

Living quarters area

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Foreword

The NORSOK standards are developed by the Norwegian petroleum industry to ensure adequate safety, value adding and cost effectiveness for petroleum industry developments and operations. Furthermore, NORSOK standards are, as far as possible, intended to replace oil company specifications and serve as references in the authorities' regulations.

The NORSOK standards are normally based on recognised international standards, adding the provisions deemed necessary to fill the broad needs of the Norwegian petroleum industry. Where relevant, NORSOK standards will be used to provide the Norwegian industry input to the international standardisation process. Subject to development and publication of international standards, the relevant NORSOK standard will be withdrawn.

The NORSOK standards are developed according to the consensus principle generally applicable for most standards work and according to established procedures defined in NORSOK A-001.

The NORSOK standards are prepared and published with support by The Norwegian Oil Industry Association (OLF), The Federation of Norwegian Industry, Norwegian Shipowners' Association and The Petroleum Safety Authority Norway.

NORSOK standards are administered and published by Standards Norway.

Annex A is normative.

Introduction

Main changes from second edition to third edition are in summary:

- general reformatting;
- inclusion of operational experience feedback from recent projects;
- revised requirements for waste handling on LQ container lay-down deck;
- revised to incorporate changes related to the new regulations for protection against injury/disease caused by tobacco smoke;
- information related to helideck deleted from this NORSOK standard and included in new NORSOK C-004.;
- inclusion of new section related to waste handling stations;
- inclusion of new section related to plumbing requirements;
- inclusion of new section related to clean, dry building philosophy ("Rent, tørt bygg");
- inclusion of new section related to "Company specified items";
- Annex A - addition of new data sheet CDS-103 - Check list for model cabin and bathroom.

1 Scope

This NORSOK standard defines the requirements for the architectural design and engineering of the LQ area on offshore installations in the petroleum industry.

This NORSOK standard is primarily applicable to fixed installations. The standard may also be used for mobile installations for which, however, other requirements may be applicable.

2 Normative and informative references

The following standards include provisions and guidelines, which through reference in this text, constitute provisions and guidelines of this NORSOK standard. Latest issue of the references shall be used unless otherwise agreed. Other recognized standards may be used provided it can be shown that they meet or exceed the requirements of the referenced standards.

2.1 Normative references

NORSOK C-002,	<i>Architectural components and equipment</i>
NORSOK C-004,	<i>Helicopter deck on offshore installations</i>
NORSOK H-CR-002,	<i>Piping and plumbing</i>
NORSOK S-001,	<i>Technical Safety</i>
NORSOK S-002,	<i>Working environment</i>
NORSOK T-001,	<i>Telecom systems</i>
NS-INSTA 800,	<i>Cleaning quality – Measuring system for assessment of cleaning quality</i>
RTB Handbook from RIF,	<i>Rent, tørt bygg (clean dry building)</i>

2.2 Informative references

ISO 11064,	<i>Ergonomic Design of Control Centres</i>
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3 Terms, definitions and abbreviations

For the purposes of this NORSOK standard, the following terms, definitions and abbreviations apply.

3.1 Terms and definitions

3.1.1

can

verbal form used for statements of possibility and capability, whether material, physical or casual

3.1.2

may

verbal form used to indicate a course of action permissible within the limits of this NORSOK standard

3.1.3

shall

verbal form used to indicate requirements strictly to be followed in order to conform to this NORSOK standard and from which no deviation is permitted, unless accepted by all involved parties

3.1.4

should

verbal form used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required

3.2 Abbreviations

CCR	central control room
CER	central equipment room
CVC	central vacuum cleaning system (wet type)
ECC	emergency control centre
HTCC	helicopter traffic control center

HVAC	heating, ventilation and air conditioning
LSD	large screen display
LQ	living quarters
MOB	man over-board
PA	public address
TER	telecom equipment room
TV	television
RTB	rent, tørt bygg (clean dry building)
RIF	Association of Consulting Engineers (Rådgivende Ingeniører's Forening)

4 General requirements

This NORSOK standard shall be read in conjunction with NORSOK C-002, where more detailed information is specified with respect to materials, finishes, furniture, equipment, etc.

Other discipline requirements related to the LQ are covered in the respective NORSOK standards and shall be integrated with the architectural design development to achieve a co-ordinated and optimal solution for the LQ area.

5 Living quarters (LQ) area

Any of the following main elements may be included in the LQ area and shall be covered by this NORSOK standard:

- the LQ (accommodation);
- the helicopter deck;
- the helicopter hangar;
- mustering area with life boats and safety equipment;
- CCR;
- TER;
- CER;
- workshop area (inclusive specialised workshops, offices, workers' coffee bar, laboratories, etc.);
- MOB-boat with associated equipment.

6 Living quarters (LQ) area room programme

The LQ area room programme is a project specific document, which systematically outlines the required treatment of rooms/areas and other related data.

The LQ area room programme shall be developed for the LQ area early in the concept phase, based on relevant field- and operational information. It shall be continuously updated throughout all project phases. The following information shall be available prior to the development of the LQ room programme:

- type of installation;
- personnel capacity;
- manning philosophy for all main operational phases;
- catering philosophy;
- CCR philosophy (if applicable);
- environmental data on location;
- design life;
- helicopter type(s) and operational philosophy;
- main evacuation philosophy;
- lifeboat capacity and number;
- workshop area requirements (if applicable);
- waste handling philosophy;
- housekeeping (cleaning) philosophy.

The room programme schedule in Annex A shall be used, where all relevant information shall be included.

7 Arrangement of main facilities in the living quarters (LQ)

7.1 General requirements

7.1.1 General

The LQ shall offer personnel protection and shelter, and shall be located in the safest place on the installation. It shall be protected from hazardous areas by external walls and roofs, which are fire and blast resistant in accordance with results of risk and emergency preparedness analyses.

There shall be at least two exits to escape routes leading in different directions from each level in the LQ with at least one internal stairway linking all levels.

All rooms exceeding 20 m² shall have a minimum of two escape ways mutually located at opposite sides of the room. Doors to this room category shall open outwards from the room. Technical rooms may have hatches.

Exposed elevations facing production and drilling areas shall have a minimum number of doors, windows and other penetrations.

Common toilets, washrooms, change and shower rooms shall be of adequate number, functionally arranged, and conveniently located in relation to workplaces, recreation and catering areas. Common toilets shall have direct access from corridors/circulation areas. Divisions to common toilets shall be continuous from floor to ceiling.

Steam piping, exhaust pipes or similar shall not be routed through personnel accommodation or in the corridors leading to such rooms, except where these are enclosed in appropriate fully welded casings. Steam piping, water pipes, tanks or similar shall be insulated against heat or cold in accordance with recognised standards.

7.1.2 Manning

The LQ shall be dimensioned, designed and equipped, to accommodate and cater for the maximum number of personnel required at any time during the field's various operational phases. This includes start-up, drilling, production, as well as periods of planned production shutdown for modifications and maintenance, etc. In this respect, the operator shall perform necessary analyses in the conceptual phase, in order to verify the required manning level.

The LQ shall be furnished and equipped for persons of both sexes, with separate rooms for women and men as needed.

7.1.3 Noise considerations

The internal areas shall provide possibilities for work, recreation, relaxation, sleep and privacy. Areas requiring quietness shall be particularly protected from noise and vibrations.

Special attention shall be given to the location of the helideck relative to the LQ accommodation areas, with regard to potential noise from helicopters during take off, landing and hovering.

Noisy and vibrating equipment and machinery shall not be located in close proximity to the LQ accommodation areas.

The sound reduction properties of the whole LQ construction, including window and door assemblies, shall be evaluated during the engineering phase.

The objective shall be to ensure and verify that the maximum sound level inside the accommodation areas is in compliance with the specific requirements as stated in NORSOK S-002.

Certification verifying the sound reduction rating of window and door assemblies shall be submitted to the operator/company for acceptance prior to placement of order. It shall be verified that the window and door assemblies tested (including frames) are identical to the actual assemblies planned to be installed.

7.1.4 Windows

The LQ shall provide daylight, through windows, in accommodation and working areas wherever possible. As a minimum, windows shall be provided in dining rooms, main recreation room(s), work places that will be in use for more than 6 h per working day, and the majority of cabins. Windows in cabins shall have a minimum glazed area of 0,6 m², and windows in offices and other work places shall have a minimum glazed area of 0,9 m² where practicable. In recreation areas, larger windows (floor to ceiling) shall be provided, if possible.

7.1.5 Selection of materials

Selection of materials and detailing solutions shall ensure effective cleaning and maintenance.

7.2 Cabin area

7.2.1 Cabins

Minimum area for single cabin, inclusive bathroom unit: 6 m²
Single cabins shall be equipped for one person only.

Minimum area for double cabin, inclusive bathroom unit: 12 m²
Double cabins shall be equipped for a maximum of two persons.

The above areas shall be measured from the centre line of the dividing partition between the cabins, and the internal face of the other perimeter partitions/linings. The areas shall include the bathroom and service void. Where two cabins share a service void, half of the service void area shall be included in each of the cabin areas. Where two cabins share a common entry lobby, half of the entry lobby area shall be included in each of the cabin areas. Where two cabins share a common bathroom, half of the bathroom area shall be included in each of the cabins.

The cabins should be grouped together on dedicated floor levels or in separate corridors (private domain) away from traffic areas and noisy activities (communal domain). Each cabin floor/area should be organised in such a manner that it can be locked up whenever required.

Each cabin type shall be standardised. Prefabricated cabins are strongly recommended in order to satisfy the strict noise reduction requirements. The cabin layout and the furniture arrangement shall be of an ergonomic design, simplifying fabrication, use, cleaning, maintenance and ease of bed linen change. Dust-collecting edges and surfaces shall be avoided.

Each cabin shall be arranged to provide a basis for uninterrupted sleep, rest and quietness. It shall be furnished to include storage for survival suit(s), clothing and personal belongings. It shall provide opportunity for reading, writing and relaxation. Beds in double cabins shall be fitted with bed curtains to enable privacy and protection from light and direct view.

All bathrooms shall be standardised and prefabricated. The size of the bathrooms and showers shall comply with recognised standards. The shower area shall be minimum 0,65 m², and clearly separated from the rest of the bathroom area. Sufficient space shall be provided in front of the toilet and washbasin. The minimum width through the centre of the shower area shall be 700 mm. Further requirements for prefabricated bathroom units are given in NORSOK C-002.

Every bed shall be placed on the floor to ease use and change of bed linen. The mattress dimensions shall be minimum 800 mm x 2100 mm. The top of the mattress shall be 550 mm to 600 mm above the floor. In double cabins, one of the beds may be of a sofa-bed type, provided it is to be used during shorter, peak manning intervals only. In this case special attention shall be given to comfort, mechanical function and ease of bed linen change.

All cabins shall have unobstructed access to a corridor leading to a minimum of two independent emergency exits.

All technical installations, switches, sockets etc. shall be neatly designed and installed as functionally appropriate. Technical penetrations in adjoining cabin walls shall be kept to a minimum to avoid weakening the noise insulation properties of the walls.

Each cabin should be equipped with sockets for telephone, computer and hotel type TV with integrated radio, entertainment equipment, alarm clock, etc. A solid, flexible support bracket shall be provided for the TV.

A full size model cabin shall be provided for one of the cabin types, complete with furniture, equipment, bathroom, service shaft and full width section of the adjacent corridor. The model shall be suitable for function testing with respect to ventilation, light intensity, noise transmission, room acoustic, etc. The model shall be constructed at an early project stage with the use of real materials, so that design, detailing, elements, materials, colours etc. can be studied and verified. The project schedule and scope shall be suitably flexible to allow for adjustments to the model, ensuring it is always up to date and can be used as a reference for the cabins to be installed onboard.

Refer to Annex A, data sheet CDS-103.

7.2.2 Lockers

A minimum of three lockable leave lockers, for storage of private articles during the onshore period, shall be provided for each bed on the installation unless specified otherwise by operator/company. Any leave lockers located in corridors shall be securely fixed and recessed in corridor walls. The front shall be mounted flush with the surrounding walls.

Personal work lockers (for working clothes) shall be provided in accordance with operator/company requirements.

Further requirements for lockers are specified in NORSOK C-002.

7.3 Recreation area

7.3.1 General

The total recreation area shall not be less than 1,5 m² per bed. A sufficient number of recreation rooms shall be provided to satisfy the employees' needs for recreation, rest, social and physical activities.

Recreation areas should, where appropriate, be grouped together to reduce isolation in periods with low manning. Glazed partitions and doors should be used, where relevant, to improve or promote a good psychosocial environment.

They shall be provided with elements and finishes of high aesthetic and durable quality that are easy to clean. The atmosphere shall be attractive, promoting social relationships and human comfort.

Loose furniture shall be light in weight and easy to handle, to ease cleaning. Further requirements to furniture are given in NORSOK C-002.

7.3.2 Main lounge/coffee bar

The main lounge/coffee bar should be located adjacent to the dining room with direct access between the two rooms, facilitating multipurpose use. Direct access to the lounge/bar shall also be provided from the main traffic area.

One area/room shall provide comfortable space for at least 50 % of the personnel for which the LQ is designed. This can be achieved by combining sub-divided areas into one larger area.

Where subdivisions of the area are required, glazed partitions and doors shall be used.

7.3.3 TV-rooms, activity room, library, kiosk, etc.

A separate TV-room/area shall be provided near the main lounge.

Activity room(s), library, quiet area, kiosk, music room, chapel, study etc., may also be provided in accordance with operator/company requirements.

The recommended location for the kiosk is adjacent to the dispatch office.

7.3.4 Multipurpose room/area

The multipurpose room/area may be used for a wide range of activities, all in accordance with operator/company requirements, e.g.:

- lectures and briefings;
- films and videos;
- entertainment;
- games;
- aerobics;
- emergency hospital.

If ball sports are required, a separate room shall be provided.

The multipurpose room/area may be combined with other rooms/areas.

A comfortable, safe and flexible/removable seating arrangement should be provided. A stage/podium may be provided with stage curtains, a white screen and adjustable spotlights. The room shall be provided with outlets for TV and audiovisual equipment. The main light fittings in the room shall have dimming facilities.

Selection and layout of flexible lighting solutions shall be carefully co-ordinated in order to satisfy the functional and aesthetical requirements for the various activities carried out in this room/area.

Special attention shall be paid to airborne and impact borne sound insulation in order to prevent noise transmission to adjoining rooms.

Suitable storage rooms shall be provided.

7.3.5 Exercise room

An exercise room with various up-to-date training equipment shall be provided, with additional space for group exercises, e.g. aerobics, spinning, etc. The room shall be provided with outlets for TV and audiovisual equipment. This room may be combined with other rooms/areas, if appropriate. All major equipment shall be securely fixed. When sufficient area and volume is available, a larger dedicated exercise room or sports hall may be provided, allowing for a variety of sports.

Special precaution shall be taken to prevent noise transmission to adjoining rooms. Shock-absorbing floor shall be installed. Wall and ceiling systems in exercise areas shall have suitable fixing and detailing to withstand physical and mechanical impact, and prevent injuries caused by loosening of panels or sharp edges. Relevant parts of walls, ceilings and any windows shall be protected with suitable nets or mesh if the room is to be used for ball games.

If tread mills (running machines) are used, they should be located in a separate room/area, or in a separate alcove or recess, which is suitably insulated to satisfy the sound requirements.

Changing rooms with shower(s), wash hand-basin(s) and toilet(s) shall be provided for both sexes, and be located adjacent to the exercise room. Saunas and solarium shall be provided in accordance with operator/company requirements. Saunas shall be detailed to avoid uncontrolled release of moisture into adjacent wall and ceiling voids. Saunas shall have slopes in the floor to dissipate water efficiently. Adjacent showers shall have individual drains.

7.3.6 Sports hall

When sufficient area and volume is available, a larger dedicated Sports Hall may be provided, allowing for a variety of ball sports.

The sports hall for ball play shall have a free height of minimum 4 500 mm.

Ceiling mounted equipment and ceiling systems shall be protected by a heavy duty netting above the ball playing area. Partitions and doors shall be suitably reinforced.

The floor system shall be suitable for ball play, i.e. shock absorbing.

Perforated surfaces and sound absorbing elements shall be provided as required.

Quiet areas shall not be located above, below or adjacent to the sports hall.

7.3.7 Telephones

Telephones for private and undisturbed conversation to shore shall be provided. These should be located adjacent to the main recreation room/dining room, the "sky lobby" and cabins as required.

Designated space shall be provided for telephone directories, unless electronic directories are used.

7.3.8 Miscellaneous rooms

Toilets and various storage rooms shall be provided as required adjacent to the recreation area.

7.4 Dining room

The dining room shall be on the same level as the kitchen (galley) and serving area. Interior elements and finishes shall be of high aesthetic and durable quality, which are easy to clean. The dining room shall be of adequate capacity and size to allow the personnel to sit comfortably while having their meals. The area provided shall be based on a minimum of 1,2 m² per person for approximately 50 % of the personnel for which the LQ is dimensioned.

Tables (and occasionally chairs) may need to be fixed to decks on floating installations, or if specified by the operator/company.

7.5 Living quarters (LQ) container lay-down deck

7.5.1 General

The LQ container lay-down deck shall be located on the same level as the provision stores and the general goods handling area. It shall be suitably sized to enable safe handling, storage and unloading of the total number of full and empty containers required to serve the LQ at any one time, without the need for unnecessary intermediate lifting operations.

It shall also provide enough space to allow a fully loaded electrical pallet truck to turn safely in front of the container un-loading ramp.

Depths of less than 7 000 mm shall be subject to formal approval by the project. Sizing and arrangement of the LQ container lay-down deck, with associated justification, shall be formally approved by the operator/company.

The food supplies will be shipped in standard containers in accordance with operator/company requirements.

Sizing of the transport route from the lay-down deck to the provision stores shall be based on the use of Euro-pallets. Threshold design in the transport routes shall allow for easy passage of trolleys.

For hygienic reasons, separate access shall be provided from the respective lay-down deck to the provision stores and to the general goods handling area/main store, i.e. goods to the main store shall not be transported through the provision store and vice versa.

A parking bay with power outlet for hand operated truck(s) and trolleys shall be provided. The wheels of trolleys or trucks shall be of a type, design and hardness that will not cause damage to the kitchen area floor finishes.

The lay-down deck shall be provided with electrical sockets (suitable for freezer/cold storage containers), heat traced freshwater outlet(s) with hose(s), compressed air outlets to project specification, and a sufficient number of drains if the deck is not self-draining.

The lay-down perimeter shall have mechanical protection/ bumpers to withstand container impact, detailed to minimise transmittance of noise and vibrations into the LQ. Impact absorbing materials shall be installed at the lay down area.

Arrangement of light fittings shall be carefully planned to provide optimal working conditions at night.

All technical installations shall be protected.

The lay-down deck shall be clearly marked with the maximum safe load bearing capacity.

Weather protection for staff (e.g. roofs, walls, windshield etc.) shall be provided in traffic areas, as appropriate.

Heat tracing of the lay-down deck/floor area shall be provided as required.

7.5.2 Waste handling on the LQ container lay-down deck

Waste compactor(s)/container(s) shall have a dedicated location in conjunction with the lay-down deck.

Separate disposal of the following waste shall be provided unless specified otherwise following the results of a dedicated waste handling analysis for the installation:

- hard plastic;
- soft plastic;
- paper/cardboard;
- metal + glass;
- textiles;
- aluminium cans;
- waste food;
- light bulbs/tubes;
- miscellaneous refuse;
- necessary hazardous waste fractions.

The waste compactor/container area should be in a weather-protected enclosure (roof and walls), providing safe and easy trolley access with no deck obstructions. The access route from the internal kitchen area to the external compactor area shall be weather protected. The layout, arrangement and type of equipment shall be in accordance with operator/company requirements.

The size of the waste compactor(s)/container(s) shall be sufficient to handle the volume of waste envisaged for the installation, and they shall be arranged for safe and ergonomic use.

Floating installations shall be provided with a "peck and hale" type fixing/strapping arrangement for containers and other relevant equipment.

7.6 Kitchen (galley) with provisions room

7.6.1 General

The kitchen area shall be of sufficient size, and have the appropriate equipment, for the preparation of hot and cold food. Sizing and capacities shall be in accordance with the catering philosophy. Execution and arrangement shall comply with applicable governing body regulations relating to hygiene and the preparation of food.

The kitchen layout shall provide optimal working conditions within each functional area and in the kitchen as a whole. Production flow, material handling, traffic patterns, hygiene, working environment and safety shall be given special attention in order to achieve operational efficiency.

Internal flow patterns shall prevent cross-contamination of food from the raw to finished stage, and shall prevent contamination from handling of waste. The relationships between various areas shall promote co-operation and efficiency. The kitchen area shall be as open as possible. It shall be planned in detail, showing the position of all major furniture, equipment and fittings.

All furniture and equipment shall be functionally and ergonomically suited, safe to operate and easy to clean and maintain.

Kitchen equipment shall in general be wall or console mounted. The consoles are specially designed floor mounted supports for major kitchen equipment, with concealed space for ducts, cables and pipes, which simplifies cleaning under and around the equipment. Plinths or special foundation may be considered if the use of consoles is found to be impractical or impossible.

All water taps, switches, etc. shall be functionally located and within easy reach.

Workbenches, frying pans and oven range shall be easily height adjustable. Benches and shelves shall have storm edges, if required. Hand washbasins shall be installed adjacent to main work-stations.

No equipment shall be stored higher than 1 500 mm above the floor.

All walls, partitions and ceilings shall be in stainless steel, or other suitable non-corrosive material in accordance with project requirements. Sound absorption and noise control shall be given special attention, particularly in the scullery and the scrub.

Arrangement of all light fittings shall be carefully planned for each workstation to provide acceptable conditions with respect to type, position, light intensity, reduction of glare and reflections from shiny surfaces. The light fittings shall be splash proof and suitable for use in the kitchen.

Further requirements for lighting are specified in 9.6.

The kitchen floor finish shall be of a non-slip type and easy to clean. The floor surface will be hosed down regularly with large amounts of hot water. Hot water of 55 °C shall be available for this purpose. For hygienic reasons, some surfaces will be hosed down with hot water of 80 °C. A local steamer unit on a trolley may be used for this purpose. It shall have a dedicated parking space.

Floors shall have suitable falls to enable efficient drainage. Large floor drains with cleanable soil traps shall be located close to certain types of equipment, e.g. tiltable frying pans and boiling kettles. For floating installations, the tiltable equipment shall have especially oversized floor drains below, to minimise the risk for scalding. All floor drains shall have non-slip stainless steel grating, which shall be detailed to allow for easy and frequent removal for cleaning. Large gratings shall be sub-divided into small sections for easy handling. Details of the floor drain and grating arrangement shall be presented to the operator/company for approval.

All walls shall be splash proof to a height of at least 1 500 mm above the floor, and have coved skirting detailing. Noise absorbing surfaces shall be incorporated in walls and ceilings as required to reduce reverberation times, with detailing to allow for a high level of hygiene. A sufficient number of retractable hot water hose reels with soap dispensers shall be provided in the kitchen area, so that all surfaces are reachable with a hose of maximum 10 m length.

All transport routes and doors shall be adequately dimensioned.

7.6.2 Provision stores

The provision stores shall be of a prefabricated type, unless specified otherwise by operator/company. They shall include all required systems and services, suitable for use on the installation. The stores shall consist of

- cold storage rooms,
- freezer rooms.

The dry storage room will normally be built of a standard partition system, and have normal ventilation.

The provision stores shall have sufficient storage capacity in accordance with operational and hygiene requirements. They shall operate within the specified temperature limits.

The provision stores shall be grouped together between the lay-down deck and the kitchen area, providing good access to the main functional areas in the kitchen. The number of rooms/compartments shall be in accordance with the regulations and any special operational requirements provided.

A sufficient number of drainage points, or a continuous drain, shall be provided outside the provision rooms.

A local, sloped built-up floor (ramp) may be provided outside the entrance to the room in the same material as used in the rest of the traffic area.

Guard-rails shall be provided in the transport routes to protect walls from damage by trucks and trolleys. They shall be positioned at 0,2 m, 0,7 m and 1,0 m from the floor.

Freezing and cooling machinery systems shall be located on skids in a separate room or in the HVAC plant room. They shall be arranged to allow for safe and effective periodic maintenance access. The machinery system shall be complete in all respect, with necessary back-up systems. The control panel shall be positioned for easy access. A dedicated switchboard and a floor drain shall be provided in conjunction with the compressors.

7.6.3 Preparation area

The preparation room/area shall be located adjacent to the provision stores and the hot food area. The floor shall be provided with a drain, equal in size to approximately half the length of the working bench.

A thawing room/cabinet(s) shall be provided adjacent to the preparation area.

7.6.4 Bakery

The bakery shall be located close to the cold food area and freezer and cold storage rooms. On smaller installations, shared use of equipment in the hot food area may be practical, e.g. mixer, combi-steamer etc. An air extraction hood shall be provided over the baking table with a cleanable flour filter, recessed lighting etc. An air extract hood (with cleanable filter) is also required above the baking oven or combi-steamer, to remove steam, fumes and heat when the door is opened. Use of prefabricated baking products ("bake-off" products) may reduce and simplify the bakery function. Any reduction shall be strictly in accordance with the operational requirements.

7.6.5 Hot food area

All cooking, frying, grilling etc. will take place in the hot food area. The products to be cooked are transported from the provision rooms and the preparation area, and then after cooking to the serving area. Pots and pans, etc. need frequent washing in the scrub. The hot food area shall therefore be located to provide good access to these areas.

On larger installations, it is often practical to arrange the hot food area as an island unit in the room. In such cases, a circulation zone of approximately 1 300 mm to 1 400 mm shall be provided around the island unit.

The kitchen extract hood(s) shall be installed above the cooking, steaming and frying equipment. In addition to air extract function, the hood shall be provided with an automatic cleaning system, flame guard filters, manually actuated fire-extinguishing system, drainage pipes, recessed lighting with removable transparent cover-plates, etc.

It is recommended to install adjustable local cold air supply at a suitable elevation to improve working conditions during longer manned periods.

Location of the following items shall be given due attention when planning the hot food area:

- utensils for regular use;
- shelves for pots and pans;
- floor drains;
- rubbish disposal bin(s);
- water taps and electrical sockets;
- waste water sink;
- hand wash basin(s).

7.6.6 Cold food area

The cold food area shall have good access to provision rooms, hot food area, bakery and serving area.

A height adjustable workbench for cold food preparation, with built-in fridges, over-shelf, sink and other accessories shall be provided as required. A food mixer may be shared with the hot food area. A large fridge with integral trays on a trolley shall be located near the workbench.

7.6.7 Serving area

The serving area shall be based on a self-service/free flow principle. It shall be located near the hot and cold food areas. The layout shall be arranged to avoid queues and to display food and equipment in a logical and delicate sequence whilst maintaining an attractive room atmosphere. The serving sequence shall be carefully arranged with separate divisions to promote healthy selection of food.

Lighting design shall be given due attention. Interior elements and finishes shall be of a high aesthetic and durable quality and easy to clean. A separate chilled table for cold food and desserts may be arranged as an "island" in the serving area with integral tray and plate dispensers.

7.6.8 Scrub

The scrub shall be located adjacent to the bakery and the hot and cold food area. All pots, pans, utensils etc. used in the kitchen will be washed here.

A height adjustable pot-washing bench with spray-hose, large sink(s), pistol-washing unit (37 °C to 55 °C), shelves etc., shall be installed. A noise insulated pot-washing machine shall be provided. The machine shall be arranged to allow efficient loading access, with space for adjacent clean and dirty utensil trolleys. Service access shall be provided without moving the machine.

The machine should be located in a separate room to reduce noise emittance to the kitchen area. The direct air extract system from the pot-washing machine shall have a condenser unit unless specified otherwise by operator/company, and have sufficient capacity to maintain comfort temperature limits.

The floor shall be provided with a drain, equal in size to approximately half the length of the workbench.

7.6.9 Scullery

The scullery shall be located in a separate room of appropriate size for operation, storage and maintenance. It should have direct easy access from the kitchen. It shall also be conveniently placed for diners returning and emptying their trays, dishes and cutlery to the scullery delivery point (hatch).

The scullery door shall provide easy access, simple use and have the necessary sound reduction characteristics. The door shall have a vision panel.

The hatch shall have sufficient width to accommodate the required number of standard baskets (500 mm x 500 mm) for dirty dishes, glasses, cups, cutlery, trays and rubbish disposal. Space for minimum six baskets shall be provided. Hatch height shall minimise machine noise exposure to diners, while allowing space for convenient handling of trays and utensils. The baskets shall be placed on the same level as the rinsing station and the feeder line to the dishwashing machine. A sloped tray with tempered water and drain point shall be located underneath the baskets.

A macerator for waste food disposal shall be provided. If possible the machine shall be located at the deck below.

The direct air extract system from the dishwasher machine shall have a condenser unit unless specified otherwise by operator/company. Ventilation extract from the scullery shall be sufficient to maintain comfort temperature limits during continuous machine operation. The machine shall be of an automatic, self-loading "tunnel" type unless specified otherwise by operator/company. There shall be sufficient space for baskets before and after the washing cycle to achieve effective manning of the scullery.

Depending on the layout arrangement, a sound absorbent screen or half-wall may be required between the hatch and the dining area.

Trolley(s) for empty baskets should be placed near the hatch. Alternatively the baskets may be placed on their sides above the hatch. Clean crockery and cutlery etc., shall be brought on trolleys and dispenser units to the serving area.

In order to meet the area noise requirement stated in NORSOK S-002, special attention shall be paid to reducing the equipment noise from the dishwashing machine, and to the acoustic treatment of the room. The noise emitted from the dishwashing machine shall be as low as possible, normally less than 60 dB, in order to meet the area noise requirement of the room.

7.6.10 Kitchen utensil store

A small storage room should be provided for spares, kitchen utensils and equipment that is not in daily use.

7.6.11 Cleaner's store

A cleaner's store with broom cabinet, shelves, sink with hot and cold water, shall be provided in the kitchen area.

7.6.12 Rest room for kitchen staff

A rest room for kitchen staff shall be provided adjacent to the staff entrance to the kitchen. Toilets and a small wardrobe shall be provided near this room.

7.6.13 Office for catering supervisor

An office with a minimum area of 6 m² shall be provided for the catering supervisor. It should be located near the staff entrance to the kitchen and be provided with a window giving daylight.

7.7 Coffee bars

There shall be a coffee bar in the main lounge area and a coffee bar adjacent to the administration centre/workshop area and CCR area.

The area of the coffee bar adjacent to the administration centre/workshop area shall be based on a minimum of 1,2 m² per person for at least 30 % of the personnel for which the installation is dimensioned.

For complexes where several installations may be connected by bridges, the above coffee bar areas may be distributed to suit operator/company requirements.

Additional coffee bars may be located in other areas in accordance with operator/company requirements, e.g. drilling areas.

The coffee bars shall contain a bench with sink and hot/cold water, coffee/tea-water machine, juice dispenser, storage cupboards/drawers, waste bins and a large refrigerator.

A dishwashing machine, in a noise reducing enclosure shall be provided in conjunction with the main lounge coffee bar.

7.8 Smoking rooms

Separate rooms for smokers may be provided in connection with the recreation/main lounge area and the administration/workshop/CCR area. The rooms shall be separated from other areas by partitions and doors. Doors from smoking rooms should not open directly into smoke free common areas/rooms. Realistic seating capacity and good ventilation shall be provided.

It shall not be possible for smoke to enter common areas, or areas where food and drink are served or consumed.

The LQ area shall be arranged to comply with the requirements of the current governing body regulations for protection against injury/disease caused by tobacco smoke.

7.9 Laundry

The laundry shall be equipped for washing and preparation of clothes, and for catering for all required washing onboard, in accordance with the operating philosophy for the installation.

The laundry shall be located with good access to lift(s) and the internal goods handling area/LQ laydown deck. Clear opening width of doors in transport routes for container trolleys shall be minimum 900 mm to allow for machine replacement.

The laundry shall be arranged with separate rooms or areas for receiving, soaking, washing, handling, drying and storage of laundry items, and for collection and storage of trolleys. Access and workflow shall be arranged in an optimal and logical sequence between the workstations, providing a hygienic, safe and good working environment. The clean/dirty handling sequence shall be separated as far as possible. An easily height adjustable workbench shall be provided in the handling area.

Washing machines and tumbler dryers shall be located in a separate room. The door to the room shall have a large vision panel. Large stainless steel floor drains shall be provided as required. Floors shall have suitable falls to allow efficient water dissipation.

The washing machines and tumbler dryers shall be provided with anti-vibration systems, or be mounted on "floating" foundations to avoid structural borne noise and vibrations. Good service access for cleaning, inspection and maintenance shall be provided around the washing machines and the tumbler dryers. An obstruction-free service access of minimum 900 mm width should be provided behind the machines. Power, water and automatic detergent supply should be provided neatly from above, in a manner that does not obstruct the service access. The washing machine drain gully shall have capacity for simultaneous emptying of all machines, and shall provide easy access for frequent removal of lint from drain filter baskets.

Washing machines and tumbler dryers shall be of the front-loading type, where the bottom edge of the opening shall be 800 mm to 1 000 mm above the floor level. Relevant trolleys shall be adjusted to this height. Small type tumble dryers may be located on top of washing machines, in accordance with operator/company requirements.

The washing machines shall be provided with automatic washing liquid and fabric softener dispensers. The filler containers shall be maximum 1 500 mm above the floor level, on stainless steel shelves or brackets.

Tumbler dryers shall be provided with a separate and direct air extraction system with a cleanable filter and, unless specified otherwise by operator/company, a condenser unit. An instrument for measuring pressure drop over the filter section shall be provided. Tumble dryer lint filter cabinets shall be arranged to allow frequent and efficient access for cleaning.

Where machines are installed facing each other, a minimum free space of 1 500 mm should be provided between the machines.

Storage space shall be provided for the required number of external/internal transport trolleys.

Laundry flooring shall be of a non-slip type, e.g. ceramic tiles, or similar.

All shelves shall be in stainless steel or aluminium with a load bearing capacity of minimum 1 500 N per running metre.

7.10 Linen store

A linen store shall be provided on all cabin levels. It shall be furnished with a sufficient number of shelves with a minimum depth of 520 mm and a load bearing capacity of 1 500 N per running metre of shelf. If linen trolleys are specified by the operator/company, the linen store shall be suitably sized for storage of standard linen trolleys (length x width x height = 1 000 mm x 620 mm x 1 450 mm).

The linen stores shall be arranged to minimise disturbance to cabin occupants from trolley movements.

7.11 Cleaner's store

A cleaner's store shall be provided on all main floor levels in the LQ, for storage of all cleaning equipment required to clean and maintain the LQ on a regular basis. The room shall have sufficient shelf capacity, tool holders, cold and hot water, utility sink with a hinged grid (height in accordance with NORSOK S-002), sufficient vertical distance to the tap for filling buckets, and a filter/strainer at outlet. A parking space shall be provided for the cleaning trolley.

The room shall be equipped with stainless steel shelves, and storage space for CVC hoses (if applicable), etc.

7.12 Living quarters (LQ) main store

The LQ main store shall be combined with the internal goods handling area and located near the LQ container deck, or in another suitable location. This room shall be dimensioned to contain all spares and general supplies required to operate and maintain the LQ. Storage space for laundry trolleys to be despatched onshore shall also be provided in the area, if this is not provided in the laundry area. All shelves and racks shall be 520 mm deep and have a load bearing capacity of between 1 500 N and 2 000 N per running metre of shelf, suitable for the type of installation considered.

7.13 Administration area

The administration area for the entire field installation shall be placed inside the LQ or, on single installations, adjacent to the LQ. Administration centres on installations that are permanently connected by bridge to other installations may be located where safely and functionally appropriate.

All office spaces should be grouped together to promote co-operation and effective use of common facilities. However, certain office spaces may be required adjacent to working areas.

The administration area should have good access to control centres, main workshops and external traffic routes, based on studies of organisation and work processes.

The administration area shall be fitted with windows, as described in general requirements. Individual offices shall be dimensioned as required, but standardisation is recommended. No single office shall have a net floor area of less than 6 m². Smaller areas per workplace may be provided for landscape solutions. Offices may be arranged as a combination of single offices and open office landscape with workstations.

The layout and usage of the administration area shall cater for the various needs of the operational personnel and contractors. This includes access to personal computers etc.

Each office/workstation shall have access to a multi-cable duct system with outlets for data, telephone, electricity, etc. Offices and workstations shall be arranged with due consideration to potential noise from adjacent areas, e.g. from the use of telephones, printers and telefax machines.

Loose furniture shall be light in weight and easy to handle, to ease cleaning.

All items shall be of an ergonomic design and shall be comfortable to use. Office chairs and office desks shall be easily height adjustable. Further requirements for furniture are given in NORSOK C-002.

Heating and ventilation for the offices shall be arranged to avoid discomfort to personnel sitting at the normal desk/workstation position.

The administration area shall have necessary supporting facilities, e.g. conference room(s), archive, copy/printer room and store for stationary. Space for large type copying machines, telefax machines, data printers and plotters, shall be provided near offices and other applicable areas. A check shall be performed against any operator standardisation requirements. Adjacent paper storage shall be provided.

If applicable, the conference room shall be equipped with a ceiling mounted projector and video conference equipment, and an interactive whiteboard (smartboard).

The following shall be provided in accordance with operator/company requirements:

- a document centre located near the administration centre or the control centres;
- offices for employee's representative and Union(s) near the main LQ access way.

If temporary offices are required during the initial start-up phase etc., they shall be carefully planned, particularly where such offices are to be located in areas designated for other purposes. A sufficient number of cable connection points (e.g. electrical, telecom, personal computer, etc.) shall be preinstalled in the ceiling in these areas, based on an optimal workstation layout study.

7.14 Offshore collaboration room

An offshore collaboration room shall be provided as required by operator/company. The room should satisfy the following general functional requirements:

- it shall provide communication with a corresponding room located onshore;
- It shall be sized for between four and ten conference participants or as required by operator/company;
- desks and seating should typically be arranged in a "V" shape providing optimum visual camera coverage and communication with onshore. The resultant video transmission quality shall be sufficient to clearly show the facial expressions of the participants;
- the display/projection wall shall be minimum 3,5 m wide to allow space for two LSDs and a video camera;

- the LSD/projection wall shall provide separate images of the participants in the corresponding onshore room, and various other displays such as closed circuit TV coverage, CCR display images, documentation etc.;
- if overhead projectors are used, the floor to ceiling height shall be adjusted accordingly;
- the acoustic properties of the room and equipment shall provide clear intelligibility of speech;
- a separate room should be provided to house the supporting equipment; computers, printers etc.;
- the room shall have a raised access floor;
- there shall be a combination of direct and indirect lighting with individual dimmer controls. The offshore collaboration room lighting equipment and arrangement shall be subject to an independent lighting verification performed by a qualified specialist;
- materials shall have low reflectance characteristics;
- finishes and colours shall be coordinated with the lighting design to obtain optimal video image quality;
- emergency power supply to the room shall be in accordance with operator/company requirements;
- the room shall be equipped with an indicator light placed outside the room which is activated automatically when the video conference mode is switched on.

7.15 Central control room (CCR)/Telecommunication centre/Maritime control room

The CCR shall be located either inside or adjacent to the LQ on single installations, in accordance with operational philosophy and safety aspects. CCRs on installations that are permanently connected by bridge to other installations may be located where safely and functionally appropriate. The CCR shall be located in a non-classified area and be well protected against all dimensioning hazards. It shall have good access to supporting facilities, production areas, emergency escape routes and lifeboat stations. It shall be adequately protected from noise and from vibration sources, e.g. HVAC units, generators and compressors.

There shall not be any piping for liquids going through the room. This includes above the ceilings and below raised access floors.

The room shall be provided with daylight. The windows should be located in the walls at the side of the control desk, not in front or at the back, since the daylight shall not cause any glare or reflections in the screens.

If positive overpressure ventilation systems are used for the CCR, the wall and ceiling systems shall be properly detailed for the required level of air or gas tight sealing. This shall also apply to doors and shall be verified by function testing during mechanical completion activities.

The CCR raised access floor (if required) shall have sufficient height between deck and support system to allow efficient maintenance and expansion access to electrical and instrument cable trays below. The recommended minimum height between deck and top of raised access floor is 0,5 m.

Illumination within the CCR shall be arranged to avoid glare and reflections, especially in the screens. This may be achieved by the use of up-lights (dust protected) providing indirect light from the ceiling. Additional adjustable spotlights may be required above each work place. Operator work stations shall be equipped with necessary lighting/dimmer controls as required, following the ergonomic task analysis described in NORSOK S-002.

Down-lights should be provided in traffic areas and other peripheral areas. Direct light against screen areas shall be avoided.

The CCR lighting shall be based on an analysis in accordance with the requirements in NORSOK S-002, and subject to an independent lighting verification performed by a qualified specialist.

Non-gloss surfaces should be used for elements within the CCR.

Information to be shared between the operators shall normally be by wall-mounted displays. Main information should preferably be based on LSDs seamlessly built either from back projected element screens or projected pictures from series of ceiling mounted projectors. In such concepts projector redundancy is recommended, i.e. backup projectors.

Matrix panels may also be used for shared information. However, this principle should be reduced to a minimum, providing critical action facilities only, i.e. hardwired functions and switches for platform shutdown

etc. With the exception of these critical action facilities, all wall mounted information systems should be passive and not be subject for direct actions from the operators.

The operators/control desks shall be located at a sufficient distance from, and with good view to all wall mounted displays. Special attention and design consideration shall be given to distances and view angles with respect to the chosen scale of symbols and other information given on the wall mounted displays.

The shape of the desks should be designed to provide a continuous arrangement for all operators, ensuring optimal cooperative working conditions.

The desks shall provide possibilities for both sitting and standing work and have separate motor driven height adjustment facilities for each work place. The desk-mounted monitors shall have supports providing possibilities for lowering the bottom of the screen totally down to the desk surface. Alternatively, the screens may be installed on a separate, individually height adjustable shelf in front of the main desk surface. The depth of the desk shall be considered with respect to the font sizes provided on the screens, space for keyboards, telephones etc.

The cables from the raised access floor to the desk-mounted equipment shall be contained in a flexible cable drag chain system that is neatly concealed in a protective housing (box). The cable management system shall be arranged to provide maximum free floor space below the desks for easy cleaning.

To avoid build up of unwanted heat and noise in the CCR, equipment such as personal computers, projection control systems etc. shall be located in a separate room. Workstations should contain screens, keyboards, mouse and necessary communication equipment only.

Space should be provided for future expansion of control stations, desks, LSDs, equipment etc..

The contact between the ECC and the CCR shall be designed in accordance with company/operator requirements. If acceptable from a safety point of view, the ECC may be a part of the CCR fire zone. An operations table with chairs, of sufficient size and number for the platform emergency team shall be provided. It shall be suitably dimensioned and arranged to provide integrated, easily accessible communications equipment, which is hidden during normal use. If an electrically operated elevation system is used for access to the communication equipment, it shall be connected to the emergency power supply. Wall mounted, sliding graphic display mark-up panel boards, to allow indication of status, shall be provided. The room shall be prepared for video projector and video conferencing equipment.

A work permit station, comprising a desk, sliding glazed hatch and an arrangement for display of issued permits, should be located in conjunction with the CCR, in accordance with the operator/company requirements.

Any required maritime control room functions should be integrated into the CCR. The telecommunication function and systems are normally located in the CCR.

Related office facilities (e.g. process supervisor's office, printer room) should be located adjacent to the CCR.

Safety and automation systems test console and other additional work areas shall be provided as required by the operator/company.

All design of the CCR should be in accordance with ISO 11064.

The design process of the CCR area shall be verified and documented in strict accordance with authority requirements.

7.16 Central equipment room (CER)/Telecom equipment room (TER)

The CER and TER should be located in conjunction with the CCR where functionally appropriate. The rooms shall have a computer raised access floor, arranged for air supply to equipment cabinets as required.

These rooms shall be located in the safest area on the installation, and shall be detailed to prevent gas from entering the rooms.

There shall not be any piping for liquids going through the rooms. This includes below raised access floors.

Equipment rooms, rectifier room and battery room, shall not have suspended ceilings.

The TER shall be provided with a workbench and space for a computer, and a parking space for an equipment trolley.

A workshop suitable for handling sensitive equipment and instruments shall be established near the telecom main equipment room. The telecom workshop may be combined with other suitable workshop for electronic equipment.

See NORSOK T-001 for the TER.

7.17 Medical centre and emergency hospital

A medical centre, sick bay and emergency hospital shall be provided in accordance with governing body regulations.

Good access from external work areas, MOB-boat and internal lift(s) and stairs shall be provided. These access routes shall be adequately dimensioned for use of standard stretchers (2 200 mm x 650 mm). Access doors to medical centre area shall have minimum 900 mm clear opening, to allow ambulance type stretcher transport. Windows shall be provided in the office and the examination room.

The medical centre will normally consist of consultation office, examination room/laboratory, medical store, toilet/shower and a ward. An oxygen system shall be provided in an appropriate room or cupboard.

An appropriate room/area in the LQ (e.g. the multipurpose room or the sports hall) shall be designated, and equipped for combined use as an emergency hospital, allowing for easy conversion from normal use. All emergency systems and equipment required shall be preinstalled. Location in close proximity to the medical centre, with short and easy access from the main access routes is essential. A store for medical emergency supply trolleys shall be provided adjacent to the designated room/area. The store shall be provided with a sink/bench and hot/cold water supply if it is located outside the medical centre.

The layout arrangement of the completed facilities shall reflect the medical flow pattern for optimal registration, sorting, treatment, supervision and transportation of mass injury cases, associated with a major platform incident.

Both the medical centre and the emergency hospital shall be connected to the emergency power system.

7.18 Helicopter "sky lobby"

The "sky lobby" (lounge) shall be located as close as possible to the helideck and have easy access to both the helideck and the main circulation routes in the LQ. The room shall be suitably dimensioned to accommodate the number of personnel that will travel with the helicopter type to be used on the installation. The room shall be arranged to allow personnel to put on their survival suits in an orderly manner. Outlets for TV and video equipment shall be provided. The lounge may be arranged for multi-purpose use.

The "sky lobby" reception will normally be manned during helicopter operations only. The receptionist shall have an enclosed workspace with full view of the "sky lobby" area. The reception shall be provided with a counter having a lockable glazed screen, office furniture, key display panel, lockable key cabinet, weighing machine, personal computer table(s) and outlets, copying machine, etc. as required in each project.

A day visitor's store, a store for extra survival suits and safety equipment, toilets and telephone booth/hood (for conversation to shore), shall be provided adjacent to the "sky lobby".

7.19 Helicopter traffic control centre (HTCC)

HTCC shall be located close to the helideck. It shall provide shelter for the heliguard(s), and have a full view of the helideck and the helicopter approach zones through large, glare free windows, outwardly inclined at the top.

Lighting shall be arranged to eliminate reflections from glazing at night.

The room shall mainly be equipped with required communication systems and equipment for start/stop and remotely controlling the helideck fire fighting monitors, if required by the project. The room will only be manned during helicopter operations near the installation. Direct access shall be provided to the helideck, where this is compatible with area arrangements and noise limits.

Suitable noise reduction measures shall be taken to allow radio communication from within the HTCC to a hovering helicopter immediately outside. Instruments shall be arranged to avoid glare.

Seating for three persons shall be provided.

Lockers for heliguard personnel safety equipment shall be provided.

7.20 Changing rooms

One change room locker shall be provided for each bed on the installation, plus an additional 10 %.

The lockers may be arranged in one room for both sexes, with direct access to separate male and female toilet/shower areas.

The room(s) shall be equipped with large ventilated lockers, showers, washbasins, toilets, and sufficient space for drying of work clothes and footwear. Lockers shall be console or wall mounted to ease cleaning. The lockers shall be equipped with air grilles or perforated bottom, and have an air extract at the top for connection to the mechanical ventilation extract system. Heating cables shall be provided in the floor.

The changing room(s) shall be located near the main entrance to the LQ. It shall function as a buffer between the dirty working areas and the clean LQ.

Separate areas for storage of clean overalls, and for organised trolley removal of dirty overalls, shall be integrated with the changing room area. The trolley transport route to laundry and catering laydown area shall be arranged accordingly.

The floors in the changing room(s) will be hosed down regularly. The room(s) shall therefore have coved skirting detailing and a sufficient number of adequately sized and grated floor drains with cleanable soil traps. The walls shall be splash proof to at least 1 500 mm above the floor, and be of a non-corrosive material. Stainless steel is recommended. The floor finish shall be of a non-slip type, e.g. ceramic tiles, or similar.

Retractable hot water hose reels with washing liquid dispensers are required, conveniently placed with easy access throughout the changing room area.

7.21 Technical rooms

All technical rooms shall be clearly defined with respect to location and system requirements.

Area, volume and fire rating requirements for rooms, shafts, distribution routes, service access etc., shall be established at an early stage. Special attention shall be given to noise and vibration reduction measures, to prevent transmission of noise into adjacent personnel rooms and areas.

Raised access floors shall be provided as required by each project.

There shall not be any piping for liquids going through electric rooms or battery rooms. This includes above ceilings and below raised access floors.

Special laydown areas, access routes and lifting equipment shall be provided for service, maintenance, repair and replacement of major technical equipment, in accordance with the material handling report.

The battery room shall be ventilated as required, and have appropriate finishes and detailing for acid spillage.

Technical rooms shall have technical liners up to a minimum height of 2 100 mm above the floor. Where perforated technical liners are required, they shall not be perforated below 1 500 mm above finished floor level.

7.22 Traffic areas

All traffic routes (e.g. corridors, stairways and lift(s)) shall be clearly arranged with respect to orientation and safety, and provide optimal access between the various areas and levels. Dead end corridors should be avoided, but if used, shall never be longer than 5 m. Corridor width shall be based on expected traffic intensity and physical geometry. The net width shall never be less than 1 000 mm. A minimum width of 1 200 mm is recommended for corridors with frequent traffic.

All escape routes shall lead directly to emergency stairs providing access to lifeboat stations and helideck. Layout and emergency lighting shall be arranged so that it is easy to find the escape routes in darkness and stressful situations. Handrails shall be provided as required in stairs, lifts and corridors.

The main internal stairway(s) shall provide access to all levels between the helicopter deck and the lowest level in the LQ. Any continuation of internal stairway(s) or lift(s) from the lowest level in the LQ to any levels below the LQ, shall be divided by appropriate smoke and sound barrier(s)

Fire and smoke divisions shall be positioned at a maximum distance of 20 m in corridors. Doors shall be fitted with magnetic holders.

Passenger lift(s) shall be provided if the LQ has more than two floor levels. The lift(s) shall provide access to all main levels, and at least one lift shall be dimensioned to accommodate a standard stretcher (2 200 mm x 650 mm), with an inside cabin dimension of minimum 1 200 mm x 2 400 mm. It shall descend to nearest landing in a power failure situation.

The lift(s) shall be equipped with a telephone connected to the main telephone system (private automatic branch exchange) onboard the installation.

The lift shall be of an electrical traction type, having a load capacity of minimum 10 000 N and a speed of minimum 1 m/s.

The handrails, interior wall, and ceiling surfaces should be finished in brushed stainless steel (grit 180 - 220).

Lift(s) with automatic lift door(s) shall face an enclosed A-60 fire rated barrier. If a drain point is located at the bottom of the lift shaft, it shall be gas tight and have a fail-safe mechanism against drying out. It shall be possible to escape from a lift cab stuck between two levels, via ladders inside the lift shaft, and open any lift door above the lift cab. It shall also be possible to escape from a lift cab stuck above the highest landing without external assistance.

The same supplier should be used for all personnel lifts throughout the installation.

For floating installations, lifts and associated guides and components, shall be constructed to allow for the relevant movements.

Safety equipment cabinets shall be recessed. Handles to cabinets shall be of a recessed type. Manual fire extinguishers and wheeled extinguishers shall have a semi-recessed fixing in situations where a surface mounted installation may obstruct the access or escape way.

Vestibules or recessed/shielded entrances shall be provided for weather protection at all frequently used external entry points.

7.23 Central vacuum cleaning system

A CVC system (wet type) shall be provided on installations where large floor areas are covered with carpets, in accordance with operator/company requirements. Wall-mounted connection points shall be placed at heights in accordance with NORSOK S-002. The number of connection points shall be sufficient to reach all areas in the LQ, including control centres and technical rooms, with a maximum 10 m flexible hose. An on/off switch shall be placed on the hose handgrip. The system shall allow for the use of at least five CVC outlets simultaneously at any position.

The pipe system shall consist of straight vertical riser(s) in technical shaft(s), with straight branches at each floor level, to avoid pipe clogging and ease any required pipe rodding. Radius of bends shall be dimensioned to allow the passage of a small object (e.g. a 200 mm long pencil) without becoming blocked. Rodding points shall be provided as required.

All piping shall be in stainless steel, but other materials may be considered where adequately justified.

The location of the CVC system will require careful planning, with due consideration to noise and vibration from the machinery, and requirements for drainage.

A control panel with adjustable time limits shall be located in the catering supervisor's office.

The CVC system accessories shall as a minimum include the following types of mouthpieces:

- rotating brush assemblies;
- water suction types;
- furniture cleaning types ("normal" types).

A set of mouthpieces and a telescopic hand piece shall be supplied for each level of the LQ and be arranged in a designated rack.

7.24 Artistic decoration

Certain wall and floor areas in the LQ may be designated for special artistic decoration in accordance with operator/company requirements. These areas shall be provided with adequate reinforcements and flexible arrangements for installation of various types of spotlights, as required. The designated wall areas shall be free from any technical installations that may interfere technically or visually with the artistic work.

8 Arrangement of main facilities adjacent to the living quarters (LQ)

8.1 Helicopter deck

The helideck design and location shall be in accordance with NORSOK C-004.

There shall be direct access from the helideck to the "sky lobby". The personnel access route(s) should be weather protected, if appropriate. A simple goods handling arrangement shall be provided for heavy items brought out by helicopters (e.g. pumps, valves, tools etc.), where lift or lifting table access is not provided. Material handling from helicopter deck for heavy items transported by helicopter shall be in accordance with operator/company requirements.

Structural vibrations and noise reducing measures shall be given due attention to prevent noise transmission to other areas.

If required, a fuel-dispensing unit connected to a fuel tank skid shall be provided close to the helideck, in accordance with helicopter operator and authority requirements. Rollers or guides shall be provided to reduce the movement of fuel hoses and to protect them against possible damage caused by helideck constructions.

A sheltered test station for fuel sampling shall be provided in conjunction with the fuel-dispensing unit.

8.2 Helicopter hangar

A helicopter hangar may be required on certain installations. It shall be dimensioned for the relevant type of helicopter specified. Tie-down and winching points shall be provided as required, to allow for safe handling and parking of the helicopter. Deck drains and maintenance equipment shall be provided as required.

The location of the hangar shall be based on practical, operational and safety considerations.

8.3 Mustering area, lifeboat stations and safety equipment

The LQ is per definition the safest area on any installation. In a given emergency, a controlled and orderly evacuation shall be organised from the designated internal "assembly" area, usually the main lounge or the dining room, to the lifeboat mustering stations. The escape route shall be short and direct. The lifeboat mustering stations shall be well protected and adequately sized to facilitate a smooth, safe and quick evacuation. A free area based on a minimum of 0,4 m² per lifeboat seat shall be provided adjacent to the lifeboat(s).

Special attention shall be given to provide adequate signage to ensure safe, organised evacuation of the installation.

Two independent access routes to the lifeboat stations shall be provided externally on either side of the LQ. The access routes shall be on the same level as the lifeboat stations, with direct connection to platform emergency escape ways.

Safety equipment, lifeboats, rafts, escape chutes and other means of evacuation shall be arranged to provide optimal conditions with respect to protection, control, escape and launching of boats and other equipment. Doors to escape chute containers shall have hold-open devices. The required seating capacity per lifeboat and the total number of boats shall be in accordance with the installation escape philosophy.

Refer also to NORSOK S-001.

8.4 Workshops, laboratories, etc.

Workshops, laboratories etc. shall be located adjacent to the LQ on single installations. The workshop area shall be arranged as required by the operator/company and may contain the following rooms/areas:

- laboratory w/office equipment and store;
- electrical/instrument workshop w/office equipment and store;
- telecommunication workshop w/office equipment and store (may be combined with above if specified by the operator/company);
- calibration room;
- pressure safety valve room (pressure safety valve testing);
- darkroom (X-ray room);
- mechanical workshop w/office equipment;
- machine workshop;
- welding bay or welding workshop;
- tool store;
- general store w/ office equipment;
- mechanical office;
- paint store/workshop;
- storage for lifting equipment;
- storage for scaffolding;
- insulation workshop;
- safety workshop;
- access to coffee bar;
- toilets;
- cleaner's store etc.

8.5 External areas

All decks, walkways, container landing area(s), platforms, stairs and landings shall have non-slip properties in all directions for wet and dry conditions. Heat tracing in decks/ floors shall be provided as required.

For safety reasons, and to reduce maintenance, external decks and roofs shall be designed and detailed to provide efficient means of controlled water drainage and minimise standing pools of water. This shall also apply to semi-enclosed/exposed roof or deck areas. Down pipes for drainage of external roof or deck areas, shall be provided as required to avoid water flows at the face of constructions. These shall be designed to avoid internal corrosion problems.

Levelling screeds may be required to dissipate water in areas that are not self-draining through slopes in deck plates or other arrangements.

The minimum falls for water dissipation shall be 1:100.

LQ roof, container landing area(s), external stairs and mustering areas shall be provided with utility stations. They shall be equipped with power and heat traced fresh water supply to allow hosing down. It shall be possible to reach all areas, including external escape stairs, with a 20 m project standard hose.

9 Miscellaneous requirements

9.1 Wet rooms

All areas and rooms defined as wet rooms shall have coved skirting detailing at the joint between the floor finish and the partition/wall lining. The base of the wall shall be recessed sufficiently to allow for "drip nose" detailing between the floor finish and the wall lining.

All wet rooms except common toilets and cleaners stores in the LQ shall have floor drains. For mobile installations, cleaners stores shall have floor drains. The floor drain position shall be optimal with respect to room function, gradient and maintenance. All floor drains shall be of stainless steel, have soil traps/filters for easy cleaning and shall be adequately dimensioned.

The HVAC supply room shall be defined and detailed as a wet room.

9.2 Technical installations in walls, ceilings and decks

All technical items (e.g. light fixtures, fittings, switches, sockets, service channels, drains, fire fighting equipment, PA speakers, panel heaters, ventilation grilles, local control panels, detectors, access panels etc.) shall be carefully detailed and located to satisfy all functional, ergonomic and aesthetic requirements.

Technical elements installed in walls and ceilings shall be neatly recessed with the face of the element mounted flush with the visible side of the wall or ceiling panel. Examples of such items are access panels, control panels, air grilles/diffusers, detectors, light fittings, PA speakers, fire hose reels etc. Alternative installation may be acceptable if for functional reasons the technical elements require open mounting. Other elements (e.g. loose fire extinguishers, fire-fighting equipment, refuse bins etc.) shall be mounted in wall recesses to the extent possible. This is particularly important in escape ways, corridors and other circulation areas.

Concealed wall reinforcement shall be provided for all walls supporting furniture, equipment and other items.

Special foundations or brackets shall be provided for all furniture, equipment etc., to be fixed to structural decks, floors and roofs. Drilling of holes in fire rated walls and decks that may impair the fire rating, is strictly prohibited.

All cables, pipes and ducts shall be concealed in the cavity of partitions and other types of walls. Multi-cable ducts/channels may be used in the office area, CCR, printer rooms, workshop area and similar rooms.

Antenna outlets for TV/radio, with associated power supply, shall be provided in all public rooms, kitchen staff rest room, kitchen (at shelves) and laundry handling area. Power and telecom outlets shall correspond with planned TV/radio position to avoid long, loose cabling.

Switches, sockets, signs, control panels, etc., serving a room/area, shall be assembled in functional units, as far as possible. The units shall be discreetly placed in an aesthetic and ergonomic correct manner, close to doors or equipment being served.

Robust hinged access hatches or panels shall be provided in walls and ceilings where regular inspection or service access is required. It is important to identify and locate equipment requiring such access at an early stage. The inspection hatches and panels shall blend with the surrounding wall or ceiling system and be labelled as required. They shall be lockable by use of a snap lock or hexagonal key system. The clear opening for ceiling access hatches or panels shall be minimum 400 mm x 600 mm or 500 mm x 500 mm.

Fire insulation shall be an integral, protected part of the hatch/panel construction and shall be completely mechanically protected to avoid release of fibres.

9.3 Ceiling heights

The minimum net floor to ceiling height (i.e. top of floor finish to underside of suspended ceiling surface) shall be as follows:

Cabins	:	2 300 mm
Prefabricated bathroom units	:	2 100 mm
Minor stores and rooms	:	2 300 mm

Corridors	:	2 300 mm
Common rooms/areas	:	2 400 mm
Common rooms/areas larger than 100 m ²	:	2 500 mm
Single office	:	2 400 mm
Office landscape larger than 100 m ²	:	2 500 mm
Technical rooms	:	2 200 mm
TER, CER	:	2 700 mm (to underside technical lining)
CCR	:	2 700 mm

Minor areas of the ceiling surface in the common rooms, for instance above circulation routes or as a strip along walls, may have a net height of 2 300 mm to create special effects and volumes.

The same net heights apply for any technical rooms or minor rooms being specified without a suspended ceiling. In this case the heights are measured from the top of the floor finish to the lowest point of any permanently fixed equipment or construction under the deck. Exempted is equipment placed directly above equipment cabinets or racks.

9.4 Doors

All doors shall be adequately dimensioned for the intended use, inclusive material handling.

Doors should normally open in the escape direction without blocking corridors and other escape routes.

Doors exposed to weather and strong winds shall be robust sliding doors wherever possible. Hinged doors may be used externally but they should be recessed or shielded from weather exposure.

A preliminary door schedule shall be developed as part of the conceptual design phase. It shall be continuously updated throughout the various project phases, until all required information is specified prior to procurement of doors.

Doors are covered in detail in NORSOK C-002.

9.5 External maintenance access

Window washing and maintenance/inspection of external wall surfaces shall be performed from various decks, platforms and walkways in a safe and functional manner. Areas inaccessible from such decks shall be reached by a suitable and safe inspection/maintenance access system. For floating installations, the inspection/maintenance access system shall allow safe operation during installation movement.

An inspection/maintenance access system shall be provided under LQ modules that are cantilevered over the sea or for other reasons are inaccessible from decks and gangways.

9.6 Lighting and electrical fittings

9.6.1 General

Lighting design is an integral part of the architectural design, and shall comply with the requirements given in NORSOK S-002. Selection and layout of light fittings shall be carefully co-ordinated between the disciplines concerned in order to satisfy the functional and aesthetical requirements of each room/area.

Light fixtures shall as far as practical be standardized, and of a low maintenance/long lifetime/energy efficient type.

Colour temperature shall as far as practical be standardised, reflecting area functions, and shall be allowed for in the maintenance and spare parts routines.

A sufficient number of electrical sockets shall be provided above all workbenches/tables, allowing connection to various types of loose equipment anywhere along the length of the bench.

Various types of light fittings shall be provided in the main lounge, dining room, coffee bars, "sky lobby" and multipurpose room to satisfy different uses, e.g. ceiling mounted down lights of twin tube compact fluorescent type and 12 V types, diode-based or fibre optical point lights, as well as wall mounted and floor

mounted lights, if applicable. Light fittings mounted in the ceiling in these rooms/areas shall be provided with dimming facilities, which shall allow individual dimming control zones within an area. Adjustable spotlights mounted on power tracks should be provided to illuminate art objects, plants, etc.

Control panels for dimming of circuits/zones shall be located adjacent to the entrance to the respective areas/rooms.

All ceiling integrated tube light fittings shall be provided with low luminance grills wherever possible. They shall be carefully located in order to obtain the correct lux level and avoid shadows in work areas.

Light fittings shall be installed underneath cabinets, shelves etc. which are located above workbenches/tables, in order to provide good working light on the work surface. Further requirements are specified in NORSOK C-002, Clause 19. Lighting for cleaning purposes shall always be provided, either as part of the general lighting arrangement or on a separate circuit.

Emergency lighting shall not interfere with the general lighting conditions within each room or area.

9.6.2 Low level escape lighting

Where wall mounted point light sources are used, the construction shall be heavy duty to provide protection against possible damage caused by the passage of trolleys and other traffic.

Where a floor mounted continuous path type light strip is used, the top protective covering strip shall be detailed to stop all entry of moisture, while maintaining a flush surface. Special attention shall be given to achieve a practical, low-maintenance detailing between floor finishes and light strips.

9.7 Room acoustics

An acceptable reverberation time shall be provided in all rooms used regularly by personnel. Intelligibility of speech is important, also with respect to signals and messages transmitted by the PA-system. Absorbent surfaces shall be applied as required.

Special attention shall be given to obtain good room acoustics in kitchen (galley), dining room, lounges, multipurpose room, cabins, exercise room, laundry, CCR and telephone booths.

As a minimum room acoustics and sound insulation shall satisfy the requirements given in NORSOK S-002.

9.8 Waste handling stations

Waste handling stations for segregation and handling of different types of waste shall be strategically located throughout the installation, and as a minimum at the following locations:

- at each level of the LQ adjacent to the main stair-lobby;
- coffee bar areas;
- office areas;
- workshop areas;
- control centres.

In accordance with operator/company requirements, each station or unit shall be equipped with a sufficient number of separate containers in waste compartments. Where required, water-tight containers shall be provided. Each compartment shall be detailed to hold plastic bags into which the waste is placed, and shall allow for easy removal of the bags. Each compartment shall be properly labelled. The standard of design and finish should be coordinated to match the surrounding elements.

9.9 Drinking water coolers

Drinking water coolers shall as a minimum be located in close proximity to the gymnasium, "sky lobby" and office areas. They shall be hard pipe connected and have a drain.

9.10 Plumbing requirements

All cold and hot water pipes shall have clearly marked and readily accessible shut off valves for each deck level. All taps and equipment shall be provided with local shut off valves.

Where water traps are used in conjunction with floor drains, special high quality and long lasting sealing shall be used to prevent sewage odours from penetrating into the room. If sealing rings are used in water traps to kitchen/galley areas, they shall be resistant to hot water and hot frying fats.

Water traps in kitchen and laundry areas shall have removable filter baskets. The sealing shall maintain its function after repeated cleaning/emptying of the filter baskets.

Standard floor drains shall have a perforated cover plate in satin finished stainless steel. The cover plate shall be "press fitted" or clipped into place, i.e. it shall not be screw fixed.

All floor drains shall be stainless steel 316L.

Larger floor drains in kitchen/galley and laundry areas shall have non-slip stainless steel gratings that are "press fitted" or clipped into place.

All drain cover plates and gratings shall be detailed to allow for easy and frequent removal for cleaning without causing injury to the hands. Large gratings shall be sub-divided into smaller sections for easy handling.

In all rooms, with the exception of technical rooms, any service pipes or cables etc. shall be neatly concealed inside the construction of the walls, ceilings or service ducts. Visible surface mounted services are unacceptable. Easy access shall be provided to all services behind water-tight, demountable inspection panels.

For further plumbing requirements, see NORSOK H-CR-002.

10 Room finishes schedule

A preliminary room finishes schedule shall be developed as part of the conceptual design phase for each room/area in the LQ. This schedule shall be continuously updated throughout the various project phases, until all the required information is specified prior to the procurement and installation phases. The room finishes schedule shall be read in conjunction with the interior colour schedule.

11 Room areas

Room areas should be included on all architectural general arrangement and room layout drawings throughout all phases of the project, including as-built. The area shall be noted in m² and be positioned adjacent to or directly under the room or area name.

12 Clean, dry building philosophy ("Rent, tørt bygg")

The project shall ensure that the principles of clean, dry building philosophy ("Rent, tørt bygg") are followed throughout all phases of the construction work, and that the required quality level is maintained until handover to the operator/company. The principles as described in the "RTB Handbook from RIF" shall be followed. The quality level shall be in accordance with NS-INSTA 800, minimum quality level 4 (normal). It shall be documented and verified that the required quality level is achieved for all areas.

13 Company specified items

Operator/company specific requirements deviating from the requirements stated herein, should be included as an addendum to this NORSOK standard in the contract documentation. Otherwise, they shall be established during the project by cooperation between the project and the operator/company.

As a minimum, the following items from this NORSOK standard require specification by the operator/company:

- common area facilities (activity room, library, kiosk, music room, chapel, study etc.);
- multipurpose room/area – required usage/activities;
- sauna and solarium requirements;
- dining room – requirements for fixing of tables and chairs;

- kitchen (galley) – sizing, capacity and equipment selection – catering philosophy;
- LQ container laydown deck – sizing and arrangement – container types for food supplies;
- waste handling on LQ container laydown deck – requirements, arrangement and type of equipment;
- provisions stores – storage capacity – number of rooms/compartments;
- requirements for thawing cabinets/room;
- kitchen – requirements for condensing units in extract systems from pot-washing and dishwashing machines;
- kitchen – requirement for self-loading “tunnel” type dishwashing machines;
- bakery – requirements for “bake-off” products;
- laundry – sizing, capacity and equipment selection - operating philosophy;
- laundry - location of tumble dryers and requirement for condenser unit;
- linen store – requirement for linen trolleys;
- CVC system – requirements;
- administration/service centre – supporting facilities requirements – requirements for;
- document centre, deck foreman’s office, employees representative office;
- administration centre – requirements for temporary offices;
- operational philosophy CCR;
- requirements for arrangement and contact between CCR and ECC;
- requirements and location for work permit/ personnel control station in conjunction with the CCR;
- workshop, laboratories etc. – requirements for combining telecom workshop with electrical/instrument workshop;
- artistic decoration – requirements and location;
- waste handling stations – requirements for types of waste – location;
- acoustic requirements specific for the LQ (airborne sound insulation, impact sound, room acoustics (sound absorption));
- requirements for personal work lockers (for working clothes);
- additional coffee bars in other areas, e.g. drilling areas;
- material handling requirements for heavy items transported by helicopter;
- requirements for onshore-offshore collaboration centre;
- requirements for emergency power supply to onshore-offshore collaboration centre.

Annex A (Normative) Data sheets

The following datasheets are enclosed:

CDS-101	Rev. 3, November 2004	Room programme
CDS-102	Rev. 2, September 1997	Room finishes schedule
CDS-103	Rev. 1, November 2004	Check-list for model cabin and bathroom

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PROJECT:	REV.
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NO	DESCRIPTION	INFORMATION					NOTES
1	BASIC DATA						
1,1	Name of installation						
1,2	Type of installation						
1,3	Personnel capacity						
1,4	Manning philosophy for operational phases established?						
1,5	CCR philosophy						
1,6	Catering philosophy						
1,7	Design life						
1,8	Helicopter type for helideck						
1,9	Helicopter type for hangar						
1,10	Total number of lifeboats						
1,11	Number of lifeboats adjacent to LQ						
1,12	Lifeboat capacity (each)						
1,13	Environmental data available?						
1,14	Waste handling philosophy						
	ROOM / FUNCTION / ACTIVITY	QTY	AREA EACH	TOTAL AREA	AREA P.P	% OF TOTAL	
2	CABINS						
2,1	Single cabin with bathroom:						
2,2	Double cabin with bathroom:						
2,3	Leave lockers						
	Other						
	SUB-TOTAL						

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PROJECT:						REV.	
NO	ROOM / FUNCTION / ACTIVITY	QTY	AREA EACH	TOTAL AREA	AREA P.P.	% OF TOTAL	NOTES
3	RECREATION AREA						
3,1	Main recreation room / lounge						
3,2	Multipurpose room						
3,3	TV-room (smokers)						
3,4	TV-room (non-smokers)						
3,5	Activity room						
3,6	Library						
3,7	Kiosk with storage room						
3,8	Music room						
3,9	Activity room (Hobby room)						
3,10	Chapel / study						
3,11	Exercise room/sports hall with storage room						
3,12	Male change and shower room						
3,13	Female change and shower room						
3,14	Sauna(s)						
3,15	Solarium						
3,16	Toilets						
3,17	Storage room(s)						
	SUB-TOTAL						
4	CATERING AREAS						
4,1	Dining room						
	Kitchen, incl:						
4,2	Hot and cold sections						
4,3	Preparation						
4,4	Bakery						
4,5	Scrub						
4,6	Scullery						
4,7	Serving area						
4,8	Kitchen utensil store						
4,9	Cleaner's store						

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PROJECT:						REV.	
NO	ROOM / FUNCTION / ACTIVITY	QTY	AREA EACH	TOTAL AREA	AREA P.P.	% OF TOTAL	NOTES
4	CATERING AREAS						
4,10	Dry storage room(s)						
4,11	Cold storage rooms						
4,12	Freezer rooms						
4,13	Thawing room(s)						
4,14	Catering supervisor's office						
4,15	Rest room for kitchen staff						
4,16	Toilets for kitchen staff						
4,17	Laydown area						
4,18	Garbage compriator(s) and various containers (No., type and dimensions to be stated)						
4,19	Laundry, incl:						
4,20	Storage of trolleys						
4,21	Receiving						
4,22	Soaking/handling						
4,23	Washing machine / tumble drying machine room						
4,24	Clean storage /collection						
4,25	Storage for washing powder, etc.						
4,26	Living quarters main store						
4,27	Central cleaning store						
4,28	Linen store on each accommodation floor level						
4,29	Cleaners store on each floor						
4,30	General store on each floor						
	Other						
	SUB-TOTAL						

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PROJECT:						REV.	
NO	ROOM / FUNCTION / ACTIVITY	QTY	AREA EACH	TOTAL AREA	AREA P.P.	% OF TOTAL	NOTES
5	ADMINISTRATION CENTRE						
5,1	Manager						
5,2	Secretarial office (if required)						
5,3	Production / maintenance supervisor						
5,4	Administration supervisor						
5,5	Safety supervisor						
5,6	Mechanical supervisor						
5,7	Electrical / instrument / telecom. supervisor						
5,8	Visitors office						
5,9	Deck foremans office (near laydown area)						
5,10	Conference room						
5,11	Copy / print room, stationary, etc.						
5,12	Archive						
	Other						
	SUB-TOTAL						
6	CENTRAL CONTROL ROOM / TELECOMMUNICATION CENTRE / MARINE CONTROL ROOM						
6,1	Central control room (CCR) / Maritime control room (MCR)						
6,2	Field cable sorting room / equipment room						
6,3	Emergency room						
6,4	Production supervisor						
6,5	Operators room						
6,6	Printer room						
6,7	Telecom. equipment room						
6,8	Telecom. workshop / storage room						
6,9	Battery room						
6,10	Rectifier / inverter room						
6,11	Antenna and radar amplifier room						
	Other						
	SUB-TOTAL						

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PROJECT:						REV.	
NO	ROOM / FUNCTION / ACTIVITY	QTY	AREA EACH	TOTAL AREA	AREA P.P.	% OF TOTAL	NOTES
7	MEDICAL CENTRE						
7,1	Office / consultation room						
7,2	Examination / treatment room						
7,3	Ward						
7,4	Laboratory						
7,5	Toilet						
7,6	Medical storage room						
7,7	Store for oxygen cylinders						
7,8	Waiting area						
	SUB-TOTAL						
8	HELICOPTER TRAFFIC CENTRE						
8,1	Arrival/ departure lounge (Sky lobby)						
8,2	Reception						
8,3	Lockers for day visitors						
8,4	Storage for day visitors survival suits, etc.						
8,5	Toilets						
8,6	Heliguard shelter						
	Other						
	SUB-TOTAL						
9	CHANGING ROOMS						
9,1	Dirty entrance						
9,2	Male changing room(s) with lockers, washbasins, shower, toilets, etc.						
9,3	Female changing room(s) with lockers, washbasins, shower, toilets, etc.						
9,4	Storage room / area for trolleys (Clean/ dirty overalls)						
	Other						
	SUB-TOTAL						

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PROJECT:						REV.	
NO	ROOM / FUNCTION / ACTIVITY	QTY	AREA EACH	TOTAL AREA	AREA P.P.	% OF TOTAL	NOTES
10	TECHNICAL ROOMS						
10,1	HVAC plant room(s)						
10,2	Electrical switchgear room(s)						
10,3	Central vacuum cleaning plant room (CVC-room)						
10,4	Refrigeration plant room for freezer / cold storage rooms.						
10,5	Technical shafts						
10,6	Emergency generator room (may be located outside LQ)						
10,7	Transformer room (may be located outside LQ)						
	Other						
	SUB-TOTAL						
11	TRAFFIC AREA						
11,1	Corridors / lobbies						
11,2	Stairways						
11,3	Passenger lift(s)						
11,4	Air locks						
11,5	Service shafts						
	Other						
	SUB-TOTAL						
12	SUM NET AREA						
13	INTERNAL WALLS/STRUCTURE						
14	SUM GROSS AREA						
15	GROSS AREA PER PERSON						

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PROJECT:						REV.	
NO	ROOM / FUNCTION / ACTIVITY	QTY	AREA EACH	TOTAL AREA	AREA P.P.	% OF TOTAL	NOTES
16	WORKSHOP AREA						
16,1	Laboratory						
16,2	Laboratory office						
16,3	Laboratory store						
16,4	El./Instr./Telecomm. workshop						
16,5	El./Instr./Telecomm. office						
16,6	El./Instr./Telecomm. store						
16,7	Calibration room						
16,8	PSV room						
16,9	Mechanical workshop						
16,10	Machine workshop						
16,11	Weld Bay						
16,12	Tool store						
16,13	General store						
16,14	Mechanical office						
16,15	Paint store/workshop						
16,16	Storage for lifting equipment						
16,17	Storage for scaffolding						
16,18	Workers coffee bar						
16,19	Toilets						
16,2	Cleaner's store						
16,2	Dark room						
16,2	Safety workshop						
16,2	Insulation workshop						
17	SUM NET AREA						
18	INTERNAL WALLS/STRUCTURE						
19	SUM GROSS AREA						

NORSOK C-001		CHECK LIST FOR MODEL CABIN AND BATHROOM		CDS-103 Rev. 1, Nov 2004 Page 1 of 4	
Package		Doc. No.		Rev.	
ITEM	DESCRIPTION	ACCEPTED CONTRACTOR	ACCEPTED COMPANY		
1	GENERAL				
1,1	Installation in accordance with drawings, complete and representative.				
2	SYSTEMS RELATED				
2,1	Cable conduits, cable segregation and junction box capacity comply with requirements.				
2,2	Shown, installation of electrical, instrument and telecom components comply with requirements, including for termination				
2,3	Heat supply system, cabin area, complies with requirements.				
2,4	Heat supply system, bathroom floor area, complies with requirements.				
2,5	Light fixtures in ceiling correctly located. Fire insulation above as required.				
2,6	Lux measurement verifications performed, requirements met (if applicable).				
2,7	Sprinkler installation (if applicable) complies with requirements.				
2,8	Ventilation supplies and extracts systems installations comply with requirements.				
2,9	Ventilation distribution measurement verification performed (if applicable).				
2.10	Noise measurement verifications performed (if applicable).				
2.11	PA speaker maintenance access is maintained.				
2.12	PA speaker function verifications performed for legibility (if applicable).				
2.13	Fire detector location accepted, above (relative to access hatch)/ below ceiling.				
2.14	Thermostat location/ installation accepted.				
3	BATHROOM AREA				
3,1	GENERAL				
3.1.1	Detailing allows efficient cleaning and avoids dirt-taps.				
3.1.2	Sizing of bathroom and shower is to an acceptable ergonomic standard.				
3.1.3	Cleaning access is maintained, including for scrubbing of corners in shower/ toilet floors.				
3.1.4	Surface textures and colours as specified.				

NORSOK C-001		CHECK LIST FOR MODEL CABIN AND BATHROOM		CDS-103 Rev. 1, Nov 2004 Page 2 of 4	
Package		Doc. No.		Rev.	
ITEM	DESCRIPTION	ACCEPTED CONTRACTOR	ACCEPTED COMPANY		
3.1.5	Hand washbasin allows washing of hair without knocking head.				
3,2	FLOOR				
3.2.1	Floor pan construction and welding system accepted.				
3.2.2	Fixing method to permanent deck accepted.				
3.2.3	Priming/ painting method accepted.				
3.2.4	Earthing of drain top provided (where necessary). Practical maintenance access to drain(s)				
3.2.5	Slopes are sufficient to drain, and drain is located to simplify cleaning.				
3.2.6	Insulation provided below floor pan where required, and sealed.				
3.2.7	Heat tracing cables arranged in a proven method. Tested for function.				
3.2.8	Membrane/ floor finish construction allows for thermal movements from cold water on a hot floor, and is completely watertight.				
3.2.9	Floor finish is non-slip and easy to clean.				
3.2.10	All joints have clearly documented elastic properties.				
3,3	WALLS AND CEILING				
3.3.1	Rigidity of construction sufficient for transport and installation movement.				
3.3.2	Priming of welded joints accepted.				
3.3.3	Insulation sealing of insulation fibres applied, including at perimeter and interfaces.				
3.3.4	Interface of smoke/ draft stoppers allowed/ prepared for.				
3.3.5	Door complies with spec, including threshold detailing, air overflow and stopper.				
3,4	SERVICE SHAFT				
3.4.1	Service access is provided to acceptable ergonomic standard for rodding point and equipment repairs. Access for vacuum toilet membrane replacement, if applicable.				
3.4.2	Sanitary piping stops valves provided.				
3.4.3	Shaft insulation detailing complies with required fire/ thermal and acoustic requirements.				
3.4.4	Shaft hinged service hatch height and detailing compatible with requirements.				

NORSOK C-001		CHECK LIST FOR MODEL CABIN AND BATHROOM		CDS-103 Rev. 1, Nov 2004 Page 3 of 4	
Package		Doc. No.		Rev.	
ITEM	DESCRIPTION	ACCEPTED CONTRACTOR	ACCEPTED COMPANY		
3,5	EQUIPMENT				
3.5.1	Service access to acceptable standard provided for sanitary piping, washbasin soil trap and plug mechanism, and for routine replacement of light fixtures.				
3.5.2	Shower partition/ wall/ curtain function in open and closed positions.				
3.5.3	Upstands/ elastic seals provided between washbasin and walls.				
3.5.4	Personal storage shelves/ cabinets are easy to clean, without sharp edges.				
3.5.5	Signs for glass holders, towel hooks, and personal storage are provided for double cabins, with secure and permanent fixing.				
3.5.6	Furniture, sanitary equipment, fixtures and hardware installed complete and accepted.				
3.5.7	Equipment and storage unit/ shelves detailing allow for installation movement (if applicable).				
4	CABIN AREA				
4,1	GENERAL				
4.1.1	Installations are in accordance with drawings and do not restrict performance.				
4.1.2	Practical space provided for survival suits/ life vests/ smoke masks, as applicable.				
4.1.3	Cabinet doors and drawers adjusted for smooth operation, open fully in all equipment functional modes.				
4.1.4	Floor screed under beds, equipment and bathrooms is accessible for inspection and cleaning. Exposed screed surface is elastically sealed against release of gasses and dust.				
4.1.5	Insulation sealing membrane applied, including at perimeter, interfaces and ceiling hatches.				
4.1.6	Wall and ceiling panels have interface detailing toward equipment and components effectively close all gaps, including toward window frames.				
4.1.7	Writing tabletop facility and TV viewing facility have been tried for functionality and accepted.				
4.1.8	Outlets for TV/ telephone/ entertainment system located to minimise loose wiring.				
4.1.9	Door to corridor stopper/ pump, ID plate, hardware installed as specified. Door threshold height with specified limits.				
4.1.10	Door striking plate and hinges as specified, and allow for gasket sealing adjustment.				
4.1.11	Door leaf adjusted to achieve full perimeter gasket sealing, while allowing door to self latch without slamming.				

[illegible]

