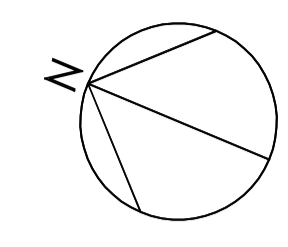


## NHSSCOTLAND PROJECT FACT FILE

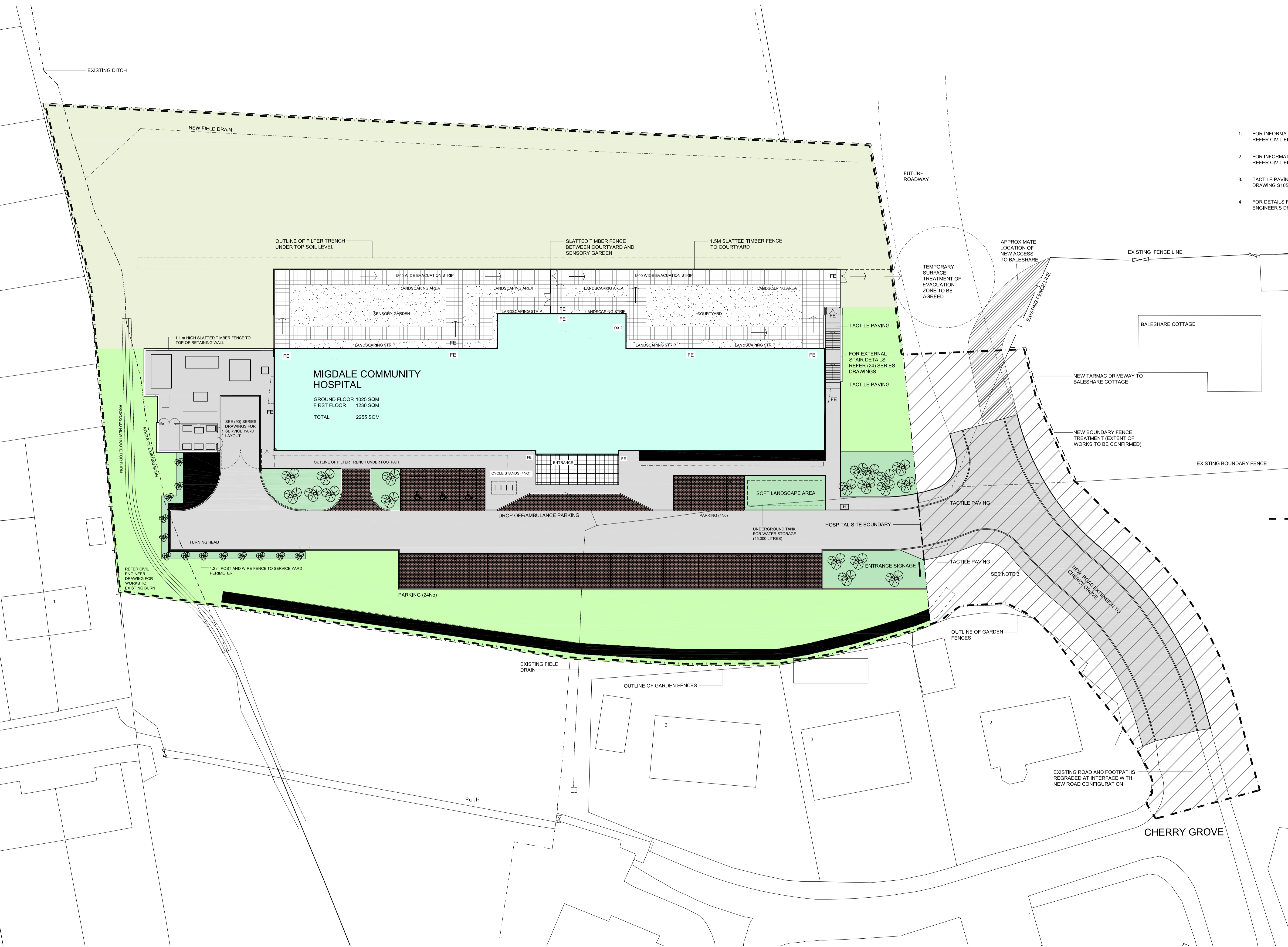


<b>Health Facility Project Name</b>	Migdale Hospital Replacement	
<b>Location</b>	Migdale Hospital Cherry Grove Bonar Bridge Sutherland IV24 3ER	
<b>Population served</b>	County of Sutherland and part of Ross-shire 13,000+	
<b>Type of healthcare facility</b>	Community Hospital	
<b>Type of construction</b>	New Build	
<b>Construction start date (estimated or actual)</b>	February 2010 (actual)	
<b>Construction completion date</b>	June 2011 (actual)	
<b>Gross floor area (m<sup>2</sup>)</b>	2255	
<b>Project, design and construction cost</b>	Land	£150,000
	design & Statutory fees	£735,197.20
	Construction	£7,306,795.38
	Equipment	£216,292.02
	Miscellaneous inc NHS salaries	£38,070.21
	<b>Total inc VAT</b>	<b>£8,446,354.70</b>
<b>Cost per m<sup>2</sup></b>	£3,745.61 total cost inc land purchase, equipment and VAT	
<b>Total bed numbers</b>	22 beds all single rooms – 10 GP, 10 Old Age Psychiatry and 2 flexible.	
<b>Departmental information</b>	In addition to in patient areas there is a physiotherapy department treating in-patients and out-patients, also a small OT department, kitchen, mortuary, boilerhouse and CPN and social worker office.	

<b>Client/owner</b>	NHSH Highland <a href="http://www.nhshighland.scot.nhs.uk">www.nhshighland.scot.nhs.uk</a>
<b>Project Manager/Key contact(s)</b>	Project Manager Austin Addison-Smyth, HFS <a href="mailto:austin.addison-smyth@nhs.net">austin.addison-smyth@nhs.net</a> 0141 207 1825  NHS Highland Project Manager: John Bogle <a href="mailto:john.bogle@nhs.net">john.bogle@nhs.net</a> 01955 880200
<b>Capital procurement route</b>	Public Capital
<b>Project management</b>	Project Management was undertaken by Health Facilities Scotland 0141 207 1600
<b>Architects</b>	Austin-Smith:Lord
<b>Contractor</b>	Robertson Dawn Health Ltd
<b>Services</b>	In patient beds for Psychiatry of old age and GP  Out patient - Psychiatry for Older Adults, Psychology for Older Adults and physiotherapy
<b>Key facts</b>	The hospital is energy efficient, receiving a B+ EPC rating.  The single rooms have resulted in better sleeping patterns for psychiatric patients which in turn has led to less disturbed behaviour during the day.  The building was highly commended in the 2011 HFS awards and in 2012 has been shortlisted for the Building Better Healthcare awards and the Inverness Architects Association awards.



- FOR INFORMATION REGARDING PROPOSED ROAD DESIGN REFER CIVIL ENGINEER'S DRAWING S105383/P1/100
- FOR INFORMATION REGARDING PROPOSED SITE DRAINAGE REFER CIVIL ENGINEER'S DRAWING S105383/P2/200
- TACTILE PAVING TO SPECIFICATION AND DETAIL ON ENGINEERS DRAWING S105383/110
- FOR DETAILS REGARDING FIRE HYDRANT'S REFER SERVICES ENGINEER'S DRAWINGS



**LEGEND**

- DENOTES OUTLINE OF PLANNING APPLICATION BOUNDARY
- TARMAC FINISH TO NEW ROADS & FOOTPATHS
- CONCRETE PAVING SLABS
- POUROUS PAVING
- AREAS TO RECEIVE TOP SOIL AND GRASS
- SOFT LANDSCAPING AREAS
- RESIDUAL SITE AREAS RETAINED AS EXISTING WITH LOCALISED REGRADING WHERE REQUIRED
- AREA OF PROPOSED SHARED ACCESS ROAD
- EXPOSED GRAVEL FILTER TRENCH
- NEW TARMAC DRIVEWAY TO BALESHARE COTTAGE
- FIRE HYDRANT
- LANDSCAPED AREAS TO BE DEVELOPED BY CLIENT
- GRAVEL

Revision	Description	By	Date
A	DWG UPDATED FOR PLANNING APPLICATION	AMcC	08.12.08
B	DWG UPDATED FOR BUILDING WARRANT	LJC	13.02.09
C	TACTILE PAVING ADDED; SERVICE YARD GATES AMENDED	SK	01.05.09
D	GENERAL UPDATES; DISABLED PARKING; REAR GARDEN EXTERNAL STAIR	SK	12.06.09
E	AMENDMENT TO SERVICE YARD AND PARKING LAYOUT; BURN DIVERSION AND FENCING AROUND TURNING CIRCLE ADDED; ADDITIONAL NOTES ADDED	LJC	28.08.09
F	Fire hydrant next to turning head gate deleted	AMcC	6.09.10

Revision	Description	By	Date
G	Service Yard Layout Updated	AMcC	12.10.10
H	Garden remodelled to accommodate evacuation strip. Access road to Baleshare updated.	LJC	04.04.11
J	Gate deleted from turning head, courtyard, entrance paving configuration & waste enclosure updated for H&S file	AMcC	20.06.11

Revision	Description	By	Date

Notes  
 DO NOT SCALE. Use figure dimension only. The contractor is responsible for all dimensions on the work as per H&S file.  
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Drawn	AMcC
Date	October 08
Checked	
Date	
Scale	1:250 @ A1
Status	CONSTRUCTION

**Austin-Smith & Lord LLP**  
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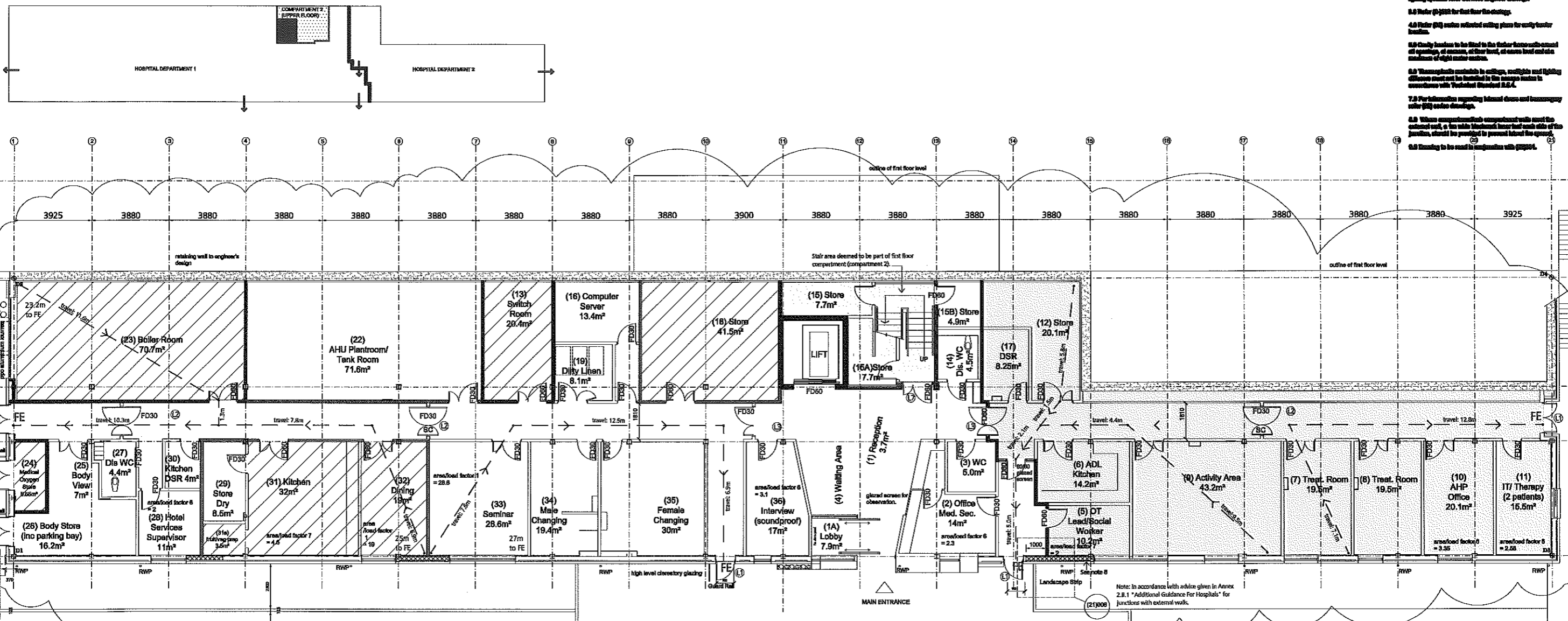
**NHS Highland**

**Austin-Smith & Lord**

Project: Migdale Community Hospital  
 Location: Bonar Bridge, Sutherland  
 Description: Site Plan AS Proposed

Job No: 207395  
 Drawing No: (0)013  
 Revision: J

# GROUND FLOOR - COMPARTMENT 1



## NOTES

- 1.0 Do not install fire doors. Use fire doors only. All fire doors and frames to be checked on site by contractor prior to making of contract.
- 2.0 For information regarding the detection and emergency lighting systems refer Services Engineer drawings.
- 3.0 Refer (10) for first floor fire escape.
- 4.0 Refer (10) for first floor fire escape.
- 5.0 Only doors to be fitted in the fire compartment walls and all openings, at access, at floor level, at same level and at same level of eight meter centre.
- 6.0 Where applicable in ceiling, multiple and lighting fixtures must not be installed in the escape routes in accordance with Technical Standard 2.1.1.
- 7.0 For information regarding internal doors and emergency lighting refer (10) services drawings.
- 8.0 Where appropriate compartment walls need the external wall, a fire wall mechanical lower half each side of the junction, should be provided to prevent lateral fire spread.
- 9.0 Drawing to be used in conjunction with (10) (11).

- 1.0 COMPARTMENTS  
Ground Floor Compartment Area = 600m<sup>2</sup>  
First Floor Compartment Area = 1169m<sup>2</sup>  
  
Building Compartment at first floor level (to less than 1800m<sup>2</sup>) satisfies Technical Standard 2.1.1.
- 2.0 Compartment Floor to achieve a 1hr fire rating (integrity & integrity). Refer Structural Engineers drawings for information regarding composite reinforced concrete structural floor construction.  
  
All structural steelwork to receive a proprietary intumescent paint finish coating to achieve a 1 hour fire rating (integrity only). Hiltite 5707-60 or equal and approved. (Where steel sections are less than 9mm in thickness, Hiltite 5606-60 is to be applied.)  
  
Where beams are located at floor perimeters where there is a risk of radiant heat breaching the compartment floor edge or within the raised walls, Hiltite insulated fire bolts are to be installed within the web of the beam in addition to the intumescent paint coating in accordance with the manufacturer's recommendations to provide 1 hour fire resistance (integrity & integrity).  
  
For compartment wall construction refer to drawings AL (0)330 and 31.  
  
Doors and glazing in stair compartment wall to be 1 hour fire rated.
- 3.0 ELEMENTS OF STRUCTURE  
  
Refer note 2 for description of compartment floor structure.  
  
Unless otherwise stated, all steel columns to receive 1 hour fire rated intumescent coating as described above.  
  
Where columns are located within fire rated walls, they are to be encased in Gyprox Oxyliner Fireless system or equal and approved as noted in item 2.6 on drawing (0)330

- 4.0 SUB-COMPARTMENT  
  
Compartment walls and doors with a minimum fire resistance duration (60mins), to be provided between different hospital departments.  
  
Areas of special fire risk to be enclosed by walls and doors with medium fire resistance (60mins).
- 6.0 LIFT SHAFT  
  
Lift shaft encased to give minimum of medium fire resistance duration (60 mins). Landing controls and lift car controls to be of a type that do not operate on heat or pressure resulting from heat.
- 8.0 TRAVEL DISTANCE  
  
In accordance with Annex 2.8 "Additional Guidance for Hospitals", travel distance doors and external lifts in 1 direction of travel and 2 in more than 1 direction.

- 7.0 OCCUPANCY CAPACITY  
  
See Annex 2.8.1.  
  
On the ground floor level, occupancy capacities are as follows:  
Number of beds on Ground Floor = 4  
Therefore propose satisfy this standard.  
  
In accordance with 2.8.1.1, the number of beds are proportional to the number of patient beds. Any stay with less than 200 patient beds should therefore provide a minimum of 8 beds. At first floor level on item 21 beds.
- 9.0 CHIMNEY BARRIERS  
  
Refer (10) for chimney barrier plans for 03 locations.
- 10.0 EMERGENCY LIGHTING  
  
For information regarding the detection and emergency lighting systems refer Services Engineer drawings.
- 11.0 GAS/CO EXTRACT (KITCHENS/ROBES)  
  
Smoke extract system to be provided to dry essential rooms. Fans to be installed on ceiling of smoke extraction system within these rooms.

## DOOR LOCKING STRATEGY

- 11 External fire exits to be fitted with panic bar mechanism with integral lock override. Door to be linked to intruder alarm system to alert staff to unauthorised opening. Note: where doors at ground floor act as secondary access the exit to service yards, the relevant intruder alarm zone to be deactivated during hours of operation.
- 12 Smoke control doors across corridors to be fitted with magnetic hold open devices connected to the alarm system. On activation of fire alarm system doors return to their closed position. Door closes are fitted to maintain them in their closed position. No locks are fitted to these doors.
- 13 Doors to wards to be fitted with key fob operated electro magnetic locking mechanisms linked to the fire alarm system. On activation of the fire alarm system, lock is deactivated facilitating escape. In the event of failure of the electromagnetic lock, a break glass push button release mechanism is provided. A push button opening mechanism is provided to the inside of the door to the GR wing and at doors on ground floor between waiting area and corridors.
- 14 Locking mechanism as described for 13.
- 15 Doors to flexible bedrooms to also be fitted with electro magnetic hold open devices when not required to function as segregation between wards. Hold open devices to be linked to fire alarm system and are to close on activation of the fire alarm. Doors to be fitted with door closes as described for 12.
- 16 Exit doors from day spaces to be fitted with panic bar mechanism with external lock override. Door to be linked to intruder alarm as described for 11. Intruder alarm override to be provided when door is to be used for access to compartmentary gardens.
- 17 Doors are fitted with an automatic opening mechanism connected to the fire alarm system to facilitate the door opening in the event of the fire alarm zone for the day/night space being activated.
- 18 Unless otherwise stated, generally all other doors to be fitted with locking mechanism with thumb turn to inside of doors.  
  
Bedroom doors and associated ensuite are not fitted with locking mechanisms  
  
Stair door at ground floor level is to be fitted with an electro magnetic lock, key fob operated with manually level override to stair side of door.  
  
The entrance auto doors are only locked at night. A key fob operated locking mechanism is to be installed to allow staff to control access to the inner auto door at night. As two other means of escape are provided from the waiting area, there is no requirement to link these doors to the fire alarm system and open on the system's activation.

## LEGEND

- Sub-Compartment (255m<sup>2</sup>)
- Areas of Special Fire Risk (60 minute fire resistance)
- Compartment Wall (60 minute fire resistance)
- Sub Compartment Wall (60 minute fire resistance)
- Walls containing Areas of Special Fire Risk (60 minute fire resistance)
- Partition walls (30 minute fire resistance) see (22) series drawings.
- FE fire escape doors fitted with panic bar mechanism.

- FD60 60 minute self closing fire door (integrity/insulation)
- FD30 30 minute self closing fire door (integrity/insulation)
- SC Smoke Control

Revision	Description	By	Date	Revision	Description	By	Date
A	Ground Floor	LJC	08.04.09	F	Room 22 AHU plantroom to improve fire resistance of separating walls. With existing fire resistance	LJC	08.04.09
B	Changes to fire door locations	LJC	08.04.09	G	Fire door locations to be updated to reflect changes to fire resistance	LJC	08.04.09
C	Changes to fire door locations	LJC	10.08.09	H	Fire door locations to be updated to reflect changes to fire resistance	LJC	08.04.09
D	Changes to fire door locations	LJC	08.04.09	J	Changes to fire door locations	LJC	10.08.09
E	Changes to fire door locations	LJC	10.08.09				

Revision	Description	By	Date	Revision	Description	By	Date
K	Changes to fire door locations	LJC	08.04.09				
L	Changes to fire door locations	LJC	08.04.09				
M	Changes to fire door locations	LJC	08.04.09				
N	Changes to fire door locations	LJC	08.04.09				
O	Changes to fire door locations	LJC	08.04.09				
P	Changes to fire door locations	LJC	08.04.09				
Q	Changes to fire door locations	LJC	08.04.09				
R	Changes to fire door locations	LJC	08.04.09				
S	Changes to fire door locations	LJC	08.04.09				
T	Changes to fire door locations	LJC	08.04.09				
U	Changes to fire door locations	LJC	08.04.09				
V	Changes to fire door locations	LJC	08.04.09				
W	Changes to fire door locations	LJC	08.04.09				
X	Changes to fire door locations	LJC	08.04.09				
Y	Changes to fire door locations	LJC	08.04.09				
Z	Changes to fire door locations	LJC	08.04.09				

Notes:  
1. This drawing is for information only. It is not to be used for construction purposes without the approval of the architect.  
2. The architect is not responsible for any errors or omissions in this drawing.  
3. The architect is not responsible for any damage or loss arising from the use of this drawing.  
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Drawn	LJC	Austin-Smith:Lord LLP
Checked	IAN 09	Architects Designers Planners
Date		Landscapes Architects
Scale	1:100 @ A1	
Sheet	CONSTRUCTION	



**Austin-Smith:Lord**  
Project: Myle Community Hospital  
Location: Bonar Bridge, Sutherland  
Description: FIRE STRATEGY DRAWINGS  
Drawing No: (2-001)  
Revision: 1





# MIGDALE COMMUNITY HOSPITAL NHS Scotland Environment, Estates, and Facilities Awards Submission

Category: Design Award

October 2011





# CONTENTS

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- Accessibility

## SUSTAINABILITY

## PATIENT FOCUSED

## PERFORMANCE DRIVEN



Entrance Foyer

## PROJECT TEAM

Client	:	NHS Highland
Architect/Lead Consultant	:	Austin-Smith:Lord LLP
Structural & Civil Engineers	:	Scott Wilson
Services Engineers	:	Hulley & Kirkwood
Cost Consultant	:	Gardiner & Theobald
CDM Co-ordinator	:	Gardiner & Theobald
Project Manager (Stage 3 & 4)	:	Cyril Sweett/ Health Facilities Scotland
PCSP/Contractor	:	RD Health/Robertson Construction Highland

### Key NHS Highland Personnel

Locality General Manager, North CHP	:	Georgia Haire
Head of Capital and Property Planning	:	John Bogle
Head of Estates	:	Eric Green
Charge Nurse, Migdale Hospital	:	Margaret Calder



## CONTEXT

### Location

The site is located within the Sutherland Village of Bonar Bridge, north of Inverness at the head of the Dornoch Firth. The site was previously used for agricultural grazing. Two-storey residential properties surround the site to the North and South West with agricultural land to the remaining boundaries.



The Original Site

### Site

The site comprised approximately 9683m<sup>2</sup> (0.968 Hectare) of open grassland sloping uniformly from east to west. The difference in level from the east to west boundary is 8.5m which provided immediate challenges for developing.

The south west view from the site provides a positive aspect toward the stunning scenery of the Kyle of Sutherland.

### Strategic Context

NHS services in Sutherland have changed in anticipation of a demographic increase in the number of, and therefore demand for care for older persons. It was recognised that the existing Migdale Hospital was not fit for purpose and would not be capable of accommodating the type of healthcare services required.

NHS Highland's FBC received Scottish Government approval in November 2009 for the construction of a new hospital to serve the community within Sutherland.



Site Plan



## DESIGN PRINCIPLES

### Brief

NHS Highland appointed the team in 2008 to design a new community hospital to replace existing facilities in Matheson Road (Bonar Bridge) that did not meet current NHS standards. The accommodation required evolved through the consultation process. The principle functions are:

- 22 inpatient bed spaces (Old Age Psychiatry, GP & Flexible use)
- Dining room, day space and ward facilities
- Common services
- Physiotherapy/Out patient consultation
- Building services accommodation.

The brief required the team to design a contemporary NHS facility complying with current Healthcare guidance.

### Key Objectives

The completed design is considered to meet the NHS brief by achieving the objectives of:

- Maximising the delivery of quality healthcare in the appropriate setting
- Improving the programme of better healthcare offered
- Replacing the old Migdale Hospital with fit for purpose facilities meeting the needs of Old Age Psychiatry, care for GP patients allied with other health professional services including outpatient physiotherapy and also enhanced community services.





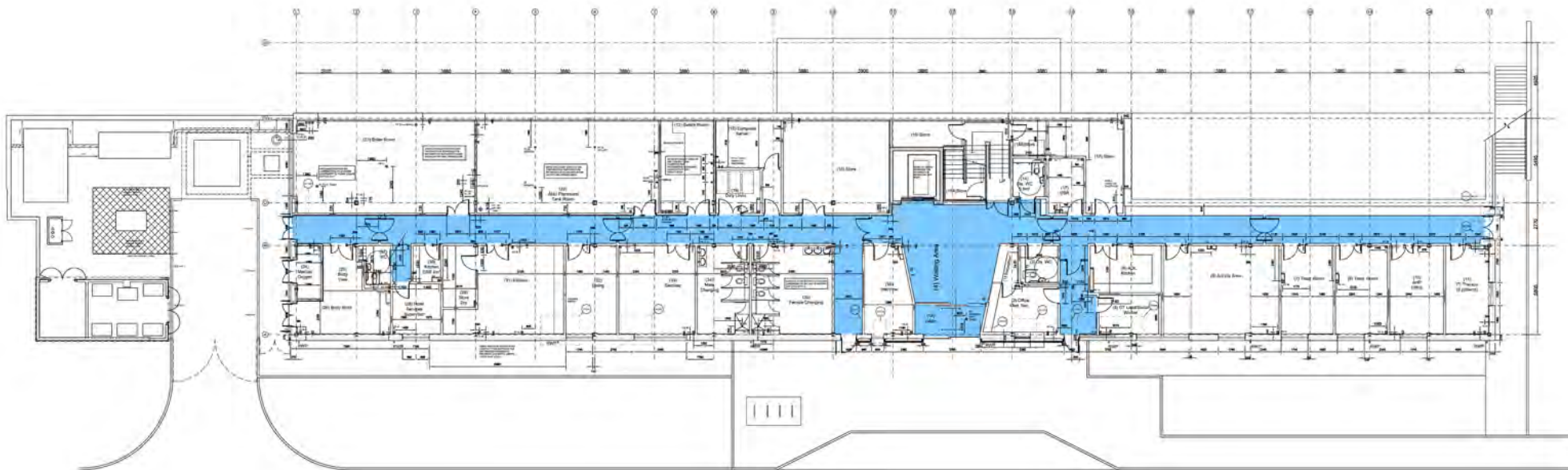
Glazed end to ward corridor

## Concept

Key issues associated with developing the design concept were to:

- Maximise enjoyment of spectacular views of the Kyle of Sutherland to the south west.
- Create contemplative day facilities to the rear side of the site divorced from all vehicle access sounds to the front.
- Develop a 2 storey solution to suit sloping site topology avoiding the cost associated with a large redundant under building and consequently discretely locating back up facilities to reduce the scale of the hospital. The linear form of the design is set out to “work with” the site contours.
- Achieve a clear circulation with easily identified departments arranged to suit activity adjacencies and to suit NHS functional requirements.
- Maintain flexibility for future extension should NHS Highland require to expand this facility at a later date.
- Promote a sustainable approach to building design.





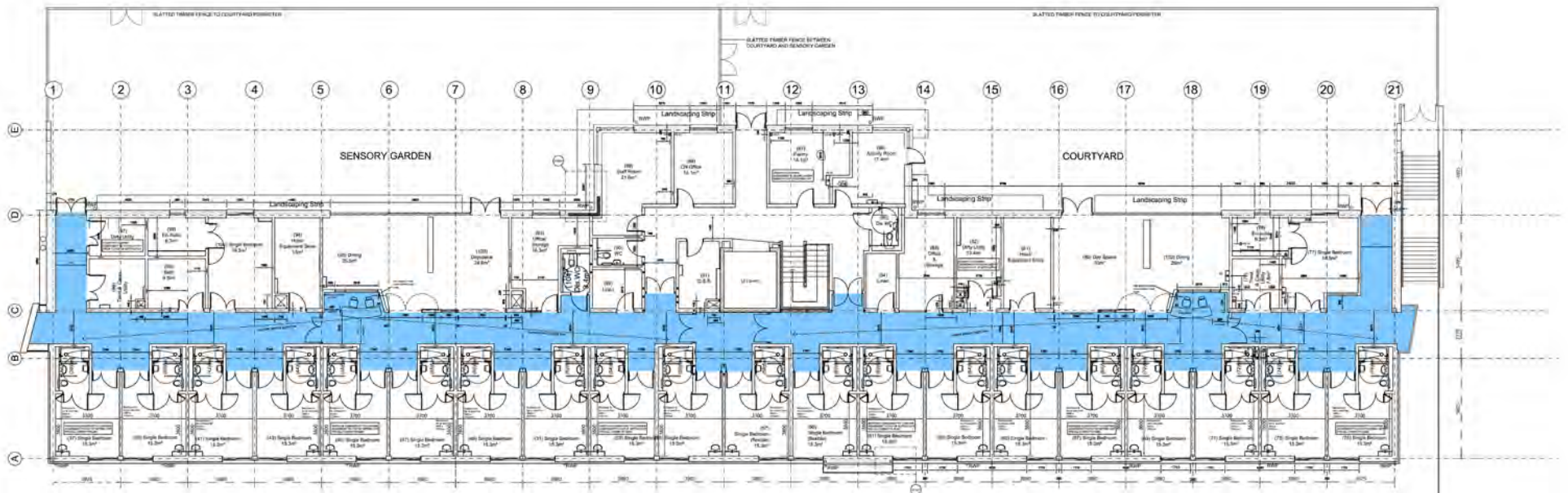
Ground Floor Plan

## DESIGN SOLUTION

### Layout

The ground floor layout gives consideration to the following:

- A centrally located entrance foyer and stair/lift area controls entry to the building and acts as first point of contact for the public.
- A spine corridor forms the principal circulation route with ancillary areas (not requiring day light) buried "into the hillside" with out patient, administration and ancillary facilities requiring daylight located on the building frontage side.



First Floor Plan

The upper floor layout is designed to achieve:

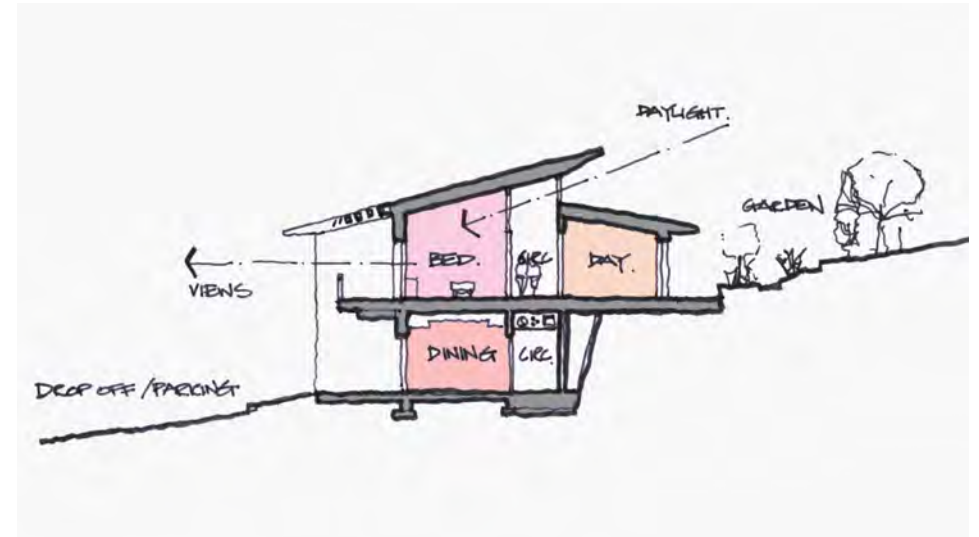
- Separate wings for Old Age Psychiatry and GP inpatient care maximising bedroom views to south west.
- Centrally located stair/lift area providing access to ground floor.
- Flexible use of 2 bedrooms at junction between Old Age Psychiatry and GP wings.
- Day facilities facing onto rear courtyards
- High level daylighting to internal corridors.



## Building Form

The design philosophy is to achieve a simplicity in building form and roofscape. A monopitch presents itself to the front of the building with overhanging edge performing a solar control function to the bedroom accommodation. The monopitch is extended over the lift/stair to articulate this vertical circulation and provide the required space for lift over run and an opportunity for clerestory glazing to the stair and associated corridor.

To the rear a monopitch roof solution is also constructed. As the roof is less visible it is considered appropriate that the eaves overhang and the roof specification is reduced. A gable end solution is utilised to terminate the building form with projecting splayed feature windows added as an “architectural event” at the end of the spine corridor to enable views to be enjoyed from the seating areas.



Concept Section



Front of building

### Front Elevation

The ground floor is designed as a building plinth separated from the upper floor by PPC aluminium framed glazing system. The glazing system incorporates clear panels, louvres where required and opaque glazing in front of elements of structure and partition ends etc. The clerestory glazing is extended to a lower level where additional daylight is required to perimeter rooms.

The upper floor is designed with timber cladding panels between PPC aluminium framed windows to bedrooms.

Attention is given to accentuating the entrance by extending the timber to the ground floor reception and the creation of an additional stone layer around the PPC aluminium framed glazed entrance screen.

Proprietary smooth concrete roof tiles are used for the front monopitch roof with extended timber structural elements to the pronounced roof overhang.

*“It is a large building compared to other structures in the village but it blends very well into the landscape and has taken maximum advantage of the stunning views. Patients, staff and visitors all love the new hospital”*  
(John Bogle, Head of Capital & Property Planning, NHS Highland).



Rear of building

#### Rear Elevation

A simple palette of contrasting colour proprietary render, PPC Aluminium framed glazing, and standing seam roofing were chosen for the rear. A band of high level clerestory glazing provides daylight to the spine corridor and integrates where required, louvres and infill panels where elements of structure are located.

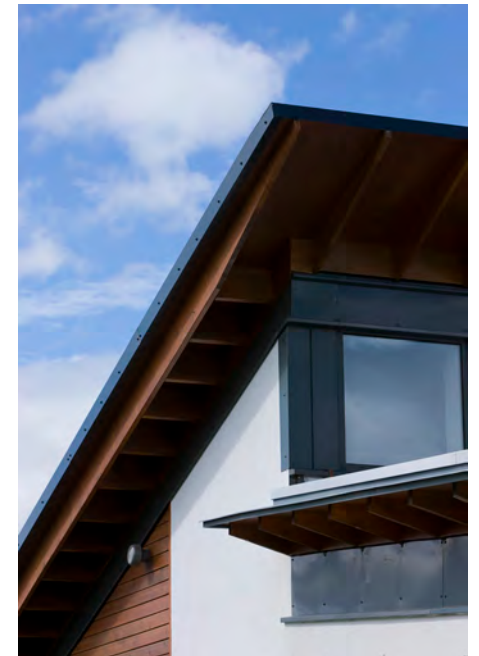




### Gable Elevations

The gable elevations act as the transition between the public frontage and the simplified detailing of the rear elevation. The white render plinth, clerestorey and timber cladding is wrapped around to the feature gable window.

The remaining area of wall is rendered to match the rear with the gable walls extended to provide shelter and a sense of enclosure to the rear courtyards.





## Accessibility

The car parking for the new facility is conveniently located to the front of the building with disabled car parking spaces clearly delineated and positioned in proximity to the principal entrance

A drop off space is also provided outside the principal entrance to assist access of building users with mobility impairment and for ambulance use.

Access to the upper floor is by means of a stair and lift. The benefit of the layout section's arrangement is that there is level access to external areas at both levels which allows a safer and manageable means of escape and evacuation.

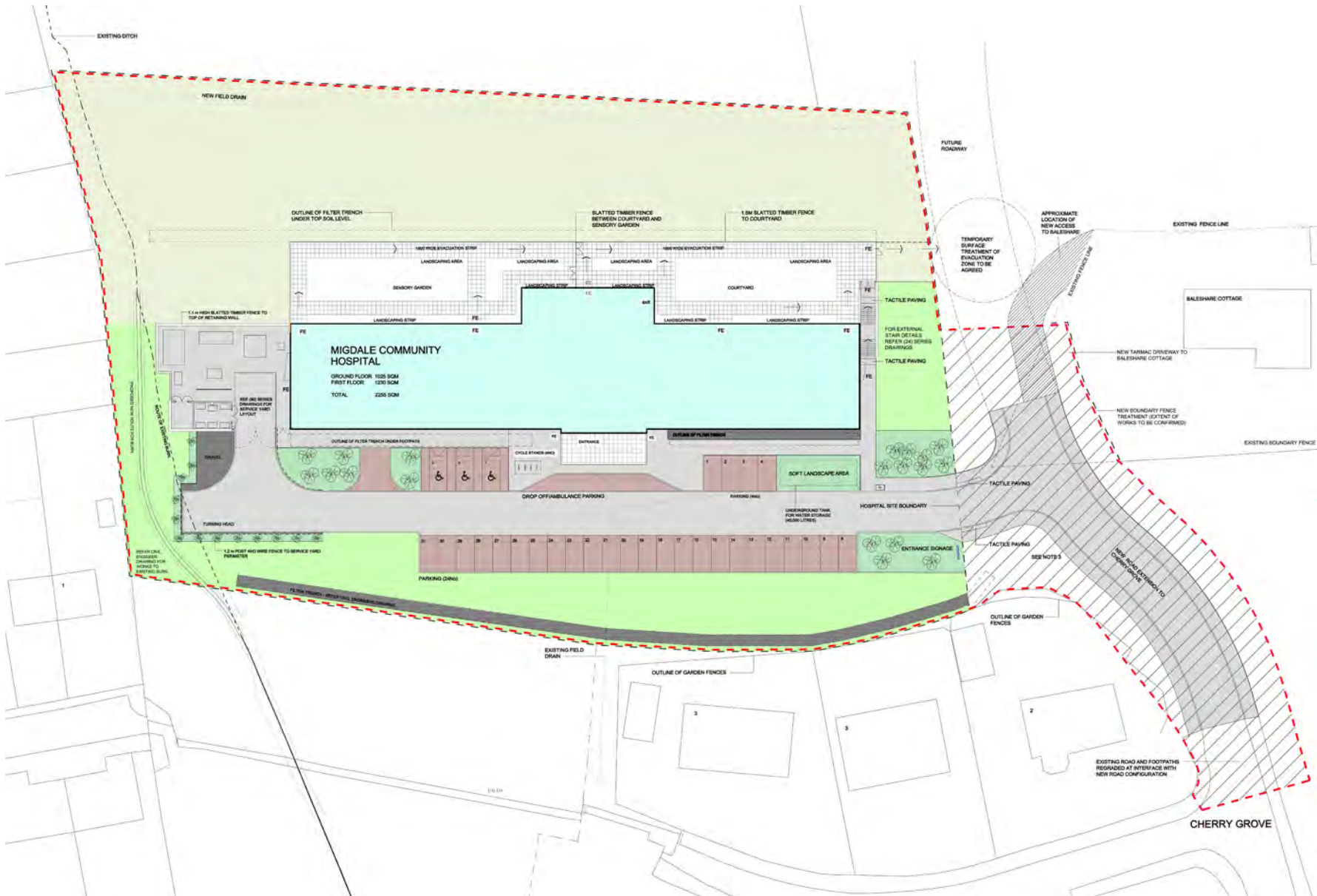
Disabled persons toilet facilities are provided throughout the building designed to Building Regulation technical standards and NHS requirements.

The means of navigation within the building is aided by carefully located signage, appropriate level of lighting and choice of finishes.

The local disability access panel was consulted from the early planning stage and during the design process with the project benefitting from their contribution to creating an environment that promotes accessibility.

*“Sutherland Access Panel would like to highlight the ease of access throughout the hospital and the way that access although secure is easy to negotiate by disabled members of the community. From the time that a disabled person arrives and parks their car, the flow through the hospital is clear and easy to follow, unlike some hospitals where people need escorts to be able to find their way around. We would also like to thank those involved in the garden design as these have also been designed disabled friendly, something that most projects overlook”*

(A Dawson, Secretary, Sutherland Access Panel).



## SUSTAINABILITY

Whilst the project was not formally assessed under the NEAT or BREEAM, the building was designed in the spirit of these schemes to provide a safe and comfortable environment. The building is designed to ensure systems are energy efficient and provided with appropriate and simplistic automatic controls, capable of expansion, minimising of building CO2 emissions and reducing energy consumption, including solar shading and selection of materials with recycled content. A biomass fuelled boiler provides the heating for the building. The EPC rating of the completed development is B+.

To minimise water during the construction phase:

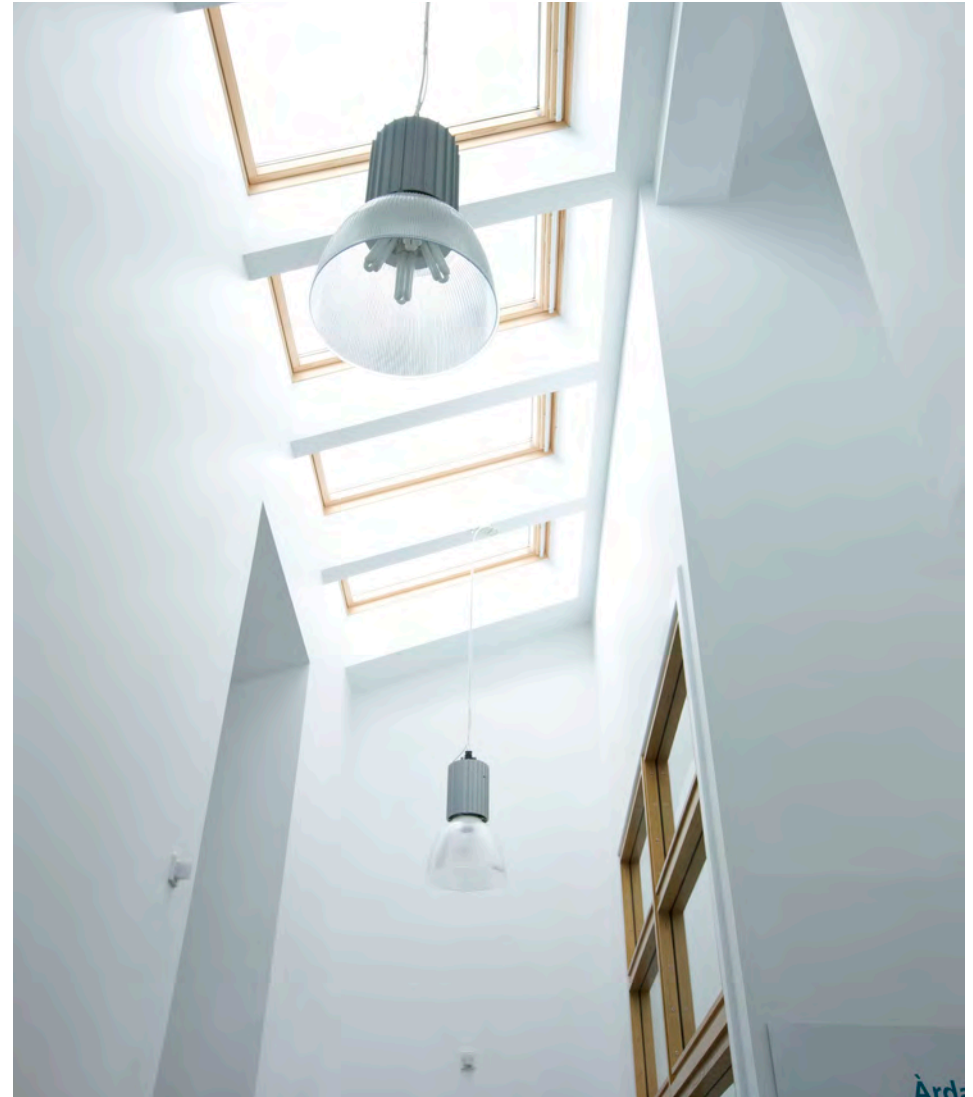
- The groundworks were redesigned to ensure that no excavated material was removed from site. The final topography was reviewed to ensure that this remained on-site resulting in minimal traffic movements and reduced carbon impact.
- All timber off-cuts were offered to the community for kindlers etc. This was a successful initiative and there was minimal timber waste from site.
- Through agreements with local waste handlers, plasterboard cut-offs were segregated and removed from site and end up as additives to provide fertilizers for arable farming.
- All waste generated on-site (including domestic waste from offices and welfare) was segregated ensuring that the recycling content is maximised.

The building offers benefits to the local community and surrounding area by providing a contemporary facility which will support healthcare services for the locality with a focus that addresses the anticipated increase in demand and expectations for elderly persons care within Sunderland.

Staff and visitors have all commented on the quality of light and natural ventilation. The spectacular outlook can be enjoyed from both the public and inpatient rooms. This has resulted in a positive response from patients, staff and visitors being able to connect with the outside environment. The whole hospital is considered by staff to have created a calming atmosphere which is beneficial to all building users including the elderly persons patient group.

The Old Age Psychiatry ward was designed in accordance with current dementia

guidelines and in consultation with dementia advisors (Dementia Services - University of Stirling) which influenced choices of colours, selection of materials, positioning and types of lights. NHS have invested in software to create memory board signs for bedroom doors to assist patients suffering from dementia in wayfinding to their own bedrooms.



## PATIENT FOCUSED

The building layout is designed to maximise the spectacularly scenic Kyle of Sutherland. These views can be enjoyed from both the inpatient bedrooms on the upper floor and public areas.

The external roofs provide an element of shading to reduce excessive glare and solar gain.

Single rooms are provided for in-patients in accordance with the Scottish Government Directive. Staff feedback indicates that compared to the old hospital that this facility replaces, this has resulted in patients sleeping better and as a consequence there are less behavioural problems from dementia care patients during daytime activities.

The en-suite design was developed in consultation with staff. The consultation process progressed from pre-construction mock up to detailed design and trial fit out of a sample en-suite to ensure that the installation would suit staff nursing activities associated with the older persons patient group.

The single bedrooms with integral en-suites have provided privacy and dignity for patients, support control of infection and individualised care planning.

The day/dining rooms are designed as a 'living room' for the wards. The communal areas are daylit and naturally ventilated and the layout offers a freedom of movement which supports rehabilitation programmes and encourages normalisation and the reduction of the length of stay.

The new physiotherapy accommodation enables a greatly improved service to be offered. NHS Highland are able to now offer group rehabilitation programmes (e.g. cardiac rehabilitation) and the added benefit of video conferencing in the gym facilities for link-up with other groups within NHS Highland.

The layout is found to be logical for patients, staff and visitors. Patients are orientated to the ward very quickly.

The day/dining rooms focus on the courtyard spaces to the rear. The courtyard design was developed by local community groups who also contributed to landscape costs.

Whilst designed to be patient-focused, consideration was also given to the two other principal users, namely staff and visitors. Since moving from the old Migdale Hospital there has been a significant increase in staff morale as a result of the improved quality of working environment.

The layout and provision of a multi-disciplinary staff room has promoted better communication between staff. The simplicity in connectivity between wards has the added value of enabling the staff of the two wards to work together and provide mutual support when there is a increased demand in workload.

*"The staff who work in the new hospital seem to be smiling all the time and our patients really seem to be benefitting from the ward environments"*  
(Georgia Haire, Locality General Manager, NHS Highland).



## PERFORMANCE DRIVEN

The project responds to reducing carbon dioxide emissions. Appraisals incorporating dynamic simulation modelling were undertaken at key project stages, and as the design evolved, the analysis centred on satisfying the requirements of both Encode and Section 6.0 Energy of the Scottish Building Regulations. Analysis examined all appropriate Low Zero Carbon Generating Technologies (LZCGTs) and eventually identified biomass (wood chip) as the optimum on-site LZCGT to minimise building CO2 emissions. The building exceeds the requirements of Section 6 Energy by a significant margin and achieved a high EPC rating (B+)

In addition to identifying the optimum on-site LZCGTs the design team has been able to minimise building CO2 emissions by incorporating additional passive building design measures which included the maximisation of natural daylight and ventilation, utilisation of high efficiency lighting, provision of ventilation plant heat recovery systems, increased provision of insulation to the building fabric and the installation of heat and energy meters to enable energy use to be monitored and managed.

From the outset the design intent maximised the provision of natural daylight and ventilation within the hospital. At upper level the high level clerestory glazing provides daylight and ventilation to the internal spine corridor allowing daylight to permeate into the centre of the plan. This also provides light to filter through glazed screens to supplement light into the day/dining spaces, offices and bedrooms. Glazed feature windows are also located at corridor ends offering the opportunity to provide seated areas for patients and visitors to enjoy the enviable views towards the village and countryside.

Floor to ceiling glazing provides an outlook from the day/dining spaces to the courtyard spaces which are used by patients and is considered by staff to be beneficial to patient wellbeing and rehabilitation.

*“We are delighted with the new building. It is extremely light and airy even with the lights switched off”* (John Bogle, Head of Capital and Property Planning, NHS Highland).

The project has enjoyed community support throughout, with local community groups being involved in the consultation process, open days, project meetings and also specifically in the design of the courtyards, with local enterprise contributing to the cost of the landscaping and televisions for patient bedrooms.

Local schools have also been involved in preparing artwork to decorate the circulation areas.

The project is testament to a successful consultation process where the community have a sense of ownership of this new facility. For example, long term commitment has been shown by local community groups to undertake the maintenance of the courtyards for patient use.

