1. Engineering Services – (MEPF)

1.1 Scope of This Document

Engineering systems and services design for healthcare facilities shall ensure that the healthy, clean and hygienic environment is maintained in hospitals as per the departmental strategy by healthcare planners. Patient care, visitor safety and efficient hospital operations by the hospital operator will heavily depend on these systems.

This document shall provide an engineering design guidance for the following building services systems:

- Section 2 - Mechanical (HVAC) Systems
- Section 3 – Electrical Systems
- Section 4 – ICT & ELV Systems
- Section 5 – Water Systems
- Section 6 – Drainage Systems
- Section 7 – Medical Gas Systems
- Section 8 – Fuel Systems
- Section 9 – Pneumatic Tube Systems
- Section 10 – Fire-Fighting Systems (Special Case Areas Only)

The key role of above-mentioned engineering services, is controlling the environmental parameters within healthcare facilities.

Also, this document provides operation and maintenance for healthcare operators to ensure that the system does not encounter any major faults or incidents with the main engineering plant that shall jeopardize patient and visitor safety.

1.2 Key Objectives

In line with DHA's mission of transforming Dubai into a leading healthcare destination, the following objectives are key for a well-designed healthcare facility as well as the intent of this document:

- The engineering design guide is not a replacement of other international healthcare standards, but a simple, no jargon design guide for engineers, operators and maintenance engineers in Dubai.
- The engineering design within this document shall be in accordance with international and Dubai Health Authority (DHA) regulations and standards.
- The engineering design within this document shall compliment requirements needed by local authorities such as Dubai Electricity & Water Authority (DEWA), Dubai Municipality (DM), Dubai Civil Defence (DCD) and other relevant authorities
- The engineering design shall meet the departmental requirements set out by healthcare planners and healthcare architects.
- The engineering design shall ensure that any opportunities for patient self-harm are minimised or eliminated.
- The engineering design bench mark outlined within this document ensures that the loss of engineering system failure is minimised and, in some areas, can be eliminated if the system is well maintained.
- The engineering design shall ensure that any scheduled operation and maintenance procedures carried out shall keep disruptions to the operation of the healthcare facility kept at a minimum, by having these at off-peak patient/visitor traffic.
- The engineering design shall ensure that any access is kept out of any clinical and patient occupied areas, but if access is required in clinical areas, then the design shall indicate that area will need to be re-treated to ensure that a safe and hygienic environment is maintained.

- The engineering system design shall ensure that in the event of failure of the system, the emergency engineering system, is able to support the hospital facilities for a dictated period (usually 24-48 Hours).

All equipment shall be suitable for the environment where they are located and operate (including temperature and pressure) and for the material they handle.

1.3 Engineering Briefing

Briefing in healthcare facilities is usually provided by healthcare planners and hospital operators.

This type of briefing is usually referring to the following items:

- Air Conditioning (including pressurisation type)
- Ventilation Provision
- Power Outlets, (Quantity & Type – Such as General, Essential, UPS etc)
- Sanitary and other Fixtures
- Data and Voice Points
- Medical Gas (Number of Outlets and type of service)
- CCTV and MATV (Number of outlets and type)
- Nurse Call

The type and quantity of the above outlets is not regarded as an Engineering decision, proposal or brief, these are regarded as part of Health Facility Briefing and covered in Part B.

They represent the needs of patients, staff and visitors as determined by Health Facility Planners in consultation with the facility operators with consideration of the minimum agreed with DHA requirements.

These minimum requirements are shown in Room Layout Sheets provided under Part B.

The engineers take the above briefing requirements as a starting point and determine the Engineering Systems from there.