

Development of Preliminary Framework of Facility Management Strategy for Construction Industry (2021–2025)





Executive Summary

Facility Management (FM) nowadays is operating in an era of change and challenging time of pandemic COVID-19. People would rather understand FM is part of the maintenance works. Moreover, FM encompasses big spectrum of construction value chain right from design onset until demolition. To address these, Construction Research Institute of Malaysia (CREAM) has embarked upon a preliminary study current gap and challenges on FM need for CIDB and pertinent issues for industry FM. The gaps and issues gathered were analysed and came out with the priority setting using matrix comparison. Some literature search, interviews with departmental of CIDB related on FM and industry experts were carried out to explore further. The recommendations were made based on action plan (short, medium, and long term) for CIDB to consider. The proposed ecosystem was then be formulated to address the current programme undertaken by CIDB, proposing new initiatives to be carried out by CIDB as new green field areas in construction industry as highlighted in CIDB Strategic Plan (CSP 2021-2025). A compendium book on FM was also compiled and published based on previous technical reports, proceedings, theses, and articles published by CREAM. This report is suitable for industry players, academia to get some insightful information the journey, initiatives and strategies FM from government and industry perspectives. The findings and recommendations made would be useful for CIDB to chart some strategies and empowerment FM particularly for CIDB and FM industry at large.

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PART 1

INTRODUCTION

1.1 DEFINITION OF FACILITY MANAGEMENT

Facility Management (FM) has been one of the growing industries for over a decade. The management of facility as addressed has become a multi-disciplinary topic. Countries such as Singapore, Hong Kong, and most other countries in Asia follow the same definition adopted by the International Facility Management Association (IFMA). The following are some of the meanings for FM.

Table 1.1: Definition of Facility Management

Definition	Source
FM's role is to coordinate all efforts related to planning, designing and managing buildings and all systems within them including equipment and furniture aimed at enhancing the organization's ability to compete successfully in a rapidly changing the world.	Becker (1990)
FM practice is to coordinate the physical workspace with human capital and the work itself in an organization by integrating the principles of business management, architecture, behavior and engineering science	Cotts (1992)
FM is structuring the building plant and its contents to create the final product. It includes systems and activities that generate profits for the business.	Park (1994)
FM is an integrated approach in the operation, maintenance, improvement and adaptation of buildings and infrastructure in an organization aimed at creating a supportive environment with the core objectives of the organization	Barrett (1995)
FM is the process by which organizations deliver and maintain support services in a quality environment to meet strategic needs.	Alexander (1996)
FM practice is concerned with delivery to enable the work environment and space to function optimally to support business processes and human capital.	Then (1999)
The basic function of FM is resource management at the strategic level and support operations. Generic resource management is cantered on the function of FM as the management of financial	Nutt (2000)

resources, physical resources, human capital, and knowledge information resources.	
FM is seen as an integrated approach in the operation, maintenance, improvement and adaptation of the building and infrastructure of an organization aims to create a supportive environment with a solid basic objective of an organization.	Nordic FM (2003)
FM is a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, process and technology”.	IFMA (2011)
“FM is an integration of processes within an organisation to maintain and develop the agreed services which support and improve the effectiveness of its primary activities”.	(BIFM) (2010)
The FM association has strong relationships with the association's fundamental operations and it is not just routine maintenance of work facility and business properties”.	(Jensen, 2011)

FM is also responsible for reconciling the company's demand and supply elements with time. In other words, FM can incorporate knowledge of both facility and management to work efficiently. Successful FM contributes to places of work that better help productive processes while adding value and reducing costs. The value of the FM in Malaysia is to ensure the sustainability of the sector, develop and maintain social and economic infrastructure through the Strategic Thrust 7 of the Construction Industry Master Plan (CIMP 2006-2015). The management of physical and non-physical facility and unpredictable business needs may be defined by FM. The organization priorities are expected of all professionals practicing management.

Professional practice involves work performed by architects, landscape architects, interior designers, structural engineers, building supervision, assessment, quantity surveys, etc., and the management and functions of the buildings. In addition, FM involves consulting consultants, construction conservation, building repair, construction cleaning, safety, parking, electricity, telephone, fire removal, air conditioning, lifts, landscape and other facility. But the spectrum of FM operations is not yet well established. Due to their own understanding, many dominant FM divisions such as land management, building maintenance and asset management are defining FM. The FM uses different approaches and has distinctive goals in - region. There are broad divergences in views and opinions on the FM conception in different countries.

1.2 ROLES AND FUNCTIONS OF FACILITY MANAGEMENT

In an organisation, management of the facility plays a major role in maintaining a stable and safe work environment for employees. A comfortable work facility helps to maximise and inspire employees' productivity and job satisfaction. On the other hand, bad workplaces will frustrate work, reduce productivity and even cause them too ill. In addition, the office reflects the picture of an organisation visually, and is used by most organisations to attract and retain employees and customers. The IFMA (International Facility Management Association), which involves the cooperation of people, locations, procedures and technologies, is an interdisciplinary discipline. FM can find management solutions by putting itself at the crossroads of these variables. As shown in Figure 1.1 below, the four variables are interdependent and are directly interdependent. The location of FM at the core implies enhanced collaboration, among the main factors for any organisation.

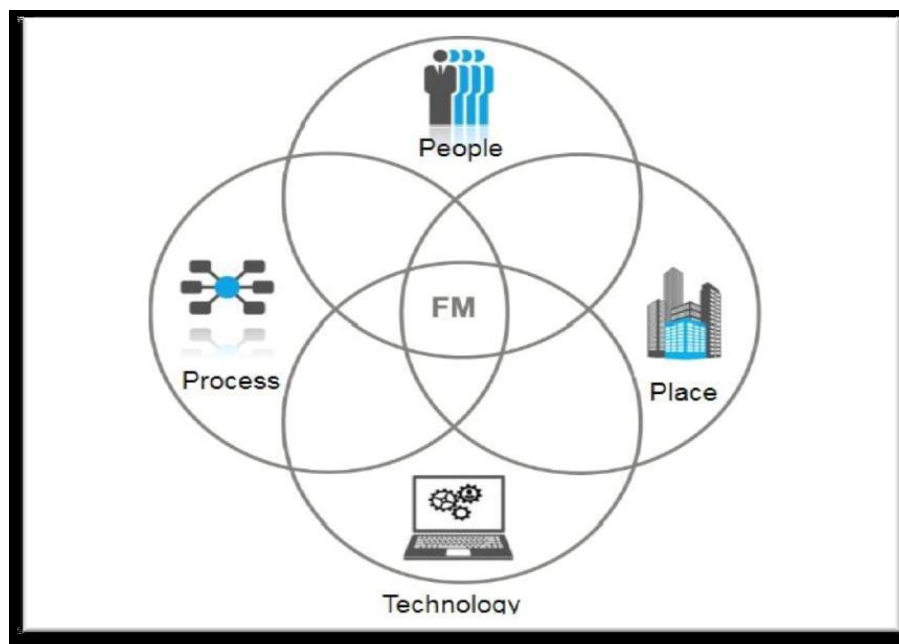


Figure 1.1: The International Facility Management Association (IFMA) Model

Facility managers are expected to be qualified and to have learned a broad range of management and leadership skills. In addition, FM can incorporate both facility and management skills to function effectively. Each organisation depends on a combination of functions and services to provide critical support for its core operations. The field of facility

management is responsible for ensuring the correct type, quality and cost of this assistance.

FM is also the multidisciplinary work that encompasses a wide variety of practices, roles and skills. Figure 1.2 below illustrates the requirements for FM and the relationship of all interrelated functions. The current scope is summed up to illustrate that FM is acting as an intermediary and combining agent on the demand and supply side of facility in an enterprise.

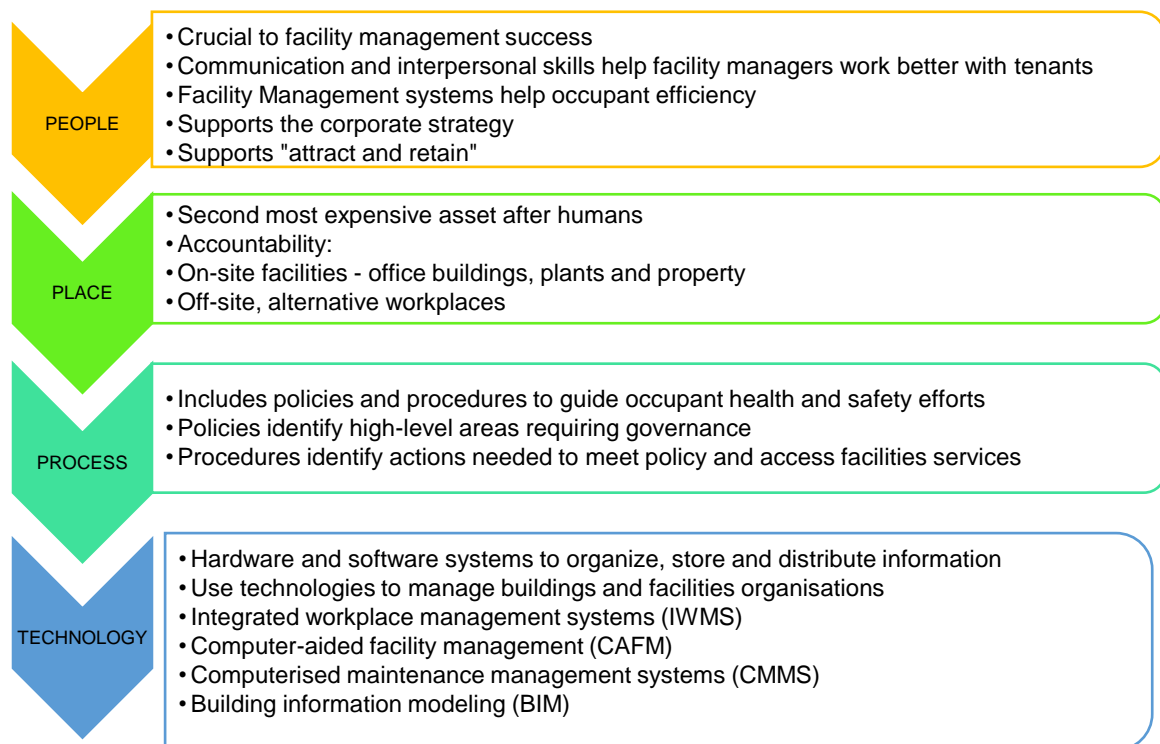


Figure 1.2: Criteria of Facility Management Functions

1.3 IMPORTANCE OF FACILITY MANAGEMENT

There are a lot of facility practitioners who feel that facility management is a thankless job not much appreciated in organisations and society, except in times of facility services breakdown, which disrupt work, or during crises, which involve danger to lives. Such perceptions will not only affect their morale working in this profession, but also limit their potential in contributing

value to their organisations. Organisations are beginning to realise the importance of facility because:

- Facility represent a substantial investment by the organisations
- Running costs of facility services account for a significant part of the organisation's expenditure; thus facility management has the potential to impact profit retention through effective and efficient management of facility.
- Facility management enables the organisation to focus on its core business by managing the non-core business operations.

It is crucial to understand that facility management has a critical role in contributing to organisation's profitability. This mindset is important, as your belief in the practice of facility management will affect your thoughts about it.

1.4 KEY TO SUCCESS IN FACILITY MANAGEMENT

Much has been discussed about the functions needed to be successful in facility management, such as:

1. Managing the non-core business activities
2. Supporting the core business activities of organisations
3. Integrating diverse disciplines under one function
4. Aligning its objectives with the organisation's mission and goals.

These responsibilities are good, but the key success in facility management is:

The ability of facility practitioner to identify, sustain, and contribute value to the organisations. Facility practitioners must know what facility or services are critical to the operations of the business, and how to safeguard and increase the profitability of the organisation.

(Steven EE, 2015)

1.5 FACILITY MANAGEMENT INITIATIVES MILESTONES IN MALAYSIA

In the 1980s a new and more holistic management specialty began to be developed focused on infrastructure, which gradually acknowledged the value of managing not only structures,

but also people-related buildings, and incorporated them into the concepts of the management and development process. FM began in Malaysia in the 1990s with government funding. In 1996, three FM companies were privatized by the government in government hospitals, the biggest FM transaction in the government at the time.

Furthermore, the introduction of the National Asset and Facility Management System (NAFAM) in 2007 demonstrates a strong government's dedication to systemic management. This can be connected to a part of the one trillion ringgits in Malaysia (RM) for public building maintenance in 2006 under the Ninth Malaysian Program. This support was also intended to express his dissatisfaction in 2001 with the need to redesign the quality level of public services at that time. The Deputy Prime Minister's article (CIDB, 2010). Later in 2009 also, a framework called mySPATA was created for the management of immovable properties. All government programs demonstrate that government reform is taking place slowly by offering guidelines, policies and handbooks on quality of service. No concrete guidelines on facility management practices have, however, been established for both the public and government sectors.

In supporting efforts by government, the construction sector has an important role to play in developing and sustaining social and economic infrastructure, maintaining the flow of national development projects and maintaining public infrastructure. While this generates business opportunities, it is important that the importance of the assets be valued by an efficient and scheduled maintenance culture. This is an acceptable way of thinking. The construction industry in Malaysia has a good potential for development and prosperity in line with facility management practices. Several physical projects carried out in conjunction with the scale of a major development are factors that should represent the number of physical installations. This paradigm is the product of the Government's continued efforts to build and improve the country. The achievements of the FM initiative in Malaysia are shown in Figure 1.2.

Table 1.2: The achievements of the FM initiative in Malaysia

Year	Milestones
1974	<ul style="list-style-type: none"> Construction maintenance rules, public roads, sewerage building and Public Works Department (PWD) responsibilities are circulated.
1989	<ul style="list-style-type: none"> Launching of Excellent Work Culture Movement.
1992	<ul style="list-style-type: none"> Public Service Guidelines in Total Quality Management and Quality Improvement Strategies issued.
1996	<ul style="list-style-type: none"> Privatisation of non-clinical support services in government hospitals.

2001	<ul style="list-style-type: none"> Deputy Prime Minister alarming statement towards the quality of public service delivery.
2006	<ul style="list-style-type: none"> Announcement of budget allocation for renovation and upgrade as part of the 9th Malaysian Plan's development budget.
2007	<ul style="list-style-type: none"> Movable Asset Management Guidelines issued. NAFAM First Convention. Building and Common Property Act 663, 2007
2009	<ul style="list-style-type: none"> Policy of Government Asset Management launched. Second NAFAM convention. Development of Immovable Asset Management System Application (MYSPATA).
2012	<ul style="list-style-type: none"> Infrastructure Asset Management Strategic Convention (PSPAI 2012).
2014	<ul style="list-style-type: none"> Government Asset Management Strategic Convention (KONSPAK 2014).
2015	<ul style="list-style-type: none"> Malaysian Certified Healthcare Facility Manager (CHFM) competency training Programme introduced by CIDB and recognize by Ministry of Health.
2016	<ul style="list-style-type: none"> CIDB strategic planning through Construction Industry Transformation Programme (CITP).
2017	<ul style="list-style-type: none"> Registration of FM Contractors by CIDB Malaysia.
2018	<ul style="list-style-type: none"> Third NAFAM convention held at Putrajaya International Convention Centre (PICC).
2019	<ul style="list-style-type: none"> Technical Working Group (TWG)/ Inter Agency Planning Group (IAPG) Workshop Sector Services-Construction Industry, Ministry of Works.
2020	<ul style="list-style-type: none"> NAFAM Resolution Workshop. First Training for Facility Management Managers (FMM) and Facility Management Executive (FME). Development of National Construction Policy (NCP) 2030.
2021	<ul style="list-style-type: none"> CIDB Strategic Plan (CSP) 2021 - 2025

Figure 1.3: Facility Management initiatives milestones in Malaysia

1.6 OBJECTIVES

The main objective of this study is to:

- Identify the scope of current duties of each Division / Unit / Subsidiary at CIDB that implements the FM program directly / indirectly and state the function of each Division / Unit / Subsidiary in the implementation of the FM program;
- Identify and state the analysis gap related to each FM program implemented cross-divisional / cross-sectoral / cross-subsidiaries within CIDB Malaysia;

- c) Identify and state the analysis gap of the existing FM industry in the construction industry taking into account the previous year (5 years) and the prospectus of the coming year (5 years ahead);
- d) Make a comparative study between the internal analysis gap (internal CIDB) and the external analysis gap (external stakeholders) taking into account the data collected in items b and c;
- e) State the area of priority (prioritization) for the implementation of the FM program by taking into account the access to the study in item d;
- f) Propose a 2-year Action Plan (2021-2022) for the implementation of the CIDB program in closing the identified gaps; and
- g) Make a comprehensive recommendation for the implementation of FM core for CIDB Malaysia.

PART 2

FACILITY MANAGEMENT IN MALAYSIAN CONSTRUCTION INDUSTRY

2.1 INTRODUCTION

The management of facility is currently a rising sector and has been recognised by many countries worldwide. This field also extends to a company in the public or private sectors. As stated previously, facility management is linked to three things: personnel, workplace and procedure. The phenomenon of the construction and the ceiling collapse recently also threatened rising public safety with the crash of the MRR2 middle ring. Over several years, our construction efficiency, lack of supervision during construction and lack of maintenance and lack of awareness of the available health care facility have deteriorated in number of potential contributors. Furthermore, a project that has just been finished involving government projects has been applied in several cases. Incidents that help lose property and death can be prevented by ensuring proper performance of all individuals involved in their respective positions. By delivering valuable returns, risks, and the whole sustainability of infrastructure building, the government has invested billions of dollars in improving the asset management industry and the nation to sustainable growth. All the installations require adequate maintenance to ensure that national installations are working well and that their life cycle is accomplished.

Consequently, certain costs for maintaining and operating a facility in an organisation, to prevent repeated and unused public funds or unnecessary accidents, are deemed necessary. Management of installations involves both physical and non-physical installations, as well as the identification of needs of investment and industry. These include professional guidance, construction management, building maintenance, cleaning of buildings, car parking, electrical facility, telecommunications, firefighting, landscape, air-conditioning, arrangements for rentals, etc.

In 2007, the first National Asset and Facility Management Convention (NAFAM) were held in August to address the current issues and future challenges in managing national assets and facility. This convention showed that the FM profession has evolved and adapted to meet the

demands of a fast growing built and human environment industry. Agreeing to an annual NAFAM, the Prime Minister has urged both the public sector and private sector to come up with a more effective and efficient procedural framework in order to continuously improve the management of national assets and facility. This convention was a major revolution to the future changes with regards to the perception of FM professions and practices in Malaysia.

Professional bodies like the Board of Engineers (BEM) and the Institution of Engineers (IEM) seem to emphasize more on developing engineers for the design and construction industry, but not for engineers involved in the built environment who bear titles such as Facility Manager, Operations Manager or Building Manager. Currently there is no proper planning for the development of the AFM industry in Malaysia. There is no single body or organization taking any role to plan, guide, develop, evaluate and monitor the progress of the AFM industry in the Malaysian business market. The industry promoters are generally moving on their own directions without being nurtured to undertake future challenges in the ever-changing economy climate.

2.2 KEY ISSUES OF FACILITY MANAGEMENT IN MALAYSIA

CIDB being entrusted to look into the development of the construction industry has taken the first step to address the issue in FM with collaboration of the industry practitioners and players in the market today. Few series of workshops and seminar on the development of FM for the Malaysian construction industry has been conducted as to determine the gaps and challenges affecting the FM development in Malaysia. Seven (7) issues have been brought up which included Recognition, Awareness, Financial, Human Capital, Performance Measurement, Regulations, and Common Voice.

2.2.1 Recognition

There are few factors that determine the success implementation of Facility Management practices in Malaysia. Among the first obstacle to overcome is the recognition, especially from the policy makers within the Government bodies. The government's involvement could be made possible in the following areas:

- Monetary (if possible);

- Awareness – to promote cultural change;
- Providing incentives and/or awards for industry best practices; and
- Encouraging expansion of knowledge through formal education programmes.

CIDB, being the government agency responsible to develop the Malaysian construction industry, is identified as the best organization that can contribute towards the excellence of FM development in Malaysia. In line with its objective, CIDB could develop the capacity of the industry through the enhancement of service delivery quality plan, placing great emphasis on professionalism, promoting research & innovation, and providing high value training programmes.

2.2.2 Awareness

The management of assets and FM are normally faced with issues and challenges related to top management direction and support, policy, organization structure, logistics, monitoring, reporting and data/ records keeping. Apart from this, there is also no proper monitoring body that is well equipped to guide and monitor the FM programme implementation. In fact, top management awareness and knowledge on FM is generally lacking. This lack of awareness and knowledge might be caused by broken chain of information flow from the operational team to the management as well as unclear roles and responsibilities of the FM functions. It was also discovered that FM is not regarded as a strategic function in most public and private organizations, scope of functions are commonly confined to maintenance activities only and very little attention given in defining the overall scope of work for the FM organization.

Apart from these issues, there are other challenges coming from the client's perspective such as high expectations of service delivery with less budget allocation given and unclear definition of service level requirements. Hence, the following issues and challenges have been identified as crucial and need to be addressed in order to successfully move forward:

- Lack of awareness on the 'value' of AFM towards achieving organizational objective by the top management
- No proper authorities to regulate the practices. This occurs at both organizational and national levels

- Lack of understanding on the importance to inculcate ‘maintenance culture’
- Broken chain on information flow from the operational team to the management
- FM professionals are not recognized at the strategic level of an organization
- Poor definition of roles, responsibilities, functions and authorities

2.2.3 Financial

The main area of concern for FM industry with regard to finance has always been related to financial model, capital, return-on-investment, life-cycle costing and value for money on the overall service delivery. The typical problem claimed by most of the Facility Managers is that there is always insufficient budget provision for an efficient delivery of the defined scope of works. The top management is unable to appreciate the justifications presented by the technical team. This creates other problems that will hamper the effort to perform better in delivering high value service to the client or end-users. Also in many cases when it comes to FM budget, it will either be reduced or rejected as FM is not regarded as a ‘value adding’ profession. To certain extent, the FM team is often regarded as “a cost centre” and therefore it is the highest priority to ensure that costs are kept as minimum as possible.

Apart from the budget issue, the Facility Managers are also facing difficulties in establishing FM service level which can convince and provide the right perception to the asset owners and end-users. In addition, current practice of FM contract tendering process is still inclining towards low-price consideration as priority of awarding contract. The ‘task-based’ nature of most AFM tenders also contributes to having financial issues as certain elements may not be appropriately budgeted against the scope of works. To summarise above arguments, the key financial issues in FM are listed as follows:

- No FM financial model outline available as a guide
- Maintenance budget always rejected / reduced
- FM not regarded as ‘value adding’ to the overall property value
- FM team has always regarded as ‘a cost centre’
- FM professionals having difficulties in justifying the budget allocation request
- Competitive tendering exercise always go for low-pricing only

- Mismatch of task-based requirement against budget proposal

2.2.4 Human Capital

The discussion on human capital issues in the AFM industry mainly focused on manpower supply, skill level and training programme. One of the most important issues highlighted was the lack of skilled, trained and competent experts in the area of FM in the Malaysian market. This was followed by limited understanding on asset and facility management knowledge at the strategic level among the professional managers. These are among the two most discussed and deliberated by the workshop participants.

Although most facility manager comes from engineering and science background, their academic and practical exposure on asset real estate, design, operation & maintenance, refurbishment and disposal are generally superficial. Apart from that, extensive exposure and experience in the overall scheme of implementation are also one of the most lacking among the manpower resource available in the market today. Acquiring people with broad AFM knowledge and experience are seen by the study group as the major challenge for the industry.

As for training initiatives, it is also found that the current collaboration between the industry and higher learning institutions is very limited. This lack of communication might be the contributing factor to the slow development programme on competency and skill enhancement among the FM related workforce market. A gap between the needs of the industry and output from the higher learning institution must be addressed immediately to ensure success in future implementation of FM programme. Thus, the following key points are taken into consideration as the major contributor to the human capital issues and challenges:

- Difficult to get knowledgeable, experienced and competent personnel in the Malaysian market
- Lack of collaboration between FM industry and academic centres

- Lack of collaboration and discussion amongst the professional in the management of physical built environment i.e. engineers, architects, surveyors, property managers etc.
- Lack of integration of various expertise/disciplines
- FM manager's lack of understanding in other field related to asset (e.g. real estate, design etc.)

2.2.5 Performance Measurement

Currently, FM performance is measured and managed through various non-standardized mechanisms. With the lack of industry experts, index and benchmarks, measuring the performance and customer satisfaction is very subjective. There is a need to formulate and standardise a set of Key Performance Indicator (KPI) for FM performance measurement. One way of doing this is through the establishment of industry index and benchmarking by an independent body or association which will enable the industry to establish its own standard for implementation. Through an association or a governing body, the industry will also be able to access information and data which can be used as reference and guidelines for best practices.

2.2.6 Regulations

The Valuers, Appraisers and Estate Agency Act 1981 are currently the prevailing act 'governing' the industry. This act generally states that registered Valuers (i.e. persons registered with the Board of Valuers, Appraisers and Estate Agents) are the only professional issued with 'power' to practice valuations of land and buildings, including furniture, fixtures, trade stocks, plant or machinery and other effects for similar purpose. They are also allowed to carry out the 'property management' function as described by the client's service requirement.

The main concern is that this act has successfully 'covered' (directly or indirectly) the whole exercise that relates to planning, management, operation and maintenance of an asset (in this

case it is called property) can only be performed by a registered valuer. This may not be fully applicable to those scope of works fall within the jurisdiction of other professional body e.g. Board of Engineers for all technical and engineering services. These overlapping functions and confusing situation need immediate solution to avoid future problems.

2.2.7 Common Voice

Having said all the changes needed to elevate the standard of AFM in Malaysia, a common 'voice' should be gathered to give a significant impact on the government and the society. A collective common interest should be forwarded to the policy makers in order to make the changes happen as smoothly as it could be. For this to be realised, it is time for an association of this purpose to act. Based on the research conducted with the Registrar of Society Malaysia, there has been an association known as "*Persatuan Pengurus Fasiliti Malaysia*" or the Malaysian Association of Facility Managers being registered in 2005. Among the objectives of MAFM are:

- To provide a forum for MAFM members to share best practice in the field of FM
- To provide networking opportunities for facility managers.
- To organize Continuous Professional Development events for members in all subjects related to facility management.
- To develop an understanding of FM at strategic, tactical and operational levels.
- To examine the concept of total building life and ways in which construction professionals can 'add value'.
- To be recognized as an expert pool of knowledge.

2.3 FACILITY MANAGEMENT PROGRAM FOR MALAYSIAN CONSTRUCTION INDUSTRY.

The building industry has a duty and a responsibility to ensure that development takes place today and that the standard of living in the future is pursued by wealth today. The Construction Industry Development Board (CIDB) has been given the authority to lead and develop construction works, value for money, and respond to consumer sentiment about construction performance, understanding the importance of its stakeholder role (CIDB, 2007). It was made

compulsory in the CIDB for all local and foreign contractors to be enrolled in one of the seven grades of registration before entering into business in Malaysia.

Knowing the need to support our national requirements, the Ministry of Works has proactively established a strategy for the Malaysian Construction Industry through the Construction Industry Development Board (CIDB) that sets essential strategic goals and milestones for upgrading the construction industry Malaysia to the next level. Several of the strategic planning that CIDB has put in place for the construction industry includes the Construction Industry Master Plan (CIMP), the Construction Industry Transformation Program (CITP) and the most recent National Construction Policy (NCP).

In order to achieve the success of the programme, the government and the private sector have to function synergistically. The leadership position taken by the Ministry of Works in leading this collaboration is therefore timely and vital, as the results obtained from and within each sector of the industry will ensure the nation's socio-economic well-being.

2.3.1 Construction Industry Master Plan (CIMP) 2005 – 2015

The first consolidated draft of the Master Plan is the "Malaysian CIMP (Construction Industry Master Plan) Framework 2005-2015." CIMP is then organised into six parts as a framework to ensure that the construction industry is well placed to support the nation's overall economic development and face numerous challenges, such as the need to increase efficiency and quality across the value chain of the construction industry. CIMP outlines the vision and mission of seven strategies thrust and 21 concrete recommendations to inform Malaysian construction industry growth for decades (2006-2015). A strategy to turn the Malaysian building industry into a sector that faces the demands of international competition and takes advantage of the opportunities on the world market and contributes significantly to the country's ambitions and people's well-being. Designed to make it a world-class global supplier of creative and knowledgeable solutions to help decide the future course of the industry, CIDB, therefore, has the strategic roles of:

1. **Construction Manpower Development:** To develop optimal and proud construction workers with knowledgeable skills

2. **Construction Business Development:** To promote and improve construction business environment and capacity building
3. **Construction Technology Development:** To enhance construction quality, productivity, innovation and sustainable development.

A number of strategic directions are followed in terms of vision, mission and critical success factors. Seven thrusts have been developed, and performance keys have been established for the overall CIMP. The recommendation has been developed to address the key issues identified in Table 2.1 below:

Table 2.1: CIMP Strategic Thrusts and Recommendation

STRATEGIC THRUSTS	RECOMMENDATIONS
ST1 : Integrate the construction industry value chain to enhance productivity and efficiency	1.1 Consolidate the industry. 1.2 Standardise and integrate administrative practices and Procedures
ST2 : Strengthen the construction industry image	2.1 Enhance the professionalism of the construction industry. 2.2 Enhance the procure-to-pay (P2P) strategy 2.3 Raise the sophistication level of the construction community
ST3 : Strive for the highest standard of quality, occupational safety and health, and environmental practices	3.1 Foster quality and environment-friendly culture 3.2 Enhance occupational safety and health 3.3 Adopt Malaysian Standard (MS) in the manufacture or import of building and construction materials
ST4 : Develop human resource capabilities and capacities in the construction industry	4.1 Enhance and enforce the use of skilled labour (building capability) 4.2 Nurture the desire to work in the construction industry amongst the local workforce (building capacity)
ST5 : Innovate through research and development and adopt new construction methods	5.1 Continuously innovate construction processes and techniques 5.2 Stimulate R&D activities through the resource-pooling initiative amongst key players and the provision of R&D infrastructure

ST6 : Leverage on ICT in the construction industry	5.1 Encourage knowledge sharing for continuous improvement 5.2 Develop local construction software industry
ST7 : Benefit from globalisation including the export of construction products and services	7.1 Ensure industry sustainability in the liberalised environment 7.2 Market the construction industry in a focused, global manner 7.3 Ensure the financial services sector's development is in line with industry's needs 7.4 Develop complementary industries

The table above is based on the Roadmap Strategy for developing the Construction Industry in Malaysia from 2006 to 2015. Therefore, this CIMP framework work will be recommended and established to improve Malaysia in the future and make a significant contribution to Malaysian people's aspirations and welfare.

a) CIMP Roadmap of Framework and Plan Implementation

The strategies and the action plans of CIMP need to be implemented using approach covering within 10 years period from 2006 to 2015. This has been adopted into the growth in the capabilities construction industry of Malaysia. Implementation of the strategies addresses to be a roadmap of the construction industry in Malaysia, and they are divided into 3 phases:

Phase 1: (2006 – 2008) Strengthen domestic capabilities in all key areas. This phase, the immediate priority seeks to resolve the construction industry, focuses as new strengths and capabilities to practice or external developments that perpetuate inefficiency and low growth rates in the industry.

Phase 2: (2009 – 2012) Further strengthen existing capabilities in all key areas to compete effectively with global peers. This 2nd phase will focus on developing new capabilities and building a strong foundation for the industry to venture overseas. This is a strategy for competing effectively with its peers in the global marketplace.

Phase 3: (2013 – 2016) Increase presence and enhance stature in the global construction arena. The long-term plans in this 3rd phase will fulfil the vision to be a world-class, innovative, and knowledgeable global solution provider, to establish a secured footprint for the construction industry in the global construction marketplace.

Table 2.2: CIMP roadmap in construction

SEQUENCING FRAMEWORK AS A ROADMAP									
2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
PHASE 1 : <i>Strengthen domestic capacity in all key areas</i>			PHASE 2 : <i>Further, enhance existing capabilities to compete effectively with global peers</i>				PHASE 3 : <i>Improve visibility and boost global stature construction arena</i>		

The implementation of this CIMP has been monitored, reviewed, and updated accordingly (if needed) by CIDB to ensure its relevance and applicability.

2.3.2 Construction Industry Transformation Programme (CITP) 2016 – 2020

The Construction Industry Transformation Program or CITP, launched in 2015, is a national transformation program that sets strategic outcomes and milestones to develop Malaysia's construction sector into a world-class industry that can compete locally and internationally. The 4 strategic thrusts of quality, safety and professionalism; sustainability of the environment; productivity and internationalisation have been designed to resolve the number of issues and problems that need to be tackled in order to turn the construction industry into one that is highly efficient, environmentally sustainable and safety and quality.

In line with the CITP's tagline "Driving Construction Excellence Together", CIDB in collaboration with more than 300 industry captains from the public and private sectors has continued to work rigorously towards realising these CITP aspirations as shown in Figure 3.1 below:

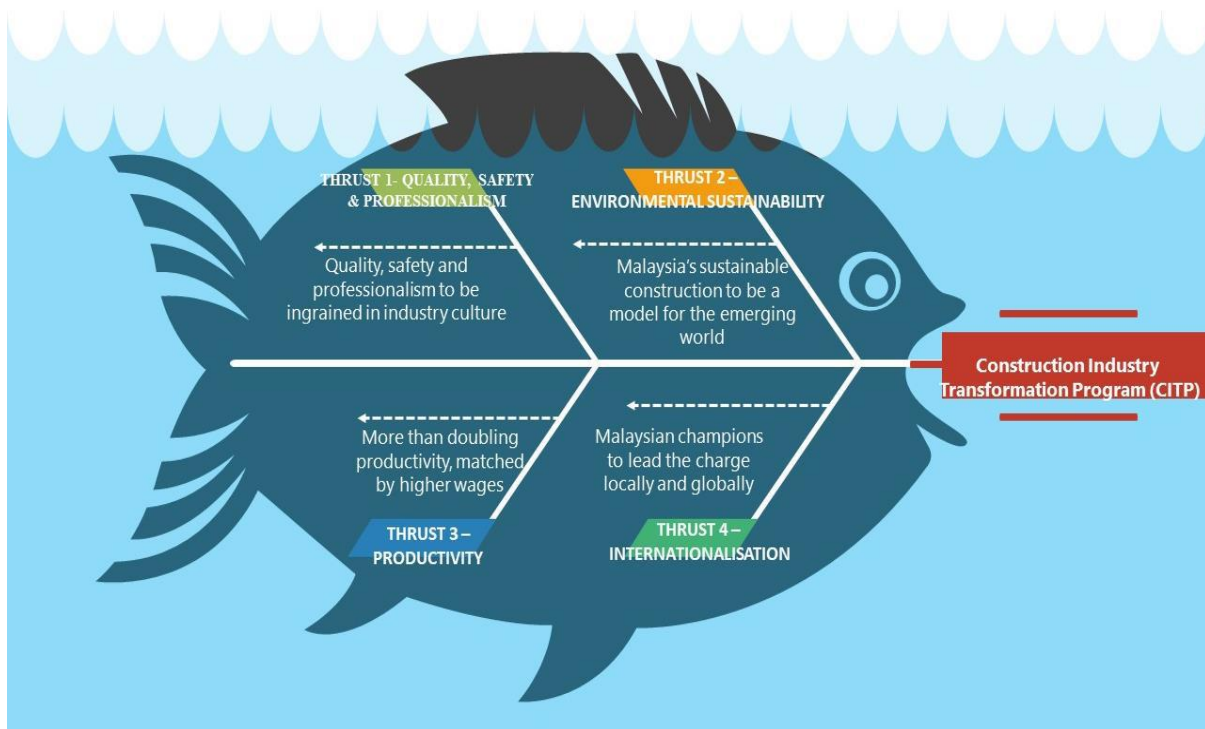


Figure 2.1: Construction Industry Transformation Program (CITP) aspiration

The Eleventh Malaysian Plan (RMKe-11) forecasts that the construction industry will contribute up to 5.5 per cent of GDP in 2020 and will have a double multiplier effect on growth with more than 120 industries depending on the construction sector. CITP pointed out that the construction sector consumes 15 per cent of total economic productivity. Malaysia's construction business continuity is, therefore, almost certain. Therefore, in order to ensure effective and efficient delivery of the necessary built environment, robust construction is essential, hence the Construction Industry Transformation Programme.

a) Quality, Safety and Professionalism in Facility Management

Improving Quality Standard

Ensuring that the construction industry achieves a maturity level that can be viewed internationally, quality and safety issues remain fundamental. Consumers should only obtain their construction products safely or the quality they paid for. Therefore, CIDB has placed very high regard on efforts to achieve a high-quality built environment securely.

The CIP strongly emphasizes the improvement of quality standards in the industry. It lays out initiatives to increase the implementation of the Quality Assessment System in Construction (QLASSIC). QLASSIC is a system that measures the quality of facility' workmanship based on the Construction Industry Standard, acting as a yardstick, also serving as a broader quality assurance for construction. The incentive to achieve higher QLASSIC scores will encourage the adoption of technology and modern construction methods, such as Industrialised Building System (IBS), to improve material accuracy and workmanship. Figure 2.2 shows CIP's new requirement to improve workers' quality of living standards in facility management.



Figure 2.2: Improved workers' living standards

The CIP also suggests training a sufficient number of trained quality assurance staff and the addition of independent evaluators for objective quality assurance and quality compliance. Rising quality standards in construction will not only benefit the industry, but will also improve public, consumers, and the overall economy.

Promote Safety Measures

Ensuring safety is strictly adhered to by all stakeholders, the sufficient availability of FM workers in the construction industry is essential. The CITP puts out steps aimed at improving the level of protection in the industry. More strict occupational safety and health standards will be added.

Via amended regulations, a minimum set of requirements for workers' amenities will be set. In addition, guidelines and Codes of Conduct will be established regulating construction safety and health. These recommendations were finalised for use in order to assist the industry in ensuring safety in facility management:

- 1) Guideline for Safe Design of Building & Structure
- 2) Guideline for Site Supervision known as “*Program Latihan Penyelia Tapak Binaan Bagi Tujuan Pentaauliahan Dan Akreditasi Penyelia Tapak Binaan*”
- 3) Guideline for Supervision known as Supervision of Construction Works

The Temporary or False Work Guideline design is finalised after public comments have been received. Meanwhile, Draft the Risk Management Guideline, confirmed by the completion of Hazard Identification, Risk Assessment and Risk Control (HIRARC) in December 2018.

Enhancing Professionalism

The number of contractors registered under the category of Facility Management (FM) F01 for General Building & Infrastructure Facility and F02 for Healthcare Facility has gradually increased, which is a positive sign to ensure that FM contracts are granted to only eligible contractors. One of the World Bank ratings to determine the ranking for ease of doing business among 190 countries is the Dealing with Construction Permit (DCP). Malaysia's ranking improved from 13 in 2017 to 3 in 2018.

The registration portal for contractors is a one-stop online registration portal that allows local and international contractors to register with the appropriate licensing agencies, thus removing the need to individually deal with each agency. The portal aims to

streamline registration requirements to avoid duplication by exchanging information, thereby saving contractors' time and costs and enhancing the ease of doing business in the construction industry.

b) Sustainability in Facility Management

In order to showcase Malaysia as a low-carbon, sustainable facility and infrastructure hub, sustainability calls for compliance with environmentally sustainable practices. Main problems to be tackled are reckless disposal of building and demolition waste as well as harm and repair spending after natural disasters. Recognising Malaysia's role in achieving a more sustainable world in the global economy, Malaysia has made a voluntary pledge to reduce the country's carbon emissions per GDP by 40% from 2005 levels by 2020.

CITP is calling for the creation of Malaysia's pre-eminent research platform to promote sustainable construction excellences in the sector, recognising the relevance of sustainability to the national interest. With incentive programs to facilitate sustainable initiatives, holistic rating tools will be built and promoted. Recycling centres for building and demolition waste are recommended in priority areas with high construction activity levels to prevent reckless waste disposal.

As a leading example for the sector, CITP also suggests adding sustainability criteria within the procurement process for public facility and infrastructure for key ministries. Imposing a tax system on excessive waste would improve the regulation of illegal dumping. The industry would be beneficial since recycled materials can then be used for other projects and purposes. Implementing better waste management practices would further benefit the sector players by decreasing waste management waste and minimising the size of the material collected from the start.

c) Up-Skilling the Local Workforce in Facility Management

Productivity is the primary driver of growth towards Malaysia's high-income target. The construction industry today has one of the economy's lowest productivity levels. The

relatively low level of productivity reflects the need for the industry to embrace modern technologies, reduce its reliance on low-skilled construction workers, and continue investing in human capital development in construction. The relatively low level of productivity reflects the need for the industry to embrace modern technologies, reduce its reliance on low-skilled construction workers, and continue investing in human capital development in construction.

The CITP puts forward steps to increase productivity levels by empowering Bumiputera human resources by expanding high-skill training and accredited professional programs to improve their efficiency, productivity, and expertise in the construction industry. Construction-related training courses will be reviewed, streamlined, and upgraded or developed nationwide where appropriate, thereby increasing trainers' quality and quantity. In 2018, 14,252 Bumiputra contractors were trained under Continuous Contractor Development (CCD) in the technical, managerial and financial fields. These CCD points are essential in order to renew the registration of the contractor. In total, trained contractors are 42,702 against the target of 22,500 since 2016.

One of the new additions to the CIDB trade is the specialisation under Facility Management (FM). To date, only 587 contractors registered. It's only appropriate to include this program for Bumiputra training to boost their chances of registration. In 2018, 174 were trained in facility management against 200 Bumiputra contractors. Besides FM, IBS and specialist trades are also rigorously pursued to enhance Bumiputra's competitiveness.

d) Technologies Adoption in Facility Management

The CITP also calls for increased Information Communication Technology (ICT) adoption and mechanisation in the industry, and innovations in facility research. To that end, collaborative partnerships will be enabled between the industry and universities to co-develop research and programs on modern construction methods and technologies. In addition, the CITP calls for the adoption and utilisation of modern construction methods and technologies to address productivity challenges in the industry.

Malaysia's version of the Civil Engineering Standard Method of Measurement, MyCESMM has been developed to promote a standard measurement method for all civil engineering works and a better-equipped Malaysian construction industry with a very important international tendering and contracting procedure.

The CITP builds on existing measures to accelerate the adoption of Industrialized Building Systems (IBS). For example, it recommends improving the economics of IBS adoption, raising the enablers for IBS adoption by introducing a comprehensive IBS catalogue harmonised with a Building Information Modeling (BIM) design library, and improving overall regulatory support.

2.3.3 National Construction Policy (NCP) 2030

The Government should continue spending on infrastructure projects under Budget 2021, leading to Malaysia's economic recovery. According to Senior Minister of Works, Datuk Seri Fadillah Yusof (2020), he stated that infrastructure projects' investments would also lead to higher gross domestic product (GDP) figures. To boost the economy further, the Government should also allocate enough funding to the Construction Industry Development Board (CIDB) to promote the construction industry.

"With enough allocation, CIDB can invest further on Industrial Revolution 4.0 (IR4.0) initiatives such as robotics, automation, Internet of Things (IoT), Big Data, Virtual Reality and Artificial Intelligence. Such projects will help the Works Ministry to fulfil the aspiration of the National Construction Policy (NCP) 2030."

(Minister of Works, 2020)

National Construction Policy (NCP) is key initiatives by the government in transforming the whole construction sector towards the digitalisation era as well as key reference and guide for both the public and private construction sectors with respect to achieving inclusive and sustainable national development by 2030. NCP intends to achieve some of the following objectives:

1. To develop a wholesome, inclusive and people-centric policy through the integration of planning, designing, procuring, constructing or producing, altering, repairing, maintaining and demolishing infrastructures.
2. To stimulate and enliven people's mindset and instill a culture in demanding high standard quality of construction sector.
3. To develop a comprehensive guide and strengthen capability through good governance and best practice.
4. To embrace future trends in the construction sector.

To achieve the objective, the National Construction Policy has developed six strategies thrust shown in Figure 2.3 as follows:



Figure 2.3: Six Thrust of National Construction Policy (NCP)

2.4 TRAINING AND COMPETENCY PROGRAMME FOR FACILITY MANAGEMENT IN CIDB

2.4.1 Certified Facility Management Executive (FME) and Facility Management Manager (FMM)

The role of the facility contractor is challenging and important. There is an apparent need for the facility contractor to continuously grow and acquire better skills, wider knowledge and more

effective work procedures in line with advancements in technology and socio-economy to be globally competitive.

In order to improve the capabilities of the registered facility contractor, the competence level of the company director and technical officers must first be assessed and accredited through the Facility Management Manager and Facility Management Executive Accreditation Program based on the competency standards developed by the Board of Directors. The Board has made a requirement that only firms with an assessed and accredited Company Director or Technical Officer are eligible to be registered as F01 and F02 Specialisation Facility Contractors.

However, accreditation is not confined to construction personnel involved in or employed by a contractor. Still, it is open to any eligible construction personnel and meets the requirements set by the Board. For registration purposes with the Board for the facility contractor of F01 and F02 specializations, it is compulsory and much encouraged for the company director and technical personnel or any other construction personnel directly involved in facility management to apply for accreditation the Board.

The objectives for accreditation are:

1. To elevate the construction facility management quality through implementation by qualified, accredited and competent personnel.
2. To ensure that both the Facility Manager and Facility Executive comply with the National Occupational Skill Standard (NOSS) or any newly formulated industry standard.
3. Ascertaining Facility Contractor of F01 and F02 specialization code registration regulations are adhered to.
4. Provision of a systematic, registration and accreditation platform.

2.4.2 Building Information Modelling Facility Management (BIMFM)

Successful Management of Facility (FM) is all about preserving accurate data. The key to quickly responding to unknown problems and anticipating maintenance knows where your

assets lie and fixing things that are broken. Having new facility created using Building Information Modelling (BIM) offers many rich data, from anticipating a facility's energy costs to knowing when maintenance may be required for that new equipment. When everyone on the project team is committed to using BIM, as-built documentation will be much closer to reality.

This programme designs a comprehensive training programme to provide skills and knowledge on Building Information Modelling Facility Management (BIMFM) to the professionals and individuals involved in building and construction industry generally, and BIM and FM sectors specifically. Besides, it also addresses the fundamental areas relating to these two imperative areas of BIM and FM, starting from the theory introduction to the theory and innovative tools' hands-on implementation.

The main objectives of this training programme development are:

1. To establish a comprehensive training programme for Facility Management (FM) stakeholders by forming a standard and complete set of documented materials required in training.
2. As a reference to benchmark the competency levels of Building Information Modelling Facility Management (BIMFM) stakeholders.
3. As a reference to clients or property owners to determine or gauge the skills and standards required in outsourcing the FM contracts.

In addition, this programme offers knowledge and skills identified to be paramount for BIMFM. The knowledge and skills are linked to BIMFM success and will be measured according to the designed assessment. The module is specifically designed for the individual or organization that are involved in the construction and keen to explore new technology with the aim to bring awareness of the recent development in Building Information Modelling (BIM). There is course outcome for BIM:

1. Understand the important of project information and collaboration.
2. Understand the need for client leadership to successfully implement BIM.
3. Recognize the importance of BIM and understand common BIM technology.
4. List the most common BIM-based applications.

5. Understand BIM tools and implementation challenges.
6. Understand barriers for BIM implementation.
7. Understand the benefits of greater collaboration and integration in design and construction and how BIM supports it.

2.5 CIDB's Strategic Plan (CSP) 2021-2025

Charting the future strategy of an organization is always a challenge. It inevitably has to be addressed the extent of which the future should depart from the present. Developing CIDB's Strategic Plan (CSP) 2021-2025 involves addressing this basic question. The trajectory of CIDB's planning in the recent past has been very much shaped by the Construction Industry Transformation Plan (CITP). CIDB Strategic Plan 2021-2025 addresses the rethinking of CIDB's role in shaping the future of the construction industry and how CIDB can improve its organizational capacity as a key enabler for a better future. To achieve the long-term goals of CSP 2021-2025 requires specific strengths, as presented by the 4 pillars of strategy, built upon 3 layers of foundations.

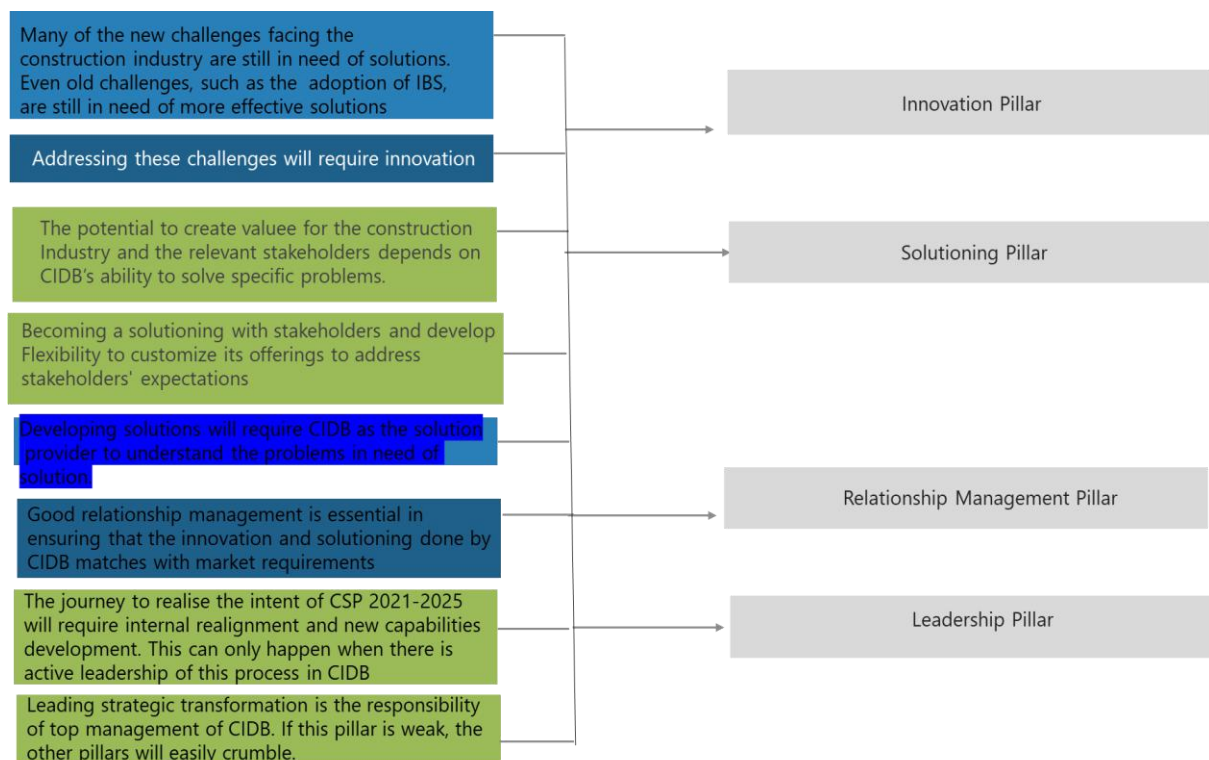


Figure 2.4: Four Pillars CSP 2021-2025 CIDB

At macro level, the transformation stages would go through these key initiatives and milestones:

Table 2.3: Key initiatives and milestones of CSP 2021-2025 CIDB

2021 Stage 1: CSP Kick Off	2022 Stage 2: Generate Quick Wins	2023 Stage 3a: Create high impact gains	2024 Stage 3b: More high impact gains	2025 CSP Destination Leadership of Construction Industry
Key Initiatives				
Develop internal capabilities	Leadership continuity	Execute high impact solutioning initiatives Broaden technology pool for solutioning.		Manage international recognition of expertise
Prepare for leadership continuity	Initiative pilot projects to develop solutions	Broaden sustainable construction material list Mid-term review of CR4.0 roadmap		Provide solutioning services to other countries
Set research priorities	Scout for technologies			Offer more high value non-mandated core services
Develop Facility Management plan for the industry	Identify high impact solutioning initiatives			
Initiative ISP Phase 1	Plan long-term research			
Conduct early year and end year Change Readiness Assessment (CRA)	Advocate on use of sustainable construction material			
Execute Relationship Management Initiatives	Organise programs that help embed innovation as way of life			
Key Milestones				
CR4.0 Implementation master plan & construction technology	CIDB leadership competency model	Deliverables improvement in high impact projects		Attain recognition for at least one CoE

implementation plan			
10-year strategic plan for FM industry	Strategic alliances with technology partners	Reduction in use of unsustainable material	Improvement in homeowner's satisfaction
Big Data Analytics Framework	High impact research collaborations initiated		Highly competent and innovative workforce
End year CRA indicates readiness			

Table 2.4 shows the Internal Process Perspective that focus on Facility Management in CIDB.

Table 2.4: Internal Process Perspective that focus on Facility Management in CIDB.

Theme	Short Term KPI	Tier 1 initiatives	Tier 2 initiatives
Strengthen Operations	FM milestones achievements (10-year strategic plan and policy)	1. Develop a 10-year strategic plan for facility management (FM) industry in Malaysia 2. Develop the related FM policy in supporting the CR.4.0 and big data initiative using the technology as facilitating platforms.	Services for external customers -Develop FM database on whole life cost (WLC) -Enhance FM practitioner's competency through enhancement of training modules according to registration classification covering both building and healthcare sectors -Improve FM personnel competency development and the entire

Internal business process perspective- what CIDB must prioritize to excel at in order to deliver the desired outcome and impact envisioned in the CSP.

Table 2.5: Internal business process perspective of CSP

Theme	P3	Explanation
Deliver Solutions	Improve current services with new benchmark and technologies	CIDB aspires to improve current services including green field services by benchmarking with world class and similar organisations plus adopting technologies that will benefit the client. Tier-2 scorecards shall have the specific objectives within CIDB's current services. Green field areas for CIDB includes the likes of facility management (FM)

2.6 Definition of Construction Work According to Act 520 (Amendment 2011)

Construction work is the construction, extension, installation, repair, maintenance, renovation, relocation, renovation, alteration, renovation or demolition: -

- a) Any building, structure, large building, structure, wall, fence or chimney, whether constructed in whole or in part above or below ground level;
- b) Any road, port, railway, cable line, canal or airport
- c) Any drainage, irrigation or river control work
- d) Any electrical, mechanical, water, gas, petrochemical or telecommunication work

e) Any bridgework, earthwork dam, pipeline, tunnel or redemption work.

And includes;

A) Any work that forms an integral and integral part or is preparatory or temporary for the work described in paragraph (a) to (e), including site clearing, soil research and repair, land transfer, excavation, laying of foundation stones, restoration and site landscaping; or

B) Procurement of building materials, equipment or workers, which must be required in paragraphs (a) to (e).

2.6.1 Categories and Specialisation of Facility Contractors

Integrated service facility and maintenance of buildings or infrastructure that include engineering services and services related to consumer needs.

Table 2.6: Categories and Specialisation of Facility Contractors

CATEGORY	SPECIALISATION
F Facility (<i>Fasiliti</i>)	F01 General Building and Infrastructure Facility (<i>Fasiliti Bangunan dan Infrastruktur Am</i>)
	F02 Healthcare Facility (<i>Fasiliti Bangunan Penjagaan Kesihatan</i>)

2.6.2 Code and Facility Specialisation

Table 2.7: Code and Facility Specialisation

CODE	SPECIALISATION	DESCRIPTION
F01	Building Facility And General Infrastructure	Integrated service facility and maintenance of buildings or infrastructure which covers engineering services and services related to consumer needs
F02	Healthcare Building Facility	Integrated service facility and maintenance of buildings or infrastructure that include engineering services, biomedical engineering and services related to consumer needs

2.6.3 General Requirement Facility Contractors Registration

1. Registered with the Companies Commission of Malaysia (SSM) in Syarikat Sdn. Bhd. or Berhad or the Cooperative Commission of Malaysia (SKM) in Koperasi Berhad or the Department of Registration of Societies Malaysia (ROS) in the Organization.
2. The type of business registered should cover construction work or related to facility and maintenance.
3. Has a fixed paid-up capital
4. Directors have a Certificate of Management Competence (SKP) in the field of Facility and Maintenance Services OR have the qualifications recognised by CIDB as follows:
 - Certified Facility Manager (CFM) – IFMA
 - Facility Management Professional (FMP) – IFMA

- Certified British Institute Of Facility Management (CBIFM) – BIFM
- Bachelor / Master / Doctor of Philosophy degree recognised by the government in asset / facility management / maintenance with three (3) years of relevant work experience.

5. Technical Personnel has established qualifications.

- Skills Certificate of Competence (SKK) in facility services and or maintenance
- Experienced in facility or maintenance services

**Disclaimer: The general requirement as of January 2020 subject to change and review by the committee CIDB*

PART 3

METHODOLOGY

3.1 Introduction

This study adopted the qualitative method and SWOT analysis, mainly due to its own strengths and weaknesses. Typically, the qualitative approach allows each method to complement the other's weaknesses, thereby strengthening the results garnered from the study (Creswell, 2003). Qualitative research methods are used in situations where a researcher intends to explore and comprehend the meanings ascribed by individuals or groups to a social or human problem. The researcher builds from a central question or the broadest question that can be enquired, which is used in order to avoid limiting the research, up to several sub-questions geared towards finding more definitive and varied explanations (Creswell, 2003). In this study, the methodology was done by interview session for department as follows:

1. Bahagian Pendaftaran Kontraktor dan Levi
2. Bahagian Kompetensi Penyeliaan dan Pengurusan
3. Bahagian Pembangunan Kontraktor
4. Bahagian Bisnes

Next, the data were gathered from interview session and analyse using the SWOT analysis. SWOT is a situational analysis that including strengths, weaknesses, opportunities and threats. Figure 3.1 shows the data collection for this study.

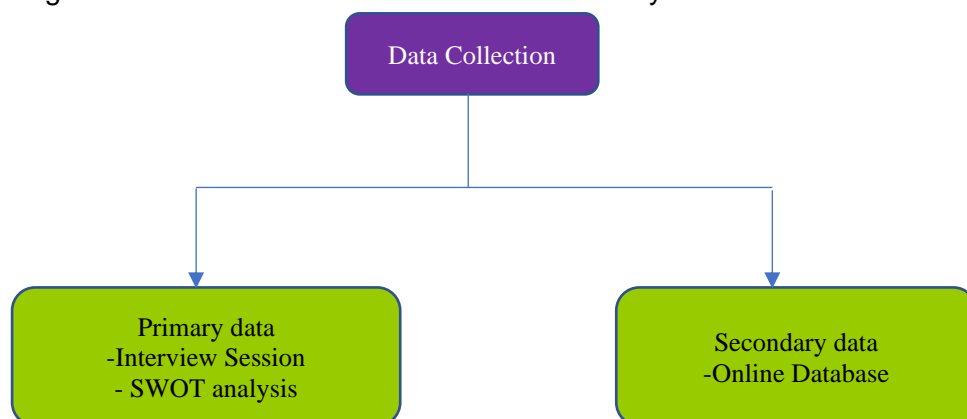


Figure 3.1: Process of data collection

3.2 Open Ended Interview

The qualitative research interview seeks to describe and the meanings of central themes in the life world of the subjects. The main task in interviewing is to understand the meaning of what the interviewees say. (Kvale,1996). A qualitative research interview seeks to cover both a factual and a meaning level, though it is usually more difficult to interview on a meaning level. (Kvale,1996). Interviews are particularly useful for getting the story behind a participant's experiences. The interviewer can pursue in-depth information around the topic. Interviews may be useful as follow-up to certain respondents to questionnaires., to further investigate their responses. (McNamara,1999). Standardized, open-ended interview – the same open-ended questions are asked to all interviewees; this approach facilitates faster interviews that can be more easily analysed and compared. In this report, the method used is interview open ended to selected department in CIDB.

3.3 SWOT analysis

SWOT stands for Strengths, Weaknesses, Opportunities, and Threats, and so a SWOT Analysis is a technique for assessing these four aspects of your business. SWOT Analysis to make the most of what have got in organization's best advantage. And can reduce the chances of failure, by understanding what are lacking, and eliminating hazards that would otherwise catch unawares.

For a SWOT analysis to be effective, company founders and leaders need to be deeply involved. This is not a task that can be delegated to others.

But company leadership should not do the work on their own, either. For best results, need to gather a group of people who have different perspectives on the company. Select people who can represent different aspects of the company, from sales and customer service to marketing and product development. Innovative companies even look outside their own internal ranks when they perform a SWOT analysis and get input from customers to add their unique voice to the mix. Existing businesses can use a SWOT analysis to assess their current situation and determine a strategy to move forward.

3.3.1 How to do a SWOT analysis in the right way

Need to gather a team of people together to work on a SWOT analysis. There is the way how to do a SWOT analysis in the right way:

1. Gather the right people.

Gather people from different parts of company and make sure that they have representatives from every department and team. Find that different groups within the company will have entirely different perspectives that will be critical to making SWOT analysis successful.

2. Rank the ideas.

Once all the ideas are organized, it is time to rank the ideas. Based on the voting exercise, should have a prioritized list of ideas. Of course, the list is now up for discussion and debate, and someone in the room should be able to make the final call on the priority. This is usually the CEO, but it could be delegated to someone else in charge of business strategy.

Strengths

Strengths are internal, positive attributes of your company. These are things that are within your control.

Weaknesses

Weaknesses are negative factors that detract from your strengths. These are things that you might need to improve on to be competitive.

Opportunities

Opportunities are external factors in your business environment that are likely to contribute to your success.

Threats

Threats are external factors that you have no control over. You may want to consider putting in place contingency plans for dealing with them if they occur.

PART 4

RESULT AND DISCUSSION

4.1 GAP IN DIVISION RELATED TO FM

Table 4.1 shows the findings gathered from divisions of CIDB. According to division, few issues and gap need to be highlighted. Among other, the process flow of registration and renewal FM contractor should be streamlined between CIDB headquarters and state offices. Many feedbacks received most of officers were not aware the procedure/ SOP of registration FM contractor and courses offered by CIDB as a condition for registration. The levy imposition to FM contractor also need to be streamlined.

Table 4.1 Gap of FM Related Division of CIDB

Bahagian Pendaftaran Kontraktor dan Levi	Bahagian Kompetensi Penyeliaan dan Pengurusan	Bahagian Pembangunan Kontraktor	Bahagian Bisnes
Terminology and definition of FM in construction	FM process/SOP for registration/renewal in CIDB states offices should be streamlined	Training module for owner and operational level should be according to the needs (i.e roads, infrastructures). Priority should be given more to operational and personnel	FM policy development
Process works and procedure of registration not streamlined in CIDB	Review the requirement of SKP and SKKP	Levy payment to FM contractor should be clear and streamlined.	FM standard development

headquarters and state offices		(Database on levy payment to consultant and sub-contractor FM)	
Course related to building maintenance are not recognised	Add on specialist areas such as roads, railways in the module	Registered FM contractor found not enough experience and competency to do FM job.	Study and Data analysis
Levy imposition to FM contractor not clear			Promotion and networking in FM
Benchmarking with developed countries i.e USA and UK			Whole Life Cost (WLC)
Focus should be given to FM contractor (hands-on) and partially to management company			Dasar Senggara Infrastruktur Negara (DSIN)- KKR (in planning)
Data employability of FM graduates are not well traced (supply and demand)			
Lack of promotions and accreditation courses to FM contractors			
Enforcement of FM contractors			
Streamline policy and contract on FM inter-ministries			

4.2 Listed below is the collation of CIDB initiatives taken towards empowerment of FM within departmental level. Few issues have been raised and need to be further improvement by the management. Table 4.2 has explained of CIDB initiatives and propose for improvement for next of action by CIDB.

Table 4.2: CIDB Initiatives and Propose for Improvement

GOVERNANCE		
CIDB Initiatives	Issues	Propose for Improvement
FM registration	No registration flow chart Renewal (SKP and SKKP mandatory) in the system due to unavailability SKP/SKKP for contractors	Establish flow chart of registration (existing, new, renewal)
Levy and enforcement	Tracking FM contractors (active/inactive)	Enhancing process of tracking and enforcement
FM Policy/Standard	Lack of direction and policy for FM industry	Develop FM Strategic Plan for Industry

TRAINING AND ACCREDITATION		
CIDB Initiatives	Issues	Propose for Improvement
Sijil Kecekapan Pengurusan (SKP) (F01)	Outdated module	Module need to be reviewed with current needs and trends
	Different style of teaching method by appointed PLBK	Standardise teaching method at PLBK
Sijil Kecekapan Kemahiran Personel (SKKP) – Facility	Since 2016, module SKKP, PLBK and trainers were not conducted properly	Conduct training for contractors (FME & FMM)
FM Executive (FME)	Interview, examination, training and assessment	Streamline requirement process BPK and Bahagian Kompetensi Penyelidikan Pengurusan
FM Managers (FMM)	Success rate is too low	

	Requirement flow chart for SKP and SKKP not clear	
BIM Coordinator FM (ECSB)	Focus on beginner level	Training should be regulated
F02 (healthcare services)	Module is handled by IIUM and recognised by CIDB	Develop module F02 (healthcare services) – currently on 65 players

ADOPTION TECHNOLOGY AND INNOVATION

CIDB Initiatives	Issues	Propose for Improvement
R&D (CREAM)	No focus and priority areas	Establish research priority areas
Adoption Technology (CR4.0 Strategic Plan)	No execution plan of CR4.0	Develop interactive Quadruple Helix Model for CR4.0

4.3 SWOT ANALYSIS OF FM FUNCTION IN CIDB

Table 4.3 below show the SWOT analysis based on information. CIDB should take on as new green field for FM. The business of FM across the industry and there is supply and demand. CIDB with CSP 2021-2025 should embark to prepare Strategic Plan for FM to chart the direction FM for construction industry.

Table 4.3: SWOT Analysis for CIDB

Strength	Weaknesses	Opportunities	Threats
CIDB Strategic Plan 2021-2025 and National Construction Policy (NCP 2030)	Areas of FM too big and need to streamline with construction industry	New green field of FM in construction industry (supply chain)	Increase construction cost
Sijil Kecekapan Pengurusan (SKP) and Sijil Kecekapan dan Kemahiran Personel (SKKP)	Definition of FM in CIDB Act 520 not specifically specify FM	FM for healthcare services	Cartel and monopoly concessionaires in FM (particularly in healthcare industries)
FM contractor registration	Division roles in CIDB not streamlined	Digitalising FM through CR4.0 and IR 4.0	
Facilitator for government, industry and academia on FM		FM as outcome based and end users centric	
Upskilling and reskilling competency/accreditation FM for personnel and contractor		New supply and demand for FM in construction industry	
		Training and registration for FM consultant	

COMPARISON OF FM GAP IN CIDB AND INDUSTRY

a) GOVERNANCE

Currently no agreed definition of FM in Malaysian context thus far. People always perceived FM is merely maintenance and non-core services. Industry always refers FM definition from USA and UK perspective. CIDB Act 520 1994 defined construction works as construction, extension, installation, repair, maintenance, renewal, removal, renovation, alteration, dismantling or demolition. In the word, it only mentions maintenance but not on facility works. Policy in Malaysia regarding to FM only mentioned in *Dasar Pengurusan Aset Kerajaan* (DPAK). The policy more focused on the government of asset management. From the industry perspective, only Malaysian Association Facility Management (MAFM) has play roles in defining the FM.

Roles of FM in CIDB can be seen in two units namely Unit Facility Management and Unit of Facility Management Development. These two units have different roles but carry word FM. The personnel competency is under purview of Personnel Sector while contractor competency is under Contractor Development Division. The registration of FM contractor under registration and levy. The segregation of works should be clearly stated to avoid confusion not only internally but also impact to external perspective.

The regulation of FM contractor to register also need to be reviewed. Some confusion happened when cross refer to manual of FM registration.

Industry workshop and engagement organised by Ministry of Works and JKR, did highlighted the urgent need for Central Institute to govern FM fraternity in Malaysia. The institute will act as governing body and umbrella for FM players.

SUGGESTIONS

- a) Need to define FM in the context of Malaysian construction industry;
- b) Amendment of Act 520 CIDB to include facility works in the definition of construction works;

- c) Realign unit and division of FM in CIDB so that it more focus and centralised;
- d) Establish Centre of Excellence (COE) for FM in Malaysia under purview of CIDB

Registration of FM Contractors

CIDB has established the procedure of registration for FM contractor for code F01 under the Division of Contractor and Levy. To promote FM contractors to register with CIDB, the government has since 2017, gave special green lane to FM contractors to register. In 2021, more than 800 contractors registered through this scheme. Special green lane is continued until 2020. Through this process, FM contractors were eligible to obtain code F01 if they were experience undertaking any FM jobs. They need to produce sufficient evidence to CIDB for them eligible to register as FM contractors.

The green lane at one point is good for creating and register FM contractors. But in another aspect, many contractors without adequate experience would also apply for FM contractors to get F01. It will cause database of FM contractors were not genuine. Currently, the practice of FM registration they must register for contractor and personnel scope differently. The contractor who representing the company i.e directors, CEOs, general managers had to attend the 5-days course known *Sijil Kecekapan Pengurusan (SKP)*. While personnel of the company must attend *Sijil Kecekapan Kemahiran Personel (SKKP)*. The scope of personnel is more on technical knowledge and skills in managing FM operation. These are requirement must comply to register F01.

Contractors have highlighted the difficulties of SKP for top management to undergo 5-days trainings. There is a requirement for top management to sit for another SKKP training if they were not technical people. The same module needs to undergo training twice and this can burden the contractors and to some extents were not productive and efficiently courses.

The problems arise when the expiry date of registration, they have to renew the F01 code. Even though SKP for owner/rectorship of contractors are available, but the SKKP training facing bit tricky by the contractors. They must have SKKP for them to renew the license. At the moment SKKP for FMM and FME statistics showed not satisfactorily numbers

throughout year 2019 and 2020. Table 4.3 below shows the statistics from CIDB for FMM and FME;

Table 4.4: SKKP for FMM Year 2019 and 2020

	Facility Management Manager (FMM)-SKPP			
Year	Method 1	Method 2	Method 3	Total
2019	0	0	8	8
2020	19	26	4	49
TOTAL				57

Table 4.5: SKKP for FME Year 2019 and 2020

	Facility Management Executive (FME)-SKPP			
Year	Method 1	Method 2	Method 3	Total
2019	0	0	0	0
2020	34	7	1	42
TOTAL				42

Method 1: Training course

Method 2: Examination and assessment

Method 3: Interview

Based on table 4.3 and table 4.4, the numbers of FMM and FME relatively low as compared the scale of FM industry. Method 3 (interview) and method 2 (exam/assessment) much complicated and difficult to pass. The only favourable method by contractors is through course trainings conducted by PLBK. The course trainings are put on hold and prolong more than a year due to pandemic COVID-19 last year.

In lieu of that, CIDB through media statement has cushion the impacts of COVID-19 by implementing the initiative of PRIHATIN by introducing exceptional of SKP for renewal application starting from 1 January 2021 until 31 March 2021. The contractors had

difficulties to undergo training for them to eligible for renewal license through CIMS of CIDB. The renewal can not be made until contractors produce evidence of having valid SKKP in the system. Currently only 3 training centres (PLBK) provide such trainings. CIDB should consider the capacity of receiving bulk of participants after COVID-19. Thus few suggestion can be taken as process of improvement in CIDB;

- a) Readiness and adequacy of training centres (PLBK) to cater big number of undergo training for SKP/SKKP
- b) Standardised the teaching method by every PLBK
- c) Readiness of trainers and assessors undertaking the course
- d) Preparation of communication plan to strategise PLBK and CIDB
- e) Mapping the integration of SKP and SKKP
- f) Revising course SKP to be more practical to contractors to avoid overlapping with SKKP courses

Based on FM registration data collection, there are 850 companies registered under FM contractors in Malaysia in 2021. Figure 4.1 shows the G3 until G7 companies that has registered FM contractors.

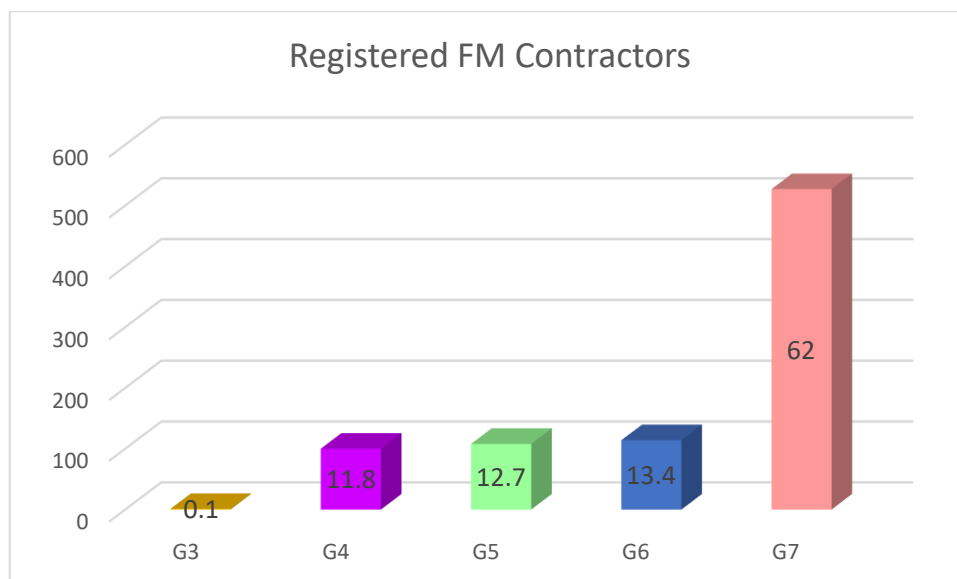


Figure 4.1: Registered FM Contractors in Malaysia in 2021

The figure shows the G7 grade of contractor has the largest number of registered companies which is 527 companies compared to other grades. The second is followed by

G6 grade with 114 companies, G5 grade with 108 companies and G4 grade with 100 companies. Only 1 company was registered for G3 grade.

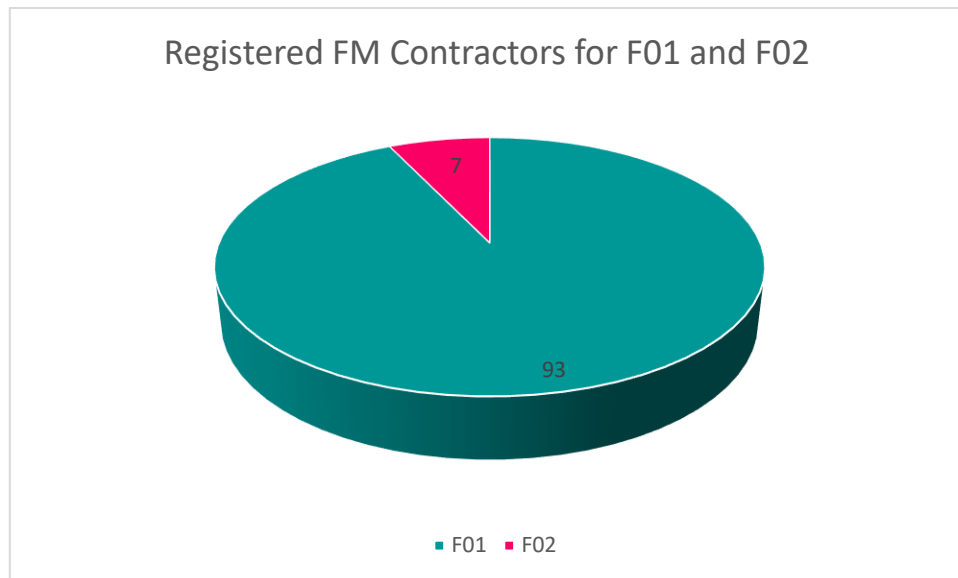


Figure 4.2: Registered FM Contractors for F01 and F02 in Malaysia

For the registration of F01, there are 850 companies registered while for F02 has 65 companies. This indicates the difference and large gap between these two contractors of F01 and F02 programme.

Second issue on the qualification criteria of registration F01. As stated in the procedure, company must have technical personnel (Degree in FM). As of now, not many university in Malaysia offer degree in FM. Currently only few university offer degree in FM. Most of universities are offering degree and diploma related to building, maintenance, construction management which partly subject covered FM and maintenance.

From FM industry perspective, there is misleading by these 2 scopes of registration. Contractor must register for company and personnel together. The registration for owner/shareholders of the company were not practical and does not carry weight in routine works. FM industry suggested, it is enough for owner/shareholders to only undergo awareness course for them be eligible to register.

SUGGESTION

- Need for CIDB to review the registration process to make more practical way of registration. In order to obtain F01, it is sufficient for contractor to register the FM personnel to undergo the compulsory training provided by CIDB.
- The eligibility qualification of criteria should also be reviewed. Degree in FM should be amended to align with current degree courses offered related to FM. Mutual recognition either degree or diploma with working experiences can be considered to register with certain requirement.
- Database of FM contractor should also be updated. Registration can trace back the status of contractor whether active or inactive.
- The programme of SKKP for FMM and FME should be reviewed and streamlined with the registration and renewal requirement in the application process. The readiness of SKKP should be streamlined with the SKP so that the contractor clear of what need to be done when they want to renew of the licensing of F01 and F02.

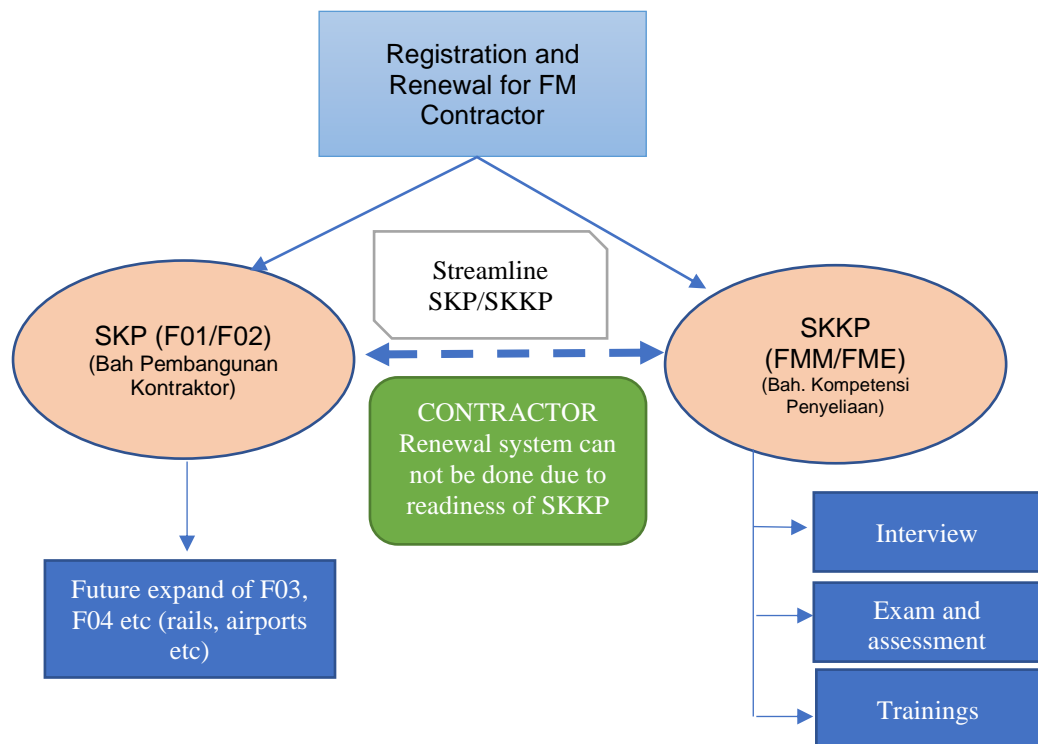


Figure 4.3: Gap of SKP and SKKP

b) TRAININGS

Competency is key aspect in developing skills and human capacity of personnel. At the moment CIDB provided such competency trainings for FM Executives (FME) and FM Managers (FMM). These training would cater for personnel and under competency division of CIDB. While for contractors, there are *Sijil Kecekapan Pengurusan (SKP)* and *Sijil Kecekapan Kemahiran Personel (SKKP)*.

These trainings were under Personnel Contractor Division of CIDB. These trainings are requisite for contractor to get F01 (FM for General). At the moment, F01 training module is used as teaching materials under selected *Pusat Latihan Bertauliah Kemahiran (PLBK)* appointed by CIDB. However, method of teaching and slides presentation is not standardised, among others. Different PLBK using their preference in teachings techniques. From the review of training module F01, the module is too general, and some topics are duplicating each other. Some topics could be combined under one topic. The module was developed more than 10 years ago and timely to be revised to suit with current needs.

Healthcare works, contractor need to register under different code namely F01 (mainly FM contractor for healthcare). Currently training for F02 being handled by International Islamic University of Malaysia (IIUM). The CIDB recognised the course and contractor eligible to register once completed. Course of F02 is undertaken by technical personnel from healthcare concessionaire like Medivest, Faber Group, Radicare and so on.

Representative from FM industry suggested, training module F01 should be reviewed and updated. Most of the content and topics in module would rather obsolete and align with the current need of FM industry. For example module should include sustainable in FM, technology and innovation including Building Information Modelling (BIM), Construction 4.0 (CR4.0).

SUGGESTIONS

- a) Learning method conducted at every PLBK should be reviewed to make sure the consistency of learning includes slides presentation;
- b) Training module SKP and SKKP should be reviewed and updated. SKP should add additional topics such as sustainable, innovation and technology;
- c) Establish training module of F02 (healthcare services) should be handled directly under purview of CIDB;
- d) Introduce e-learning in FM to give more flexibility to personnel attending classes and more attractive

c) SETTING PRIORITY FM FOR CIDB

After deliberation with related division in CIDB and feedback from representative of MAFM and industry players in FM, setting priorities have been grouped in matrix. Figure 4.2 shows the matrix priority from CIDB and industry perspectives have been gathered. It is found that, three major action need to be taken by CIDB to align the requirement of FM for industry are;

- a) The readiness of imposition regulations to FM players should be reviewed;
- b) Need further review training module SKP to align with current industry requirement;
- c) Review registration process work flow of FM registration so that, the instruction are well coordinated between CIDB and its state offices throughout the country.

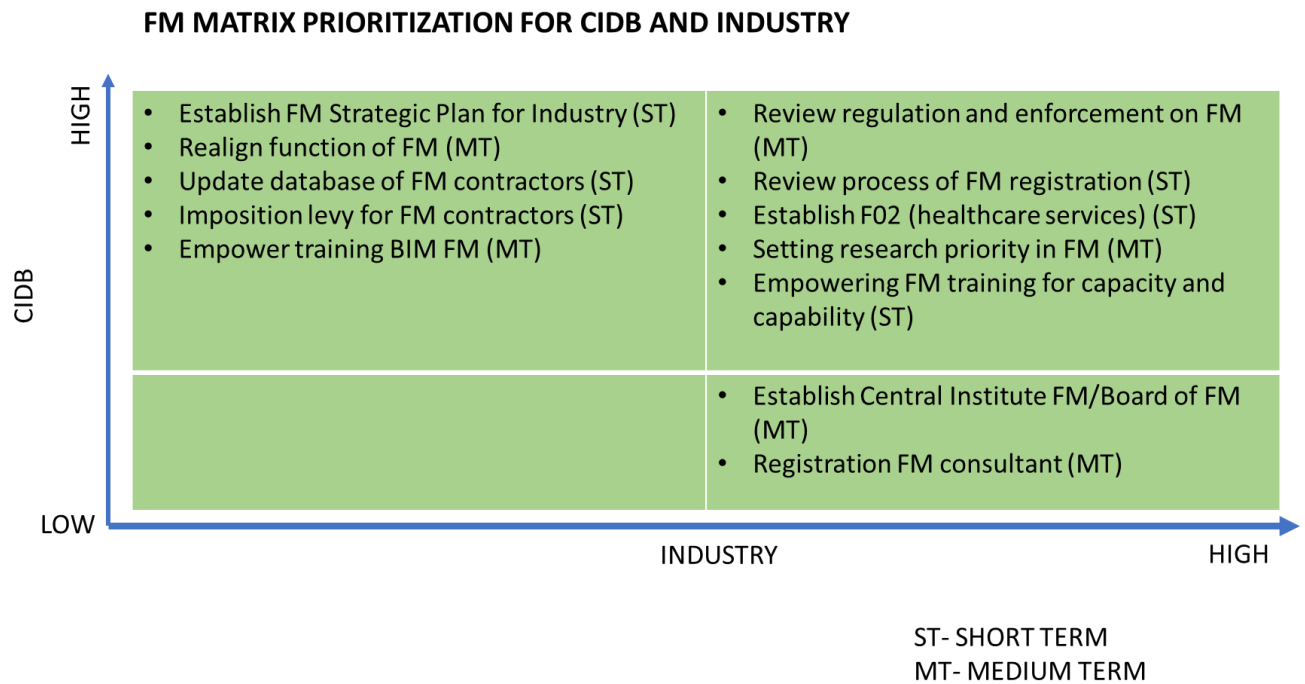


Figure 4.4: CIDB-Industry FM in Malaysia

d) FM ACTION PLAN FOR CIDB

Based on the setting priority in Figure 4.2 above, action plan of FM for CIDB can be done by phases. There are activities need to be done less than 1 year, some activities require less than 3 years. For long term which is less than 5 years, requires further discussion by CIDB and industry participation. Short-term periods need quick action by related division of CIDB to push forward FM within 1 to 3 years times.

Table 4.6: Action Plan for FM (Short, Medium and Long-Term)

PERIOD	ACTIVITIES
Short-Term (less than 1 year)	a) Establish FM Strategic Plan (Bah. Bisnes) b) Realign Division FM related functions (SDK) c) Update database of FM active contractors (Bah. Pendaftaran Kontraktor)

	<ul style="list-style-type: none"> d) Review and streamlining process of FM registration (Bah. Pendaftaran Kontraktor/Bahagian Kompetensi Penyeliaan Pengurusan) e) Establish SKP for F02 (Healthcare services) f) Empowerment FM trainings (Bah. Pembangunan Kontraktor) g) Development of FM training module FM (CREAM)
Medium-Term (less than 3 years)	<ul style="list-style-type: none"> a) Training BIM FM to be regulated (ECSB) b) Empower scope of works in FM (PUU) c) Review regulation and enforcement (Bah Pengurusan Levi) d) Setting research priority in FM (Unit Pembangunan FM/CREAM)
Long-Term (less than 5 years)	<ul style="list-style-type: none"> a) Establish Central Institute FM/ Board of FM b) Registration FM consultant

e) GAP ANALYSIS WITHIN CIDB AND SUBSIDIARIES

Multi-cross sectors of CIDB plays function of FM as well as its subsidiaries. There are three main cores should be given priority by CIDB. The people, process and technology are found to be the gap within CIDB need to be closed. Three sectors of CIDB (Sektor Kontraktor & Levi, Sektor Dasar & Korporat and Sektor Pengurusan) have their different objectives.

For instance, Bahagian Bisnes (Unit Pembangunan Bisnes) under Sektor Dasar & Korporat while another division looking on FM (Bahagian Pengurusan Fasilitas, Sektor Pengurusan). It seems these two divisions overlapping its roles and industry players were confused its existence. Even though BPF CIDB main function managing internal project of CIDB such as Akademi Binaan Malaysia (ABM), The METS and state offices, the division should be parked under same sector or more effective and well coordinated of its functions. It is recommended that, these division could be combined and divide the function and direction. For example, division can focus on development and

management of FM programme. Figure 4.3 show the correlation of function CIDB related to function of FM.

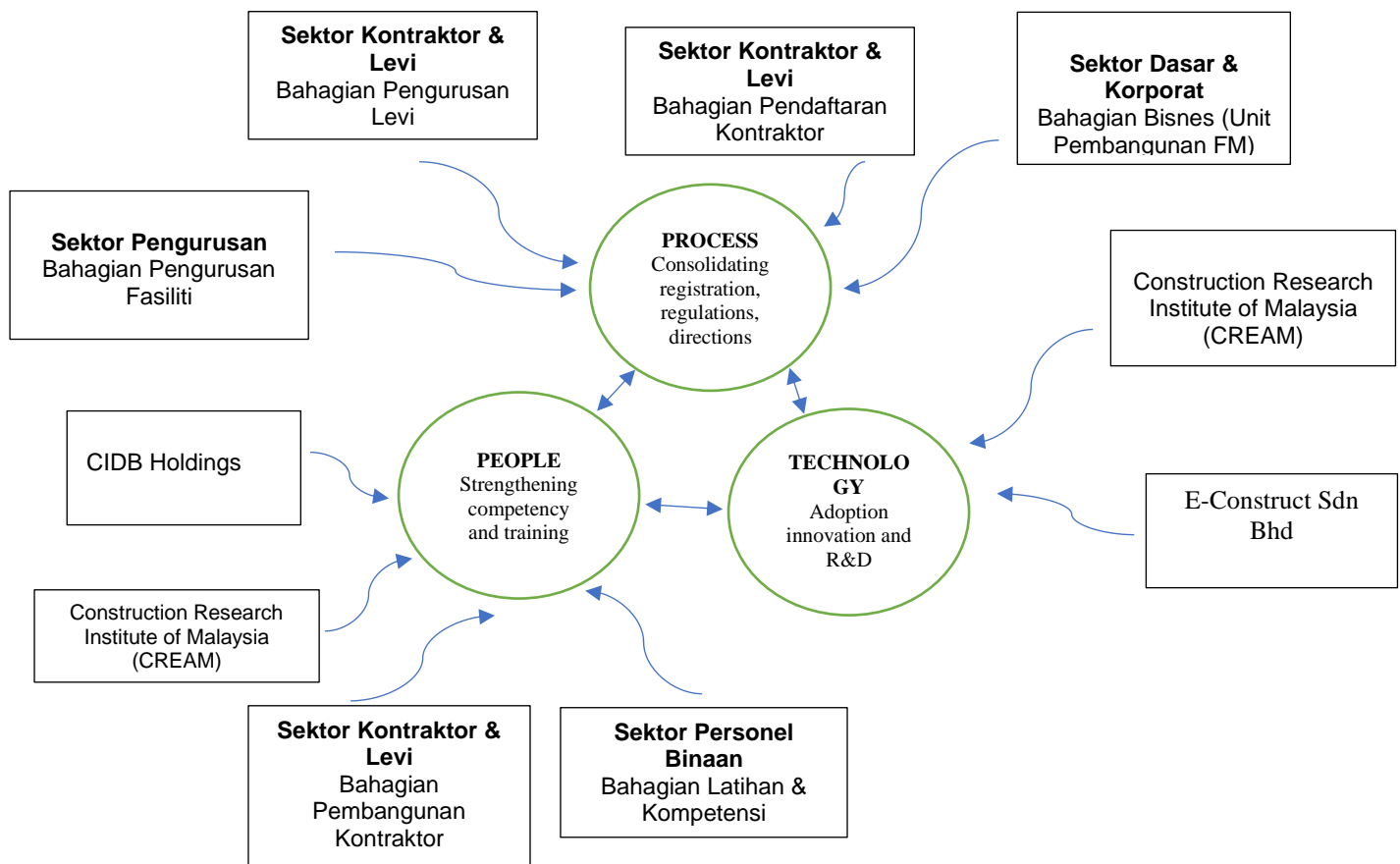


Figure 4.5: Correlation of Function CIDB with Core FM

f) PROPOSED CIDB FM ECOSYSTEM

Based on feedback from industry players and benchmarks study have been done, Malaysian construction industry thus far have not FM ecosystem by itself. FM in country have been running by private company and service providers. There are four pillars to uphold FM ecosystem of CIDB.

The transformation should start from the governance. It will be followed by having training and accreditation as part of human capacity as stipulated in CIDB Act 520. Adoption of advent technology Industrial Revolution (IR4.0) is much needed for FM. Technology could be from Construction Revolution (CR4.0), BIM, innovation and R&D. The cycle will close the loop with

enhancement of business environment as part of economy and entrepreneurship in FM. Focus not only to service providers, contractor but more over to FM consultants. The iteration process is shown in Figure 4.6 as generic process for FM revolution in construction industry. The success of FM ecosystem is much supported by three facets namely, FM industry, leading association and academia/research institutes.

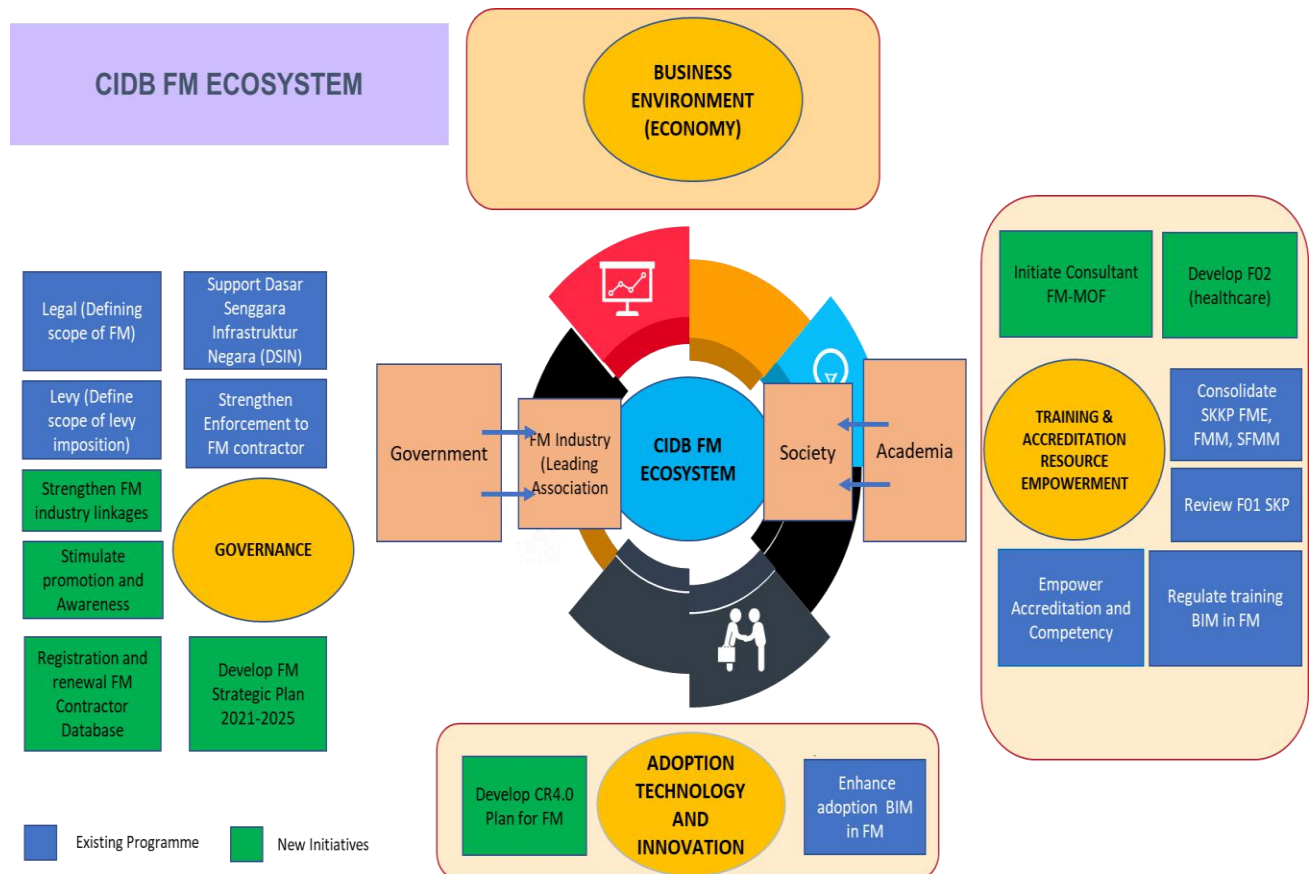


Figure 4.6: Proposed CIDB FM Ecosystem

g) CIDB Strategic Plan (CSP 2021-2025)

A five-year plan of Construction Industry Development Board (CIDB) addressing the rethinking of CIDB's role in shaping the future of the construction industry. The strategic planning is continuity plan from the Construction Industry Transformation Programme (CITP 2016-2020) to drive and change the mindset of the industry to be more resilient and robust in facing the advent of Industrial Revolution 4.0 (IR 4.0).

FM is one of new focus areas to be empowered by construction industry. The FM has big role and inspires to improve current services benchmarking and stand tall with world class FM industry in future.

FM would improve productivity and some initiatives have been placed under strategic objectives as below;

- a) FM strategic plan for the industry.
- b) FM policy in supporting the CR4.0 and big data initiative using technology as facilitating platform.
- c) FM database on whole life cost (WLC).
- d) FM practitioner's competency through enhancement of training modules according to registration classification covering both building and healthcare sectors.
- e) FM personnel competency development programme
- f) FM data intelligence analysis and salient benchmarking parameter for FM

Figure 4.5 below is proposed strategic plan for FM in industry. CIDB will play roles in streamlining function FM and to be a facilitator for industry players.



Figure 4.7: Proposed Strategic Plan for FM Industry

4.4 GAP FOR FM INDUSTRY

Issues in governance, adoption and technology, trainings and business environment need to be addressed in FM industry. Table 4.4 highlighted the pertinent issues and the propose solution to tackle the problems,

Table 4.7: Issues and Propose for Improvement FM Industry

GOVERNANCE	
ISSUES	Propose for Improvement
FM practices too diverse and not focused.	a) Define standard, scope and application in FM b) Need statistical data on FM players
Many associations and overlapping roles i.e MAFM (FM), MIPFM (Property Managers) & MAPMA (Project and Asset Management)	Align and empower the function through single entity to cater for; a) Strategic collaboration govt and industry b) Information centre and technology hub FM c) Provide pool of experts in FM d) Provide consultancy local and international e) Promoting FM industry locally and international
No coordination body to govern FM industry for the following; a) Blueprint for FM industry b) Benchmarking for FM c) Regulators for FM industry	Establish CoE as coordination body for; a) R&D (CREAM. CREaTE, University) b) Training and Competency (CIDB, MAPMA, MAFM, BOVEA, CREaTE) Establish Board of FM to regulate and enforce FM players
Standard practice & procedure, credentials competency certification for government and industry	JKR to focus on government CIDB to focus on FM industry
Lack of engagement with industry players during planning stage No consideration for Whole Life Cost (WLC) and ROI	Need to establish guidelines for FM Planning in government Establish Strategic Model on Procurement based on Total Life Cycle Asset and FM

ADOPTION TECHNOLOGY AND INNOVATION	
ISSUES	Proposed
Record of project FM Record of Contract FM Record of contractors Record of suppliers	Establish Big Data for FM
No system integration	Establish E-Tendering / Smart Monitoring / Digital Library/ Data Integrity/ Benchmarking / Complaints management Provide dashboarding
Lack of experts and skilled workers on BIM in FM	Training on BIM FM should be empowered (modellers, installers and assessors)

TRAINING AND ACCREDITATION		
Factors	Issues	Proposed
Workmanship and quality	Poor workmanship	Green card to include FM
CIDB Course on SKP and SKKP	Duration of SKP too long for Board of Company -5 days Stringent assessment for SKKP (Interview, Assessment and Training)	Review the procedure Introduce training and made compulsory for registration and renewal

FM capacity and capability (845 FM players) Certified managers (accredited) – Less than 100	Lack of FM players	•Provide more trainings, assessment and experience
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BUSINESS ENVIRONMENT		
Factors	Issues	Proposed
Business Model	No best practices for government and industry	Establish business model, contracting model and delivery model
Internal Environment	Lack of Professional FM Material Lack of financial support Equipment Management	Strategic role for organization to develop policy, Strategic planning towards delivering quality facilities
External Environment	Government Legal Politics Social cultural Demographics	investment purposes by providing good quality services Enhance procurement in FM Increase technology providers Establish Vendor Development Programme (VDP) FM supply chain management

From the management context business environment is an economic sense of human activities such as production, extraction or purchase of goods and performed earning profits. It is divided into two main categories which is the internal environment and external environment. Internal environment includes of 5 Ms which is man, material, money, machinery and management within the control of business. Meanwhile external environment focused on factors such as government and legal, physical, political, socio cultural and demo graphical.

This will expand to micro environment and macro environment that focuses on suppliers, customers, market intermediaries competitors, public and etc. business environment is a big scope that need to be taken care of in order to achieve the

organizations' objectives that leads to competitive advantage. Prior to this, FM need to be seen as business perspective rather than viewing it so much as a technical base whereby the scope may include business services, legal, financial, administrative as well as space, environment, information and other support activities (Keith, 1996). Keith (1996) emphasis that, business environment is a strategic role for organization to develop policy, contribute to strategic planning towards delivering quality facilities.

Besides, business environment can be focus as an investment purposes by providing good quality services as well as attracting the customers by fulfilling the customers' requirements, wants and needs. According to survey done by Goyal and Pitt (2005) it is highlighted that FM contributes to business success and achieve organization's goals that lead towards continuous improvement. In addition, business environment is a large scope that relates to the organization as an overall that contributes to boost the profit margin. Therefore, strategies in FM are very important to make sure the business environment has the stability, proactive and adaptive that contributes to the profit margin of FM organizations.

4.5 RECOMMENDATION OF FACILITY MANAGEMENT IN INDUSTRY

Table 4.8: Issues, Way Forward and Recommendation FM in Industry

Issues and challenges	Way Forward	Recommendation
Lack of FM players	Optimize the use of resources (capital, human and technology) and support organisation goals and customers requirement	Amend existing act CIDB 520 to include FM-registration, category, enforcement Development of FM training module
Lack of FM capacity and capability	Provide more training, assessment and experience.	Establish central institute on FM/Board of FM

Add on enforcement and legislation	Develop accreditation module	To improve FM strategies
FM only on operation level	To standardize and harmonise FM with ISO 55000 and 41000 and suit with local requirement	To have a road map/strategic plan on FM industry
No standard on FM is available to be referred by FM players in Malaysia	FM must be implemented at the design stage	FM and maintenance should be unified
FM only refer to contractual compliance	Working group to develop standard on asset management with Jabatan Standard Malaysia	Give incentives to FM players-tax relief, training fund
Lack of data sharing	Benchmarking best practices with Singapore	Long term contract (at least 3 years and above) <ul style="list-style-type: none"> • Change management • ROI • Cut cost • Increase quality service

4.6 KEY RECOMMENDATION TO CIDB

After deliberation, some of the points have been highlighted to be tackled urgently by CIDB in near future. Four (4) main recommendation should be formulated by CIDB to embark the process of consolidating FM process for CIDB internally and industry directly.

1. Develop FM Strategic Plan for Construction Industry
2. Integrate and streamline FM registration/renewal flowchart between BPK and Bahagian Kompetensi Penyeliaan
3. Enhance and review training module SKP (F01) and SKKP (FME/FMM)
4. Develop F02 (Healthcare Facilities)

4.7 CONCLUSION

Through this strategic plan, it is hoped that FM would be position at the right track to shaping construction industry forward. The COVID-19 outbreak has acted as a catalyst for change and has reiterated the need to pay attention to how facility is being managed and services are being delivered. All built environments, owned or leased offices, warehouses, retail stores or manufacturing facility, will require careful consideration and tailored plans.

Moving forward in the era of pandemic COVID-19, FM is one of green field in construction industry. As supporting for non-core business, FM can play a pivotal role in integration process, technology and process in value chain.

In the context of CIDB, the first action needs to be taken is to review internal issues with regards to registration process, policies and regulations as well as review some of existing training module.

Driven by an increased focus on the user experience and business outcome, the role of FM providers is becoming more strategic and long term. With employee engagement and experience gaining importance, FM providers are working in partnership with customers. CIDB need to establish FM strategic plan for construction industry. The 5-year plan is important to chart the direction of FM in Malaysia.

The action plan of short, medium and long term for CIDB as encapsulated in CIDB Strategic Plan 2021-2025 (CSP) should lead the way to enhance the image FM industry to the greater height in 2021 onwards. CIDB should be a facilitator for industry players and government in particular FM.