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(CONSTRUCTION INDUSTRY STANDARD)

CIS XX : xxx

FACILITY MANAGEMENT STANDARDS AND BEST PRACTICES

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CONSTRUCTION INDUSTRY DEVELOPMENT BOARD

Construction Industry Development Board Malaysia

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FACILITY MANAGEMENT STANDARDS AND BEST PRACTICES

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CIDB MALAYSIA

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Facility Management
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TABLE OF CONTENTS

Committee representation iv

Preface v

SECTION 1: GENERAL 1

1.1 Introduction 1

1.2 Purpose 1

1.3 Alignment with CIDB Strategic Goals 1

SECTION 2: SCOPE AND APPLICATION 3

2.1 Application 3

2.2 Adaptability 4

2.3 Complementarity with Other Requirement 4

2.3.1 Legal and Regulatory Alignment 4

2.3.2 Integration with Industry Standards 5

2.3.3 Sector-Specific Requirements 6

2.3.4 Conflict Resolution 6

2.3.5 Supporting Continuous Improvement 6

SECTION 3: TERMS AND DEFINITION 7

SECTION 4: CIS FM FRAMEWORK - CAPABILITY 9

4.1 Leadership and Commitment 9

4.1.1 Leadership Commitment 9

4.1.2 Strategic Plan 9

4.1.3 Leadership Roles, Accountability, and Competence 10

4.1.4 FM Organisational Structure and Resources 10

4.1.5 Governance, Ethics, and Compliance 10

4.1.6 Policy Development, Review, and Control 10

4.1.7 Stakeholder Engagement and Communication 11

4.1.8 Risk Management and Transparency 11

4.1.9 Business Continuity and Resilience Planning 11

4.2 Regulatory and Facility-Specific Compliance 11

4.2.1 Scope 11

4.2.2 Statutory Acts and Regulatory Framework 12

4.2.3 Guidelines and Standards 12

4.2.4 Sector Specific Requirements 13

4.2.5 Documented Information 13

4.3 Human Resource and Workforce Development 14

4.3.1 Recruitment and Staffing Policy 14

4.3.2 Competency and Talent Management Strategy 15

4.3.3 Compliance with Regulatory Manpower Requirements 15

4.3.4 Capacity Building and Training Programs 15

DRAFT

4.3.5	Roles, Responsibilities, and Accountability	15
4.3.6	Workforce Performance Monitoring and Improvement	16
4.3.7	Recruitment and Onboarding Processes	16
4.3.8	Training Delivery and Competency Certification	16
4.3.9	Role Execution and Accountability	16
4.3.10	Regulatory and Certification Compliance	16
4.3.11	Documentation and Records Management	16
4.4	Policy, Procedures, and Documentation	17
4.4.1	Strategic Level	17
4.4.2	Tactical Level	17
4.4.3	Operational Level	17
4.5	Process Control	18
4.5.1	Process Mapping (Strategic & Operational)	18
4.5.2	Assess Current Performance and Improvement Identification (Tactical & Operational)	18
4.5.3	KPI Development and Implementation (Strategic & Tactical)	19
4.5.4	Periodic Performance Review and Benchmarking (Tactical)	19
4.5.5	Drive Continuous Improvement (PDCA) (Operational & Tactical)	19
4.6	Financial Management	20
4.6.1	Financial Policy and Governance	20
4.6.2	Budgeting and Resource Allocation	20
4.6.3	Financial Risk Management	20
4.6.4	Financial Planning and Forecasting	20
4.6.5	Life Cycle Costing and Asset Financial Planning	21
4.6.6	Cost Control and Expenditure Monitoring	21
4.6.7	Revenue Management and Funding Sources	21
4.6.8	Risk in Financial Operations	21
4.6.9	Financial Performance, Reporting and Continuous Improvement	21
4.6.10	Procurement and Contract Financial Oversight	21
4.6.11	Financial Transaction Processing	21
4.6.12	Record Keeping, Compliance, and Audits	22
4.7	Procurement and Contract	22
4.7.1	Procurement Strategy, Planning and Identification	22
4.7.2	Supplier Selection	23
4.7.3	Manage and Monitor Supplier Performance	24
4.7.4	Review and Improvement of Procurement Strategy	24
4.7.5	Contract Management	24
4.7.6	Continual Improvement	26
4.7.7	Dispute resolution	26
4.8	Facility Service Delivery	27
4.8.1	Asset and Inventory Management	27
4.8.2	Operation Management	28
4.8.3	Maintenance Management	29
4.9	Technology Facility Management System	31

DRAFT

4.9.1 Strategic Level 31
4.9.2 Tactical Level 32
4.9.3 Operational Level 33
4.10 Sustainability 34
4.10.1 Strategic Level 34
4.10.2 Tactical Level 35
4.10.3 Operational Level 35
4.11 Health, Safety, Security (HSS) and Incident Response 36
4.11.1 Policy 36
4.11.2 Occupational Safety and Health (OSH) Compliance 37
4.11.3 Fire Safety Compliance 37
4.11.4 Hazard Identification, Risk Assessment, and Risk Control (HIRARC) 37
4.11.5 Security Management 38
4.12 Workplace Strategy 40
4.12.1 Strategic Level 40
4.12.2 Tactical Level 41
4.12.3 Operational Level 41

SECTION 5: IMPLEMENTATION PDCA CYCLE 43

5.1 Implementation PDCA Cycle 43
5.1.1 Do Phase – Pilot Test 43
5.1.2 Check Phase - Review 44
5.1.3 Act Phase – Full Rollout 44
5.2 Standardization 44
5.3 Continuous Improvement 44

SECTION 6: COMPLIANCE & STANDARDS 45

6.1 Mandatory Requirements 45
6.1.1 Statutory inspections (JKKP, Bomba, Energy Commission) 45
6.1.2 Fire Certificate Renewal, Electrical Safety, Passenger-Lift & Escalator Fitness, Pressure Vessel Inspection 45
6.1.3 Environmental Impact Licensing (Air, Noise, Wastewater), Scheduled-Waste Tracking 45
6.1.4 Accessibility compliance (MS 1184, MS 1183) 45
6.2 Voluntary Best Practices 45
6.2.1 ISO 41001 Certification for Facility Management Systems 45
6.2.2 ISO 55001 Certification for Asset Management Maturity 45
6.2.3 ISO 50001 and ISO 14001 for Energy and Environmental Stewardship 46
6.2.4 Malaysian Code of Practice for Indoor Air Quality (LAG) 2022 46

ANNEX A 47

ANNEX B 48

Table B.1 Financial Management Checklist Template 48

Table B.2 Sample Financial KPI Dashboard Template 48

DRAFT

Table B.3 Budget Planning Template 49

Table B.4 Financial Reporting Template 49

Table B.5 Audit Preparation Checklist Template 49

ANNEX C 50

Table C.1 Asset & Inventory Management alignment with Facility Operations 50

Table C.2 List of Asset Management Policies in Public Sector 52

ANNEX D 53

Table D Hard and Soft Facility Management Services 53

ANNEX E 55

Table E Strategic, Tactical, and Operational Responsibilities 55

ANNEX F 56

Table F Summary of Technology Facility Management System 56

ANNEX G 66

Table G Integrated Sustainability Functions, Responsibilities, and KPIs with Metrics 66

Bibliography 68

Acknowledgement 70

DRAFT

COMMITTEE REPRESENTATION

This Construction Industry Standard (CIS) was managed and developed by the Construction Industry Development Board Malaysia with the assistance of the Technical Committee of Facility Management, which comprises representative from the following organisations:

AFD Facilities Resources

Construction Industry Development Board (CIDB)

GFM Services Berhad

International Facility Management Association (IFMA) - Malaysia Chapter

Jabatan Kerja Raya Malaysia (JKR)

Jabatan Standard Malaysia (JSM)

JLG Integra Berhad

Kementerian Kesihatan Malaysia (KKM)

Malaysian Association of Facility Management (MAFM)

Microcorp Sdn Bhd

Trans Mobile Solutions Sdn Bhd

Universiti Malaya (UM)

Universiti Teknologi Malaysia (UTM)

Universiti Teknologi MARA (UiTM)

University of Reading Malaysia

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PREFACE

This Construction Industry Standard (CIS), CIS XX: XXXX, was developed by the Construction Industry Development Board (CIDB) Malaysia with the assistance of the Technical Committee of Facility Management, comprising representatives from government, industry, and academia.

The primary objective of this standard is to establish a unified framework for Facility Management (FM) practice across Malaysia's built environment. It is designed to reflect current local FM practices, including statutory and regulatory obligations, while integrating international best-practice frameworks such as ISO 41001 and ISO 55000.

Key focus areas addressed in this edition include:

1. Leadership and Commitment: Establishing governance and strategic planning
2. Regulatory Compliance: Identifying applicable statutory acts and regulatory frameworks.
3. Human Resource Development: Defining workforce competency and certification pathways.
4. Service Delivery: Integrating asset, operation, and maintenance management.
5. Technology and Sustainability: Promoting digital transformation and ESG principles.

By establishing a common language and standardized performance measures, this CIS enables FM stakeholders—including clients, service providers, and regulators—to operate with a unified understanding of principles and expectations.

Compliance with this Construction Industry Standard does not of itself confer immunity from legal obligations. Any feedback regarding this document should be directed to CIDB at www.cidb.gov.my.

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FACILITY MANAGEMENT STANDARDS AND BEST PRACTICES

SECTION 1: GENERAL

1.1 Introduction

Facility Management (FM) is an essential discipline within the Malaysian construction and built environment sectors. It plays a critical role in ensuring the operational efficiency, safety, and sustainability of assets throughout their lifecycle. As Malaysia's built environment continues to evolve and grow in complexity, there is a clear need to elevate and standardise local FM practices. This standardisation is crucial for aligning the industry with national priorities, statutory obligations, and international best practices.

This Construction Industry Standard (CIS) for Facility Management Standards and Best Practices is developed to establish a unified reference framework for all stakeholders, including clients, service providers, and regulators. Its development is driven by the goal to promote professionalism, enhance service delivery quality, and support the industry's digital transformation, ensuring FM practices are both locally relevant and globally competitive.

1.2 Purpose

This Construction Industry Standard (CIS) establishes a unified framework for Facilities Management (FM) practice across Malaysia's built environment. It is intended for demand organisations, FM service providers, regulators, and educational institutions. The Standard prescribes requirements and guidance that:

- Reflect current FM practice within Malaysia, including statutory and regulatory obligations.
- Align with CIDB Malaysia's mandate under the Construction Industry Development Board Act 1994 (Act 520) to drive quality, safety, sustainability, and professionalism in construction and FM.
- Integrate international best-practice frameworks such as ISO 41001 (FM — Management Systems), ISO 55000 (Asset Management), ISO 50001 (Energy Management), and British/IFMA guidelines, while contextualising them to local needs.

1.3 Alignment with CIDB Strategic Goals

This CIS supports CIDB's 2021–2030 Strategic Plan pillars: Quality & Safety, Sustainability, Technology Adoption, Talent Development, and Global Competitiveness. It contributes to these goals through the following initiatives:

- **Quality & Safety** – Embedding risk-based FM governance frameworks, preventive and predictive maintenance practices, compliance assurance mechanisms, and robust safety protocols across all facility types.
- **Sustainability** – Promoting sustainable FM practices aligned with ESG principles, SDG goals, and green certifications such as GBI, GreenRE, and MyCREST, while fostering climate resilience and carbon neutrality.
- **Technology Adoption** – Facilitating the digital transformation of FM through integration of Building Information Modelling (BIM), Computer-Aided Facility Management (CAFM) systems, Internet of Things (IoT), and AI-driven predictive analytics.

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- **Talent Development** – Establishing a competency-based training framework for FM professionals aligned with the National Occupational Skills Standard (NOSS), promoting certification pathways such as CIDB's Competent FM Manager/Executive scheme, and encouraging continuous professional development (CPD).
- **Global Competitiveness** – Aligning Malaysian FM practices with internationally recognised standards (ISO, BSI, IFMA) to enhance service delivery, support cross-border collaboration, and position Malaysia as a regional FM excellence hub.

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SECTION 2: SCOPE AND APPLICATION

This Construction Industry Standard (CIS) sets out the fundamental concepts, terms, and definitions that are essential for the consistent interpretation and implementation of Facility Management (FM) practices within the Malaysian construction and built environment sectors. It is developed as part of Malaysia's commitment to elevating FM practices to meet global standards, ensuring that local organisations can compete internationally while maintaining relevance to national priorities. By establishing a unified reference framework, this CIS enables all FM stakeholders — including clients, service providers, consultants, regulators, and industry bodies — to operate using a common understanding of FM principles, terminology, and performance expectations. It also provides a structured basis for aligning FM activities with national policies, industry transformation agendas, and sustainability targets, such as those outlined in the Construction Industry Transformation Programme (CITP), the 13th Malaysia Plan (RMK-13), and the United Nations Sustainable Development Goals (SDGs).

The provisions of this CIS are aligned with ISO 41001:2018 Facility Management — Management Systems — Requirements with Guidance for Use and are intended to:

- **Establish a common language for FM** — enabling clear and consistent communication across different sectors, asset classes, and service delivery models.
- **Support the adoption of internationally recognised best practices** — facilitating the integration of Malaysian FM processes with global standards, while addressing national requirements and industry-specific needs.
- **Promote standardisation and interoperability** — ensuring that FM data, performance measures, and reporting frameworks are compatible across organisations and systems.
- **Guide FM policy, planning, and operations** — providing a foundation for developing strategies, processes, and service models that improve efficiency, quality, and user experience.
- **Enhance capability building and professional development** — serving as a reference for training, competency frameworks, and certification programmes in FM.

2.1 Application

This CIS applies to:

- **Government ministries, statutory bodies, and local authorities**
  These bodies are key stakeholders in shaping national FM policies, enforcing compliance with relevant acts (e.g., Act 520, Act 514), and overseeing the implementation of FM in public buildings, infrastructure, and services. Their participation ensures alignment between FM standards and Malaysia's regulatory and strategic development goals.

- **Public- and private-sector asset owners, developers, and demand organisations**
  This includes GLCs, facility owners, hospital operators, real estate developers, and logistics providers who are responsible for procuring FM services and ensuring their assets are efficiently managed throughout the lifecycle. The CIS enables these stakeholders to adopt best practices for sustainable, cost-effective, and performance-driven FM delivery.

- **Registered FM contractors and consultants**
  Licensed service providers engaged in operational and strategic FM activities, including hard and soft services. The CIS provides them with a uniform standard for delivering services that meet compliance, safety, environmental, and performance benchmarks across sectors.

- **Professional institutions**
  These bodies play a vital role in setting professional competency benchmarks, developing certification and CPD programmes, and supporting research and innovation in FM. Their

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endorsement and adoption of this CIS will ensure its integration into industry practice and recognition among professionals.

- **Training providers and academia developing FM competency programmes**
  This includes TVET institutions, universities, and CIDB-accredited training centres. These entities are instrumental in embedding the CIS into FM curriculum, aligning it with National Occupational Skills Standards (NOSS), and producing a skilled workforce that meets industry demand.

2.2 Adaptability

This CIS has been developed with flexibility in mind, enabling its application by organisations of any size, structure, sector, or FM maturity level. Its adaptability is achieved through:

- **Scalability** — The requirements and guidance in this CIS can be applied proportionally, whether for a single building, a complex multi-site portfolio, or a national infrastructure network.
- **Sector Diversity** — Suitable for a wide range of sectors, including commercial offices, retail facilities, residential complexes, industrial plants, healthcare institutions, educational campuses, transport hubs, hospitality venues, and government facilities.
- **Service Delivery Models** — Applicable to both integrated FM models (where multiple hard and soft services are managed under one provider) and single-service models (where each service is managed independently).
- **Organisation Size and Resources** — Whether applied by a small FM team within a single-site facility or a large multi-disciplinary FM department managing hundreds of assets, the CIS provides principles that can be tailored to match available resources and operational complexity.
- **Operational Contexts** — Adaptable to different operational demands, from steady-state environments such as office buildings, to mission-critical facilities such as data centres, hospitals, and airports, where downtime is unacceptable.
- **Cultural and Geographic Considerations** — Flexible enough to reflect Malaysia's regional variations in climate, culture, and service expectations, enabling adaptation for urban, suburban, and rural facility environments.
- **Technological Maturity** — The CIS can be implemented in both technology-light environments (manual processes) and technology-intensive environments (e.g., Computerised Maintenance Management Systems, IoT-enabled smart buildings, BIM-FM integration).

This adaptability ensures that the CIS is not prescriptive in its method of application, but rather provides a structured framework that can be customised to suit an organisation's strategic objectives, regulatory obligations, and available resources.

2.3 Complementarity with Other Requirement

This CIS is designed to work in harmony with other relevant laws, regulations, and standards that govern facility management, construction, safety, and environmental practices in Malaysia. It does not override or replace statutory obligations; rather, it provides a structured approach that complements and supports compliance. In practice, this means:

2.3.1 Legal and Regulatory Alignment

FM activities conducted in accordance with this CIS must also comply with applicable Malaysian laws and regulations. Key legislation, policies, and guidelines referenced include but are not limited to:

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- **Construction Industry Development Board Act 1994 (Act 520)** – Provides the legal framework for the establishment and functions of CIDB, including the regulation, standardisation, and advancement of construction and facilities management activities in Malaysia. This Act also underpins CIDB's authority to accredit FM professionals and issue guidelines relevant to FM implementation.

- **Strata Management Act 2013 (Act 757)** – Regulates the maintenance and management of stratified buildings and common property. FM practitioners managing high-rise residential, commercial, and mixed-use developments must comply with its provisions, particularly regarding joint management bodies, maintenance charges, and sinking funds.

- **Occupational Safety & Health Act 1994 (Act 514) and Factories & Machinery Act 1967 (Act 139)** – Ensure that FM operations provide safe workplaces and maintain machinery to protect workers, tenants, and the public. FM providers must implement safety management systems, risk assessments, and statutory inspections in compliance with these Acts.

- **Energy Commission (Efficient Management of Electrical Energy) Regulations 2008** – Mandates large energy consumers to audit and report on energy usage. Facilities managers of commercial buildings and industrial premises must engage competent electrical energy managers and submit regular reports to ensure compliance and drive energy efficiency.

- **Renewable Energy Act 2011 and ISO 50001** – Promote the adoption of renewable energy and establish energy management systems. FM organisations are encouraged to integrate solar PV, biogas, and energy monitoring systems to meet energy performance targets and reduce operational carbon footprints.

- **ISO 14001 Environmental Management and Environmental Quality Act 1974** – Require FM practitioners to manage environmental aspects such as air quality, noise, and waste. Compliance is especially relevant for industrial and healthcare facilities managing hazardous or scheduled waste under DOE licensing.

- **Private Healthcare Facilities & Services Act 1998 (Act 586)** – Governs the planning, licensing, and operation of private healthcare facilities. FM services in such environments must align with strict hygiene, biomedical waste, HVAC control, and medical gas safety requirements set by the Ministry of Health**.**

- **Dasar Selenggara Aset Infrastruktur Negara (DSAIN)** – The national policy guiding strategic and operational maintenance of public infrastructure. It mandates lifecycle-based asset planning, preventive maintenance, and performance reporting, directly shaping FM practices in government and public sector facilities.

- **SDG 2030 Agenda, Sendai Framework for Disaster Risk Reduction, and COP/Climate-Change Adaptation commitments** – These global frameworks urge FM professionals to integrate climate resilience, sustainable consumption, disaster preparedness, and emissions reduction into facility operations. FM policies should align with SDG targets on clean energy, sustainable cities, and responsible resource use.

2.3.2 Integration with Industry Standards

This CIS can be implemented alongside other recognised standards, including MS (Malaysian Standards), CIDB's Construction Industry Standards, ISO 9001 (Quality Management Systems), ISO 14001 (Environmental Management Systems), ISO 45001 (Occupational Health & Safety Management Systems), and ISO 55001 (Asset Management).

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2.3.3 Sector-Specific Requirements

Where FM operations relate to specialised environments such as healthcare, transportation, or defence, this CIS can be adapted to meet additional industry-specific guidelines (e.g., Ministry of Health facility guidelines, Malaysian Civil Aviation Authority regulations, or port authority requirements).

2.3.4 Conflict Resolution

In the event of any conflict between the provisions of this CIS and statutory requirements, the statutory requirements shall prevail. The CIS can then be used to strengthen operational practices beyond the minimum legal threshold.

2.3.5 Supporting Continuous Improvement

While statutory requirements typically define minimum compliance thresholds, this CIS encourages organisations to go further, embedding quality, sustainability, and performance improvement into FM practice.

By aligning this CIS with existing regulatory and standards frameworks, organisations can streamline compliance, improve operational efficiency, and ensure that FM practices are both legally sound and internationally competitive.

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SECTION 3: TERMS AND DEFINITION

For the purposes of this document, the terms and definitions are primarily based on ISO 41011:2024 Facility Management — Vocabulary. Where terms are not explicitly defined herein, the definitions in ISO 41011 shall govern. Supplementary explanations or Malaysian contextual notes are included where relevant.

1. “Facility Management (FM)”

Long Definition:
Facility Management (FM) is a strategic organizational function that integrates people, place, process, and technology to ensure the functionality, safety, sustainability, and comfort of the built environment. It encompasses the planning, coordination, monitoring, and control of construction, operation and maintenance, and operational activities related to buildings, infrastructure, support services and amenities to support core business. FM serves as a strategic enabler by aligning facility operations with organizational objectives, enhancing productivity, and improving the quality of life for end-users.

Short Definition:
Facility Management is a coordinated function that integrates people, place, process, and technology, to ensure the functionality, safety, and sustainability of the built environment, in order to support the core business and enhance the quality of life and experience for its users and customers.

2. “Asset and Inventory Management”

An integrated approach to ensure assets are planned, acquired, operated, maintained, and disposed of to deliver value, manage risk, and assure performance throughout the facility life cycle.

3. “Operation Management”

The effective planning, delivery, and performance oversight of core facility operational services in alignment with organizational objectives, compliance obligations, and stakeholder requirements.

4. “Maintenance Management”

To ensure planned and unplanned maintenance activities are conducted effectively to sustain asset performance, reliability, and safety throughout the asset lifecycle.

5. “Sustainability”

An integrated Facility Management approach that aligns with organisational strategy and operational practices to promote environmental stewardship, social responsibility, economic viability, regulatory compliance and disclosure.

6. “Hazard Identification, Risk Assessment, and Risk Control (HIRARC)”

A structured method used to manage workplace safety.

7. “Workplace Strategy”

A strategy recognizing that a facility is no longer only the physical structure but includes the workspace, client space, technology supporting knowledge transfer, interrelationships between functional units, optimization of resources, and integration with society.

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8. “Process Control”

A systematic approach to identifying, documenting, analysing, and controlling facility management business processes to ensure consistent, effective, and efficient service delivery.

9. “Financial Management”

A systematic approach to financial management within FM that supports sustainable facility service delivery, asset lifecycle optimization, regulatory compliance, and continual improvement.

10. “Procurement and Contract”

A systematic and integrated approach to the acquisition and management of goods, services, and works that is value-driven, transparent, compliant, and sustainable.

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SECTION 4: CIS FM FRAMEWORK - CAPABILITY

The purpose of this section shall be to establish, implement, and maintain a comprehensive Facility Management (FM) capability framework to enhance operational resilience, data-driven decision-making, and sustainable facility performance.

This framework shall ensure alignment with organisational objectives, compliance with applicable standards, and support for Sustainable Development Goals by enabling secure, efficient, and transparent management of facility processes across strategic, tactical, and operational levels.

4.1 Leadership and Commitment

The purpose of this section is to demonstrate the leadership commitment and alignment with respect to the FM system that will be implemented by the organisation. The top management shall establish, develop and sustain the following fundamental aspects to ensure both supply and demand organisations are able to meet their respective business objectives;

4.1.1 Leadership Commitment

This ensures that the organisation:

- Demonstrate and commitment by integrating FM objectives with the overall demand organisation business objectives and strategic directions.
- Develop, communicate, and review FM policies that align with organisational goals, stakeholder needs, legal frameworks and regulatory requirements.
- Establish clear role, responsibilities, and authorities for an effective oversight of FM activities at various organisation.
- Ensures that FM policies provide sufficient framework for risk management, resource allocation, continual improvement, and sustainable facility service delivery.
- Promote a culture of accountability, good governance, performance excellence, and compliance across the FM organisation.
- Facilitate stakeholder engagement and transparent communication on FM policy implementation.
- Direct and support all to contribute to the effectiveness of the FM system.

4.1.2 Strategic Plan

- Establish and communicate the organisation's approved vision, mission, strategy, and objectives to ensure alignment across FM strategy.
- FM leadership shall establish, document, and communicate the organisation's vision, mission, strategy, and objectives related to FM.
- FM leadership shall cascade these strategic objectives to all functional levels and integrate them into annual FM plans.
- FM leadership shall organize periodic (e.g., quarterly) review meetings to assess alignment of FM activities with strategic objectives and resource utilization.
- Outcomes from review meetings shall be documented, with identified actions assigned and tracked to closure.

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4.1.3 Leadership Roles, Accountability, and Competence

- Define leadership responsibilities, promote accountability, and ensure competency through leadership development and succession planning.
- Clearly define leadership roles and decision-making authorities within FM organisational documents.
- Implement processes for assessing leadership competence, including skills assessments and performance reviews.
- Plan and execute leadership development and succession planning activities.
- Monitor and document leadership effectiveness and succession readiness

4.1.4 FM Organisational Structure and Resources

- Define roles, responsibilities, and FM models that support effective governance and operational execution.
- Maintain and periodically review an organisational chart that defines FM roles, responsibilities, and authorities.
- Select and implement FM delivery models (internal, external, hybrid) based on organisational needs and compliance requirements.
- Allocate resources with appropriate competencies and provide training aligned to responsibilities.
- Maintain records of competence, and training activities.

4.1.5 Governance, Ethics, and Compliance

- Ensure ethical conduct, diverse and accountable governance, and compliance with legal, statutory, facility specific and ESG requirements.
- Develop and communicate policies on ethical business conduct and anticorruption aligned with organisational standards.
- Implement mechanisms to monitor adherence to legal, statutory, and ESG requirements.
- Conduct periodic audits and compliance reviews, documenting nonconformities and corrective actions.
- Provide timely reports to leadership and board as per governance protocols.

4.1.6 Policy Development, Review, and Control

- Establish a structured process for developing, approving, communicating, and reviewing governance-related policies.
- Follow a documented process for drafting, approving, and disseminating FM governance policies.
- Maintain a controlled repository of all FM related policies accessible to relevant personnel.
- Conduct scheduled reviews of policies and update them to reflect changes in operations, regulations, or audit findings.
- Communicate policy changes promptly and ensure awareness.

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4.1.7 Stakeholder Engagement and Communication

- Ensure effective identification, engagement, and communication with relevant stakeholders to foster trust and continuous improvement.
- Identify key FM stakeholders and document their needs and expectations.
- Establish communication channels and schedule regular engagement activities (e.g., surveys, meetings).
- Collect, document, and analyse stakeholder feedback for service improvement.
- Communicate outcomes and improvement actions back to stakeholders.

4.1.8 Risk Management and Transparency

- Establish a systematic approach to identify, assess, mitigate, and monitor risks affecting FM activities, ensuring transparent reporting.
- Develop and communicate policies on ethical business conduct and anticorruption aligned with organisational standards.
- Implement mechanisms to monitor adherence to legal, statutory, and ESG requirements.
- Conduct periodic audits and compliance reviews, documenting nonconformities and corrective actions.
- Provide timely reports to leadership and the board as per governance protocols.

4.1.9 Business Continuity and Resilience Planning

- Develop and maintain business continuity management (BCM) and resilience plans to mitigate disruptions in FM operations.
- Develop FM-specific Business Continuity and Disaster Recovery plans aligned to organisational BCM policies. BCM/BCP documents for FM functions are approved and accessible.
- Conduct training and awareness sessions for FM teams on emergency roles and procedures. Training and awareness records are maintained.
- Schedule and conduct regular drills/testing of BCM plans, document results and report.
- Periodically review and update continuity plans based on drill feedback and changes in FM risk profile.

4.2 Regulatory and Facility-Specific Compliance

The purpose of this section shall be to establish, implement, and maintain a systematic approach to identifying, understanding, and complying with all applicable legal, regulatory, and facility-specific requirements related to facility management activities.

4.2.1 Scope

This section specifies requirements for establishing, implementing, maintaining, and continually improving a systematic approach to identify, understand, and comply with all applicable statutory, regulatory, and facility-specific obligations in Facility Management (FM).

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It applies to all FM activities across strategic, tactical, and operational levels, regardless of organisation size, sector, or service model. Example of related statutory and regulation are: -

- Construction Industry Development Board Act 1994 (Act 520)
- Strata Management Act 2013 (Act 757)
- Environmental Quality Act 1974
- Energy Commission (Efficient Management of Electrical Energy) Regulations 2008
- Renewable Energy Act 2011
- Private Healthcare Facilities & Services Act 1998 (Act 586)
- Dasar Selenggara Aset Infrastruktur Negara (DSAIN)
- Relevant Malaysian Standards (e.g., MS 1183, MS 1184 on accessibility)

4.2.2 **Statutory Acts and Regulatory Framework**

i. Compliance Register
The organization shall establish and maintain a documented compliance register detailing all statutory acts and regulatory requirements applicable to the FM scope. The register shall be updated whenever relevant regulations change.

ii. Legal Compliance Procedures
The organization shall ensure all FM activities comply with applicable legal obligations through documented procedures and operational controls.

iii. Nonconformity Management
Nonconformities shall be recorded, analysed, and addressed with corrective actions implemented in a timely manner.

iv. Compliance Audits
Periodic compliance audits shall be conducted and documented. Findings, corrective actions, and follow-ups shall be retained as evidence of compliance.

v. Competence and Awareness
FM personnel shall be trained and kept aware of updated statutory, regulatory, and sector-specific requirements relevant to their roles.

4.2.3 **Guidelines and Standards**

i. Identification of Applicable Standards
The organization can identify and maintain an updated list of applicable national, international, and industry-specific guidelines and standards that influence FM operations. This may include, but is not limited to: ISO standards (e.g., ISO 41001, ISO 45001, ISO 14001), OSHA requirements, local building codes and regulations, environmental standards.

ii. Integration into FM Processes
All applicable requirements should be integrated into FM policies, procedures, operational processes, and training materials.

iii. Monitoring Adherence

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Compliance with applicable guidelines and standards shall be monitored through inspections, assessments, and management reviews.

4.2.4 **Sector Specific Requirements**

i. Identification of Sector Needs
The organization should identify and address specialized compliance requirements unique to different sectors, including but not limited to Healthcare, Rail, Port, Defence, Aviation, Data Centres, IT Infrastructure, and Airports.

ii. Sector Compliance Checklists
Sector-specific compliance checklists and regulatory documentation shall be established and maintained.

iii. Regulatory Engagement
Collaboration with sector experts and relevant regulatory bodies should be undertaken to ensure awareness of evolving standards and operational requirements.

iv. Sector-Specific Controls and Training
Control measures and training should be tailored to address sector-specific risks and regulatory obligations.

4.2.5 **Documented Information**

The organization shall should retain documented information as evidence of compliance, which may include but is not limited to:

- The compliance register
- Audit reports and corrective action records
- Training records
- Sector-specific compliance checklists
- Records of regulatory communications

Refer Notes 1 and 2

Notes 1 – Compliance Register Template

No.	Regulation / Standard	Requirement Description	Responsible Person	Evidence of Compliance	Status (C / NC)	Last Review Date	Next Review Date
1	Act 520	CIDB FM registration & accreditation	Compliance Manager	CIDB Certificate	C	01/01/2025	01/01/2026
2	Act 514	OSHA workplace safety	HSE Manager	Safety Audit Report	NC	15/03/2025	15/06/2025

C = Compliant, NC = Non-Compliant

Notes 2 – Compliance Audit Checklist (Sample)

1. Is the Compliance Register up-to-date?
2. Are statutory licenses valid and current?

DRAFT

3. Are all sector-specific requirements documented and met?
4. Are compliance training records available?
5. Are corrective actions for noncompliance implemented and closed?
6. Is there documented evidence for all claimed compliance?

4.3 Human Resource and Workforce Development

The purpose of this section is to align FM organization in establishing, implementing, and maintaining and continuously improving and promoting a systematic approach for the development and management of human resources processes FM organisation to ensure competent, motivated, and compliant personnel of the right capability and competency in achieving the organisation's FM objective, governances and comply to all regulatory requirements.

This document helps FM organisation to consider key aspects of human resources and workforce development, as follows: -

i. Establish, define and align understanding on the human resource strategies, policies, and plans aligned with FM objectives and applicable law, regulatory, and labour requirements.

ii. Develops and maintains workforce competency frameworks covering recruitment, staffing, capability building, training, and talent management.

iii. Identifies, provides, and evaluates capacity building and development programs to enhance employee skills, knowledge, and performance aligned with changing FM operational needs.

iv. Establishes clear roles, responsibilities, authorities, and accountability within the workforce to support effective FM service delivery.

v. Monitors and reviews workforce performance and compliance to foster continuous improvement and organisational resilience.

vi. Maintains documented information related to workforce development activities, training records, competency assessments, and regulatory compliance.

vii. Fosters a safe, inclusive, and supportive work environment that promotes FM personnel's wellbeing and engagement.

viii. Commit to a workplace free of harassment and unlawful discrimination.

ix. Promote high ethical work environment and no harsh or inhumane treatment including violence, gender-based violence, sexual harassment, sexual abuse, corporal punishment, mental or physical coercion, bullying, public shaming, or verbal abuse of FM personnel; nor is there to be the threat of any such treatment.

x. Prevent and/or shall not engage in discrimination or harassment based on race, color, age, gender, sexual orientation, gender identity or expression, ethnicity or national origin, disability, pregnancy, religion, political affiliation, union membership, covered veteran status, protected genetic information or marital status in hiring and employment practices such as wages, promotions, rewards, and access to training.

4.3.1 Recruitment and Staffing Policy

- The FM organisations shall establish, document, and communicate its recruitment and staffing policies aligned with organisational FM objectives, legal, and regulatory requirements.

- The FM organisation's top management shall provide a strategic framework for FM staffing/ workforce to ensure adequate staffing levels with necessary competencies to meet current and future FM service demands.

DRAFT

- The FM organisation shall establish procedures to enable FM personnel to work during any disruption and can become part of the FM organisation's Business Continuity Plan (BCP) to sustain operations during a crisis.

Notes 3: Top management may refer to person or group of people who directs and controls an organisation

4.3.2 **Competency and Talent Management Strategy**

- The FM Organisation shall identify the FM activities and processes within the FM services which require skilled or certified personnel to meet the FM objectives and its goals.
- The FM organisation shall review the relevant characteristics (e.g. types of certified training in skills and identify personnel who meet the required criteria for providing the required services.
- The FM organisation shall develop and maintain a competency framework reflecting the skills, qualifications, and experience required for the achievement of the FM objectives.
- Talent management strategies shall include but not limited to, the relevant personnel succession planning and career development aligned with FM organisation's growth and capability needs.

4.3.3 **Compliance with Regulatory Manpower Requirements**

- Strategic manpower planning and governance shall comply with Malaysian labour laws, industry-specific regulations (refer above section), and CIDB certification/licensing requirements for FM personnel.
- Develop the required processes to monitor, measure, review, and continuously improve compliance which shall become part of FM standard. (cross referenced to related section)

4.3.4 **Capacity Building and Training Programs**

- The FM organisation shall plan and execute workforce training and capacity building activities to develop required competencies and certifications.
- Appropriate documented information as evidence of competence must be retained and be accessible for reference and future resources and long-term requirements.
- The FM organisation shall develop Training Needs Analysis (TNA) which shall support the continual improvement and the requirement of enhancing personnel capabilities in order to consistently achieve any evolving FM operational requirements and regulatory changes (if any).

4.3.5 **Roles, Responsibilities, and Accountability**

- The FM organisation shall develop and maintain a clear role, duties and, responsibilities for all FM personnel for the performance of FM activities.
- The FM organisation shall define the required level of, authorities, and accountabilities and be communicated to for all FM personnel.
- The FM organisation shall develop and implement its performance management systems to measure, monitor and benchmark the ability of FM personnel to consistently contribute and achieve FM objectives.

DRAFT

4.3.6 **Workforce Performance Monitoring and Improvement**

- The FM organisation shall plan, implement, review and continually enhance suitable mechanisms to promote continuous assessment of workforce effectiveness, including competency level, performance monitoring and evaluation, soliciting feedback and apply corrective action plans as necessary.

- Workforce engagement and motivation initiatives shall be planned and facilitated.

Notes 4: Provision that relevant to this section may be found under acts or Standards such as Employment Act 1955, Responsible Business Alliance (RBA) etc. where it can be referred to as basis of applications

4.3.7 **Recruitment and Onboarding Processes**

- The FM organisation shall establish a systematic approach which shall include processes and procedures and resources for their recruitment, selection, and onboarding in compliance with policy and legal requirements.

4.3.8 **Training Delivery and Competency Certification**

- The FM organisation shall ensure the competencies are aligned with FM delivery context.
- All FM personnel shall participate in training; certifications as identified in the TNA.
- The FM organisation shall plan and execute periodic competency assessments to maintain and improve job performance.

4.3.9 **Role Execution and Accountability**

- The FM organisation shall ensure FM personnel perform assigned tasks according to duties and responsibilities, and documented procedures, delegations and/or empowerment and any assigned authority limits, as necessary

4.3.10 **Regulatory and Certification Compliance**

- The FM organisation shall ensure FM operations team with the relevant certifications and licenses.
- Certifications shall be updated and ensure its validity throughout the duration of FM services.
- Any changes in workforce / manpower regulations shall be communicated and implemented, promptly and accordingly.

4.3.11 **Documentation and Records Management**

- FM organisation shall ensure documentations and records are complete for each FM personnel in a position requiring specific education, training and certification.
- Training records, competency assessments, recruitment documentation, and performance reviews shall be maintained as controlled documented information in accordance with internal procedures and compliance obligations.
- Records identify expiration dates of certifications and ensure FM personnel have current, unexpired certifications.

DRAFT

4.4 Policy, Procedures, and Documentation

The purpose of this section shall be to establish, implement, and maintain a controlled documentation and knowledge management system that ensures consistent, effective, compliant, and secure management of Facility Management (FM) policies, procedures, manuals, guidelines, and data. This system shall support standardization, continual improvement, transparency, and accountability ISO 41001, ISO 9001, ISO 30401, and applicable data protection laws including PDPA 2010, Official Secrets Act 1972, and Data Sharing Policy 2024.

4.4.1 Strategic Level

- FM leadership shall advocate/establish and approve overarching policy documents that define FM scope, objectives, compliance requirements, data governance principles, and leadership responsibilities in documentation control.
- Responsibilities for document ownership, custodianship, security, and periodic review shall be assigned to ensure governance and alignment with Demand Organisation goals and regulatory frameworks.
- Strategic oversight shall ensure integration of documentation governance with FM risk management, sustainability objectives, and stakeholder requirements.

4.4.2 Tactical Level

- FM middle management shall develop and maintain documented procedures such as Standard Operating Procedures (SOPs), manuals, and guidelines that translate strategic policies into operational workflows.
- Document control procedures shall include version control, approval workflows, controlled distribution, document accessibility, and regular reviews to maintain accuracy and compliance (with ISO 9001, ISO 41001?).
- Data governance at this level shall define roles for data custodians, data classification, security controls following ISO 27001 principles, and controls addressing PDPA 2010, OSA 1971, and Data Sharing Policy 2024 compliance.

4.4.3 Operational Level

- FM operational personnel shall implement documented SOPs and manuals during daily operations, ensuring adherence to controlled processes and accurate real-time record keeping.
- Knowledge management practices shall foster capturing, sharing, and utilizing facility-related knowledge supported by accessible knowledge repositories following/conforming to ISO 30401.
- Documented data governance controls shall be enforced through user access management, privacy safeguards, incident reporting, and compliance monitoring.
- Personnel shall be trained and periodically assessed to maintain competence in documentation usage, knowledge sharing, and data security.

Refer Annex A Document Control Procedure

DRAFT

4.5 Process Control

The purpose of this section shall be to establish, implement, and maintain a systematic approach to identifying, documenting, analysing, and controlling facility management business processes to ensure consistent, effective, and efficient service delivery aligned with organisational objectives.

This approach shall ensure that the FM organisation:

- Maps and defines all key facility management processes, including their interactions, inputs, outputs, and responsibilities, to promote process clarity and ownership.
- Implements process controls to manage risks, resource requirements, performance criteria, and compliance obligations associated with each process.
- Provides documented information that supports process implementation, monitoring, measurement, and continual improvement.
- Enables integration of business process management with the Facility Management System to enhance service quality, operational resilience, and stakeholder satisfaction.
- Facilitates communication, training, and awareness among personnel regarding process requirements and controls.
- Supports periodic review and updating of process maps and controls to respond to organisational changes, emerging risks, or performance gaps.

4.5.1 Process Mapping (Strategic & Operational)

- FM leadership shall identify and prioritize key FM processes (e.g., maintenance management, space management, vendor management, as-set management, and sustainability operations) for mapping.
- They shall engage senior stakeholders to gather current process inputs and create standardized process flowcharts or diagrams using approved tools, and to validate process maps that support informed decision-making and resource planning at the organisational level.
- FM operational staff shall participate in process documentation by providing accurate details on daily workflows such as maintenance procedures, safety checks, and asset/space utilization.
- Process maps shall be validated for accuracy and maintained as controlled documented information to support clarity and continuous review.

4.5.2 Assess Current Performance and Improvement Identification (Tactical & Operational)

- FM process owners and middle managers shall regularly collect and analyse performance data from operational activities (e.g., vendor performance, work order completion rates).
- A gap analysis shall be conducted to identify inefficiencies, bottlenecks, or compliance deviations in FM service delivery.
- FM frontline teams shall collect real-time data on service levels, equipment performance, and resource usage. They shall report operational issues promptly and suggest practical improvements.
- Cross-functional FM teams shall be engaged to propose and document corrective and improvement actions.
- Improvement opportunities shall be prioritized based on impact to service quality, cost, compliance, and sustainability objectives.

DRAFT

4.5.3 **KPI Development and Implementation (Strategic & Tactical)**

- FM leadership shall define KPIs aligned to strategic FM goals (e.g., uptime percentage, users' satisfaction, energy usage per sqm, etc.).
- Ownership for KPI data gathering, monitoring, and reporting shall be assigned to responsible FM personnel, such as Facilities Managers / Coordinator/Service line.
- Targets and thresholds shall be established, communicated, and periodically reviewed to ensure alignment with organisational objectives.
- FM staff (operational) shall follow established data collection methods and meet performance standards. Deviations shall be reported through defined communication channels for corrective measures.
- KPI results shall be included in FM management reviews and communicated to relevant stakeholders.

4.5.4 **Periodic Performance Review and Benchmarking (Tactical)**

- FM supervisors shall schedule and facilitate tactical reviews of operational data, comparing against internal targets and industry benchmarks.
- Findings concerning nonconformities, deviations, and improvement points shall be documented and escalated to FM leadership as needed.
- FM operational teams shall support performance reviews by providing accurate records and by implementing corrective actions assigned by supervisors.
- Adjustments to FM processes or resource allocation shall be implemented based on review outcomes.

4.5.5 **Drive Continuous Improvement (PDCA) (Operational & Tactical)**

- FM teams shall define improvement objectives based on review outcomes and prepare project plans (Plan).
- Improvement initiatives shall be implemented and piloted according to approved plans (Do).
- Effectiveness of improvements shall be measured against KPIs and evaluation criteria (Check).
- Successful improvements shall be standardized into routine FM operations, and lessons learned shall be documented (Act).
- FM leadership shall promote continual improvement culture through training, recognition, and communication.
- Records of all improvement activities and outcomes shall be maintained and reviewed.
- Refer Section 5; ISO9001

DRAFT

4.6 Financial Management

The purpose of this section shall be to establish, implement, and maintain a systematic approach to financial management within Facility Management (FM) that supports sustainable facility service delivery, asset lifecycle optimization, regulatory compliance, and continual improvement.

This approach shall ensure that the FM organisation:

- Defines and communicates financial policies, governance structures, and controls aligned with organisational objectives and applicable legal and regulatory requirements.
- Plans, allocates, and manages financial resources effectively to support operational, maintenance, and capital investment needs based on risk, lifecycle cost, and value considerations.
- Implements budgeting, forecasting, and cost control processes to monitor financial performance and promote accountability and transparency.
- Maintains accurate, accessible, and auditable financial records and documentation to support decision-making and compliance obligations.
- Identifies, assesses, and mitigates financial risks associated with facility management activities according to organisational risk management frameworks.
- Monitors financial performance using key performance indicators (KPIs) and reporting mechanisms to inform leadership and support continuous financial and operational improvement.
- Ensures workforce competence, roles, and responsibilities related to financial management are clearly defined and supported through training and awareness.
- Facilitates internal and external financial audits and integrates audit findings into financial management enhancements.

4.6.1 Financial Policy and Governance

- Shall establish, document, and communicate financial management policies that align with organisational goals, legal and regulatory requirements, and FM strategic objectives.
- Financial governance structures shall ensure accountability, transparency, and risk management in all FM financial activities.

4.6.2 Budgeting and Resource Allocation

- Shall approve and oversee the development of facility service budgets, ensuring adequate funding for maintenance, operations, and capital investments based on lifecycle cost considerations and risk assessments.

4.6.3 Financial Risk Management

- Financial risks relating to FM service delivery, procurement, contracts, and asset management shall be identified, assessed, and mitigated according to organisational risk management frameworks.

4.6.4 Financial Planning and Forecasting

- Shall develop detailed financial plans, forecasts, and cash flow projections to support operational and capital expenditure needs.

DRAFT

- Plans shall incorporate cost-benefit analyses, cost optimization strategies (e.g. value for money, value creation), and sustainability considerations.

4.6.5 **Life Cycle Costing and Asset Financial Planning**

- Apply life cycle costing methodologies to evaluate the total cost of ownership of assets, including acquisition, operation, maintenance, and disposal costs.
- Decisions regarding investments or asset renewal shall be supported by LCC analyses documented and reviewed periodically.

4.6.6 **Cost Control and Expenditure Monitoring**

- Apply mechanisms to monitor expenditure against budgeted amounts continuously. Processes shall be implemented for monitoring and controlling FM-related costs including utilities, maintenance, vendor contracts, and consumables to ensure efficient use of resources and adherence to budgets.
- Variances shall be analysed and documented, and where deviations occur, corrective actions shall be initiated and tracked for effectiveness.

4.6.7 **Revenue Management and Funding Sources**

- Where applicable, FM personnel shall manage and monitor facility/asset generated revenues or cost recoveries.
- Identify and evaluate diverse funding sources to enhance financial sustainability, ensuring transparency and proper recording of all transactions.

4.6.8 **Risk in Financial Operations**

- Identify, assess, and manage financial risks related to facility operations in accordance with the organisation's risk management framework.
- Mitigation measures, such as contingency funds and insurance, shall be established and periodically reviewed.

4.6.9 **Financial Performance, Reporting and Continuous Improvement**

- FM managers shall establish financial KPIs and reporting mechanisms to track budget variance, cost trends, and financial efficiency.
- Periodic financial reports shall be prepared and communicated/report to senior management and relevant stakeholders.

4.6.10 **Procurement and Contract Financial Oversight**

- Financial aspects of vendor and contract management shall be monitored to ensure compliance with contractual terms, timely payments, and value for money.

4.6.11 **Financial Transaction Processing**

- FM operational staff shall ensure accurate and timely processing of financial transactions including purchase orders, invoices, payments, and expense claims according to documented procedures.

DRAFT

4.6.12 Record Keeping, Compliance, and Audits

- All financial records, invoices, budgets, and related documents shall be maintained as controlled documented information to support audits, traceability, and compliance requirements.
- Operational units shall verify expenses against budgets and regulatory policies, escalating any discrepancies or nonconformities to tactical management.
- FM personnel shall cooperate with internal and external auditors by providing accurate financial records and explanations as required.

4.7 Procurement and Contract

The purpose of this section is to be establish, implement and maintain a systematic and integrated approach to procurement and contract management within Facility Management (FM). This approach shall ensure that the acquisition and management of good, services and works are value-driven, transparent, compliant and sustainable while aligning with organisational objectives and meeting stakeholder requirement

All procurement and contract management activities shall adhere to all following principles:

- Transparency in process, documentation and auditable
- Value for Money in decision regarding cost dan service quality
- Fair Competition in supplier selections
- Compliance with legal, regulatory and organisational in all activities
- Sustainability consideration of environmental, social and governance (ESG) factors

4.7.1 Procurement Strategy, Planning and Identification

Identifying and planning of Facility Management by establishing the requirements for goods, services, or works by analysing operational needs, budget constraints, timelines, and quality expectations. This phase includes defining specifications, setting procurement objectives, and aligning the plan with organisational and stakeholder priorities.

i. The procurement strategy shall define the approach, priorities, and methods used to acquire goods, services, and works to support FM operations.
    - Align with the FM strategy and organisational goals.
    - Incorporate cost, quality, sustainability, and risk considerations.
    - Identify procurement models (e.g., direct purchase, framework agreements, outsourcing).
    - Define supplier engagement methods (e.g., open tender, limited tender, negotiated contracts).
    - Ensure compliance with legal, regulatory, and ethical requirements.
    - Promote innovation and long-term supplier relationships where beneficial.

DRAFT

ii. Procurement planning shall:

- Define clear technical, functional, and performance requirements.
- Establish timelines for procurement activities, including tendering, evaluation, and contract award.
- Identify budget allocations and funding sources.
- Include market analysis to assess supplier capability and availability.
- Integrate risk assessment, considering supply chain vulnerabilities.
- Include performance measures (KPIs) linked to service outcomes.

iii. The identification of needs shall:

- Be based on FM operational requirements, asset conditions, and stakeholder inputs.
- Use data from facility inspections, asset registers, and maintenance records.
- Differentiate between essential and non-essential requirements.
- Consider lifecycle costs, total cost of ownership (TCO), and sustainability impacts.
- Document and approve needs before initiating procurement.

4.7.2 **Supplier Selection**

Identify potential suppliers through market research, prequalification processes, or approved lists. Evaluate and shortlist suppliers based on capability, compliance, pricing, past performance, and alignment with organisational standards, ensuring a transparent and objective selection process.

i. Pre-Qualification/Tendering / Request for Proposal (RFP)

- Define minimum eligibility criteria (legal, financial, technical, safety, and ESG requirements).
- Request and review supplier credentials, certifications, and references.
- Maintain an approved supplier register.
- Prepare and issue clear, complete, and unbiased tender documents.
- Ensure equal access to information for all invited suppliers.
- State evaluation criteria and weighting in advance.

ii. Evaluation

- Assess proposals against pre-defined criteria such as price, technical capability, quality, sustainability, and delivery timelines.
- Conduct site visits, product demonstrations, or sample testing if applicable.
- Apply a scoring or ranking system to ensure objectivity.

DRAFT

iii. Due Diligence

- Verify financial stability, legal standing, compliance with statutory regulations, and past performance.
- Assess supplier's capacity to meet contractual requirements.

iv. Selection & Approval

- Recommend the highest-scoring supplier based on the evaluation matrix.
- Obtain internal approvals from the appropriate authority before award.
- Document all decisions and retain records for audit purposes.

v. Notification

- Inform successful and unsuccessful bidders in writing.
- Provide feedback to unsuccessful suppliers upon request to encourage future improvement

4.7.3 **Manage and Monitor Supplier Performance**

The FM organisation shall establish, implement, and maintain processes to monitor and evaluate supplier performance against agreed Key Performance Indicators (KPIs), Service Level Agreements (SLAs), and compliance requirements. Performance monitoring shall include regular reporting, audits, and reviews to identify gaps, risks, or non-conformance. Corrective and preventive actions shall be implemented promptly to resolve issues and disputes. The organisation shall promote continual improvement by incorporating feedback, market developments, and lessons learned into supplier management practices.

4.7.4 **Review and Improvement of Procurement Strategy**

The FM organisation shall review its procurement strategy at least annually to assess performance against established objectives. The review shall incorporate feedback from stakeholders, analysis of supplier performance data, market trend assessments, and relevant regulatory changes. Documented evidence of the review, including identified improvements and updated strategic actions, shall be maintained for a minimum of three (3) years.

4.7.5 **Contract Management**

The FM organisation shall establish, implement, and maintain a systematic approach to contract management to ensure that agreements for goods, services, and works are delivered as agreed.

i. Contract documentation.

The FM organisation shall determine and maintain documented requirements for all procurement and contract management activities. Such requirements shall:

- Clearly define the scope of goods, services, or works to be procured, including detailed technical specifications and performance outcomes.
- Establish measurable Service Level Agreements (SLAs) and Key Performance Indicators (KPIs) to monitor and evaluate supplier performance.

DRAFT

- Specify commercial terms, including pricing structures, payment terms, and any applicable indexation or adjustment mechanisms.
- Identify and incorporate all relevant compliance obligations, including legal, regulatory, health and safety, environmental, and organisational requirements.
- Ensure that requirements are approved by authorised personnel prior to the commencement of any procurement or contractual process.

ii. Contract and performance establishment

The FM organisation shall establish formal contractual agreements with selected suppliers in accordance with approved procurement processes. Such contracts shall:

- Clearly define the scope of work, deliverables, timelines, and service levels in alignment with the approved requirements and specifications.
- Incorporate all commercial terms, including pricing structures, payment schedules, and applicable adjustment mechanisms.
- Include compliance provisions addressing legal, regulatory, health and safety, environmental, and organisational requirements.
- Contain agreed performance measurement frameworks, including Service Level Agreements (SLAs) and Key Performance Indicators (KPIs).
- Integrate provisions for dispute resolution, risk allocation, variation management, and termination.
- Be reviewed and approved by authorised personnel, including legal and relevant stakeholders, prior to execution.
- Be executed by duly authorised representatives of both parties and recorded in the organisation's contract register.

iii. Change and risk management

The FM organisation shall establish and implement a controlled process for managing contract amendments, renewals, deviations, and dispute resolutions. This process shall:

- Ensure all changes to contractual scope, specifications, pricing, and terms are formally documented, reviewed, and approved by authorised personnel prior to implementation.
- Assess and document potential risks associated with proposed changes, including operational, financial, legal, and reputational impacts.
- Maintain a risk register for all active contracts, with regular reviews to identify, monitor, and mitigate emerging risks.
- Engage relevant stakeholders, including legal advisors, in evaluating changes and dispute resolution strategies.
- Implement corrective and preventive actions to address identified risks and prevent recurrence.
- Preserve full transparency and auditability of all change and risk management activities.

DRAFT

iv. Compliance Assurance

The FM organisation shall establish, implement, and maintain processes to ensure ongoing adherence to all applicable legal, regulatory, contractual, and ethical requirements relevant to its operations. This shall include:

- Identifying and maintaining an up-to-date register of applicable laws, regulations, standards, and contractual obligations.
- Ensuring all FM personnel and contractors are informed of, and trained in, relevant compliance requirements.
- Conducting regular compliance audits and inspections to verify adherence to requirements.
- Promptly addressing any identified non-conformities through corrective and preventive actions.
- Documenting all compliance-related activities to maintain transparency, accountability, and audit readiness.
- Reviewing and updating compliance processes periodically or when regulatory changes occur.

v. Contract completion

The FM organisation shall establish and implement procedures for the systematic closeout of all contracts upon completion of obligations. This shall include:

- Verifying that all deliverables, services, and performance requirements have been met in accordance with contractual terms.
- Confirming resolution of all outstanding payments, claims, and disputes.
- Obtaining formal acceptance and sign-off from relevant stakeholders.
- Compiling and archiving all contract-related documentation in accordance with organisational record-keeping requirements.
- Conducting a post-contract review to capture lessons learned, performance feedback, and recommendations for future procurement and contract management improvements.
- Ensuring the secure retention and disposal of records in line with legal, regulatory, and organisational policies.

4.7.6 **Continual Improvement**

The FM organisation shall review procurement and contract management processes regularly, integrating feedback from stakeholders, supplier performance evaluations, market changes, and lessons learned to drive continual improvement

4.7.7 **Dispute resolution**

Dispute resolution process for all contractual arrangements to ensure timely, fair, and cost-effective resolution of disagreements. The FM organisation shall:

- Encourage early identification and resolution of disputes through direct negotiation between the parties;
- Require disputes to be documented, including issue description, relevant contract references, and proposed resolutions;

DRAFT

- Provide mechanisms for negotiation, mediation, and, if required, arbitration in compliance with applicable laws;
- Maintain a register of all disputes, outcomes, and lessons learned;
- Integrate lessons learned from disputes into continuous improvement activities.

4.8 Facility Service Delivery

The purpose of this section is to establish and maintain integrated facility service delivery processes that ensure asset reliability, regulatory compliance, resource optimization, user satisfaction, and alignment with core-business outcomes. These processes must define clear roles and responsibilities across strategic, tactical, and operational levels within the FM organization, consistent with an FM management system approach.

4.8.1 Asset and Inventory Management

To implement an integrated asset and inventory management approach embedded in facility service delivery so that assets are planned, acquired, operated, maintained, and disposed of to deliver value, manage risk, and assure performance throughout the facility life cycle.

i. Strategic Level

- FM policy and strategy. FM leadership must establish and maintain an FM policy and FM strategy that set the direction for asset and inventory management (including registration, tagging, labelling, and lifecycle management) to optimize value, reliability, resilience, and compliance. Policies should reference the organization's asset-management objectives and risk appetite.
- Lifecycle and value. Strategic planning must incorporate whole-life considerations (service life, renewal, refurbishment, and end-of-life) and value creation for core business, in accordance with ISO 55000 principles of value, alignment, leadership, and assurance.
- Sourcing and agreements (ISO 41012). Leadership must set the sourcing strategy (make/buy/hybrid), define facility service scope, and approve FM agreements (SLAs, KPIs, performance and payment mechanisms, risk transfer) with internal or external providers.

ii. Tactical Level

- FM supervisory and middle management personnel shall develop and implement asset registration processes in accordance with documented procedures, including asset identification, tagging, and durable labelling, ensuring data accuracy, consistency, and interoperability with the Computerized Maintenance Management System (CMMS) and Integrated Workplace Management System (IWMS).
- Inventory management plans shall define robust inventory control measures for spare parts availability, optimized storage solutions, and resource allocation to support both planned preventive maintenance (PPM) and reactive maintenance (RM) requirements, as well as emergency preparedness protocols.
- FM management shall leverage asset lifecycle data in operational planning and procurement strategies to maximize total value of ownership (TVO), enhance supplier relationship management (SRM), and ensure whole-life cost (WLC) optimization in alignment with organizational objectives.

DRAFT

- Standardized and auditable procedures for updating asset registers and inventory records shall be maintained to ensure data integrity, traceability, and compliance with operational, regulatory, and audit requirements.

iii. Operational Level

- FM operational personnel shall execute asset tagging, labelling, and registration activities in accordance with approved Standard Operating Procedures (SOPs), ensuring data integrity, alignment with asset hierarchies, and compatibility with digital asset registers.
- Day-to-day inventory and spare parts management shall include real-time monitoring of stock levels, controlled issuing of materials for maintenance activities, and trigger-based replenishment via CMMS or Enterprise Resource Planning (ERP) systems.
- Maintenance technicians and site teams shall actively contribute to asset audits by providing verified asset data, enabling physical access, and recording the as-found condition of assets during FCA, BCA, and other statutory inspections.
- Asset and inventory data shall be continuously updated, validated, and reported in a timely and consistent manner to support tactical decision-making and inform strategic facilities planning.
- Operational responses to asset-related issues, including anomaly detection, deviation from performance benchmarks, or asset failures, shall immediately trigger predefined maintenance workflows and, where applicable, expedited procurement actions in accordance with service level agreements (SLAs).

  Notes 5: Refer Annex C Table 1 Asset & Inventory Management alignment with Facility Operations

4.8.2 **Operation Management**

To ensure effective planning, delivery, and performance oversight of core facility operational services in alignment with organizational objectives, compliance obligations, and stakeholder requirements.

i. Strategic Level

- FM leadership shall define asset management policy and strategic objectives in accordance with ISO 55001 principles to ensure whole-life value, regulatory compliance, and risk mitigation for all built assets within the organization's asset portfolio.
- FM leadership shall ensure identification, monitoring, and compliance with all applicable statutory, legal, environmental, and occupational health and safety requirements affecting facility operations. Compliance assurance shall be integrated into the FM governance framework and supported by audit-ready documentation.
- Strategic financial planning for facility services shall incorporate lifecycle costing (LCC), cost–benefit analysis, budgetary control, and capital investment planning aligned with organizational priorities and service demand forecasts.
- FM leadership shall approve and resource emergency preparedness plans, business continuity management (BCM), and resilience strategies specific to facility-related risks, ensuring alignment with ISO 22301 and ISO 45001 for safety.

DRAFT

ii. Tactical Level

- FM supervisory personnel shall plan, monitor, and control utilities consumption and resource utilization to achieve energy efficiency, water efficiency, and sustainability performance targets in line with ISO 14001 environmental management practices.
- Space resource allocation and occupancy management shall be coordinated to meet operational needs, optimize space utilization rates, and support activity-based working (ABW) or other approved workplace strategies.
- FM middle management shall implement procurement management and contract administration processes that ensure vendor performance management, value delivery, and compliance monitoring against service level agreements (SLAs) and key performance indicators (KPIs).
- Periodic tactical-level condition assessments and statutory inspections shall be carried out to inform preventive maintenance scheduling, asset renewal planning, and capital works prioritization based on asset criticality ranking.
- FM management shall coordinate the delivery of hard services (engineering, building fabric, utilities) and soft services (cleaning, catering, waste, grounds maintenance) in alignment with Annex D, ensuring SLA compliance, physical security, and safety management through effective personnel coordination.
- FM teams shall operate a centralized service desk/helpdesk as a single point of contact (SPOC) to manage service requests, incident reporting, and customer communications, ensuring response times and resolution times meet defined KPIs.
- FM management shall implement physical security measures and workplace safety controls, coordinate security services providers, and ensure operational compliance with health, safety, and environmental (HSE) procedures.
- Tactical planning activities shall address resource optimization, regulatory compliance, service quality assurance, health and safety performance, and end-user satisfaction through measurable targets integrated into tactical operational plans.

iii. Operational Level

- FM operational personnel shall execute routine operational activities related to asset care and maintenance, utilities monitoring and reporting, space configuration adjustments, vendor coordination, security patrols, and end-user support in strict accordance with Standard Operating Procedures (SOPs) and method statements.
- Operational performance data — including maintenance logs, utilities consumption, occupancy changes, and incident reports — shall be captured, validated, and reported into FM information systems (e.g., CMMS, IWMS) to support tactical planning and strategic decision-making.

4.8.3 **Maintenance Management**

To ensure planned and unplanned maintenance activities are conducted effectively to sustain asset performance, reliability, and safety throughout the asset lifecycle, in alignment with whole-life asset management principles.

i. Strategic Level

DRAFT

- FM leadership shall define and approve maintenance management strategies aligned with the organization's risk appetite, asset criticality ranking, and asset class hierarchy, including:
    a. Prescriptive Maintenance (application of advanced analytics and OEM recommendations)
    b. Reliability-Centered Maintenance (RCM) (maintenance planning based on failure mode and effects analysis)
    c. Condition-Based Maintenance (CBM) (real-time or periodic monitoring of asset condition to trigger interventions)
- Integration of emerging technologies — including the Data–Information–Knowledge–Wisdom (DIKW) framework, artificial intelligence (AI), machine learning (ML), digital twins, and Internet of Things (IoT) sensor networks — shall be evaluated and planned at the strategic level to enhance predictive analytics capability, failure forecasting, and maintenance optimization.

ii. Tactical Level - Maintenance Planning and Coordination

- Maintenance supervisors shall plan, prioritize, and schedule planned preventive maintenance (PPM) and predictive/condition-based maintenance activities, ensuring minimal operational downtime and adherence to service continuity requirements.
- Documented procedures shall be established, implemented, and reviewed for corrective maintenance (CM) and reactive maintenance (RM/run-to-failure), including rapid response protocols, resource mobilization plans, and contingency resource allocation.
- Work orders, maintenance logs, equipment history records, and asset performance reports shall be documented, version-controlled, and retained according to document and records management procedures in compliance with ISO 9001 and ISO 55001 requirements.
- Tactical management shall oversee the following core maintenance processes:
    a. Work Order Management (Arahan Kerja) — creation, assignment, and closure tracking
    b. Spare Part and Inventory Management — stock control, replenishment triggers, and critical spares management
    c. Condition Assessment Reporting — standardized reporting formats to feed into the CMMS and inform capital works planning
- They shall implement vendor and contractor management processes that ensure performance evaluation, compliance with contractual obligations, and continuous improvement through key performance indicators (KPIs), service level agreements (SLAs), and performance review meetings.
- Periodic condition surveys and statutory inspections shall be conducted using standardized inspection checklists and risk-based prioritization to support preventive maintenance scheduling, asset renewal decision-making, and capital works prioritization.

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iii. Operational Level

- Maintenance technicians and contractors shall perform maintenance tasks following approved schedules, instructions, and safety procedures.
- Real-time data collection (prioritizing the critical support service) and condition monitoring shall be conducted to support maintenance decision-making.
- Maintenance execution shall be recorded accurately, documented and non-conformities reported promptly.
- Maintenance technicians and contract service providers shall perform maintenance tasks strictly in accordance with approved schedules, safe work method statements (SWMS), permits-to-work (PTW), and applicable health, safety, and environmental (HSE) procedures.
- Real-time condition monitoring and data capture — prioritizing critical assets and services — shall be conducted using IoT-enabled sensors, vibration analysis, thermal imaging, and other non-destructive testing (NDT) techniques to inform maintenance decision-making.
- Maintenance execution records shall be completed accurately, uploaded into the CMMS without delay, and non-conformities reported immediately through the incident reporting workflow for corrective action.

  Notes 6: Refer to Annex E – Summary Table: Operation Management Responsibilities for cross-referencing role accountability.
- Uses formal ISO facility management vocabulary
- Adds technology and compliance linkages
- Strengthens integration between strategic, tactical, and operational levels
- Makes it audit-ready for ISO 41001/55001 compliance

4.9 Technology Facility Management System

The purpose of this section shall be to establish, implement, and maintain a structured and effective Facility Management technology system that enhances operational efficiency, integrates data across functions, supports informed decision-making, and promotes sustainability of built assets.

This system shall ensure that responsibilities are clearly assigned and documented processes are maintained at all organisational levels, including:

- Strategic governance, policy development, investment planning, and compliance with relevant standards to align technology initiatives with organisational objectives.
- Tactical management of system selection, integration, performance monitoring, and continuous improvement to optimize technology effectiveness.
- Operational execution encompassing daily system operation, data collection, monitoring, and first-level troubleshooting to maintain service continuity and data integrity.

4.9.1 **Strategic Level**

i. Governance and Strategy

The organization shall define a formal FM technology strategy that aligns with organizational objectives, sustainability goals, and risk management frameworks.

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Leadership shall ensure resource allocation, budget approval, and policy oversight to support lifecycle asset management, digital transformation initiatives, and compliance with applicable standards and government requirements. The strategy shall be reviewed annually to remain relevant and effective.

The purpose is to establish a structured governance and strategic framework for Facility Management (FM) technologies — including Building Information Modelling (BIM) — that aligns with organizational objectives, complies with regulatory requirements (Eg. Pekeliling Perbendaharaan Malaysia PK 1.15) and ensures technology integration, lifecycle value, and operational excellence.

ii. Smart Building Standards and Compliance

FM technology solutions shall comply with recognized national and international smart building standards and open interoperability protocols. The organization shall adopt frameworks that enable scalability, integration across systems, and compliance verification through regular audits or certifications.

The purpose is to ensure FM technology solutions — including BIM, BAS/BMS, IoT, and other integrated systems — comply with applicable national and international smart building standards, interoperability protocols, and statutory requirements, enabling seamless integration, scalability, and sustainable building performance.

iii. Data Management, Big Data & AI

Policies shall be established for data governance, security, quality assurance, and analytics to ensure accurate, reliable, and secure FM data. The system shall leverage big data and AI to enhance decision-making, enable predictive maintenance, and optimize operations, with processes in place to validate and protect all data assets.

The purpose is to establish governance, processes, and technologies that ensure FM data — including BIM asset data — is accurate, secure, interoperable, and optimally leveraged through analytics and artificial intelligence to support decision-making, predictive maintenance, and operational excellence.

4.9.2 **Tactical Level**

i. Computerized Facility Management Systems (CFMS)

The organization shall select, deploy, and maintain systems such as CMMS, CAFM, CIFM, and IWMS. These platforms shall be integrated to deliver comprehensive asset, maintenance, space, and resource management, supported by documented procedures, trained personnel, and continuous performance monitoring.

The purpose is to ensure the selection, deployment, integration, and management of computer-based FM systems — including CMMS, CAFM, CIFM, and IWMS — to provide comprehensive asset, maintenance, space, and resource management capabilities, with direct integration to BIM for lifecycle data management.

ii. Building Automation System (BAS)/ Building Management System (BMS)

BAS/BMS shall be planned, implemented, and managed to monitor and control key building systems, including ACMV, lighting, security, and energy. The system shall support real-time performance monitoring, automated control, and integration with other FM technology platforms to drive efficiency and sustainability.

The purpose is to plan, deploy, and manage BAS/BMS solutions that monitor and control building services — including ACMV, lighting, security, energy systems, and other utilities — with integration to BIM, IoT, and CFMS for optimal operational efficiency and sustainability.

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iii. Building Information System (BIM)

BIM shall be implemented to support asset information modelling, lifecycle data integration, and interoperability with FM software and GIS platforms. BIM data shall be structured to enable seamless integration into FM processes and serve as a reliable source of information throughout the asset lifecycle.

The purpose is to implement and manage BIM as the central information repository for FM, ensuring asset lifecycle data is accurate, interoperable, and integrated with other FM systems — in full compliance with Pekeliling Perbendaharaan Malaysia PK 1.15 and relevant national/international BIM standards.

iv. Internet of Things (IoT) Deployment

IoT devices shall be selected, installed, and integrated to enable real-time monitoring of asset conditions, environmental factors, and space usage. Data from IoT sensors shall be used to inform proactive operational decisions, optimize energy use, and improve occupant experience.

The purpose is to plan, implement, and manage IoT devices and platforms that enable real-time monitoring, control, and analytics for FM operations — integrating with BIM, CFMS, BAS/BMS, and analytics platforms to enhance operational efficiency, asset performance, and sustainability.

4.9.3 **Operational Level**

i. ICT Infrastructure Management

ICT infrastructure supporting FM systems shall be maintained to ensure availability, scalability, and security. Network performance, server capacity, cybersecurity controls, and user access management shall be monitored and managed in line with organizational and regulatory requirements.

The purpose is to ensure that the ICT infrastructure supporting FM technologies — including BIM, CFMS, BAS/BMS, IoT, and analytics platforms — is reliable, secure, scalable, and capable of supporting continuous operations and future technology integration.

ii. System Operation and Monitoring

FM systems shall be operated in accordance with documented standard operating procedures. Real-time monitoring tools shall be used to track system performance, detect anomalies, and initiate timely corrective actions. Operational logs and monitoring records shall be maintained for review and audit purposes.

The purpose is to ensure all FM technology systems — including BIM, CFMS, BAS/BMS, IoT, and analytics platforms — are operated according to documented procedures, monitored in real time, and maintained to ensure service continuity, data integrity, and compliance with organizational and regulatory requirements.

iii. Data Collection, Analysis, and Reporting

Data shall be collected, validated, and recorded in a consistent format to support accurate reporting, KPI tracking, and decision-making. Analytical tools and dashboards shall be employed to provide actionable insights to management and stakeholders.

The purpose is to establish standardized processes for collecting, validating, analyzing, and reporting FM data — including BIM, IoT, BAS/BMS, and CFMS data — to support operational decision-making, regulatory compliance, and continuous improvement.

DRAFT

iv. System Maintenance and Support

All FM technology systems shall be subject to preventive and corrective maintenance schedules, regular updates, and secure backups. Vendor relationships and service level agreements shall be managed to ensure timely resolution of issues. Disaster recovery procedures and technical support mechanisms shall be maintained to safeguard system availability and integrity.

The purpose is to ensure that all FM technology systems — including BIM, CFMS, BAS/BMS, IoT, GIS, and analytics platforms — are maintained, updated, and supported to sustain optimal performance, security, and compliance throughout their lifecycle.

Notes 7: Refer Annex F Summary of Technology Facility Management System

4.10 Sustainability

The purpose of this section shall be to establish, implement, and maintain an integrated Facility Management sustainability approach that aligns with organisational strategy and operational practices to promote environmental stewardship, social responsibility, economic viability, regulatory compliance and disclosure.

This approach shall ensure leadership commitment, systematic planning, monitoring, and coordinated execution across all organisational levels, supported by documented responsibilities and continual improvement processes.

4.10.1 Strategic Level

i. Policy and Governance

Top management shall establish, document, and communicate a sustainability policy reflecting Demand Organisation commitments to environmental stewardship, social responsibility, and economic sustainability aligned with SDGs and applicable ESG reporting frameworks.

ii. Environmental Stewardship and Management System

The organisation shall implement and maintain an environmental management system aligned with ISO 41001, ISO 14001 and ISO 14040 standards to manage asset life cycle planning and environmental impacts systematically.

iii. Climate Change Adaptation and Mitigation

FM leadership shall develop strategies to address climate change risks and opportunities, including carbon management, greenhouse gas (GHG) emissions reduction, and resilience of the built environment

iv. Sustainable Sourcing and Supply Chain Management

Procurement and sourcing policies shall prioritize sustainability criteria, such as green materials, circular economy principles, and supplier social responsibility.

v. Social Responsibility and ESG Alignment

Leadership shall ensure FM practices support labour rights, diversity, equity, inclusion, community engagement, and align with international human rights and ESG frameworks (e.g. Simplified Disclosure Guide (SEDG) for SME: Global Reporting Initiative (GRI);

DRAFT

Sustainability Accounting Standards Board (SASB); UN Sustainable Development Goals (SDGs); Task Force on Climate-related Financial Disclosures (TCFD); GRESB Real Estate Assessment; CDP (formerly Carbon Disclosure Project);Integrated Reporting Framework (IIRC); UNECE's Guiding Principles on Sustainable Real Estate Management; EU Corporate Sustainability Reporting Directive (CSRD); ISO41001;ISO 14001 ; ISO 45001; ISO 26000).

4.10.2 **Tactical Level**

i. Green Facility Management Practices

FM managers shall implement operational guidelines for waste reduction, energy efficiency, water conservation, pollution prevention, and resource efficiency based on the 3Rs (Reduce, Reuse, Recycle).

ii. Waste and Energy Management

Tactical management shall develop plans and controls for waste segregation, recycling, and energy consumption monitoring using data-driven approaches such as IoT and smart metering.

iii. Water Conservation and Resource Efficiency

Water use reduction programs and resource optimization initiatives shall be planned, executed, and periodically reviewed for effectiveness.

iv. Circular Economy and Carbon Footprint

FM teams shall promote circular economy practices, lifecycle assessments, and monitor carbon footprint data to support corporate sustainability short term targets/goals.

v. Renewable Energy Integration

Deployment of renewable and alternative energy sources shall be planned and coordinated to reduce facility carbon intensity.

vi. Pollution Prevention and Biodiversity Protection

Procedures shall be implemented to minimize pollutants and protect local biodiversity within FM operational areas.

vii. Transportation/Fleet Management

Sustainable transportation policies, including vehicle fleet management and promotion of low-emission options, shall be established.

4.10.3 **Operational Level**

i. Implementation of Sustainability Practices

FM operational staff shall adhere to documented procedures for green cleaning, waste management, energy and water use controls, and pollution prevention

ii. Health, Safety, and Wellbeing

DRAFT

FM teams shall maintain safe and healthy environments for employees and occupants, sup-porting wellbeing initiatives and compliance with related standards.

iii. Community Engagement and Social Impact

Facility-level personnel shall facilitate stakeholder communications, support community programs, and report on social impact activities.

iv. Diversity, Equity, Inclusion, and Labour Practices

Implementation of inclusive labour practices and support for workplace diversity shall be ensured through awareness and compliance with policies.

v. Customer Satisfaction and Data Privacy

Procedures shall be followed to safeguard occupant data privacy and ensure feedback systems for service satisfaction support sustainability objectives.

vi. Sustainability Reporting and Disclosure

Operational data shall be collected and reported in accordance with organisational ESG disclosure frameworks to support transparent sustainability communication.

Refer to Annex G – Summary Table Sustainable Management Responsibility

4.11 Health, Safety, Security (HSS) and Incident Response

The objective of this section is to establish, implement, and maintain a systematic framework for health, safety, and security management (HSS) that safeguards facility occupants, personnel, and property by mitigating risks and ensuring compliance with applicable organisational and legal standards.

This strategy will ensure a safe and healthy work environment by identifying hazards, assessing risks, and implementing control measures; fostering a culture of safety awareness and accountability; enabling swift incident detection and response; and promoting continuous improvement through audits, monitoring, and corrective actions.

To ensure resilient and sustainable facility operations, HSS management must be integrated into organisational procedures and decision-making processes.

4.11.1 Policy

i. Top management shall establish, approve, periodically review, and communicate a comprehensive Health, Safety, and Security (HSS) policy that aligns with organisational objectives and compliance obligations.

ii. Middle Management shall ensure the policy is regularly updated to reflect evolving risks, regulatory changes including the Occupational Safety and Health Act 1994 (Act 514) or Malaysian Standard MS 1722:2011 for OSH Management Systems and organisational priorities.

iii. Operational team personnel shall be trained and made aware of the provisions of the HSS policy relevant to their tasks and responsibilities.

DRAFT

4.11.2 **Occupational Safety and Health (OSH) Compliance**

i. Top management oversees strategy by approving policies, making sure they follow laws like the Occupational Safety and Health Act 1994 (Act 514) and Malaysian Standard MS 1722:2011 – OSH Management Systems, providing needed resources, and checking performance for ongoing improvement.

ii. Middle management translates these policies into practice by implementing OSH programs, conducting inspections, maintaining documentation, delivering training, and ensuring incident investigations and corrective actions are completed.

iii. Operational teams uphold safety on the ground by following safe work procedures, using personal protective equipment correctly, reporting hazards promptly, participating in training, and cooperating in implementing preventive measures.

4.11.3 **Fire Safety Compliance**

i. The organization shall ensure that all facilities comply with the latest provisions of the Fire Services Act 1988 (Act 341) and its amendments, including the appointment of required fire safety personnel such as Orang Kompeten Kebakaran (OKK), Fire Safety Officer (FSO), and Fire Safety Manager (FSM) where applicable.

ii. Compliance shall include maintaining functional fire protection systems, fulfilling Fire Certificate (FC) requirements, and implementing fire safety measures in accordance with statutory obligations and guidance issued by the Fire and Rescue Department of Malaysia (JBPM).

4.11.4 **Hazard Identification, Risk Assessment, and Risk Control (HIRARC)**

i. Hazard Identification, Risk Assessment, and Risk Control is a structured method used to manage workplace safety. In facilities management, it plays a vital role in ensuring that all physical systems (e.g., HVAC, CCTV, access control, electrical systems) are operated safely and risks are proactively managed.

ii. HIRARC workflow are as below: -

a. Classify Work Activities

The process starts by identifying and classifying all work activities within facilities management. Examples include equipment maintenance, chemical handling, and system installation.

b. Hazard Identification

For each work activity, potential hazards are identified. These may include physical hazards such as moving machinery or electrical exposure, chemical hazards such as cleaning agents or refrigerants, and ergonomic hazards such as repetitive tasks or manual lifting.

c. Risk Assessment

Each hazard is assessed to determine its likelihood of occurrence and potential severity. A risk matrix is used to categorise risks as low, medium, or high, enabling prioritisation of control measures.

d. Risk Control Measures

Control measures are selected and applied following the hierarchy of controls: elimination (removing the hazard), substitution (replacing with a safer alternative),

DRAFT

engineering controls (such as barriers or ventilation), administrative controls (such as standard operating procedures and training), and personal protective equipment (PPE) including gloves and helmets.

e. Documentation & Review

All hazard, risk, and control information is documented in HIRARC forms. Assessments are updated whenever processes or infrastructure change, and the effectiveness of controls is regularly monitored to ensure ongoing safety.

iii. The organisational responsibilities in HIRARC are as follows:

a. Top management oversees policy approval, resource allocation, legal compliance, and performance review to drive improvements.

b. Middle management leads hazard identification and risk assessments, maintains the risk register, implements control measures, develops Job Safety Analysis (JSA) for high-risk tasks, and ensures team training and awareness.

c. Operational teams participate in hazard assessments, follow safe work procedures and JSAs, use personal protective equipment correctly, report hazards or incidents promptly, and provide feedback on the effectiveness of controls.

4.11.5 **Security Management**

i. To establish, implement, and maintain effective security management processes that protect facilities, assets, personnel, and information, including a structured approach to incident response

ii. Strategy for security shall be defined at the leadership level, including risk appetite, investment priorities, and integration with corporate security frameworks.

iii. The FM organisation shall establish documented security management procedures covering physical security, cybersecurity, asset protection, and user safety.

iv. Roles and responsibilities for security management and incident response shall be clearly defined and communicated to all relevant FM personnel.

v. A security risk assessment shall be conducted regularly to identify vulnerabilities and threats to facility operations and assets.

vi. Security controls shall be selected and implemented to mitigate identified risks, ensuring the confidentiality, integrity, and availability of FM assets and systems.

vii. The FM organisation shall establish and maintain documented incident response procedures, i.e.: -

- Incident Identification and Reporting
- Incident Evaluation and Classification
- Incident Response and Containment
- Investigation and Root Cause Analysis (RCA)
- Communication and Coordination
- Corrective and Preventive Actions
- Incident Documentation and Record-Keeping
- Review and Continuous Improvement

DRAFT

viii. Incident response drills and training shall be conducted periodically to ensure readiness of FM personnel and effectiveness of response procedures.

ix. Incident response performance shall be monitored and reported to FM leadership and relevant governance forum/platform to support transparency and continual improvement.

x. Physical Security and User Protection

- Controls to protect users and facility occupants (e.g., access management, incident response) shall be planned and coordinated by mid-level FM management.
- Incident reporting and escalation protocols shall be defined and monitored.
- Operational teams shall enforce physical security measures, monitor user safety, and respond to incidents as per established response protocols.

xi. Cybersecurity

- FM management shall implement cybersecurity policies, access controls, monitoring, and awareness training aligned with organisational Information Technology / Operational Technology (OT systems, such as Industrial Control Systems (ICS) and Supervisory Control and Data Acquisition (SCADA)) security programs.
- FM personnel shall comply with cybersecurity policies related to system access and data protection.

xii. Security Systems

- FM supervisors shall oversee installation, maintenance, and operation of physical security systems (such as CCTV, access controls), ensuring adherence to documented procedures.
- Frontline staff shall operate, monitor, and report on security systems (e.g., CCTV, access control) according to documented instructions.
- Asset Security
- Tactical leadership shall design and enforce asset protection measures, conduct security audits, and coordinate incident investigations related to theft, vandalism, or loss.
- FM operational units shall ensure asset integrity through adherence to security practices and report any security breaches immediately.

DRAFT

4.12 Workplace Strategy

Workplace strategy in facility management (FM) recognises that a facility is no longer only the physical structure of a building but includes the workspace, client space, technology supporting knowledge transfer, interrelationships between functional units, optimization of financial and operational resources, and integration with society through corporate citizenship. Facilities now span physical and virtual environments, shaped by organizational culture, strategy, systems, and people, requiring adaptability to a constantly changing business environment.

The purpose of this section shall be to establish, implement, and maintain a systematic workplace strategy that aligns with organizational objectives, optimizes workspace utilization, enhances employee experience, and supports operational efficiency and sustainability. According to (Smith, 1999a)

This strategy shall ensure that workplace planning and management are driven by data-informed decisions, stakeholder engagement, and continual improvement across all organizational levels.

4.12.1 **Strategic Level**

i. Workplace Vision and Objectives

FM leadership shall define and communicate a clear workplace vision and strategic objectives that support the overall organisational mission, culture, and future workforce needs. This vision should integrate physical and virtual workplace concepts, support both traditional and new organizational models—hierarchical to flat, operational to goal-focused—and guide designs that enhance productivity, collaboration, and adaptability.

ii. Policy and Governance

Workplace strategies shall be governed by documented policies that incorporate sustainability, technology integration, diversity and inclusion, and compliance with legal and regulatory requirements. Policies should embed ESG/Sustainability principles, WELL/LEED/BREEAM standards, hybrid work guidelines, and inclusive design approaches to ensure health, well-being, and equity in the workplace.

iii. Resource and Investment Planning

Leadership shall ensure strategic resource allocation, including capital investments and technology adoption, to enable flexible, resilient, and sustainable work environments. This includes funding for smart building systems, IoT sensors, IWMS platforms, and modular workspace designs that can adapt to evolving workforce needs while optimising costs.

iv. Stakeholder Engagement

FM leadership shall actively engage stakeholders across various levels—employees, management, and external partners—to incorporate their needs and expectations into workplace decision-making. Methods include surveys, focus groups, occupancy studies, and collaborative design sessions to ensure solutions are user-centric and promote engagement.

DRAFT

4.12.2 **Tactical Level**

i. Workspace Planning and Optimization

FM tactical managers shall develop detailed workspace plans that optimize space utilization, support various work modes (collaborative, focused, remote), and align with organisational occupancy targets. Activity-based working, hot-desking, and flexible layouts should be applied based on real usage data to maximise efficiency and support diverse workstyles.

ii. Change and Transition Management

Tactical plans shall include processes for managing workplace changes such as relocations, renovations, or space reconfigurations to minimize business disruption. should integrate structured change management, clear communication, and employee support to ease transitions and maintain productivity.

iii. Support System - Technology and Infrastructure Integration

Acquire data decision from workplace technologies supporting occupancy monitoring, collaboration, environmental comfort, and security shall be selected, integrated, and maintained to meet tactical objectives. Examples include workplace experience apps, booking systems, environmental sensors, and collaboration platforms that enable hybrid work and provide analytics for continuous improvement.

iv. Performance Monitoring and Reporting

Tactical management shall define and track workplace performance indicators such as space utilization rates, employee satisfaction, and operational cost efficiencies, reporting findings to strategic leadership. KPIs should be linked to business outcomes—e.g., productivity, collaboration, innovation—and assessed via real-time analytics, surveys, and cost benchmarking.

4.12.3 **Operational Level**

i. Day-to-Day Workspace Management

Facility and workplace teams shall execute daily operational tasks including workspace setup, maintenance, environmental controls, and user support following / comply documented procedures. Daily routines should ensure environmental quality—air, lighting, acoustics—are within optimal ranges, while keeping spaces clean, functional, and aligned with workplace policies.

ii. Occupancy and Usage Monitoring

Operational personnel shall collect and report real-time data on workspace use, environmental conditions, and user feedback to inform tactical planning and continual improvement. The use of IoT sensors, or smart digital check-ins, and helpdesk logs to identify underused areas, peak usage trends, and areas needing intervention.

DRAFT

iii. User Engagement and Support

Customer service and helpdesk functions shall provide timely support addressing workplace service requests, concerns, and communication to ensure a positive user experience. Engagement should focus on responsiveness, empathy, and proactive communication to strengthen employee satisfaction and workplace trust.

iv. Continuous Improvement

Facility teams shall participate in feedback collection, incident reporting, and corrective actions to enhance workplace environment and service quality. Continuous improvement loops should integrate employee feedback, post-occupancy evaluations, and lessons learned into future workplace strategies.

DRAFT

SECTION 5: IMPLEMENTATION PDCA CYCLE

The implementation of CIS FM shall be managed through the Plan-Do-Check-Act (PDCA) cycle to ensure systematic deployment, evaluation, and continual improvement.

5.1 Implementation PDCA Cycle

i. Commitment and Awareness

Establish leadership commitment and create awareness among personnel regarding the standard implementation objectives and requirements. The requirements are:

a. Top management shall demonstrate commitment by providing necessary resources and communication.

b. FM personnel and relevant stakeholders shall be made aware of the standard's, expected outcomes, and their roles.

c. Awareness programs, training, and communication plans shall be developed and documented.

ii. Gap Analysis

Assess current practices against standard requirements to identify gaps and areas for improvement. The requirements are:

a. Conduct a documented gap analysis comparing existing processes with applicable standard sections.

b. Identify nonconformities, risks, and opportunities for alignment.

c. Document findings and prioritize gaps based on impact and feasibility.

iii. Policies and Process Development

Develop and establish policies and processes aligned with the standard to address identified gaps. The requirements are:

a. Develop documented policies, procedures, and work instructions in line with standard requirements.

b. Ensure policies are approved by authorized management and communicated to all affected personnel.

c. Integrate new or updated processes into the FM management system documentation.

5.1.1 **Do Phase – Pilot Test**

Implement pilot projects or process trials to test the effectiveness and practical applicability of new policies and processes.

- Select representative pilot areas, teams, or processes for testing.
- Conduct pilot implementation according to documented plans.
- Collect data, observe challenges, and gather feedback from participants.
- Document pilot outcomes and lessons learned.

DRAFT

5.1.2 **Check Phase - Review**

i. Audit, Benchmark, Gap and Closure Tracking.

ii. Evaluate performance, compliance, and effectiveness of implemented processes through systematic reviews and audits.

iii. Requirements:

- Plan and conduct internal audits and benchmarking activities in alignment with the implemented standard.
- Document audit findings, nonconformities, and opportunities for improvement.
- Monitor and track closure of identified gaps and corrective actions.
- Report review results to management for decision making.

5.1.3 **Act Phase – Full Rollout**

Deploy the standard-compliant processes organisation-wide based on successful pilot outcomes and corrective actions. The requirements are:

- Communicate rollout plans with timelines, responsible personnel, and resource allocation.
- Implement processes fully across all relevant areas, maintaining documented controls.
- Provide training and support to ensure consistent application.

5.2 Standardization

Establish standard operating procedures and controls to maintain consistency and integration of the new processes into routine operations. The requirements are:

- Document and control procedures reflecting the standardized processes.
- Ensure accessibility of documentation and ongoing personnel competence.
- Integrate standardized processes into the FM management system and quality manuals.

5.3 Continuous Improvement

Foster an environment of ongoing evaluation and enhancement to increase effectiveness and address emerging issues. The requirements are:

- Monitor process performance through key performance indicators (KPIs) and feedback.
- Analyse data and identify opportunities for improvement.
- Implement improvements through controlled change management and PDCA iterations.
- Promote a culture of continual improvement among FM personnel.

DRAFT

SECTION 6: COMPLIANCE & STANDARDS

6.1 Mandatory Requirements

6.1.1 **Statutory inspections (JKKP, Bomba, Energy Commission)**

Facilities must comply with all legally required inspections to ensure safety and regulatory adherence. This includes inspections by the Department of Occupational Safety and Health (JKKP) for pressure vessels and lifting equipment, Fire and Rescue Department of Malaysia (Bomba) for fire protection systems, and the Energy Commission for electrical installations. Non-compliance may lead to legal action, operational disruption, or reputational damage.

6.1.2 **Fire Certificate Renewal, Electrical Safety, Passenger-Lift & Escalator Fitness, Pressure Vessel Inspection**

These specific regulatory obligations are crucial to safeguarding building occupants and operational continuity. Fire Certificates must be renewed annually, confirming that fire prevention systems are functional and compliant. Electrical safety involves routine testing of wiring, distribution boards, and main switchgear to prevent hazards. Passenger lifts and escalators require periodic fitness certification by competent personnel, while pressure vessels such as boilers must be inspected and certified safe for use as stipulated by law.

6.1.3 **Environmental Impact Licensing (Air, Noise, Wastewater), Scheduled-Waste Tracking**

Facilities that emit pollutants, generate noise, or discharge wastewater must obtain environmental licenses from the Department of Environment (DOE). These licenses ensure that emissions remain within permissible limits under the Environmental Quality Act. Additionally, any hazardous or scheduled waste must be identified, labelled, stored, tracked, and disposed of according to DOE procedures, including e-SWIS documentation, to prevent environmental contamination and legal non-compliance.

6.1.4 **Accessibility compliance (MS 1184, MS 1183)**

Malaysian Standards MS 1184 and MS 1183 specify accessibility requirements for public and private buildings. FM teams must ensure that facilities are universally accessible to persons with disabilities, including provisions such as accessible pathways, ramps, lifts, toilets, and signage. Compliance with these standards supports inclusivity, legal obligations under the Persons with Disabilities Act 2008, and enhances public reputation and user experience.

6.2 Voluntary Best Practices

6.2.1 **ISO 41001 Certification for Facility Management Systems**

This international standard provides a structured framework for implementing and improving a facility management system that supports the strategic direction of an organisation. Certification ensures FM practices are systematically aligned with business objectives, stakeholder needs, and legal requirements. It demonstrates a commitment to effective service delivery, risk management, and continuous improvement in FM operations.

6.2.2 **ISO 55001 Certification for Asset Management Maturity**

ISO 55001 defines the requirements for an asset management system to manage the lifecycle of physical assets effectively. Certification signals that an organisation has adopted a comprehensive and proactive approach to asset planning, acquisition, operation, maintenance, and disposal. It promotes asset value realisation, sustainability, and the optimisation of capital and operational expenditures.

DRAFT

6.2.3 **ISO 50001 and ISO 14001 for Energy and Environmental Stewardship**

ISO 50001 focuses on the development of energy management systems that enable organisations to improve energy performance through efficient energy use and conservation. ISO 14001 supports environmental management systems that control environmental aspects, ensure compliance, and reduce environmental impacts. Together, they help FM teams drive energy and resource efficiency, minimise environmental footprints, and support sustainability goals.

6.2.4 **Malaysian Code of Practice for Indoor Air Quality (LAG) 2022**

This guideline, developed by the Department of Occupational Safety and Health (DOSH), outlines standards and procedures to maintain acceptable indoor air quality in workplaces and public facilities. It includes parameters for temperature, humidity, carbon dioxide, airborne microorganisms, and ventilation rates. Adopting this code promotes occupant health, comfort, and productivity while supporting compliance with occupational health standards.

DRAFT

ANNEX A

Table A Document Control Procedure Template

Step	Description	Responsibility	Control Requirements
Document Creation	Develop draft document aligned with FM policy or procedure needs	Document Owner / Subject Matter Expert	Ensure content relevance, compliance with standards
Review & Approval	Validate content for accuracy, compliance, and applicability	Assigned Reviewers / Management	Formal approval process with sign-off traceability
Version Control	Assign version numbers and revision dates for document tracking	Document Control Coordinator	Maintain master document register with revision history
Controlled Distribution	Distribute documents to authorized users via approved channels	Document Controller / IT Support	Restrict access to prevent unauthorized changes or sharing
Access & Retrieval	Ensure documents are accessible to authorized personnel	All Personnel	Secure repository with defined access rights and backup measures
Periodic Review	Schedule and conduct document review for currency and relevance	Document Owner / Management	Review cycles defined (e.g., annually or as needed)
Obsolete Document Handling	Remove or archive superseded versions to prevent use	Document Control Coordinator	Mark clearly as obsolete; archive securely
Training & Awareness	Train relevant personnel on updated documentation and procedures	HR / Training Coordinators	Maintain training records and effectiveness assessments

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ANNEX B

Templates for Financial Checklists

Table B.1 Financial Management Checklist Template

Level	Checklist Item	Status (Y/N)	Comments/Notes
Strategic	Financial management policies established		
	Annual budgeting framework approved		
	Resource allocation aligned with FM objectives		
	Financial risk management processes defined		
	Periodic review of financial policies scheduled		
Tactical	Financial plans, forecasts, and cash flows developed		
	Cost control mechanisms implemented and monitored		
	Financial KPIs defined and regularly reported		
	Procurement financial compliance monitored		
	Actions on budget variances taken		
Operational	Financial transactions processed timely and accurately		
	Financial documents maintained as controlled records		
	Expense verifications performed		
	Audit support provided		

Table B.2 Sample Financial KPI Dashboard Template

KPI Name	Target	Current Value	Status (On/Off Target)	Notes
Budget Variance (%)	**±5%**			
Cost per Square Foot (RM)	**Target RM per sq.**			
Maintenance Cost %	**≤ %**			
Vendor Payment Timeliness (%)	**≥95%**			
Energy Cost % of FM Costs	**≤ %**			
ROI on Capital Projects (%)	**≥ %**			

Suggested Visuals:

i. Line graph for monthly budget vs. actual costs

ii. Pie chart for cost breakdown (maintenance, utilities, security, etc.)

iii. Bar chart for vendor payment timeliness by period/vendor

iv. Gauge for budget variance and maintenance cost %

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Table B.3 Budget Planning Template

Budget Category	Estimated Amount (RM)	Justification / Comments	Approved By	Date Approved
Maintenance		Scheduled & reactive costs		
Utilities		Electricity, water, gas		
Vendor Contracts		Service contracts & materials		
Capital Expenses		Asset replacements and upgrades		
Emergency Preparedness		Contingency planning		
Miscellaneous		Other anticipated expenses		
Total Budget	RM			

Table B.4 Financial Reporting Template

Reporting Period	Budgeted (RM)	Actual (RM)	Variance (RM)	Variance (%)	Comments/ Notes
Month/Quarter/Year					
Maintenance Costs					
Utility Expenses					
Vendor Payments					
Capital Projects					
Emergency Expenses					
Total FM Expenses	RM	RM	RM	%	

Table B.5 Audit Preparation Checklist Template

Audit Item	Completed (Y/N)	Evidence Provided (Y/N)	Comments/ Follow-up Actions
Up-to-date financial policies and procedures			
Completed and approved budgets and forecasts			
Organized financial transaction records			
Evidence of cost control & purchase approvals			
Current financial reports and KPI dashboards			
Financial risk assessment documentation			
Records meeting regulatory and audit requirements			
Documentation of corrective actions from past audits			
Training and communication records related to finance			
Readiness of designated personnel for audit			

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ANNEX C

Table C.1 Asset & Inventory Management alignment with Facility Operations

Management Level	Focus Areas	Key Activities & Responsibilities	Facility Management Integration	ISO 41001 & ISO 55001 Emphasis	Key KPIs / Metrics	Purpose / Measurement Focus
Strategic	Asset Policy & Governance	• Define and maintain policies for asset registration, tagging, labelling, lifecycle management, and inventory control. • Plan and schedule asset audits (FCA, BCA, BPA). • Establish frameworks for sustainability, compliance, and risk mitigation. • Align asset management with SDGs.	• Leadership governance for asset and inventory management. • Define resource allocation and compliance strategies. • Incorporate asset lifecycle and audit strategies in capital planning.	• Leadership commitment and governance. • Value realization. • Lifecycle and risk-based approach. • Alignment with organisational strategy and sustainability goals.	• Facility Condition Index (FCI) • Lifecycle Costing • Regulatory Compliance Rate • Energy Consumption & Intensity • SDG Alignment Progress	• Measures asset health, cost-effectiveness, compliance, environmental footprint, and sustainability goal achievement.
Tactical	Asset & Inventory Planning and Coordination	• Plan and coordinate asset registration including tagging/labelling and data accuracy. • Manage inventory control, spare parts availability, and storage. • Use audit results (FCA, BCA, BPA) to inform maintenance and capital prioritization. • Maintain asset and inventory records.	• Manage utilities, space coordination, supplier performance. • Conduct condition surveys and inspections. • Align asset/inventory plans with maintenance and operational needs. • Support contract compliance monitoring.	• Medium-term planning and resource management. • Risk assessment and information management. • Process integration and control.	• Asset Register Accuracy • Inventory Turnover Rate • Vendor/ Contractor Performance Scores • Maintenance Plan Compliance • Condition Survey Results • Space Utilization Rate	• Ensures data reliability, resource optimization, supplier effectiveness, and asset condition monitoring supporting decision making.

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Operational	Execution, Monitoring, and Data Collection	• Perform asset tagging, labelling, and registration per procedures. • Manage inventory/spare parts stock, replenishment, and issuance. • Support asset audits by providing data. • Record and report asset and inventory status. • Trigger maintenance for asset issues promptly.	• Execute daily tasks: maintenance, utilities monitoring, security, helpdesk support. • Collect real-time asset/inventory data. • Provide feedback for tactical and strategic decision-making. • Ensure operational compliance and safety.	• Daily execution and monitoring. • Data integrity and accuracy. • Responsiveness and continual improvement. • Operational compliance and safety.	• Work Order Completion Rate • Helpdesk Response Time • Asset Downtime • Inventory Stock Accuracy • Energy Use Monitoring • Incident Reports	• Measures operational responsiveness, user satisfaction, service continuity, resource accuracy, energy efficiency, and safety compliance.

Supporting Insights from Research and Technology Integration:

i. **Data and asset integration platforms**: Modern FM uses BIM (Building Information Modelling), IoT sensor data, and GIS for seamless asset and inventory tracking, improving data quality, automation, operation efficiency, and maintenance responsiveness.

ii. **Technology applications**: RFID and IoT enable real-time asset tagging, inventory tracking, predictive maintenance, and optimized spare parts management, reducing downtime and costs while enhancing accuracy.

iii. **AI and machine learning**: Predictive analytics and AI models integrated with asset and inventory data improve fault prediction, dynamic inventory replenishment, and supply chain optimization, supporting proactive maintenance and resource allocation.

iv. **Performance measurement**: Real-time monitoring of key operational KPIs supports continual improvement, operational resilience, and compliance with safety and sustainability standards.

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Table C.2 List of Asset Management Policies in Public Sector

No	Guideline	Asset Management Policies
1	PB13	Pekeliling Perbendaharaan Malaysia – Garis Panduan Penyediaan Cadangan Anggaran Perbelanjaan
2	BCA	Garis Panduan Pemeriksaan Bangunan Sedia Ada
3	FCA	Garis Panduan Pemeriksaan Fasiliti
4	BPA	Penilaian Prestasi dan Penarafan Bangunan
5	-	Garis Panduan Pengumpulan Data dan Pelabelan Aset Tak Alih (PeDATA)
6	-	Garis Panduan Kitaran Hayat Aset

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ANNEX D

Table D Hard and Soft Facility Management Services

Service Type	Service / Function	Description / Typical Activities	ISO 41001 Context
Hard Services	Building Fabric and Structure Maintenance	Repairs and upkeep of walls, roofs, doors, windows, finishes	Technical Core FM Services
	Mechanical, Electrical, and Plumbing (MEP)	Operation, maintenance, and repair of HVAC, electrical, water supply, drainage, and gas systems	Technical Core FM Services
	Fire Safety and Life Safety Systems	Compliance and maintenance of fire alarms, sprinklers, extinguishers, emergency exits	Safety Related FM Core Services
	Building Automation and Control Systems (BMS)	Management of automated controls for energy efficiency, environment, and security integration	Technology-Enabled FM Services
	Security Systems and Physical Security	Access control, CCTV, intrusion detection, physical security patrols	Security and Risk Management
	Cleaning and Waste Management	Regular cleaning, hazardous waste handling, waste segregation programs	Operational Support Services
	Grounds Maintenance	Landscape care, exterior lighting, snow removal, signage upkeep	Physical Asset Management
	Energy Management and Utilities Control	Energy and utilities metering, monitoring, and optimization	Sustainability and Operational Control
	Asset and Equipment Maintenance	Routine and preventive maintenance of fixed assets and equipment	Asset Management and Maintenance
	Space Planning and Move Management	Coordination of physical relocations, workspace setup, and optimization	Space and Workplace Management
Soft Services	Reception, Helpdesk	Visitor management, switchboard operation, concierge	User-focused Support Services
	Security Personnel and Patrol Services	On-site security officers, emergency response	Security and Safety
	Waste Collection and Recycling Coordination	User engagement on waste segregation and collection scheduling	Environmental Management
	Mailroom, Courier, and Logistic Support	Handling mail, parcels, and internal logistics	Support & Administrative Services
	Cleaning Services	Daily janitorial and scheduled deep cleaning	Operational Support
	Catering and Vending Services	Food service provision, café management	Occupant Comfort and Wellbeing
	Facilities Helpdesk and Customer Service	User support, managing service requests, and complaints	Customer Service Management
	Reception and Visitor Management	Greeting and registering visitors, issuing badges	Organisational Front Desk Support
	Conference and Meeting Room Services	Room setup, booking management, and technical support	Event and Space Utilization Management
	Office Support Services	Stationery supplies, furniture setup	Administrative Support

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	Health, Safety, and Wellbeing Programs	Ergonomics, wellness initiatives, occupational health support	Occupational Health and Safety (OHS)
	Training and Awareness Programs	User inductions, FM service familiarization, emergency drills	Competency and Compliance Training

Notes on Table Usage

i. Hard Services: Focused on physical and technical asset management, ensuring infrastructure reliability, regulatory compliance, and safe, efficient operation.

ii. Soft Services: User-cantered services enhancing occupant comfort, satisfaction, and organisational productivity.

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ANNEX E

Table E Strategic, Tactical, and Operational Responsibilities

Function/Process	Strategic	Tactical	Operational
Asset Management	Policy, lifecycle strategy	Condition assessment, prioritization	Asset care, inspections
Regulatory Compliance	Governance, resource allocation	Compliance monitoring, audit coordination	Compliance implementation, reporting
Utilities & Resource Management	Strategic efficiency objectives	Resource planning and consumption control	Monitoring and operational control
Space Management	Utilization strategy	Allocation planning	Space adjustments
Vendor & Contract Management	Contracting strategy	Vendor selection, performance monitoring	Vendor coordination, SLA adherence
Financial Management	Budgeting, investment planning	Cost control, financial reporting	Transactional support
Condition Assessment	Policy & strategy	Inspection programs	Data collection, condition surveys
Emergency, Crisis, Disaster Mgt.	BCM and resilience strategy	Emergency plan implementation	Emergency drills and response
Hard and Soft Services Management	Service policy and governance	Service coordination, quality assurance	Service delivery
Security and Safety Operation	Strategy & policy	Operational control & compliance oversight	Security patrols, safety checks
Helpdesk and Customer Service	Service level objectives	Operation of helpdesk and complaint handling	Customer interaction, service closing
Maintenance Regime	Strategy & technology adoption	Planning and scheduling	Executing maintenance tasks
Maintenance Documentation	Records management policy	Documentation control	Work order generation and closure

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ANNEX F

Table F Summary of Technology Facility Management System

Management Level	Requirement	Implementation	Records	Example
Strategic	**Governance and Strategy**			
	• FM Technology Strategy The organization shall develop and document an FM Technology Strategy covering BIM, aligned with organizational objectives, sustainability targets, and the risk management framework. For public sector agencies, the strategy shall comply with and implement the requirements of Pekeliling PK 1.15, including the use of BIM for asset and facility management. • Integration of BIM into Strategic Planning BIM shall be recognized as a core technology component and the central FM data repository, and be integrated with other systems (CMMS, CAFM/IWMS, BAS/BMS, IoT, GIS). • Technology Governance A governance structure (e.g., FM Technology Steering Committee) shall be established with defined roles and decision-making authority to oversee the implementation of all FM technologies, including BIM. • Investment & Resource Allocation Leadership shall provide investment and resources for the development, training, and maintenance of FM technologies, including hardware, software, ICT infrastructure, and cloud data repositories. • Compliance with Standards & Regulations All FM technologies shall comply with relevant international and national	• Develop a 3–5 Year Technology Roadmap with BIM as a key milestone. • Align FM technology planning with sustainability (ESG), smart building, and digital twin targets. • Establish an FM Technology Steering Committee to supervise and approve technology investments. • Develop policies for system integration, data standards, and cybersecurity. • Plan competency development programs, including BIM training and recognized certification. • Apply the Plan–Do–Check–Act (PDCA) cycle for continuous improvement of FM technology.	• Approved FM Technology Strategy document. • Technology roadmap and BIM integration plan. • Minutes of technology governance committee meetings. • Budget and resource allocation plans. • Records of BIM and FM technology training. • Technology and BIM performance KPI reports.	• Example Roadmap: - Year 1: CMMS deployment + basic asset data; basic BIM training. - Year 2: BAS/BMS integration with IWMS & BIM; LOD 500 compliance for new assets. - Year 3: BIM integrated with IoT for real-time asset performance monitoring. • Example KPIs: - 100% of new FM public sector projects comply with PK 1.15. - LOD 500 asset data completed within 6 months of handover. - ≥ 90% integration rate between BIM and other FM systems.

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	standards (e.g., ISO 41001, ISO 19650, BACnet, KNX) and official reference documents such as JKR BIM Guidelines and PeDATA. • Monitoring & Reporting Technology performance KPIs, including BIM usage, shall be monitored regularly. For government agencies, BIM implementation status shall be reported to the National BIM Technical Committee as required in PK 1.15.			
	Smart Building Standards and Compliance			
	• Compliance with National & International Standards All FM technology systems shall comply with standards such as ISO 41001 (FM), ISO 19650 (BIM), ISO 50001 (energy management), BACnet/KNX/Modbus (BAS/BMS), and data security standards such as ISO 27001. For public sector agencies, compliance with Pekeliling PK 1.15 is mandatory for BIM implementation in asset and facility management. • System Interoperability Systems shall use open data formats and protocols (e.g., IFC, COBie, gbXML, MQTT, OPC UA) to enable integration between BIM, CFMS, BAS/BMS, IoT, GIS, and analytics platforms. • Integration of Standards into Contracts & Design Requirements for compliance with standards and protocols shall be explicitly stated in tender, contract, and system design documents.	• Identify relevant standards & protocols for each FM technology category (BIM, BAS/BMS, IoT, CFMS). • Maintain an up-to-date compliance register aligned with changes in legislation and industry standards. • Include compliance sections in all FM technology procurement and contracts. • Conduct integration testing during commissioning to verify data and protocol compatibility. • Perform annual compliance audits and document outcomes. • Provide regular training for staff and vendors on standards, protocols, and best practices in system integration.	• Standards & protocol compliance register. • Tender/contract specifications showing compliance requirements. • Integration test and commissioning reports. • Compliance audit reports. • Training records for standards and integration best practices.	• Example BIM Standards: ISO 19650 for information management, IFC for data exchange, COBie for asset data. • Example BAS/BMS Standards: ISO 16484 for BAS, BACnet/IP for control system communications. • Example KPIs: - 100% of new FM projects meet open integration standard compliance. - ≥ 95% of compliance audits record no critical non-conformities. • Example Best Practice: Use BIM (LOD 500) as the single source of truth for all FM systems, including CFMS and BAS/BMS.

DRAFT

	• Compliance Audits & Reporting Compliance audits shall be conducted regularly, with findings and corrective actions documented. Public sector agencies shall report BIM compliance status according to the formats and timelines set by the National BIM Technical Committee. • Training & Awareness Training on smart building standards and BIM compliance shall be provided to all FM staff, technicians, and vendors involved in operations, maintenance, and facility management.			
Tactical	**Computerized Facility Management Systems (CFMS)**			
	• System Selection & Deployment FM middle management shall select, deploy, and maintain CFMS solutions based on organizational needs, scalability, and compliance with open standards (e.g., IFC, COBie, BACnet/IP). • Core System Types The CFMS environment shall include one or more of the following: - - Computerized Maintenance Management System (CMMS) - Computer Aided Facilities Management (CAFM) - Computerized Integrated Facility Management (CIFM) - Integrated Workplace Management System (IWMS) • Integration with BIM CFMS shall be integrated with BIM (LOD 500) to enable centralized asset data, space management, and maintenance scheduling.	• Conduct needs assessment to determine required CFMS modules and integration scope. • Prepare technical specifications for procurement, including open data format requirements. • Deploy CFMS in phases, starting with core asset and maintenance management modules. • Configure BIM–CFMS integration for asset data synchronization and spatial reference. • Develop user guides and training materials for system operation. • Set up performance monitoring dashboards for KPIs. • Conduct quarterly review meetings to assess system performance and plan enhancements	• CFMS procurement and selection documents. • System configuration and integration documentation. • BIM integration mapping records. • User access logs and training attendance records. • KPI and system performance reports. • User feedback reports and improvement plans.	• Example Integration: Preventive maintenance schedules from CMMS linked to BIM model locations; technician can view asset specifications directly in BIM before executing the task. • Example KPIs: - ≥ 90% of work orders generated from preventive maintenance schedules. - ≥ 95% synchronization accuracy between BIM asset data and CFMS. • Example Best Practice: Use IWMS to unify CMMS, space management, and lease administration with a shared BIM data source.

DRAFT

	• System Functionality CFMS shall support modules for asset register, preventive maintenance scheduling, work order management, space utilization, cost tracking, and KPI reporting. • User Access & Training All CFMS users shall be provided with role-based access and trained in system usage, data entry standards, and reporting functions. • Continuous Improvement System performance, user feedback, and integration effectiveness shall be reviewed periodically to improve functionality and usability.			
	Building Automation System (BAS)/ Building Management System (BMS)			
	• System Planning & Design FM technical teams shall plan BAS/BMS architecture to cover all relevant building systems, ensuring scalability and compatibility with open protocols (e.g., BACnet/IP, Modbus, KNX). • Integration with FM Technologies BAS/BMS shall integrate with BIM, CFMS, IoT platforms, and analytics dashboards to enable centralized monitoring and data-driven control strategies. • Performance Monitoring BAS/BMS shall provide real-time monitoring of environmental parameters (temperature, humidity, IAQ), energy consumption, and system health, with alerting for anomalies. • Automation & Control BAS/BMS shall enable automated control functions (e.g., demand-based ventilation, daylight harvesting,	• Develop BAS/BMS design specifications with open protocol and integration requirements. • Install and configure BAS/BMS hardware and software to cover all designated building systems. • Integrate BAS/BMS with BIM models for asset location and operational context. • Set up alert thresholds and notification procedures for anomalies. • Implement automated control algorithms for energy and comfort optimization. • Train FM operations teams on BAS/BMS interface, controls, and troubleshooting.	• BAS/BMS design and installation documentation. • Integration records with BIM, CFMS, and IoT. • System performance logs and anomaly reports. • Automation control settings and change logs. • Training attendance and competency records.	• Example Integration: Energy consumption data from BAS integrated into BIM to visualize high-usage zones in 3D for targeted efficiency improvements. • Example KPIs: - ≥ 10% reduction in annual energy usage through BAS optimization. - 100% of BAS/BMS connected assets mapped in BIM with LOD 500. • Example Best Practice: Implement predictive fault detection using BAS data and AI algorithms, linking findings to maintenance work orders in CFMS.

DRAFT

	automated fault detection) to optimize efficiency. • Data Standards BAS/BMS data shall be structured according to open formats (e.g., Haystack tagging, IFC, gbXML) for integration into BIM and energy management systems. • Security & Resilience BAS/BMS shall implement cybersecurity measures, redundancy, and failover capabilities to prevent service disruption			
	Building Information System (BIM)			
	• BIM Implementation Policy The organization shall develop a BIM Implementation Plan (BEP) for FM that defines objectives, standards, responsibilities, and integration requirements. For public sector agencies, BIM shall be implemented in accordance with PK 1.15, including the delivery of LOD 500 asset data for operational use. • Data Standards & Compliance BIM data shall comply with ISO 19650, JKR BIM Guidelines, PeDATA, SKATA (Fixed Asset Code), and other relevant national/international standards. • Integration with FM Systems BIM shall be integrated with CFMS, BAS/BMS, IoT, and GIS platforms, using open formats such as IFC, COBie, and gbXML to enable seamless data exchange.	• Develop and approve a BIM Execution Plan (BEP) specific to FM. • Define LOD 500 requirements for all relevant assets. • Configure BIM–CFMS integration to ensure live data exchange. • Implement BIM–IoT integration for real-time asset performance monitoring. • Conduct model quality audits before and after system integration. • Train staff in BIM for FM workflows and provide user guides. • Establish a BIM data governance framework in alignment with organizational policies.	• Approved BIM Execution Plan for FM. • BIM models and data files with asset codes and LOD 500 compliance. • Integration logs between BIM and FM systems. • Quality audit reports for BIM data. • Training records for BIM-related competencies. • Reports submitted to the National BIM Technical Committee.	• Example Integration: BIM model with LOD 500 assets linked to CMMS, enabling technicians to click on a 3D asset and open its maintenance history and IoT sensor data. • Example KPIs: - 100% of new FM public sector projects deliver LOD 500 asset data as per PK 1.15. - ≥ 95% BIM data accuracy verified through audits. - ≥ 90% integration rate between BIM and other FM systems. • Example Best Practice: Use BIM as the Single Source of Truth for asset data, integrating it with IoT for predictive maintenance and with BAS/BMS for automated control.

DRAFT

	• Asset Lifecycle Data BIM shall maintain accurate asset lifecycle information from project handover through operations, maintenance, and disposal phases. • Quality Control & Data Validation BIM models and associated asset data shall undergo regular quality checks and validation to ensure data integrity, completeness, and usability for FM purposes. • BIM Training & Competency FM staff, consultants, and contractors shall be trained in BIM standards, tools, and workflows for FM, including model navigation, data extraction, and integration processes. • Reporting & Compliance Monitoring For government agencies, BIM implementation status and data submission shall be reported to the National BIM Technical Committee as stipulated in PK 1.15.			
	Internet of Things (IoT) Deployment			
	• IoT Strategy & Planning The organization shall define an IoT deployment strategy that aligns with FM objectives, asset lifecycle needs, and integration requirements with other FM technologies. • Device Selection & Standards Compliance IoT devices shall be selected based on compatibility with open communication protocols (e.g., MQTT, OPC UA, BACnet/IP) and relevant standards for FM and building automation. • Integration with BIM & FM Systems IoT platforms shall integrate with BIM (LOD 500), CFMS, BAS/BMS, and	• Develop an IoT deployment plan covering device types, locations, and integration workflows. • Conduct technical compatibility assessments with BIM, BAS/BMS, and CFMS before deployment. • Configure data pipelines to ensure secure and reliable data flow from IoT devices to FM systems. • Implement real-time dashboards for operations teams to monitor IoT data. • Establish predictive maintenance rules using IoT data analytics.	• Approved IoT deployment strategy. • Device specifications and installation records. • Integration documentation with BIM and FM systems. • IoT system performance reports. • Predictive maintenance logs. • Training records for IoT operations.	• Example Integration: IoT sensors detect abnormal vibration in a chiller and trigger a predictive maintenance work order in CFMS, while updating the BIM model with asset condition status. • Example KPIs: - ≥ 90% IoT devices integrated with BIM and FM platforms. - ≥ 15% reduction in reactive maintenance through IoT predictive alerts. • Example Best Practice: Deploy IoT sensors with

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	analytics tools to enable contextual visualization and automated workflows. • Data Management & Security IoT data shall be managed according to the organization's data governance policy, ensuring security, encryption, and role-based access control. • Performance Monitoring & Analytics IoT systems shall provide real-time data streams for monitoring asset conditions, space utilization, energy performance, and environmental parameters. • Predictive Maintenance & Automation IoT analytics shall be leveraged for predictive maintenance triggers, automated control adjustments, and anomaly detection.	• Conduct training sessions for FM and technical teams on IoT systems and data interpretation.		edge computing capability to preprocess data locally before sending to FM systems, improving response time and reducing bandwidth use.
Operational	**ICT Infrastructure Management**			
	• Infrastructure Planning & Capacity The organization shall plan and maintain ICT infrastructure (servers, storage, networking, cloud services) with sufficient capacity to handle FM system data volumes, including high-resolution BIM models and IoT data streams. • Network Reliability & Performance ICT infrastructure shall be designed for high availability, low latency, and redundancy to minimize downtime of FM systems. • Security & Compliance Infrastructure shall implement cybersecurity measures including firewalls, intrusion detection, encryption, and compliance with relevant laws and organizational ICT policies. • Cloud & On-Premises Integration	• Develop an ICT Infrastructure Plan aligned with FM technology requirements and growth projections. • Implement network segmentation for critical FM systems to enhance security. • Set up automated monitoring tools for server performance, network health, and storage capacity. • Configure disaster recovery infrastructure, including offsite backups and failover systems. • Regularly test cybersecurity protocols and update firmware/software. • Conduct user access reviews to ensure only	• ICT infrastructure design and configuration documents. • Network performance logs and uptime reports. • Security audit reports and penetration test results. • Backup and disaster recovery test records. • Access control logs and user management records.	• Example Integration: High-speed fiber network connects BAS/BMS, IoT gateways, and BIM servers, enabling real-time visual updates of asset conditions in BIM models. • Example KPIs: - ≥ 99.5% uptime for all critical FM systems. - 100% disaster recovery tests completed on schedule. - Zero critical security breaches annually. • Example Best Practice: Use a hybrid cloud architecture where BIM and CFMS run on secure cloud servers, while sensitive IoT control functions remain on-

DRAFT

	FM systems shall leverage hybrid infrastructure where appropriate, combining on-premises servers with secure cloud environments for scalability and disaster recovery. • Access Control & User Management ICT infrastructure shall support role-based access, multi-factor authentication, and centralized identity management for all FM systems. • Monitoring & Maintenance All ICT components shall be monitored continuously for performance, capacity, and security threats, with proactive maintenance scheduled.	authorized personnel have system access.		premises for latency and security control.
	System Operation and Monitoring			
	• Operation According to Documented Procedures All FM systems shall be operated in accordance with approved Standard Operating Procedures (SOPs), covering workflows, access control, and security protocols. • Real-Time Monitoring FM systems shall be continuously monitored through a centralized dashboard integrating data from BIM, BAS/BMS, IoT, and CFMS. • Performance Reporting Key performance indicators (KPIs) such as system uptime, response time, module utilization, and data accuracy shall be monitored and reported on a regular basis. • Incident Detection & Management Automatic detection mechanisms for system failures, data anomalies, or security breaches shall be implemented with clear incident response procedures.	• Develop SOPs for the operation of each FM technology (BIM, CFMS, BAS/BMS, IoT). • Establish a FM Operations Control Center to monitor all systems. • Implement a centralized monitoring dashboard with real-time alerts and KPIs. • Define and implement incident response protocols, including automated notifications to technical teams. • Conduct regular service continuity drills to test redundancy and failover mechanisms. • Provide operator training on monitoring tools and escalation procedures.	• Approved SOPs for each FM system. • System monitoring logs and KPI reports. • Incident records, root cause analyses, and corrective actions. • Service continuity test records. • Operator training attendance records.	• Example Integration: Monitoring dashboard displays live temperature data from BAS, maintenance schedules from CFMS, IoT sensor status, and BIM 3D asset locations. • Example KPIs: - ≥ 99.5% uptime for all critical FM systems. - Incident response time ≤ 15 minutes for critical events. - 100% of incidents logged with root cause analysis and follow-up actions. • Example Best Practice: Use AI-based monitoring to detect unusual energy usage patterns and link anomalies to BIM for investigation and resolution.

DRAFT

	• Service Continuity Failover and redundancy processes shall be in place to maintain continuity of critical system operations. • Audit Logs & Traceability All user interactions and configuration changes shall be recorded in secure audit logs.			
	Data Collection, Analysis, and Reporting			
	• Structured Data Collection Data from all FM sources (BIM, CFMS, BAS/BMS, IoT, GIS, and manual inputs) shall be collected in accordance with a standard format (e.g., IFC, COBie, CSV, XML). • Data Validation & Cleansing All data shall be validated for accuracy, completeness, and consistency before being used for analysis or reporting. • KPI-Based Analysis Data analysis shall be linked to operational, maintenance, energy, space, financial, and sustainability KPIs. • Regular & Ad Hoc Reporting Performance reports shall be produced on a regular basis (e.g., monthly, quarterly) and on demand for management or regulatory purposes. • BIM-Integrated Reporting Analytical reports shall leverage BIM visualization where relevant (e.g., energy heat maps, asset maintenance locations). • Regulatory Reporting Compliance All mandatory reports required by circulars, standards, or regulations (e.g., PK 1.15 BIM status) shall be submitted in	• Develop data collection procedures for each FM system. • Define standard data formats for interoperability and cross-system analysis. • Implement data validation tools for automated quality checks. • Create analytical dashboards integrating operational, performance, and sustainability data. • Conduct data review meetings to identify trends, risks, and improvement opportunities. • Prepare BIM performance reports for PK 1.15 compliance (public sector).	• Data collection & processing procedures. • Data acquisition logs from each system. • Data validation & cleansing reports. • Analytical dashboards & KPI reports. • Periodic performance reports to management or regulators. • Minutes of data review meetings & follow-up actions.	• Example Integration: IoT room temperature data integrated into BIM for heat map visualization in energy audit reports. • Example KPIs: - ≥ 98% of reported data free from critical errors. - Monthly KPI reports issued ≤ 5 working days after month-end. - 100% of public sector BIM reports submitted on time. • Example Best Practice: Use BI tools like Power BI or Tableau connected to FM data repositories for automated reporting and interactive visualizations.

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	the prescribed format and within the set deadlines.			
	System Maintenance and Support			
	• Preventive and Corrective Maintenance All FM technology systems shall have documented preventive and corrective maintenance schedules, executed in accordance with manufacturer recommendations and organizational policies. • Software and Firmware Updates All applications, operating systems, firmware, and integrated modules shall be updated regularly to maintain functionality, security, and interoperability. • Vendor Management and SLA Compliance Service Level Agreements (SLAs) with vendors shall specify response times, resolution times, system availability targets, and maintenance obligations. • Disaster Recovery Planning A Disaster Recovery Plan (DRP) shall be maintained for all FM technology systems, tested at least annually to ensure operational readiness. • Configuration and Version Control All changes to system configurations shall be documented, including software version histories, integration settings, and network configurations. • User Support and Training Ongoing technical support shall be provided to all FM system users, including a helpdesk/ticketing system, user guides, and periodic refresher training.	• Develop a maintenance master schedule for all FM technologies. • Implement an automated patch management process for software and firmware updates. • Review and update vendor SLAs annually based on performance metrics. • Conduct annual DRP tests covering all critical FM systems. • Maintain a configuration management database (CMDB) for FM technology assets. • Operate a FM Technology Helpdesk with issue tracking and resolution logging. • Schedule annual refresher training for all FM technology users.	• Maintenance schedules and completion logs. • Software/firmware update logs. • Vendor SLAs and compliance reports. • Disaster recovery test reports. • Configuration change logs. • Helpdesk/ticket system reports. • Training attendance and competency assessment records.	• Example Integration: Routine BAS firmware update logged in CMDB and tested for interoperability with BIM and CFMS. • Example KPIs: - ≥ 95% of scheduled maintenance tasks completed on time. - Critical incidents resolved within SLA-defined timelines 100% of the time. - Zero system downtime caused by outdated software or missed updates. • Example Best Practice: Implement predictive maintenance for FM systems using AI-based monitoring tools to detect performance degradation before failures occur.

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ANNEX G

Table G Integrated Sustainability Functions, Responsibilities, and KPIs with Metrics

Function / Area	Strategic	Tactical	Operational	Key KPIs / Metrics	Purpose / Measurement Focus
Sustainability Policy and Governance	• Policy establishment and leadership commitment • Integration into organisational governance and culture	• Development of supporting management systems and standards • Coordination of sustainability initiatives and internal audits	• Staff awareness, training, and compliance enforcement	• Policy adoption and review frequency • Leadership sustainability commitment index • Personnel training completion rate	• Measures leadership engagement, policy currency, and workforce sustainability competence
Environmental Management System (EMS)	• EMS governance and alignment with strategic goals • Define environmental performance targets	• EMS implementation and ongoing monitoring • Conduct compliance audits and performance reviews	• Execute operational environmental controls • Maintain accurate reporting	• Environmental compliance rate • EMS audit finding closure rate • Environmental incident frequency • Reporting accuracy rate	• Ensures EMS integration, regulatory compliance, operational effectiveness, and data quality
Climate Change & Carbon Management	• Set strategy and emission reduction targets • Climate risk mitigation planning aligned with SDGs	• Monitor carbon emissions and progress • Develop carbon reduction and offset plans	• Implement mitigation actions (energy savings, renewables)	• Carbon footprint (Scope 1, 2, 3 emissions) • Progress vs. carbon reduction targets • Energy consumption intensity • Renewable energy usage rate	• Tracks emissions levels, reduction effectiveness, and sustainable energy use
Sustainable Sourcing & Supply Chain	• Define supplier sustainability policies and expectations	• Procurement planning with sustainability criteria • Supplier engagement on sustainability	• Monitor supplier compliance and performance • Contract sustainability adherence	• Sustainable procurement % of total purchases • Supplier sustainability audit scores • Contract compliance rate	• Measures alignment of suppliers and procurement with sustainability goals

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Green FM Practices	• Align green facility management objectives with strategy	• Plan waste, energy, and water management programs • Set resource efficiency targets	• Adhere to daily operational green practices and resource conservation	• Waste diversion rate • % reduction in energy and water consumption • Operational compliance with green procedures	• Measures resource efficiency, waste management success, and operational adherence
Social Responsibility and ESG	• Define frameworks for social responsibility and ESG • Diversity and inclusion policies	• Coordinate social programs and community engagement • Implement ESG initiatives	• Execute diversity practices • Enable workforce and community engagement	• ESG program coverage • Community engagement participation rate • Workforce diversity index • Social incident rate	• Tracks social outcomes, stakeholder involvement, and diversity performance
Reporting and Disclosure	• Ensure ESG reporting framework compliance and transparency	• Oversee data collection and KPI reporting systems • Manage internal reporting processes	• Maintain data integrity • Contribute operational data for disclosures	• Reporting timeliness and accuracy • KPI data completeness • External audit findings on reporting	• Measures quality, completeness, and timeliness of sustainability disclosures and data

Notes:

i. **KPI**s should be quantitatively defined with clear measurement methods, data sources, review frequency, targets, and assigned accountability.

ii. This table supports ISO 41001 (Facility Management), ISO 9001 (Quality Management), and ISO 14001 (Environmental Management) principles while embedding United Nations SDG targets through measurable sustainability performance.

iii. Regular monitoring and reporting on these KPIs enable objective evaluation and facilitate continuous improvement in sustainability management.

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DRAFT

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DRAFT

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