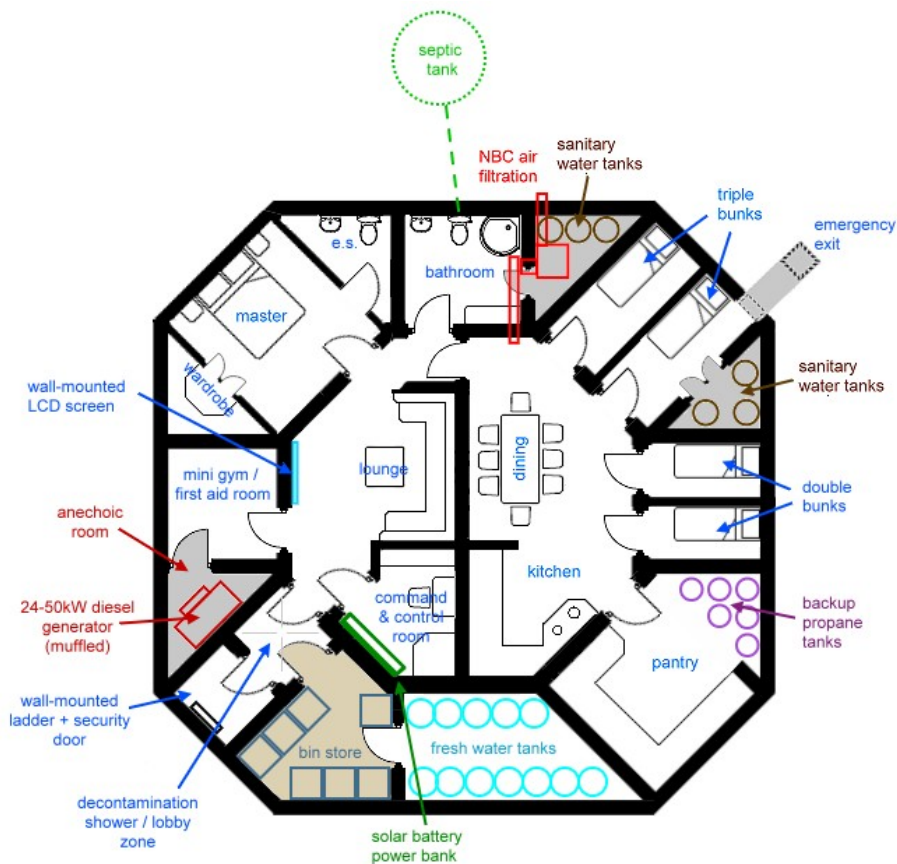


The 12-14 berth "Octabunker"



MAJOR FEATURES

1. Lockable Command & Control Room (de facto "war room" during a crisis) equipped with:

- Diesel generator control.
- Solar Li-Po battery bank control.
- Heating control.
- NBC filter control.
- Dehumidifier control.
- Weather station monitor (to track airmasses) - external measuring instruments mounted on main dwelling.
- AM/FM radio scanner(s).
- External security camera monitoring (mostly mounted on main dwelling).
- Backup wind-up radios, torches, etc. NOTE: it is imperative that back-up items be very strictly kept in a known, predictable location.
- Lighting control.
- Backup systems control (including lighting).
- External radiation monitor (mounted inconspicuously on main dwelling) + portable radiation monitors.
- LCD feed control (for DVDs, any TV signals).
- Maps, WW3 survival books, etc.
- Safe to keep important documents + "contraband" (e.g. luxuries for special occasions).

- Stationery store.
- IR motion detection covering site above the bunker.
- Walkie-talkies (plus rechargeable batteries) for security patrols during low / zero radiation periods.
- Binoculars, perhaps also night vision equipment.
- Backpacks for such expeditions out of bunker.

This room is where stock control over the food is also planned and maintained on a daily basis.

2. Decontamination lobby: stainless steel surfaces, used to wash the waterproofed outer clothing and footwear of anyone entering the bunker after fallout exposure.

3. Mini gym / treatment room to hold exercise bicycle and / or treadmill, small bench and weights, wall-mounted first aid kit, medicines, medical equipment. Additional IR lighting optional in this room.

4. Lounge with wall-mounted LCD screen for feeds from the Command & Control Room.

5. Anechoic (sound-proofed) room with foam pyramid blocks on walls, floor, ceiling and door to enhance the muffler equipment on the 24-50kW diesel generator. The generator's fuel would be supplied from a PVC storage tank housed in a separate underground concrete basin located away from the bunker. Exhausted through obscured venting.

6. Bin store for vertically stacking sealable PVC boxes to contain waste packaging; note that items stored in the pantry should be unboxed and removed from bulky packaging and repacked in new, minimalist wrapping in advance of using the bunker.

7. Water room to hold large, stackable BPA-free water barrels and routed into the kitchen through in-line plumbing system. The ceiling in this room, like that in some of the other rooms, can have suspended racks for storage if required, for example, to keep barter items.

NOTE 1: Ideally the water room should have UV lighting switched on for one hour at least once per day to maintain a sterile environment.

NOTE 2: One or two foldable cargo e-bike(s) or trekking e-bike(s) (i.e. with electrically powered assistance) could be stored in the water room for deployment when outdoor radiation levels are safe again. This would be for scouting out the countryside during the post-strike period of projected lawlessness (based on the government's own War Book materials declassified in *The Secret State* by Peter Hennessy, 2010) with substantial range and access to unpaved tracks and grassy fields in aftermath scenarios without confining you to on-foot sorties. Typical range of 90+ miles, typical powered speed of 20 mph. In this case one or even two charging stations for the e-bike(s) could be included in this storage space.

8. Large pantry, to hold enough food for the bunker occupants for a prolonged stay. Note that the pantry exceeds the kitchen area in size, as the priority in the bunker is on food storage and minimalist, lowest-energy-use-possible cooking, for which reason most of the foodstuffs would typically consist of items essentially pre-cooked and ready to be reheated (esp. casseroles, stews, soups, pasta bakes, bolognese, lasagnes but also things like sausages, burgers) and / or rehydrated (this practice also radically reduces cooking

smells). Remember, the bunker is primarily about survival, with luxuriousness a lesser priority. That said, for the sake of morale it is always advisable to have some luxuries and a properly regimented policy for their restricted but occasional use, and the materials for some home cooking, say, once a week.

NOTE 1: Ideally the pantry should have UV lighting switched on for one hour at least once per day to maintain sterility.

NOTE 2: A chest freezer should be installed, esp. for pre-cooked meals, plus a fridge for some luxury items.

NOTE 3: However, the pantry should ideally be well stocked with good quality freeze-dried food.

9. Clothes wash facility: Ideally only undergarments and each individual's personal wash cloths should be washed and done so by hand, and a cast iron mangle / clothes-wringer used to expedite their drying. This process should form part of each person's chore rotation, i.e., on Mondays the kids wash their items, on Tuesdays the guests' kids do, on Wednesday the guest parents do, on Thursday the master does, etc. The wrung-out water would be used to top-up the flush water for the toilets (assuming they are based on a water flush mechanism), otherwise disposed of in the wastewater system.

10. Bathroom with marine toilet or pneumatic flush. In a bunker living situation, washing should be limited far below normal everyday aboveground standards, so as to save water, minimise the energy in heating it and to minimise the production of condensation. Typically, each person will have a washable facecloth to wipe themselves down with each day and their own small set of towels. Maintaining personal hygiene in a bunker scenario is critical but need not entail indulgent showering every day.

NOTE 1: Toilets could be (depending on type) drained to a deeply buried, gravity-fed large sewage tank. This could be pumped empty at a future date, postwar.

NOTE 2: One or more rainwater butts could be set-up aboveground and sited in a location substantially removed from the bunker, and discreetly piped to the bunker's toilet flush but this should not be used during times of high fallout radiation, and instead reserved for when radiation levels normalise during the post-strike or inter-strike periods.

11. Bunk rooms: All bunks would be suspended from the walls by chains and could be retracted flat against the wall during the day and, in the case of triple bunk room #1, from the opposite wall, a "day table" could be folded down. Foldable seating could be stored under the bunks at night.

GENERAL NOTES

The bunker is designed for (a) surviving prolonged periods of radioactive fallout and (b) the much longer periods of lawlessness projected (by the UK government) to follow in the aftermath of nuclear strikes. In the latter scenario, the bunker could conceivably be only used during sleeping hours, depending on the assessed severity of the situation.

A nuclear war survival shelter is therefore not simply a fallout shelter, but a bastion against breakdown in law and order that comes during such a war.

The bunker is accessed through a wall-bolted ladder leading to a thick steel security door that can only be locked from inside the bunker; the door has no handles, hinges or keyholes on its external side (facing the ladder), yet opens outwards; this is to make forced entry extremely difficult.

Low voltage lighting should be used as much as reasonably possible, although for prolonged stays care needs to be taken with regard to maintaining circadian normality – for example, lighting should have minimal blue emissions, at least from late afternoon onwards. (more on this further below).

However, a backup LED lighting system should also be in place based on rechargeable batteries (for example) – can't use candles in bunker (they burn up precious oxygen and produce unwanted condensation and carbon monoxide), so keep them for the aboveground dwelling for use during less critical times.

Every square inch of space in a bunker is precious and the principle of "verticality" comes into its own in maximising that space, with as many options for storing things vertically or in a stacked fashion as possible being a key design consideration.

There should be small fire extinguishers and smoke detectors in every room + carbon monoxide alarms in every sleeping room.

Leafy house plants (e.g. Aloe Vera, Peace Lilies, Boston Ferns, English Ivy) should also feature in most rooms for the purpose of absorbing moisture from breathing, mould-countering (some species are astonishingly effective at this), air purification and for helping to imbue a sense of tranquillity.

UV lighting in each of the sleeping quarters should be deployed, ideally activated in the mornings only and for no more than 60 minutes at a time for air purification (kills mould, kills bacteria, removes odours, revives ozone, kills viruses and kills dust mites).

IR lighting should be installed in the mini gym / treatment room for pain relief (if required) and skin rejuvenation. Natural sunlight contains both UV and IR light and both have health benefits that would be unavailable absent these systems.

Air circulation is vital to (a) prevent pooling of stagnant air and odours, (b) purge any viruses brought in at the time of "bunkering down" (although the UV should also help with that) and (c) to compensate for oxygen burnt during cooking and heating, but this can be achieved using very basic, simple expedients (details reserved from these notes).

Water heating should have redundancy but primarily via the generator and backed up using propane (details reserved from these notes).

Bunker time should be used for catching up on healthcare issues and getting plenty of rest, on which point note that in grid-down scenarios where people are left to shelter in place, it is often the case that sleep greatly improves and lasts several hours longer than usual.

Light boxes to maintain circadian rhythm and to prevent mood problems should, minimally, be kept in the mini gym / treatment room. Due to lack of natural light throughout the day, it is important for mood regulation and sleep that appropriate light types be experienced at different times of the day.

Daily routine should be encouraged during the "bunkered down" periods when fallout levels rise or evidence of any fresh wave of strikes emerges (based on the principle of ongoing missile barrages, arriving in waves every few days or weeks throughout hostilities that might last several months).

A typical routine for the bunker's "master" might consist of:

- News check (AM/FM/MW radio) on the hour, every hour.
- Ration planning for the day.
- Weather station checks (first thing, noon, dinner time, bed time).
- Radiation monitor checks (as above).
- Exercise in the mini gym.
- Walk-around inspections of the generator room, the bin store, the water store and the pantry, looking for signs of electrical faults, loose water seals, etc.
- Clean-up of rooms, wipe-down of equipment (these chores to be delegated to other occupants).
- Bunker systems checks (e.g. generator output, NBC, etc.)
- Bunker air quality monitor checks.
- Lots of reading!
- Arranging a showing on the lounge's LCD screen for each evening (for example) of a film or documentary, to maintain a semblance of normality.
- Ensuring everyone is fed and well hydrated and well rested.
- Speaking to everyone in the bunker on a one-to-one basis at least once per day to maintain morale and vigilance.

It is an extraordinary situation and that requires discipline and a temporarily regimented approach to certain aspects of it, but stress reduction is also essential in such situations.

HEATING: At temperature latitudes, subterranean shelters like this tend to stabilise at around 13 degrees C (+/- 1-2 degrees) without any heating input. That said, heating will be needed to some extent for much of the year, especially during the day time, and ideally using propane catalytic heaters (very safe, very efficient (cheap to run), use the same fuel as the stove / hob), strictly arranged in a space-by-space basis as some people have low tolerance of warmth during sleeping hours and others have a higher requirement for it. Hot water bottles for each sleeping position should be provided.

DEHUMIDIFYING: Aside from the house plants, an optional dehumidifier could be installed adjacent to the NBC air filter and mounted on the wall. The run-off water could then be used to top-up the sanitary water supply.

SPECIAL NOTE: This design serves as a baseline or starting point for a 12-14 berth survival shelter, but can be modified to client's requirements, including creating provision for pets and / or disabled access.

External features: Obfuscation of entrance, vents and sensors. IR sensors + cameras on main dwelling. The entrance should be under a ramshackle shed or other low value structure and the access point well obscured; nevertheless, it should be robust enough to allow the bunker occupants to spend short periods each day (of the order of 5-10 minutes) above ground to experience morale-boosting sight of the world outside in all but the most severe fallout conditions.