UNIVERSITI TEKNOLOGI MARA

DEPARTMENT OF BUILDING

FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING

UNIVERSITI TEKNOLOGI MARA

(PERAK)

SEPTEMBER 2015

It is recommended that the report of this practical training provided

By

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2013434372

entitled

CAUSES OF DEFECT ON WHARF RESIDENCE AND METHODS OF RECTIFICATION

accepted in partial fulfilment of requirement has for obtaining Diploma in Building.

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STUDENT DECLARATION

I hereby declare that this report is my own work, accept for extract and summaries for which the original references stated herein, prepared during a practical training session that I underwent at Prinsiptek (M) Sdn. Bhd. for duration 5 month starting from 25 May 2015 to 9 October 2015. It is submitted as one of the prerequisite requirement of DBN307 and accepted as a partial fulfilment of the requirement for obtaining the Diploma in Building.

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Date : **9 OCTOBER 2015**

ACKNOWLEDGEMENT

Alhamdulillah, all praises to Allah for the strengths and His blessing in completing this thesis. Special appreciation goes to the managing director, Dato' Foo Chu Jong, for his supervision and constant support. His invaluable help of constructive comments and suggestions throughout the experimental and thesis works have contributed to the success of this research. Not forgotten, my appreciation to my project manager, Mr Gabre Lee for his support and knowledge regarding this topic. I also would like to thanks to the site manager, Mr How Keh Toong because he also has provided guidance and shares his experience there to help me achieve he ultimate goal in the training industry. I would like to express my appreciation to my supervisor Puan Zahidah Dzulkifli for her support and help towards my postgraduate affairs. My acknowledgement also goes to all the technicians and office staffs at Prinsiptek (M) Sdn Bhd and client company Symphony Life that has help me in doing my practical report and give their support and share their knowledge with me. Sincere thanks to my lecture supervisor En Muhammad Redza Rosman for his guidance, advice and moral support during doing this report in successfully. Thanks for their concern in ensure to being success at training time. My appreciation also goes out to Dr Hafizah Mohd Latiff who has visiting me during my practical training. Not to forget, great appreciation to the rest Practical Training Coordinator Puan Nor Rizallinda Ishak and Faculty's Coordinator Dr.Mohd Rofdzi Bin Abdullah. Last but not least, my deepest gratitude goes to my beloved parents, and also to my brother for their endless love, prayers and encouragement. To those who indirectly contributed in this report, your kindness means a lot to me.

Thank you very much.

ABSTRACT

Defects can arise because the work was not carried out in a 'good and workmanlike manner' in accordance with good practice or a particular design, or because the wrong materials have been used – matters which would usually be the responsibility of the building contractor and its supply chain. . The objective of this report is to identify and compare the causes of defect on Wharf Residence and method of rectification based on every unit of house in the building. Method of study in this report involve observation and interview. Observation and interview have been done in order to gain information and knowledge. As describe in this report, defect need to be identify to prevent any damage happened to the owner of the unit. The defect also need to be rectified before the contractor handover the unit to the owner, this is because if the owner did the defect by their self, the owner can claim the payment to the contractor. Defect also one of the thing that the contractor can know what is the faulty of the construction.

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CHAPTER 1.0

PREFACE

1.1 Introduction

Defect are aspects of the work that are not in accordance with the contract. Defects may occur because of design deficiencies, material deficiencies, specification problems and also because of workmanship deficiencies.

According to Designing Buildings Wiki (2015), defect can be 'patent' or 'latent'. Patent defects are those which can be discovered by reasonable inspection. Latent defects are those cannot be discovered by reasonable inspection. Latent defects are those which cannot be discovered by reasonable inspection, for example problems with foundations which may not become apparent for several years after completion when settlement causes cracking in the building. When a latent defect becomes apparent, it becomes patent rather than latent.

1.2 Objective

This report is prepared to,

i. To identify the method of rectification for each defect
ii. To differentiate the defect according to the sub-contractor

1.3 Scope of study

This studying will be focus on the causes of defect and method of rectification of the defect at the unit of The Wharf Residence. The defect that had been list were assist by the owner of the unit. Employer for this project was Symphony Life.

1.4 Method of study

There are primary method of study which can be divided into observation and interview.

i. Observation

Observation had been made using eye contact and observes at site situated at Taman Tasik Prima, Puchong. Here it can be observed on how to rectify the defect that occur.

ii. Interview

An interview have been made with the project manager Mr Gabree Lee and also site supervisor Mr How. Mr How has worked for many years and have many experiences and gave information that are needed about this topic. Furthermore, interview with the sub-contractor like Ah Chun for plumber, En Ihsan for mechanical and engineer, Kit Cheong for aluminium, the skilled worker and also the worker was also been carried out.

Secondary study method is by using literature study.

i. Literature study had been used in several ways which are books, internet and documents. Books had a lot of information and borrow from the library to be made as references. This method is more productive to understand detail about the method on how to rectify the defect.

CHAPTER 2.0

COMPANY BACKGROUND

2.1 Introduction of company

Prinsiptek Corporation Berhad (PCB) was incorporated in year 2002 with the founding by its Managing Director, Dato' Foo Chu Jong. PCB was listed on the Second Board of Bursa Malaysia Securities Berhad (Bursa Securities) on 10 December 2003 via the reserve takeover of L&M Corporation (M) Bhd. On 5 July 2005, PCB was transferred to the Main Market of Bursa Securities.

The PCB Group has total of 21 companies, PCB as the holding corporation and 20 subsidiary companies. The PCB Group's principal activities are mainly construction and property development.

The history of PCB Group started from one if it's largest and longest established subsidiaries, Prinsiptek (M) Sdn Bhd (PST). PST was incorporated in 18 October 1990.

PST principally involves in building and construction activities. PST is registered with Pusat Khidmat Kontraktor as a Class "A" contractor and Construction Industry Development Board as a Grade G7 contractor. These registrations allow PST to bid and undertake construction projects of unlimited value. PST is not only playing its role as the Contractor, PST has exceeded beyond the traditional limit and has diversified its business into other related fields as Turnkey Contractor, Property Developer and Trading House for Construction Raw Materials.

As at 31 December 2011, PST has undertaken and completed construction projects valued at approximately RM 1.93 billion, consisting of high-rise hotels, multi-storey car parks and staff quarters for the Genting Berhad Group and also some rehabilitation of the abandoned projects for the Selangor State Government. Besides, PST also managed to rehabilitate the biggest abandoned property development

projects at Serdang Perdana recently which consisted of more than 1600 units of shops, shop apartments, medium cost apartments and low cost apartments.

PCB Group of companies have so far delivered a total of RM 148 million worth of own development property to the buyers in the area of Bangi, Sekinchan and Melaka. The Group is going to launch new development property in Selangor, Kuala Lumpur, Penang and Thailand.

2.2 Company profile

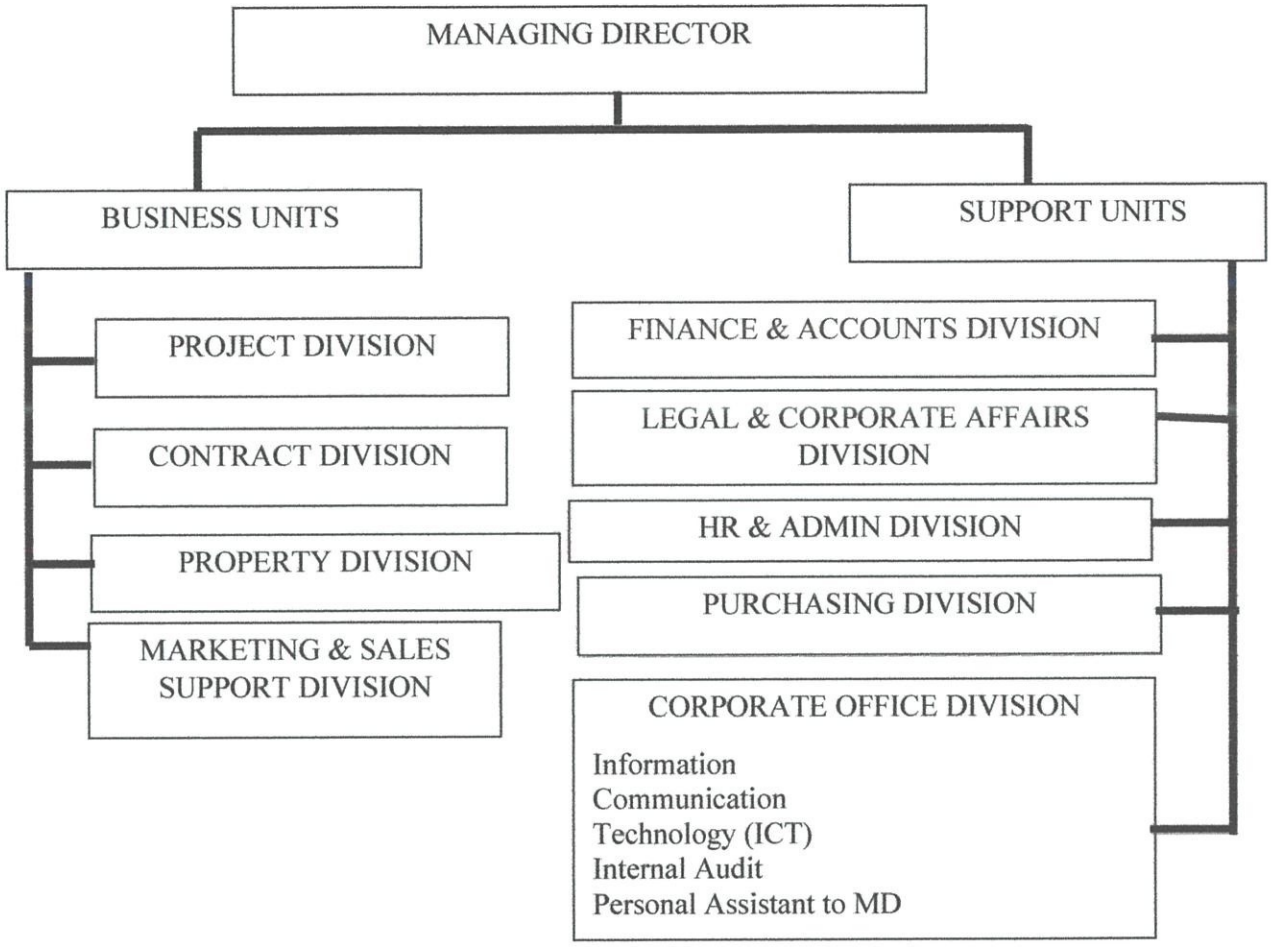
Company	: Prinsiptek Corporation Bhd
Registration No.	: 595000-H
Date of incorporation	: 7th October 2002
Registered and business address	: No 83 & 85, Jalan SS15/4C, 47500, Subang Jaya, Selangor Darul Ehsan.
Share registrar	: Symphony Share Registrars Sdn Bhd Block D13, Pusat Dagangan Dana1, Jalan PJU 1A/46, 47301 Petaling Jaya, Selangor Darul Ehsan.
Telephone No.	:
Fax No.	:
Email address	: prinsiptek@prinsiptek.com
Website	: www.prinsiptek.com
Facebook	: http://www.facebook.com/prinsiptek

Share capital

Authorised capital	: RM 100,000,000.00
Paid-up capital	: RM 64,000,000.00
Principal banker	: Malayan Banking Bhd
	Public Bank Bhd
	Bank Kerjasama Rakyat Malaysia Bhd
Stock exchange listing	: Main market of
	Bursa Malaysia Securities Bhd
	Stock Name: Prinsiptek
	Stock Code: 7145
	Sector: Construction
Auditors	: Morison Anuarul Azizan Chew
	No 18, Jalan 1/64,
	OFF Jalan Kolam Air/ Jalan Ipoh,
	51200 Kuala Lumpur, Malaysia.
Company secretaries	: Ms. Teoh Yee Shien (MIA 9662)
	Ms. Lim Seck Wah (MAICSA 0799845)

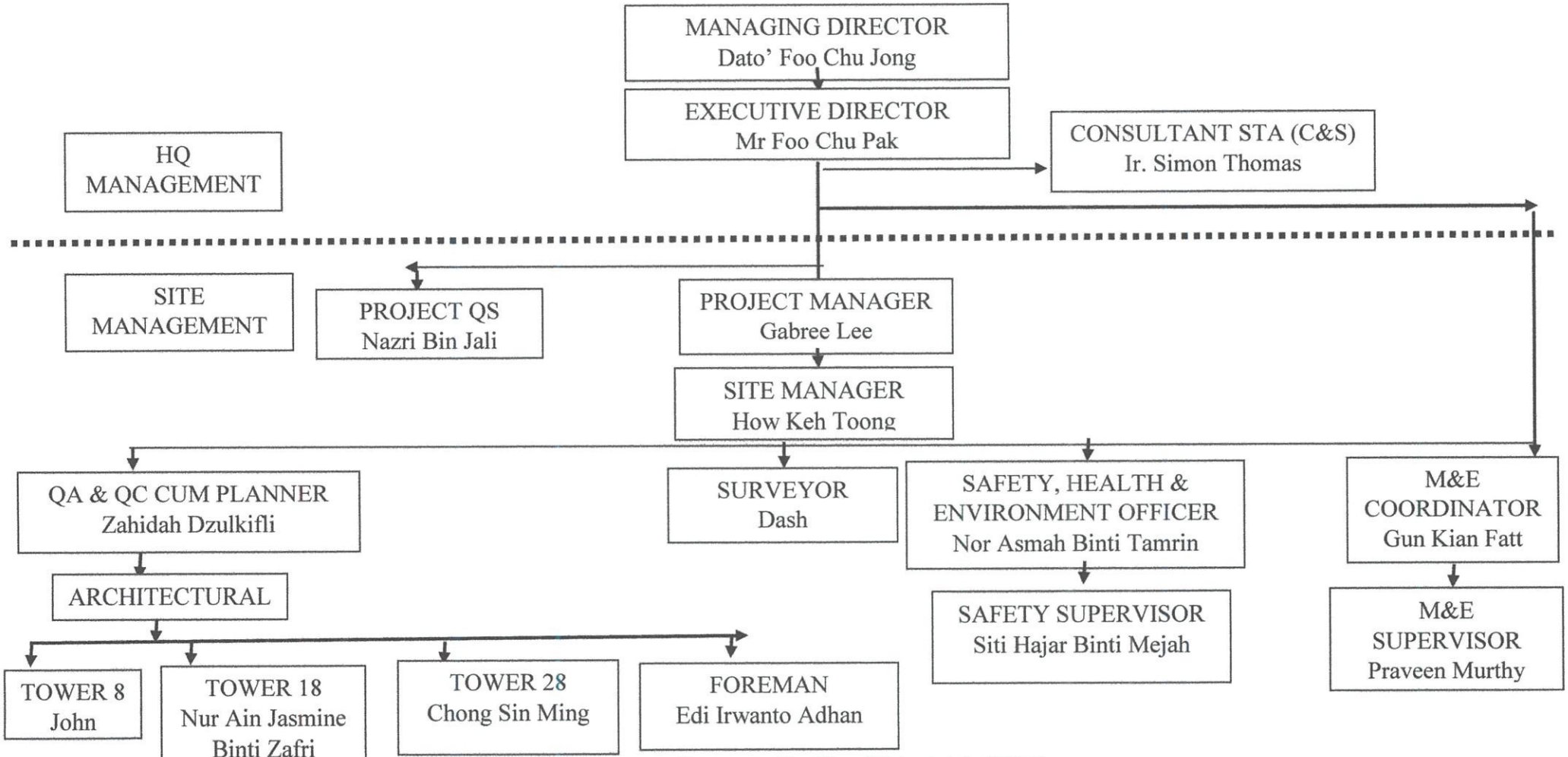
2.3 Organization Chart and Corporate Structure

Diagram 2.1: Organization Chart



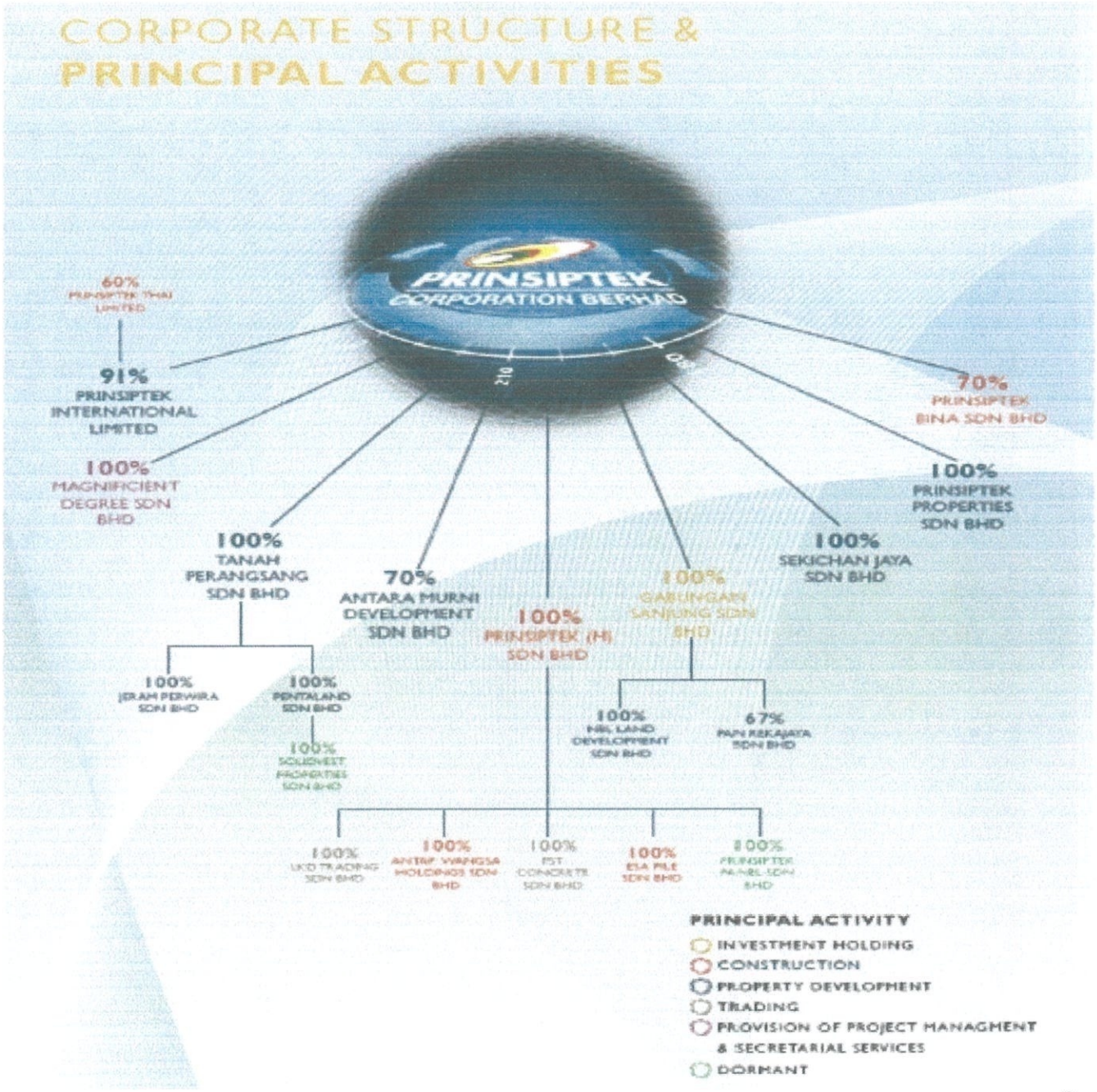
Source: Corporate profile of Prinsiptek (2014)

Diagram 2.2: Puchong Site Organization Chart



Source: Corporate Profile of Prinsiptek (2014)

Appendix A: Corporate Structure & Principal Activities



Source: Corporate profile of Prinsiptek (2014)

2.3.1 Project Background

Prinsiptek (M) Sdn Bhd

No 83 & 85 Jalan SS15/4C, 47500 Subang Jaya, Selangor Darul Ehsan.

Prima Nova Harta Development Sdn Bhd

Cadangan Membina 3 Blok Servis Apartment Berjumlah 1002 Unit Tingkat, 1 Tingkat Kemudahan, 4 Tingkat Letak Kereta dan 1 Tingkat Separa Besmen, Di Atas Sebahagian Lot PT 15140, Taman Tasik Prima, Puchong, Mukim Petaling, Daerah Petaling, Selangor Darul Ehsan.

Table 2.1: General Information for Consultant

Consultant	Company Name & Address	Phone No. & Fax No.	Person in Charge
Employer	PRIMA NOVA HARTA DEVELOPMENT SDN BHD Level 9 Symphony House, Pusat Perdagangan Dana 1, Jalan PJU 1A/46, 47301 Petaling Jaya, Selangor Darul Ehsan.		Mr. Michael Bu Mr. TH Tan Mr. Adrian Pok Mr. Michael Kit
Architects	C'ARCH ARCHITECTURE + DESIGN SDN BHD D5-1-G Block D5, Pusat Perdagangan Dana 1, Jalan PJU 1A/46 PJU 1A, 43701 Petaling Jaya, Selangor Darul Ehsan.		Mr. Wilson Sng Mrs. Citrine Wong Mr. Goh Toh Kiat

Civil & Structural Engineer	SINCLAIR KNIGHT MERZ ENGINEERING SDN BHD Suite E-15-01 Block E, Plaza Mont Kiara, No 2, Jalan Kiara, Mont Kiara, 50480 Kuala Lumpur		Mr. TH Chong Mrs. Ang Ms. SH Chua
M&E Engineer	MEP ENGINEERING SDN BHD 24A Jalan SS26/4, Taman Mayang Jaya, 47301 Petaling Jaya, Selangor Darul Ehsan.		Ir. Teh Cheng Hua Mr. Thin V.T
Quantity Surveyor	BHARUDDIN ALI & LOW SDN BHD 217-219, Jalan Perkasa Satu, Taman Maluri, Cheras 55100 Kuala Lumpur		Mr. Tay Toong Soong Ms. Ann The
ID Architect	BLUE WATER STUDIO SDN BHD B-11, Block B, First Floor, Megan Avenue 1, 189 Jalan Tun Razak, 50400 Kuala Lumpur.		Mr. Patrick Ong

Landscape Architect	PRAXCIS DESIGN SDN BHD 5-11 Bangunan Perdagangan 7, 800 Jalan Sentul, 51000 Kuala Lumpur.		Ms. Yap Nga Tuan
Land Surveyor	JURUKUR BERJASA Blok D-7-5 & D-7-6, Level 9, Menara Uncang Emas (UE3), No. 85, Jalan Loke Yew, 55200 Kuala Lumpur.		Mr. Chow Chee Phing
Main contractor	PRINSIPTEK (M) SD BHD 83 & 85, Jalan SS15/4C, 47500 Subang Jaya Selangor Darul Ehsan.		Mr. Foo Chu Pak Mr. Gabre Lee

Source: Prinsiptek (M) Sdn Bhd Project Quality Plan (2012)

2.4 List of project

2.4.1 Completed Projects

Table 2.2: List of completed projects for low rise building

Construction period	Project Title	Project Owner/ Beneficiaries	Contract Value (RM '000)	Type of construction
01.05.1991 - 30.12.1991	Construction of a bio-filter plant of 15,000 population equivalent (PE) at 50A & 50B Mukim Bentong, Pahang Darul Makmur.	Resorts World Berhad	3,900	Building construction
15.09.1993 - 30.04.1994	Construction of a hotel building and ancillary works at Lot PT 1529K Mukim Batu Buruk, Terengganu.	YTYI Sdn Bhd	11,122	Building construction
01.09.1997 - 30.04.1998	Rehabilitation of an abandoned project of 396 units of 5-storey low cost flats at Seksyen 20F, Shah Alam , Selangor darul Ehsan.	Selangor State Government Body	7,609	Building construction
12.04.1999 - 30.11.2000	Construction of 260 units of double storey link houses on part of Lot PT 27426, Mukim Petaling, Daerah Petaling, Selangor Darul Ehsan.	Taman Enquine (M) Sdn Bhd	24,835	Building Construction

29.09.1999 - 28-11-1999	Earthwork and ancillary works at development of small and medium industry zone (phase 1), Air manis Daerah Sabak Bernam, Selangor Darul Ehsan.	Selangor State Government Body	959	Building Construction
08.10.1999 - 01.08.2001	Construction of 60 units of 6 blocks of three and four storey shop-offices on part of Lot 27428, Mukim Petaling, Daerah Petaling, Selangor Darul Ehsan.	Taman Equine (M) Sdn Bhd	14,401	Building Construction
30.06.2000 - 30.03.2001	Designing and building construction of 21 units terrace factories, 5 units of terrace stalls and 1 unit of 'Pencawang Elektrik' and ancillary works at Zon Industri Kecil Dan Sederhana (Fasa 1), at part of Lot 13574, Mukim Air Manis Daerah Sabak Bernam, Selangor.	Selangor State Government Body	1,863	Design & Building Construction
25.09.2000 - 31.10.2000	Site preparation and reinstatement works to existing ground on Plot J5, Section 13, Shah Alam, Selangor Darul Ehsan.	Tadisma Harta Sdn Bhd	426	Site Clearance & reinstatement

07.03.2001 - 06.11.2001	Designing and building construction of a block of 5-storey low cost flats at Rancangan Perumahan Utara, Bengkel Mara, Dato' Keramat AU1, Mukim Ulu Kelang, Daerah Gombak, Selangor Darul Ehsan.	Selangor State Government Body	1,175	Design & Building Construction
2000 - July 2005	Designing and building construction of 26 units double-storey terrace house and 8 units of double-storey semi-detached houses at Lot No. 584, PN 7306, (PT. 45 – PT. 79) Pekan Sekinchan, Daerah Sabak Bernam, Selangor Darul Ehsan.	Sekinchan Jaya Sdn Bhd	8,500	Turnkey Construction
2001 - Oct 2006	Designing and building construction as well as marketing and sales activities as part of Seksyen 7, Bandaraya Shah Alam, Selangor Darul Ehsan.	Daya Intelek Usahasama Sdn Bhd	67,367	Turnkey Construction
2003 - Aug 2006	Construction of mixed development: 100 units of single storey bungalows; 2 blocks hostels; 8 units of 2-storey shoplots; and public amenities at Bandar Felda	Federal Land Development Authority	36,592	Building Construction

	Jaya Utara at Felda Trolak, Mukim Sungai, Daerah Batang Padang, Perak Darul Ridzuan.			
2006 - May 2007	Design, build, complete, testing and commissioning of a car sales and service centre (3S Centre for Proton Edar) in Kuching.	Proton Edar Sdn. Bhd	5,547	Design & Building Construction
2005 - Aug 2007	Construction of 74 units of double storey terrace houses on Lot PT 1184, H.S (D) 33859, Kawasan Bandar VI, Daerah Melaka Tengah, Melaka.	Sekinchan Jaya Sdn Bhd	13,198	Turnkey Construction
2007 - Jan 2009	The proposed construction, rectification and completion of remaining works for 94 units terraces, landscape works, infrastructure works and associated works on Sub-Precinct 14-10 of Precinct 14, Putrajaya, Wilayah Persekutuan.	Putrajaya Holdings Sdn Bhd	24,784	Building Construction
2003 - Aug 2007	Designing and building construction of link and semi-detached houses as well as marketing and sales activities at part of Seksyen 8, Bandar Baru Bangi	NBL Land Development Sdn Bhd	47,626	Turnkey Construction

Sept 2007 - Mar 2009	Proposed construction 1 unit of 1 storey warehouse, 1 unit of 1 storey shop office, 1 unit of guards house, 1 unit of refused chamber, 1 unit of 'pencawang elektrik'and 1 unit pump house at part of Lot 2251, Seksyen U19, 40160 Shah Alam, Selangor Darul Ehsan.	Prinsip Sinaran Sdn Bhd	6,500	Building Construction
2006 - Aug 2009	Construction and completion of infrastructure works (site preparation, earthwork and drainage) at Mukim Chendering, Kuala Terengganu, Terengganu Darul Iman.	SKC Machinery Sdn Bhd	6,900	Infrastructure Work
2008 - August 2010	Cadangan Membina Dan Menyiapkkan Sebuah Sekolah Kebangsaan taman Bunga Raya Yang Mengandungi 24 Bilik Darjah Dan Kemudahan Berkaitan Di Daerah Hulu Selangor, Selangor darul Ehsan.	Prinsip Sinaran Sdn Bhd	7,918	Building Construction

2001	Designing and building construction of link houses and low medium cost apartments as well as marketing and sales activities at part of Seksyen 8, Bandar Baru Bangi, Selangor Darul Ehsan: RL_2A – Double Storey Link House (40 units); RL_2B – Double Storey Link House (55 units); RL_4A – Double Storey Link House (33 units); RL_2A – Double Storey Link House (29 units); RL_2B – Double Storey Link House (70 units); RL_3B – Double Storey Link House (13 units); RL_2B – Double Storey Link House (24 units); And Medium Low Cost Apartments (437 units).	Jeram Perwira Sdn Bhd	66,919	Turnkey Construction
Mar 2008 - June 2011	100' road and drainage works (Masteron site to highway) Green Crescent Resources Sdn Bhd, Aspek Analisa Sdn Bhd	Unique Budget Sdn Bhd	2,003	Infrastructure works

	and HK Land Sdn Bhd			
Apr 2009- May 2011	Cadangan Membina 5 Unit Kedai Pejabat 5 tingkat di Pekan Sekinchan, Daerah Sabak Bernam, Selangor Darul Ehsan,	Muhibah delima Sdn Bhd	1,689	Building Construction
Mar 2010 - May 2012	Cadangan Membina 27 unit rumah teres 3 tingkat Fasa 3B di Seksyen 7, Shah Alam, Selangor Darul Ehsan.	Era Wangsa (M) Sdn Bhd	17,080	Shear Wall and Half Slab System
Aug 2007 - Aug 2011	Proposed construction of mixed housing development and the associated works in Langkawi, Kedah Darul Aman	Prinsip Sinaran Sdn Bhd	61,057	Building Construction

Source: Corporate profile of Prinsiptek (2014)

Table 2.3: List of completed project for high rise building

Construction Period	Project Title	Project Owner/ Beneficiaries	Contract value (RM '000)	Type of Construction
24.02.1997 - 31.12.2000	Rehabilitation of an abandoned project of 5 blocks of 16-storey medium cost apartments on Lot 4351, Sector M Ampang, Ulu Klang, Selangor Darul Ehsan.	Selangor State Government Body	53,165	Building Construction
07.03.1998 - 05.05.2000	Construction of a 20-storey new office tower with 4-storey basement carpark for Tenaga Nasional Berhad on Build,Operate and Transfer Concept (B.O.T) on 9, Section 10, Jalan Timur, Petaling Jaya, Selangor Darul Ehsan.	Juru Bena Tenaga Sdn Bhd	39,244	Building Construction
01.09.1998 - 30.12.2001	Construction of First World Hotel (Zone 1), a 22-storey hotel complex with 8-storey basement carparks, structural and architectural works at 9574 (50A), 9575(50B) and PT 12522 in Mukim of Bentong.	Resorts World Berhad	71,147	Building Construction
03.09.1999 - 14.08.2000	Rehabilitation of an abandoned project of 4 blocks f 18-storey medium cost apartments with superstructural works and	TTDI Jaya Sdn Bhd	32,083B	Building Construction

	architectural works, including a multi-purpose hall, mini shop lot, prayer room, management office and playground at Lot PT 15216, Seksyen U2, Shah Alam, Selangor Darul Ehsan.			
14.03.2000 - 15.10.2001	Rehabilitation of an abandoned project of 400 units of low medium cost apartments at Seksyen 7, Fasa 3C, Shah alam, Selangor Darul Ehsan.	Selangor State Government Body	12,497	Design & Building Construction
2002 - Nov 2006	Construction of 640 units of army quarters Lot 1049, Seksyen 100, Bandar Kuala Lumpur, Lot PT 1895, Mukim Ampang and a Lot PT 875, Mukim Setapak, Kg Keramat, Kuala Lumpur	Government of Malaysia	152,000	Building Construction
Jun,2008	Construction of 12 blocks of 8 to 18-storey apartments including amenities at $18R_{12}$ and $18R_{13}$, Precint 18, Wilayah Persekutuan Putrajaya.	Putrajaya Holdings Sdn Bhd	218,642	Building Construction
2002 - July 2005	Re-development into 336 units of medium cost apartmnets on part of PT 5131 HSD 79502 Jalan SS3/39, Sungai Way, Mukim Damansara, Daerah Petaling, Selangor Darul Ehsan.	Selangor State Government Body	32,800	Building Construction
2002	Designing and building	Kumpulan A.	29,681	Turnkey

- Dec 2008	construction of 96 units medium-cost apartment on Lot 11051, 33 and 18 units of 21/2 storey terrace houses and 195 units of low cost apartments on Lot 1928, Seri kembangan, Mukim Petaling, Daerah Petaling, Selangor Darul Ehsan	Besik Sdn Bhd		Construction

Source: Corporate profile of Prinsiptek (2014)

2.4.2 Project in progress

Table 2.4: List of project in progress

Year expected to commence	estimated completion	Project title	Project Owner	Contract value	Type of construction
Jan 2012	May 2016	Cadangan membina 3 blok servis apartment berjumlah 1002 unit 29 tingkat, 1 tingkat kemudahan, 4 tingkat tempat letak kereta dan 1 tingkat separa besmen di atas sebahagian Lot Pt 15140, Taman Tasik	Prima Nova Harta Development Sdn Bhd	219,380	Building Construction

		Prima, Puchong, Mukim Petaling, Daerah Petaling, Selangor Darul Ehsan untuk Tetuan Prima Nova Harta Development Sdn Bhd			

Source: Corporate profile of Prinsiptek (2014)

CHAPTER 3

CAUSES OF DEFECT ON WHARF RESIDENCE AND METHODS OF RECTIFICATION

3.1 Introduction

The term defect was defined from Kevin Barret (2008), he mention in his book that Tate v. Latham & Son (1897), as a meaning of a lack or absence of something essential to completeness. Qualitative defects can be categorized in various ways, including work (including design) or materials not of acceptable quality; work (including design) or materials that are in themselves of acceptable quality, but which nonetheless do not conform with the specification or the design brief and lastly work that is incomplete.

Contractor must complete the agreed work using materials and workmanship conforming to the contractual requirements. If they fail to provide anything necessary to bring about completion in accordance with the contractual requirements then the work is describe as defect.

3.2 Project background

Photo 3.1: Entrance of The Wharf Residence Puchong

The Wharf Residence is an integrated residential commercial development located in Puchong. This commercial development is within close vicinity to Lake Vista, Lake Haven, Taman Puchong Utama and Taman Putra Impiana to name a few.

The Wharf comprises of The Wharf Residence, a condominium that consists of a total of 1002 residential units, Bizwalk that comprises 3-storey shop offices and also Wharf Lifestyle Mall which is currently not for sale. The Wharf Residence offers units with built up areas ranging from 818 sf to 1146 sf and each unit comes with 2 bedrooms and 2 bathrooms. Facilities provided are swimming pool, parking bay, store room, playground, 24 hours security and jogging track intact. Being a commercial development itself, many amenities are easily accessible. For examples, clinics like Klinik Kulit Ko are just a short 4 minutes drive away via the Putra Prima Intercharge.

There are also multiple schools located near to the Wharf such as SMK Puchong Utama 1, SK Puchong Utama 1, SK Puchong Utama 2 and SMK Puchong Perdana- all situated within a 15 minutes drive away. It is easily accessible via the Putra Prima Interchange and also major highways like the Damansara-Puchong Highway, ELITE and NKVE.

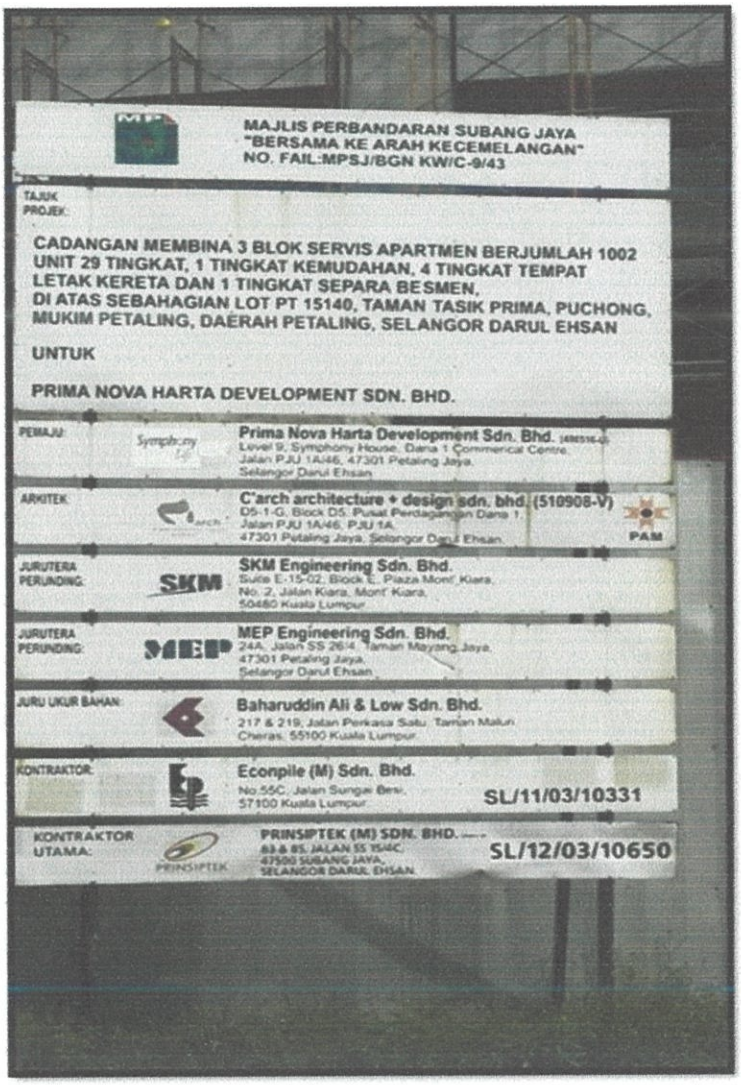


Photo 3.2 : Project signboard

3.3 Scope of work

The scope of work to be performed under this project is stated as to construct 3 block services apartment.

3.4 Defect Liability Period (DLP)

The purpose of defect liability period is to ensure that all the customer complaints are entertained and followed up effectively to the customer satisfaction. The scope of this services procedure shall be applicable to identification and rectification of defects during the DLP as specified in the contract. The definition of Defect Liability Period Services is a provided by Prinsiptek under the requirement of the contract condition to carry out maintenance and repair to the defective works occurred after issuance of Certificate of Practical Completion and this services procedure is under responsibilities of site supervisor and also site manager (Prinsiptek Project Quality Plan,2012)

3.5 Case study

Project title for this building is 'Cadangan Membina 3 Blok Servis Apartment Berjumlah 1002 Unit 29 Tingkat, 1 Tingkat Kemudahan, 4 Tingkat Tempat Letak Kereta Dan 1 Tingkat Separa Besmen, Di Atas Sebahagian Lot PT 15140 , Taman Tasik Prima, Puchong, Mukim Petaling, Daerah Petaling , Selangor Darul Ehsan Untuk Tetuan Prima Nova Harta Development Sdn. Bhd.

A defect may considered based on filing or shortcoming in the function performance, statutory or user requirements of a building, and might manifest itself within of their structure fabric, services or other facilities of the affected building. When an inspection or survey is being undertaken, the set of requirements for the particular building type or use will help to set performance benchmark is not achieved, this is indicates a defect or deficiency, the severity of which is gauged by reference to the benchmark (David Watt, 1999)

This case study are related with the complaint by the owner regarding defect in their unit. The defect also need to be clarify into their part. For example, there is a defect for general worker, but sometimes there are also defect that need to be rectify by the sub-contractor. Sub-contractor also had been divided into several numbers of group. For example, sub-contractor for plumbing work, aluminum work, bond work (M&E), waterproofing and also ceiling work.

Table 3.1: List for sub-contractor that responsible to each defect

No	Majority defect that owner complain	Responsible
1	Painting code for interior and exterior	Main contractor (general worker)
2	Damaged for leaf door or door knob	main contractor (general worker)
3	Leaking for sink at kitchen , basin in the bathroom	Plumber (Kim Chong)
4	Tile crack, chipped and scratch	Tiler (Alpha-Up)
5	Electrical, phone defective and doorbell defective	Wiring (Bond)
6	Window , sliding door defective	Aluminum work (Kit Cheong)

Based on the table above it is clearly stated the defect that commonly had been complaint by the owner. Normally, after the owner submit the defect form, the management office will make a copy as their references and give contractor the other copy with the key of the unit. Then, contractor will check the unit and next, segregate the defect according to the sub-contractor that been responsible to complete the defect.

Table 3.2: Defect list for tiling for Tower 18

NO	DATELINE	UNIT	DEFECT
1	URGENT	06-08	water ponding bath 2
2	3/6/2015	09-10	Water pending bath 2
3	19/6/2015	27-11	Tile uneven

6	8/6/2015	30-06	Hand bidet leaking
7	9/6/2015	11-07	Tap missing
8	9/6/2015	32-3A	Kitchen tap not installed
9	10/6/2015	22-05	Toilet hose bidet not properly fix
10	10/6/2015	13-12	Ceiling watermark bath2
11	10/6/2015	22-08	Ceiling bath2 leaking
12	17/6/2015	20-09	Shower head missing
13	17/6/2015	07-03	Leaking water mark
14	19/6/2015	14-10	Kitchen pipe water leaking
15	19/6/2015	24-08	Ceiling bath 2 leaking
16	20/6/2015	16-07	Yard water leaking
17	20/6/2015	23-02	Outside 2nd bathroom got watermark, please check, suspect leaking
18	21/6/2015	16-12	-yard water leaking -shower head leaking -bath2 tap water leaking
19	21/6/2015	17-02	WC leaking master bath
20	23/6/2015	07-01	Shower tap leaking
21	23/6/2015	07-08	-missing water tap -missing shower head
22	24/6/2015	06-10	-stop cock yard leaking -water pressure at bath slow
23	24/6/2015	12-02	Bath 2 tap broken
24	26/6/2015	13-10	-leaking at wall kitchen
25	26/6/2015	28-08	-yard tap leaking -kitchen sink leaking -shower handle missing
26	27/6/2015	18-07	Yard tap loose
27	28/6/2015	31-07	-shower head leaking bath1 -bath 2 WC leaking -yard leaking from tap

28	28/6/2015	23-01	-basin water leaking -shower head leaking -yard tap leaking
29	28/06/2015	18-3A	Kitchen basin leaking
30	28/6/2015	13-03	Bathroom accessories missing
31	28/6/2015	25-01	-shower head leaking -WC leaking
32	28/6/2015	25-08	-Master bathroom leaking -kitchen leaking
33	28/6/2015	26-05	-pipe yard leaking -shower master bath leaking
34	28/6/2015	09-12	Master bathroom main pipe valve leaking
35	28/6/2015	16-01	Shower head leaking
36	28/6/2015	15-07	Shower head leaking
37	2/7/2015	26-10	-main water valve leaking Kitchen sink leaking
38	2/7/2015	28-05	-water tap basin leaking -kitchen leaking -toilet flush water slow
39	3/7/2015	19-06	-missing water tap -missing valve main
40	3/7/2015	06-11	Loose tap
41	6/7/2015	31-05	Basin leaking
42	7/7/2015	16-10	Pipe yard leaking
43	7/7/2015	22-11	Tap yard leaking
44	7/7/2015	16-11	Yard pipe leaking
45	13/7/2015	30-05	-sink leaking -basin master bath leaking
46	13/7/2015	24-01	Toilet seat do not aligned
47	13/7/2015	10-01	Water leaking bath 2
48	15/7/2015	13-06	Yard tap leaking

49	15/7/2015	14-08	-water leaking master bedroom -yard tap leaking
50	15/7/2015	17-07	-sink leaking -tap yard leaking
51	17/7/2015	29-05	-shower knob leaking -basin leaking
52	17/7/2015	20-01	Yard tap leaking
53	20/7/2015	25-02	Master bath tap no pipe connection
54	20/7/2015	20-02	Hand bidet not fixed properly
55	21/7/2015	25-03	Flexible hose missing
56	23/7/2015	27-07	Toilet bowl loose

Based on the table above, it shows about the defect that occurs in the unit for tile and plumber. The defect had been segregated according to the unit number that had been complaint by the owner of the unit. The dateline that had been stated there is the 28 days from the date that the defect had been complaint by the owner. Normally, the defects need to be done within the 28 days of the dateline.

3.5.1 Method Statement for painting work

Painting work is a standard work instruction for providing painting work on top of architectural works finishes and it shall be used for relevant works in addition to the specification requirement. Majority of owner will complaint about the painting work at their unit. Normally, they did not satisfied about the different tone of colour for wall and also door in their house. So, to rectify that, the general worker will repaint their house followed by their complaint in the defect form.

BUILDING DEPARTMENT

METHOD STATEMENT FORM

PROJECT: **Cadangan Membina 3 Blok Servis Apartment Berjumlah 1002 Unit 29 Tingkat, 1 Tingkat Kemudahan, 4 Tingkat Tempat Letak Kereta Dan 1 Tingkat Separa Besmen, Di Atas Sebahagian Lot PT 15140 , Taman Tasik Prima, Puchong, Mukim Petaling, Daerah Petaling , Selangor Darul Ehsan Untuk Tetuan Prima Nova Harta Development Sdn. Bhd.**

VENUE: **18-15-11** FAILURE DATE: **07/08/2015**

COMPLAINT BY OWNER: **'All paint uneven- please repaint all'**

Table 3.4: Method statement form for painting work

No.	Operation	Method	Sequential operation / diagram	Plant/ manpower	Duration works	Remarks
1	Setting out	The applied location must be clean, free from dirty, loose particle and dust.		1.supervisor 1.general worker	15 minutes	.

2	coat	Start the painting with the first coat. Then let it dry at least for 2 hours and continue with another coat until it reach 3 coat layer of paint.	 Photo 3.3: Painting work	1.Supervisor 1.General worker	2 days	

And addition before the painting work start, supervisor need to make sure that,

i. The applied location shall be clean, free from dirt, loose particle and dust.
ii. Supervisor shall ensure that there have no other rectification work/hacking and other major work inside painting unit.
iii. Supervisor shall ensure the painter is using the correct and latest colour scheme drawing.
iv. Supervisor shall ensure that the fitting at surrounding painting area for example like lockset, hinges, aluminium window, electrical fittings, plumbing fittings, and floor finishes are well protected.
v. Supervisor shall ensure that there have no structural/ finishes crack detected especially at column, RC wall and surrounding pipe sleeve. All cracks shall be treated first before proceed with painting works.(Progress Report no 45 Bolton Site, 2013)

3.5.2 Method Statement for skim coat work.

Skim coat work normally being done after plastering work. When there is defect related to crack at the wall and ceiling, the skim coat work need to be done to cover up the crack and also to rectify the defect. The skim coat work need to be done by skilled worker because if not the surface of the wall or ceiling were not even and when paining were applied above it, the surface will became uneven.

BUILDING DEPARTMENT

METHOD STATEMENT FORM

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VENUE: **18-22-10** FAILURE DATE: **23/6/2015**

COMPLAINT BY OWNER: **'masterbedroom wall crack'**

Table 3.5: Method Statement form for skim coat work

No.	Operation	Method	Sequential operation / diagram	Plant/ manpower	Duration works	Remarks
1	Setting out	- Before the skim works the working area shall be cleared. - The surface to be skim shall be free from dirt, dust and grease.		1.supervisor 1.Skilled worker	10 minutes	

2	Hacks the crack area	-The crack area need to be hack, then be replace with new layer. -Excess concrete lumps and in areas where honey combs has developed especially along uneven joints shall be chisel off and repair by patching up to level the surface.	 Photo 3.4: hacking crack area	1.Supervisor 1.Skilled worker	30 minutes	

3	Covered with skim coat	-The base coat shall be applied to a thickness of 2-3 mm per application to the wall. -It can be done by using spatula to level and smoothen the surface to form a layer of even fine particular size coating. -After that the coated area shall be left to dry until partial setting is achieved prior to application of finishing coat.	 Photo 3.5: Applied skim coat	1.Supervisor 1.Skilled worker	30 minutes	

4	Protection	-Place a net at the crack area to prevent the crack form happened again. - The net that been used must be suitable with the size of crack and the deep of the crack.	 Photo 3.6: place net as protection	1.Supervisor 1.Skilled worker	15 minutes	-The net that been use has their own glue on the back of the net.

5	Finishing coat	-The finishing coat must be applied after the first coat had been dry correctly. The thickness of between 1-2 mm per application.	 Photo 3.7: Applied finishing coat	1.Supervisor 1.Skilled worker	1 hour	

5	Painting	-After the skim coat had been dry, painting the area nicely.	 Photo 3.8: Painting	1.Supervisor 1. General Worker	1 hour	

Safety precaution need to be take while doing skim coat work,

i. Supervisor shall inform to plasterer the location of M&E opening, switches, plumbing and sanitary fitting before starting the work. All opening shall be properly protected with correct protection material. Any fitting shall be wrapper with plastic and sealed with masking tape for avoiding any damages.
ii. Workplace shall be cleaned after skim coating work complete. Any drops shall be removed immediately.
iii. Any debris shall be kept at safe place and should be remove after work complete at designated rubbish dumping area.
iv. Plasterer to provide proper signage to inform the public that there have wet cement wall/ceiling location. (Progress report No.79 Bolton Site, 2014)

3.5.3 Method statement for tiling work

Normally defect that been complaint by owner is crack and hollow and both of these defect causes occur from the tiling sub-contractor Alpha-Up. So, while rectify the defect they need to bear by their company. But, there are also some defect that causes by other sub-contractor such as ceiling, plumber (Kim Chong), aluminum (Kit Cheong). If like that, they need to claim to other company for the charge but they need to show the photo of the defect.

BUILDING DEPARTMENT

METHOD STATEMENT FORM

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VENUE: **18-23-07** FAILURE DATE: **18/8/2015**

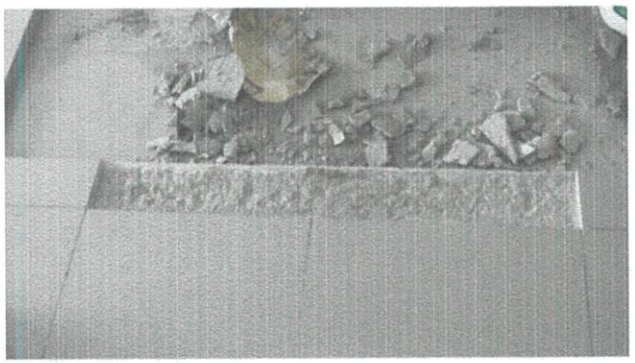
COMPLAINT BY OWNER: **'tiles hollow and crack'**

Table 3.6: Method statement form for tiling work

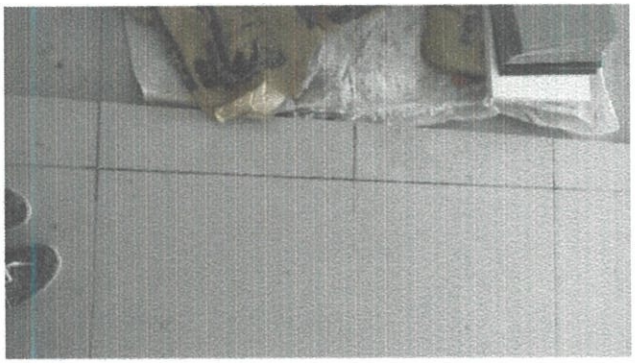
No.	Operation	Method	Sequential operation / diagram	Plant/ manpower	Duration works	Remarks
1	Setting out	-contractor must quainter measure the defects happen and how to solve it. -contractor must detect the causes of the crack, if the		1.supervisor 2.general worker	30 minutes	

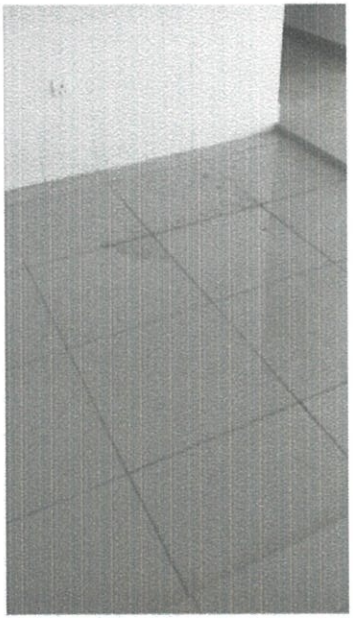
		crack was happened because of the renovation work by the contractor of the owner, the owner need to pay for the cost of the installation of the new tile. -for hollow tile, normally we will use key to check. -mark the tile that need to be change.	 Photo 3.9: Check tiling for hollow and crack			

2	Move the entire crack and hollow	-move all the crack and hollow tiles -the defects must install the new tile	 Photo 3.10: move the entire crack and hollow	1.supervisor 3.skilled workers	1 day	Move the entire crack and hollow tiles

3	Move all the cement render	-move all the cement renders to provide the new installation of tiles. -the cement render need to be clearly done before we install another tile, if the cement render did not being move correctly, it will affect the thickness of the new installation of tile.	 Photo 3.11: move all the cement render	1.supervisor 3.skilled workers	1 day	Move all the cement renders by scratcher

4	Installation of new tiles	-the installation of new tiles need to be done correctly to avoid any other defects	 Photo 3.12:Installation of new tile	1.supervisor 3.skilled workers	1 day	-apply the same pressure to all tiles when want to install it, with that, the same thickness of tiles can be achieve and it can avoid any complaint about uneven of tiles.

5	Grouting	-fill in grouting for all tiling. Make sure the grouting is consistent for all tile.	 Photo 3.13: grouting	1.supervisor 2.general worker	¾ day	

6	Finishing and cleaning work	-ensure no more crack again -ensure there is no more hollow of tile again -clean the working area.	 Photo 3.13: finishing and cleaning work	1.supervisor 2.general worker	½ day	-ensure the finishing not have any defects. if the defects happen move the crack and install the new tiles.

According to Prinsiptek (M) Sdn Bhd Method Statement for Tiling Work (reference: PST/065/MS/TILING/01), the safety precautions that need to be consider are,

i. Only skilled worker is allowed for tiling at height.
ii. Concrete mixer shall be operating with only skilled worker.
iii. Hoisting of cement mortar to high level shall using approved machinery.
iv. Only approved scaffolding can be use plasterer for working at height usage of proper PPE is compulsory during working at site.
v. Workplace shall be cleaned after tiling work complete. Any cement drop shall be removed immediately.
vi. Tile debris shall be kept at safe place and should be remove after tiling work complete at designated rubbish dumping area.

CHAPTER 4.0

CONCLUSION

4.1 Conclusion

The conclusion for this report is about of the causes of defect and method to rectify the defect at The Wharf Residence, Puchong. The main objective of this case study to identify the causes of the defect and also to identify the sub-contractor who need to responsible to each defect can be achieved by preparing this report. It is also clearly show that, by doing this report the knowledge about the actual defect work can be improve by supervise the defect work when the worker rectify the defect. Other than that, these reports show the method statement for painting work, method statement for skim coat work and also method statement for tiling work. These three method statement had their own requirement that need to be fulfill. Through these report also, the knowledge about the main purpose of defect liability period can be increase.

4.2 Recommendation

From this training, I had learn on how to be a site supervisor in managing work and solve problems about the defect that happened at the construction site. It taught me on how to organize the work in the correct order to avoid any others problems. Basically, all that I have learn from this practical training is all about the defect problem because I had been responsible to settle about the defect problem at Tower 18. I also had learn on how to cooperate with the many type of people. For example, main contractor, sub-contractor, client, owner and also general worker.

While doing the practical training, the problem that I been face are firstly, I had to face the bad employee attitudes and some workers who do not respect others. Other than that, while follow the meeting with the client, we can see the situation when the client were not satisfied with the contractor work, they will argue about that and sometimes it will causes argue between the client and the contractor. Other than that, I

also need to face with the attitude of owner that did not agree with our explanation. For some reasons, they only want the defect of their unit done by the time. It is really tricky because there are a number of unit that need to be done within one month, and sometimes if the defect is serious it will drag another time.

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