

Quality, Health, Safety & Environment Manual

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1. Scope of the QEHS Management System

- I. The scope of this QEHS Management System Manual is to document how Space Matrix Design Consultants Pvt. Ltd. Will manage its obligations for environment, health & safety (EHS).
- II. To do this the manual describes the core elements involved, the roles and responsibilities of all levels of the organization for QEHS and the specific guidelines which will help the organization fulfill its QEHS policy and commitment to, "Exceed the environment, health and safety standards of the industry."

Space Matrix Design Consultants Pvt. Ltd Quality, Environment, Health and Safety Policy

- I. We at Space Matrix are committed to the Quality, Safety and Health of our employees, sub-contractors & visitors, clients and care of the Environment and the prevention of accidents, health hazards and pollution.
- II. We ensure that all the activities and services carried out and products are manufactured considering appropriate Quality Environmental, Health and Safety risks, aspects, impacts and objectives and in conformance with the relevant legal requirements.
- III. All levels of management and all employees have a primary responsibility for the safety and well- being of all employees, subcontractors and visitors and prevention of pollution.

QEHS objectives:

- Identify and update the Quality, Safety, Health & Environmental hazards and risks associated with our activities and products.
- To improve conditions in order to prevent accidents, health hazards and pollution.
- To minimize waste generation, promote recycling.
- To reduce energy consumption.
- To reduce harmful emissions.
- To the best extent possible, to work with suppliers who themselves have sound
- Safety, Health and Environmental policy.
- To set Environmental, Health & Safety objectives and targets by all departments to improve EHS performance.
- To implement and continually improve an Integrated Environmental, Health & Safety Management System which conforms to the latest requirements of ISO 9001, ISO 14001 and OHSAS 18001.

2. Abbreviation and Definitions

F&D	:	Founder & Director
GM	:	General Manager
EHS	:	Environment, Health and safety
OHS	:	Occupational health and safety
SMI -13-01	:	Means Space Matrix International QHSE Manual
SMI -13-02	:	Means Space Matrix International QHSE Plan & Procedure
PPE	:	Means Personal Protective Equipment
QHSE	:	Means Quality, Health, Safety & Environment
Approved	:	Means acceptable to common industry standards

3. QEHS Management System Requirements

3.1. General Requirements

- Space Matrix acknowledges its duty to provide its entire staff with a safe and healthy workplace and to maintain environmentally sound work practices which comply with applicable legislative standards. As such this QEHS Management System is based on SMI commitment to quality, environment, health and safety as detailed in our QEHS policy described in Section 3.2 in this manual.
- The QEHS Management System is designed to be consistent with the OHSAS 18001:2007 occupational health and safety management systems, and the ISO 14001:2004 international environmental standards, ISO 9001:2008.

3.2. Health, Safety & Environmental Policy

- Space Matrix International Policy identifies its overarching commitment to improving EHS performance and compliance with the law. This policy is embodied in our separate EHS policy as is given on the following page.

1. Objectives are focused to ensure deployment for the business unit, Project Sites.

Quality, Environment, Health & Safety Commitment Policy

R K INSULATION ENGINEERS & CONTRACTORS recognizes Quality, Environment Health and Safety as amongst the highest corporate priorities, as an integral part of its business performance, and as a key determination to sustainable development. The QEHS Management system is therefore integrated into each business as a prime responsibility and as an essential element of management.

Space Matrix , during it's business activities, endeavors to:

- Quality elements in all its services to the customer, people, value generating system & processes.
- Provide a safe working environment for all personnel involved in the work.
- Comply with the requirements of all applicable Local laws and standards, and Clients standard requirements
- Prevent any loss of production or damage to equipment or property, third parties included.
- Adopt the measures to prevent and reduce the environment impacts on air, water, during our project's activities. So as to maintain & sustain eco-friendly surrounding for all the people.
- Pursue continuous improvement of the QEHS management and QEHS performance.
- Perform QEHS training programs and promote the awareness of the personnel at every level to work in a QEHS responsible manner and to develop their QEHS knowledge and skills.
- Assure the co-operation with public Authorities, customers, suppliers, local communities and other stakeholders on QEHS issues.
- Require subcontractors to manage the QEHS issues in an appropriate way, consistently with the requirement of the Space Matrix International QEHS plan and management system.
- Promote the purchase and use of materials and equipment with a higher environmental compatibility and quality conformance.
- Regularly conduct audits on QEHS management system and on the legal compliance.
- Apply the principle of pollution prevention and control on all the activities and services carried out.
- Promote a culture in which all project employees share this commitment.
- Provide energy, resources, product and services consistent with these aims.

3.3. Planning

- The main objective of QEHS planning is to achieve all the objectives of the QEHS policy. (Note that the term “hazard” from here on will include environmental aspects.) This is achieved by utilizing processes for:
- Identification of hazards, risk assessment and control of risks
- Identification of QEHS legal requirements
- Development of measurable objectives and targets
- Development of site specific QEHS management plans

3.3.1. Planning for hazard identification, risk assessment and control of risks'

- It is vital that all processes are carried out with full knowledge of the likely QEHS hazards, risks and impacts and those practicable controls have been identified and put in place to address these risks.
- The range of likely QEHS hazards and risks associated with the Space Matrix operations will be determined initially and updated at least annually by the respective project manager who will maintain a register of risks.
- In addition, regular review of risks will occur through safety and environmental inspections.
- At the start of each project, the hazards and risks associated with the project will be identified and assessed. These proactive actions during project planning will allow resources required for control of these risks to be included in the project budgets.

3.3.2. Legal and other requirements

- The QEHS Manager, in conjunction with the corporate regulatory body, will arrange for the preparation, identification and maintenance of a legal register which captures the applicable safety and environmental legal requirements for the project operations.
- The legislative requirements impacting upon the project operations may be National or State in origin. As such the QEHS Manager will be responsible for ensuring that the applicable State-based legal requirements as well as National requirements are met.
- In addition, other non-legislative requirements such as voluntary codes of conduct, to which the organization subscribes, or contractual agreements with clients or contractors are also to be identified and met.
- The QEHS legal register will be reviewed annually or when there is a change in scope of the operations or changes to relevant legislation.

3.3.3. Objectives and targets

- QEHS objectives and targets will be developed at the project level
- These objectives and targets will be documented and measurable, so that performance can be effectively monitored with the goal to continual improvement.
- In developing and reviewing QEHS objectives and targets, consideration will be given to the companies EHS policy, the applicable legal requirements and likely EHS hazards and risks.
- In addition, inputs from employees and clients, knowledge of available technological options and business considerations also need to be considered.

The SHE targets, goals and aim for the Works are to achieve:

- Zero total recordable injuries.
- Zero reportable environmental incidents
- All personnel inducted in accordance with the approved SHE plan
- Total compliance of conducting inspections and audits as per approved SHE plan
- 100% incident recording and reporting
- 100% adherence of usage of appropriate PPEs at work.

- Executing construction work with least disturbance to the environment
- **Design - Safety, Health and Environment**
We as Designer primary role includes to minimise the risk to health and safety of those who are going to construct, maintain, clean, repair, dismantle or demolish the structures and any one else like adjoining road users/general public, who might be affected by the work.

Hazard	Objective	Target	Indicator at Project Site
Substandard conditions	Provide a safe workplace for all employees	Increase awareness of Health and Safety issues in the workplace	Monitoring data of reported Incidences and accidents due to machine operations typically noise, strain due to repeat movement, and vibrations due to hand held tools, ergonomics, Electrical shorts, fires, and other identified Hazards.
Controls and Improvements	Data collection for validation of controls, resource consumption for water, electricity and fuel	Identify improvement opportunities	Resource consumption, Work Zone monitoring and Health monitoring for all the areas and employees.
		Use of PPE	Maintaining log for use of PPE
	Improvement projects	All incidents reported, investigated, addressed and closed out with in two months	Monthly review of incidences and corrective preventive actions during safety committee meeting
Employee Participation	Implementation of improvement projects by employee participation schemes	Training and implementation of participation schemes like suggestion scheme.	Min. Five improvement projects by end every year.

3.3.4. QEHS Management Programme

- QEHS management programmes are required to facilitate the actions needed to meet the established EHS objectives and targets at the agreed time-scales.
- QEHS management programmes will be prepared for the project operations, and will be prepared for each project where there is a perceived Critical EHS risk that has been assessed as requiring control.
- At the project level, QEHS management programmes need to be reviewed at regular and planned intervals, and be amended where required when there are significant changes to the organization.
- At the project level, QEHS management programmes need to be reviewed at the proposal stage, contract review stage, project start phase and where there are significant changes to the project.

3.4. Implementation and Operation

- Effective implementation and operation of the QEHS management system to achieve the requirements of the QEHS policy, objectives and targets requires:
 - Having a defined organization structure with identified responsibilities for QEHS.
 - Appropriate training for employees
 - Established lines for consultation, communication and reporting to those responsible for QEHS
 - Accurate documentation of the management system
 - Effective document and data control measures
 - Identification, assessment and control of risks associated with the project operations
 - Emergency preparedness and response

3.4.1. Structure and Responsibility

- The organization structure for Space Matrix department is as shown in annexure - I

Founder & Director

- The F&D is responsible for the approval and implementation of the QEHS policy. This includes reviewing performance, objectives, targets and implementation of the QEHS management system. The F&D assumes ultimate responsibility for QEHS performance of the company.

Division Head

- The Division Head has overall responsibility for establishing, implementing and maintaining QEHS management systems in the Division. As a minimum he will be responsible for ensuring that:
- Appropriate QEHS training is provided to all employees
- QEHS Management programmes are developed and implemented to manage workplace and project QEHS hazards
- Relevant and applicable legal requirements are met

QEHS Manager

- The QEHS Manager will be responsible for informing the Sr. Vice President and the Sr. GM-Technical of any identified areas of the QEHS management system requiring improvement or shortcomings in the implementation of the system. To achieve this, he will be responsible for:
- Monitoring of QEHS performance and ensuring that it is in line with the relevant and applicable legal requirements
- Formulating QEHS objectives and targets at project level
- Continual development and improvement of the QEHS Management System
- Developing programs for QEHS training and employee awareness of the QEHS Management System requirements necessary to meet their obligations
- Assisting Project Manager in implementing the QEHS Management System within the projects.
- Participating where required in visits, inspections and resolution of QEHS issues
- Assist with the investigation of incidents
- Initiate actions to improve QEHS performance.

QEHS Committee Members

- The elected QEHS Representative will assist in the implementation of the QEHS Management System within their workgroups and will:
- Assist in guiding and monitoring the implementation of the QEHS practices within their workgroups
- Facilitate the consultation and communication of QEHS matters between management and the employees.

Project Teams & Employees

- All project team members and employees have a responsibility to QEHS, and these include:
- Attend site induction and QEHS training programmes as required.
- Comply with the QEHS Management plan and applicable and relevant legal requirements
- Report any hazards, near misses or incidents immediately to supervisors or Project Manager.
- Follow safe work procedures and work instructions.
- Use tools and equipment safely and in accordance with manufacturer's instructions.

Contractors & Sub-Contractors

- Contractors and sub-contractor are responsible for developing, implementing and monitoring their own QEHS management plans, in compliance with the requirements of the SMDCPL QEHS management plan and applicable laws. At minimum the contractors and sub-contractors QEHS management plans:
 - Must be made aware to and adopted by all persons under their control.
 - Must be submitted to the Project Manager for approval prior to any works commencing
 - Must include measures for the provision of training, instruction, supervision, tools and equipment to all persons under their control necessary for them to perform their tasks in accordance with the QEHS objectives and targets. Organization chart-Annexure-I

3.4.2. Training and Competency

- All personnel will receive appropriate training in QEHS necessary for them to meet their obligations under the QEHS Management System and to perform their responsibilities competently.
- QEHS training requirements will be identified through regular reviews by the Project Manager, the
- QEHS Manager and the Sr. GM (Technical) in consultation with the employees. Training that may be

a. Required include, but are not limited to :

- QEHS awareness training
- OHS representatives training
- Project-specific EHS inductions
- Specific project or vehicle operation
- Confined space
- Working at heights
- First aid
- Emergency rescue
- Basic Construction & commissioning safety training
- Electrical safety
- Chemical safety

b. EHS training at minimum will identify:

- The importance of conformance to the EHS policy, guidelines and requirements of the
- EHS management system
- The EHS hazards and risks, actual or potential, of their work activities and the benefits of improved EHS performance
- The roles and responsibilities in achieving conformance with the EHS policy, guidelines and requirements of the EHS management system, including emergency preparedness and response requirements
- The potential consequences of departure from specified operating procedure

c. Employees who are directly responsible for external parties, such as contractors and visitors, will ensure that they are made aware of the QEHS requirements.

d. Contractors must provide supporting documentation identifying required QEHS qualifications and competencies and records that the relevant training or competency assessments have been completed and are current.

e. Training records for each employee will be retained on personnel files.

3.4.3. Consultation, Communication and Reporting

- a) **Consultation, communication and reporting cover:**
- Consultation between various levels of the organization
 - Communication of QEHS issues at management meetings, on safety bulletin boards, through newsletters, intranet, website, meetings and with interested external parties
 - Reporting of QEHS performance, the decision on communication of the significant aspect to external stake holders entirely is reviewed case to case and is documented in ON-SITE EMERGENCY PLAN/ Communication plan/ MRM.
- b) **Consultation**
- Management will consult with QEHS representatives regarding all changes to processes, operations or workplace that may affect the Quality, Environment, health & safety performance for employees.
 - An EHS Committee will be established and will be comprised of the nominated QEHS representatives and management representatives. This Committee will then be the principal, but not the only, means of consultation between employees and management.
 - The QEHS Committee will meet at least every three months.
 - All issues, suggestions or complaints made by employees would generally be made to their immediate supervisor or QEHS representative for action and consultation at the committee meeting.
 - Feedback from the committee on any issue made by employees will be provided promptly to the contributor.
 - The Project Manager will be informed of all issues, suggestions and complaints made by employees directly to the committee, and the recommendation or response of the committee to each item.
- c) **Communication**
- Communication of pertinent QEHS information internally between all levels of the organisation and externally with interested parties is important to implementing the QEHS management system and to meet statutory requirements.
 - Contributions, suggestions or complaints from employees on QEHS matters are important and encouraged, and can be made directly to management representatives, immediate supervisors or any member of the QEHS Committee.
 - QEHS information will be communicated to employees via Safety Bulletin boards, newsletters, emails or meetings.
- d) **Reporting**
- Relevant and routine reporting of QEHS performance will include :
 - Reporting of QEHS performance against established objectives and targets
 - Reporting on incidents and system failures together with the subsequent corrective actions
 - Any statutory reporting requirements

3.4.4. Documentation

- i. The QEHS management system is composed of and documented in the following forms:
- QEHS Manual
 - QEHS Plan & Procedures
 - Standard Operating Procedure

- ii. QEHS records which must be maintained, as a minimum are :
 - Training records
 - EHS risk registers
 - Safe work procedures
 - Site inspection results
 - Audit results
 - Incident, hazard and near miss reports
 - Corrective action records
 - Government and statutory authority communication
 - Legal register
 - Emergency Response Plan
 - Project and equipment inspection, test and calibration records

3.4.5. Document and Data Control

- 1) QEHS documentation is maintained in accordance with the SMI Quality Management System.

3.4.6. Hazard identification, risk assessment and control of risks

- I. To main objective of operational control is to ensure that all activities are conducted in line with the objectives and targets of the EHS management system. This is achieved by utilizing processes for
 - Hazard identification
 - Risk assessment
 - Control of risks
 - Evaluation

3.4.6.1. Hazard identification

- * Many activities may have QEHS hazards associated with them; as such Arch will seek to identify potentially hazardous or environmentally damaging work practices or situations.
- * Hazard identification will occur as part of:
 - * Regular QEHS inspections at the workplace
 - * Formal exercises as part of site-specific QEHS Planning
 - * Awareness and reporting from employees
 - * Where there is an immediate risk of injury or environmental pollution, employees should take action within the limits of their competence, and immediately report the hazard.

3.4.6.2. Risk assessment

- * Risk assessment will be carried out for all identified hazards to establish a priority for control action.

3.4.6.3. Control of risks

- * Risk controls will be implemented according to the hierarchy of controls based on reasonable practicability:
 - Elimination
 - Substitution

- Isolation
- Engineering controls
- Administrative controls
- Personal protective equipment

3.4.6.4. Evaluation

- * As necessary the total process will be evaluated, at an appropriate time after controls have been implemented, to review the effectiveness of the process and controls, and to identify areas for improvement.

3.4.7. Emergency preparedness and response

- a. Emergency Preparedness and Response Plans (ON-SITE EMERGENCY PLAN) will be developed for project operations.
- b. The ON-SITE EMERGENCY PLAN will outline:
 - Types of emergency such as dangerous intruders, bomb threat, building damage, earthquake, electrical failure, external emergencies, fire, flood, hazardous material spills, civil unrest, medical emergencies and vehicle accident.
 - Roles and responsibilities to be adopted during an emergency, including contact details
 - Systems and procedures to be activated in order to manage the emergency situation
 - Arrangements for reporting of incidents to statutory authorities
 - Procedures for restoration
 - Administrative arrangement to maintain emergency preparedness
- c. All personnel must be trained for the applicable Emergency Response procedures.
- d. Emergency plans will be reviewed and revised as required and will be periodically tested.
- e. The outcomes of all testing or drills must be documented and communicated to the QEHS Committee.

3.5. Checking and Corrective Action

- It is essential that appropriate data is collected, measured and analyzed so that the right actions and decisions can be made, and the system continually improved.

3.5.1. Monitoring and measurement

- The QEHS Manager will ensure that proactive and reactive measurement of QEHS performance indicators are carried out regularly to measure if the QEHS objectives and targets are being met.
- Workplace environmental monitoring will be established using reference to applicable legislative requirements and standards for conditions as follows:
 - Atmospheric monitoring of hazardous substances against exposure standards where there is potential for personnel exposure
 - After changes to work practices which may increase employee exposure
 - To measure effectiveness of environmental control measures
 - To test atmospheres for confined space entry
 - Continuously for processes involving highly dangerous substances
- Where monitoring equipment is required for performance measurement, such equipment must be readily available, adequately maintained and calibrated.
- Records of calibration and maintenance activities and results must be retained.

- Workplace safety monitoring for the office will be conducted quarterly by the elected QEHS representative for the workgroup together with a management representative, and will inspect all areas for safety hazards including;
 - Lobby
 - Escape stairs
 - Entrances and Exits
 - Kitchens
 - Meeting rooms
 - Offices
 - Copy and print areas Storage areas
 - Toilets
 - Fire fighting equipment
 - First aid kits

- Workplace safety monitoring for Project will be conducted weekly by the Manager.
- Where specified by legislation, health monitoring will be conducted and recorded for employees where there is a potential for exposure to specific hazards.
- Where an adverse health monitoring result is confirmed for an employee, appropriate treatment and counseling will be provided.
- All health monitoring records of personnel will be managed and maintained as private and confidential documents but will be made available to the employee tested, free of charge.

3.5.2. Incident investigation, corrective and preventive action

- All reported incidents, hazard and near misses will be followed up, investigated and corrective action completed so that safety and environmental performance is improved.
- All employees have the responsibility to report any incidents, hazards or near misses they encounter.
- Incidents, hazards and near misses will be reported and documented.
- At minimum the investigation teams will consist of the EHS committee representative for the workgroup, EHS Manager and a management representative for the area.
- Details of the investigation and all corrective actions will be reported to the EHS committee for their information.
- All reports are to be closed out and signed off by the affected person, the EHS Manager and the Project Manager when all corrective actions have been implemented satisfactorily.
- All serious incidents or near misses which could or did lead to a fatality or serious injury will be reported to the relevant authorities in line with regulatory and statutory requirements.

3.5.3. Records and Records Management

- All necessary records and documentation will be kept in accordance with the Quality Management
- System by the EHS Manager and/or Project Manager, Divisional Head.
- Records of medical monitoring will be kept secure by the HR manager.

3.5.4. QEHS Management System audit

- An audit program will be established and maintained by the QEHS Manager and will indicate the scope and timing of audits.
- Once the audit has been completed the QEHS Manager will prepare an audit report and communicate the findings to:

- Division Head
 - Sr. General Manager(Technical)
 - Project Managers/ HOD's
 - QEHS Committee
- 3) The QEHS Manager will ensure that all recommendations from the audit report are addressed and closed out.

3.5.5. Key Performance Indicators

R K Insulation sets key performance indicators in all its activities in the field of Safety, Health, Environment, & Quality by: -

- I. Continual improvement in proactive targets and objectives by creating positive awareness among the workmen & people in the vicinity of the working place.
- II. Imparting induction, refresher & specialized health & safety courses among the workmen so as to comply with safe operating procedures & avoid any mistakes that can cause untoward incidents.
- III. Insisting projects & operating projects to comply with all the prescribed safety & health measures as required by laws, standards & best practices in the world.
- IV. Asking the industries to conserve energy consumption so as to avoid overburdening of green house gases in the environment.
- V. Cutting down emissions of NOX, SO₂, H₂S, CO & other harmful effluents by adopting suitable technological processes & conforming to right operational regimes.
- VI. Maintaining safe & health working conditions at the workplace to avoid health damage to the people & there by increasing the productivity in industry & well being of the people.
- VII. Taking particular care for occurrence of notifiable diseases and other non-recoverable health problems.
- VIII. Introducing quality aspects in all endeavors and activities undertaken by Space Matrix International while rendering QEHS services to the industries.

3.6. Management Review

- The QEHS management system will be reviewed annually by the QEHS Manager to verify the performance of the QEHS system.
- The scope of the management review will include review of :
 - QEHS policy, based on the inspections, audits, concerns and notifications, accident incidents trends analysis
 - Performance statistics
 - EQHS objectives and targets and the compliance for the performance and resources /technological options if any
 - Incident, hazard and near miss reports and other communication from interested parties including complaint
 - Status of Corrective, preventive actions
 - QEHS responsibilities, coping up the internal and external dynamics like changes in legal and any other obligation affecting aspects and needing management attention
 - QEHS consultation and communication protocols, for recommendations of improvements.
- Results of the management review will be reported to the Division Head who will ensure that identified deficiencies are corrected.

Annexure - I
Organization Chart

Annexure - II

Work Instruction: Environment Health & Safety

- a. Ensure that all the safety devices/means are there well in condition and working properly.
- b. Use job specific PPE's (Respirator, Goggles, Hand gloves, Ear plug, chemical suit, gum boot, self contained breathing apparatus, face mask etc.) along with Basic PPE's (Safety shoe & Helmet)
- c. Ensure proper earthing and bonding while handling solvents.
- d. In case of any chemical spillage use spill kit and instructions displayed in the project.
- e. Use MSDS for further information related to Environment Health & Safety
- f. If any abnormalities observed related to environment health and safety issues, immediately report it to shift officer/project manager.