DEPARTMENT OF BUILDING UNIVERSITI TEKNOLOGI MARA (PERAK)

PRACTICAL TRAINING REPORT

DEFECT LIABILITY PERIOD

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DEPARTMENT OF BUILDING

FACULTY OF ARCHITECTURE,

PLANNING AND SURVEYING

UNIVERSITI TEKNOLOGI MARA

(PERAK)

FEBRUARY 2022

It is recommended that the report of this practical training provided

By

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entitled

DEFECT LIABILITY PERIOD

(DLP)

be accepted in partial fulfillment of requirement has for obtaining Diploma inBuilding.

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STUDENT'S DECLARATION

I hereby declare that this report is my own work, except for extract and summaries for which the original references stated herein, prepared during a practical training session that I underwent at IMhome Company for duration of 20 weeks starting from 23 August 2021 and ended on 7 January 2022. It is submitted as one of the prerequisite requirements of BGN310 and accepted as a partial fulfillment of the requirements for obtaining the Diploma in Building.

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At the very beginning, I would like to express my deepest gratitude to almighty Allah for giving me the strength and the composure to complete my practical training and prepare this report within the scheduled time. During the period of my practical training, I have received generous help from many quarters, which I like to put on record here with deep gratitude and great pleasure.

I am grateful to my supervisor, Mohd Faizal, Quantity control Inspector. He allowed me to encroach upon his precious time freely right from the very beginning of this research work until the completion of my practical training. His guidance, encouragement, and suggestions provided me the necessary insight into the research problem and paved the way for the meaningful ending of the work in a short duration. I have no hesitation to say that, without his constant support and valuable advice from time-to-time, I would probably fail to complete the work in an appropriate manner.

I am grateful especially to Dr. Hafizah Binti Mohd Latif sincere co-operation and support for giving me the opportunity and always help and support me for making this report.

ABSTRACT

Defect liability period is the period contractor is liable to make good of the defects but how reasonable is the defects liability period to allow defects (patent and latent) This report the occurrence of defects during and after the defect liability period and the contractual terms of defects Malaysia, Malaysia were chosen as case study areas. Findings from the study revealed that 6months defects liability period practice in Malaysia is reasonable enough to allow defects to manifest within the period. whereas most of the defects manifestation often occur after the 3 months defect liability period which really poses a major threat on employers and amount to economic loss. The study suggests extension of defects liability in Malaysia so as to allow the employer to have value for money invested.

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CHAPTER 1: INTRODUCTION

The Defect Liability Period is defined as the period of time from the date you receive delivery of vacant possession and keys to your property, where the developer is responsible to fix any defects.(What Is Defect Liability Period (DLP) In Malaysia All About? 2021). Numerous studies have analyzed the factors affecting the quality of housing (e.g., Craig, et al. 2010, Chong & Low, 2005, 2006, Johnsson, 2009, Georgiou et al., 1999, Ilozor et al., 2004, Mills et al., 2009, Sommerville & McCosh, 2006). In Spain, research on housing defects has been confined to the studies undertaken by Forcada et al. (2012, 2013a, 2013b, 2014). Within the housing sector, there are two major opportunities for a builder to rectify defective elements: • during construction • prior to the building handover when a range of inspections occur by site management, and relevant warranty and guarantee providers.(Forcada et al. 2016).

In addition, Defect liability period clause is provided in the statutory housing agreements Schedules G, H, 1 and J (the said agreements'). However, this liability is not provided if the housing project is abandoned. Thus, in the event of housing abandonment, the purchasers may not be able to get protection under defect liability period clause. Due to this lacuna, the rights of purchasers may be undermined. This paper aims to highlight this issue - defect liability period in the said agreements, particularly involving abandoned housing projects in Malaysia,(Nua.pdf n.d.) Quality is a fundamental term in the construction industry. The non-achievement of such a crucial aspect of construction can result in the failure of a construction project and in the dissatisfaction of clients and/or building occupants. Furthermore, the non-achievement of quality can result in delays in building projects and the need for rework, which can result in a significant financial loss. Quality focuses on eliminating defects and variations and seeks to avoid waste of time, materials, and financial resources due to rework (Love, Edward & Smith, 2005: 197).(Zunguzane, Smallwood, and Emuze 2012)

Warranty of defect deriving from the idea of balancing the contracted price between buyer & seller – originated in Roman law, adopted by Germany, Switzerland, France, etc., and followed by Japanese civil law was promulgated by the Taiwanese civil law in order to reach reliability and credibility in trading. Through the analysis of relevant theories and regulations about warranty systems, this paper discusses possible disputes that may occur during constructing process when the warranty is applied to it. In particular, it focuses on the contractor's product defect warranty due to the contractor's professional, independent and non-organizational characteristics. In addition to this, the advancement of construction technology has also complicated the legal aspects of human relationships, especially the issue of product defect warranty. Therefore, it is significant and useful to consider and

integrate the contractor's product defect warranty into the constructing process under warranty system.(論營建工程之瑕疵擔保責任---以承攬人之物之瑕疵擔保責任為中心__臺灣博碩士論文知識加值系統 n.d.).

1.1 Objectives: -

1. The parties involved responsibilities in Defect liability period and contractual term.

2. To study the contractual terms of defects liability period and causes of defect occurrence during period time warranty.

3. To determine solutions to the problems.

1.2 Scope of study

In-depth understanding of the construction defect liability policy obtainable in the study area with legal issues.

1.3 Research methods

The methods, procedures, or techniques used to acquire data or proof for evaluation to collect information or produce a greater understanding of a subject is known as research methods.

1. Observation

Due to the exposure to real work, this strategy is used immediately while doing a project site visit. Within a two-month period, observations were taken to study the procedure of defect inspection and the method of defect correction. By observing, the types of defects that occur were easily discerned, as were the methods for correcting the problem. Throughout the observation procedure, photographs and films were made to document the findings. Taking written notes throughout the observation is also necessary to ensure that any significant information is not overlooked.

2.Interview

Interview. The unstructured interviews have been done on site visits. Usually, spontaneous unstructured questions will be pointed to the workers at the construction site, especially during fixing the defect that require high expertise. For example, the way of repair the repair of crack wall. Unstructured interviews also will be conducted with the defect inspector regarding the defect report. By having unstructured interviews, the data will be record by writing short notes into notebook. After that, the question will be prepared before asking directly to the defect inspector and the data will be record by smartphone audio recorder which addresses the occurrence of defects during and after the defects liability period. It also will be conducted at office which will take 30minutes. interview will be done from time to time.

3. Document evaluations

This strategy entails systematic data collection from the organization's existing records, such as construction blueprints, corporate profiles, monthly progress reports, and photographs taken by employees. The majority of the relevant and secret data about the organisation or project can be obtained and used to meet the report's objectives.

CHAPTER 2: COMPANY BACKGROUND

IMHome Property Management Sdn Bhd started in 2016 as a construction and affordable property company in Malaysia. The idea of setting up this company came about because they felt that property and construction prices in Malaysia were quite burdensome at that time. So, they gained awareness to help those who own their own land to build houses at low prices according to the customer's budget. Initially, iMHome Property Management Sdn Bhd offered an affordable home construction package at a price of RM 28 900.00 only. The company provides affordable home construction in the form of packages that customers can choose from themselves. There are 18 types of affordable housing packages offered, 6 of which are 'semiD' house packages and 12 'single storey' house packages. Apart from that, there are also conventional package houses that are offered starting at RM 105.00 up to RM 150.00 per foot. Each price offered uses different building materials and specifications.

The company is located at No P4-1, Level P4, Mutiara Anggerik Service Apartment, Jalan Tukul 015/Q, Section 15, Shah Alam, Selangor. The company also has 13 employees, most of whom are graduates from the Polytechnic in engineering. The staff all have knowledge of construction.

To date, iMHome Property Management Sdn Bhd has successfully built approximately 250 housing units throughout Malaysia excluding Sabah and Sarawak. The company has also helped many customers to own a home according to their own budget. Therefore, iMHome Property Management Sdn Bhd aims to be an affordable construction and property company that can provide affordable property development and construction services to Malaysians.

The founder of IMHome Property Management Sdn Bhd. Dato 'Haji Ahmad Tajuddin bin Haji Idris is the founder who developed iMhome Property Management Sdn Bhd. He hails from Negeri Sembilan and is a graduate of the University of Malaya majoring in Syariah and Usul Fiqh. Apart from developing construction companies, he also has application companies such as The Noor, Haji Furada Consulting Center and ZeptoLab Sdn Bhd

IMHome Property Management Sdn Bhd provides private house construction services on its own land with the slogan Bina Rumah Atas Tanah Sendiri (BRATAS). Every customer who wants to build a house can choose the package that has been prepared. There are 18 home packages offered to customers at affordable prices. Customers can also choose a
'custom made' package according to the budget they want.

MISSION AND VISION OF THE COMPANY

Aspires to provide design and consultancy services for realizing affordable real estate to the community

VISION

Aspire to be a real estate company that they can afford, build and provide affordable property development services to the community.

2.1 Completed Project

Construction of house that complete projects have already done by the check list shown complete as in agreement between the client and employees of the IMHOME company
that depart area of Selangor shown in Table 1

Table 1: Completed project

Project's Name to finish	Contractor's	Price(RM)	Duration	Started	Estimated
Plan with the client and started build house which is Lily (type c) that located at Jalan pedan, Pagoh, Johor	Grade 3	57,900	8 weeks	3/4/21	17/5/21
Work and build a Lily type c house based on package that serve by the Company at Kampung jenderam Hilir, sepang, Selangor	Grade 3	57,900	8 weeks	17/3/21	17/5/21
Build 1 units Medium package house (Orked C) that have been choose by customer at Bagan Datoh, Johor	Grade 3	77,900	12 weeks	12/3/21	19/5/21

2.2 Ongoing Project

Construction of house projects that have already done the agreement between the client
and employees of the IMHOME company that depart area of Selangor shown in Table 2.

Table 2 : Ongoing project

Project's Name	Contractor's	Price(RM)	Duration	Started	Estimated to finish
Plan with the client and start build a new two storey custom house that located at Seri Kembangan, Selangor	Grade 3	355,000	42 weeks	10/9/20	1/10/21
Work and build a package house (Orked C) that have been choose by customer at Sungai Buloh , Selangor	Grade 3	79,680	13 weeks	18 /8/21	8/11/21
Build 3 units small Bungalow house based on package that serve by the Company at Jalan Kebun, Selangor	Grade 3	151,200	12 weeks	16/8/21	15/10/21

2.3 ORGANIZATION CHART IMHOME PROPERTY MANAGEMENT SDN BHD

An organizational chart at below that visually a company's IMhome property by detailing the roles, responsibilities, and relationships between individuals within an entity.

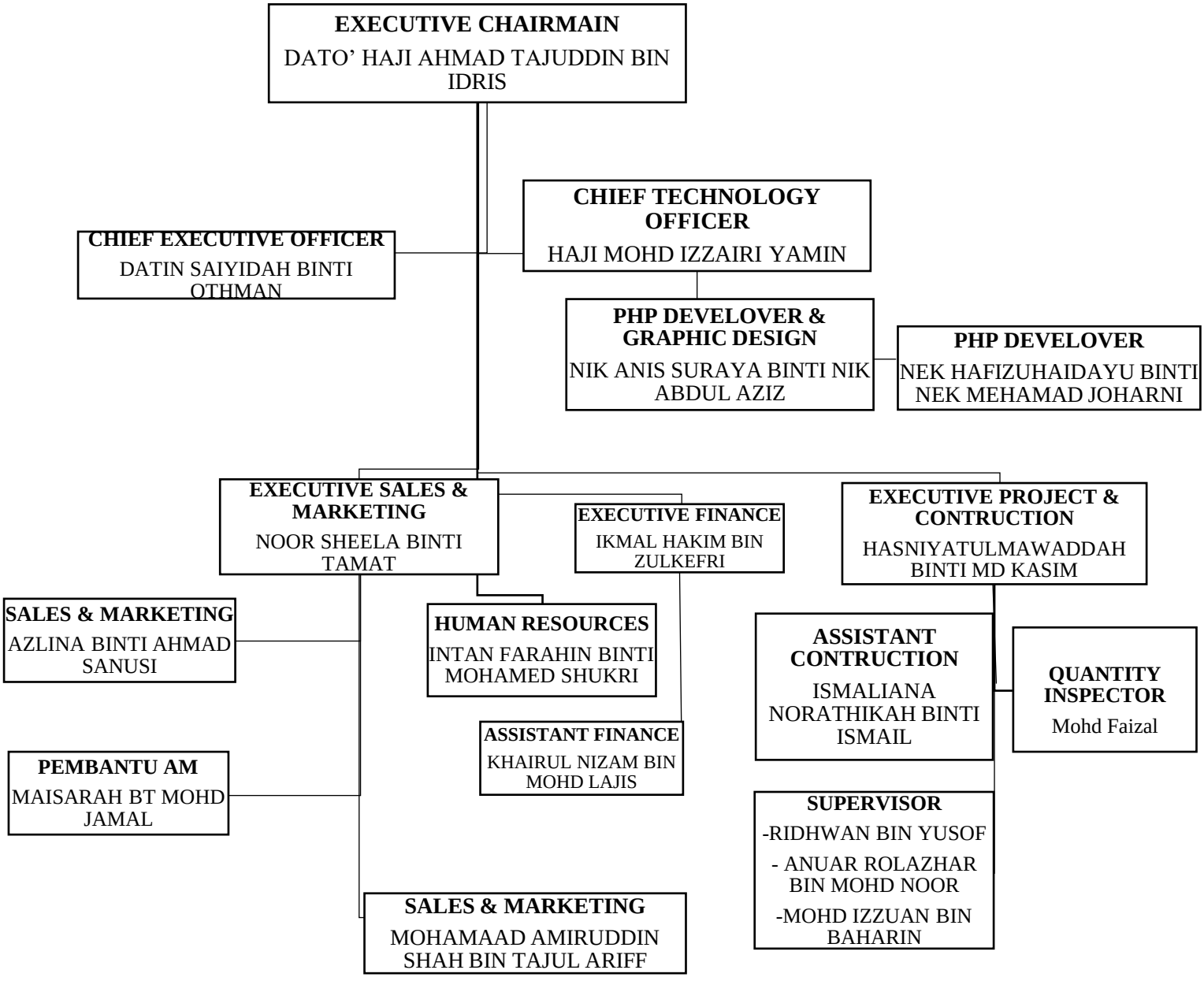

Figure 1 : Organization charts

CHAPTER 3: CASE STUDY

The case study of this report is about the defects of all houses that have been completed from 5 states such as Selangor, Negeri Sembilan, Johor, Pahang and Perak. in this report will focus on selangor and defects that have been resolved in selangor.

Figure 2

BIL	CLIENT	LOCATION	PIC	DATE WORK	NOTES
	SELANGOR				
1	Salleh	Kuala Kubu Baru, Selangor	Zairi	08/04/2021	1) There are some cracks on the limestone ceiling i.e. on the corner section between the wall and the limestone ceiling.
2	En.Fadhil	Olak Lempit	Zairi	7/1/2022	1) Fine cracks in the living room and bedroom
6	Ramlan	Kajang	Zairi	16/12/201	1) Tiles tandas 2 yang tidak selari.
10	Hanafi	Jenderam hilir, Selangor	Zairi	05/09/201	1) All windows cannot be closed properly (rubbing with coping) 2) 2) Cracks in the living room 3) 3) Cracks in rooms 1 and 2
11	Mujab	Tanjung Karang, Selangor	Zairi	11/10/201	1) Leaking pipe in toilet room 1

The houses are located in Kajang, Jenderam Hilir, Olak Lempit, Tanjung Karang and Kuala Kubu Baru. Most of the houses are built in the village area which is surrounded by deep forest from the existing housing. estimated house completion takes 30-60 days to complete according to the house package. Houses built at the cheapest price. This report focuses on the liability period Defects that occur after the keys are handed over to the customer have agreed upon the warranty period depending on the company how long the warranty is broken. building defect work is defined as 'defects in design or defects, construction, or materials in a construction project

3.1 The parties involved and their responsibilities in Defect liability period.

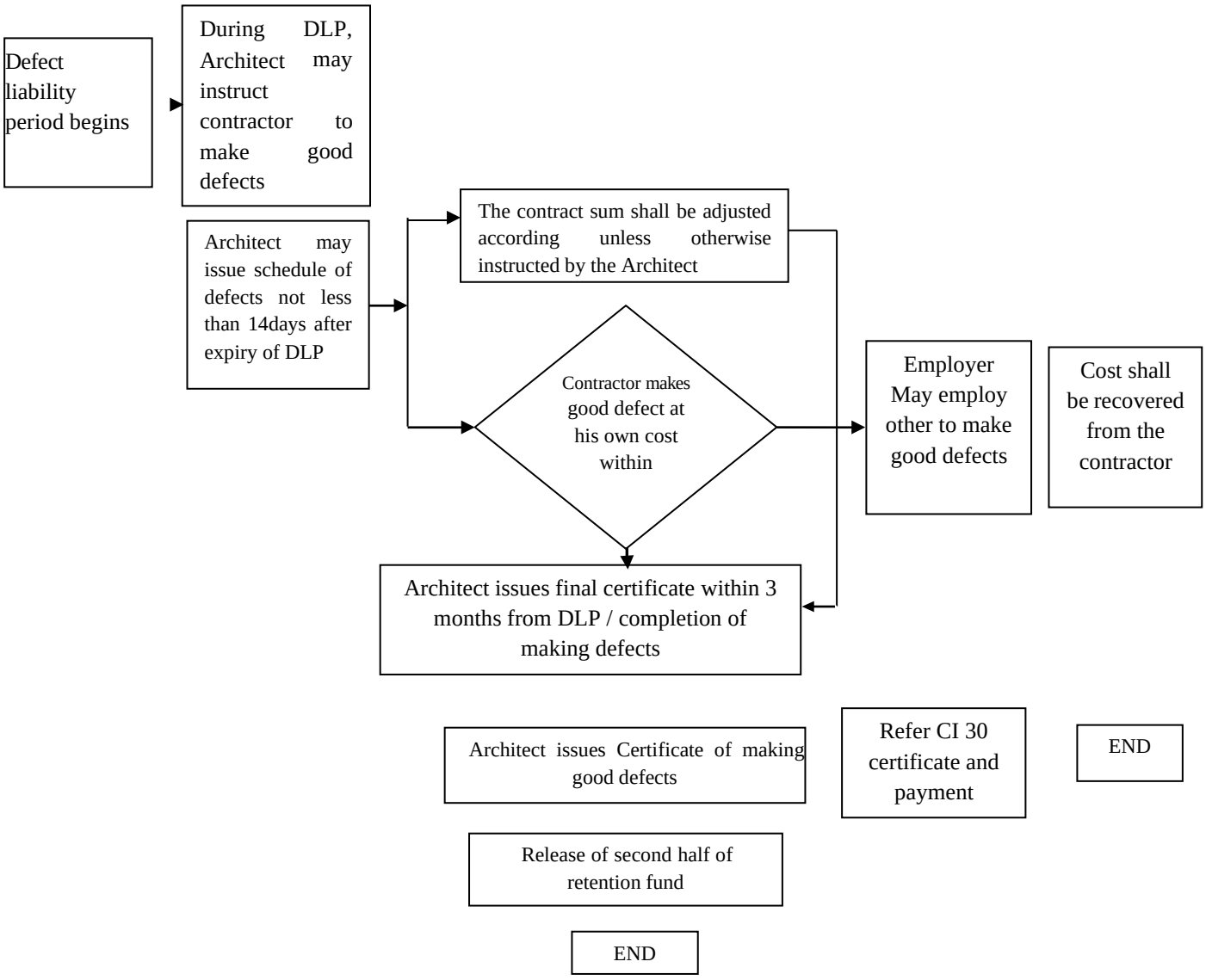

Figure 2:Flowchart

1.Completion Of Work

Certificate of practical completion (CPC) shall be issued by the architect upon completion of the works to certify that the works have been completed in accordance with the contract. This marks the beginning of defect liability period (DLP).

The actual nature of the 'Defects liability period' is a period stated in the construction contract document agreement which during this period, the occurrence of defects is at the contractor's own liability and the contractor shall be called upon to return to site to rectify the defects as necessary. During this period for 3 month, The customer makes a report of any defects to the Sales administrator and SA refers that the report

to the Project Department that takes over the defect is the Defect Inspector who decides whether there is a defect. then they can issue instructions to the contractor to repair the defect in a reasonable time. Defect inspection responsibilities to identify problems and the contractor is responsible for correcting defects. At the end of the defect liability period, defect inspector prepares a defect schedule, list the defects that have not yet been repaired, and agrees with the contractor the date it will be corrected. The contractor must in any case correct it. within a reasonable time.

2.Types of Defects

When the standard, materials as specified in the contract is deficient and quality of workmanship is inadequate, the building works is considered as defective building works. Defects can be viewed and classified into two main categories which are ‘latent defects and patent defects.

2.2.1 Latent defects

These are defects that cannot be easily discovered. Latent defects can be classified as those concealed or hidden defects which would not be discovered by nature of a reasonable inspection. These defects only become obvious upon an instigation of some consequential effects caused by the defects or obvious at some later date.Latent defects are defects which cannot reasonably be discovered during the period of contractual liability for defects at the stage of a building’s practical completion56 . Susan Hodges57 was of the opinion that ‘a latent defects could not be discovered on such an examination as a reasonably careful skilled man would make’. Thus, by definition latent defects cannot be discovered by the exercise of ordinary care or due diligence contrary to patent defects.

i. The manifestation of latent defects becomes apparent only after the owner/developer has sold the completed structure.

ii. When the latent defects become obvious, and the valid limitation period has expired.

2.5.2.2 Patent Defects

Patent defects are the deficiency in a structure that is apparent to reasonable inspectionor the defects which can be noticed upon examination, for example, in differential foundation settlement or roof leak64. Patent defects are obvious to the eyes and the defects are capable of being assessed, inspect and if necessary; rectified. In the case of Victoria University of Manchester V Hugh Wilson & Lewis Wormsley and Pochin Ltd65, patent defects were defined as defects which could be discovered by the exercise of ordinary care66. Therefore, patent defects are defects that can be discovered by means of reasonable examination or testing, inspection and the defects are quite apparent. Robison, the author in 'construction law in Singapore and Malaysia attribute a rather simple d efinition to the term 'patent defects': this being67 'a defects that can be observed by normal testing or examination'. Vincent Powell – smith describes patent. defects as: 'A defects which is discovered by reasonable inspection68'. In engineering contracts context, the term covers all the terms which the engineer's representative or engineer must be expected to discover and notify the contractor so that remedial measures can be carried out. The theory is; patent defects are apparent to see.

3.2 To study the contractual terms of defects liability period and causes of defect occurrence during period time warranty.

3.2.1 Causes of Defective Work

Building defects occur due to various reasons. This because poor workmanship or the building was not constructed in accordance with the design or building being subjected to factors not allowed for in the design or poor design. The constructor is liable to remedy the defects if the defects arisen from workmanship.

Constructed or supplied components that in some respects are not in accordance with the contract can be defined as faulty work. Damaged work can also be defined as some action that has consequences that are not permitted by the contract. Therefore, in a contract the acceptability of performance must be limited to the terms implicit or explicit in the contract. The implied terms require workmanship, negotiable quality, suitability for purpose and workmanship. While the real terms are compliance with the drawings and content of the contract specifications, supervisory satisfaction.

3.2.3 Contractual Provision and Quality

When the standard of construction work falls below the standards required by the contract, the construction work is defined as defective. defines defective work as shrinkage, defects or poor workmanship and other faults caused by materials in accordance with the contract. It was found that the faulty works were due to faulty design, improper materials and poor workmanship.

requires the contractor to comply with specified specifications and materials. The contractor's duty to achieve and obtain absolutely prescribed standards and types. Therefore, the failure of the contractor to perform his responsibilities regularly and diligently will result in breach of contract except for EXECUTIVE &

CONSTRUCTION PROJECTS willing to allow substitution by way of variation instructions

To determine whether a defect was due to material or misuse by occupants, poor construction or design, a large number of building failure analysis defects were conducted. Defective designs are caused by most failures, followed by the execution of faulty work by the builder, failure of materials to meet required performance or failure of building components and failures due to misuse by building occupants.

In construction industry, defects can be divided into three (2) main categories as follows:

a) Quality of workmanship
b) Quality of building materials

Quality of workmanship

The standard of workmanship may be defined expressly in considerable detail by the contract document, in respect of quality of workmanship that is requiring the quality of the workmanship to comply with an appropriate. The workmanship should be of those standards as the standards were described in the contract documents.

The main outcomes of lack of care and interest, lack of skill or lack knowledge on the important of special care in the execution of some important scope of works are

a) employer could reasonably except of an ordinary skilled, workmanship has to be of ‘workmanlike’ standard and experienced contractor of the type the employer has elected to employ and having refer to any relevant claims made by the

contractor as to his level of competence. There is no provision for implication of further provision as to the standard required to be achieved where a contractor has compiled exactly with a detail express specification.

b) Express term as prescribed in the contract. They are usually contained in the form of the code of practice, specification, contract drawings, e.t.c and established by relevant express clauses. It is important that the standard of workmanship for each construction works components in a building project should be expressly provided in the building contract to prevent uncertainties in the scope of the contractor's obligations83.

i. state that the workmanship for the work shall be of the standard as specified in the contract document or as instructed by the supervisor.

ii. stated that the workmanship shall be of required standards and kinds stated in the specification and in accordance with the standard of workmanship n the industry.

Quality of Building Materials.

Conforming to the express description of it in the contract documents as a general rule, the contractor's obligations will not extent beyond supply a material of good quality, if the description is certain and precise with the engineer's choice of the material and architect96.

The standard of quality expected of the contractor:

a) By necessary implication established, material supplied must be fit for their purpose and 'merchantable quality.

b) Expressed in the contract documents, these being reconfirmed through adequately drafted conditions of contract, which set out those matters on quality, kind and standard materials.

3.2.3 The defects liability period of the above building projects was classified into four different categories namely:

i) Wall, floor and finished defects
ii) Doors, windows and fitting defects
iii) Sanitary fittings, fixture and toilet cubicle defects
iv) Ceiling and roof defects.

Table 3-5 were the common defects from all defect site was observed during the defect's liability period

Defects	**Period(months)**		
	1	**2**	**3**
Hair – line crack		√	√
Cracks			
Discolour paint.	√		

Table 3Wall, floor, and finished defect

Defects	**Period (months)**		
	1	**2**	**3**
In proper paint on surface of door	√		
Peeling paint			√
Door leaf difficult to open	√		
Door leaf damaged/decayed			√

Table 4 Door, windows, and fitting defects

Table 5 Sanitary fittings, fixture, and Toilet cubicle defects

Defects	**Period (months)**		
	1	**2**	**3**
Hair-line crack	√		
Ceiling stains			√
Ceiling sagging		√	
Roof leakage	√		

3.3 To determine solution to the problem

Problem was submitted to the department project and was handle by defect inspector The defect such like hair line crack and crack wall is the common problem and will explain this solution by the contractor way to fix the defect. In the figure below shows the defect occurrence.

1.Crack wall solution.

Figure 3 : wall crack

-By using the demolition hammer to hack the wall and put something that we call wire mesh inside the wall for helping wall to strengthen the bond on the wall.

Figure 4 : Wall has been hacked by demolition hammer

-After putting the wire mesh inside the wall and re-plasted with cement

-Plastered the wall and flatten neatly

-re -scheme by applying flaxi neatly and paint with undercoat paint.

2. Hair-line crack

Figure 5: hair line crack

This hair line crack mostly happens for the package house to repair this problem is easy because the crack just because the plaster cement cracked not the brick.

Figure 6 : scrap the crack

-scrape and match using scrapers on the crack line

Figure 7: pour silicon

-apply silicone on the cracked part that has been scrapped.

Figure 8: flatten with flaxi

-smear with flaxi and flatten neatly.

Figure 9:apply undercoat paint

-repaint with undercoat paint to look neat all over.

CONCLUSION

This report has succeeded in bringing to the fore the dynamics of defects liability period in building: where and when they occur most, the trend of defects during the defects liability period. From the foregoing discussion and analysis, it became apparent that the defect liability period practice in Malaysia i. Despite the short period of defects liability, other major causes of frequent occurrence of defects range from poor workmanship by contractors, sub-standard building materials, faulty construction methodology, incompetent contractors, non-compliance with standards/specifications by developers/contractors and defective design. The greatest numbers of claims made by employers are related to defects and the employers often pursue legal actions many years after the work was carried out. This will continue and it's often amount to economic loss.

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