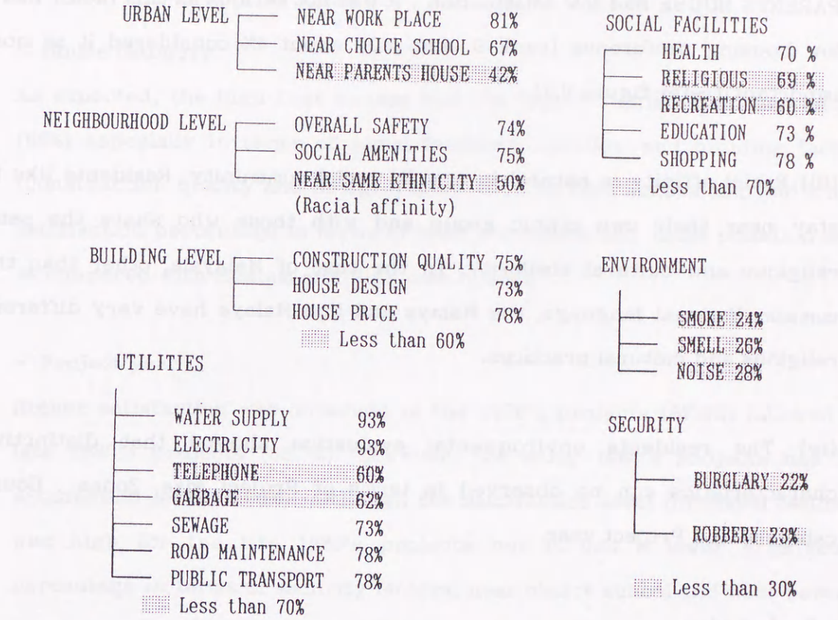
(i) The residents were most dissatisfied with security (BURGLARY and

(LESS THAN 30% RESIDENTS SATISFIED) ANALYSIS FROM QUESTIONAIRE INTERVIEW DETAILED FACTORS AMENITIES(POLLUTION) AND SAFETY(SECURITY)		SATISFACTION LEVEL					
		POLLUTION			SECURITY		
		1 SMOKE	2 SMELL	3 NOISE	4 BURGLARY	5 ROBBERY	
PROJECT SIZE	SMALL	9	15	30	27	21	- These are the 5 factors which have smaller percentage of residents satisfied although overall safety and amenities are fairly high (>70%)
	MEDIUM	27	29	44	29	22	- Relatively, smoke pollution and burglary as well as robbery have lesser % of residents satisfied.
	LARGE	20	32	28	17	15	- Large projects have lesser % of residents satisfied than small and medium size projects.
	MEAN	19	25	34	24	19	
ZONE	CITY CENTRE	39	36	25	33	33	- Among the zones, Kulai (in outer suburbs) has the lowest percentage of residents satisfied. City centre zone has higher % of residents satisfied in all factors. - Generally, inner and outer suburbs have low % of residents satisfied in robbery.
	TAMPOI	50	41	18	13	19	
	SKUDAI	23	25	11	29	27	
	P GUDANG	43	18	27	29	15	
	KULAI	10	4	0	4	4	
	MEAN	33	25	15	23	20	
HOUSE CATEGORY	LOW	20	27	43	20	25	- All housing categories' residents have low % of satisfaction on smoke pollution and burglary.
	MEDIUM	21	22	32	21	27	
	HIGH	15	28	25	22	26	
	MEAN	19	26	33	21	26	
PROJECT YEAR	1970'S	25	35	40	31	31	- Generally the earlier housing projects (1970's) have higher % of residents. It is found that later projects(1980's) have lower %residents satisfied in robbery
	EARLY 80'S	19	16	34	27	18	
	LATE 80'S	28	37	36	18	15	
	MEAN	24	29	37	36	21	
OVERALL	MEAN	24	26	28	23	22	

NOTE : 24 - 24% of residents interviewed are satisfied
(hatching marks are those percentage less than 25%)

Figure 9.5 Residents Satisfaction by detailed amenities factors (Pollution) and security(burglary and robbery)

(1) SUMMARY PERCENTAGE OF RESIDENTS SATISFIED BY FACTORS AND SPATIAL HIERARCHY



(2) SUMMARY OF OVERALL MEAN % OF RESIDENT SATISFIED BY CRITERIA

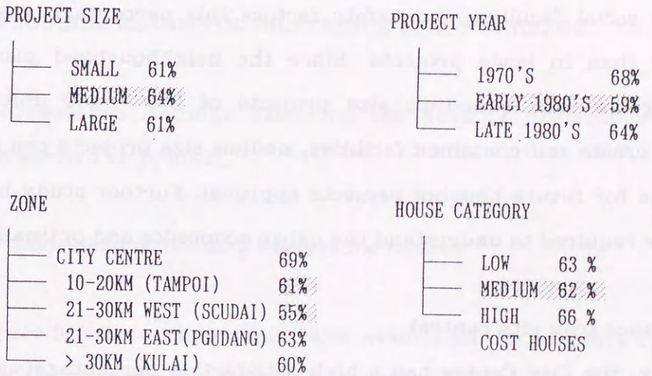


Figure 9.6 Summary of Satisfaction analysis

ROBBERY) and pollution problem (SMOKE and SMELL). Factors at all the three urban, neighborhood and building levels had above 50% satisfaction percentages except for NEAR PARENTS HOUSE factor. Although NEAR PARENTS HOUSE had low satisfaction , it was not serious as this factor had a low housing preference (rank 9 and only about 4% considered it as most important)(refer figure 9.7).

(iii) Racial affinity is natural in a multi racial community. Residents like to stay near their own ethnic group and with those who share the same religious and cultural similarity. In the case of Malaysia, other than the common National language, the Malays and Non Malays have very different religious and cultural practices.

(iv) The residents environmental evaluation showed that distinctive characteristics can be observed in terms of Project size, Zones , House category and Project year.

- Project size

Medium Size projects had a higher satisfaction percentage especially in terms of the social facilities and safety factors.This percentage was also much higher than in large projects. Since the neighbourhood planning concept suggests that 4 medium size projects of 200 - 400 units are sufficient to create self contained facilities, medium size projects can serve as a guideline for future housing projects approval. Further study in this area would be required to understand the urban economics and optimality.

- Zones (distance from city centre)

Comparatively, the City Centre had a high satisfaction percentage(mean of 69%) followed by Pasir Gudang (63%). Zones which had the least satisfaction percentage were recorded in Scudai and Tampoi .This was caused by the

relatively lower satisfaction percentage in social facilities, utility, pollution and security. Replanning of these zones is required in terms of facility provision and development control on incompatible landuse.

- House category

As expected, the High Cost houses had the highest satisfaction percentage (66%) especially in terms of social facilities, utilities and building factors (construction quality and design). However, Low Cost houses also had a high satisfaction percentage in terms of near workplace and noise pollution level as compared with Medium and High cost houses.

- Project year

Higher satisfaction was observed in the 1970's projects (67.8%) followed by late 1980's projects (63.7%). However, the early 1980's projects had low satisfaction level (60.5%). Although the satisfaction level for social facilities was high for the late 1980's projects but it had a lower satisfaction percentage in terms of security factors, near choice school and near parents house.

9.3 HOUSING RESIDENTS PREFERENCE STUDY FINDINGS

The research findings based on the housing preference survey can be summarised as follows:

(a) Rank Mean of Housing Preference factors

Figure 9.7 shows the overall rank mean of all the 9 factors by zones, project size, housing category and project year.

ANALYSIS FROM QUESTIONAIRE INTERVIEW		RANK MEAN								
		URBAN LEVEL			NEIGHBOURHOOD			BUILDING LEVEL		
FACTORS / CRITERIA		1 NEAR WORKPLACE	2 NEAR CHOICE SCHOOL	3 NEAR PARENTS	4 SAFETY	5 AMENITIES	6 NEAR SAME ETHNICITY	7 CONSTRUCTION	8 HOUSE DESIGN	9 HOUSE PRICE
PROJECT SIZE	SMALL	3.19	5.87	6.75	4.18	5.14	5.37	4.53	4.95	5.06
	MEDIUM	2.49	6.23	7.09	4.28	5.02	5.32	4.78	4.94	4.81
	LARGE	2.93	6.61	7.49	3.87	5.21	5.94	4.05	4.31	4.66
	MEAN	2.81	6.17	7.04	4.18	5.10	5.44	4.57	4.83	4.87
ZONE	CITY CENTRE	2.37	6.30	7.33	4.29	5.24	5.61	4.22	4.72	4.91
	TAMPOI	2.91	6.86	7.63	4.27	5.14	5.07	4.27	4.45	4.46
	SKUDAI	3.56	5.68	6.91	3.91	5.33	5.67	4.39	4.65	4.95
	P GUDANG	2.71	6.23	6.92	4.24	4.88	5.44	4.92	4.93	4.76
	KULAI	2.66	5.78	6.45	4.07	5.16	4.94	4.62	5.54	5.65
	MEAN	2.81	6.17	7.04	4.18	5.10	5.44	4.57	4.83	4.87
HOUSE CATEGORY	LOW	2.75	6.19	6.91	4.05	5.02	5.37	4.72	4.97	4.98
	MEDIUM	2.79	6.18	7.17	4.20	5.27	5.49	4.36	4.80	4.80
	HIGH	3.27	6.07	7.18	4.78	4.91	5.59	4.51	4.13	4.58
	MEAN	2.94	6.15	7.09	4.34	5.07	5.48	4.53	4.64	4.79
PROJECT YEAR	1970'S	2.24	6.21	7.32	4.10	5.49	5.62	4.24	4.77	4.95
	EARLY 80'S	3.04	5.94	6.86	4.17	4.89	5.24	4.89	5.02	4.93
	LATE 80'S	2.64	6.80	7.28	4.12	5.38	5.92	4.05	4.29	4.63
	MEAN	2.80	6.17	7.04	4.15	5.11	5.46	4.59	4.82	4.87
OVERALL MEAN		2.84	6.17	7.10	4.30	5.13	5.42	4.52	4.76	4.83

NOTE : HOUSE PREFERENCE FACTORS MEAN RANK (1 MOST IMPORTANT... 9 LEAST IMPORTANT)

Figure 9.7 Rank mean of housing preference

(i) Overall rank mean

Among all the factors, NEAR WORKPLACE (rank mean 2.8) (Urban level) , followed by SAFETY (rank mean = 4.3)(Neighborhood level) and CONSTRUCTION QUALITY (rank mean = 4.5)(Building level) were ranked as the three highest important housing preference factors.

(ii) Rank mean by different criteria

– Ranking by Project size

Residents of small size projects placed more importance on Urban level factors such as NEAR SCHOOL and NEAR PARENTS HOUSE. Residents of Medium size projects placed importance on NEAR WORKPLACE and Neighborhood level factors such as AMENITIES and NEAR SAME ETHNICITY. Residents in large size projects emphasised SAFETY and Building level factors such as CONSTRUCTION, HOUSE DESIGN and HOUSE PRICE. The findings tended to show that residents in smaller projects emphasised Urban level factors and residents in large projects chose Building level factors.

– Ranking by zones

In terms of zones, the City centre residents placed importance on NEAR WORKPLACE and CONSTRUCTION QUALITY. Tampoi residents placed more important on AMENITIES, HOUSE DESIGN and HOUSE PRICE. Scudai residents emphasized NEAR SCHOOL and SAFETY factors whilst residents in Kulai placed greater importance on NEAR PARENTS HOUSE.

– Ranking by house category

In terms of house category, the Low Cost housing residents placed more importance on NEAR WORK PLACE, NEAR PARENTS' HOUSE, SAFETY and NEAR SAME ETHNICITY factors. The Medium Cost housing residents placed CONSTRUCTION QUALITY as the more important factor. The High Cost

residents placed more importance on HOUSE DESIGN, HOUSE PRICE and NEAR SAME ETHNICITY factors compared with the other residents.

– Ranking by Project year

The results showed that residents of the 1970's and early 1980's projects placed greater importance on urban level factors (NEAR WORKPLACE and SAFETY) whilst residents in the late 1980's projects emphasised building level factors (CONSTRUCTION QUALITY, DESIGN and PRICE).

(iii) Analysis by ranking order

The results of the mean rank can be arranged in ascending order and compared with each group of variables (e.g. between Low, Medium and High Cost houses). Figure 9.8 summarises the overall rank mean and classification of factors by 'common rank order' and 'non-common order'. 'Common rank order' factors are factors that have similar rank in all the criteria and the 'irregular 'factors are those of non common rank order. The 'Common rank order' were Rank 1-NEAR WORKPLACE, Rank 7-SAME ETHNICITY, Rank 8-NEAR CHOICE SCHOOL and Rank 9-NEAR PARENTS HOUSE . The 'Irregular Rank order' were SAFETY, AMENITIES, CONSTRUCTION QUALITY, HOUSE DESIGN and HOUSE PRICE factors.

The analysis of the 'Irregular Rank order' showed that the city centre residents ranked CONSTRUCTION QUALITY higher than the others (rank second), High cost residents ranked HOUSE DESIGN factor higher than the other factors. The relatively higher percentage of satisfaction of the City centre's residents and High Cost residents (refer figure 9.5) had contributed to a lower rank in SAFETY factors in both groups.

COMMON ORDER

AGE COHORT	WP	SC	PT	SF	AM	SE	CN	HD	HP
CITY CENTRE	1	8	9	3	6	7	2	4	5
TAMPOI	1	8	9	2	6	7	3	4	5
SCUDAI	1	8	9	2	6	7	3	4	5
P GUDANG	1	8	9	2	4	7	5	6	7
KULAI	1	8	9	2	5	4	3	6	7

HOUSING CATEGORY	WP	SC	PT	SF	AM	SE	CN	HD	HP
LOW COST	1	8	9	2	6	7	3	4	5
MEDIUM COST	1	8	9	2	6	7	3	4	5
HIGH COST	1	8	9	5	6	7	3	2	4

PROJECT SIZE	WP	SC	PT	SF	AM	SE	CN	HD	HP
SMALL	1	8	9	2	6	7	3	4	5
MEDIUM	1	8	9	2	6	7	3	4	5
LARGE	1	8	9	2	6	7	3	4	5

PROJECT YEAR	WP	SC	PT	SF	AM	SE	CN	HD	HP
1970'S	1	8	9	2	5	7	3	4	6
EARLY 1980'S	1	8	9	2	6	7	3	5	4
LATE 1980'S	1	8	9	3	6	7	2	4	5

NOTES

Ranking order by zones showed similar rank order in city centre, Tampoi and Skudai (Inner suburbs). Ranking order in Pasir Gudang and Kulai zones varies and emphasied amenities and construction quality respectively.

Low and Medium Cost houses have similar ranking order. High Cost housing tends to rank housing design higher while Low cost and Medium Cost ranked safety higher.

There is no different in ranking order by housing size.

The 1970's and early 80's have slight different in ranking order where medium size project emphasize more on house price However, the late 1980's placed high emphasise on construction quality

WP - WORKPLACE SC - SCHOOL PT - PARENTS HOUSE SF - SAFETY AM - AMENITIES
SE - SAME ETHNICITY CN- CONSTRUCTION QUALITY HD - HOUSE DESIGN HP - HOUSE PRICE

Figure 9.8 The common order and uncommon order of factor preference

(b) Percentage Factor rank as Most important

(i) Percentage Factor rank as most important by overall spatial hierarchy

Among the factors, NEAR WORK PLACE factor (53.2%) had the highest percentage followed by SAFETY factor (12.8%). The rest of the factors had less than 10% respondents ranking the factor as most important. By percentage rank most important, the Urban level factors were the highest(63.3%) followed by Neighbourhood level (19.5%) and Building level (17.6%). The high percentage of Urban level rank was mainly contributed by the NEAR WORKPLACE factor (>50%). The other factors (i.e. NEAR CHOICE SCHOOL and NEAR PARENTS HOUSE) had a lower percentage (<10%). Figure 9.9 shows the distribution of percentage factor rank as most important.

(ii) Percentage Factor Rank as most important by different criteria

– Ranking by project size

Residents of Medium size projects emphasised Urban level factors(71.1%) particulary the NEAR WORKPLACE factor. Residents of the Large size projects placed relatively higher importance on Neighbourhood level factors (23.5%) especially AMENITIES factors as well as Building level factors(23.5%) particularly HOUSE DESIGN and HOUSE PRICE. Residents of the small size projects did not have a typically high percentage in all levels. However, factors such as NEAR PARENTS HOUSE, SAFETY, NEAR SAME ETHNICITY and CONSTRUCTION QUALITY were ranked high in small size projects.

– Ranking by zones

The results showed a fairly random distribution of ranking by zones. Broadly, the City zone residents emphasised Urban level factors(70.1%) particularly the NEAR WORKPLACE factor. Residents in the suburbs

ANALYSIS FROM QUESTIONAIRE INTERVIEW		% RANK FACTOR MOST IMPORTANT								
		URBAN LEVEL			NEIGHBOURHOOD			BUILDING LEVEL		
		(1) NEAR WORK PLACE	(2) NEAR CHOICE SCHOOL	(3) NEAR PARENTS	(4) SAFETY	(5) AMENITIES	(6) NEAR SAME RACE	(7) CONSTRN QLY	(8) HOUSE DESIGN	(9) HOUSE PRICE
PROJECT SIZE	SMALL	45.9	5.0	6.7	14.3	3.5	4.4	9.6	3.8	6.1
	MEDIUM	64.4	4.4	2.3	11.9	1.9	2.5	6.7	3.1	3.7
	LARGE	43.1	5.8	3.5	13.8	5.7	4.0	8.0	7.5	8.0
	MEAN	54.4	4.8	4.0	13.0	3.1	3.4	7.9	4.1	5.3
PROJECT YEAR	1970'S	60.4	5.9	4.0	10.4	1.5	2.5	9.8	3.5	2.5
	EARLY 80'S	52.3	4.9	4.9	13.1	3.5	4.2	8.0	3.7	5.9
	LATE 80'S	52.8	4.1	2.0	14.7	3.6	2.6	6.1	6.1	7.1
	MEAN	54.1	4.9	4.1	12.8	3.1	3.5	8.0	4.1	5.4
ZONE	CITY CENTRE	59.7	6.1	4.3	10.8	2.6	3.0	7.8	3.5	2.6
	TAMPOI	54.0	3.0	1.0	15.0	3.0	4.0	13.0	4.0	2.0
	SKUDAI	39.6	7.5	5.4	10.2	3.2	6.5	13.4	6.4	7.5
	P GUDANG	58.3	3.8	3.0	15.2	3.0	1.8	4.5	4.8	7.1
	KULAI	54.2	2.4	8.4	13.3	4.8	4.8	6.1	1.2	3.6
	MEAN	54.4	4.8	4.0	13.0	3.1	3.4	7.9	4.1	5.3
HOUSE CATEGORY	LOW	57.70	3.20	3.80	14.50	3.21	2.90	8.80	2.30	4.20
	MEDIUM	52.60	5.30	3.20	13.00	3.20	3.70	6.90	5.60	6.10
	HIGH	42.60	11.70	8.50	15.30	2.10	5.30	7.40	8.50	8.50
	MEAN	50.97	6.73	5.17	10.93	2.83	3.97	7.70	5.47	6.27
OVERALL	MEAN	53.18	6.01	4.11	12.75	2.94	3.79	7.45	4.83	5.34

NOTE : ▒▒ Highest percentage among variables in each criteria

ANALYSIS FROM QUESTIONAIRE		RANK FACTOR MOST IMPORTANT - SPATIAL HIERARCHY		
		URBAN LEVEL(1+2+3)	NEIGHBORHOOD LEVEL (4+5+6)	BUILDING LEVEL(7+8+9)
PROJECT SIZE	SMALL	57.6	22.2	19.5
	MEDIUM	71.1	16.3	13.5
	LARGE	52.4	23.5	23.5
	MEAN	63.2	19.5	17.3
PROJECT YEAR	1970'S	70.3	14.4	15.9
	EARLY 80'S	62.1	20.8	17.6
	LATE 80'S	58.9	20.9	19.3
	MEAN	63.1	19.4	17.5
ZONE	CITY CENTRE	70.1	16.4	13.9
	TAMPOI	58.0	22.0	19.0
	SKUDAI	52.5	19.9	27.3
	P GUDANG	65.1	20.0	15.6
	KULAI	65.0	22.9	10.9
	MEAN	63.2	19.5	17.3
HOUSE CATEGORY	LOW	64.70	20.60	15.30
	MEDIUM	61.10	19.90	18.60
	HIGH	62.80	12.70	24.40
	MEAN			
OVERALL	MEAN	63.30	19.48	17.62

Figure 9.9 Percentage Rank as Most important by criteria

i.e. Skudai and Kulai emphasised Urban factors such as NEAR CHOICE SCHOOL and NEAR PARENTS HOUSE respectively. Residents of new development areas such as Pasir Gudang and Tampoi also emphasised Neighborhood factors (about 22.0%), particularly the SAFETY factors (about 15%).

- Ranking by housing category

Residents of Low Cost houses placed more importance on Urban level factors(64.7%),particularly NEAR WORKPLACE factor and Neighbourhood level factors(20.6%), particularly AMENITIES factors. However, the High Cost housing residents emphasised Building level factors(24.4%) particularly HOUSE DESIGN and HOUSE PRICE factors. The Medium Cost housing residents did not have typically high percentage for all the levels.

- Ranking by project year

The results showed that residents of the 1970's projects emphasised Urban level factors(70.3%) particularly NEAR WORK PLACE and NEAR CHOICE SCHOOL. Residents of the late 1980's projects emphasised Neighbourhood level factors(20.9%) particularly SAFETY and AMENITIES and Building level factors(19.3%) particularly HOUSE DESIGN and HOUSE PRICE.

9.4 CONCLUSION

The main conclusion drawn from this Chapter is as follows:

(a) Overall, most residents were satisfied with the current housing estate living environment.

The overall satisfaction by spatial hierarchy showed that more than 70% of residents were satisfied with the current living environment except for

NEAR SAME ETHNICITY and NEAR PARENTS HOUSE factors which had less than 50% of the residents satisfied. Nevertheless, both factors had the least important rank (Rank 7–NEAR PARENTS HOUSE and Rank 6–NEAR SAME ETHNICITY) and less than 5% of residents ranked them as most important factors. Hence, it does not require the attention of the Housing Authority.

(b) Security (burglary and robbery) and pollution factors were least satisfactory.

By analysing the detailed factors of AMENITIES, POLLUTION and SECURITY factors in particular had low satisfaction level(less than 30%). The analysis also showed that higher satisfaction over safety factor was experienced in older housing estates due to the better social control and more established community. The study also showed that SMOKE and NOISE POLLUTION were related to workshops and traffic in the housing estates. The smell pollution was caused by oxidation ponds and poor garbage collection as well as polluting factors (e.g. rubber factory)

(c) The 2 main preference factors were near workplace and safety.

In terms of percentage rank as most important factor, among the 9 factors only the NEAR WORK PLACE (53.2%) and SAFETY (12.8%) factors recorded more than 10% and the other factors had a much lower percentage rank. Different weightage may be used to calibrate a model of housing preferences.

The Preference Study showed that NEAR WORKPLACE and SAFETY factors were the two most important factors (total 66% contribution). Hence, they should also be used as the prime requirements as conditions for approval of housing estate development in addition to the existing considerations of Low Cost housing and minimum social facilities provision.

(d) The Common Rank and Uncommon Rank order group

The overall ranking priority position between house category, income group and age group showed 2 groups of order; Common Rank Order (Rank 1 -NEAR WORK PLACE, Rank 7-SAME ETHNICITY, Rank 8-NEAR PARENTS HOUSE, Rank 9-NEAR CHOICE SCHOOL) and Uncommon Group order (SAFETY, AMENITIES, HOUSE DESIGN, HOUSE PRICE and CONSTRUCTION QUALITY)

Within the uncommon rank order factors , the distribution tended to show that residents of Low and Medium Cost housing placed more importance on SAFETY than residents in High Cost housing. Therefore in the planning of mixed dwelling housing estates, SAFETY should be given priority in Low and Medium Cost housing residence compared to High Cost housing areas. The planning of High Cost housing area should emphasise design factors more.

(e) Urban level factors were the most important consideration.

For hierarchy of space analysis , Urban level factors comprised about 63% and the workplace accessibility was the main contributing factor(52.3%). The other factors such as NEAR CHOICE SCHOOL and NEAR PARENTS PLACE were negligible(<5% each). This also meant that the present urban structure of Johor Bahru planned on corridor development pattern should either improve workplace accessibility between housing estates and city centre by public transportation improvement or further decentralise main city functions to subcentres to enhance workplace accessibility.

(f) Tentative method for residents satisfaction and preference studies.

This residents' satisfaction and preference survey is the pioneer study

carried out on housing estate areas in Malaysia. The proposed tentative method of residents' satisfaction study and housing preference analysis using Johor Bahru Metropolitan Area's experience can provide insights for future housing preference researches in Malaysia.

Housing development in other developing countries may experience similar problems as their urbanisation rate is also high. Due to the rapid urban growth, large housing estates will continue to be approved in developing countries. Therefore the Housing Authority should consider improvements in design to minimise the security and pollution problems when approving future large housing estates. The evaluation of residents preferences which showed that the dissatisfaction on pollution was related particularly to the corridor development and mixed industrial residential development should be considered an issue in future housing planning.

NOTES :

1) Perceived needs are important in study of housing problems because perceived may be more important than actual problems because people react based on what they think.

(2) Zoltan Karpati et al (1992) unpublished paper (5th International Research on Housing, Montreal) entitled'Upscale Residential Development in Hungary and the US: New Bourgeoisie Perceptions' examines residential lifestyle preferences of upscale suburban housing in two countries. Their study used a sociological approach testing Bourdieu's idea of crossnational new bourgeoisie and petite bourgeoisie. Hence it is very different from the purpose of my Study. The factors used were price, privacy, exterior design, floorplan, interior design, wooded lots, size, access to work, access to schools, distinctivenesss, access to services and neighbourhood. In home interior, it was further classified into sub factors such as cleanliness, warmth, comfort, tidiness, spaciousness, ease of maintenance, harmonious, functional, imaginative, distinctive, traditional, contemporary and rustics.

(3) The 9 factors grouped into 3 levels were logical but were futher simplified in order to ensure that a manageable survey could be done. If time permits, a more detailed study involving more factors should be used to identify more measurable factors for better planning. The 3 levels reflect the priority of residents in choosing a house as a place of residence. In reality, there will be a complicated combination of factors. In this Study, a simplified version of 3 important factors were used due to the limitation of time and other resources. In future, more factors may be included to increase the details of the result.

(4) Children Choice school was used as a factor because children can be admitted to the nearby school. As a result, parents prefer to stay near 'better schools' to enable their children to qualify for entry to better schools. The other reason is that there are 2 types of elementary schools in Malaysia ; Malay language medium of instruction (National type) and Chinese or Tamil medium of instruction, and some parents prefer their children to have a better command of their mother tongue language.

(5) Safety factor was used because it is one of the basic needs. Safety refers to overall conditions free from danger. On the other hand, security refers to feeling of being safe.

(6)Construction quality was used as a factor because some housing developers had a better image of higher construction quality than others. The massive building of housing estates and the increasing number of illegal immigrants as construction workers who were generally unskillful had resulted in poorer construction quality.

(7) The following intervening factors were also being carried out but was not reported in the main text :

Age cohort – Sequence of life cycle needs
Ethnics – Cultural difference and ethnocentric
Income – Affordability and purchasing power

Results of the Friedman test on the above factors showed that there was a general agreement between judges in the ranking order. Friedman test is a test of agreement or concordance among n judges and k objects being ranked. Friedman's Statistics M=12/(nk(k+1) Summation Rji^2- 3n(k+1) on the assumption of no difference between the treatment(k). The null hypothesis is that there is no general agreement between judges. The findings showed that M for Income =22.71, House category =22.75, Ethnicity =23.47 and Age Cohort =22.04. Since x(5) at degree of freedom of 8 is 15.51 and M > x(5) therefore the hypothesis that there is no general agreement was rejected.

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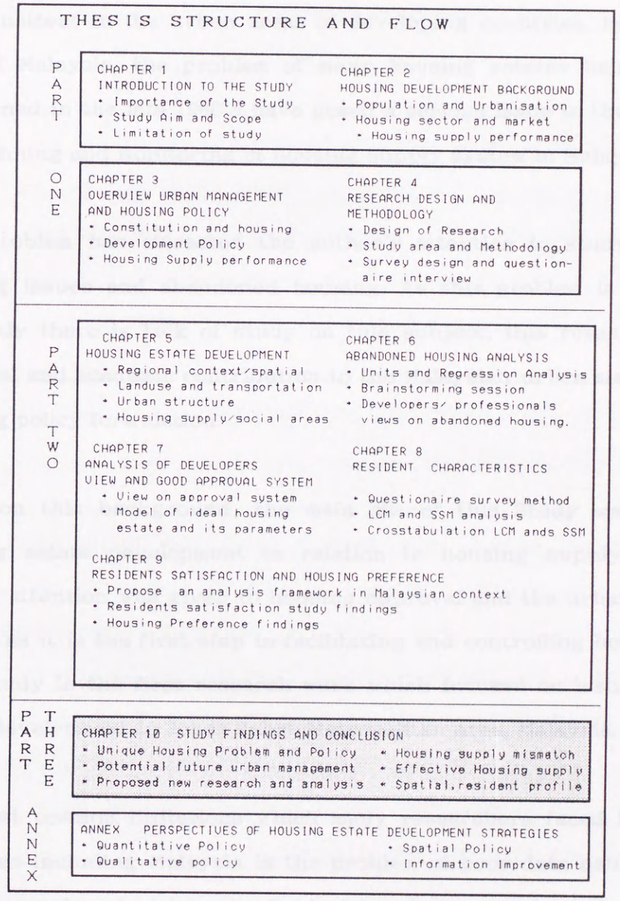
PART THREE

CONCLUSION

CHAPTER 10 : STUDY FINDINGS AND CONCLUSION

PART THREE : FINDINGS AND CONCLUSION

Part Three consists of Chapter 10. It summarises the main findings from Chapter 1 to Chapter 9. In additions, it also provides directions for future research.



CHAPTER 10 :

STUDY FINDINGS AND CONCLUSION

10.0 INTRODUCTION

Many researches in urban planning have focused on the problems of slums and squatters in the urban areas of developing countries. However, in the case of Malaysia, the problem of many housing estates being delayed or abandoned in the late 1980's have posed a serious issue to the Authority on the planning and monitoring of housing supply system in Malaysia.

This problem has attracted the author's attention to study the present housing issues and abandoned housing. As this problem is pressing and presently there is lack of study on this subject, this research will be of practical and academic contribution to the Malaysian urban management and housing policy formulation.

Based on this background, the main aim of this Study was to evaluate housing estate development in relation to housing supply in Malaysia. Special attention was given to housing approval and the urban management system as it is the first step in facilitating and controlling housing supply. This Study is the first research work which focused on issues in housing estate development in Johor Bahru Metropolitan Area, Malaysia.

The most common limitations which many researchers faced in developing countries including Malaysia is the problem of poor data bank and lack of local research material in the field of housing and urban planning. Due to these limitations, three main fieldworks were carried out to collect vital housing and urban management data in the Study Area. The framework of survey and analysis was based on the author's Model of housing market

interaction where the 3 main parties, the URBAN MANAGERS (Authority), the PRODUCERS (Developers and professionals) and CONSUMERS (Residents) are important to ensure the matching of housing supply and demand. The 3 main fieldworks were:-

(i) Documented housing estate development data - Housing supply

(ii) Residents questionaire interview - Housing demand

(iii) Developers and Professional Interview - Housing demand and supply system.

The evaluation of Housing estate development in relation to Housing supply was mainly based on the data gathered from documented survey , questionaire interview with residents, developers and professionals as well as formal and informal discussions in the fieldwork survey in July/ August 1991. The Study findings can be summarised under the following aspects :

10.1 UNIQUE HOUSING PROBLEM AND POLICY DIFFERENT FROM OTHER DEVELOPING COUNTRIES.

Since Malaysia gained Independence from the British in 1957, the Government had taken concerted efforts to ensure balanced regional development via rural development programmes to reduce massive rural urban migration and the Rural area's 'Push forces'. In urban areas, rapid growth in population was met by housing mainly from housing schemes carried out by private developers and public corporations. The relatively successful past policies and sound economic growth have resulted in housing problems different from other nations that is :-

(i) Malaysia is relatively an 'advanced developing nation'

Based on the comparative study of economic and social indicators of Malaysia with other developing countries in Asia, it can be grouped as an 'advanced'

developing nation. The common urban housing development issues in most developing countries tend to be housing shortage related problems such as slums and squatters settlement. However, in Malaysia, the problem in the mid 1980's was unique i.e. abandoned housing.

(ii) Unique Abandoned housing problem in developing nation.

The abandoned housing problem is viewed as a serious problem by the Government. By 1990, it involved 277 housing projects with a total of 63,560 units and an estimated value of MR$3,630 million. Several measures had been taken by Malaysia's Ministry of Housing and Local Government to monitor licensing of housing developers and stock of reported abandoned housing as well as rescue current abandoned housing projects.

The Sixth Malaysia Plan (1991-95) stated that the slow progress of housing development and abandoned housing was contributed by several factors related to producers (developers and contractors mismanagement) as well as urban managers' (Authority's delay in approval) weaknesses and not merely due to the recession and fall in housing demand. In other words , these are the multi attributes related to the causes of abandoned housing and the problem can be prevented with careful housing supply planning.

(iii) Unique Low Cost Housing policy

In most countries, social housing provision rests solely on the responsibility of the Government. However, in Malaysia, Low Cost housing policy requires the private developers to provide a minimum of 30% of Low Cost houses in an approved housing project and sold at a price of not more than MR$22,000 (equivalent JPY 1million). This had contributed a significant increase of Low Cost housing stock in housing estates in Malaysia.This policy works on the mechanism of cross subsidy from High and Medium Cost Houses as well as shophouses (industrial lots and commercial complex in the case of

large housing estates) to Low Cost houses and require developers who are experienced and capable in cash flow management and pricing.

(iv) Multi racial and mixed dwelling housing estates

Malaysia's population is a multi-racial society of 59% Malay, 32% Chinese and 9% Indian (1980). This multi-ethnic character is also seen clearly in housing estates where there are social areas by ethnicity and house category. The formulation of housing policy should also take cognizance of these heterogenous characteristics.

10.2 POTENTIAL FOR FUTURE URBAN MANAGEMENT AND HOUSING ESTATES SUPPLY PLANNING

The rapid rate of 'industrialisation led urbanisation' in Malaysian cities need careful urban management and housing supply planning to prevent mismatch of housing supply and demand and urban sprawl. The existing potential of Malaysia's urban housing for future planning are due to the following :-

(i) Existing Malaysian small cities enable preventive planning

In comparison with most Asian cities, the existing relatively small city size in Malaysia provides opportunites for the urban planners to use proactive (preventive) planning to guide and facilitate urban housing development so that urban sprawl and environmental problems can be avoided.

(ii) Changing pattern of housing supply towards housing estate development

The traditional approach of housing supply through 'individually initiated housing' is no longer possible because of massive housing demand and shortage of residential land in prime locations in urban areas. In addition, suburb developments on individual basis faced the problem of the lack of

social amenities and expensive infrastructure outlay. Therefore, housing estate development has contributed significantly to the urban housing stock since 1980's. It has the advantages of economies of scale and 'comprehensive' nature of social facilities provision as well as play a major role in the contribution of Low Cost housing.

10.3 PROPOSED NEW RESEARCH AND ANALYSIS FRAMEWORK

As research works on urban housing are lacking in Malaysia, there are few references that can be drawn from other local studies. New ideas on research methods relevant to local context had to be formulated. Among these were :-

(i) Introduced the semi random sampling method in surveying mixed dwelling and multi racial housing areas.

In this thesis, semi random sampling was introduced instead of the conventional survey method based on even distribution. This semi random method used 'spot sampling' and ensured an effective representation of the mixed dwelling and multi racial housing estates in the fieldwork sample. This will give directions for large scale survey for future housing demand study.

(ii) Incorporated residents' satisfaction and housing preference factors in housing demand analysis.

In addition to demographic factors such as household size, this research introduced and incorporated Residents Satisfaction and Housing preference factors as an input in housing demand and supply analysis in the Malaysian context. Questionaire interview surveys on the views of developers and professionals in construction were also being carried out to gain a better understanding of the 'producer's ' problem.

(iii) Adopted and explored the use of LCM and SSM analysis technique

As for the analysis, housing demand techniques such J.MIYAKE's Life Cycle Matrix (LCM) and Social Status Matrix (SSM) Analysis were adopted in this study to explain the residents characteristics and housing needs as well as the identification of different types of housing demand groups.

(iv) Used Tentative model of urban housing supply scenario for the future.

Based on the housing development background and social structure, Malaysian urban housing development model can be postulated to provide a scenario of future housing supply. This tentative model assists in explaining the relationship between social structure, policy and housing pattern.

10.4 MISMATCH OF HOUSING SUPPLY AND DEMAND INDICATED BY HIGH PERCENTAGE OF UNBUILT STOCK IN THE STUDY AREA

The Study Area's documented housing data and Brainstorming session among the experts revealed that the abandoned housing problem should be considered a symptom of the mismatch of housing supply and demand.

(i) Unrealistic high stock–flow ratio of housing

The documented survey of the Study Area on 208 projects from 1973–1990 showed that there was a relatively high stock–flow ratio (66,919 :161,218 =1:2.4) i.e.STOCK(completed housing) to FLOW (committed, underconstruction and abandoned housing). There was also a high percentage of 'Pending flow housing' (committed and abandoned housing) up to about 41.5% of the total housing units (59% of total housing flow). With this unrealistic high stock–flow ratio, it will take about 30 years to absorb the total flow (based on current absorption rate of 5,000 units p.a.). Hence, a detailed study on housing demand and forecast is required to identify a realistic housing stock and Authority need to sift the non feasible approved projects.

(ii) Abandoned housing due to mismatch in quantity and location

The analysis on 208 approved housing projects in the Study Area indicated that project location was related to abandoned ratio of a project. The developers' interview further supported that project location, oversupply situation and Low cost housing policy had contributed to the abandoned housing problem in the Study area.

Both findings conclusively showed that the problem is not temporal due merely to economic slow down and it can be prevented with careful housing supply planning and legislations governing current weaknesses including the control of developers and use of project funds.

(iii) Serious 'Hidden' abandoned housing

Based on documented housing survey on 208 approved housing projects from 1973–1990, abandoned housing stock should be further classified into 3 main types for planning actions by the Authority;

TYPE 1 (Totally unbuilt after 5 years of approval), – 94.1%

TYPE 2 (Delay in later phases of implementation) and – 2.3%

TYPE 3 (Abandoned housing at construction stage). – 3.6%

Although the abandoned housing which is commonly refered to by the Ministry of Housing and Local Government is the TYPE 3 category (Abandoned at construction) and is considered serious to the Housing Authority, this proportion is small (3.6% or about only 2% of total pending flow). However, the TYPE 1 category of abandoned housing (totally unbuilt of about 94%) which is relatively unknown to the public (hidden abandoned housing) is more serious in quantity and must requires the Authority's attention. It is very difficult to carry out forward planning on housing supply as the unbuilt housing stock (TYPE 1) is fairly large and the certainty of implementation is unknown . In other words, the current

abandoned housing problem known to public (TYPE 1) is just a 'tip of iceberg' problem.

10.5 NEED FOR EFFECTIVE HOUSING SUPPLY AND HOUSING AUTHORITY'S ROLES

The urban managers (the Housing Authority) are responsible for ensuring that housing supply meets demand rather than leave it free to market forces to operate(perfect market situation).

(i) Different views on housing issues by the urban managers and producers.

Based on the Housing developers and professionals' interview in the Study Area, housing approval process, Low Cost policy as well as present developers construction system were ranked as serious housing issues. Based on the analysis on subsidy mechanism for Low Cost houses, competent developers are needed to ensure successful project implementation. Analysis from this interview survey indicated that developers and Authority are 'antagonistic' rather than 'cooperative' in carrying out their roles in housing supply.

(ii) Current inefficiency and ineffectiveness of housing approval system

In approving housing projects, the Authority should emphasise 'efficiency' as well as 'effectiveness'. Project feasibility should be given priority in addition to meeting the Low cost housing policy requirements and dateline of approval set in the 'One Stop Agency' framework.

(iii) Concept of lead time and actual supply

The mean 'lead time' required for housing project completion is about 4.3 years after obtaining development approval. Therefore the quantum supply on paper i.e. based on units approved by the Authority cannot be a measure

of actual supply at a particular time since many houses may not have been completed due to the lead time required.

10.6 OBSOLETE SPATIAL POLICY AND IMPORTANCE OF JOHOR STATE'S INDUSTRIALISATION POLICY

(i) Review on the current 'obsolete' spatial planning policy

The current linear corridor housing development allows economies of scale but may cause serious traffic congestion. Spatial planning should emphasise alternative public transportation modes. It is timely that the obsolete Structure Plan be reviewed and new housing estates and large infrastructure projects incorporated.The large scale developments around the 20–30 km rings also indicated a possibility of decentralisation with self sustaining development.

(ii) Importance of overspill development from Singapore and State's industrialisation policy.

The overspill development from Singapore boosted the economic base in the Study Area. This spatial development is basically an industrialisation led urbanisation. Therefore industrial area planning should be incorporated in overall housing supply planning.

(iii) Strong Centralisation function and lack of Public transportation

The main employment centres in the Study Area were Johor Bahru City (53%), Pasir Gudang (22%) and Singapore (7%). The present distribution of employment showed that centralisation is still predominant. It also showed that a high percentage (60%) of commuters travelled from the city fringe to the city centre daily and hence generated significant traffic.

The high percentage of vehicle ownership (81.2%) in housing estates was due

to the present poor public transportation and high percentage of persons employed per household (1.86 person per household). This indicated that congestion will be serious along the main corridor of Johor Bahru– Senai, Johor Bahru– Kota Tinggi and Johor Bahru– Pasir Gudang.

10.7 RESIDENTS' PROFILE AND DEMAND VARIABLES

(i) Mixed dwelling and multi ethnicity housing estates

The residents questionaire survey supported that housing estates were multi-ethnic in character with 57% Malays, 28% Chinese and 15% Indians reflecting the national ethnic composition. There is a distinctive pattern by ethnicity, housing category and zones. The Malay and residents of high cost and inner suburb area had a higher household size and household number.

(ii) Impractical Low Cost housing rulings on ownership

The Fieldwork data also showed that a relatively high percentage of Low Cost houses (55%) were non house owner occupiers. This meant that there was an 'abuse' on the ownership of Low Cost houses. This could be due to the Low Cost house residents having large household size (more than 4 persons /household) and it was difficult for them to look for bigger houses elsewhere. The LCM analysis also showed that about 41% of the residents had a household size of more than 5 persons (i.e. overcrowding condition). There is a need to review the Low Cost housing rulings and procedure of balloting and the possibility of allowing the resale of houses back to the Government at market price.

(iii) Main reasons of migration are job related and house purchase.

The majority (53%) of residents moved to housing estates for job related reasons while 33% moved due to the purchase of new houses . This movement showed a 'filtering' process from informal housing (village houses) to House

ownership in housing estate areas.

10.8 RESIDENTS NEEDS AND DEMAND BASED ON LIFE CYCLE MATRIX (LCM) AND SOCIAL STATUS MATRIX (SSM)

(i) Overcrowding problem in Low Cost houses (45.1%)

The Life Cycle Matrix Analysis (LCM) is useful for studying housing needs and overcrowding condition. The LCM of the study Area showed a natural pattern of household size increasing with age. In comparison, household size was larger(> 5) even in relatively young age residents. The existence of smaller household size of Senior aged residents indicated the possibility of a tendency towards nuclear family.

(ii) About 25% of residents were below House Affordability Level

The Social Status Matrix (SSM) analysis is useful in studying housing demand. SSM of the Study Area showed that the monthly income increased with age attributed by the seniority of rank in a job. Based on assumption of affordability, there were 25.1% who could not afford any type of housing which meant that the housing demand was from about 75% of the total residents. The ratio is 41.9 : 32.9 % for Low Cost: Medium and High Cost.

10.9 RESIDENTS SATISFACTION AND HOUSING PREFERENCE

(i) Satisfaction level was high except for security and environment problem.

The residents satisfaction study aimed to identify the current problems related to the dissatisfaction of the residents and the preferences study identified their housing ideal. The overall satisfaction analysis by spatial hierarchy showed that more than 70% of the residents were satisfied with most factors. Among these factors were Near Workplace(81%), House Price (78%), Social Amenities(75%), Construction quality(75%), Overall safety(74%)

and House Design(73%). Factors which had less than 70% of residents satisfied were Near Choice school(67%), Racial Affinity (50%) and Near Parents House(42%).

The detailed analysis by social amenities showed that most facilities recorded more than 70% satisfaction level. Among them were Water supply (93%), Electricity 93%), Road maintenance (78%), Public transportation(78%), Shopping (78%), Education(73%), Sewage(73%). Social amenities which had a satisfaction percentage of less than 70% were Religious facilities (69%), Garbage collection (62%), Recreation (60%) and Telephone (60%). A detailed analysis showed that environmental (Smoke (24%), Smell (26%), Noise (28%)) and security factors (Burglary (22%) and Robbery (23%)) recorded the least satisfaction with less than 30% of residents satisfied. Satisfaction percentages also varied significantly by zones, project size and project year. The preliminary study tended to show that older and smaller size projects had the advantage of close community and newer and larger projects had better social amenities provision.

(ii) The 3 most important factors related to housing preference were Near Work place, Safety and Construction quality.

The preference study identified that near work place, safety and construction quality of houses were the 3 most important factors in choosing a place of residence. High priority was placed on near workplace (53% of residents rank it as most important factor) followed by safety (12.8%) and construction quality (7.5%). In terms of spatial hierarchy, urban factors were the prime consideration (63%) followed by neighbourhood factors (19%) and building factors (18%). This high priority on urban factor showed that the spatial planning of urban structure should enhance near work place with better public transportation and a decentralisation policy.

10.10 CONCLUDING REMARKS

From the main findings which were based on documented survey and fieldwork, it can be concluded that housing estates will be a major contributor of the urban housing stock in the Study Area. The findings also provided insights and framework of understanding the actual characteristics of abandoned housing and its possible causative factors related to mismatch of housing supply and demand. The current mismatch of demand and supply, housing developers dilemma and Housing Authority weaknesses have to be rectified. The gross mismatch of housing demand and supply should be viewed in terms of quantitive, qualitative and spatial aspects. (see Annex for detail). The present lack of planning information in the above areas also need improvement. Hence, recommendations to improve the present housing supply and approval system should incorporate the quantitative, qualitative and spatial policies on housing demand and supply as well as data management improvement. The information system related to housing supply should also be improved to assist decision making.

There are several areas of research which are considered important and need to be studied in the future. This includes the following :

(a) Set up Housing Data bank and Management information

The setting up of a comprehensive data bank on housing estates in the Local Planning Authority area should be carried out by Local Authority. Data from different engineering departments such as landuse, transport network, social facilities and development status as well as residents characteristics should be collected and computerised. This data bank should allow network linking with the State Authority and Local Authority so that data updating can be done. Besides quantitative data, spatial data (Geographical

Information System) should also be carried out to facilitate spatial planning. Therefore questionaire interviews and mapping work should be carried out. This research work also requires an understanding of the present Housing Authority's budget for computerisation and networking as well as manpower implications in managing this system.

(b) Further study on Residents Satisfaction and housing preference studies

The LCM and SSM analysis frame may be further used to explore the housing needs and demand in relation to residents satisfaction and preferences.As the Satisfaction and Housing preference study showed that safety was an important factor, the idea in Newman's hypothesis that 'territory' and 'crime control' tends to indicate that security may be related to layout design can be further researched. On the environment pollution, future research should have detailed categories of pollution i.e. noise polution (community, traffic, industrial or engineering etc.) and engineering measurement should be carried out (in deciBel).

(c) Further study on Housing estate development Analysis

Detailed and current transportation (e.g. Traffic volume, Origin and destination and Modal split data) and landuse data in the Study Area should be carried out to enable a more detailed understanding of the present causes of traffic congestion so that a spatial planning proposal can be formulated. In addition,analysis on optimal size project can be supported based on construction economies. Provision of social facilities by private developers should also be analysed in terms of development cost.

(d) Detailed study on Low Cost Housing Policy

A realistic price for Low cost housing should be worked out jointly by the Public and private sector. Research on this price in terms of different design, location and material should be explored to arrive at a realistic price. In addition, the Government should look into the possibility of the State Housing Authority managing the reselling of Low Cost houses back to the Government (on condition the present house is overcrowded) at market price.

(e) Other research themes are

(i) main causes of low achievement of housing completion ratio against the target in the Fourth Malaysia Plan (1981-85) and Fifth Malaysia Plan and potential use of other projection techniques.
(ii) the relative Pull and Push forces of rural and urban areas in relation to migration and problem of slum and squatters in Malaysia as compared with other developing countries.
(iii) filtering process of residents to housing estate areas
(iv) detailed transportation and landuse information to determine a feasible solution on public transportation mode.
(v) refining the model of urban housing development

Due to the limitation of resources (particularly money and time), the relatively small sample size of questionaires helped to identify some major issues. The Annex provides tentative guidelines to improve the Housing approval system in the Study area in particular and Malaysia in general.

It is also hoped that these findings can be shared with other developing countries in formulating proactive measures in planning massive urban housing estate development.

ANNEX

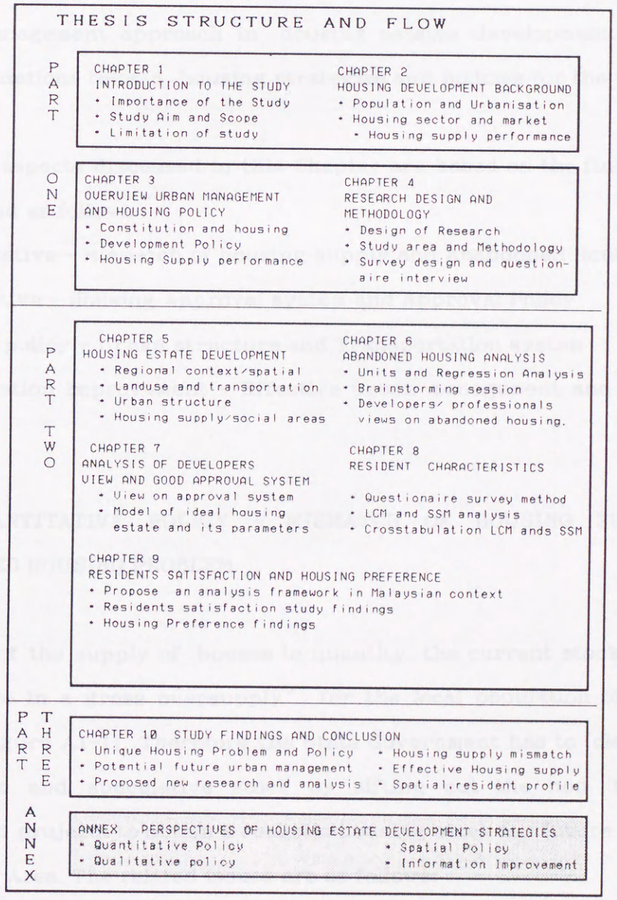
PERSPECTIVES OF HOUSING ESTATES DEVELOPMENT STRATEGIES

- SOME RECOMMENDATIONS

ANNEX :

PERSPECTIVES OF HOUSING ESTATE DEVELOPMENT STRATEGIES – SOME RECOMMENDATIONS

As proposal is important for developing countries such as Malaysia, this part of the thesis provides tentative proposal for improvement of housing supply planning for the Study Area. It is based on the main findings and some hypothetical assumptions.



ANNEX :

PERSPECTIVES OF HOUSING ESTATE DEVELOPMENT STRATEGIES – SOME RECOMMENDATIONS

A1.0 INTRODUCTION

This Chapter takes up some main findings in Chapter 10. It focuses on the management and development control aspects of the relevant Housing Approval Authority in the Study Area by studying the failure of the current urban management approach in housing estates development.It provides recommendations toward housing strategies and policies for the Study Area.

The main aspects discussed in this Chapter are based on the findings which are divided as follows :

a) Quantitative – Mismatch of housing supply and Abandoned Housing

b) Qualitative – Housing Approval system and Approval Policy

c) Spatial policy – Urban structure and Transportation system

d) Information Improvement – Effective urban management and information system

A1.1 QUANTITATIVE POLICY – MISMATCH OF HOUSING SUPPLY AND ABANDONED HOUSING PROBLEM

In terms of the supply of houses in quantity, the current stock of 228,188 houses are in a gross oversupply*1 for the local population of the Study Area. (Figure A1-1). Therefore the State Government has to 'clean up' this unrealistic and speculative stock by sifting out the non 'feasible' or abandoned projects to obtain a realistic housing stock for future planning in the Study Area. The related issues are as follows:

HOUSING NEEDS AND SUPPLY

YEAR		SOURCE and ASSUMPTION
a) POPULATION		Projection by State Planning
b) HOUSEHOLD SIZE		Projection by State Planning
c) TOTAL HOUSEHOLD		c = a/b
d) NEW HOUSEHOLD		Pt1 - Pt0
e) HOUSING NEED	82052	One household per house
f) REPLACEMENT(1%)		1% of housing stock or 1%-g
g) HOUSING NEED(INC REPLACEME		g = e + f
h) SUPPLY (STOCK AND APPROVED		
i) APPROVED STOCK		
j) CFO (66955-11586 units)		CFO-approved 1970
k) UNDERCONSTRUCTION		Author's Documented survey
l) COMMITTED		Author's Documented survey
m) ABANDONED		Author's Documented survey
n) NETT NEEDS (+ excess... - deficit)		n = g - h

YEAR		1980	1990	1995	2000	2005	2010
a) POPULATION		415200	626519	769614	945392	1161318	1426556
b) HOUSEHOLD SIZE		5.4	5.1	5	4.9	4.7	4.6
c) TOTAL HOUSEHOLD		76889	122847	153923	192937	247089	310121
d) NEW HOUSEHOLD			45958	31076	39014	54151	63032
e) HOUSING NEED	82052	76889	122847	153923	192937	247089	310121
f) REPLACEMENT(1%)		821	1241	1555	1949	2496	3133
g) HOUSING NEED(INC REPLACEME		77709	124088	155478	194886	249584	313253
h) SUPPLY (STOCK AND APPROVED		82052	137421	253829	298639	298639	298639
i) APPROVED STOCK							
j) CFO (66955-11586 units)			55369				
k) UNDERCONSTRUCTION			66509				
l) COMMITTED			44810				
m) ABANDONED			49899				
n) NETT NEEDS (+ excess... - deficit)		4343	13333	98351	103753	49055	-14614

SCENARIO OF ABANDONED HOUSING

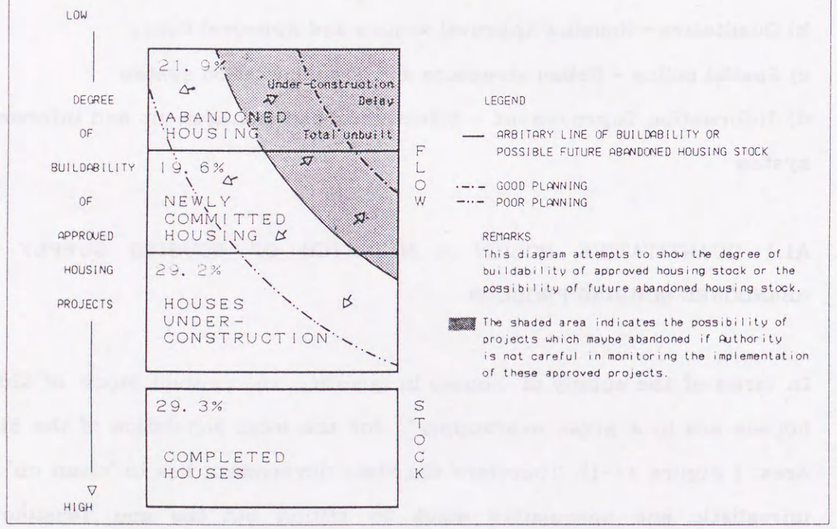


Figure A1-1 Study Area's Housing Needs and Abandoned Housing Scenario

(a) Lacking of self sustaining Economic Base of Housing Estate

From the survey,the location of projects in terms of their accessibility to City Centre, job employment area ,place of work and security were ranked as the Most Important Factor. An analysis of the location of abandoned projects indicated that a majority of them were in inferior areas where the catchment population was low.

Although major housing developments were along the main corridor, economic development and employment opportunities were lacking there. Employment is still focused in the city centre towards the south and the neighbouring country; Singapore and as such those large projects with poor location were not attractive to house buyers.

(b) Massive size Projects approved in Poorer Location

Further, in these inferior locations, projects of massive size(above 20,000 units) were approved close to one another. For instance, the development of Pasir Gudang New Town in the eastern corridor spearheaded other major housing areas along the corridor. Subsequent projects or rather 'mega townships' instead of housing schemes had to compete hard as they were close to each other and their population catchment was similiar. Consequently, some developers have had to delay their project development or abandon them altogether due to the lack of demand.

RECOMMENDATIONS FOR RESCUE OF ABANDONED HOUSING

The recommendations will have to consider separate policy strategies for (a) abandoned houses with outstanding planning permission and (b)future approval of new housing estates

(a) Sift and Rescue Current Abandoned Housing Stock

Different policy actions are required for the 3 different categories of abandoned housing.

(i) Abandoned housing with buyers (at construction stage) (TYPE 3)

The Federal Ministry of Housing and Local Government should intervene to rescue the projects because it is not within the jurisdiction of the State Government as it involves finance (banking) and the developer's licencing matter. The affected house buyers, bankers, developers(if still available) and the State and Federal Government officials should work out a new schedule of work together and agree on payment to parties concerned. The possibility of tendering these projects to other interested developers should also be considered.

(ii) Abandoned housing (at planning stage) (TYPE 1 AND 2))

These are projects with outstanding planning permission of more than 5 years after the issue of development approval. The Government should serve notice to the developers and obtain the developers' proposed new schedule of project implementation. The Authority will ultimately reissue another development order with a given fixed period of time for the project implementation by phases. Alternatively, if there is no reply from the developers or the projects are found to be not feasible, the Authority should revoke the previous development approval. The developers through the Housing Developers Association and State Government should set up a committee to jointly discuss a feasible solution on these outstanding projects.

(b) Formulate set of new guidelines for approval of future housing stock

Future housing projects to be approved require careful consideration. The recommendations are :

(i) The Authority shall ensure that all development that have been given approvals are completed within the specified period of not more than 5 years.

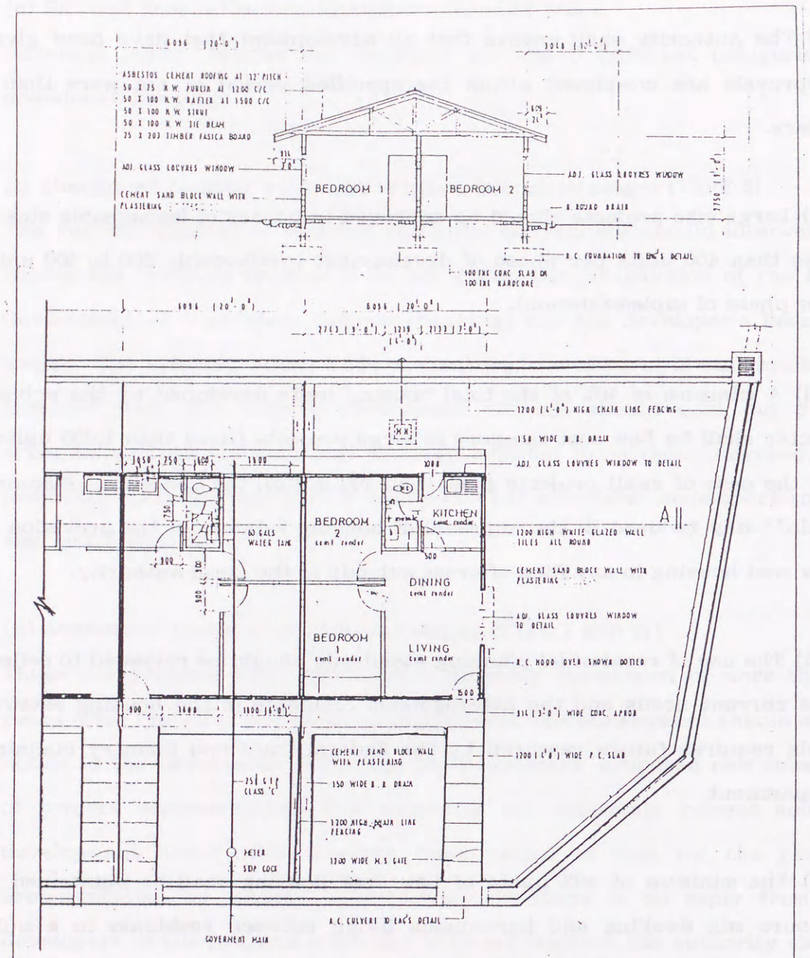
(ii) Large size projects should be approved in phases of manageable size of less than 400 units per phase of development (prefereably 200 to 400 units per phase of implementation).

(iii) A minimum of 40% of the total housing units developed by the private sector shall be Low cost category in large projects (more than 1,000 units). In the case of small projects (less than 100 units), the Concept of Planning Gain*2 may be used in the approval of housing estates i.e. the provision of low cost housing in any form of cross subsidy to the Local Authority.

(vi) The use of residential planning standards should be reviewed to reflect the current needs and the heterogenous residents in the housing estates. This requires future research by the Federal Town and Country Planning Department.

(v) The minimum of 40% quota of Low Cost Housing shall be maintained to ensure mix dwelling and harmonious living between residents in a multi racial and multi social community.

(vi) The price of Low Cost Housing may have to be reviewed as it is below the current cost of construction of MR$29,200. In order to ensure that developers will build decent houses, the price may have to be increased to MR$30,000. Alternatively, Government subsidy in building material and the use of State land is required to keep the current minimum price at MR$22,000. (Ho C.S and Konno A, 1992). Figure A1-2 shows the estimated current development cost of a Low Cost house.



MR$(RINGGIT)

CONSTRUCTION (Built-up area 500sqft)	14000	48%
INFRASTRUCTURE (drain,road,sewerage etc)	9000	31%
BRIDGING FINANCE at 14% for 6 mths	948	3%
ARCHITECT FEE at 6%	840	3%
LAND AREA OF 20'x 35'	2800	10%
INTEREST FOR LAND for 2 - 3yrs	1085	4%
MISC Qualify titles, Quit rent etc	500	2%
TOTAL DEVELOPMENT COST FOR UNIT LOW COST	29173	100%

1US$ = approx 2.7 Malaysian Ringgit (MR$)

Figure A1-2 Researcher's estimated current development cost of Low Cost House(single storey terrace)

(vii) Employment centres for the residents of the housing estates should be emphasised to ensure that housing estates are planned at a fairly self sustained manner. In large housing estates (more than 2,000 units), nearby industrial parks and local centres must be planned together to provide jobs for residents. Alternatively, the location of these housing estates must be near job centres with good accessibility.

(viii) In order to improve the security of housing estates, Police station or Police beat should be provided in housing estates of more than 1,000 units or within a radius of 5 km. Alternatively, private security guard patrol may be used to ensure safe housing estates.

Community policing concept whereby community solidarity at neigbourhood level may help in long term planning should be considered. The layout planning based on 'territory' (refer Oscar Newman concept of defensible space) may help to enhance the community policing idea.

The use of 'grid iron' pattern layout allows easy movement and more 'public space' or less community territory which results in housing estates becoming more vulnerable to robbery and burglary. The planning of housing estates should reconsider the use of loop and 'cul del sac' to enhance community solidarity and territory.

(viii) In addition to the recent implementation of PROJECT ACCOUNT SYSTEM,[*3] consideration should also be given to the possibility of increasing the developer's licence bank guarantor commensurating with the housing project size (at least 50% of total construction cost) (Alternatively, the extreme policy is that only completed houses are allowed to be sold in the market.)

A1.2 QUALITATIVE POLICY – HOUSING APPROVAL SYSTEM

Theoretically, the 'non interference' approach adopted by the Housing Authority will provide a competitive market condition and thus keep house prices in equilibrium, benefiting the end purchaser. However, the failure of this approach lies more in the fact that in adopting it,due cognizance was not taken of the critical factor as shown from the Case Study i.e. the prevailing supply and demand situation .

Inspite of the fairly laiser faire approach and the implementation of the ONE STOP AGENCY*4 which aims to expedite housing approval, the approval process still takes a long time due to poor inter departmental coordination. A delay in obtaining housing approval can increase the developer's landholding cost considerably and affect project feasibility. Emphasis on development control tended to focus on policy matters and neglected project feasibility aspects. The issues related to quality aspects are as follows :

(a)The Weaknesses in Deregulation policy

The deregulation in the private housing sector was evident in the mid 1980's when the Government emphasised the facilitating of development rather than strict development control.This policy direction in facilitating private sector development is very similar to 'Minkatsu' privatisation policy in Japan (Hayakawa K and Hirayama Y, 1990) except for its smaller scale.*5

The deregulation approach undertaken by the Government contributed indirectly both to the approval of a massive number of projects at this time and to the approval of very large size projects i.e. those containing more than 20,000 units in a single scheme. This had the effect of increasing rapidly the housing stock pending development. In Johor Bahru Metropolitan area alone, at least 50% of the current housing stock was approved during

that period i.e. between 1981 to 1983. (refer Chapter 5) This rapid speculative increase in the supply and the recession in 1986 contributed to the fall of housing property prices and subsequently caused numerous housing projects to be either delayed or abandoned.

(b) Project Feasibility requirements in Approving Housing .

The Housing Authority in approving housing projects had tended to concentrate on the developmental control aspects like the Low Cost Housing Quota, fulfillment of Planning Standards, Building Bye-laws and Engineering requirements. Whilst development control is necessary, consideration for project feasibility should be made.

(c) Lack of Time Frame for project completion

Apart from fixing the approval time needed for the Government to approve the project within 2 years as specified in the ONE STOP AGENCY, the time frame for completion of projects should also be fixed. The current practice is that development should be carried out within the 2 years period. The definition of development is too loose and some developers prefer to speculate on the market or sell the project later rather than built immediately . Therefore the dateline for completion of project or phases should be fixed first.

RECOMMENDATIONS

(i) The deregulatory policy should serve to protect public interest and not only the developers. The Government should seek to improve the efficiency as well as effectiveness of housing approval procedure system.

(ii) Monitoring of project implementation is important to ensure that the approval conditions are met.This include ensuring that Low Cost houses are

built in the earlier phase of construction and not in the later phases i.e. after Medium and High Cost houses are built.

(iii) Feasibility of housing projects in terms of demand for the location of the project in relation to job employment is an important consideration.

(iv) Government Rules and Policy Regulation should be easily accessible and understood by the developers. This can be facilitated by the dissemination of essential information such as planning standards requirements, manual of approval procedure such as ONE STOP AGENCY Procedure to the public through publication or a computer terminal service counter at the Housing Authority. (Chapter 10)

(v) The Approval Procedure should be centralised where the Director of Land and Mines Office should be able to provide the status of the approval at any time enquiries are made. (This can be done quite easily by computer networking between all the technical departments).

(vi) The reasonable time for a project completion will depend on the size of the project. Based on the data of approved housing , the following guidelines may be used :-

(1) Project of less than 200 units - 2 years

(2) Project size 200-400 units - 3 years

(3) Project size 401- 800 units - 4 years

(4) Project size 801- 1200 units - 5 years

(5) Project size of more than 1,200 units should not be approved at one go but rather in phases.

A1.3 SPATIAL POLICY : ALTERNATIVE PROPOSED URBAN STRUCTURE

The abandoned housing analysis in Chapter 7 and the Housing Preference study results showed that location to workplace is the most important factor. Therefore , the proposal and recommendations should include the spatial aspects. In planning housing estates development, the urban structure and transportation system have to be planned to provide an overall spatial framework for urban management and to guide future housing approval. Figure A3-1 shows the changing proposed urban structure of the Study Area.

(a) Decentralisation and increased use of public transportation

In order to reduce this problem of urban sprawl, the Structure Plan for Johor Bahru-Plentong and Pasir Gudang (1984) proposed a Decentralisation Policy emphasising growth of subcentres to reduce unplanned urban expansion in the fringe area. The corridor development pattern affected traffic demand along this corridor especially when the present alternative routes are limited. Apart from building additional alternative routes, improvement in public transportation mode should be considered.

b) Incorporation of Integrated landuse transportation planning

In planning the future urban structure of Johor Bahru,the focus should be on a balanced approach of centralisation and decentralisation to ensure that the dynamic growth of the city is not hampered. Station towns development integrated with Light Rail Transit will help to increase accessibility between subcentres and satellite towns of the Study Area.

The present urban structure proposal of Johor Bahru Structure Plan have to be reviewed to incorporate new development such as Second Johor Bahru-Singapore Causeway, North South Highway, new industrial estates

development, Technopolis development and mega housing estates such as Taman Johor Jaya and Taman Ungku Tun Aminah.

The Life Cycle matrix on distribution of population by zone (distance from city centre) supported that the young and senior age population were dependent on public transport. The housing preference study revealed that high priority should be given to near workplace especially among the young population. Therefore,improvement in public transport to cater for this population is important as they provide the major workforce in the Study Area.

The present linear pattern of housing projects along the main corridor enables an effective and efficient use of rail system. The poor public bus service and relatively serious congestion along the Kulai-Johor Bahru and Plentong road further support the need for a rail system between the city centre and its surrounding subcentres. This rail system will further enhance accessibility of housing estates to City Centre, Pasir Gudang and main industrial estates.

RECOMMENDATIONS

Based on the examination of the existing radiating transportation line from city centre to suburbs and the rapid rate of industrialisation, Radial pattern of 'Finger' shape development, Industrial park, Ring road and Station development concepts can be integrated as one of the possible alternative concepts in promoting development in this region. The young population can also work in these Station towns.

(i) Propose a radial pattern :'Finger' shape development

This pattern of development can enhance accessibility and facilitate

flexibility in the implementation of industrial expansion and housing estates development in Johor Bahru Metropolitan area.

Presently, two main arterials radiate from Johor Bahru city centre; one to the north west and the other to the north east direction. The present circular roads will form the ring roads of the city. Green spaces between each arterial road need to be reserved to prevent uncontrolled urban sprawl. Figure A3-1 shows the future urban structure in the Study Area in year 2020.(Ho C.S. and Konno A, 1993)

The existing landuse, transportation network with rail system can form a good framework and provide optimal accessibility and easy phasing for housing estate and industrial development. In addition, it will further enhance rural urbanisation and industrialisation by providing linkages with Penawar New Town and medium size towns in neighbouring districts such as Pontian and Kota Tinggi.

Existing service centres such as Masai (Taman Rinting/ Kota Puteri) , Plentong (Taman Johor Jaya and Taman Desa Jaya) and Scudai (Taman Tun Ungku Aminah and Scudai Bahru) and Lima Kedai can be linked to form the Inner Ring Road. The Middle Ring Road can be formed from towns like Pasir Gudang New Town, Ulu Tiram, Senai and Pekan Nenas. The existing partial ring road joining Kulai and North East axis (to Kota Tinggi) can be developed by joining it to Pontian town to form the outer ring road. The current North South development axis along Kulai, Senai and Skudai to Johor Bahru forms the existing spine of the Study Area. The proposed alternative North South Highway will form the other alternative North South axis of development. New links in the west direction such as the Second Causeway and Port development will provide a corridor for developing the relatively depressed west coastal area of Pontian and Johor Bahru districts.

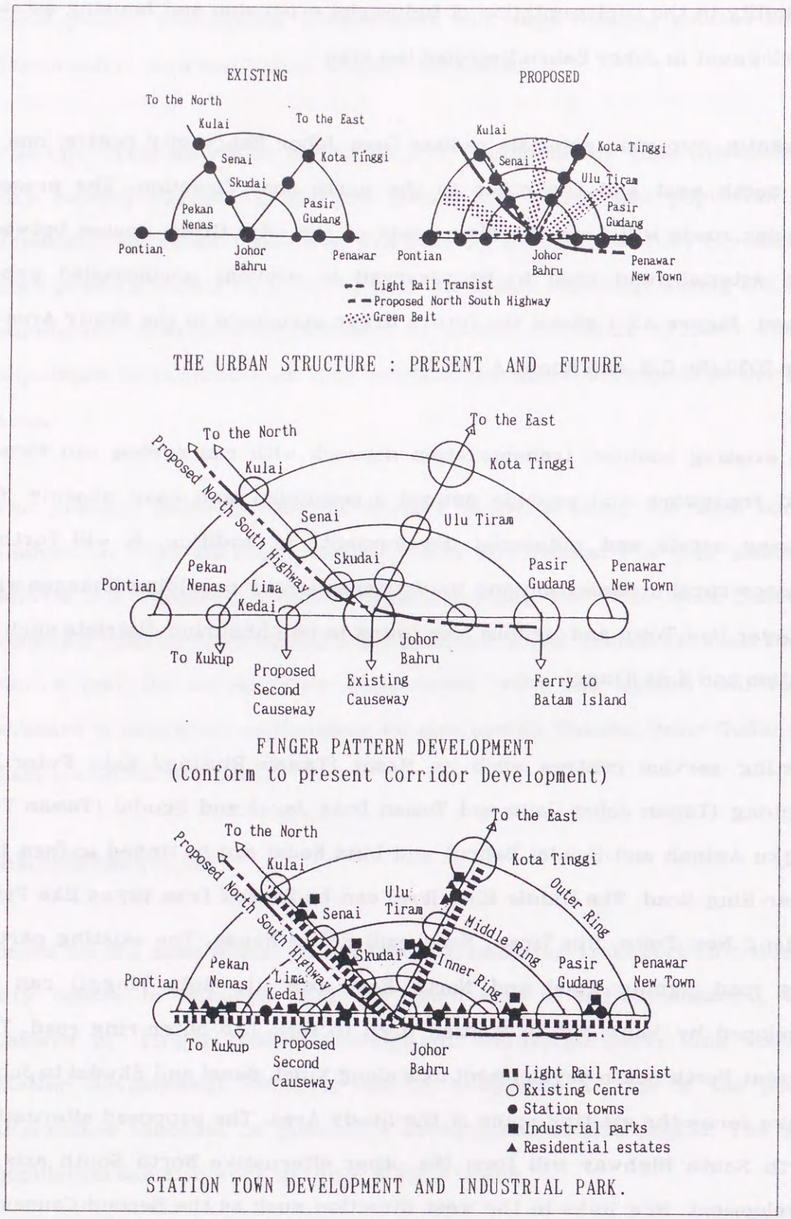


Figure A3-1 Proposed Alternative Urban structure for the Study Area

(ii) Implementation of Station Development with Industrial Parks.

The committed housing areas along Kulai- Johor Bahru and Pasir Gudang development corridor with pockets of industrial areas provide opportunity for the development of the feeder industries that support larger industries in Pasir Gudang. Existing housing estates with accessible industrial parks and the Technology Park at Scudai provide an adequate pool of labour supply. Competition between industries in the Pasir Gudang industrial areas with industrial parks at subcentres should be avoided.

Key major housing estates forming nodes will function as Station City development which is linked by rail lines. The introduction of Light Rail Transist (LRT) can provide an alternative means of transportation mode to help ease traffic congestion in future as the city expands in the form of ribbon development. LRT is feasible when peak traffic demand in one direction is within a range of 10,000 to 20,000 trips per hour. This demand can be met by the present population of about 400,000 along the main corridor.

A combination of transportation modes may be used for intercity network. Currently, the circulation system does not provide much alternative between major centres. The situation can be improved with the implementation of the new North South highway and Pasir Gudang-Johor Bahru coastal road.

A1.4 INFORMATION IMPROVEMENT - EFFECTIVE URBAN MANAGEMENT AND INFORMATION DATA BANK.

From the Case Study on abandoned housing, we conclude that the current weaknesses in the Housing Authority's role with respect to housing management in Malaysia is their ineffective housing planning as a result of weak decision making resulting from the lack of an integrated information

system.

The present urban planning system using the two-tier development plan system ; Structure and Local Plan adopted from the British model provides a good framework for policy planning especially in social and environmental aspects. However, the local planning lack detailed project planning and engineering considerations. Therefore, the Japanese approach of urban planning which highlights detailed project and finance planning can be integrated into the present system.

Prime contributory factors like the oversupply situation and locational factor requires an updated data bank and an effective monitoring system. The present housing data bank is inadequate and the manual processing and recording of projects is laborious and time consuming. The lack of a good data bank has resulted in rather adhoc planning work and retrieval of housing data for monitoring is very time consuming.(Ho C.S., Konno A, 1992)

Despite extensive applications and use of management information systems in other sectors in Malaysia,its application in the Planning Department at the Local Authority level is limited to word processing and simple data management only. The 1990's has seen some improvement as many Housing Approving Authorities are beginning to use computers in housing data management. A comprehensive data management is therefore urgently required. The cycle of better policy decision will depend on better information support system as follows:-(Wellar B, 1990)

Policy outcome<—Policy decision<—policy information<—
<—information capability<—decision support system

Constant monitoring of information is important as well and the three

categories of monitoring exercises i.e.implementation,impact and policy strategy should be done.(Forrest R,1976)

RECOMMENDATIONS

(i) The Housing Authority should initiate a comprehensive urban planning and housing data bank for the Study Area.

(ii) Computerisation of these data should make it easier for storage and retrieval of vital data for the use of administration and future planning.

(iii) It should also integrate planning information pertaining to policy variables to assist decision makers including the politicians in arriving at a more objective decision.

(iv) Local planning of housing estates development should be more project planning and engineering orientated.

(v) Public and private partnership through Land Readjustment Method should be explored in urban development of centre or subcentres.

Finally, the statutory power of professionals in Housing Authority at State Government and Local Authority levels such as Land Administrator, Town Planners, Architects and Enginner is limited to their capacity in an advisory role to the decision makers who are usually politically motivated.This often makes it difficult for the professionals to implement the plans. Political interference in housing approval is unavoidable and it requires the strong determination and persuasive power of the professionals backed by up to date information to convince the political masters of a better planning decision.

4.3 MODEL OF IDEAL HOUSING ESTATE AS BASIS FOR HOUSING APPROVAL EVALUATION

This model of an ideal housing estate is based on the discussion in Chapter 6. In the absence of a concrete housing policy in the Case Study, interview surveys and brain storming sessions with Housing Authority and residents questionaire interview (N= 999 samples) were carried out to identify the Housing Authority's policy (rules of thumb) and the residents' perceived needs. An interview survey with developers/professional (n=23) gave due considerations to the objectives of private developers. The findings aimed mainly to ascertain the parameters of an ideal housing development as follows:-

(a)The developers' interview identified that the 3 factors determining success of implementation of a good housing project were location, pricing and management skill (project management skill in particular). Many developers quoted that the problem of abandoned housing was contributed by poor location and the involvement of inexperienced or new developers during the recession period. The survey indicated that factors such as good developer's image and good design is presently becoming important factors to ensure that a project is more marketable.

(b) The Housing Approval Authority considered a good housing development as provision of decent housing (conforming to urban planning and engineering standard), ensuring equity and housing owning democracy (including housing accessibility to low income population), and protecting house buyers from non delivery or late delivery of houses (prevent abandoned housing).

(c) The residents opinion of ranking of importance of an ideal housing development were nearness to place of work, security (against robbery and burglary), housing design, quality construction and price.

Logically, some of the developers' views and the Government's as well as residents views were conflicting where the developers tended to emphasize profit and marketability whilst the Government sector considered general public interest and residents placed individual needs first. In reality, some of above factors are interrelated for instance the house pricing is directly affected by the Government's approval procedure since a longer approval time will increase the cost of development and the low cost housing policy on pricing and quota have a direct impact on high and medium cost house prices due to the cross subsidy practised by all developers.

The criteria commonly shared by the three parties can be used in a model defining a good housing development. Further the criteria used in evaluating effectiveness can be grouped as mandatory requirements and non-mandatory requirements. All development have to conform to mandatory requirements such as State Policy on housing distribution, overall spatial policy and planning and engineering standard. There is also a need to assess the certainty of implementation of a good housing development. In assessing the certainty of implementation, a GOOD HOUSING DEVELOPMENT MODEL can be calibrated based on the following relationship (Figure A4-1)

Total Score = x1L + x2F + x3S + x4D + x5A

where

L - Location (time/distance from employment centre)
(distance from main development corridor)

PL - Project Feasibility (distance from nearest abandoned project)
(developer experience)

(project size)

S – Security (police station/beat, design consideration)

D – Design (layout design, environmental pollution)

A – Amenities (social facilities and landscaping)

x1, x2, x3, x4 and x5 are coefficients

Each of the above variables are calculated on a 10 point system evaluated within the knowledge base.

By using this assessment, the Housing Authority can determine the project's certainty of implementation even though the project has fullfilled the mandatory requirements. It will allow the Housing Authority to make its final decision to approve or reject a proposed project based on the information on the 'quality' of the project given by the computer.

The other dimension of good Housing evaluation system is EFFICIENCY which is related to the reduction of Development Control time. The Development Control Time refers to the time duration taken by the Authority in carrying out an examination of the design, planning requirements and policy matters related to the proposal before the project is approved. The average time taken for the approval of a housing scheme ranged from 2 years to 6 years depending on the complexities (in terms of land matters, design , environmental and engineering aspects) of the project. The One Stop Agency aims to streamline this process by reducing the time to not more than 2 years (3 months for Stage 1 and One year 6 months for Stage 2).

The procedure involved in the processing of all housing development applications require certain administrative routine as well as systematic evaluation which can be translated into rules in an expert system. Routine administrative checklist such as plan submission requirements in scale,

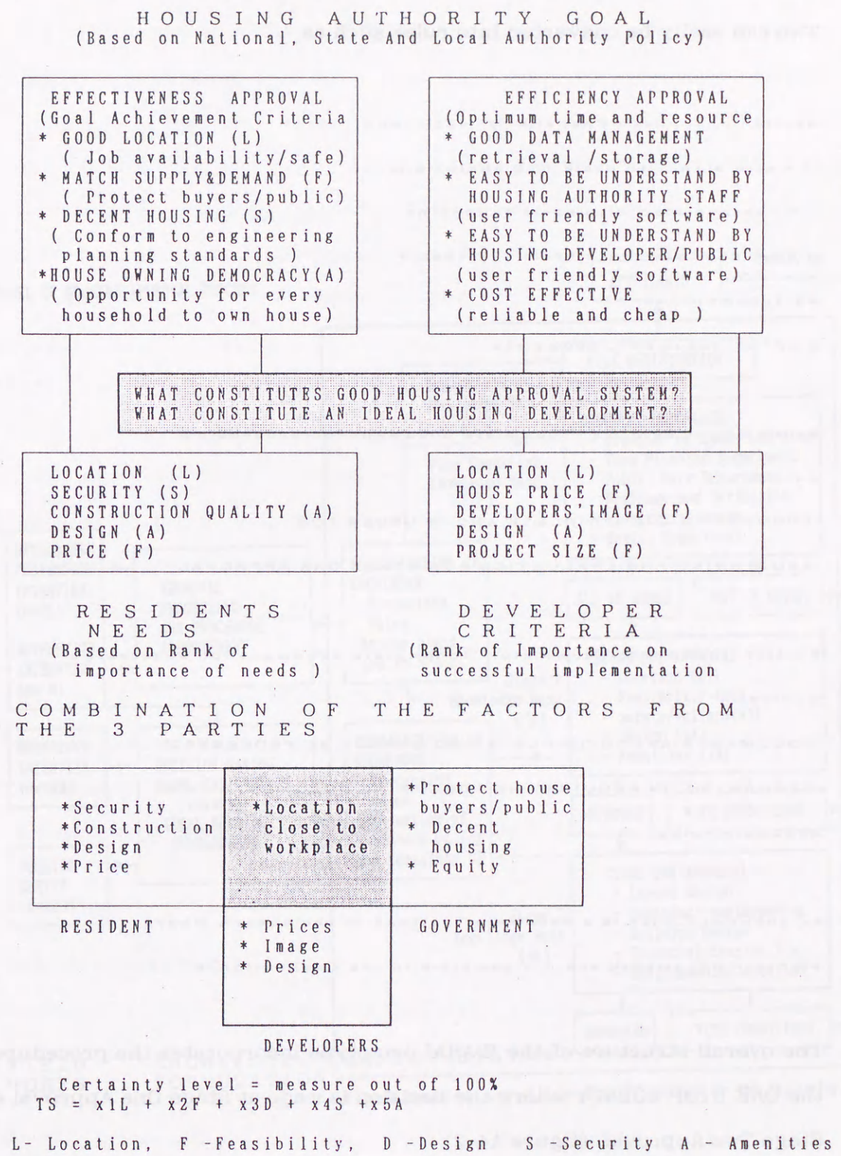


Figure A4–1 Calibration of a Model of an ideal Housing estate

types and other supporting documents and payment in Stage One and Stage Two can easily be converted into rules such as

```
Section checklist :'Checklist of document'
If < site plan with scale 1:16 chain> and
   < contour plan with scale 1: 2chain>
   < concept plan with scale 1: 2 chain>
do document_ok
stop  do document_incomplete

Section document_ok : 'Complete document for processing'
Advice
'DOCUMENTS ARE COMPLETE AND IN ORDER FOR
 PROCESSING AND EVALUATION FOR STAGE ONE APPROVAL'

Section document_incomplete : 'Incomplete document for processing'
Advice
'DOCUMENTS ARE INCOMPLETE AND CANNOT BE PROCESSED'
'RESUBMISSION REQUIRE THE FOLLOWING DOCUMENTS'
document_miss

*/ document_miss is a parameter defined in the system where
plans or documents are not complete in the application/*
```

The overall structure of the 'DAHA' prototype incorporates the procedure of the ONE STOP AGENCY where the decision is made at Stage One Approval and Stage Two Approval. (figure A4-2)

The prototype DAHA provides a user friendly consultation system for the Housing Authority to check the application in a checklist manner

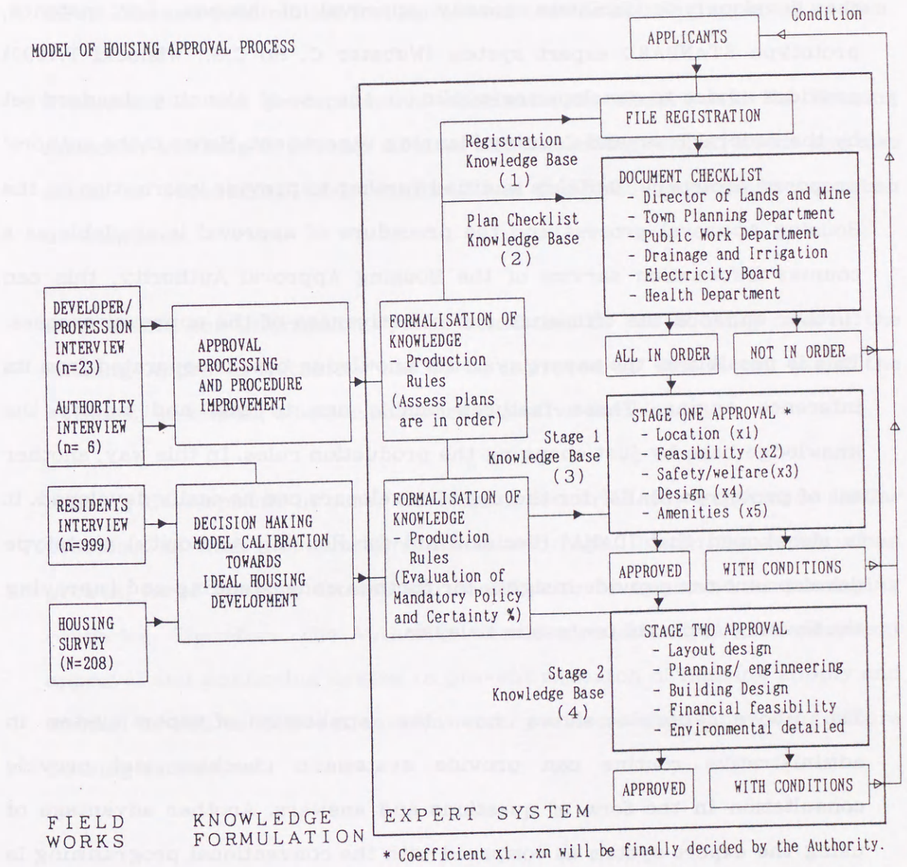


Figure A4-2 Structure of DAHA (Decision Aid for Housing Authority)

systematically. It can also help to identify and list out conditions why the projects are rejected or approved and these conditions are clear to both the Housing Authority and applicant.

In order to improve the housing approval system, the other important factor is to disseminate information on the approval procedure more explicitly to the developer to facilitate speedy approval of houses. For instance, prototype STANDARD expert system (Webster C, Ho C.S., Wislocki T,1990) provides advice to developer or public on the use of planning standard set by the Federal Town and Country Planning Department. Hence if the authors' proposed prototype 'DAHA' is modified further to provide information on the Housing Approval process and the procedure of approval is available as a counter information service of the Housing Approval Authority, this can further enhance the efficiency and effectiveness of the approval process. This is possible as the expert system's knowledge base is separated from its inference engine. These features enable one to edit and modify the knowledge base by just changing the production rules. In this way, another set of prototype 'DAHA' for the use of developers can be easily developed. It is also hoped that 'DAHA' (Decision Aid for Housing Authority) prototype development can provide insights for further understanding and improving the Housing Approval process in Malaysia.

The above example shows how the application of expert system in administrative routine can provide systematic checking and provide consultation in the form of questions and answers. Another advantage of using the expert system as compared with the conventional programming is that the expert system has the ability to explain the reasons for the decision given to the user. In this way, it improves the efficiency of the administrative system and records of application for development.

A1.5. CONCLUSION

These proposals aimed to provide some recommendations for the improvement of housing supply system in the Study Area in particular and Malaysia in general. As the limitation of time and other resources do not permit detailed analysis on the implementation aspects, the conclusion provides indicative directions and possibilities for improvement of the housing approval system.

Evaluation of the perceptions of residents, developers and the Housing Authority will help to provide a better understanding of their needs and also assist in reconciling their conflicts and facilitate cooperation in urban development.

In addition, the information system consisting of the housing data of the Housing Approval Authority has to be improved so that it can assist the Authority in making a better and more objective decision.

Housing development in other developing countries may experience similar problems as their urbanisation rate is also high. Due to the rapid urban growth, large housing estates will continue to be approved in developing countries. Therefore, the Authority should give attention to development approval and monitoring system to prevent mismatch of housing supply and demand as well as prevent environmental problems when approving future housing estates.

NOTES

(1) The gross oversupply on paper with current total flow of 161,218 units (PENDING FLOW (abandoned and committed) 94,709 units and ACTIVE FLOW (underconstruction) of 66,509 units. Based on housing needs (household formation, housing replacement and vacancy ratio), this housing flow will take about 20 years to be fully taken up. Alternatively, if the present absorption ratio of 5,000 units p.a is used as housing demand, this housing flow will take about 30 years to be absorbed in the housing market. Both the calculations are assuming that approval of housing is totally frozen for the next 20 years which is unrealistic. Hence, the Authority have to sift the current housing stock to enable effective housing supply planning in the Study Area.

(2) Planning Gain concept uses the idea of developers 'gain' through betterment due to the change in use of development which in return contributes social infrastructure (e.g. public housing).It is also known as 'planning agreement' between Local Authorities and private developers. These are known as 'section 106 agreement ' and are essential as a form of planning gain obtained from developers or landowners when planning permission is granted for new development.The contribution can take a variety of forms which include cash payment, supply of land or transfer of Low Cost housing units to Local Planning Authority or Housing Association.

(3)In this system, the developer has to deposit all the money collected from the house purchasers into a particular project account in a bank. The withdrawal of project funds for the construction of the housing project requires the confirmation from the supervising architect to prevent mismanagement of fund.

(4) 'One Stop Agency' aimed to streamline the approval system and ensure that applications for housing development were processed in a shorter time i.e.less than 2 years as compared with the 3 years or more before that. Deregulation of planning standards such as Non-polluting workshops were allowed in housing projects. In addition, special planning design requirements for Low Cost houses were relaxed, for example the residential road width in Low Cost areas were reduced from 12m to 9m and the backlane from 6m to 3m. A Special Low Cost Housing Programme with special incentives for private developers was initiated in 1986 and it involved the construction of a total of 240,000 units of Low Cost houses over a period of 3 years.

(5) Professor Hayakawa and Dr Hirayama argued that the 'Minkatsu' concept aimed at stimulating economic development of private sector rather than the privatisation aspiration of efficiency of social housing production. It was misused for political and economic gain of a small group of developers and politicians. For instance the deregulation of zoning and sale of nationally public owned land had caused public dissatisfaction.

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A P P E N D I X 1

HISTORICAL BACKGROUND–FORMATION OF MULTI–ETHNIC POPULATION

The recorded historical development of Malaysia can be summarised into the following periods:

1) Malaccan Empire
Artifacts have proven the early settlements in Malaysia were related to that Khymer empire in early 100 B.C. However, the first recorded history about Malaysia was the establishment of Malacca empire by the Sumatra prince Parameswara early in the fifteenth century. The strategic location of Malacca between the sea route from the main trading countries ;India and China accelerated the growth of this settlement. It had been under the influence of Hindu and Buddhist and also Islam as early as the fourteenth century. Islamic religion greatly influenced the royal and adminstrative set up which is passed down even until today. The present Monarch system at the State level consists of the Sultan and his court, a class of local leaders comprising district chiefs, village headmen and peasant class which was inherited from the traditional system.

2) Colonial Period (1511 to 1957)
Peninsular Malaysia was once ruled by 4 main foreign powers viz:
a) Portugese (1511–1641)
b) Dutch (1642–1824)
c) British (1825–1957)
d) Japanese Occupation (1942–1945)

The colonial masters were more interested in trade and mobilising the people to produce goods for the market at home. This was especially noted during the British Period when key settlements such as Penang, Port Swettenham (now known as Port Klang) Malacca and Singapore were developed as Ports for ships of the East India Company making voyages between India and China.

The discovery of tin deposits in Perak and Selangor around 1850, and the introduction of rubber (Hevea brasiliensis) plantation in the late 19th century transformed the economic activities in Peninsular Malaysia. The expansion of tin mining and rubber plantations have brought Chinese and Indian labour who are from South China and South India respectively to work in these growing industries. Most Chinese lived in urban areas, where they dominated the commerce; whilst the rural Chinese engaged in tin mining and smallholder farming. Most Indians lived in rubber and oil palm estates whilst the urban Indians engaged in professions and services.

The majority of the Malays lived in rural areas and were smallholder farmers and fishermen whilst urban Malays were generally public servants and petty traders. The Malay had little contact with the growing tin and rubber industries and also the commercial activities in the towns. Hence, this kept them away from the modern sector of the economy and many

continued working in rural agriculture and urban government bureaucracy.(K. Young , 1980)

The Colonial Period greatly influenced the demographic and socio-economic change in the population structure of Malaysia (formerly known as Malaya).

During the period of Japanese occupation in the Second World War (1942-1945) much of the physical infrastructure and plants were destroyed. The Japanese occupation was more than economic, it penetrated the myth of British invincibility and fanned up the nationalistic sentiments. This has led to political awakening and ultimately towards the Independence of Malaya from the British in 1957.

HISTORICAL BACKGROUND
Recorded Period : Malacaan Empire (1400 -1511)
: Colonial Period (1511-1957)
Portugese(1511-1641) Dutch (1641-1824)
British(1824-1957) Japanese(1942-1945)

YEAR	COLONIAL MASTERS	IMPACT ON PRESENT MALAYSIA FROM COLONIAL RULE
1402	MALACCAN SULTANATE	Results of the colonial rule in Malaysia The Malaccan sultanate system form the basic sultanate system integrated with the present Parliament monarchy system.
1511	PORTUGESE RULE	
1641	DUTCH RULE	Dutch and Portuguese rules only affect Malacca.
1824	BRITISH RULE	The British introduces the urban planning and land administrative system in Malaysia. - Multi-racial population brought in by the British notably the Chinese from China in tin mining industries and Indian from South India for rubber plantation. - Regional imbalance between the west (developed) and east coast (less developed)Peninsular Malaysia. - Racial disparity between the Malay and non Malay because of racial distribution by economic function - Malays in rural and traditional sector and the Non Malay in urban and modern sector. - Fanned up nationalistic sentiments.
1942	JAPANESE OCCUPATION	
1945	BRITISH RULE	
1957	MALAYSIA GAINED INDEPENDENCE	- The Birth of Malaya. The name was then changed to Malaysia in 1963 and consists of Peninsular Malaysia, Sabah, Sarawak and Singapore. Singapore was separated from Malaysia in 1965.

A P P E N D I X 2

RESIDENTS HOUSEHOLD INTERVIEW QUESTIONAIRE

RESIDENTS QUESTIONAIRE SURVEY
JOHOR BAHRU METROPOLITAN HOUSING STUDY 1991
DEPARTMENT OF URBAN AND REGIONAL PLANNING, UNIVERSITI TEKNOLOGI MALAYSIA
AND DEPARTMENT OF REGIONAL PLANNING, TOYOHASHI UNIVERSITY TECHNOLOGY,JAPAN

1.0 IDENTIFIER

Subdistrict ;

☐ JB city	☐ Kulai
☐ Pasir Gudang	☐ Senai
☐ Tebrau	☐ T kupang
☐ Plentong	☐ Sg Tiram
☐ Sedenak	

Neighbourhood Zone

2.0 HOUSEHOLD CHARACTERISTICS

a) ETHNICITY ☐ Malay ☐ Chinese ☐ Indian ☐ Others

b) TENURIAL ☐ Owner ☐ Tenant ☐ Others, state.....

c) NUMBER OF HOUSEHOLD S IN LIVING QUARTER _____

d) NUMBER OF FAMILIES IN LIVING QUARTERS _____

e) NUMBER OF PERSONS IN LIVING QUARTERS _____

f) NUMBER OF BEDROOMS IN LIVING QUARTERS _____

g) NUMBER OF PERSONS EMPLOYED

h) VEHICLES USED ☐ Cars ☐ Motorbike ☐ Others, state.....

i) NUMBER OF CHILDREN ATTENDING SCHOOL _____

j) FOR HOUSEHOLD MEMBERS (SCHOOL GOING AGE < 17 YEARS OLD)

NOS.	RELATION	SEX	AGE	BIRTH PLACE	SCHOOL

h) FOR HOUSEHOLD MEMBERS (WORKING AGE > 17 YEARS OLD)

NOS.	STATUS	SEX	AGE	MARITAL	OCCUPATION	INCOME	WORKPLACE	BIRTHPLACE

i) HAVE YOU MOVED SINCE BIRTH ? ☐ YES ☐ NO

IF YES, (IMMIGRANT)

LAST PLACE OF RESIDENCE _____ YEAR ____ HOUSE TYPE _____

WITHIN JOHOR STATE

☐ JOHOR BAHRU DISTRICT ☐ MPJB (JOHOR BAHRU MUNICIPALITY
☐ OTHERS (please state _____

OUTSIDE MALAYSIA _____

OUTSIDE JOHOR STATE _____

MAIN REASONS FOR MOVING INTO PRESENT HOUSING ESTATE

☐ JOB SEEKING ☐ JOB OFFER
☐ JOIN FAMILY ☐ EDUCATION
☐ OTHERS _____

NUMBERS OF YEARS IN PRESENT PLACE OF RESIDENCE _____

3) EXPENDITURE

a) SHOPPING HABIT

GOODS/ SHOPPING	MONTHLY (M$)	USUAL PLACE OF RESIDENCE
CONVENIENT GOODS		
DURABLE GOODS		
RECREATION ITEMS		

b) IF HOUSEOWNER

HOUSE PRICE _____ (TIME OF PURCHASE)

HOUSE MONTHLY MORTGAGE _____ (TIME OF PURCHASE)

IF TENANT, MONTHLY RENTAL _____

4) OPINION SURVEY

a) SPATIAL HIERARCHY

FACTORS (1 LEAST SATISFACTION … 4 HIGHEST SATISFACTION)	CURRENT SITUATION 1	2	3	4	RANKING OF IMPORTANCE 1HIGH.. LOW9
1 NEAR WORK PLACE					
2 NEAR PARENT HOUSE					
3 NEAR CHOICE SCHOOL					
4 SAFETY					
5 AMENITIES (SOCIAL FACILITIES)					
6 SAME ETHNICITY NEXT DOOR / NEARBY					
7 HOUSE PRICE					
8 CONSTRUCTION QUALITY					
9 HOUSE DESIGN					

b) DETAILED AMENITIES FACTORS - SOCIAL FACILITIES AND UTILITIES

FACTORS 1 LEAST SATISFACTION / 4 HIGHEST SATISFACTION	CURRENT SITUATION 1	2	3	4	REMARKS
1 WATER SUPPLY					
2 ELECTRICITY SUPPLY					
3 PUBLIC TELEPHONE					
4 GARBAGE SERVICE					
5 DRAIN MAINTANENCE					
6 ROAD MAINTENANCE					
7 HEALTH FACILITIES					
8 RELIGIOUS FACILITIES					
9 RECREATION FACILITIES					
10 EDUCATION					
11 SHOPPING					
12 PUBLIC TRANSPORTATION					

b) DETAILED AMENITIES FACTORS - ENVIORNMENTAL FACTORS

FACTORS 1 LEAST SATISFACTION / 4 HIGHEST SATISFACTION		CURRENT SITUATION 1	2	3	4	REMARKS
1 POLLUTION	- NOISE					
2	- SMELL					
3	- SMOKE					
4 SECURITY	- ROBBERY					
	- BURGLARY					

c) OTHER OBSERVATIONS

_____

_____

_____

A P P E N D I X 3

– DEVELOPERS/PROFESSIONALS INTERVIEW QUESTIONAIRE

JOHOR BAHRU METROPOLITAN HOUSING STUDY 1991

DEPARTMENT OF URBAN AND REGIONAL PLANNING, UNIVERSITI TEKNOLOGI MALAYSIA
AND DEPARTMENT OF REGIONAL PLANNING, TOYOHASHI UNIVERSITY TECHNOLOGY, JAPAN

INTERVIEW SURVEY ON HOUSING DEVELOPERS (OPINION SURVEY)
PROFESSIONAL/ HOUSING AUTHORITY
Department of Urban and Regional Planning, Universiti Teknologi Malaysia and Department of Regional Planning, Toyohashi University of Technology, JAPAN

A) What is the current problems faced by the housing developers?

Problems	Seriousness*				Rank					
1) Governmental Procedure					1	2	3	4	5	6
- One Stop agency	1	2	3	4						
- Building approval	1	2	3	4						
2) Governmental Policy										
- % Low cost housing	1	2	3	4						
- Bumiputra discount	1	2	3	4						
3) Market					1	2	3	4	5	6
- overall demand/supply	1	2	3	4						
- specific demand/supply	1	2	3	4						
4) Financing					1	2	3	4	5	6
- Bank regulation	1	2	3	4						
5) Site					1	2	3	4	5	6
- Land supply	1	2	3	4						
- Infrastructure	1	2	3	4						
6) Construction/contractors					1	2	3	4	5	6
- Material	1	2	3	4						
- Reliable Contractors	1	2	3	4						
- Workers	1	2	3	4						
7) Others										

* Seriousness 1= not serious 2 = below average
3= above average 4 = very serious

B) Would you suggest some possible remedies where the governmental approving bodies and private sectors can contribute?

_____

_____

_____

C) Based on your experience, what are the main factors for ensuring successful implementation of a housing projects?

Factors	Rank					
1)Location	1	2	3	4	5	6
2)Size of project	1	2	3	4	5	6
3)Housing Layout	1	2	3	4	5	6
4)Building design	1	2	3	4	5	6
5)Developer image	1	2	3	4	5	6
6) Pricing	1	2	3	4	5	6

D) What are the main causes of abandoned housing projects and delayed in implementation of housing projects?

Parameters	Rank	Particulars
1)Poor Location	1 2 3 4 5 6 7 8 9 10 11	
2)Poor Economic/Market	1 2 3 4 5 6 7 8 9 10 11	
3)Oversupply	1 2 3 4 5 6 7 8 9 10 11	
4)Low cost Pricing	1 2 3 4 5 6 7 8 9 10 11	
5)Low cost quota	1 2 3 4 5 6 7 8 9 10 11	
6)High land holding	1 2 3 4 5 6 7 8 9 10 11	
7)Planning standards	1 2 3 4 5 6 7 8 9 10 11	
8)Land conversion/division	1 2 3 4 5 6 7 8 9 10 11	
9)Building plan approval	1 2 3 4 5 6 7 8 9 10 11	
10)Financing	1 2 3 4 5 6 7 8 9 10 11	
11)Site problems	1 2 3 4 5 6 7 8 9 10 11	

E) What is the current and future outlook of residential property market in Johor Bahru Metropolitan?

Current situation : Rank 1 2 3 4
Future market : Rank 1 2 3 4

* 1 bad * best

Please state the reasons

A P P E N D I X 4
– NEWSPAPER CUTTINGS ON ABANDONED HOUSING

MONDAY July 16, 1990 THE STAR

ANGRY PROTESTERS . . . The buyers picketing along thè Kota Tinggi highway yesterday. Inset: Encik Zainal.

House buyers stage picket

JOHOR BARU, Sun. — More than 400 people who bought property in Taman Puteri Wangsa staged a picket today to protest against the developer's failure to revive the abandoned project.

The house buyers, carrying placards outlining their frustrations, picketed at the project site in Ulu Tiram from 9am to noon.

Their spokesman, Encik Zainal Othman, said the project was scheduled to be completed in 1986.

He said the bank had already released money for the project.

Encik Zainal added that the house buyers were unhappy with the developer and the Housing and Local Government Ministry for not taking steps to revive the project despite more than 10 meetings.

He suggested that the developer apply for financial assistance from the fund set up by the Government to help revive abandoned housing projects.

WHY MANY LOW-COST PROJECTS ARE ABANDONED

JUNE 17, 1988
(FRIDAY)
THE STAR
NEWSPAPER

By S.B. LIM

JOHORE BARU, Thurs. — Many low-cost housing projects in Johore have been abandoned because the developers are "small-time, inefficient, mismanaged and short of cash."

Johore Housing Developers Association deputy chairman Alan Ong, who said this, added that the industry was one of the most regulated and too complex for small-time, inexperienced developers.

"You have to be very competent to manage a developer's firm.

"It is also important for developers to have enough capital because they cannot rely on loans to solve cash-flow problems," he added.

Mr Ong said most of the developers who abandoned their projects were not members of the association, which has 53 members.

He was commenting on a statement by State Housing and Local Government Committee chairman Haji Abu Bakar Dewa that about 40 per cent of low-cost housing projects in Johore were abandoned.

Haji Abu Bakar said the State might reject applications for new low-cost housing projects from developers who failed to complete earlier schemes.

On suggestions that better established developers from the association take over projects abandoned by non-members, Mr Ong said: "It is not that simple.

"With the industry not as profitable as before, most developers are happy just to complete their houses and sell them.

"Taking over means inheriting financial liabilities the developers would have to service loans already taken, do repairs on the infrastructure."

Mr Ong said developers did not make any money from low-cost projects.

He said in some countries, it was the responsibility of the Government to provide housing for the poor.

"In Malaysia, this social responsibility is given to the private developer. Since we do not make money from low-cost housing projects, we have to subsidise their costs from other housing projects.

"The trouble begins when there is poor demand for low-cost houses."

Mr Ong said some developers had problems because they had borrowed money during the housing boom when interest rates for loans were 16 to 17 per cent.

THE STAR THURSDAY January 24, 1991

DEVELOPERS STOP WORK ON 39,000 HOUSES IN JOHOR

Tan Sri Muhyiddin ... 'low-cost housing shortage must be overcome'

By Harpajan Singh

JOHOR BARU, Wed. — Work on 39,000 low-cost houses in Johor has stopped although they were approved under the privatisation programme several years ago.

In several schemes, the developers just completed the medium and high-cost units and abandoned the low-cost ones.

Mentri Besar Tan Sri Haji Muhyiddin Mohamed Yassin said today he was concerned over the findings made during a preliminary survey and has ordered the housing committee to investigate.

"The committee will identify all such schemes to help in future planning," he said.

Tan Sri Muhyiddin said the developers involved would be asked to explain the delay and those who failed to give valid reasons would be "blacklisted."

Those who abandoned only the low-cost phases would have their project permits revoked, he said.

"We are not trying to be vindictive but the shortage of low-cost houses in Johor has to be overcome," he added.

He also said the housing department and the land office had been directed to co-ordinate efforts to monitor the progress of all new housing projects.

"From now, once a housing application is approved by the state executive council the land office will inform the developer concerned who will be given a time frame to start work. From there, the housing department will take over and visit the project site from time to time to ensure that the project is on schedule," he said.

Yesterday, Housing and Local Government Committee chairman Bahari Haron said the state planned to privatise all low-cost housing projects under its squatter resettlement and urban renewal programme.

Berita Harian, h. ISNIN 1 JULY 91

120,000 rumah belum siap

KOTA TINGGI, Ahad — Pemaju di seluruh Johor sehingga ini gagal menyiapkan 40 peratus atau 120,000 daripada 3[illegible]00 unit rumah kos rendah [illegible] diluluskan dalam tempoh sepuluh tahun lalu, kata Menteri Besar, Tan Sri Haji Muhyiddin Haji Mohd Yassin.

Berikutan itu, kata beliau, kerajaan terpaksa berhati-hati meluluskan permohonan baru kerana bimbang projek berkenaan tidak dapat disiapkan hingga menyulitkan pembeli.

Tan Sri Haji Muhyiddin berkata, mulai sekarang kerajaan akan memastikan pemaju memulakan projek masing-masing dalam tempoh enam bulan, termasuk menyediakan pelan, membersihkan kawasan serta mengeluarkan iklan.

"Sebelum ini ada pemaju gagal melaksanakan projek mereka sehingga enam tahun selepas mendapat kelulusan," katanya kepada *Berita Harian* di sini, hari ini.

Menurutnya, sesetengah pemaju mendahulukan pembinaan rumah kos tinggi, sederhana dan kedai kerana menganggap rumah kos rendah tidak menguntungkan.

Tan Sri Haji Muhyiddin berkata, kerajaan negeri juga akan mensyaratkan pemaju perumahan menyelaraskan pembinaan 40 peratus rumah kos rendah atau sederhana dengan rumah jenis lain di setiap projek perumahan.

Menurutnya kerajaan perlu bertindak demikian bagi memastikan penduduk di negeri ini dapat memiliki rumah sendiri.

Sehubungan itu, beliau berkata, kerajaan negeri sudah menyiapkan kajian menyeluruh bagi memastikan jenis dan jumlah rumah yang boleh diluluskan untuk dibangunkan di sesuatu kawasan.

Selain itu, katanya, kerajaan sudah memulakan konsep penswastaan di mana pemaju akan diberi tanah untuk dimajukan dan rumah berkenaan dijual dengan harga yang sesuai.

"Konsep itu sudah dilaksanakan di Kluang dan Batu Pahat, manakala di Muar dan Johor Bahru sedang dilaksanakan, diikuti di daerah lain," katanya.

Menurutnya, rumah tiga bilik itu dijual dengan harga antara $17,000 dan $22,000 seunit.

translation (from MALAYSIA LANGUAGE)

120000 HOUSES APPROVED REMAINED UNBUILT

(120,000 LOW COST HOUSES APPROVED IN LAST 10 YEARS REMAINED UNBUILT IN THE JOHORE STATE... GOVERNMENT MAY HAD TO TEMPORARY STOP APPROVING HOUSES AS ABANDONED HOUSING WILL CAUSE HARDSHIP TO BUYERS...)

APPENDIX 5
- PHOTOGRAPHS OF HOUSING DEVELOPMENT IN THE CASE STUDY AREA

PATTERN OF HOUSING DEVELOPMENT

CORRIDOR DEVELOPMENT ALONG HIGHWAY
Housing estates are located on both sides of the main road leading to North East (Kota Tinggi),North(Kuala Lumpur) and East(Pasir Gudang) forming a corridor pattern development

LARGE SCALE OF HOUSING DEVELOPMENT

(1) COMPLETED HOUSING ESTATES
These houses were completed and occupied by residents in the late 1980's. This housing estate has a total of about 30,000 units. There are about 50,000 completed housing units if other housing estates in the vicinity are included.

(2) HOUSING PROJECTS UNDERCONSTRUCTION
The sound economic growth and lifting of ban on foreign buyers has stimulated a boom in the housing construction industry in Johor State in the early 1990's. This has caused many housing developers to start the construction of their approved projects and revive some abandoned projects.

EXAMPLES OF CATEGORIES OF HOUSES IN HOUSING ESTATE

LOW COST HOUSES
Price : Not more than MR$22,000
Lot size : 5m x 15m to 6m x 20 m
(75 sqm to 120 sqm)
Floor area : 70 sq m to 100 sq m
Combination : 2 LDK or 2 LK
House Type : 1 storey Row houses
2 storey Row houses
4 storey Walk up flats

MEDIUM COST HOUSE

Price : MR$75,000 - MR$150,000
Lot size : 6m x 20m to 7m x 25 m
(120 sqm to 175 sqm)
Floor area : 90 sq m to 200 sq m
Combination : 3 LDK or 4 LDK
House type : Single storey Rowhouses
: One and a half storey Rowhouses
: Double storey Rowhouses

HIGH COST HOUSE

Price : More than MR$150,000
Lot size : 10m x 25m to 20m x 30 m
(250 sqm to 600 sqm)
Floor area : 120 sq m to 300 sq m
Combination : 4 LDK or more.
House type : Double storey Rowhouses
: Semi detached houses
: Detached houses

EXAMPLES OF ABANDONED HOUSING AT CONSTRUCTION STAGE

LOW COST HOUSING (without water and electricity supply)

These houses were abandoned and Certificate of Fitness for Occupation (CFO) were not issued by Local Authority.As a result, there is no water and electricity supply. In spite of that,some residents illegally moved into the houses. They got the water supply from neighbouring housing estates with pipes laid across the road. Electricity supply was also illegally connected from neighbouring estates or from the mains.

SINGLE STOREY ROWHOUSE

These houses were abandoned since 1985.It was abandoned at 65% completion (without road,drain and sewerage way serving the building as well as water and electricity supply).As the estate was left unattended, it was overgrown with grasses and some houses were vandalised. There were about 200 units abandoned in this condition in this estate.

DOUBLE STOREY HOUSE

These houses were abandoned at about 80% completion stage (without water and electricity supply). As the developer has gone bankrupt, construction work stopped since 1985. The site was left overgrown with grasses. Guards were employed to prevent pilferage and vandalism of construction materialsuch as roof tiles, window panes and planks.

SUBMISSION DOCUMENTS

別記様式第１号

承認印	専攻主任	指導教官
	宮崎	

平成 6年 1月 11日

豊橋技術科学大学長　殿

申請者
入学年度　1991　　年度
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大学院工学研究科博士課程
専攻名　システム情報工学　専攻

氏　名　ホ　チン　ション
HO CHIN SIONG

学　位　申　請　書

このたび博士（工学）の学位の授与を受けたいので、所定の期日に下記書類を提出しますから、審査をお願いいたします。

記

1　博士論文１編（Ａ４版）・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・４通
（本文の前に、1,200 字程度の和文要旨及び 800語程度の英文要旨を記述）

2　論文目録（所定用紙）・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・４通

3　論文内容の要旨（Ａ４版、和文 1,200字程度）・・・・・・・・・・・・・・・・・・・・・・４通

4　履歴書（所定用紙）・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・４通

論文題目	EVALUATION OF HOUSING ESTATE DEVELOPMENT IN RELATION TO HOUSING SUPPLY IN MALAYSIA
	- The Case Study of Johor Bahru Metropolitan Area -
	マレーシアの住宅供給における住宅団地開発の評価に関する研究
	～ジョーホールバル都市圏の事例研究～

※　論文題目が外国語の場合は、和訳を（　）で付記すること。

論 文 目 録

1994 年 2 月 日

氏名 HO CHIN SIONG 印

発表論文名・著者名（全員記入のこと）・掲載誌名・巻号（最初と最後のページ）・発表年（西暦）

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申請者が上記の論文を学位申請に用いることについて、共著者全員の同意を得ています。

平成 年 月 日

HO CHIN SIONG 印

注） 発表年次の順に整理番号を付して記入すること。

論 文 目 録

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発表論文名・著者名（全員記入のこと）・掲載誌名・巻号（最初と最後のページ）・発表年（西暦）

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発表論文名・著者名（全員記入のこと）・掲載誌名・巻号（最初と最後のページ）・発表年（西暦）

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Toyohashi city, Japan on November 23, 1993.

申請者が上記の論文を学位申請に用いることについて、共著者全員の同意を得ています。

平成 年 月 日

HO CHIN SIONG 印

注） 発表年次の順に整理番号を付して記入すること。

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申請者氏名	HO CHIN SIONG				鈴木 康
					瀬口 哲夫

論　文　要　旨

論文題目	マレーシアの住宅供給における住宅団地開発の評価に関する研究 ～ジョホールバル都市圏の事例研究～

（要旨 1,200字以内）

マレーシアの住宅団地開発に於て'８０年代後半の開発遅延や「放棄住宅」の急増は、住宅供給計画上の深刻な問題となっている。これらは緊急課題であり、マレーシアの都市経営や住宅供給に関して、学術的のみならず実務的に寄与する研究が必要とされており、本研究はジョホールバル都市圏を対象とし、住宅団地開発の評価を目的として行ったものである。開発途上国で行われる住宅・都市計画研究の限界として、データ未整備による実態把握の困難さがある。そのため①行政当局内の団地開発情報の掘り起こし ②団地居住者へのアンケート調査 ③開発業者や専門家へのヒアリング調査を行った。調査対象を、住宅市場を主役としての行政当局者・開発業者・居住者の三者に設定した。主な知見は次の通りである。

(a)第６次マレーシア計画では、団地立地の不適性、開発業者の問題、認可の遅延をその理由にしているが、筆者の研究では、この他に住宅需給の不整合の意味が大であることが明らかになり、放棄住宅の実態と共に、住宅需給構造を把握することの重要性を示した。

(b)行政当局にも認知されている、竣工後に放棄された「放棄住宅」は、実は「氷山の一角」であり、それらは開発認可は受けたが建設されていない広義の「放棄住宅」９万戸余りのわずか２％に過ぎない。また広義の「放棄

住宅」は、現在建設中の住宅を含めたトータルフローの５９％を占める。これら「放棄住宅」の効果的な再利用計画と今後の放棄住宅防止策の必要性を示した。

(c)多民族社会・住宅階層混在といったマレーシアの住宅団地の特殊性を考慮し、準・無作為抽出法などの手法を用い、住宅階層・民族・団地立地別等により分析を行った。居住者の住宅所有形態・転入理由・収入・雇用形態に、居住者層の住宅需要の型の把握をし、モデル的な住宅需要像の型設定を行った。これにより、今後の大がかりな住宅需要調査の為に、有益な基礎知見を提供できた。

(d)効果的な住宅需要に必須である居住者の住宅選択や選好把握では、住宅階層・立地・開発規模・開発年次の開発属性別に傾向が異なるが、特に立地・治安・居住環境が選択要因として最重要視されていることが分かった。

(e)開発に関する試算を行うと、低コスト住宅の価格を一定額以下に固定的に定める現行制度では上昇する建設費に対応できない。また現行の住宅政策による住宅売却制限が住宅内の過密や不法賃貸につながっており、低コスト住宅についての見直しが必要であることを示した。

(f)民間開発業者による住宅建設の役割が急増している点からも、行政当局の遅れがちな開発許認可の改革、住宅需給構造の正しい知見と住宅情報改善が将来の効果的な住宅計画や決定のための必須条件であることが示した。

論文は、第１部マレーシアの住宅供給の概要、第２部事例研究、第３部知見と結論、終章で将来のマレーシアの住宅供給計画のあり方をめぐるモデル的提案を試みた。

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論 文 要 旨

論文題目	EVALUATION OF HOUSING ESTATE DEVELOPMENT IN RELATION TO HOUSING SUPPLY IN MALAYSIA -The Case Study of Johor Bahru Metropolitan Area-

（要旨 1,200 字以内）

The abandoned housing problem which emerged in late 1980's have posed a serious issue to the Authority on the planning and monitoring of housing supply system in Malaysia. This problem has attracted the author's attention to study this housing issue. As this problem is urgent,this research will not only be of academic but also practical contribution to the Malaysian urban management and housing policy formulation. Hence,the main aim of this Study is to evaluate housing estate development in relation to housing supply in Malaysia using Johor Bahru Metropolitan Area as a Case Study.

The most common limitations which many researchers faced in developing countries including Malaysia is the problem of poor data bank and lack of local research material in the field of housing and urban planning. Due to these limitations, three main fieldworks were carried out to collect vital housing and urban management data in the Study Area. The main fieldworks were (i) Documented individual file of housing project survey (ii) Residents questionaire interview (iii) Developers and professionals interview. The framework of survey and analysis was based on the author's Model of housing market interaction where the 3 main parties are the URBAN MANAGERS (Authority), the PRODUCERS (Developers and professionals) and CONSUMERS (Residents). The main findings are as follows:

(a) The Sixth Malaysia Plan reported that abandoned housing is attributed by poor location, developers and contractor problems and approval delays. However, the author's fieldwork survey and brainstorming sessions between the Authority and housing experts showed that apart from the above factors, it should be viewed as a SYMPTOM of the mismatch of housing demand and supply problem. Hence, solution needs a better understanding of abandoned housing profile and urban housing demand and supply pattern.

(b) Abandoned housing problem at construction stage which is known to the public is a 'tip of iceberg' problem only (2% of total pending flow of 94,709 units). The larger hidden problem is the totally unbuilt abandoned housing projects and the committed housing stock which accounts for 59% of the total housing

flow. Some of these projects which are not feasible need to be removed to enable an effective housing supply planning and prevent future abandoned projects.

(c) This Study also introduced and proposed a new research and analysis framework such as Semi random sampling for multi racial and mixed dwelling housing areas to study the overall residents characteristics and demand pattern. The demand pattern had to be grouped by housing category, ethnicity and zones (distance from city centre). There is a distinctive pattern of residents characteristics by house tenure, reasons of migration, income and employment pattern. This Semi random sampling result provides a representative conclusion and identification of different types of housing demand groups. This will give directions for large scale survey in the future for housing demand study.

(d) Effective housing demand requires on understanding of not only demographic factors but also residents satisfaction and preferences. Residents satisfaction and preferences vary by different criteria such as housing category, zones, project size and project year. However, the questionaire surveys showed that location, safety and environmental problem were common important factors perceived by the residents as current issues and as priorities in choosing a place of residence.

(e) Author's development costing on Low Cost houses showed that the present price of not more than $22,000 per unit is not feasible due to increasing cost. The Study also showed that policy which forbid selling of Low Cost houses is not practical due to the overcrowding and illegal renting problem. Hence, there is a need to review current Low Cost Housing Policy related to its pricing and ownership.

(f) The Private sector's increasing role in urban housing supply requires the Authority to reconsider the developers' views seriously on the issue of slow development approval process. This study showed that with a better knowledge of housing demand and supply structure and information management, an effective housing planning and decision making of the Housing Authority can be further enhanced.

The thesis consists of 3 main parts and Annex; Part One - Malaysian housing development background, Part Two - Case Study's findings and Part Three - Findings and conclusion. The Annex provides tentative proposals for future policy formulation based on the above findings and some hypothetical assumptions to guide housing estate development in Malaysia.