

# Challenging Behaviour Unit ST Helena: Technical Review of Proposals



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## Report Summary

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This report is an independent desk-based technical review of the design and supporting specification for the proposed Challenging Behaviour Unit (CBU) on St Helena, focussing on compliance with Building Regulations and suitability of the proposals to meet the needs of the particular client group.

In general terms the proposals are considered to be basically sound for the purpose of the building(s) in respect of both health and safety and client group requirements. However, whilst the aim of this report is not to prompt a redesign of the facility, suggestions are made that can be considered by the commissioning body and management team for modifications and improvements should they be appropriate and if available funds allow.

The main issues, divergence from best practice and recommendations for improvements identified within the report are as follows:

- Provision of ramps for wheelchair access around the site, onto the verandas and into the buildings is not evident from the plans (paras. 2.3.2 and 2.5.2)
- Adjustable height worktops and appliances should be considered for the kitchens in those dwellings designed for wheelchair users (para. 2.3.3)
- The specification for ceiling linings should be upgraded to be equivalent to that of the partition walls in order to provide adequate fire protection and robustness (para. 2.3.5)
- Acoustic insulation should be provided above the ceilings and access hatches. The hatches should be secured to prevent unauthorised access into the roof voids (para. 2.3.6)
- The partition construction as noted on the drawings is incorrect, so should be amended to match the description given in the Specification (para. 2.3.7)
- Advice is given on layouts for accessible bathrooms and showers (para. 2.3.9)
- Suggestions are made for discreet observation of residents in their bedrooms, both during the day and at night (para. 2.3.17)
- Means of escape in case of fire would be improved by separating the kitchen and lounge areas (para. 2.3.22)
- Consideration should be given to provision of emergency call systems (para 2.3.26)
- The anomalies on drawing no 17/004/2013 should be corrected (para. 2.4.4)
- Advice is given on best practice in the design of external spaces (para. 2.5.3)



# SECTION 1

## Introduction

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### 1.0 Basis of the review

1.0.1 This independent desk-based technical review of the design and supporting specification for the proposed Challenging Behaviour Unit (CBU) on St Helena has been undertaken to ensure the design meets appropriate standards and requirements. It concentrates on the following:

- Adherence to the appropriate Building Regulations, in particular: Approved Document B (Fire Safety) and Approved Document M (Access to and use of buildings).
- Suitability of the facilities, design and layout for the requirements of the particular client group.

### 1.1 Current Provision

1.1.1 In common with the UK, the model of care on St Helena is changing from that of an institutional nature to one of supported independent living. Early intervention is being developed so the number of individuals requiring institutional care is minimised. The existing CBU at Sundale House in Half Tree Hollow has five residents but is unfit for purpose. Accordingly, a new facility is to be created at the former Half Tree Hollow Primary School (see Figure 1). The buildings will be altered in order to provide self-contained living accommodation for eight to nine residents with some additional accommodation for respite care of other unwell patients.

### 1.2 Existing Buildings

1.2.1 The main building (figure 2) was constructed for use as a First School and then partly used as a nursery before lying empty for some time. It is single storey with single leaf blockwork walls having a rendered finish externally, steel-framed windows and timber pitched roof with asbestos cement sheet covering. A veranda runs along the entire front of the building. Internally, there are concrete floors with predominantly timber boarded covering, timber doors and blockwork partitions. Foul drainage discharges to a septic tank, surface water to a soakaway. Foundations are generally of the shallow trench type.

1.2.2 The existing upper-level building (figure 3) is of similar construction and has been used as ancillary space for the School and as a mechanics workshop for the Adult Education Department.

1.2.3 External surfaces are generally of tarmac to provide hard play areas for the School, with surrounding areas predominantly of grass.



**Figure 1: Aerial view of former Half Tree Hollow Primary School**



Image © Google 2014

**Figure 2: Main School building as existing**







**Figure 3: Upper level building as existing**



**Figure 4: Long range front view of School**





# SECTION 2

## Review of the Proposals

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### 2.0 Proposed Development

- 2.0.1 The buildings are to undergo alteration and refurbishment to provide the new CBU facility. Design drawings and specifications have been prepared by the Environment & Natural Resources Directorate of the St Helena Government and these documents form the basis of this review, with plans included for reference at Annex 1.

### 2.1 Basis of Design

- 2.1.1 The following description of the scheme has been provided by John Bowker of DFID:

*'The new building will provide residential accommodation for both long-term and respite care for adults with mental disabilities. The proposal is not to create a secure or semi-secure environment, just somewhere that provides a home-like setting where they can be looked after by professional staff and engage with therapy sessions in the adjacent sensory room, day room and gardens, and where they can develop independent living skills. The day room and sensory rooms will be used by both residents of this building and mentally disabled children housed in the new-build home on the vacant site to the rear of the building (design work is still underway, but expected to start once the adult facility is complete).'*

*It is not intended to be a secure facility as in the UK. It is more a residential unit with support.*

*Staff will be working a ratio 1:3 throughout the day, with two staff (awake) on duty at night. The site needs to be more of a home than a secure unit, as these residents have learning disabilities. The Unit needs to have safeguards in place so that risk of self-harm is minimised.*

*The long term aim is for residents to reside in the community, however, due to being institutionalised or the nature of disabilities will prevent a number of individuals from doing this.'*

### 2.2 General Principles

- 2.2.1 Although a full anti-ligature design is not required, all fixtures and fittings such as window and door furniture, door closers and hinges, taps, showerheads and coat hooks should be robust, able to withstand sustained attack and meet national safety requirements. In general, all fixtures and fittings should be specified, manufactured, fitted and maintained to help prevent the possibility of accidents, misuse or use as weapons or to aid self-harm. Local risk assessment is necessary, with fitting according to manufacturers' instructions. Projections, level surfaces that could form hook points, and horizontal rails or similar should also be avoided wherever possible. As a rule, any fixture or fitting that could provide a ligature support should safely break free when weight is applied.



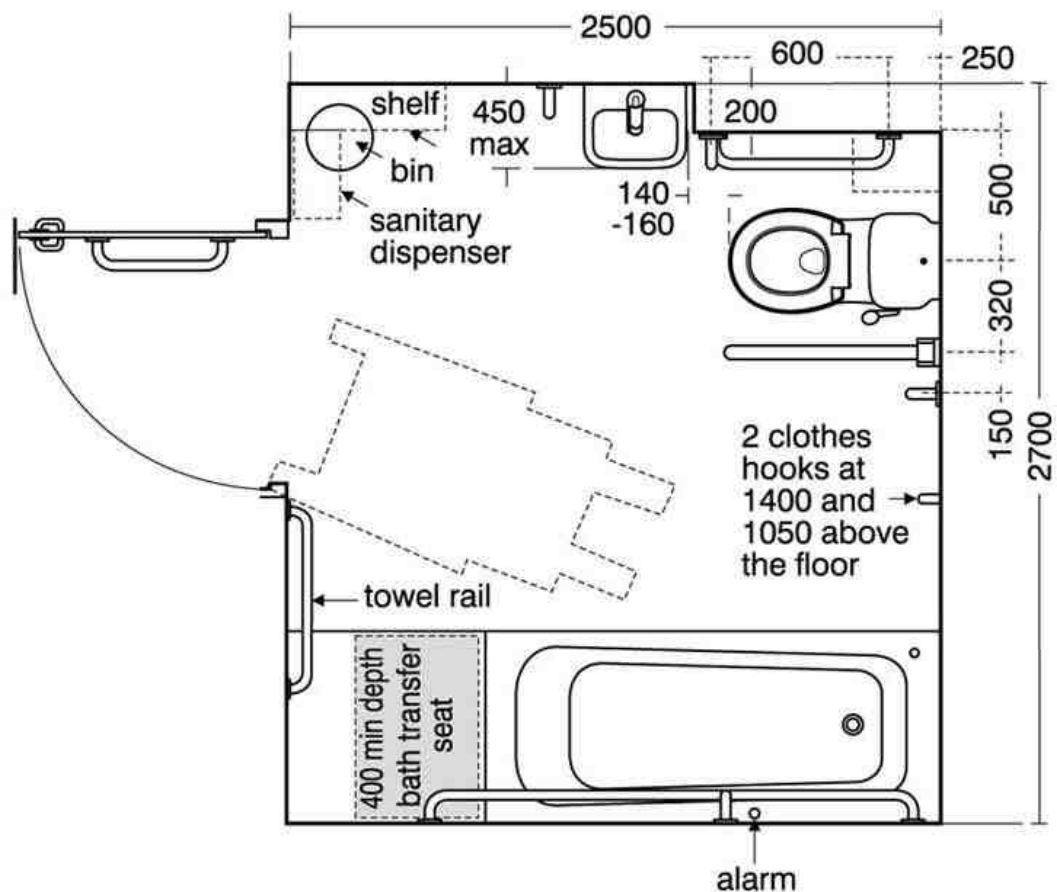


## 2.3 Main Building

- 2.3.1 The overall external dimensions of the main building are 6.15m wide by 59.25m long. There is a continuous 1.65m wide veranda to the front elevation, set 0.75m above the level of the footpath. Two small sections of the building are to be demolished in order to create discrete units of two detached dwellings (internal floor areas approximately 78 sqm) and a pair of semi-detached dwellings (internal floor areas approximately 71 sqm). Each dwelling is designed for two people in single bedrooms with ensuite sanitary provision, plus an open-plan shared kitchen/diner and lounge area with doors to outside at the front and rear. Three of the four bedrooms/ensuites in the detached dwellings have been planned to accommodate wheelchair users, and each of the two semi-detached dwellings incorporates a sensory room.
- 2.3.2 The specification document states that “All external entrances shall have a ramp installed to allow wheelchair access from both directions”, although this is not evident from the plans supplied, both in terms of access into the buildings and onto the verandas.
- 2.3.3 All the dwellings have adequate space for cooking, eating and relaxation within the kitchen/diner and lounge. No provision appears to have been made for adjustable height worktops or appliances within the dwellings suitable for wheelchair users, so this may be worthy of consideration.
- 2.3.4 All doors, both external and internal, open outwards. This demonstrates good practice in that it prevents the residents barricading themselves within rooms. Internal doors are all specified as being solid core FD30 standard (half-hour fire resisting), and appear to be of appropriate widths where wheelchair users may be anticipated, although no dimensions are given. Internal doors to the Sensory Rooms are provided with glazed vision panels, although sizes are not given. All doors are capable of being locked and each will be provided with a thumb turn on the inside face, so occupants cannot be trapped in case of fire within a room behind a locked door.
- 2.3.5 The construction of internal partition walls is described in the Specification as being two layers of plasterboard and one layer of plywood fixed to each side of a timber or metal stud frame and sound insulation material within the void. This is a robust construction that should be perfectly adequate for the intended use, and will also provide half-hour fire resistance in common with the doors. However, the ceiling specification is far less robust, being only a single layer of plasterboard on timber framing. It is recommended this be upgraded to a specification equivalent to that of the partition wall lining – not only will this be much more resistant to physical abuse but the fire resistance of the room enclosure will be maintained, since the partitions stop at ceiling level.
- 2.3.6 Speech privacy is very important, as patients may receive visitors in their rooms, and they may listen to music. A reasonable level of sound attenuation is therefore required. Acoustic insulation should be laid on the ceiling within the roof space to maintain levels of privacy between rooms, and the access hatches within the ceilings should provide equivalent levels of sound and fire resistance. In addition, the hatches should be secured to prevent unauthorised access into the roof space.
- 2.3.7 It is noted that the section through the building shown on drawing no 17/003/2013 describes the internal partition and ceiling construction as timber frame with hardboard sheet and paint finish – this should be corrected to match the description in the Specification.

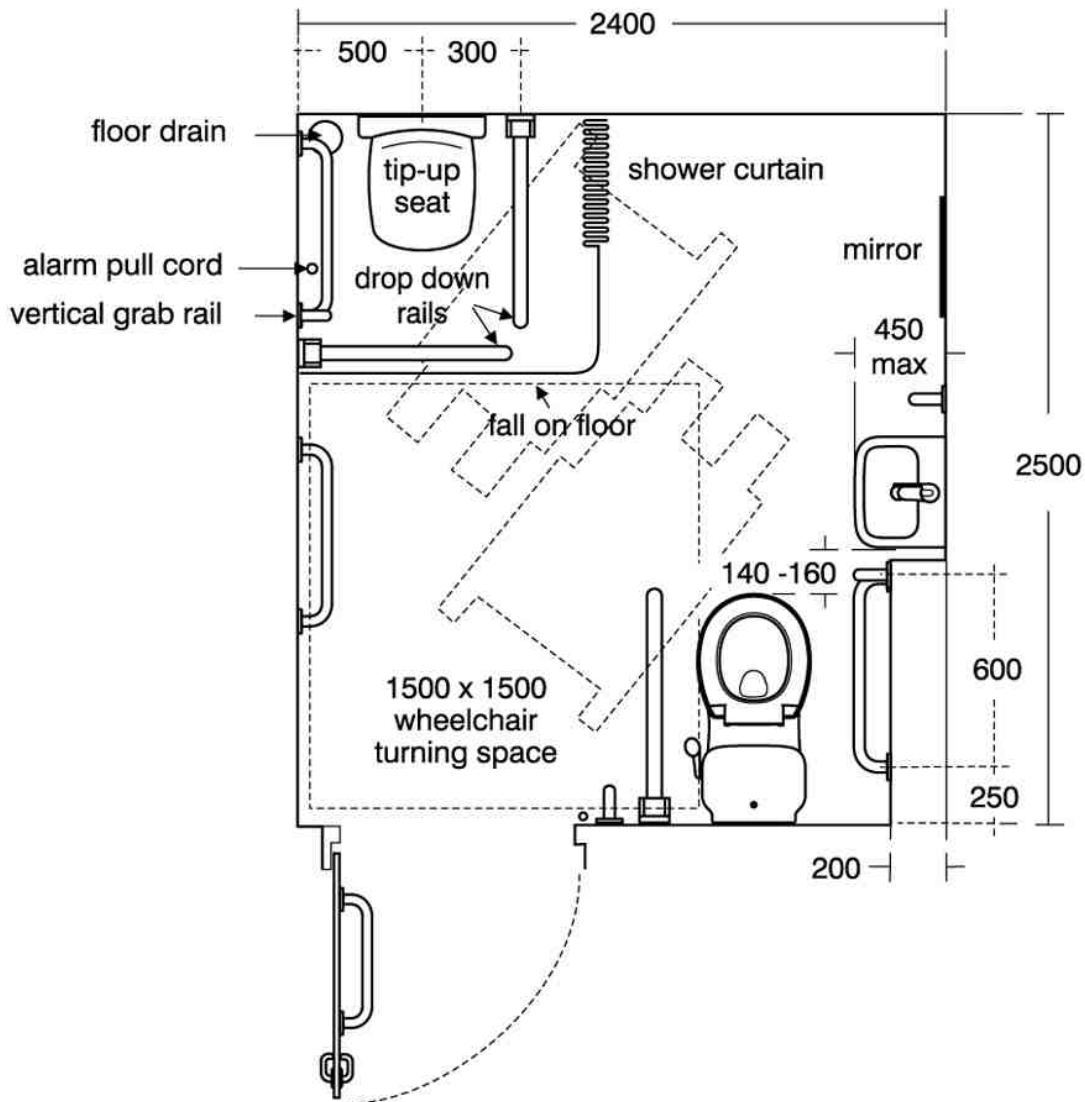
- 2.3.8 Glazing to windows is presumed to be single-glazed and is noted as being 4mm toughened glass. Whilst this may prove to be adequate, increasing the glass thickness to 6mm would make it more resistant to accidental (or deliberate) damage. In any event, glass in fire doors will need to be a minimum of 6mm thick in order to comply with regulatory standards.
- 2.3.9 Outline requirements for ensuite showers and bathrooms are described in the Specification and Room Data Sheets appended to it. Sizes of rooms are adequate, but accessibility of the ensuite showers would be improved by changing the swing of the doors to the opposite hand. The layout of the ensuite showers is shown on the plans but no layout is given for the bathrooms. Reference is made to a website for suggested design details ([www.disabledtoilets.co.uk](http://www.disabledtoilets.co.uk)) which does have some useful information, although this is a commercial company selling a variety of sanitary products suitable for a wide range of disabilities. A better guide for design principles would be Diagram 25 of Building Regulations Approved Document M (Figure 2).

**Figure 5: Bathroom for independent use incorporating a corner WC layout**



Baths may not be suited to some residents with particular mobility problems so consideration could be given to providing a shower instead of a bath in one of the two bathrooms (see Figure 3).


**Figure 6: Shower room for independent use incorporating a corner WC layout**




2.3.10 The Room Data Sheet for the Bathroom & Ensuites refers to a stainless steel bath; this is a very unusual specification so is presumed to be a typographical error – a pressed steel bath would be the norm. In addition, choice is given for a shower rail or screen, although polycarbonate or toughened glass screens are generally preferable to rails & curtains. Each room should also have a full-length unbreakable mirror.

2.3.11 All bathrooms will have a floor drain, which can prevent the rooms becoming flooded either accidentally or deliberately provided the outlets are not blocked.

2.3.12 Fixtures and fittings should be robust, prevent opportunities for concealment and meet infection control requirements. All ductwork, plumbing and pipework should be concealed wherever possible.


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- 2.3.13 The door to the en-suite facilities is fitted with a privacy lock, which should have a clearly visible “vacant/engaged” indicator and an external locking release which can be used quickly by staff in an emergency.
- 2.3.14 Bedrooms should be domestic in nature, their main function being to provide sleeping accommodation and an area of personal space for the patient. People may be long-term residents, so the design of bedrooms should reflect this. For example, extra storage will be required to hold an accumulation of personal possessions.
- 2.3.15 Bedrooms should be furnished with divan beds which are high enough to get in and out of, and which will not present problems with bed-making. Plenty of personal storage facilities, with appropriate security for patients’ clothing and personal possessions, should be provided within each bedroom. As a minimum, furniture should include a wardrobe, a chest of drawers and chairs. Bookshelves and a writing surface are useful for many people. It is for local decision whether furniture is freestanding or fitted.
- 2.3.16 Residents are able to lock their rooms, both when they are inside the room and on leaving it, to safeguard their property and to increase the feeling of safety, privacy and dignity. However, members of staff have the facility to override the lock by use of a key.
- 2.3.17 With certain categories of service user it can be important to be able to observe them unobtrusively whilst they are in their bedrooms. In such cases, bedroom doors have a vision panel to allow staff observation into the room. Some means of obscuring the vision panel, controlled by the service user but with staff over-ride, is required. A number of solutions are available, including observation panels that change from white to clear. A separate low brightness nightlight, operated from outside the room, is often provided for observation during the hours of darkness. Such provision is not made in this scheme but may be worthy of consideration.
- 2.3.18 The Sensory Rooms have an increased number of power sockets which will be useful for the equipment used in therapies such as Snoezelen (used with people having autism and developmental disabilities). It would be beneficial if the rooms had blackout blinds on the windows and vision panels in doors as such therapies include the use of light in the creation of a multi-sensory environment. The walls and ceilings in these rooms are of mainly lightweight construction so any suspension equipment used for treating vestibular disorders (the vestibular system provides the leading contribution to the body about movement and sense of balance) will have to be self-supporting.
- 2.3.19 Flooring is generally non-slip vinyl sheet throughout apart from lounges and bedrooms, which are to have timber board floors with varnish finish. Consideration could be given to using vinyl sheet in these rooms as well, since residents will be barefoot at times.
- 2.3.20 Means of escape in case of fire is relatively straightforward in small single storey dwellings such as these. Building Regulations Approved Document B (Fire Safety) states that compliance can be achieved by ensuring that all habitable rooms – except kitchens – should open directly onto a hall leading to the entrance or other suitable exit. Alternatively, those rooms should have a window that can be opened to provide an exit. However, fire safety guidance for residential care premises states that using windows as a means of escape is not normally acceptable and should only be considered in exceptional circumstances.



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- 2.3.21 In this scheme the windows are restricted to 100mm opening to protect occupants from accidental (or deliberate) falls onto a hard surface outside the rooms. In some cases, individuals may try to escape from an environment they perceive to be hostile or may be confused due to their clinical condition. Restricting the opening width of windows will prevent such occurrences.
- 2.3.22 The bedrooms open off the open-plan layout of the lounge and kitchen, without the separation of a hall to offer a protected route of escape to the exit door from the lounge. All habitable rooms are provided with smoke detectors to give early warning of fire, and the kitchen space has the benefit of a heat detector. In addition, there is an exit door from the kitchen space leading direct to outside. Nevertheless, fire safety would be improved by separating the kitchen and lounge by a partition wall and fire-resisting door.
- 2.3.23 Staff procedures should be put in place to manage evacuations in case of fire or other emergency and to assist residents where necessary, particularly those with reduced mobility.
- 2.3.24 As noted above, all habitable rooms are provided with fire detection. Locations for break glass call points are not defined in the Specification or on the plans but should be provided adjacent each exit door from the premises. The call points are to be fitted with covers to deter accidental initiation or vandalism, which is a prudent precaution. Consideration may also be given to fitting protective covers over the detectors to also deter vandalism.
- 2.3.25 A good distribution of emergency lighting is shown on the plans, although it appears a fitting has been missed from the plan of the right-hand bedroom in the right-hand dwelling. Socket outlets for power, TV and telephone are generally well-provided throughout the dwellings.
- 2.3.26 No mention is made of an emergency call system. These are commonly provided where assistance is required by a disabled person or a member of staff needs to call for help. The design and positioning should allow a person to get to the alarm call at all times when exit through the door is blocked.
- 2.3.27 Hot water is to be provided by solar panels mounted on the roofs, with each building having a storage tank with immersion heater. No indication is given on the plans for the proposed location of the storage tanks. The hot water supply system should be designed to avoid the development of Legionella bacteria and the outlets thermostatically controlled to avoid scalding temperatures.
- 2.3.28 No mention is made of space heating so it is presumed to be unnecessary given the prevailing climatic conditions on the Island.

## 2.4 Ex-Avec Building

- 2.4.1 The overall external dimensions of this building are 6.35m wide by 15.21m long (internal floor area approximately 90 square metres). There is a continuous 1.5m wide veranda to the front elevation, set 0.175m above the level of the footpath. This building is constructed in a manner similar to that of the main building and the refurbishment proposals are also broadly similar. Accordingly, our comments on these aspects are the same as given above.


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- 2.4.2 The building has been used for storage but will now be converted to provide a Reception Office, General Office, Day Lounge with accessible toilet and a Sensory Room. The Day Lounge and Sensory Room have individual doors leading from the front veranda so may be used independently.
- 2.4.3 As before, entrances are to have ramps thus permitting wheelchair access into the building but it is unclear how wheelchair access to the veranda is to be achieved.
- 2.4.4 Specification of construction, fixtures, fittings and services is generally similar to that in the main buildings. However, there are a number of anomalies on drawing no. 17/004/2013.
- It is noted that the Services plan shows a different use of certain rooms from that on the general layout plan – the Office has become a Meeting Room and the Sensory Room an Office.
  - The Services plan shows no light fittings in the Reception Office or Meeting Room, and no telephone point or smoke detector in the Office.
  - The new small window to the Disabled Toilet is shown on the rear elevation but not on the plans.
  - There is no window provided to the Office / Meeting Room, hence this room would have no natural light or ventilation.

It may be this is indicative of work in progress but clarification and confirmation should be provided before the project moves forward.

- 2.4.5 The office will, no doubt, function as the administrative base for the unit. It may also be the location for a safe in which to store clients' valuables. This should be a lockable room so that only authorised persons can enter.

## 2.5 External areas and landscaping

- 2.5.1 These comments are based upon drawing no 17/001/2013 and the Specification document.
- 2.5.2 Although not immediately evident from the plan, there is a considerable slope on the site from front to back (northwest to southeast). Accordingly, movement from the road frontage and between the various flat areas and buildings will be via steps. This creates barriers for movement of wheelchair users so provision should be made to ensure appropriate wheelchair access is available between the dwellings, garden area and car park. Guidance on acceptable standards is given in Building Regulations Approved Document M (Regulation M1 Section 6) and BS 8300.
- 2.5.3 Recommendations on the design and treatment of external spaces are as follows:
- 2.5.3.1 Access to fresh air and outdoor spaces, and the opportunity for reflection and social engagement, all play a significant role in supporting well-being and recovery. The external space accessed from the unit should be viewed as a functional and therapeutic part of the service.
- 2.5.3.2 Park-like spaces with open grassy areas, herbs, textured plants and shrubs that attract wildlife can alleviate stress and help service users to feel more connected with nature. Raised flower beds could incorporate seating and support therapeutic activities.

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- 2.5.3.3 Units should provide a range of external areas for service users, staff and visitors. Outdoor spaces should offer a range of activities, such as gardening, ball games, sitting, walking, resting and quiet contemplation. There should be a shaded area and also some cover from inclement weather. Planting schemes should be imaginative, encourage use of the space and reflect the passing of seasons.
- 2.5.3.4 There should be level access from the unit to an external space. This space should be designed so that service users can be observed easily. This should provide a space where service users can relax or exercise and should be of sufficient size to accommodate at any one time all the service users in the unit.
- 2.5.3.5 External spaces should be orientated to maximise sunlight and maintain privacy. Where possible, views out to the wider community are also desirable, to decrease the feeling of isolation and institutionalism which can arise from looking inward.
- 2.5.3.6 Gardens with green or relatively verdant foliage or flowers can be arranged in such a way that they offer a feeling of privacy but do not obscure sight lines or present opportunities for service users to conceal themselves.
- 2.5.3.7 Planting should avoid the possibility of contaminants, particularly glass and metals that could be picked up by service users. Sieved and screened topsoil should be used.

## 2.6 Personal Safety

- 2.6.1 Although not specifically a design matter, personal safety is an important consideration in the design and operation of any unit to house persons with challenging or potentially violent behaviour, and thus due consideration should be given to the issues arising therefrom.
- 2.6.2 All users of a facility – including patients, carers, visitors and staff – may be vulnerable to violence, and may need to be protected not only from violent patients in the facility but also from the risk of violence and attack from people in the wider community.
- 2.6.3 Where violent incidents are foreseeable, employers have a duty under Section 2 of the Health and Safety at Work etc Act 1974 to identify the nature and extent of the risk, and to devise measures which would provide a safe workplace and a safe system of work. Guidance on workplace violence is also available on the website of the Health and Safety Executive at [www.hse.gov.uk/healthservices/violence/index.htm](http://www.hse.gov.uk/healthservices/violence/index.htm)
- 2.6.4 Although violence is not as prevalent as some public perceptions suggest, premises which are likely to contain people with a propensity to violence should be designed so that the risk of violence and security problems are minimised. Important design requirements include:
- the creation of a pleasant environment;
  - good observation. Direct and unimpaired visual contact with colleagues is important. Observation should be addressed by both design and operational policies.



- good communication systems taking account of the perception of staff towards their own levels of security. Consideration should be given to alarm call systems, for use by clients and staff. Alarm call points should be situated so that they can be operated if the door or exit is blocked.





## References

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### Technical Documentation Provided by DFID

#### Drawings:

- 01 Site Plan
- 02 Proposed Plan
- 03 Elevation and Section
- 04 Ex Avec Existing Layout
- 05 Septic Tank

#### Photographs:

- Photo front of Existing School
- Photo rear of existing School
- Photo long range front of School
- Photo front of ex Avec building

#### Documentation:

- Specification and prepared contract

### Publications

The Building Regulations 2010: Approved Documents

Published by NBS, part of RIBA Enterprises Ltd, on behalf of HM Government

- Approved Document B – Fire Safety: Volume 1 – Dwellinghouses, 2006 edition incorporating 2010 and 2013 amendments.
- Approved Document B – Fire Safety: Volume 2 – Buildings Other Than Dwellinghouses, 2006 edition incorporating 2010 and 2013 amendments.
- Approved Document M – Access to and use of buildings: 2004 edition incorporating 2010 and 2013 amendments.

*BS 8300:2009+A1:2010 – Design of buildings and their approaches to meet the needs of disabled people – Code of practice.* Published by BSI (2<sup>nd</sup> edition 2009) with amendment A1 (31 July 2010).

*Fire safety risk assessment – residential care premises.* Published by the Department for Communities and Local Government 2006.

*Health Building Note 00-02: Sanitary spaces.* Published by the Department of Health 2013

*Health Building Note 03-01: Adult acute mental health units.* Published by the Department of Health 2013

*Health Building Note 35: Accommodation for people with mental illness Part 2: Treatment and care in the community.* Published by NHS Estates, an Executive Agency of the Department of Health 1998. (Now out of print but a valuable source of information)



Figure 7: Site Plan – 17/001/2013



Figure 8: Proposed Plan – 17/002/2013



Figure 9: Elevations & Section – 17/003/2013

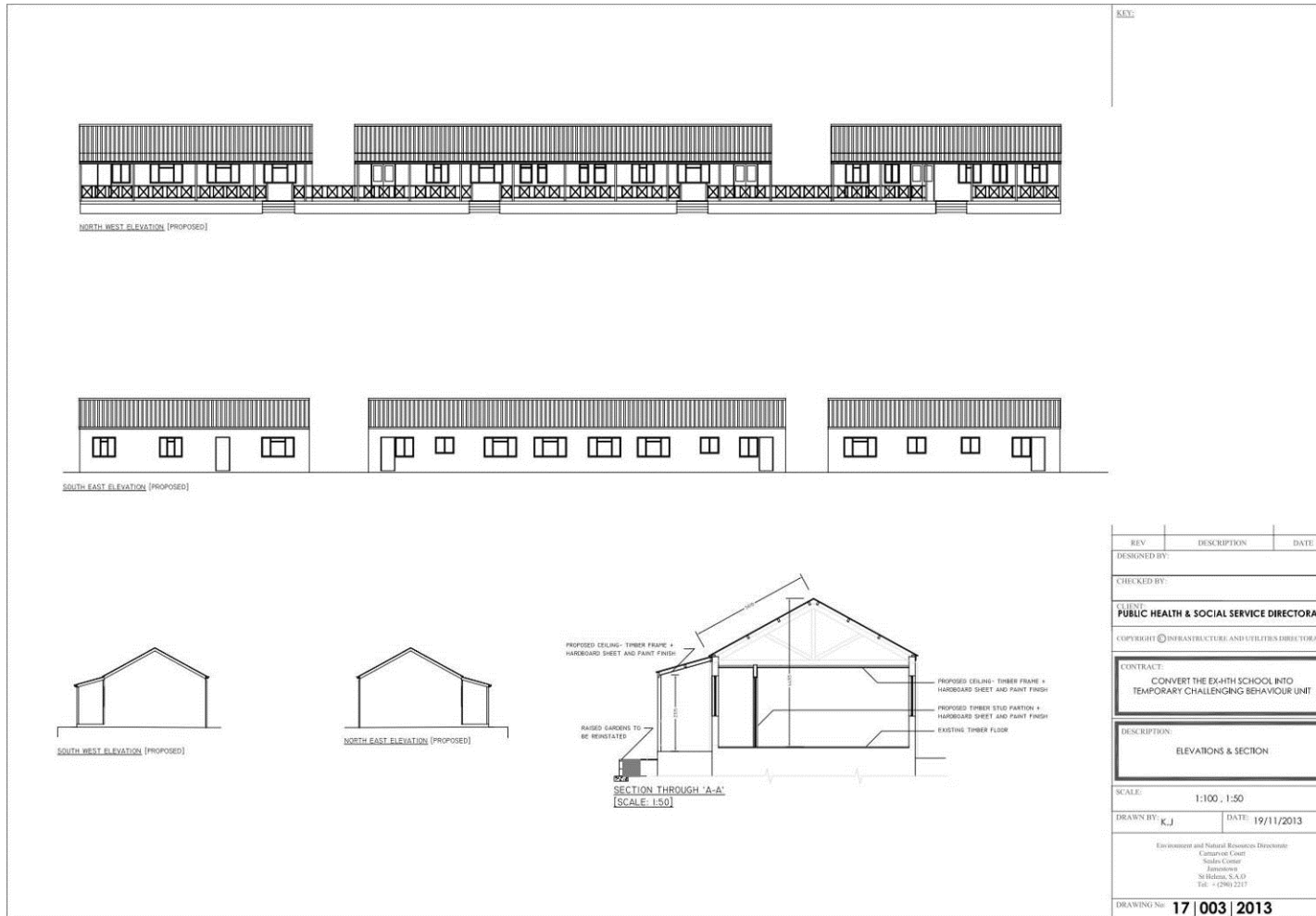




Figure 10: Ex Avec building layout – 17/004/2013

