FACILITY MANAGEMENT (ISO 41001) FOR BETTER COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH (ISO 45001) REQUIREMENTS AND BENEFITS

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Facility management — Management systems — Requirements with guidance for use

Occupational health and safety management systems — Requirements with guidance for use

- **FM** is an Organizational function which integrates people, place and process within the Built Environment with the purpose of improving the Quality of Life of people and productivity of the Core Business.

- **Built Environment** is a collection of buildings (include mechanical & electrical installations) external works (landscape areas, walkways, fence, gates), infrastructures (facilities, equipment and services) and other construction works within an area.

- **Quality of Life** is continuous improvement to fulfill better Health and Safety requirements of people working & living in the Built Environment.

- **Core Business** is to provide the needs to the Society such as Commercial Business Services, Medical Services, Education Services, Food Manufacturing & Products, Hotel Accommodation, Condominium Services, Shopping Mall.

- **OH&S** is to achieve the policy to prevent work-related Injury and Ill-Health to workers and to provide safe and healthy Workplaces.

- **Injury and Ill-Health** means adverse effect on the physical, mental or cognitive condition of the worker. Such as injury due to machinery or tools, sickness due to mold infection or air pollution, mental sickness due to stress or excessive noise, unhygienic work conditions spread diseases.

- **Workplaces** are where workers need to go for work purpose such as Commercial Office, Factory, Hospital, Hotel, University/College, Mall/Shopping Complex,…etc.
FM Built Environment / OHS Workplaces

Hospital & Healthcare Industry

Shopping Mall & Retail Industry
Train Station & Transport Industry

Hotel & Hospitality Industry
Similarities (1): ISO 45001 OHS and ISO 41001 FM

- Quality of Life. Health & Safety of Life
- Plan–Do–Check–Act (PDCA) Process Approach
- Leadership Commitment: Policy & Objectives
- Social Responsibility: Quality Leadership
- Risk Management & Environmental Management
- High Level Structure (HLS) (ISO Management Systems)
Similarities (2): ISO 45001 OHS and ISO 41001 FM

- Identical Core Text
- Common Terms & Core Definitions
- Auditing Management System
- Self Determination & Self Declaration
- Confirmation of Conformity/Certification
- Fulfil Legal Requirements, Rules & Regulations
## Differences (1): ISO 45001 OHS and ISO 41001 FM

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<thead>
<tr>
<th>ISO 45001 OHS</th>
<th>ISO 41001 FM</th>
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<tr>
<td><strong>Occupants at Workplaces</strong> (Human: Health &amp; Safety, Good IAQ, prevent injury, eliminate Hazard, etc)</td>
<td><strong>Facility Management</strong> (Physical Assets: Built Environment, buildings, infrastructure, etc)</td>
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<tr>
<td><strong>Direct Protection of Workers against Adverse Environment</strong> (High temperature, polluted air, loud noise, etc)</td>
<td><strong>Direct Protection of Physical Facilities by Quality Maintenance Services</strong></td>
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<tr>
<td><strong>Ensure Workers are Healthy with High-productivity at Safe Environment</strong></td>
<td><strong>Ensure Facilities/Property in Good Functional Manner to Serve Clients/Customers</strong></td>
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### Differences (2): ISO 45001 OHS and ISO 41001 FM

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<tr>
<td>▪ Avoid exposure of Workers to Risks, Hazard, Accident or Illness and unhygienic Conditions. eg, IAQ</td>
<td>▪ Avoid Facility Failure that can cause Loss of Lives and Damage to property</td>
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<tr>
<td>▪ Reduce Downtime of Workers and ensure maximum wages/salary to worker or bonus. Promotion on job</td>
<td>▪ Reduce Downtime of Facility Function and Extend useful Life of Physical Facilities</td>
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<tr>
<td>▪ Performance Criteria include workers’ injury, health complaints, incidents, insurance….etc</td>
<td>▪ Operation Performance of Facility in relation to “Service Failure”, “Risk of Failure”</td>
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## Quality Leadership: Commitment & Performance

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<tr>
<td>▪ Overall Responsibility &amp; Accountability to prevent work-related injury/ill health</td>
<td>▪ Establish &amp; Implement FM with Strategic Direction of Business</td>
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<tr>
<td>▪ Establish &amp; implement OHS Policy &amp; Objectives with Resources/Manpower</td>
<td>▪ Establish &amp; Implement FM Policy &amp; Objectives with Resource/Manpower</td>
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<tr>
<td>▪ Develop, Lead &amp; Promote OHS Culture</td>
<td>▪ Deliver FM Services according to Legal/Contract Requirements (SLA, KPIs, Risk management)</td>
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<td>▪ Commit to Legal Requirements (Local law/regulations on OHS)</td>
<td>▪ Ensure Quality FM Services and Reduce Failure Rate. Observe legal role on OHS.</td>
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<tr>
<td>▪ Eliminate Hazard &amp; Reduce Risks on OHS at Workplaces/Facilities</td>
<td>▪ Support Service Delivery Staff &amp; Service Providers. Ensure Conformity &amp; Continual Improvement</td>
</tr>
<tr>
<td>▪ Worker Participation &amp; Consultation and OHS Committee. Report Incidents, Risks Hazards and Opportunities (ie including FM Failure/risks)</td>
<td></td>
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Roles of Workers: ISO 45001 OHS

- Participation, Cooperation & Communication with Top Management on OHS Management matters
- Build Mutual Trust, Share Perception on Importance of OHS
- Detect & Report Incident, Hazards, Risks and Opportunities on OHS matters at workplaces/facilities
- Establish & Implement Preventive & Protective measures for better OHS of workers/occupants
- Establish OHS Management Committee/OHS Representatives. Promote Consultation, Communication & Improvement of OHS Performance (eg Target “Zero Risk”)
FM on Indoor Facilities and Quality Maintenance

1. Air-Conditioning and Ventilation System & Equipment (IAQ)
2. Fire Protection System & Fire Safety Equipment
3. Sanitary Piping, Fittings & Plumbing
4. Floors, Walls, Ceilings & Doors, Rest Rooms, Pantry
5. Water Supply System, Storage & Distribution
6. Furniture, Fixtures & Fittings, Office Equipment
7. Electrical Supply System & Equipment, Standby Genset
8. Security Facility, CCTV, Computer Hardware,…etc
9. Lifts, Escalators, Stairs & Walkway
FM Service Level Agreement (SLA) (1): (General)

1. The Concession Period & Warranties
2. Maintenance Services & Contractor’s Responsibilities
3. Implementation, Reporting & Management Information System
4. Ownership & Subcontracting
5. Assets Handling & Procurement of Supplies & Services
6. Occupational Safety & Health Requirements
7. Payments of Fees, Cost & Expenses & Reimbursable Works
8. Insurance, Indemnity & Liability & Penalty
9. Termination & Extension
FM Service Level Agreement (SLA) (2): (Technical Specifications)

1. Technical Requirements & Key Performance Indicators (TRKPI)
2. Master Agreed Procedures (MAPs) and Method Statement
3. Specific Implementation Plan (each Site)
4. Management of Reimbursable Works (each Site)
5. Management of Deduction Formula (each Site)
6. Planned Preventive Maintenance (PPM for each equipment)
7. Project Operation Guidelines (POGs)
8. Standard Maintenance Manuals & Safety Procedures
9. Various Technical Work Instructions, Checklists & Worker PPE
FM Service Level Agreement (SLA) (3):
(Compliance with International Standards)

1. Implementation ISO relevant Standards within agreed period.


3. In Compliance to ISO Standards:-
   (i) ISO 41001: Facility Management System (2018)
2. Maintain all Facilities according to intentional purpose/operation use
3. Conduct Statutory Inspections, Test, QA for Safe Operation
4. Ensure all Supplies (electricity, water, IAQ) & Contingency Plans
5. Provide Comprehensive Maintenance Programme & Plans
6. Ensure adequate supply of parts, components without interruption
7. Correction Maintenance, Warranty Management
8. Adequate Competent technical manpower with proper tools/PPE
9. Comply with OSAH, other legal requirements
10. Energy Management, IAQ, ISO 9001, ISO 14000,....etc
Leadership: Taking overall Responsibility and Accountability for the prevention of work related injury and ill-health, as well as the provision of Safe and Healthy workplaces and activities. This shall include commitment to fulfill Legal Requirements and other requirements.

Local Legal Requirements (Philippines:2018):

CHAPTER V

JOINT AND SOLIDARY LIABILITY

SEC.21. Employer’s Responsibility and Liability. - The employer, project owner, general contractor, contractor or subcontractor, if any, and any person who manages, controls or supervises the work being undertaken shall be jointly and solidarity liable for compliance with this Act (2018).

(OSH Standards and Providing Penalties for Violations)
FM Failure & Fire Safety: Grenfell Tower Fire (London)

Before                  During                                After
FM Failure & Fire Safety: Grenfell Tower Fire (London)

1. **June 2017**: 24 storey Grenfell Tower block of flats “One of Deadliest” Structural Fire in UK history

2. **Casualty**: 72 deaths, 70 injured, 223 people escaped. Fire burned for 60 hours

3. **Source of Small Fire**: Started by a malfunctioning fridge-freezer on the 4th Floor

4. **Rapid Spread of Fire**: has been attributed to the buildings exterior cladding (Polyethylene Core)

5. **Major FM Renovation from 2012-2015**: Using new aluminum composite rain screen cladding

6. An alternative cladding with better fire resistance was refused by Council due to cost (£11.278 M, £1.6M higher than Budget).
7. Council was negligent not to recognise the risk & hazard of “Flammable Polyethylene”. Lack of Quality Leadership: “Error of Judgment” in purchasing Flammable Cladding Materials.

8. Council ignored their responsibility to ensure Health & Safety of their tenants and leaseholders. Loss of Lives & Damage to Property.

9. Record of Several fire safety and maintenance practices.
   i. Exposed gas pipes
   ii. Did not have fire sprinkles
   iii. Fire-fighter lift Control damaged
   iv. Fire doors not functioning properly
   v. Smoke venting system was not functioning properly
FM Failure & Fire Safety: EPF Building Fire (PJ)

Beginning
During
After
1. **Feb. 2018**: EPF Building, Petaling Jaya.

2. **Small Fire**: A spark from renovation work caused the fire.

3. **Rapid Spread of Fire**: Started with flammable polyethylene cladding on the external walls of the building. (polyfoam), easily catch fire. **Lack of FM Plan & Safety measures** on hot work.

4. **No Death**: During office hours and all workers were able to evacuated safety. 527 occupants managed to escaped without injury.

5. **Investigation**: is still on the way on Technical/Contract. Responsibility in using Flammable Materials for cladding.
FM Failure & Safety: Highland Tower Collapsed (Dec 1993, Disaster)

1. **48 Deaths**, Dec 1993
2. **Lack of Clear Regulations** in Protection of Buildings
3. **Lack of Master Drainage Plan** (Negligence of Local Council) to ensure Stability and Safety of tall buildings
4. **Lack of FM Practice & Safety Plan**
5. 10 days downpour of rain and clearing of trees nearby, plus installation of pipes underground
1. **7 Deaths**, May 2009
2. **Breach of Safety Standards**
3. **Lack of Clear Regulations in Demolition Works**
4. Landlord/Contractor **Lack of FM Practice & Safety Plan**
5. Local Council **Lack of Competent Personnel** to Supervise.
1. **18 Deaths, 187 Injured.** 21/10/2018

2. **Breach of Safety Design.** A flaw in wiring blueprint between the train’s Automatic Train Protection (ATP) Safety & Control Station (in 19 train sets)

3. **FM negligence:** No follow up to rectify flaw during 6 years maintenance.

4. **Driver was negligence:** manually switched off the Speed-Control System in order to increase its power.

5. **Further Investigation** is still in progress on the Derailed Train.
FM Failure & Safety: Hotel Ceiling Collapsed

1. **6 Stars Hotel**. 14/10/2018
2. **Lack of FM Practice & Safety Plan**
   Without adequate Maintenance Procedure and Safety measures.
3. **Damage**: Big section of Plaster Ceiling fell 12m to lobby floor. A worker was injured.
4. **Business Embarrassment**
   to Top Management of Hotel. Lack of Quality Leadership.
FM Maintenance Practices (Fire Safety)

**Good**
- Proper FM with Scheduled Maintenance
- Functional Safety Features
- Provide Protection

**Bad**
- Lack of Quality Leadership
- Subject to Fire Risk & Disaster
- No Safety Practice
- No FM Plan
Forensic Unit at Hospital Ravaged by Fire (March 2018) (Breach of Fire Safety)

1. Lack of Knowledge on Fire Safety of staff at store.

2. Lack of Fire Fighting Equipment at store area.

3. Lack of FM Maintenance Plan to upgrade outdated design & facilities.
6 Dead, 10 Injured after Fire at Hospital (October 2016) (Breach of **Fire Safety**)

1. **Lack of Initiative** by top management to replace old electrical components.

2. **No FM Plan** to rectify Safety Features.

3. **Maintenance Services** remained at low level for years.
Summary (1): Corporate Advantages & Benefits

*ISO 45001: OHS & ISO 41001:FM*

1. Enhance Leadership Quality and Responsibility.
2. Reduce Top Management Liability & Possible Penalty (OSH Act).
4. Ensure Quality of Life for occupants/workers and better OSH at Workplaces.
Summary (2): Local Authority/Council Responsibility 
(ISO 45001: OHS & ISO 41001:FM)

1. Encourage Landlord/Property owners Implement FM (ISO 41001) and OSH (ISO 45001) Voluntarily.

2. Promote & Reward Good FM Practitioners/Landlords.


4. Establish Linkage between OSH (ISO 45001) and FM (ISO 41001) and their amplified advantages and benefits.
Empirical Relation: Facility Management Failure Rate related to OHS Loss of Lives & Damage to Property

- Low Incident Rate
- Longer Useful Life of Facility
- Occasional injuries
- Upgrade of facility
- Loss of Lives / Disaster
- Damage to Property

FM Quality Leadership

High Level FM

Low Level FM
Thank you

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