

NHRA Engineering Requirements

(The Designing Guide for The Medical Facilities 2023)



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➤ Requirements for Submitting Drawings:

- Using engineering drawing software to design the outline of the health facility, and not using hand drawing or primitive drawing programs.
- Ensure the clarity of the full drawing, in addition, make sure that the sent file is working.
- Engineering drawings are submitted as a soft copy only, and it is not allowed to submit them as a hard copy (except the huge hospitals).
- Make a clear scan for the drawing, and do not photograph it with a mobile phone.
- Clarify the internal distributions for all the roles of the facility, by writing the names and measurements on all rooms according to the proposal submitted.

specifying the dimensions and names of all the rooms and sections and detailing the number of beds according to each section.

- The writing line must be clear on the engineering drawing.
- Differentiate the (examination/consultation) rooms from the (treatment/procedure) rooms.
- Clarification of the initial medical furniture on the engineering drawings.
- Illustration and drawing of specialized medical laboratory devices, lasers and x-rays.
- The unit of measurement on the plan must be in linear meters only.
- Determine the location of the medical waste room and the sterilization room if their presence is required, and in case that they are not, a letter will be sent to NHRA stating that they are not needed with justification.
- Evidence of the validity of the materials used in the finishing of the building must be provided, or information relating to medical devices and medical furniture, if requested by the NHRA.
- The drawing will be rejected if it loses one of the above-mentioned elements or if the engineer considers the place to be invalid in terms of construction, planning, security and safety concerns for patients, staff, and visitors to the health institution.
- In case that there is a specific engineering change in the health facility, and it has been approved in advance by the engineer, it is not allowed to change other parts of the drawing before the inspection visit without notifying NHRA engineers.

➤ General Requirements:

- The site should be suitable, while adhering to the building regulations adopted in terms of heights, building proportions and setbacks, in accordance with the requirements of the concerned authorities in the Kingdom of Bahrain, and that it should be far from dangerous places, such as storage places for petroleum and gases, industrial workshops, and sources of nuisance, avoiding the building that is near any hazardous places or substances.
- The international specifications and standards of the mechanical engineering and the technical details in the building must be met in a way that does not contradict the required requirements.
- The health institution shall be independent in the building, separated from any other activity (in case of a hospital) and should not be connected to any residence or any other place of work and be designed so that all the work can be carried out in a proper, comfortable, and a safe manner, In addition it should not be overcrowded with furniture, or any other materials that hinders the movement.
- It is forbidden to use the medical facility for residence (except for medical facilities having in-patient department.), and it is permitted to have a contract with a security company when needed.
- The internal or external design of the facility should provide the patient with a sense of safety and comfort and allow easy movement between the departments, and the needs of the elderly and handicap must be considered in all the departments of the facility, by placing an anti-slip ramp, and avoid using steps in the design.
- The corridors must not be occupied with any materials or furniture that impede movement, considering that the columns do not protrude outward as much as possible.
- Examination and treatment rooms must not contain free columns in the middle.
- All patient examination rooms should be structurally separated from each other, so that the door of each room overlooks the general corridor of the facility. Separated rooms must also be provided for sterilization services and storage of the medical waste.
- To study the areas and dimensions of the elements and their relationship with each other, the width of the corridors, doors, the necessary electrical, sanitary, and mechanical installations, the materials used, in accordance with the types, specifications, measurements of the devices, medical equipment used, and the services to be provided in the building.
- The width of the main entrance of the building should not be less than 2 meters, with a need for a ramp for the disabled.
- The intensity of lighting (natural or artificial) should be appropriate in all parts of the facility.
- The area of the vital signs room in the facility should not be less than 1.5 x 1.5 square meters.
- The area of the sample collection room should not be less than (2 x 2) square meters.

- In the case of a health unit in the institution, the area should not be less than (3 x 3) square meters and should be provided with a private bathroom.
- A room must be provided for the medical waste, and the correct way of disposal of the general and medical waste, and dealing with them, in accordance with Resolution No. (3) of the year 2020 regarding hazardous waste management, considering the complete separation of medical waste from general waste, according to Appendix No. (26) of the NHRA decision.
- The area of the medical waste room should not be less than (1.5 x 1.5) square meters and should be increased according to the capacity of the facility.
- Medical waste room should be paved with a smooth, non-slip floor, and equipped with air conditioning that works throughout the time with a hand sink or sanitizer placed inside the room, or near it.
- It is not allowed to put the medical waste room in confined spaces.
- Providing storage rooms for medical devices, equipped with electric charging handles.
- The height of the rooms inside the facility should not be less than 2.6 meters as a minimum.
- The width of the doors used for the treatment and consultation rooms should not be less than one meter, and for the rooms in which the transfer of beds is required, the width shall be 2 meters.
- All rooms should be at the same level as the main corridor, not too high or low. This can be done if there are stairs or a safe ramp, considering people with special needs.
- The width of the internal corridors located between the clinics should not be less than 1.3 meter, and between the wards, not less than 2 meters, considering the presence of corridors or rooms for keeping beds and trolleys on each floor.
- The net width of the staircase shall not be less than 1.5 meter, and the width of the stair landing shall not be less than the width of the stair.
- The presence of an elevator if the building consists of more than one floor, considering the possibility of entering the examination bed and the wheelchair in a safe and smooth manner, so that the area of the elevator designated for patient beds is not less than 1.8 x 2.8 square meters, while the elevators for visitors are required to be sufficient to enter At least one person with a wheelchair, safely and smoothly.
- The building should be equipped with a source of pure water, whether intended for washing, cleaning, or drinking, as well as an appropriate means of sanitation.
- Considering that the design of electricity, water and sanitation connections is according to the specifications of the concerned authorities in the Kingdom of Bahrain.
- All electrical panels shall be fully sealed.
- The presence of a reception desk at the entrance of the medical facility, and at the entrance of each department.



- Commitment to the name of the rooms, which prevents the use of one room for more than one purpose at the same time, and the same room may be used at different times for different purposes, without prejudice to the standards approved by the NHRA.
- In addition to the hospital's main store, there must be a storage room in each section of the building, and it must not be used for any other purpose.
- Patients' residence rooms shall be as far as possible from the streets and parking lots, and the wall prevents the transmission of sound from one room to another.
- Providing a backup generator that works automatically in case of a general power outage, with sufficient power to operate the main departments of the hospital, especially the operating rooms, maternity wards, blood bank, emergency department, intensive care unit, and the main corridors of the hospital, with continuous testing of this generator; To ensure its continued validity, see Appendix (40) of the NHRA decision.
- Providing toilets, washbasins, and waiting areas in each department.
- Providing a toilet in each private room of patients, and in isolation rooms in the hospitals, considering the handicapped, so that the area of the toilet in them is not less than (1.5 x 1.5) square meters. As for public toilets, disabled are also taken into consideration by providing a toilet with an area at least (1.3 x 1.5) square meters, considering the smooth and unobstructed entry of the wheelchair.
- The toilet door must be at least one meter wide.
- The floor of the toilet must be at the level of the public corridor, in order that does not obstruct the passage of the persons or wheelchair.
- A toilet for handicapped whose door should open towards the outside, provided that the public passage is not disturbed.
- Providing a waiting area for men and women that is not less than one square meter per seat.
- Allocating a place for the medical staff in each department, ensuring that it is not used for any other purpose.
- Provide adequate administrative offices according to the type and size of the health facility.
- Providing a place designated for installing a server of the computer system devices, and not placing it in a room with other purposes, and permanent air conditioning must be available; to avoid overheating of electrical appliances and connections.
- Buildings constructed for other purposes must not be converted into hospitals; Due to the difficulty of meeting the requirements of the hospital.
- The tangents of the medical rooms should be parallel as much as possible, and incase that it's not parallel, the suitability is estimated by the NHRA engineers.
- When requesting an expansion in the facility, the following shall be considered:



1. In case of adding or using additional floors, the building must bear these additional loads.
2. Fulfilling the requirements of the government agencies before applying for the final inspection.
3. Considering the safety of patients and the building during the construction operations that are to be completed, with the need to develop an action plan in a way that does not affect patients, visitors, and staff, and the owner/director is responsible for that.
4. Ensure that the facility's electrical loads are suitable for the expansions, and checking the calculations for the mechanical and electrical systems so that it does not affect the facility.

➤ The Final Finishing:

- Considering the handicapped people in the finishing of corridors and entrances.
- Fire-resistant doors should be installed in the electrical and mechanical rooms.
- Considering the direction of the ventilation movement from the laboratory and the department of the infectious disease towards the critical departments.
- Walls or interior walls must be completely built starting from floor up to the ceiling.
- Expansion joints must be applied on the concrete floors.
- Placing medium shading on the windows in the patients' rooms.
- Fix an Air lock on all doors of medical rooms and isolation rooms.
- If glass is used in the interior and exterior doors, it must be break-resistant.
- It is forbidden to place the ventilation beneath the medical rooms doors, and a simple lower opening (Undercut) is allowed.
- It is not allowed to fix a door containing window in the patient examination rooms, except in laboratories.
- When installing a (PVC) floor, a thin concrete layer is placed under it (Screed), considering the inclinations at the corners of the walls.
- An anti-static PVC floor is installed for general medical rooms. As for operating rooms, the intensive care unit, medical laboratories, recovery rooms, endoscopy units, and maternity wards, a Conductive floor (PVC) is used, and this is proven during the inspection tour.
- If epoxy is used in the floors of medical rooms, it is preferable to spray it with antibacterial to prevent its growth.
- Providing clothes hangers in the toilets behind the doors, or on the wall, and fixing an arm support in the toilets of handicapped people.
- The walls and ceilings for the treatment, in patient rooms and operating rooms in the facility should be smooth and coated with (Semi-Gloss Paint) that allows easy cleaning, and friendly to repeated cleaning, and the floors should be designed to be smooth, easy to clean, and slip resistant.
- All electrical connections must be covered and secured; To avoid electrical contact, and to avoid obstruction.
- Providing a pressure detection device (positive or negative) in all public hospitals.

➤ General Requirements for Hospitals:

In addition to the general requirements, clinics, and all medical services and allied services, the following must be available in all hospitals that provide general medical services, for example but not limited to:

Ground floor:

- Determine the position of the ambulance on the map.
- Presence of emergency and urgent care department.
- The existence of a department for outpatient clinics.
- Gas cylinder storage room.
- Backup generator room.
- Medical waste room.

Other floors:

- Department of Surgical Operations.
- Medical waste room in the Operations Department.
- The intensive care unit.
- Central sterilization section.
- Recovery rooms.
- Inpatient wards.
- Obstetrics and Gynecology section.
- Cesarean room.
- Separate sterile areas from others.

One day surgery:

- The requirements of public hospitals are applied, except for what implies to the one-day surgery hospital.



➤ General Requirements for Medical Clinics:

- The area of the examination room should not be less than 9 square meters (3 x 3), in the absence of an examination bed.
- The area of the examination room shall not be less than 12 square meters (4 x 3), in the case of an examination bed, leaving one meter around the perimeter of the bed or dental chair.
- The diameter of the examination room shall not be less than 4 meters for the circular room in the case of an examination bed availability, and not less than 3 meters in the absence of an examination bed.
- Considering the privacy, confidentiality, and safety of patients in the design of all rooms.
- Provide a washbasin made of porcelain, stainless steel, or solid surface materials in all examination rooms.
- The area of the laser room should be from 9 square meters to 12 square meters as a minimum, depending on the type of laser machine used.
- Absence of reflective surfaces (door - floor - walls) in the laser procedure room.
- Installing an air suction fan in Ayurvedic treatment rooms.
- Cupping therapy rooms are considered as treatment room of not less than 9 square meters (3 x 3) if there is a bed only.

➤ Emergency Department Requirements:

- Providing a separate entrance to the emergency department, which is shaded and has a safe ramp, with easy access to the department, and the door opens automatically.
- Providing a private parking for ambulance.
- The emergency department must be located on the ground floor.
- Provide a dedicated ramp for emergency cases at the emergency entrance.
- The width of the corridor should not be less than 3 meters.
- Separation of the ambulance entrance from the general entrance must be considered, so that no disruption will be caused (back door entrance/side entrance).
- Providing an area for beds and wheelchairs.
- The width of the door should not be less than 2 meters.
- Providing a recovery room, and a plastering room with a store.
- Providing a triage room for patients.



- Providing a vital signs room.
- Providing treatment room of not less than 9 square meters (3 x 3) per bed, and this applies to the multi treatment rooms, considering the separation of beds with an anti-bacterial curtain; To preserve patients' privacy.
- Provide a consultation room of not less than 12 square meters (4 x 3).
- Provide an isolation room of no less than 12 square meters (4 x 3) containing a toilet inside, with negative pressure ventilation.
- The presence of a separate area between the isolation room and the rest of the department's, with insulating doors, equipped with a bacteria purifier, stainless steel sinks, and an isolated corridor for wearing protective clothing (Anti-room).
- Providing a toilet for the staff.
- The presence of a nursing station within the department.
- Providing waiting places in the emergency department.
- Providing toilets for men and women, considering the disabled.

➤ Operations Department Requirements:

<u>Surgery room requirements and standards</u>	Minor OT	Major OT
Easy access for patients from the intensive care unit, emergency department, and inpatient wards to the operating department.		•
The presence of a pre-surgery preparation room with one bed for each operating room and a toilet, and it is preferable to separate men from women, with an area of not less than 6 square meters for each bed (2 x 3) square meters.		•
The number of operating rooms is subject to the hospital's operational plan, and it is preferable to provide one operating room for every 25 beds.		•
Separate the sterile area from the non-sterile areas with a red line.	•	•
The presence of an area for receiving and delivering patients at the entrance to the operations department,	•	•

separated by a red line to distinguish the sterile area from the non-sterile area.		
The operation section entrance shall open inward automatically, or by a control panel.		•
The total area of the operating room according to its classification: ⇒	4x4 square meter, minimum	5x6 square meter, minimum
The operating room must be equipped with central air conditioning, allowing the air to be exchanged with 100% pure air, with the ventilation inside the room having a negative pressure.		•
Provision of HEPA filter (positive) compared to adjacent preparation areas, with two air supply outlets, fitted with intact HEPA filters, mounted on or near the ceiling and not directed on the surgical table.		•
Providing an indicator next to the door of the operating room from the outside, showing the amount of pressure inside the room.		•
The room should be curved at all angles.		•
Keeping in mind that the net ceiling height of operating rooms should not be less than 3 meters.	•	•
Having a separate path to enter the clean tools.		•
The presence of a separate path for the exit of dirty materials.		•
The presence of a sterile corridor within the operations department.		•
The presence of a central sterilization area, considering that it is close to the operations department.		•
Providing a nursing station and a medicine store.		•
Presence of an office room for the Chief of Operations.		•
Provide a room for the anesthesiologist.		•
The presence of a dressing room for the medical staff, and a place designated for washing the hands of surgeons and nurses.	•	•

The hand sink must be made of stainless steel.		•
There is a rest room (WC) for doctors.		•
There are recovery rooms, with two beds for each operating room, and they are equipped with all necessary equipment for first aid.		•
The walls and ceilings shall be coated with anti-bacterial and anti-fungal smooth paint: (Gloss paint or semi-gloss paint).	•	•
The floor of the operating room should be covered with vinyl: ⇒	PVC (Anti-static)	PVC (Conductive)
The doors of the operating room should be efficient, covered with melamine or stainless steel in one piece, and free from edges and voids.	•	•
The operating room door must be wide, with a width of at least 2 meters, and open automatically.		•
The operating room should be equipped with a strong, circular, and large light, fixed in the ceiling above the operating table, and it can be moved in all directions as needed, and the lighting should be sufficient, and from different angles, and that the lamps should not reflect any shadow inside the room.		•
The presence of a store for medical devices, and another for medical supplies.		•
Restrooms must be within the department.		•
The presence of a temporary room for medical waste close to the operating rooms, with air conditioning.		•
The door leading from the operating room to the waste transfer corridor should only open outwards.		•
Provision of service rooms (clean materials room) - (dirty materials room).		•
Availability of an electric generator that operates automatically in the event of a power outage in the facility.		•

➤ **Department of Obstetrics:**

- It is preferable that the department's location be near the emergency, operations, and inpatient ward.
- The interior design of the rooms should be done in a way that is comfortable and safe for the patient, considering their needs.
- Consider allocating each delivery bed in a separate room with all its services.
- There should be an operating room within the department, or near it.
- The presence of a sterile corridor for the caesarean section room, and another corridor for the exit of contaminated instruments.
- The area of the delivery room should not be less than 4 x 3 square meters.
- Availability of a calling system for the nurses by the patient.
- Air conditioning of the room with internal control to consider the patient's needs, ensuring that it is not less than 24 degrees Celsius; To ensure the safety of supplies or medicines in the room.
- The room floor should be made with a floor made of vinyl (PVC).
- Providing a prenatal ward within the department.
- Availability of a private toilet in each room in the maternity ward, considering the following of the general requirements of this guide.
- The presence of a caesarean section room with all its services, with an area of not less than 6 x 5 square meters.
- Considering the link between the maternity department and the neonatal department, and the intensive care department.
- Provide a recovery room of not less than 4 x 3 square meters.
- Presence of a nursing station with a medicine room.
- Providing waiting areas for men and women, and public toilets as well.

➤ **Maternity Ward:**

- Providing a nursery ward considering the hospital's capacity.
- Leave a free distance around the nursery of not less than one meter.
- Availability of an infant intensive care unit (NICU) with an area of not less than 3 x 3 square meters for each bed, or 3 x 4 square meters for a single room.
- Providing a room for preparing feeds, breastfeeding, and cleaning newborns.



- Allocating rooms for in-patients, at the rate of two rooms for each delivery room.
- The presence of a nursing station that enables a view of all incubators, with the provision of a medicine room.
- Provide a rest room for doctors and staff.
- Providing a public waiting area and toilets.
- Provide a room for cleaning materials, and another room for dirty materials.

➤ **Dialysis Unit:**

- Considering that the dialysis unit is independent with all its services.
- The dialysis room should not be less than 3 x 3 square meters (single and shared rooms).
- Availability of hand washbasins, at the rate of one for every four beds.
- Considering the position of the bed towards the Qibla (Makkah), according to Islamic law, whenever possible.
- Providing toilets for men and women.
- Presence of a nursing station with a medicine store for the department.
- The presence of an isolation room in the department of not less than 4 x 3 square meters, attached to a toilet, and equipped with negative pressure.
- The presence of a room for the water treatment plant, the area of which is not less than 9 square meters, and its area increases according to the bed capacity.

➤ **Endoscopy Unit:**

- The unit must preferably be near the emergency department, intensive care unit, and the operating section in the hospital.
- The presence of a reception desk at the entrance of the department.
- Consider the separation of sterile areas from others.
- Allocating an area for washing and sanitizing hands and using personal protective equipment.
- That there are two separate doors for entry and exit; To allow clean instruments to be inserted, and to remove used endoscopes at the end of the procedure.
- The area of the endoscopy room should not be less than 4 x 4 square meters.
- The floor of the endoscopy room is made of (PVC).

- The doors and windows are well-made, and completely tight.
- To be equipped with central air conditioning, which allows the exchange of air with 100% pure air, with the necessity of using a HEPA Filter.
- To be connected to the backup generator, so that the alternative current works automatically in case of a power outage.
- Providing a patient preparation room before the operation.
- Provide a room for recovery after the procedure.
- Providing a room for the anesthesiologist.
- Considering the presence of a washing room adjacent to the endoscopy room, with a window between them.
- Consider the presence of a store for sterile instruments within the department connected to the washing room and endoscopy room.
- The presence of a nursing station in the center of the department as much as possible.
- Providing waiting areas for men and women near the department.
- Providing a changing room and toilets.

➤ **Cardiac Unit: -**

▪ **General requirements:**

- The unit consists of three main sections: the cardiac catheterization ward, the cardiac diagnostic unit, and outpatient cardiac clinics.
- Most frequently used examination rooms should be close to the patient reception and waiting area.
- The catheterization ward should be in a separate area, with an area for receiving and waiting for patients.
- It is preferable that the path of patients be separated from the path of staff in case of inpatient treatment.
- The size of the rooms is enough to allow access to the patient in case of cardiac arrest, without the need to move the equipment.

▪ **Outpatient clinics of the cardiac unit:**

- The presence of a reception desk and a waiting area for patients, so that they are easily accessible to all departments, and suitable for disabled people.
- Having a room to meet patients.
- Presence of an area to prepare patients before and after operations.
- Providing a store for files and stationery.
- Presence of rooms designated for medical consultation.
- The presence of an ECG room, with the availability of hand washbasins.
- Presence of a stress measurement room, with an entrance to the changing facilities.
- Presence of echocardiography room.
- Having a room to monitor the Holter device.
- Presence of tilt table test room.
- There is a room for making reports, with offices for staff.
- It is preferable to provide bathrooms for bathing patients after performing therapeutic exercises.
- A changing room for patients.
- Having a room to store equipment, mobile appliances, and resuscitation carts.
- The presence of a room for storing detergents.
- Presence of an entrance to the examination rooms and the electric defibrillator room if there is a heart rhythm disorders clinic.
- Providing an entrance to the ECG room if the consultation rooms are part of the common outpatient clinics area.

▪ **Cardiac catheterization ward:**

- Considering that the cardiac catheterization department is independent with all its services.
- The ward should be close to the hospital's emergency department or provide direct access to the ambulance.
- The ward should be as close as possible to the daily case reception area and the recovery area.
- Presence of a reception and waiting area for patients.
- Having a room to meet patients.

- The existence of a cardiac care unit linked to the catheterization department.
- Having a changing room.
- Presence of a control room within the department.
- The area of the cardiac catheterization room should not be less than 6 x 5 square meters.
- The cleaning room should be outside the catheterization laboratories area.
- Provide a patient pre-catheterization room.
- Provide a room for recovery after the procedure.
- Providing examination clinics for doctors.
- Providing changing rooms and toilets.
- Providing a medical waste room with air conditioning.
- The presence of an electrophysiology laboratory.
- A room for computer equipment.
- Presence of a patient control station.
- Provide an area for storage.
- Having room for reports.
- provide a staff lounge containing a toilet and shower.
- All major operating room requirements are applied to this section.

■ **Cardiac operating room:**

In addition to the general requirements for the major operating room (Annex 11), the following must be considered:

- The area of the cardiac operating room should be at least 49 square meters, horizontally rectangular (7 x 7 m²).
- Provide enough space for additional monitors and supporting devices.
- The space allocated for the anesthesia machine should not be less than one square meter, with enough storage space.
- The space allocated for the double cart shall not be less than 2 square meters.
- The space allocated for the transesophageal echocardiography machine shall not be less than one square meter.
- The space allocated for the rapid infusion machines should not be less than one square meter.



- The area designated for the air duct cart is one square meter.
- The area designated for perfusion equipment should be no less than 6 square meters.
- The presence of suitable support beams in the ceiling to bear the load of the equipment installed in it.
- There are two hangings fixed to the ceiling.
- The presence of a vertical pendant fixed on the ceiling.

➤ In Vitro Fertilization Unit (IVF):

▪ General requirements for second-level facility:

- The presence of a reception desk provided.
- There is a masturbation room to receive the couple, and privacy is taken into consideration. It is equipped with a bed and a bathroom for giving semen, with a connection between the reception hall that is attached to the room and the laboratory.
- There is a room specified for keeping patients' medical files and records, if paper files are used.
- Presence of stores for medical devices which must be separated from laboratories.
- The existence of a separate room for medical waste located away from any other services.
- Availability of an IVF room.
- the availability of another room to return the fetus.
- The existence of an operating theater connected to the fetal laboratory by a door, window, or both.

▪ Operating room requirements:

- It is a room designated only for artificial insemination and fertilization operations, in addition to the requirements stipulated in Appendix No. (11) attached to the NHRA decision, the following conditions must be met in this room:
- The room should be directly connected to the embryo laboratory by a window, door, or both.
- To allocate the room for the retrieval of eggs, and any other operation related to artificial insemination and fertilization only.
- Presence of a fetal return room, which is an independent room connected to the fetal laboratory by a window, door, or both, and the following must be present in it:

Examination room requirements and adequate lighting.

- Ultrasound device (U/S), if necessary.
- Presence of a recovery room, which is a room designed to care for patients and recover them from general or local anesthesia, and it has the equipment stipulated in Appendix No. (11) attached to the NHRA Resolution.
- Presence of fertilization laboratories, so that each laboratory is provided with smoke and fire detectors.
- The availability of a room for short stays.



▪ **Fetal laboratory requirements:**

- It should be far from the patient areas with restricted entry for authorized persons only.
- The walls, surfaces, and floors should be made of materials that prevent the growth of fungi and germs and easy to wash and clean. with no unauthorized organic or chemical cleaners being used in cleaning embryo laboratories.
- It should be equipped with means to regulate and control temperature, humidity, and light, as well as a device to monitor and indicate the positive pressure with a HEPA filter.
- No storage should be allowed inside the laboratory.

▪ **Requirements for the laboratory for freezing gametes and embryos:**

- The laboratory for freezing gametes and embryos must be equipped with negative pressure devices compared to the embryo laboratory and the operating theater.
- Presence of a sterile air pumping station supported by a thermal surface.
- Existence of special stores for preserving frozen embryos, gametes, etc., equipped with devices for measuring the cooling degree that are directly connected to the backup electricity generator.
- The existence of a special store for freezing samples of patients with infectious venereal diseases.
- Presence of a device to indicate and monitor the negative pressure, or the availability of a device for suctioning vapors resulting from the use of liquid nitrogen, used in supplying small stores.

▪ **Requirements for the semen analysis laboratory:**

Taking into consideration the specifications that must be available in the embryo laboratory,

The semen laboratory must be equipped with positive pressure devices that are lower than the embryo laboratory, and higher than the gamete and embryo freezing laboratory. The following semen analysis laboratory must also have:

- 1) A light microscope with viewing lenses of (X100 X40 X20) required for the analysis of fluid and semen.
- 2) A suitable incubation for sperm preparation.
- 3) a centrifuge.

➤ Hair Transplant Unit:

- The area of the room should not be less than 16 square meters (4 x 4 m²).
- The floor should be made of vinyl (PVC) and shall be installed as one piece.
- The presence of a two steps ladder, with a hands' washbasin.
- There should be a red line separating the operating theater from the rest of the facility's corridors.
- A place for the medical staff to change their clothes and for scrubbing.
- The door of the procedure room should be covered with a layer of melamine or stainless steel, in one piece, free of edges and voids.
- The requirements of the minor operating room are applied to this unit.

➤ Laboratory Requirements:

- The laboratory section should be separated with all its services.
- Connect the laboratory department to the emergency department and outpatient clinics in the hospitals.
- The presence of a room specified for sampling, considering the privacy of patients.
- Create a window between the laboratory and sampling area.
- Provide an area for washing the eyes according to the international standards.
- Providing a hand-washing basin, and a place designated for changing clothes before entering the laboratory (applicable according to the classification of the laboratory type).
- The ceilings of the histology and chemical laboratories should be made of aluminum and equipped with a HEPA Filter.
- The ceilings of simple laboratories should be coated with anti-bacterial and anti-fungal paint.
- The space of the laboratory should be well organized and suitable for its function and should not affect the quality of work nor the employees' safety, while providing enough space according to the services provided in the laboratory and the size of the accompanying equipment.
- Existence of three-port electrical sockets (Type G), and a source of electricity for emergency cases.
- The washing basins should be made of stainless steel.
- The water taps should be automatic (applicable according to the lab classification).
- Provide adequate lighting and ventilation for the laboratory.

- Availability of a room for washing tools (applicable according to the lab classification).
- The drainage of the lab sewage water should be separated from the public sanitary drainage.

➤ Radiology Requirements:

- The radiology department should be separated, containing all its services within the department.
- The location of radiology department inside the facility should be within easy reach of the emergency department, operating theater, and outpatient clinics.
- The room should be designed to allow access to the patients' beds and CPR cart.
- The height of the x-ray room must comply with the medical equipment manufacturer's requirements.
- Each x-ray machine must be placed in a separate room for its own services.
- Providing waiting areas and public toilets.
- Presence of a nursing station with file room.
- Allocate a room for recovery after MRI.
- Provide an equipment room adjacent to the MRI room with a separate entrance.
- Availability of a dressing area for patients.
- Availability of a suitable storage area.
- Availability of control room and report writing room.
- Availability of offices for doctors and specialists.
- Provide a distance of at least one meter around all x-ray machines of any kind.
- The walls of the room shall be padded with lead, according to the requirements of the Supreme Council for the Environment.
- The x-ray room must be designed for the x-ray imaging direction to face a free movement area outside, and the thickness of the protective lead material must be doubled if this is not possible.

➤ **Physiotherapy Unit:**

- The physiotherapy Unit/department should be separated containing all its services within the department.
- Providing a reception desk and a waiting area.
- Considering the width of the main door of the facility to accommodate the passage of the wheelchair.
- All doors must be at least 1 meter wide.
- Easy access to the department from the inpatient rooms and from outside the hospital.
- A curtain/partition should be placed between the beds in the common ward.
- The area of the patient's room should not be less than 12 square meters (3 x 4).
- The space allocated for one bed should not be less than 6 square meters (2 x 3) in the common ward.
- Separation of men and women in the physiotherapy rooms.
- Availability of changing rooms, toilets, and shower areas.
- That all rooms are equipped with air conditioners that can be controlled from inside the room.
- Provide enough toilets, equipped for the use of handicapped, and accommodate the entry and exit of the wheelchair.
- The walls of the rooms for the treatment should be coated with anti-bacterial paint and allow for easy cleaning.
- Provide a specified room for storing devices and equipment.
- Providing restrooms and lockers for the belongings of employees.

▪ **If a physiotherapy unit is provided in the outpatient clinics:**

- It must contain a room for examination and another for electrotherapy.
- The area of the electrotherapy room should not be less than 7 square meters (3.5 x 2).
- Containing a room for specific types of examinations, and are equipped with specific equipment for evaluation, such as: neurological and muscular examinations, balance examinations, gait analysis, and others.
- To contain a room for laser treatment, considering the provision of the necessary precautions for the walls, and the safety of specialists and patients.
- To contain work desks for physiotherapists.



- Availability of a room for wax devices, thermal compresses, ice, and towels.

- **If an open therapy hall for exercises is provided:**

- The size of the hall should be commensurate with the devices and tools used for treatment.
- To contain at least one wall completely covered with glass mirrors.
- It should have an easy to clean and disinfect floor designated for exercise halls be.
- Taking into consideration that the exercise hall design should have minimum number of wall obstacles and columns.

- **If hydrotherapy is available:**

- Availability of a swimming pool size commensurate with the number of patients: small (for 5 patients), medium (for 20 patients), or large (for more than 20 patients).
- The presence of a stair with safe steps that reach the bottom of the pool.
- The presence of handles made of stainless steel on all sides of the pool.
- Installing non-slip floors around the perimeter of the swimming pool.
- The depth within the therapeutic pool may vary, but it should not exceed 1.5 meters as a maximum for adults, while in the therapeutic pools for children, the depth must not be less than 0.85 meters.
- Availability of changing rooms for patients containing lockers for the patients' personal belongings.
- The showers before and after treatment should be separate for both genders, not less than 2 for small pools, 4 for medium pools, and 6 for large pools.
- Contain separate toilets for men and women.
- Contain a room for equipment, devices, tools, and exercises for hydrotherapy.
- Contain a separate room for the pump.

➤ Inpatient Ward:

- The number of inpatient beds should match the required capacity compared to the number of operating theaters and services that require a stay in the hospital.
- The area of the private room should not be less than 12 square meters (4 x 3).
- The area allocated for one bed should not be less than 6 square meters (3 x 2) in the shared rooms.
- The width size of the room doors should be not less than 2 meters to facilitate entry to the patient's bed.
- Providing a toilet in each private room, taking into consideration people with handicaps (according to what is shown in the general requirements).
- The bathroom door must open to the outside direction.
- Provide an isolation room with dimensions of not less than 12 square meters (4 x 3), and a private toilet inside, and it should have a separate air conditioning unit equipped with a negative pressure system.
- The door to the isolation room must be double; to allow a small corridor for changing clothes and a sink before entering the room.
- Providing a nursing station close to the rooms, with a medicine storage room.
- Providing a private room within the department for the doctor on duty, the area should not be less than 9 square meters (3x3).
- Providing a waiting area for men and women.
- Provide a room for clean materials and another room for dirty materials.
- The room should be coated with anti-bacterial and easy to clean paint.
- Windows of the rooms should allow sufficient natural light.
- Providing one toilet for every 6 beds in the shared inpatient room.
- Not less than two meters between beds in the shared patient room.
- Patient rooms should be as far as possible from streets and car parking lots, and the wall should prevent the transmission of sound from one room to another, while the bed positioned towards the prayer direction as much as possible; considering patients who are unable to move.

➤ **The Intensive Care Unit (ICU):**

- The department is separated and fully equipped for all its services.
- The location of the unit/section should be near operation theaters and emergencies.
- The area surrounding each bed should be 12 square meters as a minimum.
- Taking into consideration that each bed (CCU) has a separate room of no less than 4 x 4 square meters.
- The bed should be placed in the direction of the prayer as much as possible.
- The number of beds in the intensive care unit be appropriate to the number of hospital beds, so that the ratio is (1:10).
- Availability of stainless-steel hand-washing sinks, one sink for every 4 beds.
- Provide space for two visitors per bed in the unit.
- The presence of a central nursing station that enables all beds to be visible, with the provision of a medicine room.
- Providing a waiting area near the department.
- Provide a rest room for doctors and staff.
- There should be at least one isolation room equipped with a negative pressure system.
- The isolation room should be visible to the nurses (a glass wall or a sealed window).
- Allocating an area (anteroom) for hand washing and using personal protective equipment before entering the isolation room.

➤ **High Dependency Unit (HDU):**

- The area allocated for each bed is 12 square meters (4 x 3).
- The bed should be placed in the direction of the prayer as much as possible.
- Availability of stainless-steel hand basins, one basin for every 4 beds.
- The unit must be visible to nurses (glass wall or sealed window).
- Provide an isolation room belonging to the unit, considering the necessary requirements for it.

➤ Oral and Dental Clinics:

- The area of the clinic should not be less than 12 square meters (4 x 3).
- To leave a free distance of 1 meter around the perimeter of the dental chair.
- The space must be adequate to provide care for patients with disabilities and allow wheelchair access.
- The wall should be insulated for radioactive leakage (considering the requirements of the Supreme Council for the Environment).
- The floor of the room should be smooth and easy to clean, and the walls of the treatment rooms should be coated with anti-bacterial paint that allows for easy cleaning and can withstand repeated cleaning.
- If the clinic is located on the upper floors, elevators must be available.
- Considering the privacy and safety of patients in the design of the rooms, so that the direction of the dental chair is opposite to the door of the clinic.
- A separate room for compressors must be provided in dental facilities, and it is not allowed to place them inside the patients' treatment rooms.

➤ Dental Labs:

- The laboratory must have enough space to perform the necessary functions.
- Allocating separate places for metal smelting, gypsum casting, and others for wax.
- Provide natural and non-natural ventilation by air-conditioning fans and suction fans.
- The floor of the room should be smooth and easy to clean, and the walls of the treatment rooms should be coated with anti-bacterial paint that allows for easy cleaning and can withstand repeated cleaning.
- Provide a special chimney to remove the gases resulting from metal smelting outside the lab.
- Providing a washbasin to wash the eyes inside the laboratory.

➤ **Central Sterile Supply Department (CSSD):**

- Consider linking the CSSD with the operation theaters and the one-day surgery section.
- The department should consist of an area with negative pressure ventilation; to receive and sort dirty items.
- The department should consist of an area with positive pressure ventilation for cleaning and packing tools.
- The department should consist of another area with positive pressure ventilation; to make instrument sterilizers.
- The department should be suitable, which does not cause an obstruction during work in the three previous areas.
- Follow a one-way path for sterilization, and place signs clearly showing this pattern.
- Specifying an area for changing clothes for CSSD technicians.
- To have at least one sink of enough size (for medical centers and clinics).
- Provide an area of not less than (3 x 3) square meters for the sterilization rooms of medical centers and clinics.
- Provide a window/door for the exit of sterile instruments, in addition to the entry door, that's only applicable for medical centers and clinics.
- All requirements for sterilization rooms in medical centers and clinics are included in this appendix.

➤ **Medical Laundry Requirements:**

- The laundry location should be separated containing all its services within its assigned location.
- Provide enough space free from obstructions to accommodate devices with safe movement of workers.
- There is an area for receiving and sorting dirty linen, another area for the clean linen, and a separate area for delivery.
- Consider separating the textile sorting and dirty linen area from the drying, ironing, folding, and packaging area.
- The ventilation of the receiving and sorting area shall be of negative pressure, and the cleaning and packaging area shall be of positive pressure, equipped with pressure rate indicator devices.
- Providing a room for changing clothes between the clean and dirty area while providing toilets for workers.



- Use a washing machine that opens in two directions, placing it between the dirty laundry area and the clean area.
- Providing a room for cleaning materials with an easy-to-use eye wash area.
- The sanitation of chemicals left over from the sink must be separate from the public sanitation, considering the approval of other authorities when necessary.
- Fabric washing areas should have hand hygiene facilities such as: soap, water, paper towels, hand sanitizer, and personal protective equipment available for workers, see appendix no. (40) of resolution no. (2) of 2019.

➤ **Hospital Kitchen:**

- In addition to all the requirements of the Public Health Law and the existence of a license from the concerned department at the Ministry of Health, the following requirements must also be met in the hospital kitchen:
- Availability of clean water sources, adequate lighting, ventilation, and sanitation.
- Doors and windows must be completely sealed and equipped with mesh or similar material that does not allow insects to pass through, and that the external doors must be equipped with air pressure devices that prevent the entry of insects.
- All the walls and floors of the kitchen must be covered with smooth tiles, easy to clean, and water drains with a stopper.
- To provide the kitchen and preparation room with enough high-efficiency air extraction fans.
- All cooking and serving utensils of all types must be easy to clean.
- There should be enough refrigerators to store foodstuffs, considering the appropriate space to avoid overcrowding.
- To provide the kitchen with a separate place for washing plates and cooking utensils in a healthy and safe manner.
- The existence of a room for washing, cutting, preparing and peeling raw food before cooking them, and another room for washing vegetables and fruits that are eaten without cooking. Also, enough number of stainless-steel sinks to be provided with sufficient number of tables with smooth surfaces.
- The presence of a separate store for preserving raw foods.
- Fire extinguishing supplies must be provided in line with the standards of the civil defense department.

➤ **Backup Generator Room:**

- Located in a room isolated from the building, open to the outside, and near the main entrances.
- Provide enough space in the room for easy clearing and cleaning.
- Allocating a tank under the generator for the purpose of limiting the oil spread in case of leakage.
- The floor shall be made of cement and covered with a soft layer (Screed).
- Provide adequate and separate ventilation for the room.
- Providing the necessary fire safety equipment.
- Provide a periodic maintenance form for the generator.
- Basic specifications of the backup generator:
 - The backup generator room should comply with the requirements of the manufactory.
 - The generator should cover the needs of the building without obstructing the core and periodic work.

➤ **Compressed Gas Cylinder Store:**

- The storeroom must be located away from the clinics and patient's site.
- The electrical wiring should be protected (in insulated pipes or inside the wall).
- The store should be dry and free of moisture to save cylinders and safety devices from rust.
- Provide proper ventilation that renews the air 10 times per hour (10times/hrs. 1).

➤ **Chemical Waste Room:**

- The room must be in a separate building, away from public places, and at a safe distance from the borders of neighboring buildings.
- It should consist of one floor only and should not be below ground level.
- The construction materials, including those used in the walls, ceiling, and floor, must be non-flammable and fire-resistant for a period of not less than two hours.
- The floor shall be made of reinforced concrete and finished with a smooth layer (Screed).
- The height of the stair treads in front of the door should not be less than 10cm.
- The store shall be surrounded by a wall of bricks and cement, with a height not less than two meters from the ground.

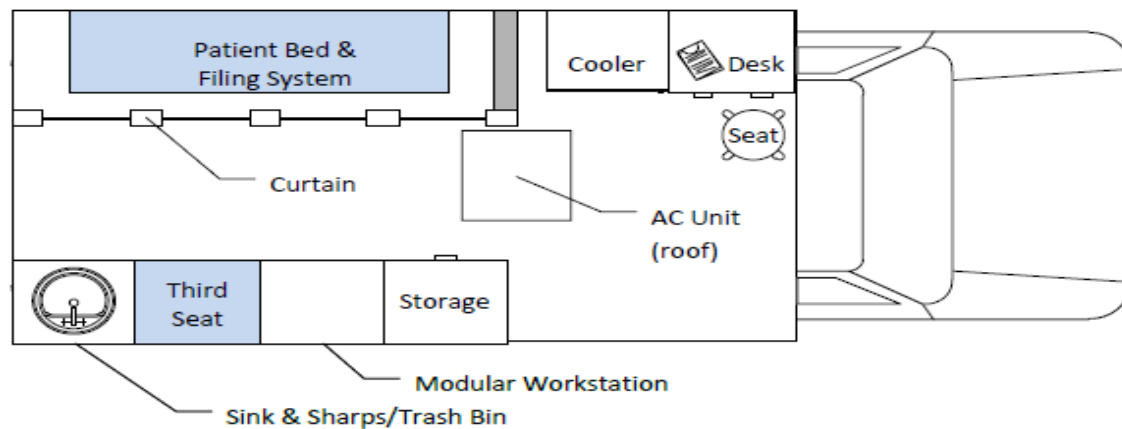


- The electrical installations should be at a height that is not less than two meters from the ground level.
- The electrical installations should not emit heat, and should be covered with a layer of mesh, and these extensions should be separated from the building extensions.
- Provide proper ventilation inside the room according to appropriate standards, ensuring that the indoor air changes from 10 to 12 times per hour.
- The number of exits should not be less than two far apart, so that each of them leads to the outside.
- The width of the exit door from the wall should not be less than 2 meters.

➤ **Mobile Medical Clinics:**

- There must be an area to store medical supplies.
- Presence of a medicine cabinet, and a refrigerator for it.
- The presence of an air conditioning unit inside the mobile clinic.
- Internal lighting system, and external flashlights to light around the clinic.
- Provide a source of fresh water and a hand wash sink.
- Providing an electrical generator for the clinic.
- The water source should be far from the generator.
- The presence of fire extinguishers inside the clinic.
- The presence of a ramp suitable for people with handicap.
- Presence of a specific container for medical waste.
- It is also required to have an office that manages mobile clinics with the following:
 - A refrigerator to store medicines.
 - An administrative office and a room to receive applications.
 - A clean store for keeping medical supplies.
 - A place for medical waste if needed.
 - There is a place to sterilize tools in case of need.

- The following sketch shows an example of mobile clinic: -



Mobile medical clinic model

➤ Pre-employment Check-up:

- The department should be separated.
- A private entrance for this department.
- The department should be close to the x-ray room in the facility.
- The presence of a medical examination room for the department (4 x 3) m².
- There is a specific room for checking vital signs (1.5 x 1.5) m².
- There is a room for blood sample collection (2 x 2) m².
- Providing a private waiting area for the service, accommodate for the capacity: -

➤ Category 1: up to 150 person per day:

1. Facilities specified for preemployment services.
2. Each x-ray machine for 150 people per day.

➤ Category 2: up to 100 person per day:

1. Space of reception minimum (50 m²).
2. Min 2 examination room.
3. Space of x-ray waiting area (35 m²).



- **Category 3:** up to 75 person Per Day
- 1. Space of reception minimum (35 m²).
- 2. Min 1 examination room.
- 3. Space of x-ray waiting area (25 m²).

➤ **Speech and Hearing Center:**

- The center's facilities must be equipped to receive disabled people.
- Preserving patients' privacy must be considered in designing examination rooms.
- The area of the room should not be less than 9 square meters (3 x 3).
- Audiology test rooms must be completely soundproofed.

➤ **Sleep Labs:**

- In addition to the requirements contained in Appendix No. (27) of resolution no. (2) of 2019, the following requirements should be met:
- The area of the examination room should not be less than 12 square meters.
- Availability of a private toilet for patients inside each room.
- It is not allowed to create a common room for patients in this specialty.
- Consider people with handicap in the design of the facility.
- Located away from the sources of noise and disturbances as much as possible.

➤ **Optical Shop:**

- Must provide an area for displaying medical lenses and eyeglasses.
- Eye test room must be provided if the examination service is provided.
- Provision of a porcelain hand basin in the eye test room.
- Install the examination devices in a safe manner and follow the manufacturer's requirements for spaces.
- Presence of periodic preventive maintenance for all medical devices and placing a maintenance label on the device itself.
- Provide a storage area, and not to store inside the eye test room.



➤ **Prosthetics and Orthotics Centers:**

- A ramp must be provided at the center's entrance. Doors and corridors must be wide enough for a wheelchair to pass.
- The lab must have enough space for the technicians to move easily, and sufficient space for the devices and equipment for the professionals to move in a safe manner. Allocated space for each activity to commensurate with the nature and size of tools, machines, materials, number of workers, according to the detailed proposal for the center.
- The examination room should be of sufficient size, the floor should be non-slip, a large mirror should be available, and a corridor with barriers fixed on both sides for balance to help train patients to walk.
- To line the walls and floor of the labs with a smooth layer that is easy to clean, and does not absorb liquids, considering that the floor is non-slip, and the work surfaces must be well fixed and easy to clean.
- Prosthetics and orthotics technicians should have isolated areas from the rest of the laboratory to carry out gypsum molding works and plastic melting.
- The lab should have natural ventilation, through doors, windows, or ceiling openings, and mechanical ventilation, fans, air conditioners, and air extraction devices/fans.
- Availability of eye/body wash areas in case of emergency.
- Availability of changing rooms for patients near each room, and areas for washing hands and body.
- The presence of sufficient electrical sockets and a backup power source in case of emergencies.

➤ **Pharmacy Requirements:**

- The entrance to the pharmacy must be from within the health facility, and not from the outside.
- The design should have enough space to allow movement to facilitate the process of dispensing and preparing medicines.
- Enough space for storage.
- Provide sufficient ventilation and lighting.
- It is preferable that the pharmacy is located on the ground floor for easy access from departments and outpatient clinics.
- The expansion of the pharmacy should be vertical (if it is not possible to provide sufficient stores for medicines) to facilitate movement and easy access.



- This appendix is affiliated to the Pharmacy Department of NHRA, and accordingly all approvals must be taken from the concerned department.

➤ **Cryotherapy Service:**

- Room size: It should not be less than 9 square meters (3 x 3); however, the room can be 6 square meters (3 x 2) if the nitrogen cylinders are stored in a separate room, connected through the wall.
- The design can contain the cylinders in a separate room with the hose extending through the wall:

-

1. A single cryotherapy room is provided to maintain privacy.
2. Provide sensors in the room where the nitrogen cylinders are stored.
3. The room floor must be smooth, easy to clean, and non-slip.
4. The cryotherapy machine must be installed on a completely flat floor.

Ventilation specifications:

1. Considering the provision of a suction fan that suctions the nitrogen out of the building.
2. Fan size: The size should be no less than (30 x 30) cm.
3. Consider not installing the fan directly above the cryotherapy machine. It can be fixed on the wall or in the ceiling away from the therapeutic machine to avoid directing nitrogen into the patient's face.

❖ To review the detailed information of the service, kindly find it in the following link:

(<https://www.nhra.bh/Departments/HCF/>) □ **Appendix No. (49).**

➤ **Hyperbaric Oxygen Therapy:**

➤ General requirements:

- The facility should not be inside an industrial area.
- It is not allowed to provide this service below ground level.
- Single rooms are used in health facilities approved by NHRA.
- The (multiple) rooms are used only in hospitals and clinical trials centers, and preferable to be located on the ground floor.
- The hyperbaric section should be close to the emergency exit, with visual signs to direct patients.



- Considering the fulfillment of all requirements of the Civil Defense Department at the Ministry of Interior – Kingdom of Bahrain.

➤ Hyperbaric oxygen therapy section includes:

- Reception area and public waiting area.
- Consultation/Examination room: at least one private room must be provided for individual consultation and treatment, which includes a hand-washing basin in an area not less than 3 x 4 square meters. Patient care rooms must also be prepared to ensure privacy.
- Providing a changing area for patients: must be provided for outpatients, and should contain a seat, mirror, hangers for hanging patients' clothes, and a locker.
- The presence of a nearby toilet, considering people with handicap.
- The presence of a store for medical equipment inside the department.

• **Hyperbaric oxygen chamber, considering the following:**

1. The area of the single room should not be less than 16 square meters (4 x 4). As for the multi-room, a width of 3 meters is allocated for each chamber, with enough space supporting tools and considering the privacy of each patient.
2. There is a basin for washing hands inside the room.
3. There should be a room for storing gas cylinders safely, and the floor and walls should be covered with a smooth-finished, anti-flammable concrete layer, and it is preferable to make some gaps in the door of the room to avoid accidents of gas leakage.
4. Providing a gas/smoke discharge device after completing each session.
5. There is a room for compressors belonging to the hyperbaric room.
6. Easy access for wheelchairs to the department and avoiding obstacles.
7. Installing a safe non-static floor, free of joints (Antistatic PVC).
8. All materials inside the room must be fire resistant and compatible with its working environment.
9. Windows must be protected from direct exposure to sunlight, using shading, and curtains.
10. A free distance of not less than one meter must be left around any part of the chamber pumped with oxygen, with distance not less than 50 cm for paths that allow access to the valves used in operating the chamber or areas that need cleaning and maintenance.

11. The lighting should be appropriate, considering that it should not be installed directly above the hyperbaric chamber as much as possible.

12. Provide the room with the necessary air conditioning, while staying as far away as possible from heat sources.

➤ **Medical Resort Requirements:**

- The area of the treatment room applies as stated in the medical clinic's appendix.
- A basin for washing hands must be provided inside the treatment rooms.
- The floor of the treatment rooms should be easy to clean and non-slip.
- All treatment rooms must be well ventilated.
- The lighting should be appropriate inside the treatment room, according to the service provided.
- Allocating a place for showering inside the treatment rooms, considering privacy.
- Allocating a trolley to carry the tools inside the treatment room.

➤ The following requirements should also be available:

1. A reception and waiting area separate from the treatment rooms.
2. Providing separate toilets for men and women.
3. Store for towels and tools needed for the facility.
4. A proper place to change clothes or a place to hang clothes inside the treatment room.
5. An internal laundry for towels, blankets, etc., or contracting with an external laundry.

➤ **Addiction Treatment, Rehabilitation, and Rehabilitation Centers for Addicts (Permanent Residence):**

- Presence of a protective room or cabinet for flammable or explosive liquids and materials, according to internationally recognized standards.
- Considering the selection of the facility's location as far away from residential and educational places as possible.
- Availability of a psychiatrist's room with an area of not less than (3 x 3) square meters.
- The existence of a psychologist's room not less than (3 x 3) square meters.
- The existence of a room for a social worker, area measured not less than (3 x 3) square meters.
- Do not put locks on the bathroom doors or even rooms from the inside and consider that the opening of the bathroom doors opens to the outside.
- Installing various safety measures on windows, toilets, and patients' rooms, commensurate with the degree of danger of each of them.
- It is permissible to allocate an area for smoking isolated from places where smoking is prohibited and is tightly closed equipped with special suction fans according to the health requirements issued by the Ministry of Health.
- Separation of male patients' wards from women, and adults from adolescents.
- Availability of a place for recreational treatment, according to the capacity of the center or hospital.
- Stay away as much as possible from sharp walls or cover them with a safe material made of rubber or sponge.
- Not placing fans in facility rooms.
- Do not put lamps hanging from the ceiling, such as chandeliers.
- Stay away from putting or using breakable materials.
- Water pipes, electrical tubes, electricity, and medical devices; all of which must not be subject to tampering or disassembly.
- Ensure that there is no chance of jumping off the building.
- Providing doors for patients' rooms that give staff the possibility to open them from the outside in case of emergency.
- Ensure that there are no door handles from the inside.
- The ceiling of the rooms should be made of solid reinforced concrete.
- The walls of the rooms must be made of concrete bricks and painted with easy-to-clean paint.



- The toilet pipes must be short so that they do not cause personal harm.
- The shower head supply must be inside the wall.
- Availability of a nursing room and the necessary medicines if treatment is provided by a specialist.
- Provide an isolation room for emergency cases covering the walls with sponge or something similar.
- Provide a camera for surveillance inside the isolation room.
- A room for the center supervisor near the inpatient rooms.
- Provide toilets in all patients' rooms.
- The presence of a hall for joint activities within the facility.
- Availability of a room for the security guard at the building entrance.
- Provide an area for sorting and distributing food meals.
