EXPRO National Manual of Assets and Facilities Management
Volume 17, Chapter 2

Sustainability Procedure

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1.0 PURPOSE

The purpose of this chapter is to offer guidance in establishing, developing, and enhacing sustainability-related practices associated with the Entity's Facilities Management (FM) activities.

The National Transformation Program which is intended to deliver key parts of the Kingdom of Saudi Arabia's (KSA) Vision 2030 will enable resilient and sustainable societies. Furthermore, KSA is dedicated to international action on sustainability demonstrated by its commitment to the United Nations (UN) Sustainable Development Goals (SDGs), as shown in Figure 1 (below) and the Paris Agreement.

Figure 1: United Nation's SDGs

This document will support entities in contributing to the national commitment to sustainability by:

- Highlighting the need for a focus on sustainability when carrying out FM activities.
- Guiding entities in integrating a Sustainability Management System (SMS) framework existing operations.
- Outlining an approach for improving performance and setting objectives – considering compliance obligations; environmental aspects; and sustainability rating system standard methodologies.
- Providing mechanisms to assess operational risks and opportunities
- Signposting to globally recognized sustainability reporting approach to track performance and drive consistency across entities whilst aligning with the sustainable development goals and vision 2030.
- Aligning the Entity with current best-practice and international standards.
- Providing an approach to enable continuous improvement of performance.

2.0 SCOPE

The sustainability standard outlines the importance of implementing a sustainability and environmental policy as the foundation for implementing an SMS Framework. SMS-related content is primarily for the attention of decision-makers within the Entity. However, for an SMS framework to be established and successfully maintained, all members of staff within the Entity should be aware of it.

In addition to covering the strategic-level requirements associated with implementation of an SMS framework, the document also approaches the subject of sustainability in enough technical detail to enable the Entity to identify tasks which should be driven at the operational-level. The specialist technical content contained herein is critical to the success of the SMS and is intended for use by the Entity's operational staff who are Subject Matter Experts (SME) within the sustainability field.

In the context of volume 17, sustainability is the balance between people (social), planet (environmental), and cost (economic). This version of sustainability has its roots in the concept of sustainable development has at its core is an approach to development that looks to balance different, and often competing, needs against an awareness of the environmental, social, and economic limitations faced by society. Expro has

developed a schematic based upon the 'Three Pillars of Sustainability', tailored to the needs of the entities, as depicted in **Error! Reference source not found.** below:

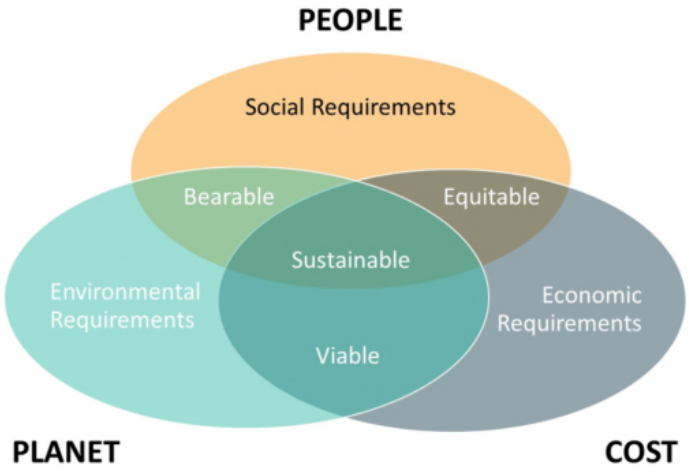


Figure 2: The Three Pillars of Sustainability

Error! Reference source not found. below is sourced from the Expro Projects White Book volume 15. It provides an overview of sustainability elements which impact the project lifecycle, including the operational phase.

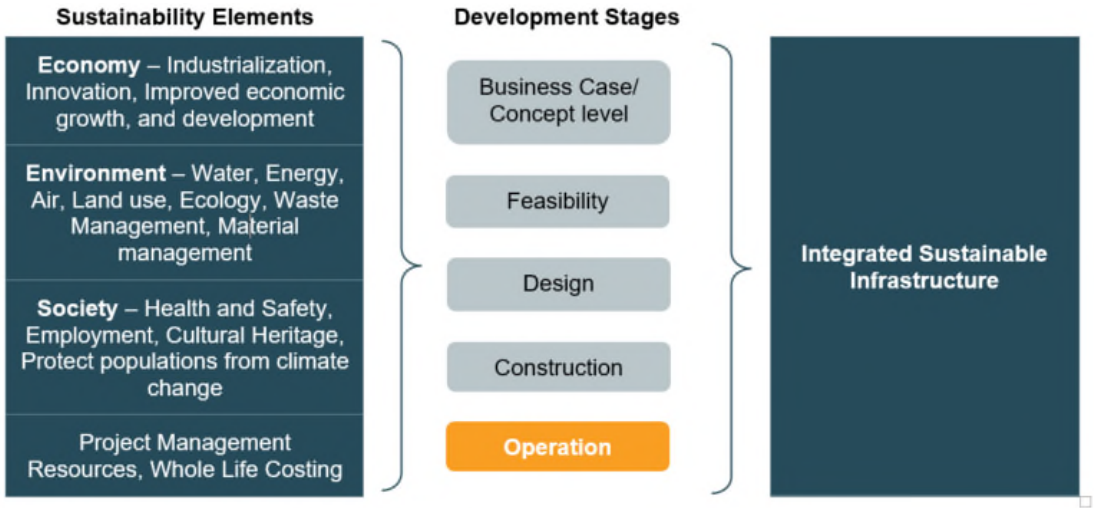


Figure 3: Integrated Sustainable Infrastructure

This document expands further upon the sustainability elements and how they apply to the operational development stage.

While the Entity's sustainability strategy is largely driven at the corporate level, the FM function has a critical part to play in maximizing the positive impact of its operations in relation to achieving sustainability targets. This includes effective management of its supply chain and ensuring all operational specifications, key performance indicators, policies and standard operating procedures reflect these targets. Industry Best Practice (IBP) examples of sustainable FM practices may include: minimizing herbicide and pesticide use; optimizing water conservation and use of 'grey water' from buildings; promoting balance of hard and soft landscape infrastructure to reduce irrigation requirements; promoting 'green' transport (e.g. contractors using electric or hybrid vehicles); waste minimization from FM operations (e.g. implementation of the waste hierarchy of Reduction – Re-use – Recycling – Recovery – Disposal); and 'green' procurement policies for e.g. using locally sourced materials and consumables.

3.0 DEFINITIONS

Definitions	Description
Grey Water	Grey water wastewater generated from all non-hazardous streams (i.e. sinks, showers, baths, washing machines, dishwashers – but not toilets)
Mostadam	A Sustainability Rating System for residential buildings in KSA
Recycled Content	The recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value.
Stakeholder	Person, group, or organization which can affect or be affected by the project's objectives, policies, and execution. Some examples of stakeholders include the customer, project team, sub-contractors, local communities, regulators, other government departments, and local communities.
Acronyms	
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
BMS	Building Management System
BSI	British Standards Institution
CFC	Chloro-Floro-Carbons
EBOM	Existing Buildings: Operations & Maintenance
EMS	Environmental Management System
ESR	Environmental Scoping Review
EV	Electric Vehicle
FM	Facilities Management
GRI	Global Reporting Initiative
HR	Human Resources
HVAC	Heating, Ventilation, and Air Conditioning
IBP	Industry Best Practice
ISO	International Organization for Standardization
IT	Information Technology
KMS	Knowledge Management System
KPI	Key Performance Indicator
KSA	Kingdom of Saudi Arabia
LEED	Leadership in Energy and Environmental Design
NMA&FM	National Manual of Assets & Facilities Management
FM	Operations & Maintenance
PPM	Planned and Preventative Maintenance
RFP	Request for Proposal
SBC	Saudi Building Code
SDG	Sustainable Development Goals
SKM	Sustainability Knowledge Management
SLT	Sustainability Leadership Team
SME	Subject Matter Expert
SMS	Sustainability Management System
SWG	Sustainability Working Group
UNDP	United Nations Development Program
UN SDG	United Nations Sustainable Development Goals
UV	Ultra-violet

Table 1: Definitions

4.0 REFERENCES

- GCC Uniform Law for Medical Waste Management (Amended in Jumada Thani 1440H/ February 2019)
- GCC Uniform Law for Municipal Solid Waste Management, Rabi' al-Awwal 1437H. KSA, Ministry of Municipal and Rural Affairs – Laws and Regulations
- ISO 14040:2016 Enviromental Management Life Cycle Assessment Principle and Framework.

- ISO 50001:2018 Energy Management System
- ISO 14001:2018 Environmental Management System
- CIBSE Guide M 2014 Maintenance Engineering and Management
- United Nations Sustainable Development Goals Transforming Our World: The 2030 Agenda for Sustainable Development A/RES/70/1 – adopted by the General Assembly on 25 September 2015 (https://sustainabledevelopment.un.org/)
- US Green Building Council – LEED Rating System (https://www.usgbc.org/leed)
- UN Global Compact Bulgaria (http://www.unglobalcompact.bg/en/?page_id=150)
- National Manual of Assets and Facilities Management (NMA&FM) Volume 17, Chapter 2 – Energy Management Procedure – EOM-ZN0-PR-000001
- NMA&FM Volume 5, Chapter 17 – Waste Management Procedures
- NMA&FM Volume 6, Chapter 22 – Waste Management Plans
- International Well Building Institute - Scorecard (https://resources.wellcertified.com/)
- EPM-KU0-GL-000001 Expro Projects White Book, Volume 15, Chapter 1, Sustainability Guideline
- EPM-KSE-PR-000003 Expro Projects White Book, Volume 11, Chapter 5, Project Environmental Training and Awareness Procedure

5.0 RESPONSIBILITIES

Each Entity shall ensure that relevant roles and responsibilities are assigned, and resources are in place to meet the requirements of the its policy statement.

5.1 Primary Roles

Primary roles are those assigned to the Entity's leadership who shall be accountable for compliance with guidance contained herein:

Role	Description
Leadership	Provide visible support, review performance, approve high-level initiatives, and allocate financial resources to meet policy commitments.
Sustainability Working Group (SWG)	Sustainability-specific roles (i.e. Environmental Manager, Sustainability Advisor, etc.) SWG may utilize focus groups (i.e. water, waste and procurement). Focus groups shall be led by representatives from SWG, or Department Heads responsible for implementing sustainability projects.Multi-disciplinary team comprising: • Departmental operations • Facilities management • Procurement • Communications • Information Technology (IT) • Projects
Sustainability Departmental Coordinators	Operational staff/any specific sustainability roles: Assist communication, implementation and reporting of initiatives (i.e. performance monitoring on behalf of SWG).

Table 2: Primary Roles

5.2 Supporting Roles

Supporting roles and functions which shall assist the SWG are:

Role	Description
Human Resources (HR)	Provide assistance on employee training, on-boarding, inductions, job specifications, recruitment of sustainability specialists
Communications	Communications campaigns, internal and external stakeholders
Legal	Support on legal matters relating to performance, incidents and compliance obligations
Finance and Commercial	Provide assistance on budgeting and commercial management of any initiatives
Information Technology (IT)	Support on initiatives to reduce business travel, data analytics, digital programs with sustainability benefits etc.
Projects	Support on large scale projects/refurbishments

Table 3: Supporting Roles

5.3 Other Stakeholders

Other stakeholders with which the Entity should engage are:

Role	Description
Mostadam	The organization which has developed a sustainability rating system for residential buildings in KSA

Table 4: Other Stakeholders

6.0 PROCESS

6.1 Planning Stage

Figure 4 (below) outlines the approach for guiding entities in integrating a SMS framework into FM activities, outlining an approach for improving performance, setting objectives, and aligning with a formal international standard. Figure 4 has been adapted from a British Standards Institution (BSI) standards publication, Environmental Management Systems (EMS) — Requirements with Guidance for use (ISO 14001:2015 standard) and this model provides an overview of how the new ISO management system framework interacts with the traditional Plan – Do – Check – Act Model.

Figure 4: Relationship between ISO Framework and "Plan – Do – Check – Act" Model

The Entity shall understand the important issues which affect (either positively or negatively) its approach in managing the sustainability responsibilities. Examples of internal and external issues which may affect the approach the Entity takes to managing environmental responsibilities are outlined in Table 5 below.

Internal Issue	External issue
Strategic direction	Effects of climate on the entities operations
Policy and Procedures	Air quality
Culture	Water quality
Resources (people/technology/systems)	Contamination of land
Training and communications	Dust storms
Operational and capital budgets	Cultural issues
Access to asset lists and FM manuals	Technology
Maintenance strategy	Political issues
Age and condition of assets	Economic issues

Table 5: Internal and External Issues Affecting Management of Environmental Responsibilities

A Materiality Analysis (example contained within Attachment 2, Attachment 2 – EOM-ZN0-TP-000002 – Materiality Analysis Template

) should be undertaken to help recognize the internal and external issues which affect the Entity's approach to sustainability. Prior to undertaking Materiality Analysis, the Entity shall gain an understanding of its stakeholders. This should be done by using the Interested Parties Risks and Opportunities Template (Attachment 1). Risks and opportunities will arise shall be addressed as part of the sustainability management system.

Examples of stakeholders that should be identified by the entities include, but are not limited to:

- Customers
- Communities
- Suppliers
- Regulators
- Other entities
- Non-governmental organizations
- Investors

The needs and expectations of each relevant stakeholder should be understood and integrated into compliance obligations for the operational phase.

6.2 Compliance Obligations and Regulatory Requirements

Regulatory and standards compliance is critical to implementing FM best practice. Ensuring compliance will ensure that the Entity:

- Delivers value against its vision and contributes to the Kingdom's sustainability aspirations.
- Limits risk to its operations.
- Performs its duties against the values upon which the Entity is built.

Attachment 3 of this document**,** includes a Expro Legal and Compliance Obligations Register which should be used to capture regulatory and wider requirements by department, building, or location level.

6.2.1 UN Sustainable Development Goals

One such compliance requirement is the KSA support to meet the United Nations Development Program (UNDP) SDGs, as a universal call to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity. KSA is an enthusiastic supporter of the SDGs and intends to remain active in their further development.

There are 17 goals set out in the program covering 3 spheres (Economy; Society, and Biosphere). The UN SDGs as outlined below are extracted from the UN Resolution 70/1 ("Transforming our World: The 2030 Agenda for Sustainable Development") adopted by the General Assembly on 25 September 2015:

Economy (SDGs 8, 9, 10, 12, and 17):

- **Goal 8.** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- **Goal 9.** Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- **Goal 10.** Reduce inequality within and among countries.
- **Goal 12.** Ensure sustainable consumption and production patterns.
- **Goal 17.** Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

Society (SDGs 1, 2, 3, 4, 5, 7, 11, 16):

- **Goal 1.** End poverty in all its forms everywhere.
- **Goal 2.** End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
- **Goal 3.** Ensure healthy lives and promote well-being for all at all ages.
- **Goal 4.** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
- **Goal 5.** Achieve gender equality and empower all women and girls.
- **Goal 7.** Ensure access to affordable, reliable, sustainable and modern energy for all.
- **Goal 11.** Make cities and human settlements inclusive, safe, resilient and sustainable.
- **Goal 16.** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

Biosphere (SDGs 6, 13, 14, 15):

- **Goal 6.** Ensure availability and sustainable management of water and sanitation for all.
- **Goal 13.** Take urgent action to combat climate change and its impacts (acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change).
- **Goal 14.** Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
- **Goal 15.** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Achieving the SDGs requires the partnership of governments, private sector, civil society, and citizens. The Entity shall carry out materiality analysis to determine the UN SGDs which are most relevant to its operations. It should try to select five or six goals while remaining cognizant of the fact that goals are interconnected – Often the key to success of one involves tackling issues more commonly associated with another. Objectives and targets could be established for each Entity's sustainability management system around applicable SDGs considering the UN Global Compact as outlined in the section below.

6.2.2 The United Nations Global Compact

The United Nations Global Compact (shown in Figure 5, below) is a translation of the UN SDGs into responsible and innovative business practice. It features ten principles around four themes (human rights, labor, environment, and anti-corruption) as illustrated in Figure 5:

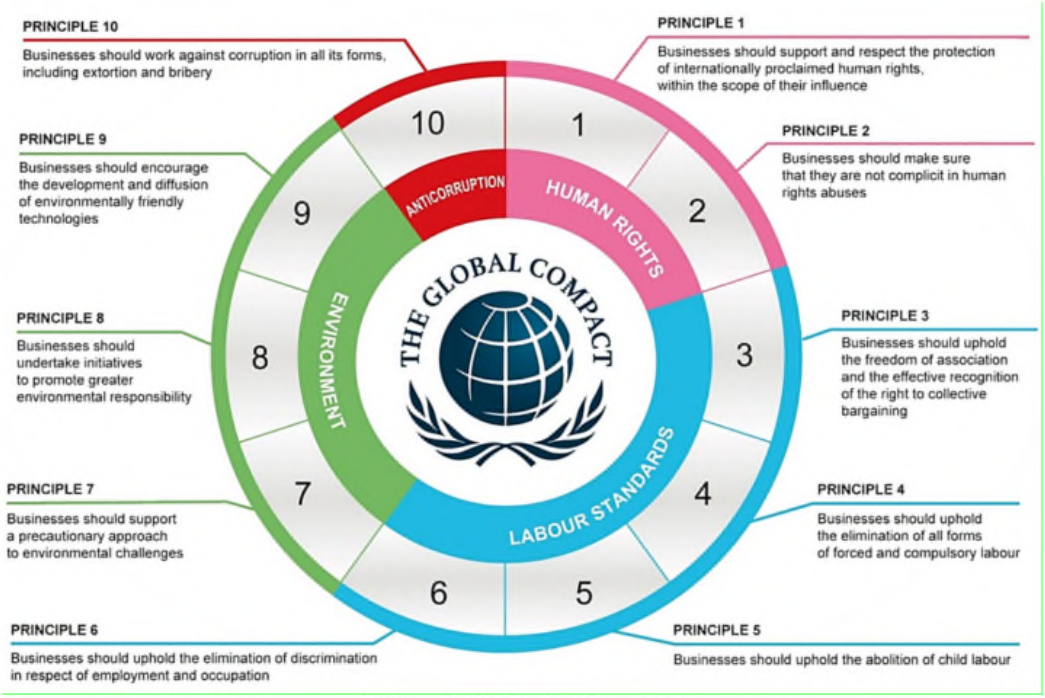


Figure 5: UN Global Compact

Through incorporation of the global compact principles into strategies, policies, and procedures, and establishing a culture of integrity, entities shall uphold their basic responsibilities to people and planet, and build a foundation for long-term success.

6.3 Policy Statement

A Policy Statement should be in place for entities to help demonstrate commitment, leadership, and support for sustainability. The Policy Statement should:

- Align with the requirements of the ISO 14001:2015 standard for EMS.
- Be appropriate to the Entity context and operations.
- Commit to meeting legal and compliance obligations.
- Commit to pollution prevention.
- Set a framework for improving performance and setting objectives, considering compliance obligations, significant aspects, sustainable development goals, and any sustainability rating system standard methodologies for built assets.
- Be communicated internally and to stakeholders, ensuring it is reviewed regularly.

See Attachment 4 for an example Policy Statement.

6.4 Environmental Risk Assessment

An important starting point which helps understand the sustainability risks associated with FM is the performance of an Environmental Risk Assessment. ISO 14001 outlines the requirements for EMS and defines terminology as contained within Table 6 (below).

Term Used	ISO 14001:2015 Definition
Environmental Aspect	Element of an organization's activities, products, or services that interact with the environment
Environmental Impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects
Environmental Risk	A potentially adverse deviation from the expected
Environmental Opportunity	A potentially beneficial deviation from the expected
Environmental Condition	Elements of the environment affected by the activities, products or services (e.g. air quality, water quality, land use, etc.) or those which affect the organization (e.g. climate change, extreme weather, urban air pollution, dust storms)

Table 6: Environmental Terminology

Environmental aspects shall be evaluated to determine their significance by giving due consideration to the likelihood and severity of the risk and opportunity impacting the environment. The severity of the impact should be assessed considering the magnitude of the potential impact and the likelihood of the impact occurring. This should be determined using the criteria tabulated below.

IMPACT X LIKELIHOOD = SIGNIFICANCE OF ENV ASPECT

An example aspect and impact register is outlined in Figure 6, below.

Environmental Considerations						Environmental Impact Reduction Controls			
Aspect	Impact	Condition Normal (N) Abnormal (A) Emergency (E)	Consequence Rating			Control Methods / Equipment / KPI's	Compliance Obligations (legislation, procedures, customer requirements, SDGs etc)	Compliance Evaluation undertaken? Yes / No and date	Compliance Report Reference/ Key items reviewed to show compliance
			Likelihood	Impact Severity	Rating				
(1) Use of Resources & Discharges to Land from operational Waste Streams	Waste to Landfill - pollution of land, potential to leach into water resources and produce landfill gas affecting air	N	5	1	5	Waste segregated accordingly to maximise recycling ie paper, cardboard, metals, plastics, glass, biodegradable. Appropriate bins and signage provided, resources use recycled material, staff training provided.	Waste Management Procedure XXXXX, Goal 12: Responsible Consumption and Production	Yes- April 2019	Reference number
(2) Transport & Use of Resources, Emissions to Air	Pollution of Air and Use of Fossil Fuel, Noise	N, A	4	2	8	Business travel hierarchy, staff trained in eco driving techniques, company vehicles serviced regularly, less polluting vehicles purchased for fleet, company cars more efficient, fuel usage / km / g.CO2e per km monitored for fleet	Sustainability goal on business travel, Goal 13: Climate Action	No	Reference number
(3) Storage of fuel - Discharges to Land, Use of Fossil Fuel Resources	Land / groundwater /marine pollution from large fuel spill or leak	E	3	4	12	Storage assets compliant, emergency plans in place and tested, spill kits, staff trained, risk assessment and method statement for fuel deliveries in place, site monitored continually.	Pollution Prevention Procedure XXXXX, Goal 6: Clean Water and Sanitation Goal 14: Life below water	Yes - September 2019	Reference number

Figure 6: Aspect and Impact Register

The Risk Rating as shown in Figure 6 (above) should be determined through a Significance Assessment as shown in Table 7 (below):

Rating	Significance	Actions/Controls Required
1 - 4	Insignificant	No additional controls required, keep under review by monitoring through inspections, audits etc.
5 - 10	Significant	Additional physical or management controls to be considered and implemented as required, keep under review by monitoring through inspections, audits etc.
>10	Significant and Unacceptable	Additional physical or management controls to be implemented immediately, keep under review or consider avoiding the activity if possible

Table 7: Significance Assessment

The Entity shall follow Expro's Environmental Risk Assessment Procedure contained within the Expro Projects White Book Volume 11, Chapter 5.

6.5 Objectives & Targets and Measuring Performance

Sustainability objectives and targets should be set based on the considerations and outcomes undertaken in the planning stage as depicted in Figure 7 (below).

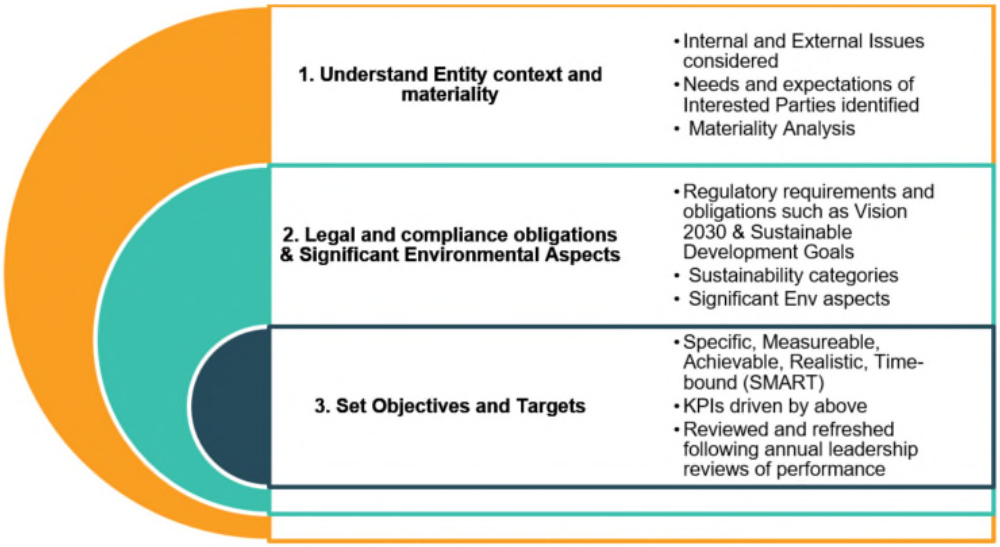


Figure 7: Objectives and Targets Process

6.6 Sustainability Categories for Consideration

Sustainability categories and control measures outlined herein should be considered from an operational perspective when:

- Undertaking a materiality analysis.
- Assessing environmental aspects and impacts.
- Setting sustainability objectives and targets.
- Considering benchmarking against a sustainability rating system for the buildings aspect of Entity operations.

6.6.1 Climate Change Mitigation and Adaption

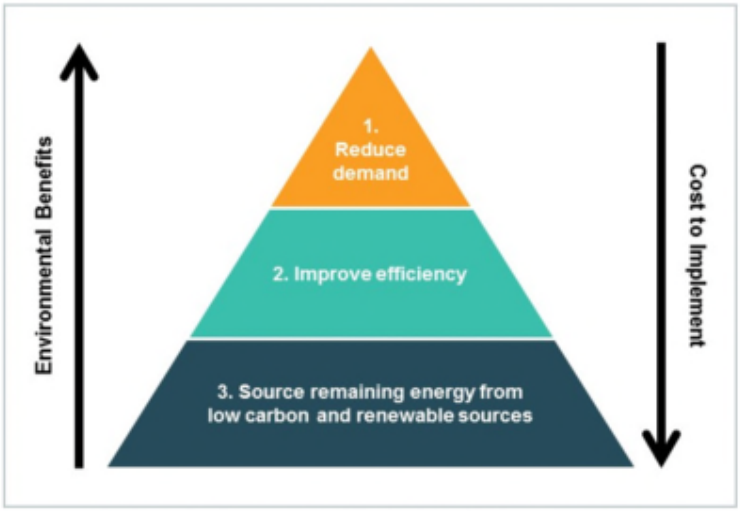


Figure 8: Sustainable Utilities Hierarchy

6.6.1.1 Energy

The Entity shall review guidance contained within Energy Management Procedure (EOM-ZN0-PR-000001) against Figure 8 (above).

6.6.1.2 Refrigerants

The Entity shall:

- Review use of ozone depleting substances and fluorinated gases to minimize use and reduce leakage.
- Develop plans for climate adaption, mitigating risk of overheating through-use systems, building envelope, etc.

Chloro-Floro-Carbons (CFCs) are compounds which were contained within industrial refrigerants used throughout the world (e.g. R11, R12, R113, R114, R115). However, CFCs used for refrigerants, such as those used in Heating, Venitlation, and Air Conditioning (HVAC) systems, were found to be detrimental to the environment. When refrigerant leakage occurs in a CFC-based refrigerant, chlorine contained within CFCs reaches the stratosphere, is broken down into atoms by atmospheric radiation, and contributes to depletion of the Ozone Layer (gas blanket which protects the earth from harmful solar ultra-violet (UV) rays. Ozone depletion has catasrphic consequences for the earth and its inhabitants. For example: increase in skin cancer, lower immunity to infection, inhibited plant growth, and loss of marine life.

FM staff shall positively reduce the Entity's environmental impact by phasing-out the use of refrigerants, chemicals, and gases which are harmful to the environment and replacing with modern equivalents. Equipment known to use CFC-based refrigerant should form part of a replacement program.

6.6.1.3 Transport

Each Entity should implement a sustainable travel hierarchy (Figure 9 – below) considering factors such as climate and seasonal limitations.

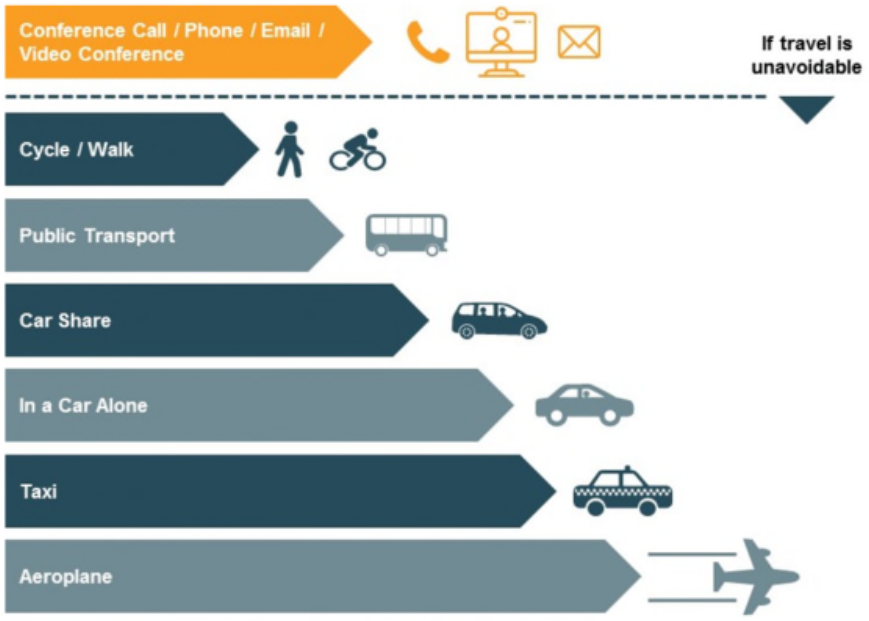


Figure 9: Sustainable Travel Hierarchy

Other transport-related initiatives which the Entity should review and implement, include: undertake a transport survey; track alternative transport rates (vs single car commuters); implement a car share/car pool scheme; offer preferential parking for car sharers; implement a car parking charge; initiate compressed working hours; offer flexi-work time; subsidize public transport; assess public transport proximity against office location; implement a company bike scheme; provide bicycle storage and showers; offer company car scheme incentives; procure less environmental damaging company cars and fleet vehicles; offer mandatory efficient driver training programs; implement fleet tracking systems; and optimize route planning.

FM personnel shall play an active role in the Entity's transport-related sustainability initiatives. Table 8 (below) contains examples of iniatives and the activities which should be undertaken by FM staff associated with each initiative.

Sustainability Initiative	FM Action
Preferential parking for car sharing	Re-model and re-paint car park
Procure and use electric vehicles (EV)	Replace existing vehicles with electric vehicles and install EV charging points
Implement a company bike scheme	Procure bicycles and use for travel around the facility as far as is reasonably practicable
Provide bicycle storage and showers	Install bicycle storage sheds at strategic points throughout the facility, and showers for staff who choose to cycle to work
Fleet Maintenace Planning	Prepare and apply a Best Practice Fleet Maintenance Plan Further guidance is available within NAF&M Volume 6, Chapter 15

Table 8: FM Actions for Sustainable Transport

6.6.2 Resource Efficiency and Sustainable Procurement

Figure 10: Circular Economy Model

The Entity shall:

- Follow the Circular Economy Model outlined in Figure 10 (above), including: segregation of waste streams, maximize recycling, avoid landfill, comply with GCC Law for Waste Management.
- Establish a Sustainable Procurement Policy and Supply Chain Engagement Program considering elements such as: energy rating; whole life costs; green certification; supply chain carbon; local suppliers; packaging; single-use plastics; recycled content; recyclability of products; product return at end of life.
- Establish Waste Plans for refurbishment activities such as re-purposing office IT equipment and furniture for use by local charities.
- Implement Water Conservation: establish a Water Baseline; carry out benchmarking against facilities of a similar size and function (e.g. flush and flow rates); monitor and measure water use; install additional metering; limit irrigation requirements.
- Consider joint-use of facilities in buildings and maximize shared occupancy.

For guidance specifically related to FM activities associated with Waste Management, see Volume 5, Chapter 17 (Waste Management Procedures) and Volume 6, Chapter 22 (Waste Management Plans) of the National Manual of Assets and Facilities Management (NMA&FM).

FM personnel shall also play an active role in the Entity's sustainable procurement-related initiatives. Table 9 (below) contains examples of iniatives and the activities which should be undertaken by FM staff associated with each initiative.

Sustainability Initiative	FM Action
Sustainable procurement policy	Establish and drive the policy; pre-qaulify contractors and suppliers, write policy-compliant specifications, agree KPIs which shall be met by each supplier
Establish a Waste Plan for refurbishment activities	Source off-takers for Waste (establish a value chain) whereby the Entity benefits financially or materially from items which it considers to be waste
Water conservation program	Review flow-rates of all faucets and fit aerators throughout the facility; benchmark facilities against one another; instal automated functions as far as possible; determine feasibility of on-site grey water treatment facility.

Table 9: FM Actions for Sustainable Transport

6.6.3 Environmental Protection

6.6.3.1 Pollution Prevention

The Entity shall:

- Seek to achieve reduction in air emissions from building and wider operations.

FM staff should lead pollution prevention initiatives by monitoring air quality then determining which operations have the biggest impact on the Entity. Air quality is essential for staff productivity and well-being. The HVAC system has a significant impact on air quality as a result of air re-circulation. Operations personnel shall be responsible to determine the optimimum level of fresh air intake which maintains CO2 levels within safe limits, whilst minimizing energy use. Further guidance is available NAM&FM Volume 5, Chapter 4 and Volume 6, Chapter 5.

6.6.3.2 Biodiversity

The Entity shall:

- Review site hydrology and vegetation on site to provide a habitat for local biodiversity. Support volunteering for environmental charities. Limit herbicide use – consider impact of grounds maintenance and chemicals used. Reduce light pollution through appropriate lighting design

When carrying out grounds maintenance activities, FM personnel shall ensure that only those nationally and internationally approved herbicides and pesticides are deployed by its contractors, in order to minimise the harmful effects of chemical use on wildlife and local ecosystems such as water courses. An example of the impact of herbicide and pesticide use is the global decline in bees and honey production.

Overall, FM has an integral role to play in managing its supply chain to employ only goods, services, and practices which limit impact on biodiversity and environment.

6.6.4 Health and Wellbeing

The Entity shall:

- Maintain comfort conditions, including: air quality; HVAC; lighting; ergonomics; and noise levels.
- Implement a Green Cleaning Policy to reduce chemical use and fumes.
- Reduce heat island effect through: shading of paving; planting of vegetation; solar reflective surfaces on buildings, structures, and paving.
- Undertake review in line with the Well Building Standard which covers parameters such as: air, water, nourishment, light, fitness, comfort, and mind (as shown in Figure 11 – below).

Air quality should be significantly improved, and heat radiation within the built environment significantly reduced by the introduction of effective planting schemes. FM personnel shall be responsible for managing and maintaining healthy and diverse range of vegetation (indoor and outdoor planting), assisting in improving air quality and reducing the demands for irrigation and cooling. Planting, in combination with optimized lighting levels should increase staff productivity, and reduce energy consumed directly through lighting, and indirectly through HVAC load.

Figure 11: Well Building Standard

6.7 Sustainability Rating Systems

Sustainability rating systems provide a means to benchmark performance of buildings across various sustainability categories and help to recognize levels of sustainability achievement. This section describes pertinent, current (and potentially future) sustainability rating systems which could be used by each Entity for the 'buildings' element of their operations.

6.7.1 Mostadam – Sustainable Buildings

Mostadam is the KSA sustainability rating and certification system established to address the long-term sustainability of the buildings in the Kingdom of Saudi Arabia (KSA). At present, Mostadam is only applicable to residential buildings. However, when tailored to sectors outside of the residential sector, it shall be aligned with the NMA&FM. This section describes Mostadam and is for the Entity's information only.

6.7.1.1 Mostadam and Vision 2030

Mostadam's remit includes a wide range of sustainability issues important to KSA and it is aligned with the aspirations of Vision 2030 as shown in Figure 12 (below).

Figure 12: Alignment between Vision 2030 and Mostadam

6.7.1.2 Mostadam and the Saudi Building Code

The Saudi Building Code (SBC) is a set of legal, administrative, and technical regulations that specify the minimum standards for building design and construction in KSA. SBC 1001 is the Saudi Green Building Code developed by SBC to ensure that buildings designed and constructed according to the code have a minimal impact on the environment.

Mostadam has been developed to go beyond the minimum SBC requirements to ensure an even higher level of sustainability for residential buildings. Figure 13 (below) shows the relationship between SBC and Mostadam.

Figure 13: Relationship between SBC and Mostadam

6.7.1.3 About Mostadam

Mostadam is applicable to any size of existing residential development and there is no minimum size requirement for certification. It is applicable to the following types of residential development projects:

- Buildings of 3 stories or less
- Multi-stories buildings of 4 stories or greater

MOSTADAM comprises two elements:

1. Design + Construction (D+C)

D+C is applicable to the design and construction of new buildings.

2. Operation + Existing (O+E)

Mostadam O+E is applicable to the buildings that have achieved Mostadam D+C certification and existing/older buildings, including those that are undergoing minor renovation, refurbishment and/or extension. If a building is undergoing significant renovation, refurbishment or extension, i.e. the majority of the fixed building services are being replaced and the thermal elements are being renovated, it should follow the D+C component of Mostadam.

6.7.1.4 Credit Categories

Mostadam is organized into seven categories of credits as described in Figure 14:

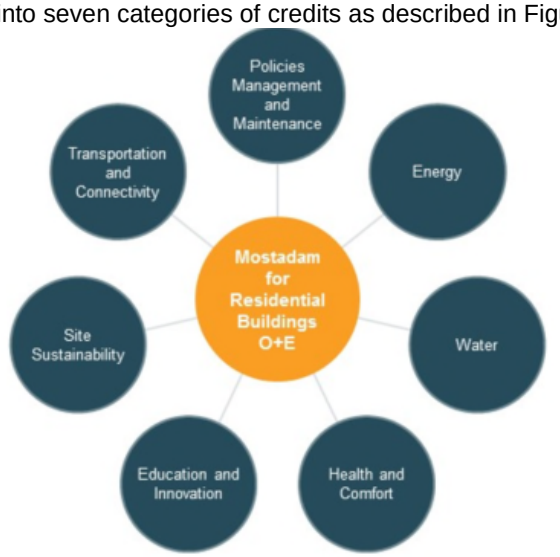


Figure 14: Mostadam for Residential Buildings Categories

6.7.1.5 Occupant Rating Levels

There are five different rating levels set out in Mostadam: Green, Bronze, Silver, Gold, and Diamond. The number of credits points required for each rating level is shown in Table 10 (below).

Number of Points Achieved	Rating Level
≥ 20	 Green
≥ 35	 Bronze
≥ 50	 Silver
≥ 65	 Gold
≥ 80	 Diamond

Table 10: Mostadam Rating Levels

6.7.1.6 Keystone Credits

To ensure that a basic level of sustainability is achieved, Mostadam O+E contains mandatory credits referred to as 'Keystone' Credits. There are 12 Keystone Credits outlined in Table 11 (below), the achievement of which results in a score of 20 points and a rating level of Mostadam Green. To achieve a higher rating level, projects shall achieve Keystone Credits and additional optional credits to reach the minimum number of points for the targeted Rating Levels described in Table 10 (above).

Credit Category	Keystone Credit
Policies, Management & Maintenance	PMM-01 Annual Audit
	PMM-02 Residential Waste Management
	PMM-03 Sustainable Maintenance and Servicing
	PMM-04 Sustainable Procurement
Energy	E-01 Energy Performance
	E-02 Energy Metering
	E-03 Envelope Assessment
Water	W-01 Water Performance
	W-02 Water Metering
Health and Comfort	HC-01 Outdoor Thermal Comfort
	HC-02 Indoor Thermal Comfort
Education and Innovation	EI-01 Mostadam Guide

Table 11: Keystone Credits

6.7.2 LEED for Buildings Operation and Maintenance

Leadership in Energy and Environmental Design (LEED), as described in Figure 15 (below) was developed by the US Green Building Council and has a sustainability rating tool for existing commercial and institutional buildings, LEED Existing Buildings: Operations & Maintenance (EBOM). The certification tool identifies and rewards current IBP and provides an outline for buildings to use less energy, water and natural resources; improve the indoor environment; and uncover operating inefficiencies. All LEED EBOM projects shall include a minimum of 93 square meters of gross floor area and be in operation for at least 12 continuous months before certifying.

6.7.2.1 LEED Credit Categories

Figure 15: LEED Credit Categories

6.7.2.2 Rating Levels

There are five different rating levels set out in LEED EBOM certified, silver, gold and platinum. The number of credits points required for each rating level is shown in Table 12 (below). There are 100 base points.

Number of Points Achieved	Rating Level
40 – 49	CERTIFIED 40 - 49 POINTS
50 – 59	SILVER 50 - 59 POINTS
60 – 79	GOLD 60 - 79 POINTS
≥ 80	PLATINIUM 80+ POINTS

Table 12: LEED Rating Levels

The rating system is targeted at single buildings, whether owner occupied, multi-tenanted, or multiple-building campus projects and requires three months of operational data for an initial certification; any building construction shall be complete for at least a three-month span before LEED certification can be pursued. Projects that have already been certified using LEED for new construction, LEED for schools or LEED for core and shell should receive free registration if they choose to certify using LEED for EBOM. Buildings are permitted to apply for recertification as frequently as each year but shall file for recertification at least once every five years to maintain LEED EBOM status.

6.8 Reporting on Performance

6.8.1 Global Reporting Initiative

In order to report and communicate on the performance of the sustainability management system the Global Reporting Initiative (GRI) reporting framework should be used. GRI is an independent international organization that has pioneered sustainability reporting since 1997. GRI helps businesses and governments worldwide understand and communicate their impact on critical sustainability issues such as climate change, human rights, governance and social well-being. This enables real action to create social, environmental and economic benefits for everyone. The GRI sustainability reporting standards are developed with true multi-stakeholder contributions and rooted in the public interest. GRI ensures consistency in approach across all entities and enables entities to only report on material aspects of their operations.

The GRI framework (see Figure 16 – below) should also be cross-referenced against Sustainable Development Goals by using the SDG Compass (https://sdgcompass.org/). Prime disclosures are specific to each Entity and shall be determined during the Materiality Analysis stage discussed in Section 6.1.

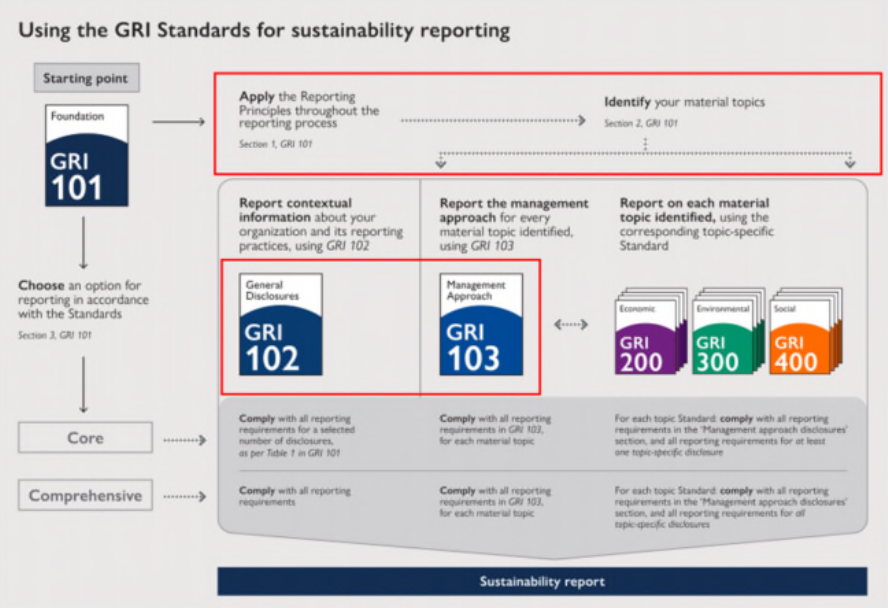


Figure 16: GRI Process Flowchart

6.9 Knowledge Management and Sharing

Knowledge management is a systematic approach to ensure that the right information is transferred to the right people at the right time (i.e. Knowledge Management facilitates Knowledge Sharing). Knowledge management is essential to establishing and delivering a successful sustainability framework.

Therefore, each Entity should establish a sustainability Knowledge Management System (KMS). This shall act as a platform for knowledge sharing and should help to ensure that sustainability requirements are accurately communicated and well understood by all Entity stakeholders.

6.9.1 Sustainability Knowledge Management System

The Entity should build upon the KMS outlined within volume 15 of the Expro Projects White Book and meet the following criteria:

- Web-based and accessible on-the-go
- Easy to understand
- Provide practical guidance

In developing the sustainability framework, the following steps should be taken:

- Identify and assess the current state of sustainability knowledge within the Entity
- Agree upon clear and achievable objectives for the sustainability KMS
- Identify opportunities to provide training
- Identify opportunities to leverage supporting resources – for example: consider a cross-Entity approach to developing sustainability case studies
- Link monitoring and reporting to the sustainability KMS
- Identify the right system for knowledge sharing (e.g. document library/web-based portal) and decide what should remain internal to the Entity and what should be shared more broadly

The sustainability KMS should help facilitate the sustainability framework implementation, as well as identify challenges and lessons learned as part of a continuous improvement model.

Guidance regarding capacity building and establishment of a sustainability awareness training program as outlined in volume 15 of the Expro Projects White Book are equally relevant and applicable when implementing the National Manual of Assets & Facilities Management (NMA&FM).

7.0 ATTACHMENTS

1. Attachment 1 – EOM-ZN0-TP-000001 – Interested Parties Risks and Opportunities Template
2. Attachment 2 – EOM-ZN0-TP-000002 – Materiality Analysis Template
3. Attachment 3 – EOM-ZN0-TP-000003 – Legal and Compliance Obligations Register Template
4. Attachment 4 – EOM-ZN0-TP-000004 – Environmental Management Policy Statement Template

Attachment 1 – EOM-ZN0-TP-000001 – Interested Parties Risks and Opportunities Template

Register of Interested Parties

Interested Parties <Entity>

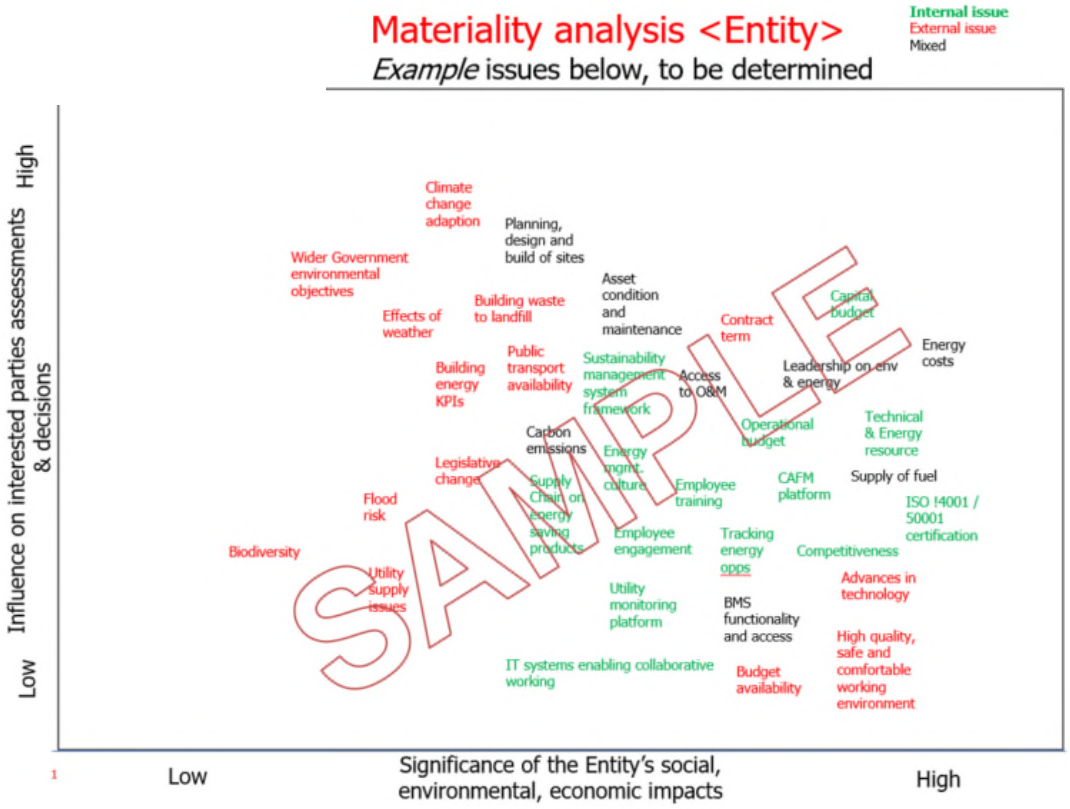
Interested Parties relevant to sustainability performance	Description of interest party	Interested party requirements	Risk / issues (Abnormal conditions or Reasonably Forseeable Changes)	Requirements addressed through the Sustainability Management System
Employees				
Contractors				
Procurement and Utility providers				
CAFM system provider				
Clients (External)				
Board of Trustees				
Human Resources (Internal)				
Finance (Internal)				
On-site partners				
Legal information provider				
Regulators				
General Public				
Supply chain				

Log of Internal and External Issues

Interested Parties <Entity>

Key issues identified through Materiality Analysis	Risk / Opportunities	Actions to address in Sustainability Management System

Attachment 2 – EOM-ZN0-TP-000002 – Materiality Analysis Template



Attachment 3 – EOM-ZN0-TP-000003 – Legal and Compliance Obligations Register Template

Introduction and Guidance

Mashroat Legal and Compliance Obligations Register

Facility Managers - This register is designed to give <Facility Managers> a high level overview of the legislation and compliance requirements covering common activities undertaken across <entity name>. It is not a comprehensive list of every legal and compliance requirement for all our activities but it is designed to provide an overview of key requirements which will help to ensure you remain legally compliant and meet wider compliance obligations.
The red tab provides information on: Key Health & Safety legislation which is generally applicable across our operations, associated legislation and compliance requirements which are applicable across our operations.
The green tabs provide information on: Environmental Management legislation and compliance requirements which are applicable across our operations. It is not a comprehensive list of every compliance requirement for every department / building activity. Aspects and Impacts Registers should be used to help you identify and record which environmental legislation and compliance obligations apply to your operations.
For further help and advice on managing HSE compliance legislative or otherwise, please contact <insert entity HSE lead>

Amendments Log

Amendments log

Version	Date	Summary of changes

Attachment 4 – EOM-ZN0-TP-000004 – Environmental Management Policy Statement Template

Environmental Management Policy Statement

We are committed to minimizing our impact on the environment and whilst striking the optimum balance between the 3 Pillars of Sustainability: People, Planet, and Profit:

It is the policy of <Entity> to identify the significant aspects of our operations on the environment and work to minimise these. We will promote sustainability and environmental awareness throughout our organization and wider stakeholders. In order to continually improve our performance, we will:

- Comply with relevant environmental legislation and wider compliance obligations such as working toward the UN Sustainable Development Goals and Vision 2030
- Incorporate energy and water efficiency measures into our buildings and operations, promoting resource efficiency across our activities
- Implement waste management strategies that promote waste minimisation, re-use, recovery and recycling where appropriate
- Adopt a sustainable procurement programme that takes into account the environmental impact of products and services in areas of concern and embraces the circular economy vision
- Seek to manage and reduce business travel via changing business practices and increased use of IT collaboration tools
- Prevent pollution from our work activities
- Ensure that our staff are aware of the environmental impacts of their work activities and encourage them through awareness raising and training to minimise those impacts
- Review our procedures and policies on a regular basis
- Consider certification to ISO standards and building Sustainability Rating Systems where deemed appropriate
- Measure and report on our performance

Signed

Date

Entity Leadership