ACUTE HOSPITAL FOR THE SOUTH WEST

DRUMCOO, IRVINESTOWN ROAD, ENNISKILLEN

ENVIRONMENTAL STATEMENT - NON-TECHNICAL SUMMARY

CONTENTS LIST

1.0 Background

In February 2003, the Minister for Health, Social Services and Public Safety announced his decision on the pattern of services set out in Developing Better Services including that the new hospital for the South West of Northern Ireland was to be located to the north of Enniskillen. In October of that year, The Sperrin Lakeland Health and Social Services Trust, through the appointment of a Strategic Partnership Board, commenced their search for a suitable site to the north of Enniskillen.

In April 2004 Ferguson McIlveen LLP were commissioned to carry out a more detailed site search and recommend a suitable site for the new hospital on the northern part of Enniskillen. Following thorough investigation and consultation with statutory bodies the site on lands at Drumcoo, Irvinestown Road, Enniskillen was recommended. In June 2004 the Trust and the board members agreed to proceed with the planning application seeking outline approval for a site for the new acute hospital.

While the application is only outline, the concept submitted as part of this application is for a 325-bed acute hospital, on a 16-hectare site with space for 750 car parking spaces and a new roundabout on the Irvinestown Road.

An Environmental Impact Assessment has been carried out based on the above concept and this resultant Environmental Statement (ES) has been submitted as part of the planning application.

The location of the subject lands in relation to Enniskillen is shown in **Figure 1** with the proposed 16-hectare hospital site shown in **Figure 2.**

Figure 1
Location of Site

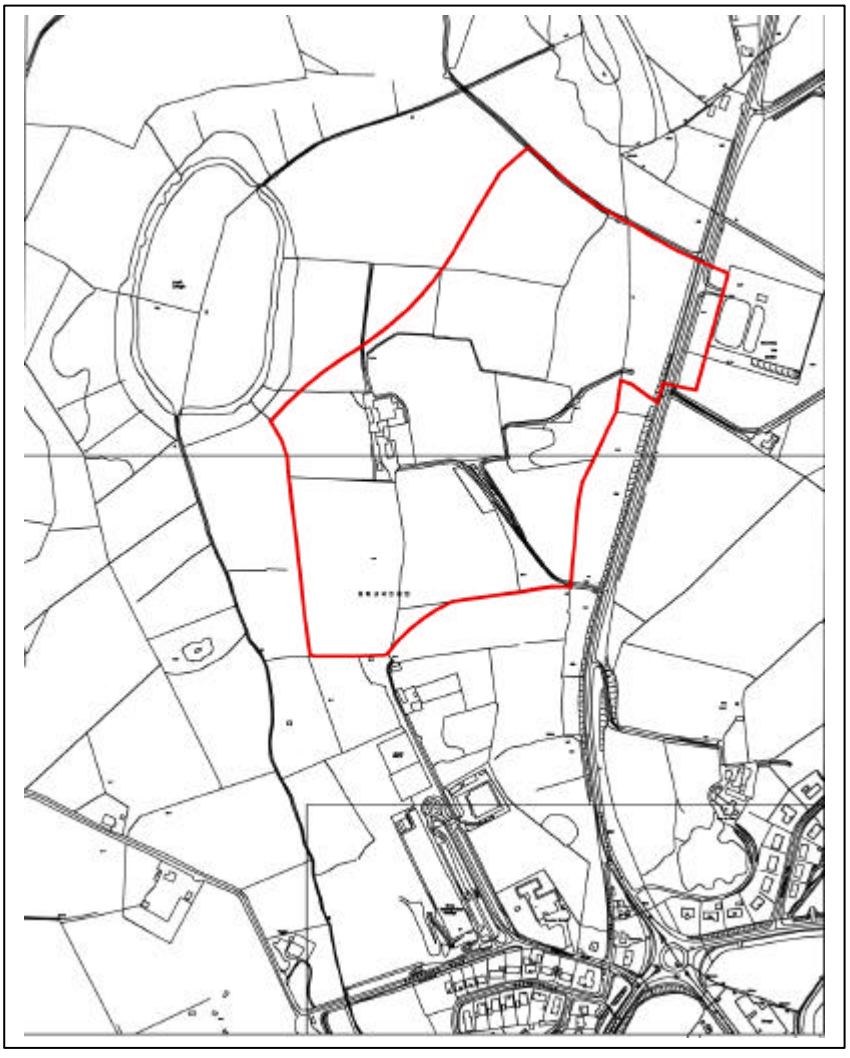


Figure 2
Planning Application Site Boundary

2.0 EIA and Planning Regulations

In accordance to the European Council Directive 85/337/EEC, as amended by Directive 97/11/EC, the Environmental Impact Assessment (Northern Ireland) Regulations 1999 [the EIA Regulations] introduce to the Planning procedures a process by which the effects of a development on the environment are evaluated and considered when determining whether a development should proceed.

Where an EIA is required, the assessment normally begins with a Scoping Study to identify the key impacts and issues of concern that warrant detailed assessment. Detailed assessment typically involves impact analysis according to accepted methodologies, consultations and site visits, leading to the evaluation of the significance and magnitude of any direct, indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects on the environment from the development.

During and following this evaluation, mitigation measures are developed to avoid, reduce or remediate the impacts. The ES describes the investigations, findings and conclusions of the EIA, and any proposed monitoring of the environmental impacts that would be undertaken during and after the construction of the new hospital.

Screening and Scoping Decision

In a screening letter of 15th October 2004, Planning Service confirmed that the proposal was EIA development. The construction of a new acute hospital in Enniskillen falls within Category 10(b) of Schedule 2 of the Planning EIA Regulations (NI) 1999, and as such the application should be accompanied by an Environmental Statement. The key issues dealt with in this EIA were:

- Landscape and Visual impact
- Ecology
- Noise impact
- Traffic impact
- Impact on water and sewage provision
- Pollution
- Geology and Hydorgeology
- Air Quality
- Cultural Heritage
- Socio-economic

3.0 Planning Context

Strategically the Regional Development Strategy ('Shaping Our Future') identifies Enniskillen as one of sixteen main hubs within the province. Thereby it has the potential to develop as a 'growth pole' for the clustering of economic activity and provision of employment and services. Its location and identification as a Major Inter-Regional Gateway makes Enniskillen an ideal location for the South West's new hospital, promoting equal growth across the region and relieving Belfast of further over development and congestion.

An overall assessment of policy context reveals that the principle of this development is broadly in line with central Government policy, provided a Traffic Impact Assessment is carried out and the environmental and visual impact on the designated landscape is kept to a minimum.

The proposal meets regional planning objectives and is in accordance with local planning policy and guidance because:

- The proposal reflects the Regional Development Strategy's aims for equal growth in all sectors across the Region, especially in the Rural West and cross-border areas;
- While it will have an impact on the natural landscape, the design and mitigation can ensure that it is broadly consistent with the policy objectives for nature conservation and archaeological preservation as detailed in PPS2 and PPS6. It is also consistent with the objectives set out in PPS3 and 13 in terms of vehicular and pedestrian access, as well as an integrated approach to land use and transport through its siting and location;
- The 'need' requirement in the PSRNI has been satisfied as showing that the facility meets a market need in Fermanagh and the building can be integrated with the landscape;
- The Area Plan has already designated the site for development, and this proposal will strive to attain a design and layout which respects and integrates with the local landscape and natural and man made features;
- Finally in terms of the Landscape Character Assessment, the proposal respects the importance of the local landscape character through screening and a sympathetic design layout, it is therefore considered that the development would not be prominent and would not detract from the quality of the area.

4.0 Scheme Description and Alternatives Considered

4.1 Proposal and the Site

The proposal is for a major new acute hospital to serve the south west of Northern Ireland. The proposal is submitted for outline permission, so at this stage, final details on the design and layout are not fully developed. However, the concept, which is the basis of this application is for a 325 bed hospital, building over 3 storeys, 750 car parking spaces, new roundabout on A32 and new access with feature bridge over wetland area.

The application site is around 16 hectares and located approximately 1km to the north of Enniskillen town, on the Irvinestown Road (A32). It has a typically drumlin landscape and is of moderate landscape value. The site essentially consists of three low hills with a collection of farm buildings located on top of the middle of three hills. The combined topography of the site and the wider area is such that long-range views are unusual due to the surrounding hills. There are rich ecological habitats on site, which should be retained and enhanced through better management. The mature trees on site are potentially valuable bat roosts as well as being visually attractive features in the landscape.

4.2 Alternatives

In line with the requirements of the EIA Regulations, the following section describes the alternatives considered in proposing the application site for the development of the new hospital for the south-west.

a. Do Nothing

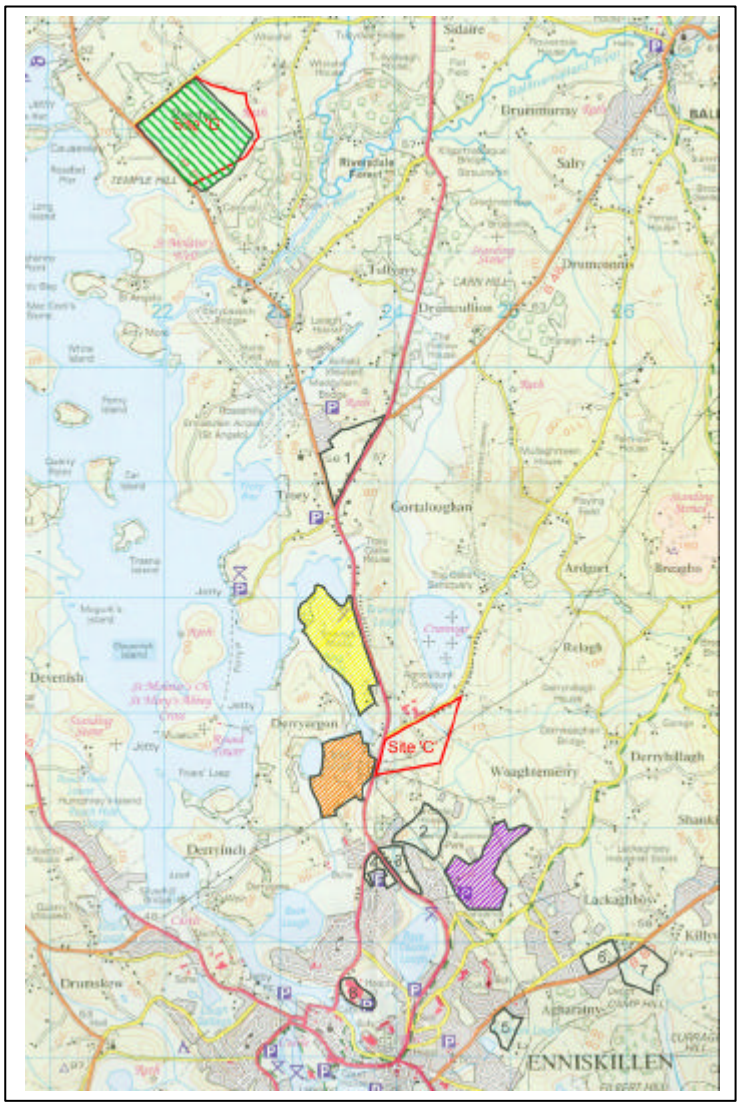
EIA good practice dictates that the "Do Nothing" alternative is also considered. However, in February 2003 the then Health Minister Des Browne made the decision to locate the new acute hospital for the south-west to the north of Enniskillen. This political decision effectively means that the "Do Nothing" option could not be considered.

b. Alternative Sites

A site selection exercise was completed in June 2004 to find a suitable site for the new hospital. In line with the requirements of Des Browne, the search was carried out along

the main roads to the north of Enniskillen. In consultation with various statutory bodies a 7Km (4 mile) limit to the north of the town centre was established for this search area. The main area for the search was the A32 corridor but the B80 Tempo Road was also included as an alternative route to Omagh. Using experience from recently constructed acute hospitals elsewhere in Northern Ireland, it was considered that the ideal size of site for a 3-storey hospital building would be 16 hectares (40 acres), although smaller sites may also be suitable in inner urban areas. All suitably sized sites close to the A32 and B80 were considered. Figure 3 shows the thirteen that were assessed.

Figure 3
Long List of Sites

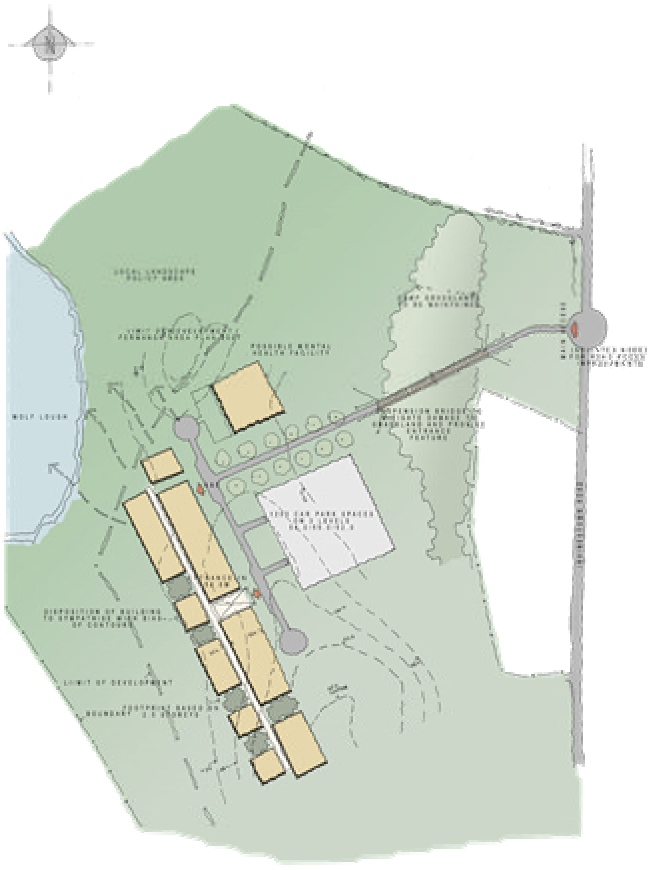


Consultation on each of the sites was carried out with a range of statutory consultees and their opinions were included as part of the site scoring exercise. Each of the sites were scored, using team-based scoring techniques, against a range of criteria which reflected planning and environment issues.

The consultations and scoring produced a shortlist of two sites. One at Carran and the other at Drumcoo. Further detailed assessment was carried out including more consultation and architectural analysis. The site at Drumcoo was chosen for the following reasons:

- The landform ensures that the building will not be over-dominant in the landscape thus retaining the setting of this side of Enniskillen
- Minimal impact on adjoining landuses
- Easy access to the main route north to Omagh
- Existing Department of Health land to the south as an option for future expansion
- Excellent setting in a quiet, healing environment
- Potential access off Cornagrade Road for emergency purposes
- Centre of site is well drained

c. Alternative Designs



Option 1 - On the west bank of the 3 peaks aligned in sympathy with the contour bias.

Option 2 - In line with 2 peaks which will require extensive excavation to reduce levels and create a 'plateau' development site.

Option 3 - In an 'amphi-theatre' of similar contours on the east bank of the hills.

Option 4 - In a valley weaving between 2 peaks along similar levels.

Option 5 (Final Layout Design) - Similar to no. 4 but in the form of a double curvature reflecting the land form / contour bias more closely.

4.3 Design Description

a. Built

Access

Access to the site is proposed via the creation of a new roundabout located on the A32 to the north eastern boundary of the site. An emergency helipad is located to the south western corner of the site adjacent to the A&E entrance.

Bridge

In order to respect the ecological aspects of the identified wet grasslands area it is proposed to enter the site across a 'pontoon' type bridge structure.

Entrances

Two 'public' entrance points are proposed into the hospital building. The 'main' entrance is located approximately midway along the plan form and is positioned to take advantage of westerly views across Wolf Lough. The other public entrance is located at the southern end of the building at a higher level and will provide access to Accident and Emergency / Maternity and Out of Hours functions.

Street

A village 'street' will be the main form of circulation and communication, linking the access points, public spaces and clinical / functional content.

Functional Buildings

The triangular form of the ward blocks are positioned to face towards the west, thereby taking advantage of views and orientation and are largely unseen on approach from the site and building entrance points. Other facilities such as an element of worker housing are dispersed around the site. The building levels are derived from the existing topography to permit the development to nestle with the landform accordingly.

Servicing

The main service area and the energy centre is located to the southern end of the proposed development.

Car Parking

A series of car parks are dispersed around the site.

- A staff car park.
- A decked car park adjacent to the main entrance.
- Car parking associated with key worker housing.
- A dedicated car park for Accident and Emergency / Maternity services.
- A total provision of c. 750 cars is indicated.

Scale and Mass

As indicated, the form of the building is generated and influenced by:

a. The natural landform.
b. The clinical planning / functional needs of a hospital.
c. Site constraints.

The key elements include a 'public space' to the main entrance area, articulated and stepped built frame, transparency, a carefully considered network of roads and car parks.

b. Landscape

Three main objectives were reached for this landscape design:

1. Protection of existing features.
2. Creation of a new landscape which integrates with its surroundings.
3. Sustainable management of the new landscape to enhance the users experience, to promote biodiversity and long term integration of the development within its setting.

It is proposed that the landscape design will be developed with respect to the existing site and surrounding areas. The main aim is to integrate the buildings within the landscape by working with the natural topography, and to incorporate a sustainable urban drainage system (SUDS) to minimise changes to the water table and treat run-off. Habitats at risk from development will be protected, enhanced or managed as part of the landscape structure. The aim of the planting is to reflect the form and character of the local vegetation. Structure planting will be incorporated into the design to provide visual screening for the site as well as enhance the available views. Linkages will be developed to ensure quick and easy movement between different parts of the hospital, as well as linking the hospital to the wider environment for people and wildlife. The use of public transport will be maximised by incorporating frequent and convenient public transport links into the development scheme.

5.0 Potential Impacts & Recommended Mitigation

The following are the key issues and their potential impacts arising from the hospital proposal. The table that follows summarises the degree of the impacts and mitigation measures.

- **Landscape and Visual –** The landscape context of the proposal site is primarily agricultural, with a patchwork field pattern, mature hedgerows and trees. In the vicinity of the proposed site location, is the busy A32 main road, cemetery, scattered residential dwellings, substation and associated high angle powerline masts, all of which contrast with the rural setting.

  There are three lakes in the immediate area of the proposed site; Lough Erne, Drumgay Lough and Wolf Lough, however these are not prominent in the landscape due to the existing undulating topography and vegetation patterns.

  The proposed hospital will be largely screened from the A32 by an existing belt of trees, hedgerows and shrubs, although glimpsed views may sometimes be possible through gaps in the vegetation. This screening effect will be reduced in the winter months. Open views of the proposed hospital site are possible from the raised ground to the east of the site in the location of the cemetery, however, the existing mature trees will break up the mass of this built form. The natural topography of the site affords some screening to the proposed main building in its intended location.

  The retention of important vegetation and habitats within and to the boundary of the proposal site will help to sit the proposed building into the wider landscape context. It is also noted that the proposed planting of trees and native vegetation will retain the existing landscape character and habitat value within the site and soften the built form.

- **Ecology –** A desk study was undertaken of the proposed development area with a surrounding buffer zone of a minimum of 2 km. Accompanying this desk study, was a field study undertaken in August 2004. The entire site was surveyed by an experienced ecologist and the following were all noted in the study: plant communities, habitats, landscape features of ecological value, potential habitats for different ecological groups and any signs of mammals, invertebrates, birds and

amphibians. A number of major habitats were identified, and the potential effects from development were noted as well as mitigation measures that may be employed to limit any direct impacts.

The site is located within the catchment of the Lower Lough Erne wetland system. Wolf Lough is noted as a lake of ecological significance as part of the EHS NI Lake Survey 1999. Importantly, the lands in question do not hold any designation under statutory nature conservation legislation. The network and mosaic of wetland habitats, (Wolf Lough, mature hedgelines and scrub, inundated grassland, ditchlines and hydrological interest), is of high local ecological value as part of the Erne wetland system. The mature trees and wooded pockets are of high local importance in contributing to the mature landscape and providing wildlife refuge. This is also considered to be the case with regard to the mature hedgerows and ditchlines in the area. It is considered that there will be a direct loss of some of these habitats in order to accommodate the proposed hospital.

The status and effects on birds, protected mammals, amphibians and invertebrates was also noted. Around thirty species of birds were recorded on survey, the network of wetland habitat is of high value to breeding and migrant avifauna. There are no records of Otters, Red Squirrels or Badgers on the proposed site. Wolf Lough and the associated mature trees are of significance to bats and this will have to be considered. Habitats present were considered to be of local interest for invertebrates, although a more detailed survey is not seen as being necessary.

A number of key mitigation measures that should be incorporated into the design process were suggested. Avoidance and retention of areas of higher ecological value, and appropriate management and monitoring of these retained areas; Landscape, drainage and environmental management proposals sympathetic to existing habitats, as well as habitat creation to improve areas of low ecological value to offset any loss to more valuable areas; Involvement of tenants and local environmental groups in environmental management and control of impacts during construction.

- **Noise –** Currently the predominant noise source across the site is that of transportation noise on the surrounding roads and in the town centre. There is also occasional impact from agricultural activity. The most proximate residential

property to the site boundary is to the east at a distance of circa 105 metres and the most proximate property to the proposed building is at a distance of 150 metres to the North.

The potential for noise impact on the most proximate noise sensitive properties has been assessed based on a worst case, unscreened scenario with acceptable target levels set for daytime and night-time. It has been noted that these target levels can be raised with increased distance and screening. The noise impacts are split into three sources, which are subject to different criteria, these include, facility, vehicle and construction noise.

With regards to the impact of the facility and its operation, it is noted that as the hospital itself is a noise sensitive property, potential noise impact will be lower again at existing properties outside and beyond the site. It is unlikely that significant internal noise will be generated provided adequate design of building envelope is carried out. It was also noted that there is the potential for kitchen noise, however, this is predicted to be within daytime and night-time target noise levels and of no significant impact.

In relation to vehicular noise levels, it is considered that at peak hour volumes, noise generated by traffic may be perceptible to properties adjacent to the A32, however these changes will not represent a significant increase in noise impact. Potential noise from service and delivery vehicles is below daytime targets and only of marginal significance to night-time targets. Typical car park usage will not cause an impact above existing noise and traffic levels and is within day and night-time targets. It is believed that emergency vehicles will not create new or significant impact, based on the fact that there is already an ambulance centre operating twenty-four hours a day out of the site. Finally, with regard to construction noise, it is suggested that this can be controlled within Environmental Health guidelines for day and night time targets.

- **Water and Pollution –** Wolf Lough, situated close to the north west edge of the site, is fed by and drained by small streams which are designated (under the Drainage (NI) Order 1973), and their maintenance is therefore the responsibility of the River Agency. These streams are not gauged and therefore there are no flow records available for them. The streams in the vicinity of the proposed works are

not tributaries of designated Salmonid or Cyprinid watercourses, as defined by EC Freshwater Fish Directive (78/659/EEC).

Water quality is monitored at several points in Lower Lough Erne. None of the streams in the vicinity of the proposed development are currently monitored as part of the EHS Water Quality Programme. The nearest monitoring point is at Devenish where there have been no major fluctuations in the water quality parameters measured in the last three years. The proposed development must not produce a deterioration of these figures as a result of any potential pollution to Lower Lough Erne.

Rivers Agency has confirmed that there are no flood records available for the site. A walkover survey of the site confirms Local knowledge from Rivers Agency Officers, that the marshy areas close to Wolf Lough would be subject to flooding on a regular basis.

Silting is expected to be the main issue and should be considered at an early stage of the design and mitigation measures monitored throughout construction.

New hospital developments wastewater is usually directed to the nearest WWTW through existing infrastructure. A new WWTW for Enniskillen is currently at the design stage and provision for water treatment coming from the new hospital with laundry and CSSD facilities has been included in determining the load capacity of the new WWTW.

Foul sewage has high concentrations of chemical and biological elements, which are difficult to treat. Appropriate planning will reduce the potential risk caused to water quality and drainage on site. PPG 25 contains information on means to reduce pollution specifically from hospitals and health care establishments. Proper and effective monitoring of Sewage and Waste Water Drainage should occur on a frequent basis. A special treatment package for the pre-treatment of foul sewage was considered to be unnecessary at the hospital site by Water service, however restrictions have been placed on what can be disposed of in this way. EHS suggests SUDS should also be considered for the treatment of Surface Water Drainage. Finally, the operational site must have a plan and emergency procedures in place to deal with any potential pollution incident.

- **Geology/ Hydrogeology –** The proposed siting of the hospital is along a ridge formed by two drumlins, which are aligned in an approximate north-south orientation, at an elevation of between 50 to 60 metres above O.D. Belfast. The terrain is generally grazing land with convex slopes, which grade out to low-lying areas of poorly drained soil.

  Within the site the topsoil exhibits change of composition due to topography. Generally on top of the ridge and upper slopes the topsoil consists of a clay – rich grey/brown earth, while the lower slopes and margins the soil is organic – rich dark brown, becoming peat in wet low-lying areas. Boreholes have indicated that the drift geology is also made up of two distinct zones, glacial till on the higher ground and fluvio-lacustrine alluvium on the lower ground.

  Underlain by rocks of Carboniferous Age, principally Mudstones and Limestones of the Clogher Valley Series, varying in thickness from approximately 300m to 800m, the site forms part of a larger series of rocks known as the 'Tyrone Group' of the Lower Carboniferous Touraisian Series.

  Classified as a locally important aquifer the Clogher Valley Limestone Group is regarded as a Type B aquifer, 'moderately permeable', and the soils at the site have been classified as 'Soils of Low Leaching Potential'. Currently the site is open grassland with no contaminants present; contamination may only become a potential problem if significant depths of overburden are removed exposing the bedrock to construction contamination.

  The potential impact of the proposed development will be principally concerned to the ground disturbance during the construction of the hospital and associated facilities. However there are no features of outstanding geological significance within the site, which are not replicate within a short distance, such as, drumlins with inter-drumlin wet hollows.

  Potential damage will principally be caused by the movement of plant over the site, together with the stripping of topsoil and overburden, stockpiling of materials on site and the construction of cut and fill operations within the site and excavation for foundations. However all the appropriate mitigation and design measures have been incorporated into the proposal.

- **Cultural Heritage** - The archaeological assessment has sought to identify both known sites and probable locations for previously undiscovered sites. Although the final details of the proposed construction are not yet available, ground inspections of the proposed site and the adjacent area of Devenish Island Area of Archaeological Potential have been carried out and show there are 13 known sites within the area. 12 of these are recorded in the EHS SMR, some of which suggest Bronze Age activity within close proximity of the proposed site and one site is recorded in the EHS IAR. One extra site within the proposed development area may have the potential to reveal archaeological information that has not yet been formally recorded in the official records.

  Despite the presence of such sites, it is likely that there will be no direct impacts on any of the known archaeological sites, however of the various hospital design options provided to date, it must be noted that some of these may impact on areas where there may be hidden archaeological evidence, especially in the low-lying area between the farmhouse and the A32, and on the important setting of the Devenish Island archaeological area.

  No further fieldwork or excavation should be required before construction commences. However, mitigation against damage to archaeology should follow the following recommendations. If activities, which are likely to have an impact on the boggy area beside the A32, such as piling or any proposals to place a load-bearing surface upon the existing surface, are to be included in the final proposal, it is recommended that test trenching be carried out first to establish the possibility of archaeological evidence buried beneath the surface. This should be supervised by a qualified archaeologist who should observe and monitor all disturbance of the ground connected with the construction works (and ancillary works), under a licence from Environment and Heritage Service. Any areas set aside for planting should be examined before any planting takes place, by stripping off the topsoil, again this should be observed and monitored by a qualified archaeologist. It is also recommended that the setting and character of Devenish Island be preserved, ensuring that all development is entirely hidden from view from Devenish Round Tower and its surrounding area, this should be achieved the implementation of low rise development hidden by the ground surface of the ridge to the west of Wolf Lough.

- **Air and Climate -** Existing ambient air quality in Enniskillen is generally good with NO_2 and SO_2 concentrations at various urban locations in Enniskillen for 2000 to 2003 below the National Air Quality Strategy (NAQS) objective limit values.

  The main air pollutants that may impact on the local air quality as a result of the proposed development are considered to be predominantly derived from traffic during both the construction and operational phases. These include sulphur dioxide (SO_2), oxides of nitrogen (NOx), Volatile Organic Compounds (VOCs) and particulate matter (to include PM_{10}/$PM_{2.5}$). During the construction phase strict adherence to 'good site/engineering practices' will minimise the generation of any unnecessary dust generation and vehicle emissions. The level of air pollution generated will not be of significance and will be of short duration i.e**.** 24-36 months.

  Predictive calculations were undertaken to determine the potential impact on the nearest sensitive receptors (100 metres from the site), in accordance with the UK Department of Transport and Design Manual for Roads and Bridges (DMRB). The predicted results showed that the traffic emissions from the proposed development would not adversely impact on these receptors.

  Exact details are not yet available on the final boiler design but based on the recently proposed Downe Hospital, it is predicted that a similar boiler operating on heavy fuel oil, will produce approximately 15,529 tonnes of CO_2/year. This equates to 0.0946% of 1999 CO_2 emissions in Northern Ireland, which is negligible. The erection of a proposed 32m stack will aid dispersion of the exhaust gases from the boiler and standard emission control measures will be adopted to help achieve air quality objectives by using up to date boiler technology.

  In summary, emissions to air during both the construction and operation phase of this project will be minor in nature and will have no significant effect on the receiving ambient air quality. Mitigation measures will be implemented to ensure emissions from the proposed development are kept to a minimum.

- **Socio-economic** – there is the potential for the hospital to impact on local housing through demand from new employees and the use of housing land to build the hospital, thereby using some of the supply. There is however sufficient housing land within Enniskillen to last well beyond the current Area Plan period. The

proposal is likely to have a positive economic affect on the area. Local workforces could be used during construction and the local economy will benefit from services being used and goods being purchase both during construction and during operation. Additional people will be employed in the new hospital and the new facility will have any obvious affect on improving health services in the local area.

- **Traffic -** The existing traffic on the road network serving the hospital catchment has been determined, and a detailed estimation made, of the traffic that will be generated by the new hospital. Using population figures for the various wards in the local catchment areas, the traffic was distributed to determine the effect on key roads when the proposed hospital opens in 2008. For a large part of the catchment road network there will be no increase in traffic, because the new hospital traffic will simply replace existing Erne hospital traffic. Other sections of road will experience significant increases, due to an increased catchment area of the new hospital compared to the Erne hospital, and due to the current low traffic volumes on some roads. A number of link roads within the centre of Enniskillen will also experience changes in traffic flows, due to the re-routing of hospital traffic coming into the town, as it finds the most direct route.

  Other issues considered within the traffic impact assessment are:
  - The proposed new entrance roundabout.
  - The internal road layout of the hospital site.
  - Parking provision.
  - Public transport accessibility.
  - Proposed cycling and pedestrian provision for the site.

Table 1 Summary of Environmental Effects and their Mitigation

Receptor	Description of Effect	Effect	Nature	Potential Significance of impact	Key Mitigation
Landscape & Visual	Visual impact from the earthworks during construction.	Adverse	St R	Moderate	- Roads and buildings within the scheme should follow the existing contours as much as possible and minimal cut and fill should be utilised. - These impacts will lessen as the vegetation matures around the site.
	Impact on visual and landscape character from a new building and roundabout.	Adverse	LT IR	Slight (from views on A32); Moderate (from views from high ground tot he east)	- Retain existing landscape features and significant trees - Incorporate as much existing vegetation and habitats as possible. - Apply best practice in tree protection during construction - Large areas of car parking should be broken up with tree and shrub planting - Proposed tree planting should be of species which will grow to a height in scale with the proposed buildings

Receptor	Description of Effect	Effect	Nature	Potential Significance of impact	Key Mitigation
Landscape & Visual (continued)	Impact on visual and landscape character (continued)	-	-	-	- Indigenous species should be used wherever possible and heavy standard trees should be planted to give immediate impact where appropriate. - Design and construction of the proposed entrance should aim to minimise removal of mature vegetation
Ecology	Direct loss of 20% of inundated wetland area. Localised impact on hydrology of wetlands	Adverse	Lt. IR	Moderate	- Avoidance of areas of higher ecological value. - Control of sphere of impacts during course creation and construction - Landscaping proposals to be sensitive to local area, eg.include creation of wetland in design - Landscaping proposals to link with surrounding landscape and create new species rich ecological features

Receptor	Description of Effect	Effect	Nature	Potential Significance of impact	Key Mitigation
Ecology (continued)	Direct loss of improved agricultural pasture through excavation and contouring of land	Adverse	Lt. IR	Moderate	- Create meadows and new habitats as design allows - Protect hydrological interest of areas from direct and indirect impacts of hospital development - Minimise and screen potential disturbance.
	Direct loss of some mature trees and woodland	Adverse	Lt. R	Minor	- Protect mature trees and areas of deciduous woodland - Enhance ecological value of woodland edges by devising a landscape management plan - Manage areas of woodland to enhance value
	Direct loss of some mature hedgerows	Adverse	Lt. R	Minor	- Protect mature hedgerows and the hydrological interest of areas - Creation of linear woodland features

Receptor	Description of Effect	Effect	Nature	Potential Significance of impact	Key Mitigation
Ecology (continued)	Direct loss of some willow scrub as a result of new access construction	Adverse	Lt. R	Minor	- Protect and enhance ecological habitat to include associated marsh and woodland - Recreate areas of willow scrub and carr where design allows - Minimise and screen potential disturbance
Noise	Potential impact on nearby dwellings from construction noise	Adverse	St, R	Moderate	- Restrict construction times to those recommended by EHO guidelines - Construct screening during excavations - Monitor noise levels during construction
	Potential impact on nearby dwellings from operational traffic and hospital plant	Adverse	Lt, IR	Minor	- Ensure proposed plant is designed and installed to ensure any noise impact is below background noise level - Typical impact of car park activity will be below both daytime and night-time target levels. - Changes to traffic noise on roads around the site will be generally imperceptible

Receptor	Description of Effect	Effect	Nature	Potential Significance of impact	Key Mitigation
Water and Pollution	Silting up of water courses during the construction phase	Adverse	St, R	Moderate	- Water bearing silt should be contained by the use of silt ponds or cut-off ditches/walls. - Stockpiles must be minimised and where they are occur they should be seeded or covered. - All washing facilities need to be securely constructed and the effluent properly contained for treatment and disposal. - Site roads should be kept free from dust and other deposits. The inclusion of small dams in roadside ditches may assist in silt retention, which, if properly planned may be used as part of a Sustainable Urban Drainage System (SUDS) post construction.
	Pollution of water courses due to poor construction and maintenance of Sewage and Waste Water Disposal systems.	Adverse	Lt, IR	High	- Proper and effective monitoring on a frequent basis of all infrastructure will be required to ensure it is operating as required. - Foul sewage may require some pre-treatment onsite before being released into Water Service Infrastructure.

Receptor	Description of Effect	Effect	Nature	Potential Significance of impact	Key Mitigation
Water and Pollution (continued)	Contamination of the watercourses by pollutants e.g. hydrocarbons in the surface water.	Adverse	Lt, IR	High	- Consideration of SUDS. SUDS can be divided into three main sections, source control techniques, permeable conveyance systems and passive treatment systems. Regular inspection and maintenance of SUDS ditches is required to ensure they remain effective throughout the life of the facility.
	Flooding caused by blockages in the drainage system and flooding due to high water levels in the Lough.	Adverse	St, R	Moderate	- Site should have a Pollution Incident Response Plan in place to deal with a pollution incident or flood should it occur.
Geology/ Hydrogeology	Ground disturbance during construction	Adverse	Lt, IR	Slight	- There are no features within the site which are of outstanding significance which are not replicated within a short distance of the site. - There is no requirement to retain the existing landform but the building is to be situated between the drumlins along the ridge.

Receptor	Description of Effect	Effect	Nature	Potential Significance of impact	Key Mitigation
Geology/ Hydrogeology (continued)	Movement of plant over the site	Adverse	St, R	Slight	- Use of an existing road will minimise damage to the site. - Where further access is required temporary haul roads will be constructed in geotextile lining and aggregate capping.
	Topsoil stripping and storage	Adverse	St, R	Slight	- Stripping of topsoil will occur in dry weather, avoiding deterioration of topsoil and avoid surface runoff of fine-grained material. - All topsoil stored on site will be treated in accordance with an approved landscape specification.
	Construction of cut and fill operations within the site	Adverse	Lt, IR	Moderate	- Use of appropriate fill material on site will be a priority to avoid the importation of fill from other sources.

Receptor	Description of Effect	Effect	Nature	Potential Significance of impact	Key Mitigation
Geology/ Hydrogeology (continued)	Excavation for foundations	Adverse	Lt, IR	High	- Generally the site is covered in a significant layer of boulder clay, which has sufficient load bearing capacities. - In areas of lacustrine or alluvial clay, piling works and protection against flooding may be appropriate. - In addition, any floor slabs in these areas would need to be suspended.
Cultural Heritage	Loss of significant boggy land (between A32 and Farmhouse), which may have the potential to reveal archaeological information.	Adverse	Lt, IR	Moderate	- Carry out test trenching to establish the possibility of archaeological evidence buried beneath the surface. - Should be supervised by a qualified archaeologist, under a licence from Environment and Heritage Service.
	Loss of Potential archaeological evidence in topsoil in areas allocated for planting.	Adverse	Lt, IR	Slight	- Topsoil in these areas should be stripped off and examined, under the supervision of a qualified archaeologist.

Receptor	Description of Effect	Effect	Nature	Potential Significance of impact	Key Mitigation
	Intrusive impact on Devenish Island - Area of Archaeological Potential	Adverse	Lt, IR	Moderate	- The setting and character of Devenish Island should be preserved and protected from detrimental development. - The design and layout of the hospital should make maximum use of the natural screening provided by the ridge to the west of Wolf Lough and therefore hidden from the view of The Devenish Round Tower and surrounding area.
Traffic	Increased traffic on some sections of the A32 due to increased catchment area	Adverse	Lt. IR	Moderate	- Improvement of existing road junctions/layout - Improved provision of public transport/cycling/pedestrian access
	Increase of traffic on link roads through Enniskillen town due to re-routed traffic	Adverse	Lt. IR	Moderate	- Improvement of existing road junctions/layout - Improved provision of public transport/cycling/pedestrian access
	Increased HGV traffic during the construction phase, and roadworks on existing routes	Adverse	St. R	Moderate	- Adoption of good working practices/traffic management scheme

Receptor	Description of Effect	Effect	Nature	Potential Significance of impact	Key Mitigation
Air and Climate	Generation of dust during construction phase	Adverse	St, R	Minor	- A dust minimisation plan - The use of construction equipment designed to minimise dust generation - Site roads will be regularly cleaned and maintained - A temporary truck wheel wash will be installed - Mobile bowser will be used during dry periods to dampen vehicle routes - Stockpiles of soil / sand and hardcore will be kept moist - The use of site speed - Lorries/trucks will be properly covered or enclosed - The construction period will be of short duration - If necessary, hoarding will be erected around the site to reduce dispersion of fugitive dust

Receptor	Description of Effect	Effect	Nature	Potential Significance of impact	Key Mitigation
Air and Climate (continued)	Vehicle Emissions During Construction	Adverse	St, R	Minor	- Site vehicles/ machinery to be switched off when not in use - Short term construction phase - Well maintained plant machinery
	Impact on nearest dwellings from vehicle emissions during operation	Adverse	Lt, R	Negligible	N/A
	CO2 emissions from proposed hospital boiler	Adverse	Lt, R	Negligible	- Adhere to standard emission control measures - Use of up to date boiler technology. - Erection of a 32m stack to aid dispersion of the exhaust gases
Socio-economic	Boost to local economy from construction employment.	Beneficial	St, R	Major	N/A
	New jobs created by new hospital	Beneficial	Lt, R	Moderate	N/A
	Multiplier affect on local services	Beneficial	Lt, R	Moderate	N/A
	Improved health care	Beneficial	Lt, R	Major	N/A
	Impacts on housing land	Adverse	Lt, R	Moderate	- The Housing Monitor figures show that there is sufficient housing land

*KEY: St =Short Term; Lt =Long Term; R =Reversible; IR =Irreversible

6.0 Summary & Conclusions

In scoping this Environmental Assessment, it was established that the potential impacts would include:

- Landscape and Visual
- Ecology
- Noise
- Water and Pollution
- Geology and Hydrogeology
- Cultural Heritage
- Traffic
- Air and Climate
- Socio-economic

Of these issues, the scoping exercise identified traffic, landscape/visual, ecology and cultural heritage as the most important. As a result of the assessment, it has been shown that:

- the proposal will have a significant impact on traffic movement in the area and could lead to junction improvements;
- the visual impact of the new building would not be a significant concern;
- the ecological assessment had a direct influence on the design of the site layout, which avoids the most sensitive parts of the site;
- the proposal does not encroach on the adjacent ASAI and the setting of Devenish will not be affected.

It is considered that the remaining topics in the list above do not give rise to impacts so adverse as to be significant enough to fetter the proposed scheme.

Table 1 above lists the impacts and mitigation associated with each environmental topic. The following draws together all the short and long term impacts of this proposal and states how the design has dealt with them where necessary.

Short-term impacts

The short-term impacts of this new development will occur during the construction phase. On the positive side there will be a boost to the labour force

via construction employment, together with a positive multiplier effect on the local economy. Negative short-term impacts will include the visual impact of earthworks on the hillside. Most of this will be screened from open views by existing vegetation and will only last for the period of the construction. There is also the potential for increased noise and dust created by construction machinery. However, the ES has shown that there are no nearby properties that will be adversely affected and good working practices will ensure that any disturbance is kept to a minimum. Construction also has the potential to cause silting up of nearby watercourses and affect wetlands. Again good working practices such as bunding and use of SUDs ponds will prevent pollution of nearby watercourses. Construction traffic is likely to cause disruption, which can be mitigated through agreement with Roads Service on traffic management.

Long-term impacts

Long-term impacts mostly affect the environment during the operation of the proposed development. The main long-term beneficial impacts include the creation of new jobs and the multiplier affect of the new facility as well as improved health care for the south west region.

There is the potential for a minor impact on the housing supply within Enniskillen. Analysis of the housing monitor for Enniskillen has shown that there is sufficient housing land within the town to cater for housing up to the end of the Area Plan period.

There will be a long term visual impact of a new building on the landscape which will be mostly screened from open views on the A32 with trees and other vegetation. Due to existing landform and tree coverage, it would be possible to integrate the hospital into the landscape and not adversely affect the setting of this side of Enniskillen. The only significant view would be from higher ground to the east of the site, adverse affects of which could be mitigated through a quality design. The perception of this visual impact will also dissipate over time, as the new building becomes a normal part of the wider landscape.

There is a minor/ moderate loss of various habitats throughout the site. Most of the building work will take place on the improved agricultural grassland, which is of low ecological value. Some trees are lost to provide the access, which is

unavoidable. However, the ecological value of the wetlands to the east of the site has been taken into consideration and a bridge has been provided for access which aims to retain as much of the existing habitat in this area as possible. The development has been kept well away from the sensitive environment around Wolf Lough and SUDs ponds are recommended for various parts of the site were there is a risk from surface water run off.

There will be no impact on any known cultural heritage sites, buildings or features. Importantly, the proposal is not expected to adversely affect the setting of Devenish. Despite the fact that the proposal will not encroach on the ASAI, there always remains the risk of impacting on undiscovered archaeology on a site of this size. The ES therefore recommends early inspection of the site and ongoing monitoring during construction by a qualified archaeologist.

There will be a long term impact on traffic in Enniskillen generally and on the northern part of town in particular. This increase will require improvements to junctions throughout the town in order to reduce congestion. In reaction to this the proposal puts makes provision for accessing the hospital by means other than the private car. It has pedestrian cycle access to the town centre and cycle parking will be provided. There are also bus connections planned to the hospital.

Increase in noise and impact on air quality in the area are more minor issues that will be caused by the new land use. The ES has shown that there are no noise sensitive receptors close to the site that will be significantly affected by increase in noise on the site. In terms of the air quality, modeling has been carried out on the impact from traffic emissions. As with the noise impact, the closet residential properties will not be adversely affected by increase in traffic emissions. The boiler emissions are considered to be negligible and are expected to amount to 0.07% of the Northern Ireland total.

APPENDIX 1 – PHOTOMONTAGES