#### **CHAPTER 6**

## ANALYSIS AND FINDING

In this chapter, analysis will be done on all the data and information which are collected to get the findings for this research. All the interviews and questionnaire will be concluded into quantitative and qualitative matter.

The interviews had been done with the professionals to get their opinion and information about building quality assessments.

There are 50 sets questionnaire were distributed to the respondent of each case study to get information about the condition of the properties which they purchased and staying. Some of the data and information which were taken from the CONQUAS and QLASSIC are also analyze to qualitative events. All of the information and data will be selected to support each term which are discussed in this chapter.

## 6.1 Finding and analysis

The questionnaires were distributed to the residents of the case studies. The residents who answer the questionnaires are the occupants, house owners and tenants of the units. All of them are the occupants of the case studies and all of them have live there during the handover period and defect liability period.

For the interviews of the professionals, there are consisted with consultant of building quality inspector, personnel of quality department of the developer from private company.

## Section B: Owner/purchaser information

In session B of the questionnaire, the occupants' general information had been recorded and tabulated as follow. From the data could roughly know and confirm that the range of the occupants who are able to answer the questionnaire wisely and accordingly. The interviewee must be more than 20 years old.

Age	Development							
	MK MK		MK	Flora	Kiaramas			
	Kiara Designer Suite	Banyan	Meridin	Murni	Ayuria			
20 to 29	7	6	10	4	6			
30 to 39	14	13	3	20	3			
40 to 49	16	10	25	15	26			
50 to 59	10	11	15	5	9			
60 to 69	3	10	26	6	6			

## 6.1.1 Range of Age

Table No. 6.1.1



#### Figure No. 6.1.1 (a)



Figure No. 6.1.1 (b)

The purpose of this question is to know the range of owner/ occupants age and identify whether the occupant fulfill the requirement to answer the questionnaire.

There was different range of age of the occupant participate the survey. For this question categorizes the range of age into five (5) groups (Please refer to the Table No. 6.1.1).

From the results could know that most of the occupants are in the range of 40 to 49 years old, which is 33% for all of the case studies.

It could be confirmed that the occupants who were surveyed by our questionnaire are mature and could think wisely when answer our question. Their answer would be more realistic and the data could be used for our analysis.

# 6.1.2 Gender of Residents

Gander	Development						
	MK MK Flora Kiaramas						
	Kiara Designer Suite	Banyan	Meridin	Murni	Ayuria		
Male	19	16	10	15	13		
Female	31 34 40		40	35	37		

Table No.	6.1.2
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Figure No. 6.1.2 (a)



Figure No. 6.1.2 (b)

For the case studies, most of the residents who joined in the survey are female, which is 71%. It could be believed that most of the female residents could observe and notice the defects of the units in detail. Therefore most of the male owners would let their wife or daughter to do the survey.

No. of	Development							
People		MK MK		Flora	Kiaramas			
	Kiara Designer Suite	Banyan	Meridin	Murni	Ayuria			
1	3	5	5	9	5			
2 to 3	11	18	21	15	25			
4 to 5	15	23	17	20	15			
>5	21	4	7	6	5			

## 6.1.3 No. of People Live in the House

Table No. 6.1.3



Figure 6.1.3 (a)



Figure No. 6.1.3 (b)

From the tabulated data could understand that most the units would stay about 2 to 3 and 4 to 5 persons, which is about 36% for each range of number of occupants in the house.

## **6.2 Section C: Questions**

#### 6.2.1. Criteria that the purchaser considered most before purchase/rent a house.

There were many criteria of the house which were needed to be considered by a property buyer when they are considering of buying a house. The different purchaser would pay more attention to different criteria which they felt more important.

We could not doubt that the price of the property is the most and the 1<sup>st</sup> criteria which the potential buyers need to be considered. Therefore this item had been excluded. There were four (4) main criteria had been selected for the residents of the case studies, they are:

- A. Well floor layout,
- B. Choice of materials
- C. Workmanship
- D. Quality assurance assessed

The residents based on their opinion and experience, place the ranking to the four selected criteria as follow:

- 1. The First Priority;
- 2. Low Priority;
- 3. Lower Priority; and
- 4. Lowest Priority.

		[1]	[2]	[3]	[4]
		First	Low	Lower	Lowest
		Priority	Priority	Priority	Priority
K. Designer Suite	Well floor layout	26	8	11	5
	Choice of materials	10	14	12	14
	Workmanship	9	24	14	3
	Quality assurance assessed	5	4	13	28
MK Banyan	Well floor layout	16	15	12	7
-	Choice of materials	11	14	13	12
	Workmanship	15	10	12	13
_	Quality assurance assessed	8	11	13	18
MK Meridin	Well floor layout	19	16	8	7
	Choice of materials	14	15	15	6
	Workmanship	14	7	13	16
	Quality assurance assessed	3	12	14	21
Flora Murni	Well floor layout	25	12	9	4
	Choice of materials	13	24	5	8
	Workmanship	8	10	23	9
	Quality assurance assessed	4	4	13	29
TZ: A :		20	11	-	2
Kiaramas Ayuria	well floor layout	30		6	3
	Choice of materials	7	27	9	7
	Workmanship	8	10	28	4
	Quality assurance assessed	5	2	7	36

Table No. 6.2.1:Criteria that the purchaser considered most before purchase/rent a<br/>house.



Figure No. 6.2 (a)





## Figure No. 6.2 (c)



Figure No. 6.2 (d)



Figure No. 6.2 (e)



Figure No. 6.2 (f)

From the individual charts of every case study, it can be known that the residents in different case study have different criteria which were considered by them, from first priority to lowest priority.

Based on the majority basis, most of the residents of case studies had chosen "Well Floor Layout" as the first priority criteria. According to the residents, if the floor layout is well design and fully utilize the area of the unit, the buyers may no need to spend much money to carry out the renovation works, and even not carry out at all. Besides that, the floor layout of a unit will affect daily activities of the occupants.

"Choice of Materials" is the low priority criterion, which were selected by the majority of the residents. In their view, good quality material would ensure to produce the good quality product. They believed that a good quality product would minimize the possibility of occurrence of building defects on the property. The life span of the materials may also durable for longer period. Indirectly they would also save the cost for doing the repair to the building defects or carrying out the replacement works to the building elements.

The lower priority criterion had been chosen by the most of the residents of all case studies is "Workmanship". Some of the residents mentioned that the poor workmanship would not guarantee the product quality; even the best quality of materials to be used. Workmanship is also one of the criteria when buying a house.

However, it is a subjective item if compare to the two (2) criteria which were mentioned above. This is because the workmanship can only be seen when the building or the house had been constructed completely. So when buying a house, the purchasers can only refers to the previous projects which were built by the developer or the contractor. Most of the time is also gain the opinion from their friends or the buyers from the previous projects.

For all case studies, most of the residents respond that the "Quality Assurance assessed" is lowest priority to be considered for buying a property. In their opinion, they believed that the developer or the contractor will carry out the inspection to the unit before handover to the purchasers. Therefore, the developer or the contractor would ensure that the property in the condition and fulfill the requirement to handover to the purchasers.

There were some comments claimed that they would not know the "marks" to be given to the property they are going to purchase. They could only refer to the previous projects and the opinion from the previous purchasers. Therefore, it does not help at the time of purchasing a property.

However, some of the purchasers claimed that the quality assurance assessment would confident the purchaser when buying a house. It would be the addition points to the property which potentially to be bought.

# 6.2.2 Achieve Requirement of the Owners

Developments	Yes	No
Kiara Designer Suite	38	12
MK Banyan	42	8
MK Meridin	40	10
Flora Murni	43	7
Kiaramas Ayuria	38	12

Table No. 6.2.2: Achieve Requirement of the Owners



Figure No. 6.2.2 (a)



Figure No. 6.2.2 (b)

Most of the residents of all case studies agreed that the property which they purchased had met their need and requirement after the property handed over to them (approximately 80%).

Before purchase the property, there were showcases and sample houses for them to visit and foresee the condition of the property which they were going to purchase. Besides that, based on the model of the project, they could roughly imagine the appearance of the building. The marketing personnel from the developer would also show them the layout of the unit and do explanation if necessary. Therefore, in their opinion, there were no much different between the existing condition and the expectation to the property.

For those who mentioned that the purchased property did not suit their need and requirement (approximately 20%), most of them complaint about the materials had been used by the developer.

Some of them mentioned that the materials which were used for finishing their existing unit are not the same as shown at the showcase or sample houses. They felt that the lower quality of the materials had been installed and used in their property, such as the floor tiles been used and the sanitary appliances.

Besides that, they also claimed that at the time of handing over, there were defects on the building elements in their unit which may be caused by the poor workmanship of the workers.

Developments	Yes	No
Kiara Designer		
Suite	33 (66%)	17 (34%)
MK Banyan	39 (78%)	11 (22%)
MK Meridin	34 (68%)	16 (32%)
Flora Murni	39 (78%)	11 (22%)
Kiaramas Ayuria	42 (84%)	8 (16%)

6.2.3 Satisfaction of current unit situation after few months staying in the house





Figure No. 6.2.3 (a)



Figure No. 6.2.3 (b)

From the chart of all case studies, we could see that most of the residents of the case studies are satisfy with the condition after few months staying in the property (approximately 75%). However, there were also minor portion of the residents not satisfy with the existing condition (approximately 25%).

When look into the details of every case study, Kiara Designer Suites (KDS) has more resident felt unsatisfied to the existing condition of the property after few months staying at the units, which is 17 persons (approximately 34%).

As understand from the residents of KDS that after moved into the house, they only discovered that the air conditioning fan coil has water leaking. It is because, when they moved in, the air-conditioning fan coil would be used frequently. Therefore at the time of handing over joint inspection, the purchasers did not notice the air conditioning problem due to the limited time to test and inspect all building elements of the unit.

According to the technician of KSD, the water leaking from the air conditioning fan coil is likely due to the condensation water outlet pipes were installed too linear from the fan coil unit to the water outlet pipe. The condensation water outlet pipes should be installed with fall to avoid water flow backward and leak out from the fan coil. After the rectification work, most of the air conditioning water leakage had stopped. In the other hand, most of the residents from Kiaramas Ayuria (KA) satisfied with the condition of the property after few months staying at the house, which are about 42 persons (approximately 84%).

The residents from KA claimed that during the time of the joint handing over inspection, the personnel from the developer and contractor were presented. The representatives of the developer had recorded down the comments from the purchasers and rectify the defects during the reasonable interim time.

Even the defects had been found after the handing over inspection, the developer were also deployed the works to rectify the new defects during the Defect Liability Period (DLP). Therefore the units were still in good condition after few months occupied.

#### **6.2.4** The defect(s) in the unit during the handover the vacant possession period.

During the handover inspection, normally the purchaser who bought the unit would inspect their property with the attendance of the contractor or the developer's representative.

The purchaser can only carry out an overview visual inspection which can only spot or notice the buildings defects with naked eyes.

To understand what the major defects which were always complaint by the purchaser during the handover inspection, there were nine (9) major common defects had been selected for the residents' reference. They are:

- 1. Water seepage
- 2. Uneven wall surface
- 3. Chipped tiles
- 4. Misalignment of door/ window
- 5. Uneven ceiling
- 6. Rusty of ironmongery
- 7. Defective of sanitary fitting
- 8. M&E problem
- 9. Defective of timber flooring

	Kiara				
	Designer	MK	MK	Flora	Kiaramas
Defects	Suites	Banyan	Meridin	Murni	Ayuria
Water seepage	3	2	4	3	23
Uneven wall surface	10	12	15	6	17
Chipped tiles	5	7	22	8	20
Misalignment of door/window	2	4	2	4	3
Uneven ceiling	17	10	16	15	15
Rusty of ironmongery	22	3	27	20	21
Defective of sanitary fitting	6	15	13	10	25
M&E problem	4	2	3	2	4
Defective of timber flooring	15	6	10	16	6

Table No. 6.2.4 (a): The defect(s) in the unit during the handover the vacant possession period.



Figure No. 6.2.4 (a)



Figure No. 6.2.4 (b)



Figure No. 6.2.4 (c)



Figure No. 6.2.4 (d)



Figure No. 6.2.4 (e)



Figure No. 6.2.4 (f)

Based on the data and the bar charts, the top three (3) defects for every case study which

were most of the purchasers' complaint during the handover period were tabulated.

Table 100. 0.2.4 (b). The top three (5) defects in the unit of every ease study du	ing the
handover the vacant possession period.	

No.	Case Study	The Most Complaint of Building Defects					
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>			
1.	Kiara Designer Suites	Rusty of	Uneven Ceiling	Chipped tiles			
		ironmongery					
2.	Mont'Kiara Banyan	Defective of	Uneven wall	Uneven ceiling			
		sanitary fitting	surface				
3.	Mont'Kiara Meridin	Rusty of	Chipped tiles	Uneven ceiling			
		ironmongery					
4.	Flora Murni	Rusty of	Chipped tiles	Uneven ceiling			
		ironmongery					
5.	Kiaramas Ayuria	Defective of	Water seepage	Rusty of			
		sanitary fitting		ironmongery			

Based on the data collected from the case studies, we could summarize the top five (5) building defects which were always facing by the purchaser during the handover of vacant possession period as follow:

# I. Rusty of Ironmongery

Most of the purchasers claimed that there were rusty of ironmongery for the doors, windows, cabinets' handles and some of the accessories items in the unit, at the time of their handover inspection. The defect is likely due to poor workmanship of storage management to the materials and also poor protection work had been done to the ironmongery which was installed on the building elements before the handover period.

Therefore, some of the contractor choose to install the ironmongery at the final stage of the construction period to avoid the ironmongery exposed to the weather and deteriorate before the handover period.

Besides of improve the workmanship of storage and protection works, the representative of the developer who were interviewed, claimed that they were recommended to use stainless steel ironmongery product for the project in future to avoid the rusty ironmongery defects. However, this may affect the price of the property which price will be raised to higher level.

#### II. Uneven Ceiling

There were also complaints that the ceiling soffit/surface evenness of the unit. The purchaser claimed that the first when they open the door of the unit at the time of handover inspection, they would view on the ceiling, wall and floor of the unit. Therefore, if there is unevenness on the ceiling soffit/surface, especially concrete ceiling, with the reflection of the sunlight, the defects would be very obvious to be seen.

The purchaser very concern on the ceiling unevenness is because when the installation of lights or lamps on the ceiling, the reflection of the light on the

ceiling with uneven soffit/surface, the ceiling would become "wavy" and it would be an esthetic issue.

According to the professions who we interviewed, they claimed that the evenness of ceiling soffit/surface is affected by the workmanship of the workers who carry out the plastering and skimming works to the ceiling. However, the purchaser could not expect that the ceiling would be smoothed with no single waviness. Therefore, they need the Building Quality Assessment guidelines as their references to ensure that the product quality is up to the standard.

#### III. Defective of Sanitary Fitting

Nowadays most of the developer would provide the standard sanitary fitting and appliances to the housing project. As we understand from the residents, there were many defects could be happened on the sanitary fitting and appliances.

It could be chipped, scratches and broken on the appliance, improper sealant works at the joint of the fitting and caused water leakage, stain marks left on the appliance during the construction period, cistern not functioning, and even missing items.

We are of the view that there were likely due to poor workmanship to the installation of the sanitary fitting, storage management and lack of protection to the appliance or fitting after installation on site.

The developer or contractor would also install all the sanitary items which easily to remove or uninstall, at the final stage of the construction period. We understand from the profession that some of the developer would handover the sanitary fitting such as water tap, soap holders and so on, to the purchaser at the time of handover inspection to prevent the items missing before the handover session.

#### IV. Uneven wall surface

Wall could be considered that is the main building elements of a property. Same as the unevenness of the soffit of ceiling, the residents also concern on the evenness of the wall.

As per professions view, they claimed that the evenness of wall is affected by the workmanship of the workers who carry out the plastering works to the wall. Therefore, wall plastering need to be carried out by a skill works who expertise of doing the plastering works to the wall.

#### V. Chipped tiles

As mentioned earlier, the purchasers would very concern about the main building elements to the property, which is ceiling, wall and floor. Nowadays, most of the floor and wall finishes would be laid by ceramic tiles, homogenous tiles and even stone materials such as marble or granite. Chipped floor or wall tiles may be caused by the poor workmanship of handling the materials during the delivery, storage and installation works. Besides that, we believe that lack of protection to the laid tiles on the construction site would also cause the defective tiles.

## **6.2.5** Defect(s) on the building elements after handed over unit.

Due to the limited time for the handover inspection, the purchasers can only roughly overview the condition of purchased property. Therefore, the purchasers can only notice some "obvious" and "can be seen" defects at the time of handover inspection.

Some of the "latent" defects may occur after the handover session or when the residents stay at the property. After the key handed over to the owner by the developer, the owner could spend more time to the unit and more defects may be noticed.

There were twelve (12) common building elements were selected for the residents to identify most of the defects would be found on which building elements. They are:

1.	Painting	7. Floor Finishing
2.	Piping	8. Ceiling Finishing
3.	Wall Plastering	9. Built in Cabinet
4.	Door	10.M&E Fitting
5.	Window	11. Sanitary Fitting
6.	Wiring	12. Ironmongery

Defects	Kiara	MK	MK	Flora	Kiaramas
	Designer	Banyan	Meridin	Murni	Ayuria
	Suites				
Painting	19	10	7	14	7
Piping	19	13	9	16	5
Wall Plastering	19	6	18	12	6
Door	9	3	6	6	12
Window	3	5	6	4	2
Wiring	2	0	7	1	9
Floor Finishing	5	2	30	3	11
Ceiling Finishing	3	6	7	4	8
Built in Cabinet	7	4	10	5	7
M&E Fitting	30	3	9	8	6
Sanitary Fitting	11	18	8	14	20
Ironmongery	20	6	21	12	9

Table No. 6.2.5: Defect(s) on the building elements after handed over unit.



Figure No. 6.2.5 (a)



Figure No. 6.2.5 (b)



Figure No. 6.2.5 (c)



Figure No. 6.2.5 (d)



Figure No. 6.2.5 (e)



Figure No. 6.2.5 (f)

Based on the data collected from the case studies, we could summarize the top five (5) building elements which were always facing defect problems by the purchaser after the handover of vacant possession inspection as follow:

### I. Sanitary Fitting

As we understand from the residents, most of the "surface" defects had been detected and pointed out to the person-in charge for the rectification work. The defects on the sanitary fitting could only be discovered after they used for a period. There were water leakages and appliance not functioning.

We are of the view that the defects are likely due to poor workmanship of installation works. The fitting were not installed properly and the joint of the fitting were not sealed properly. For the mechanism problem, it would be the manufacturing issue. The owner would felt that the quality of the sanitary fittings which provided by the developer is low.

From the developer and contractor view, they commented that some of the faulty of sanitary fitting is caused by the owner himself/herself. The owner did not follow the instruction from user manual and they do not know the way of handling the new types or new style equipment.

#### II. Ironmongery

Normally the defective ironmongery which was noticed by the owner during handover inspection would be replaced or made good by the contractor or developer.

However, when the owners occupy would notice more ironmongery defects of the unit, especially for the ironmongery which were exposed to the weather may speed up the deterioration progress.

Besides that, the owner may use stronger detergent to clean the ironmongery and cause the corrosion on the surface of the ironmongery. Therefore, without the surface protection, the ironmongery may be deteriorated.

### III. Piping

As we understand from the residents, most of the defect on the piping is clogged water outlet pipes and water leakages at the joint of the pipes. The owners can only discover the defects when do the washing and cleaning work in the property.

The defect is likely due to poor workmanship of the workers during the construction period. Therefore, the site supervisors have to inspect and test all the piping works during the construction period to ensure all the piping is functioning well.

### IV. Wall Plastering

From the survey we understand that most of the owner facing the plaster/crazing cracks problem on the wall plastering of their units.

The hairline plaster cracks could be attributed to plaster shrinkage as a result of the continuous wetting and dry circle of the plaster works. Plaster like all forms of cementitious materials absorbs moisture from the ambient, particularly during rainfall or form water streaming down the face of the wall. The trapped moisture would eventually dry out on its own.

This continuous wetting and drying cycle would eventually cause shrinkage to occur within the plaster works, resulting in hairline plaster cracks as observed on the wall. Therefore, we are of the opinion that this is a fair, wear and tear issue.

### V. M&E Fitting

There were incidents of air-conditioning split unit water leaking, malfunction of water heater and other similar defects on the M&E fitting which were facing by the owner after they took over the property from the developer. All these M&E defects could be discovered when the equipment been used frequently after the occupants move in the property. The defects may likely due to the poor workmanship of installation or mechanism issue.

## 6.2.6 Building defects affected residents' daily life routine

The following data will be used to understand the whether the building defects affected residents' daily life routine.

Tuble 110. 0.2.0. Duntang delects uncered residents' duny					
Developments	Yes	No			
Kiara Designer Suite	16	34			
MK Banyan	12	38			
MK Meridin	18	32			
Flora Murni	32	18			
Kiaramas Ayuria	39	11			

Table No. 6.2.6: Building defects affected residents' daily life routine.



Figure No. 6.2.6 (a)



Figure No. 6.2.6 (b)

Most of the residents of all case studies claimed that the building defects are not affected to their daily life routine (approximately 53%).

This is because the defects which were noticed by them could be considered as minor defects, such as stains on the wall, paint peeling, scratches on the floor or wall tiles, tonality issue and poor workmanship of the sealant works.

For those who mentioned that the building defects are affected to their daily life routine (approximately 47%), especially for the Flora Murni and Kiaramas Ayuria, most of them experience with major defects such as water leaking from the air-conditioning fan coil unit, water leakage from the piping, water heater malfunction, water leakage from the joint of the windows and so on. These building defects would direct impact the residents of the affected unit.

On the other hand, once the residents occupy the unit, it would be inconvenient for the contractor or developer to carry out the rectification works. The occupants may need to do the protection to the surrounding areas, apply off day for allow the contractor access their unit; and even could not use the accessories due to the curing period of the rectified items and so on. All of these indirectly will also affect the daily routine life of the occupants.

# 6.2.7 Defects Remaining and Recurring after rectification

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Table No	677	Detects	remaining	and	recurring	atter	rectification
1 4010 1 10.	0.2.7.	Derecto	remaining	unu	recurring	unu	rectification

Developments	Yes	No
Kiara Designer Suite	3	47
MK Banyan	5	45
MK Meridin	2	48
Flora Murni	3	47
Kiaramas Ayuria	30	20



Figure No. 6.2.7 (a)



Figure No. 6.2.7 (b)

Based on the data that we collected from case studies, there were 83% of the residents claimed that the defects did not remain and recur after the rectification by the contractor. However, there were 17% of the residents reflected that the defects were still remain and recur after the rectification works.

As we understand from the residents and developers, there were some of the defects which had been categorize as "subjective" defect. The subjective defects such as scratches on the WC cover, chipped edges on the wall and different tonality of timber flooring or marble floor tiles, the contractor or developer may not carry out the rectification works to the mentioned defects.

It is because for the defects such as scratches or chipped edges; may be occurred or "created" by the owners themselves after they move into the house. For the tonality issue, natural material would not get the same pattern or grain to all products. Therefore, the contractor or developer would not entertain all these subjective defects and this cause the defects to be considered as remain or recurring defects by the residents.

However, we noticed that for Kiaramas Ayuria, the percentage of remain or recurring of defects (60%) is outstanding more than the non-recurring percentage (40%). As we understand from the residents from Kiaramas Ayuria, the major defect is sanitary fitting issue.

The residents claimed that they believed the developer provided them the low quality products. Even the residents launch the complaint to developer or contractor; they would replace the defective items with the same type of the products. Therefore the short life-span of "non-durable" products would recur the same defects and caused the defects remains up to date.

## 6.2.8 Action of the residents to complaint on the defects.

Developments	Yes	No
Kiara Designer Suite	48	2
MK Banyan	50	0
MK Meridin	50	0
Flora Murni	39	11
Kiaramas Ayuria	50	0

Table No. 6.2.8: Action of the residents to complaint on the defects.



Figure No. 6.2.8 (a)



Figure No. 6.2.8 (b)

Based on the result of the research, it could be understand that most of the owners of the property are willing to launch complaints to the developer or contractor (95%). As we understand from the residents, in the Sale and Purchase agreement has indicated that they could do complain to the building defect in their unit during the Defect Liability Period.

Some of the residents did not submit the complaint of building defects to the developer or contractor (5%) because they felt the defects are minor and not affected their daily routine life. Besides that, they met the difficulty for arranging the contractor to do the rectification work during the weekdays as they need to works and not available to attend the appointment.

In our view, nowadays the property buyers are educated and knowing their right to launch complaint to the relevant departments. For the first time property buyer, they would do the research easily from different source before buying a property. For the experienced property buyer, their expectation would be higher when they are buying the next property. Besides that, due to all the case studies are the high end condominiums, the expectation of the owner would be higher and they would ensure the minimum defects to be found in their unit.

## 6.2.9 Developer or Contractor Respond and Action

In this section, we would understand that whether the Developer or Contractor did carry out the rectification work to the complaints. Besides that, it would be understand that the duration they needed to rectify those defects. We had categorized the period of rectification work into weeks basis as follow.

Developments	Yes	No
Kiara Designer Suite	46	4
MK Banyan	50	0
MK Meridin	50	0
Flora Murni	50	0
Kiaramas Ayuria	50	0

Table No. 6.2.9 (a): Developer or Contractor Respond and Action to the complaint.



Figure No. 6.2.9 (a)(i)



Figure No. 6.2.9 (a)(ii)

From the Pie Chart No. 6.2.9 (a), the tabulation for all case studies, we could obviously understand that almost all of the defects had been addressed by the developer or contractor, which is about 98%. There were only 2% of the complaints has not been addressed by the developer or contractor.

With referring to Bar Chart No. 6.2.9 (a), there is only one (1) case study, Kiara Designer Suites which the developer or contractor did not address some of the defects, which were complaint by the owners.

As we understand from the residents, they claimed that the developer or contractor refused to rectify the defects which had been reported to them since the handover inspection. The defects are stated as follow:

- 1. Different tonality of tonality and grain of timber flooring;
- 2. The timber skirting colour is different from the show case/brochure;

- 3. Low quality materials had been provided;
- 4. Request for replacement of water heater with bigger capacity of water tank;
- 5. Wall unevenness;
- 6. Lippage at the joint between the floor tiles;
- 7. Hollowness on the floor tiles; and
- 8. Defective lockset.

As we understand from the developer or contractor, they claimed that they would only entertain and rectify the defects which were considered "reasonable".

The developer or the contractor claimed that some of the property buyers are very demanding and most of the complaint are not building defects, in fact is their "additional requests" out of the contract.

The listed defects No. (1) to (4) above is all additional requests from the owner of the units. The developer explained that natural materials such as timber and marble would not have the same tonality and grain. They can only do the matching colour or grain to make it consistent. Besides that, request of replace the items which are different from the original specification is also out of their scope.

For the defects listed No. (5) to (8), even though they are building defects, the contractor claimed that they had fulfill the minimum requirement and within the tolerant of the Building Quality Assessment which they are using as their guideline.

It is impossible to plaster a 100% smooth plaster wall or laying floor tiles without any minor lippage. Therefore they really need the Building Quality Assessment as a guideline to provide a limitation to the building quality standard.

The developer or contractor do not doubt that sometime very difficult to identify whether the building defects are caused by the contractor during the construction time or caused by the owners themselves after handover session. Therefore, the handover inspection is a very important session which to allow the developer to record all the building defects before handover the key to the owner, to clear cut their liability for the building defects.

However, to remain the good impression to the property buyer, most of the time the developer or contractor would rectify the minor defects which were complaint by the house owners, even the defects could not be identify who is responsible on its.

Defects	Kiara Designer Suites	MK Banyan	MK Meridin	Flora Murni	Kiaramas Avuria
less than a week	31	31	33	21	36
1 week	10	11	6	22	9
2 week	4	8	9	4	5
3 week	1	0	2	3	0
Others	0	0	0	0	0

Table No. 6.2.9 (b): Duration of Developer or Contractor need to rectify defects.



Figure No. 6.2.9 (b)(i)



Figure No. 6.2.9 (b)(ii)

From the data which were collected from the research, most of the defects were rectified less than one (1) week time, which is about 62%. About 24% of the defects were rectified within one (1) week time, 12% about two (2) weeks time and about 2% only were taken about 3 weeks to be rectified. The defects which were not entertained by the developer or contractor are not considered into this session.

According to the developer or contractor, the duration of defects rectification works are affected by few factors. For the minor defects such as stains on the wall, rusty ironmongery, paint peeling and improper sealant works which can be rectified immediately within few days.

However, sometime some of the materials such as the ironmongery or sanitary fitting out of stock, the defects would need to be pending until the delivery of the new stock to the site.

Some of the defects may need longer period to be rectified, such as unevenness wall or lippage of floor tiles, the workers need to hack out the affected area and reinstate the materials to fulfill the requirements and match existing. Re-plastering and re-lay the tiles may need to take longer time due to the curing period.

They were also facing the problem of making appointment with the owners for the rectification works. Some of the owners may not in during the day time period. The

defects may need to be pended until the owner available for the contractor to access the unit for rectification works.

Based on the result we could know that nowadays the developer or contractor is not only providing the high quality product to their customer, in fact they would also be providing good services to their customer to remain their good impression of their company to the customers.

# 6.2.10. Encountered other defects

Tuble 110: 0.2.10: Elleountered	Tuble 110: 0.2.10: Encountered other derects				
Developments	Yes	No			
Kiara Designer Suite	43	7			
MK Banyan	38	12			
MK Meridin	31	19			
Flora Murni	35	15			
Kiaramas Ayuria	37	13			

 Table No. 6.2.10: Encountered other defects



Figure No. 6.2.10 (a)



Figure No. 6.2.10 (b)

Based on the data from the research, there were 74% of the owners encountered other defects, besides the defects which they had pointed out during the handover inspection. There were only 26% of the owners did not encounter other defects in their unit.

From here it could be understand that building defects would be occurred from time to time on other building elements, even after the rectification works of the defects on certain building elements, which they had been complaint during the handover inspection. Therefore, the complaint from the residents would be "endless" and keep encounter new defects in their unit.

The occurrence of building defects could be caused by some of the factors, such as poor workmanship, incorrect materials to be used, poor protection management, poor storage system for the materials, weather effects, designs issue and user behavior.

This is the reason of the developer providing a Defect Liability Period to maintain the interior of the property in a certain period after handover the key to the owner. It would provide a limitation to the defects rectification works to the Private Enclosed Space (PES).

### 6.2.11. Awareness of Building Quality Assessments

In this section, it could be known that the awareness of the property buyers to the Building Quality Assessments in the property industry in Malaysia. There were three (3) Building Quality Assessments had been selected which were well-known and practicing in Malaysia and also Asian countries. They are:

- 1. Construction Quality Assessment System (CONQUAS) from Singapore;
- Quality Assessment System for Building Construction Work (QLASSIC) from Malaysia; and
- 3. Building Performance Assessment (PASS) from Hong Kong

	Kiara Designer	MK	MK	Flora	Kiaramas
Defects	Suites	Banyan	Meridin	Murni	Ayuria
CONQUAS	50	50	50	50	40
QLASSIC	16	12	14	10	2
PASS	2	2	3	0	0

Table No. 6.2.11: Awareness of Building Quality Assessments



Figure No. 6.2.11(a)



Figure No. 6.2.11(b)

Based on the survey, the most well-known building quality assessment is Construction Quality Assessment System (CONQUAS), from Building and Construction Association (BCA) Singapore, which is about 80%.

As per the comments from the owners of the case studies, most of them had heard about CONQUAS rather than another two (2) Building Quality Assessments. At the time of purchasing the property, the developer would promote that the property would be assessed by the CONQUAS, to ensure that the quality of the buildings up to standard and fulfill the requirement. In their view, CONQUAS is a guarantee to the good quality of the property.

The professionals also claimed that CONQUAS has been practice in the building industry for a long period. The CONQUAS is a voluntary scheme introduced in 1989 to measure the quality level achieved in a completed project. As the national benchmark for building quality in Singapore, the CONQUAS will be revised to promote design and materials which support both high quality and productivity. CONQUAS has a systematically and proper procedure and marking system.

BQA is Quality Assessment System for Building Construction Work (QLASSIC) from Construction Industrial Development Board (CIDB) Malaysia, which was only 18% of the residents come across this building quality assessment.

QLASSIC was developed in November 2006 by CIDB's Technical Committee (TC) that comprises of representatives from Public Works Department (PWD), Jabatan Perumahan Negara (JPN), Real Estate and Housing Developers Association (REHDA), Pertubuhan Akitek Malaysia (PAM), Master Builders Association Malaysia (MBAM), National House Buyers Association (HBA) and other relevant organizations. This standard specifies requirements on quality of workmanship and assessment procedures for building construction work.

Previously in Malaysia there was no Building Quality Assessments could be referred. Therefore, most of the developments were using CONQUAS as their reference, which we believed that it was the only one Building Quality Assessment in Asian at the time.

In the beginning stage when QLASSIC was introduced in Malaysia, most of the developers were still using CONQUAS as their guideline. Up until these few years, QLASSIC had been commonly practicing and assessing in Malaysia, it becomes more developers choose to use QLASSIC instead of CONQUAS, which is mainly used in Singapore.

There were only few of them had ever heard about PASS which was introduced in some of the property relevant internet websites (2%). Therefore, PASS not even has not been generally introduced in our country, but also not so well-known in Hong Kong. Besides that, the assessment may not suitable to our country building condition.

## 6.2. 12. Important of Building Quality Assessments

From here the survey would like to know the opinion from the residents that the important and the need of Building Quality Assessments to a property which they are going to buy.

Developments	Yes	No
Kiara Designer Suite	39	11
MK Banyan	45	5
MK Meridin	50	0
Flora Murni	48	2
Kiaramas Ayuria	45	5

Table No 6.2.12: Important of Building Quality Assessments



Figure No. 6.2.12 (a)



Most of the residents responded that the Building Quality Assessments (BQA) is important to a property, which is about 91% of the residents from the case studies.

Based on the reasons which were given by the residents, they are of the opinion that the BQA is a benchmark to ensure the standard and quality of the potential purchase property. It is because the BQA would have the standard procedure and checklist for the surveyor to inspect the quality of the building, as well as confirm the building is built to fulfill the requirement with according to the specification and regulation.

The BQA results (marks) would affect the value of the building itself. It is because some of the buyers purchase the property for investment purpose. Therefore, the good quality of property could be sold at better price, if compare with those property which did not get assessments from any BQA.

Besides that, most of the property buyers are "layman" who do not know how to inspect the building defects or even identify the quality of works when the developer handing over the property to them. Therefore, they need an expert to ensure the purchased property in good condition and they do not need to worry about aspect which is out of their own expertized.

From the developer view, BQA is also a guideline or reference for them to follow and to ensure that the building quality is up to the standard and achieve the minimum requirements or within the tolerant. It is because they believed that in building construction field, there is nothing can be built up 100% perfectly. Therefore, they need a guideline for building construction rather than blindly fulfill the buyers' expectation of the standard which could not be achieved.

There were also 9% from the residents claimed that the BQA is not important to a property. Some of the residents claimed that as long as the building structures are capable and safely to stay, they have no any special requirement to the quality of the finishes to the units.

Some of the residents also commented that the unit may be renovated once they get the key from the developer. Moreover how good of the building quality on the finishes in the unit, the existing finishes would be removed and replaced with their favorable designs and specification. Therefore they felt that the BQA is not so important to a property.

There were also residents claimed that nowadays most of the developer providing the good customer services to the property buyers. If there are building defects to be complaint by the property owner, the developer would rectify the defects during the Defects Liability Period. Therefore they felt it is doesn't matter if the property without the assessment of BQA at the initial period.