PLANNING SUPPORT STATEMENT

New School Hall and 1 Classroom extension with ancillary facilities

at

Gretton Primary School

for

Northamptonshire County Council (c/o Lend Lease)

prepared by

Peter Haddon and Partners Architects

May 2012
Planning Policy Framework

The purpose of this section is to outline the local, regional and national planning policy context for the planning application site. A summary of the relevant policy and guidance is provided below.

National Policy Guidance

National Policy and Government guidance is provided in Planning Policy Guidance Notes (PPG’s) and Planning Policy Statements (PPS’s). We have taken reference from those we believe are relevant to the proposed development and the design of the building extensions and site works take this into account.

The Communities and Local Government National Planning Policy Framework and supporting guidance document sets out criteria for effective and appropriate developments which can be supported by the Local Planning Authority. We highlight some key aspects of the proposed scheme relative to the objectives and aims of the Framework noted above, in support of the proposed application.

- We believe the proposal is to a high standard of architectural design, maintaining the character of the existing building complex, whilst providing 21st Century spaces and facilities required for primary school education.
- The new school Hall significantly improves the provision for possible extended community use (when compared to the inadequate hall space currently available), maintaining the role of the school as a focus of the local area.
- We have engaged with the local community by way of a two separate public consultation and feedback processes to ensure that the project moves forward to satisfy the needs of all, as far as practicable, and the submitted design takes account of all this previous development and refinement (refer to later section for further explanation).
- The building design has gone to great lengths to respect and preserve the existing mature landscaping/trees on the site. This is supported with reports from an arboricultural specialist and advice received from the NCC Ecological/Landscape Officer following a site visit to the school.
- The buildings have a satisfactory means of access and provide for parking, servicing and manoeuvring in accordance with adopted standards which will remain unaffected.
- We believe the design/location of the building extensions will not result in an unacceptable impact on the amenities of neighbouring properties or the wider area, by reasons of noise, vibration, smell, light or other pollution, loss of light or overlooking.
Regional and Local Plan Policy

North Northamptonshire Core Spatial Strategy sets out criteria for effective and appropriate developments which can be supported by the Local Planning Authority. In particular, we believe the following aspects are relevant to this Application and are responded to by the proposed design namely: -

- To create sustainable communities by ensuring that economic, environmental, social and cultural infrastructure needs are met in step with growth. The new Hall offers the opportunity for greater community involvement.
- To ensure that development contributes to an improved environment, by requiring high standards of design and sustainable construction. We believe the design respects the form, massing, scale and materials of the existing buildings and includes for natural ventilation (with solar powered boost fans) and maximising natural daylight. There is an opportunity to use an air-source heat pump to provide a low energy solution to providing space heating to the new build areas.
- The project supports the objective of providing high quality infrastructure by improving the quality and range facilities (both new build and extent of enhancement works within the existing school buildings). In particular, the classroom will be fitted-out with the latest technology and the new Hall will receive a theatre lighting bar, audio installation and removable staging for drama productions together with new PE frame/equipment and new dining furniture. The existing small hall will allow the adjacent classroom to expand to an appropriate size, together with providing an ICT hub which can be used as a core facility for the entire school. Externally, the retained area beneath the mature ash tree is to be utilised as an external classroom space to enhance the learning experience to the pupils.
- Policy 13 identifies further specific points which are listed below with commentary added:
  - Incorporate flexible designs for buildings and their settings, including access to amenity space, enabling them to be adapted to future needs and to take into account the needs of all users. The key spaces are designed as simple forms to allow flexibility of future use. The potential to expand the school to link the existing out-buildings (containing the Library/Art room) has been identified as part of the long term solution.
  - Seek to design out antisocial behaviour, crime and reduce the fear of crime by applying the principles of the “Secured by Design” scheme. External windows and doors will be to a high security standard, with the perimeter of the building ‘open’ to the pedestrian routes with good visibility from windows.
Design Background

Gretton Primary School is situated in Gretton village to the North of Corby. The village is distinguished by a majority of quality stone buildings, conveying a traditional and historic feel to the character of village. The school buildings themselves follow similar design style and material selection, using steeply pitched roofs with plain tiles but mostly brick walls articulated with stone string courses and other detailing.

![Aerial photograph showing the existing school site and buildings.](image)

The school is situated centrally towards the edge of the village, adjacent to the local playing fields and sports facilities with housing close to the south western boundary.

The site of the Primary School is located within a Conservation area but the existing buildings are not Listed. The massing of the existing main school is formed with 2 main blocks with pitched roofs, linked by a flat roof corridor. A secondary runs of out-buildings containing the Library and Art room are separated on the other side of the playground and are formed with more simple, narrow plan width elements in a rural style.

Much of the site is taken up by the existing school buildings and hard standing play areas. There is a soft play area to the south east of the site which consists of a small grassed play area and ecological/habitat area. The school have beneficial use of the recreation ground/playing field immediately adjacent to the site. Furthermore, in the last year a MUGA (multi-use games area) has been constructed on the recreation area, which again provides enhanced external play facilities for the school to utilise.

The existing staff/visitor car park accessed directly from Kirby Road is to remain unaffected as there no changes to pupil or staff numbers.
Photograph showing the existing school buildings from location of proposed Hall

Photograph showing the quality of brickwork and stone detailing
The site is not located within an area of potential flood risk, as illustrated on the attached map extract taken from the Environment Agency website.
Statement of Planning Need (provided by Northamptonshire County Council)

This project will be jointly funded by the Primary Capital Programme and Targetted Capital for Dining Facilities, both are grants from the Department for Educations (formerly DCSF). The lack of a suitably sized school hall is identified as a priority for action in the “Strategy for Change”. It is one of the key suitability issues for primary schools in that it has a major impact on:

- Delivery of the PE curriculum, as well as music and drama
- Increases opportunities for whole school assemblies and performances
- Provision of a hot school dinner
- The school’s ability to offer extended services and be a resource for the local community

There is a drive towards greater commitment to 5 hours PE per week, plus opportunities for music and the arts, and therefore a multi-purpose school hall is increasingly important for primary aged children. The provision of Hot School Meals for children is also recognized as an important target, working towards National Healthy Schools Status. The provision of a school hall therefore has an important part to play in providing opportunities for improving children’s physical and emotional health and well-being. It can also contribute to longer term improvements in health, reduction of inequalities in health, and increasing social inclusion.

The project includes for a new build classroom to allow the existing mobile classroom to be removed from the site, with the area reinstated as tarmac as replacement hard play area.

The dilapidated canopy outside the Reception classroom is to be removed and replaced with a new roof and semi-enclosed walls to provide enhanced facilities for outside play for the younger children.
Design Considerations

This proposal is to construct a new School Hall with associated facilities together with new classroom to allow the existing mobile to be removed. This will enable the existing old school hall to be converted into new ICT pods and allow for expansion of the existing adjacent classrooms, together with providing a new circulation route to link through the existing school. The existing toilet facilities within the school are to be re-configured and refurbished to modern standards. This also allows for a new corridor link and external door to the expanded rear playground.

This new playground will be laid out to re-create the netball/football pitch as currently provided on the existing playground. The location of the new extension offers the potential for future links to the Library and Arts building, to join the entire school together, with the new part glazed corridor framing the edge of the front playground. The design takes account of the mature Ash tree to the rear, with the plan form stepped in accordance with guidance received from the Landscape Officer. It is intended that the area below this south facing tree canopy could be used as an outdoor teaching space to further enhance the learning facilities on site.

The design for the new building provides a re-heat kitchen with serving facility for hot school meals, as part of the NCC countywide strategy, served using the existing side access gate. The existing covered play area for the Reception classroom will be replaced with an expanded covered and sheltered area. The new hall and classrooms are sized to meet the minimum area requirement in Building Bulletin 99 (DCSF Briefing Framework for Primary School Projects).

The large spaces are visually broken down into smaller elements with the single storey spaces wrapping around them, taking reference from the parapet heights established by the original building. We believe that the elevation designs are sympathetic to the style of the adjacent existing buildings using a palette of robust and durable traditional materials in-keeping with the setting but which also takes the opportunity to provide the school with an identity that looks towards the future.
Artist's impression of the new extension of the part glazed corridor and classroom with Hall beyond

Artist's impression of the new extension from the rear showing the Hall and covered play area
Statement of Community Involvement and Consultations

An initial Public Consultation was held at the School on 08th December 2011 with a second Public Consultation held on 22 February 2012. Invitations were issued to school parents, pupils, local residents and parish councillors.

Questionnaire and feedback forms were available to allow comments and possible concerns to be expressed, together with representatives from Northamptonshire County Council, Lend Lease, pHp Architects and the School being present to respond to queries raised and provide accurate information and clarification.

Following both verbal and written responses received from these Public Consultations, the project team took the opportunity to re-consider the design strategy and building layout on the site, to respond to the issues highlighted. There was a balance of views between those who believed the proposal was a good response to the site and context of the existing buildings, providing a more integrated school with enhanced facilities (such as the ICT hub) and those who felt that the design and layout could be improved.

The key issues raised against the proposal presented, relate to the fact that the proposed location for the new build extension would segregate the existing playing area and with other concerns that the area of outdoor hard play space would be reduced. Many of the feedback forms received suggested that an alternative location for the new extension could be along the south western boundary.

PHP Architects have prepared alternative design layouts with the new Hall located (together with the Kitchen, toilets and Hall stores) as an extension against the existing Year 1/2 classroom. In this arrangement, the additional classroom (to replace the current mobile classroom) with associated toilets, could be located as a linked extension adjacent to the existing reading room. This layout would form a central courtyard with the Nursery building forming the south east wing.

Both the original design and this alternative layout have been reviewed by the Planning Authority at meetings, since the initial public consultation. The Planning Officer has also visited the site to review the different layouts in context. It is their opinion, from a Planning perspective, that the alternative scheme will have a significantly greater impact on the adjacent housing due to the required size and height of the building extension proposed. The size and height of the Hall is determined by DFES requirements under Building Bulletin 99 for design of Primary Schools. Furthermore, the large ash tree which is located just outside the school boundary was identified by the Planner as a significant issue and it was requested that a specialist arboricultural (tree) survey would need to be carried out to understand the effect of any building development on the tree, particularly as the site is located within a Conservation Area.

A specialist tree surveyor was appointed to undertake the necessary survey in accordance with BS5837:2005 (trees in relation to construction recommendations). The survey results confirmed that the Ash tree was in good condition and was a category B1 tree (of moderate quality and value) with the report stating that there is “….no obvious arboricultural reason why the tree should be removed…” The size of the tree resulted in a root protection area of 9m
radius from the trunk which would result in any building extensions being so far away from the boundary in this location that this alternative layout is not feasible.

The original design for the extension is able to take account of the existing mature ash tree on the opposite boundary (relevant to its root protection area of 6.4m) by stepping of the plan form of the building but this is not possible along the south western boundary due to the location of the Nursery and the size of the root protection area identified.

The overall area of hard play surface in the original design is the same as the existing situation, as the area of gravel and below the mobile classroom is replaced with a tarmac playground to offset the area lost due to the new building.

Diagrammatic plan layout of both the submitted proposal and the discounted, alternative scheme are provided below for reference.
Artist's impression of the new extension from the side showing the Hall and Kitchen

Artist's impression of the new extension from above showing the context of the existing buildings
Photograph showing the view across the existing front playground (location for new Hall/Classroom)

Photograph showing the existing mature ash tree on the neighbouring site and proximity of existing houses
Photograph showing the existing mobile to be removed and proximity of adjacent houses

Photograph showing the existing covered play canopy to be removed
Photograph showing view towards central courtyard

Photograph showing existing Nursery building on site and area for temporary construction access
DESIGN & ACCESS STATEMENT

Extensions to Gretton Primary School

for

Northamptonshire County Council

prepared by

Peter Haddon and Partners Architects

May 2012
DESIGN BASIS

pHp Philosophy Statement:

Peter Haddon and Partners Architects are committed to a policy of equality, inclusion and accessibility achievable through good design. The basic right for access to and use of buildings for all is recognised as the most fundamental basis upon which the design should be established. The design process offers an opportunity to maximise individuals’ abilities to enjoy a safe and, wherever possible, independent participation. It is recognised that all individuals have a range of abilities which vary greatly and some of which may be impaired requiring consideration upon the Designer’s part to ensure that as wide a range of abilities as possible are accommodated. The design process is unique for each development as the distinctive requirements for a Client/End User will be specific to that project. For this reason we view the Client/End User as a part of the Design Team to ensure that the ‘inclusive design for all’ philosophy is adopted from the inception stage.

As Designers, we endeavour to work to the latest legislation and good practice guidance available at the time, also taking into account advice and comments received as a result of consultations with Access Consultants and Local Groups. It is the aim of the practice to adopt the guidance from these sources so far as is reasonably practical for the type and nature of the building, the restrictions of the site and the intended occupiers.

In accordance with advice published by the Commission for Architecture and the Built Environment (CABE) in connection with Design and Access Statements, the process has been fully informed by a consideration of issues, including:

- Use: what buildings and spaces will be used for;
- Amount: how much would be built on the site;
- Layout: how the buildings and spaces will be arranged on the site and the relationship between them and the buildings and spaces around the site;
- Scale: how big the buildings and spaces would be;
- Landscaping: how open spaces will be treated to enhance and protect the character of a place;
- Appearance: what the buildings and spaces will look like;
- Vehicular and Transport Links:
- Inclusive Access: how everyone can get to and move through the place on equal terms regardless of age, disability, ethnicity or social grouping.
USE / AMOUNT

This proposal is to construct a new School Hall with associated facilities together with new classroom to allow the existing mobile to be removed. This will enable the existing old school hall to be converted into new ICT pods and allow for expansion of the existing adjacent classrooms, together with providing a new circulation route to link through the existing school. The existing toilet facilities within the school are to be re-configured and refurbished to modern standards. This also allows for a new corridor link and external door to the expanded rear playground.

This new playground will be laid out to re-create the netball/football pitch as currently provided on the existing playground. The design for the new building provides a re-heat kitchen with serving facility for hot school meals, as part of the NCC countywide strategy, served using the existing side access gate. The existing covered play area for the Reception classroom will be replaced with an expanded covered and sheltered area.

The new hall and classrooms are sized to meet the minimum area requirement in Building Bulletin 99 (DCSF Briefing Framework for Primary School Projects).

LAYOUT

We have carefully considered the location of the new extension on the site, respecting the existing mature trees and arrangement of existing buildings. In particular, the design takes account of the mature Ash tree to the rear, with the plan form stepped in accordance with guidance received from the Landscape Officer.

The location of the new extension offers the potential for future links to the Library and Arts building, to join the entire school together, with the new part glazed corridor framing the edge of the front playground. It is intended that the area below the south facing tree canopy could be used as an outdoor teaching space to further enhance the learning facilities on site.

We believe that the layout serves to join the school together, with the large Hall space also offering the opportunity for community use, as it can be separately accessed together with the new toilet provision.

SCALE

The large spaces are visually broken down to a smaller scale by the single storey spaces wrapping around them, which in turn take references from the parapet heights established by the original building.

The scale and height of the buildings satisfy the requirements for each space within and the building elements are designed using plan widths/roof pitches appropriate with the scale and form of the existing building on the site.
LANDSCAPE

As noted above, there are several mature trees on the site which are respected by the design proposal. A small, damaged Lilac tree is to be removed (as agreed with the NCC Landscape Officer). An arboricultural assessment has been undertaken by a specialist and the proposals incorporate all of the recommendations made in terms of new planting / protection of the existing trees.

APPEARANCE

The site is located within a Conservation Area and we believe the proposed design acts to reinforce the quality of the local architectural heritage. We believe that the elevation designs are sympathetic to the style of the adjacent existing buildings using a palette of robust and durable traditional materials in-keeping with the setting but which also takes the opportunity to provide the school with an identity that looks towards the future.

As stated on the elevations, the design proposes a traditional red brick to the walls with small, plain clay tiled roof. The design of fenestration glazing bars and window proportions have been considered to balance with the aesthetic established on the site.

VEHICULAR AND TRANSPORT LINKS

The existing car park is accessed from Kirby Road which will remain unaffected by this application. Existing footpath / road links to the site will remain unaffected by the building extension / alterations.

INCLUSIVE ACCESS

All building extensions are located and designed to achieve mostly level approach from existing adjoining pathways with maximum 1:20 gradients to localised areas. External lighting will be provided at 50-100 lux to all approach paths.

The entrances will be fully DDA compliant with level threshold. The entrance area flooring will be carpet style barrier matting which is inherently slip resistant.

The internal corridors and passageways are generally 1.8m wide (2.5m wide to new Foyer to Hall). All internal floors are level. Collision hazards are avoided and passing places provided by utilising corridors of these widths. Projecting radiators are also eliminated by using underfloor heating.

Colour contrast of at least 20 points Light Reflectance Value (LRV) is to be provided between walls and floors, floors and ceilings. Colour contrast of at least 20 points Light Reflectance Value (LRV) is to be provided between door/door frames and surrounding walls, door face and leading edge of non self closing doors and between ironmongery and doors.

Ironmongery door handles are selected to meet the requirements of BS8300 to be operable with one hand using closed fist. All doors are designed to provide minimum clear opening widths, measured to the face of any protruding Ironmongery, to comply with Building Regulations AD part M table 2. Doors on access routes are fitted with vision panels towards the leading edge to provide minimum zone of vision between 500mm and 1500mm from floor level.
INSPECTION OF AN OFFSITE ASH TREE AT GRETTON PRIMARY SCHOOL, GRETTON

In light of potential development at Gretton primary School Gretton, an inspection of an offsite tree has been instructed to determine the constraints the tree may pose. The inspection was undertaken by Bryan Clary, Chartered Arboriculturist at Lockhart Garratt Ltd on the 31st January 2011. Bryan was met onsite by Oliver Bazeley of PHP Architects.

Background

A tree survey in line with BS5837:2005 ‘Trees in relation to Construction – Recommendation’ at Gretton Primary was undertaken in late September 2011 and an Arboricultural Implications Assessment (AIA) subsequently produced. Further to the Masterplan outlined in the AIA alignment of the new structures have been considered close to an offsite tree on the south western boundary.

Site Plan

![Site Plan Image]
Site Visit and Observations

T1 Ash (*Fraxinus excelsior*)

- **Height**: 18
- **Stem Diameter (mm)**: 750 Estimate
- **Crown Spread (m)**: N 7.0, E 6.5, S 6.5, W 6.5 Estimate
- **Crown Clearance (m)**: 7
- **Physiological Condition**: Good
- **Structural Condition**: Fair
- **Comment**: Located immediately adjacent to wooden and metal boundary fences. Lapsed pollard at 2.5-3m with a full regenerated crown. Multiple upright. Lower stem inversely tapers from visible section (fence restricted full visual assessment). Recent removal of stems on western crown likely to be a result of their proximity to new residential buildings. Partially occluded wounds at sites of former branch attachments on the pollard heads. Slight bacterial canker on stem closest to school building north (not significant). Ground around the base of the tree west has been recently been regrassed/seeded. Previously crown raised to 7m over site. Small amounts of small diameter deadwood in the lower crown although a low level target.

- **Estimated Remaining Contribution (years)**: 20-40
- **Retention Category**: B1

The crown of the ash tree currently appears healthy with no structural abnormalities. The tree is a good backdrop to both the nearby residential houses and school, it therefore holds a reasonable level of amenity. There appears no obvious arboricultural reason why the tree should be removed.

**Discussion**

The root protection area (RPA) of the ash is 9m given the estimated stem diameter of 750mm. Within the school site, the ash trees RPA has a wooden garden shed and gazebo. Ground conditions are gravel which allows waters to filtrate into the soil below and is unlikely to be detrimental to root growth/function. There does not appear to be significant disturbance of the RPA within the curtilage of the primary school.

A proposed new structure would likely to be aligned within the RPA of the ash given its 9m RPA. Even if an accurate measurement was taken of the stem and/or an offset could be argued (of up to 20%) a considerable percentage of the overall RPA would be influenced. Trench fill foundations to accommodate a structure are not recommended due to the potential of root severance and the likelihood of tree decline. Alternate options to trench fill foundations include pile and beam foundations, cantilever foundations or innovative designs such as ‘Housedeck’.
Conclusions

Options therefore are limited to either:

- ‘no dig’ constructions of foundations of a structure to prevent third party tree decline;
- Relocation of the structure outside the trees RPA;

Bryan Clary BSc(Hons) MICFor Arb Marbor A
31st January 2011
ARBORICULTURAL
IMPLICATIONS
ASSESSMENT

Gretton Primary School, Gretton

REF:  11-1808/3372/D18/R
DATE:  October 2011

Prepared For
Lend Lease Consulting Ltd

County Property Services
PO Box 128
County Hall
Northampton
NN1 1AS

Prepared By
Lockhart Garratt Ltd

7-8 Melbourne House
Corbygate Business Park
Weldon, Corby
Northants
NN17 5JG

Telephone:  01536 408840
Fax:    01536 408860
Email:  info@lockhart-garratt.co.uk
Web:    www.lockhart-garratt.co.uk
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1. INTRODUCTION

1.1.1 This Arboricultural Implications Assessment in line with BS5837:2005 *Trees in Relation to Construction - Recommendations*, has been prepared in relation to the proposed development at Gretton Primary School, Kirby Road, Gretton, Corby, NN17 3DB, see the aerial photograph at Appendix 1.

1.1.2 The report has been commissioned to establish the full constraints that the trees pose on the site, to assess the impact of the current development proposal on the site’s tree resource and provide appropriate tree protection methodology for the construction phase of the development. The instruction was confirmed by Lend Lease Consulting Ltd, letter dated the 28th September 2011.

1.1.3 The scope of this project is threefold:

- To undertake a survey of trees on the site and within influencing distance of the site.
- Provide a Tree Constraints Plan for the site including root protection areas and canopy spreads.
- Undertake an Arboricultural Implications Assessment (AIA) in relation to the proposed site layout. The AIA will assess the trees in relation to the proposals and the probable impact of the proposed development on the existing tree resource.

2. DOCUMENTS PROVIDED

2.1.1 As background information the following documentation has been provided/been available to prepare this report:

- Plan to assist the tree survey in .dwg format. Date: July 2011. Produced by: Bruce Batcock, Land & Engineering Surveyor, 6 Laurel Court, The Arbours, Northampton, NN3 3RY.


3. RELEVANT BACKGROUND INFORMATION

3.1 Site Description

3.1.1 Gretton Primary School is located in the village of Gretton, 3km north of Corby. The school is bound on the east and west by residential properties which vary in age, style and size, each with their associated gardens. To the south of the school is a cricket pitch and to the north of the school is Kirby Road from which the school is accessed.

3.1.2 An access drive is located immediately adjacent to the eastern boundary that leads to a doctors surgery and then onto the cricket pitch.

3.1.3 The school site consists of a centrally located educational main building with a detached, recently built nursery building to the south. Hard surfaced play areas are
immediately north and west of the main building with a further grassed area to the south of the nursery building.

3.2 Development Proposal

3.2.1 The development proposal includes the construction of an extension to the existing main building which will include a classroom, hall, foyer and kitchen.

3.2.2 In addition to the new construction there will be the remodelling of a number of areas within the existing main building and the installation of an outdoor classroom.

3.2.3 The details of the proposals outlined above are illustrated on the ‘Proposed Site Plan’ at Appendix 3.

3.3 Tree Protection: Legal Status

3.3.1 The Local Planning Authority (LPA) has been contacted to establish whether any trees contained within the red line boundary are protected by either a Tree Preservation Order (TPO) or are within a Conservation Area.

3.3.2 It has been confirmed by email on the 12th October 2011 by Lisa Clements, Planning Officer at Corby Borough Council that there are no TPOs within the site boundary.

3.3.3 However, there is a conservation area administered by Corby Borough Council within the site boundary:

- Gretton Conservation Area – see plan at Appendix 2.

3.3.4 If full planning consent is granted then any trees which require felling to implement the approved plans are exempt from statutory protection. It should also be considered that any proposed tree works detailed in the Tree Schedule at Appendix 4 are also implemented as part of the planning decision consent.

3.3.5 This report does not consider the general requirements of the Forestry Act 1967 as full planning permission is exempt from the need for a felling licence (although it is recommended that the Forestry Commission is consulted prior to felling).

4. ARBORICULTURAL SURVEY DATA

4.1 Data Collection

4.1.1 A site visit was undertaken on the 10th October 2011 by Bryan Clary BSc(Hons)Arb MArborA MICFor, Arboricultural Consultant at Lockhart Garratt Ltd and trees were inspected from ground level.

4.1.2 The survey recorded trees either as individual specimens or as groups where these trees were aerodynamically, culturally or visually important as groups. The complete method of data collection during the tree survey can be found at Appendix 5.

4.2 BS5837:2005 Tree Categorisation

4.2.1 BS5837:2005 sets out the methodology for surveying trees on potential development sites in order to identify them within a prioritised system of retention categories, as summarised below and given in full at within the BS5837:2005 Cascade Chart for Tree Retention at Appendix 4:
A Category Trees of high quality and value in such a condition as to be able to make a substantial contribution for a minimum of 40 years

B Category Trees of moderate quality and value in such a condition as to make a significant contribution for a minimum 20 years

C Category Trees of low quality and value currently in adequate condition to remain until new planting could be established and expected to remain for a minimum of 10 years, or young trees with a stem diameter less than 150mm measured at 1.5 metres above ground level.

R Category Trees in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural or forestry management.

4.2.2 Additionally, BS5837:2005 provides subcategories 1-3 within the category system outlined above which indicate the area(s) in which a tree or group retention value lies. An explanation of these values is given within the BS5837:2005 Cascade Chart for Tree Retention at Appendix 4:

1. Retention values that are mainly arboricultural.
2. Retention values that are mainly landscape.
3. Retention values that are mainly cultural, including conservation.

4.2.3 In line with BS5837:2005 the A and B category trees should be considered as a constraint on site and provide a substantial contribution to the site. As a result, A and B category trees should be retained and incorporated into the scheme where possible.

4.2.4 Generally C and R category trees are considered to be of low quality or are young specimens, which can be readily replaced and therefore should not be a constraint in terms of future development.

4.2.5 However, it is generally considered desirable to retain trees wherever reasonably possible to ensure continuity of tree cover and to provide a mature landscape to the development.

4.3 Summary of Data

4.3.1 The survey contains two individual trees and four group of trees (see Table 1 below). The comments including species, age, condition and the BS5837:2005 retention category for each individual tree and group of trees are given in detail in the Tree Schedule at Appendix 4.

4.3.2 The location of each individual tree, the groups of trees and their associated constraints are shown on the Tree Constraints Plan at Appendix 3.

4.3.3 In line with the BS5837:2005 retention categories, there are no trees which merit an A category. However, there is one individual tree and two groups of trees which merit a B category and are considered to be of moderate quality with a minimum of 20 years useful life expectancy remaining.

4.3.4 Additionally there is one group of C category trees (a beech hedge) of low quality with the remaining two individual trees being considered to be R category and have less than 10 years life expectancy remaining.
4.3.5 Table 1: Distribution of trees by BS5837:2005 tree categorisation

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<thead>
<tr>
<th>Retention Category</th>
<th>Individual Trees</th>
<th>Groups of Trees</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>R</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2</strong></td>
<td><strong>4</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

4.4 Description of the Tree Resource

4.4.1 The majority of the trees within the grounds of the school can be found on the northern and southern boundaries (G1 and G6). Many of these trees are mature and offer high amenity value, especially those to the north adjacent to Kirby Road (G1), see Plate 1 at Appendix 8.

4.4.2 On the western boundary close to the doctors surgery are the mature ash T2 and the lilac T3 (see Plates 2 and 3 at Appendix 8)

4.4.3 A small group of cherry (G4) and a low maintained beech hedge (G5) are offsite within the curtilage of the doctors surgery.

5. ARBORICULTURAL IMPLICATIONS APPRAISAL

5.1 Overview

5.1.1 The Tree Constraints Plan has been superimposed onto the ‘Proposed Site Plan’ produced by PHP Architects at Appendix 3. The resulting Arboricultural Implications Plan (at Appendix 3) indicates the relationship between the trees and the development proposal. This has helped inform the following appraisal of the potential impacts to the current tree resource.

5.2 Site Layout and Tree Related Conflicts

5.2.1 The alignment of the proposed extension to the existing main building has been located on an existing hard surfaced playground, therefore reducing the conflict with the onsite trees.

5.2.1 However, unavoidable conflicts have still arisen with regard to the construction of the proposed site layout and the trees identified within the tree survey, specifically the:

- indirect loss of one tree (T3) and one group of trees (G4);
- construction of an outdoor classroom within close proximity to the ash T2;
- construction traffic access; and,
- ensuring adequate protection of the retained trees throughout the construction phase.
5.2.2 Each of these identified conflicts are detailed in the following sections.

5.3 **Tree Removal and Replacements**

5.3.1 In undertaking the development proposal as indicated on the ‘Proposed Site Plan’ at Appendix 3 there will be no direct tree loss.

5.3.2 However, one tree T3, an R Category lilac has been recommended for removal due to its poor form and low future contribution. In addition G4, a R Category group of cherries has also been recommended for removal given their poor quality.

5.3.3 It is recommended that after the completion of the proposal the beech hedge G5 is extended with new beech planting and restored (with its gaps replanted along with the removal of the young ash trees). This replacement planting would help provide an element of screening for the primary school in the long term.

5.3.4 A tree in G1 adjacent to Kirby Road and within the playground has died and requires felling on health and safety grounds. It is recommended that this tree is replaced with a similar sized *Prunus* or *Sorbus* species.

5.4 **Below Ground Constraints**

5.4.1 The below ground constraints are generally confined to the root protection area (RPA). The RPA is a circular area with a radius 12 or 10 times the diameter of the trees measured at 1.5 m or at ground, level respectively. The RPA is the minimum area in which no ground works should be undertaken without due care in relation to the retained tree(s) in order to avoid soil compaction, root severance, changes in levels or soil contamination which could reduce future tree health and/or stability. The shape of the RPA and its exact location will depend upon arboricultural considerations and ground conditions.

5.4.2 The RPA for the trees have been calculated as prescribed by BS 5837:2005 and are shown as circles for simplicity on the Arboricultural Implications Plan at Appendix 3. This plan illustrates the relationship between the RPA’s associated with the trees and the proposed development.

5.4.3 In addition the Tree Schedule at Appendix 4 displays the root protection calculations for each tree or group of trees where Radius (m) is the distance of root protection from the main stem and Area (m²) is the overall root protection area.

5.4.4 The appraisal of the Arboricultural Implications Plan (Appendix 3) has indicated that following the tree removals outlined in Section 5.3 the only areas of RPA incursions through development are as follows:

*Construction of the proposed outdoor classroom*

5.4.5 To the east of the proposed new extension an outdoor teaching area has been proposed under the crown of the ash T2 which is within the Gretton Primary School.

5.4.6 Currently the ash is situated on a narrow strip of compacted soil between a paved path to the south and a hard surfaced play area to the north which are both within the trees RPA. It is proposed that the hard surfaced play area will be removed, replaced with thin layer of new topsoil and a final surface of permeable material of bark chippings.

5.4.7 As the area outlined above is already under hard standing, no significant roots are likely to be encountered (and if any are they are likely to be fibrous and can
regenerate) therefore future tree health will not be unduly affected by the removal of the necessary removal of the hardsurfacing.

5.4.8 To alleviate the compaction of the narrow soil strip it is recommended that it is ‘forked over’ then bark chippings are placed on the surface. It is anticipated where bark chippings will be placed, worm activity given time will help reduce the compaction of the soil.

5.4.9 Overall the construction of the proposed outdoor classroom is likely to benefit, albeit to a small degree, the rooting potential of the ash T2.

Construction traffic access

5.4.10 It is understood that the construction of the nursery building to the south of the main building was enabled from the access road immediately adjacent to the eastern boundary through the removal of a wooden post and rail fence within the curtilage of the doctors surgery and the removal of a number of panels from the 2m high metal fence that surrounds Gretton Primary School (see Plate 4 at Appendix 8). The approximate location of the ‘gap’ is immediately north of the Gretton Surgery and south of the cherry G4.

5.4.11 An access drive is located immediately adjacent to the eastern boundary that leads to a doctors surgery and then onto the cricket pitch

5.4.12 The construction access for the proposed development will follow the method outlined above, however, it is noted that the RPAs of the ash T2 and the cherry G4 will be influenced by the construction traffic. None of the beech hedge G5 will be significantly influenced or will require removal (see Plate 5 at Appendix 8).

5.4.13 The cherry G4 are a poor quality group and it has been recommended above that the group are removed, however, the ash T2 RPA overlaps the proposed construction access.

5.4.14 The area that will facilitate the construction traffic consists of in part, a gravel driveway and grass (See Plates 4 and 5 at Appendix 8). The ground of the grassed area exhibits signs of the former nursery build and is likely to be compacted, however, it is recommended that to ensure that the ground is not further compacted a temporary construction surface is utilised.

5.4.15 It is therefore recommended that a ‘no dig’ construction utilising a cellular confinement system such as CellWeb (see Appendix 6) be employed for the construction of a temporary access for plant and machinery. The hatched area in green on the Arboricultural Implications Plan indicates the extent area of ‘no dig’ construction.

5.4.16 The benefit of the ‘no dig’ system is that no tree roots are cut, it spreads the load of the construction thereby reducing the compaction of the soil and finally when a permeable surface layer is applied there still remains a water and gaseous exchange essential for healthy tree roots. This method limits the potential stresses to the root system of the ash T2 and protects the adjacent ground in poor weather from compaction, rutting and water logging due to the construction traffic.

5.4.17 The ‘no dig’ system incorporates a geotextile separation filtration layer of Treetex T300 pegged into place with a 150mm standard CellWeb cellular confinement system being utilised and infilled with a no fines angular granular fill (typically 20-
40mm). These would be laid directly onto the ground following a herbicide application to remove the ground vegetation (grass).

5.4.18 The construction of the ‘no dig’ area will be undertaken at the start of the construction phase and will stay in place throughout the duration of the construction phase. At the end of the project the ‘no dig’ system can be removed and the area reseeded with grass making good the site.

5.5 **Above Ground Constraints**

5.5.1 The ash T2 has branches that currently touch a single storey structure to the east (see Plate 2 at Appendix 8) and branches to the south that are interfering with adjacent telephone lines. In addition the tree’s crown will be in relatively close proximity to the proposed extension to the main school building.

5.5.2 It is recommended that the ash T2 is crown raised to 4m and crown cleaned whilst reducing the branches away from the telephone lines to the south. This pruning should be undertaken regardless of the development being approved.

5.5.3 It may be appropriate that further reduction is required during the construction or post construction to ensure that a minimum of a 1.5m standoff from the ash T2 and the new building is maintained.

5.5.4 Considering the future growth potential of the ash T2 it is likely that there will be the need for future pruning, however, given the crown raising described above it is unlikely that future pruning will be significant.

5.5.5 Shading from T2 is noted, although it is unlikely to be a significant problem given the crown raising mentioned above allowing light under the crown.

5.5.6 All tree pruning should be undertaken to BS3998:2010 ‘Tree work – Recommendations’.

5.5.7 It is unlikely that honeydew related to leaf aphids will be a future problem on windows. With regards to leaf fall the specification of guttering should be considered in the detailed design of the proposed extension.

5.5.8 Given the proximity to the proposed extension and the constant flow of children passing under the tree it is recommended that the ash T2 is inspected annually.

5.6 **Effect on Amenity and the Impact of the Proposed Development**

5.6.1 In the context of this development there is no direct loss of trees.

5.6.2 However, the removal of the lilac T3 on the eastern school boundary and the offsite cherry G4 are not a significant loss to the amenity of the area.

5.6.3 Overall, from a public viewpoint there will little effect on the wider tree related amenity with the current proposal. In addition the impact of the development on the tree resource is low.

5.7 **Tree Protection**

5.7.1 It is recommended that during the construction phase of the development the key method of protecting the retained trees is through protective tree barriers/fencing enforcing the Construction Exclusion Zone (CEZ). The CEZ will be sacrosanct throughout development and no access will be allowed to this area including for example the storage of or moving of materials or machinery. The positioning the
barrier/fencing is usually on the edge of the RPAs, the edge of existing hard standing or adjusted to include tree crowns to prevent damage by construction machinery.

5.7.2 The barrier/fencing will be made from scaffold in a vertical and horizontal framework, as shown at Figure 2 in BS5837:2005 (at Appendix 7) with vertical tubes up to 3 metres apart. The framework will be braced to resist impacts.

5.7.3 The Tree Protection Plan with the location of the protective tree fencing and the CEZ should be produced prior to any works commencing on site and may be requested as part of a planning condition, once planning consent is granted.

6. CONCLUSIONS

6.1.1 Two trees and two groups of trees are affected by the development proposals.

6.1.2 No trees are to be removed as a direct result of the development proposals, however, it is recommended that the lilac T3 and cherry G4 (both R Category) are felled due to their poor form and low future contribution. In addition it is recommended that a dead tree within G1 is removed (and replaced) on health and safety grounds. No further replacement tree planting is deemed appropriate due to the level of tree cover on the site boundaries and space constraints, however, it is recommended that the beech hedge G5 is extended.

6.1.2.1 There is to be an encroachment of the construction of the outdoor classroom and associated works within the RPA of the ash T2. However, it is likely that these work will not comprise the health of the tree but in fact may benefit (albeit marginally) the tree in the longer term.

6.1.2.2 A 'no dig' method of construction to protect the roots and soils of the ash T2 from construction traffic has been specified.

6.1.3 The trees to be retained should be proactively managed to ensure that trees enhance the development and the wider environment. In addition it is strongly recommended tree works are undertaken as specified in the associated Tree Schedule (at Appendix 3) including the removal of the dead tree from G1 on health and safety grounds before construction commences.

6.1.4 The future growth, shading and apprehension from the trees on the site, specifically the ash T2, has been considered as well as the impact of the tree on the building extension to avoid future conflicts.

6.1.5 It has been considered desirable wherever possible that a tree should be retained although care has been exercised over misplaced tree preservation. In terms of the current site layout plan, areas requiring careful design and appropriate ‘no dig’ engineering solutions have been considered.

6.1.6 There may be a further requirement for a full Arboricultural Method Statement to include the methodology, specification and location of ‘no dig’ construction and tree protection (including a Tree Protection Plan). It is recommended that an Arboricultural Clerk of Works (ACoW) is engaged to monitor the protection of the trees through the development process to ensure the implementation of any tree related planning conditions.
7. REPORT LIMITATIONS AND QUALIFICATIONS

7.1 Report Limitations

7.1.1 This is an arboricultural report and as such no reliance should be given to comments relating to buildings, engineering or soil.

7.1.2 This is not a full arboricultural health and safety survey.

7.1.3 The inspection was undertaken from ground level.

7.1.4 Trees are growing dynamic structures. The comments of this report are valid for a period of one year from the date of report.

7.1.5 No tree is ever absolutely safe due to the unpredictable laws and forces of nature.

7.2 Qualifications

7.2.1 The principal author of this report is Bryan Clary BSc(Hons)Arb. M.Arbor.A MICFor and a Full Member of the Institute of Chartered Foresters and a Professional Member of the Arboricultural Association. As an arboriculturist at Lockhart Garratt Bryan Clary specialises in dealing with trees in relation to planning issues.

7.2.2 The project director is Justin Mumford FICFor.

7.2.3 The qualifications and experience of each consultant can be provided on request.
8. REFERENCES & RELEVANT LEGISLATION

APPENDIX 1: AERIAL PHOTOGRAPHY

Aerial photograph of the surveyed area
APPENDIX 2: STATUTORY NOTICES

Gretton Conservation Area Plan
APPENDIX 3: PLANS

Plans Produced by Lockhart Garratt Ltd:

Tree Constraints Plan (D11-1824)

Arboricultural Implications Plan (D11-1825)
APPENDIX 4: TREE SCHEDULE

Tree Schedule (Ref 11-1809)

BS5837:2005 Cascade Chart for Tree Retention
**BS5837:2005 Tree Schedule**

<table>
<thead>
<tr>
<th>Tree No.</th>
<th>Species</th>
<th>Height (m)</th>
<th>Stem Dia (mm)</th>
<th>Crown Spread (m)</th>
<th>Height of Crown Clearance (m)</th>
<th>Age Class</th>
<th>Phys Con</th>
<th>Struc Con</th>
<th>Additional notes</th>
<th>Preliminary management recommendations</th>
<th>Estimated remaining contribution (Years)</th>
<th>Ret Cat</th>
<th>RPA Radius (m)</th>
<th>RPA Area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>Group of: Holly (Ilex aquifolium), Japanese flowering cherry (Prunus sp.), Monterey cypress (Cupressus macrocarpa), Purple-leaved plum (Prunus cerasifera ‘Pissardi’), Small leaved lime (Tilia cordata)</td>
<td>up to 15</td>
<td>up to Gl 850</td>
<td>av dia 8</td>
<td>65</td>
<td>2</td>
<td>Mid to Mat</td>
<td>Dead to Good</td>
<td>Poor to Good</td>
<td>Group located on the boundary to Kirby Road. Lime and Monterey cypress are the largest and most prominent specimens. Hard surfaced playground within the trees RPA. Small dead tree in centre of group.</td>
<td>Fall and replace dead tree.</td>
<td>20-40</td>
<td>B2</td>
<td>8.5</td>
</tr>
<tr>
<td>T2</td>
<td>Ash (Fraxinus excelsior)</td>
<td>12</td>
<td>Gl 645</td>
<td>4</td>
<td>6.5</td>
<td>E</td>
<td>2</td>
<td>Mat</td>
<td>Good</td>
<td>Fair</td>
<td>Codominant stems from 1m. South the union is tight and included for 200mm, north the union is wide and open. A pocket between the stems at the union has a build-up of organic debris. Full healthy, dense crown. Epicotomic growth on main stem in lower crown. Small diameter hung up branch in centre of crown although unlikely to be dislodged. Telephone lines in southern crown. Northern crown is low and touches building to north. The tree is located on an area of compacted soil between a paved path and existing hard surfaced play area.</td>
<td>Crown raise to 4m and crown clean. Reduce crown from telephone lines.</td>
<td>20-40</td>
<td>B1</td>
</tr>
<tr>
<td>T3</td>
<td>Lilac (Syringa vulgaris)</td>
<td>5.5</td>
<td>295</td>
<td>4</td>
<td>6</td>
<td>1.5</td>
<td>2</td>
<td>Mat</td>
<td>Fair</td>
<td>Fair</td>
<td>Main stem forks into two at ground level. Crown is weighted heavily to the east. Slender stems with foliage only at the ends of the branches. Evidence of bark wounding on the main stem. Overall a low quality specimen.</td>
<td>Fall.</td>
<td>0-10</td>
<td>R</td>
</tr>
<tr>
<td>G4</td>
<td>Group of: Wild cherry (Prunus avium)</td>
<td>4.5</td>
<td>80</td>
<td>av dia 1.5</td>
<td>2</td>
<td>Mat</td>
<td>Poor to Fair</td>
<td>Poor to Fair</td>
<td>Located offsite on the boundary of Gretton Surgery and Gretton primary School. Specimens of short stature directly adjacent to the metal boundary fence. Suppressed by the crown of the ash T2. Low quality and exhibiting decline. An insignificant group with no long term potential.</td>
<td>Fall.</td>
<td>0-10</td>
<td>R</td>
<td>0.96</td>
<td></td>
</tr>
<tr>
<td>G5</td>
<td>Group of: Beech (Fagus sylvatica)</td>
<td>2</td>
<td>&lt;75</td>
<td>av dia 1</td>
<td>2</td>
<td>Mat</td>
<td>Good</td>
<td>Fair</td>
<td>Located offsite on the boundary of Gretton Surgery and Gretton Primary School. Intermittent beech hedge maintained at 2m height. Occasional young ash within hedge.</td>
<td>Remove ash from within hedge and replant in gaps.</td>
<td>20-40</td>
<td>C</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>G6</td>
<td>Group of: Lawson cypress (Chamaecyparis lawsoniana), Lombardy poplar (Populus nigra ‘Italica’), Small leaved lime (Tilia cordata), Wild cherry (Prunus avium)</td>
<td>18</td>
<td>450</td>
<td>av dia 4</td>
<td>2</td>
<td>Mid to Mat</td>
<td>Poor to Mat</td>
<td>Fair to Good</td>
<td>Located offsite on the southern boundary. Majority of group are Lawson cypress with Occasional basal bark wounds on the Lombardy poplar otherwise a reasonable group.</td>
<td>None.</td>
<td>40+</td>
<td>B2</td>
<td>5.4</td>
<td></td>
</tr>
</tbody>
</table>
## TREES FOR REMOVAL

<table>
<thead>
<tr>
<th>Category and Definition</th>
<th>Criteria</th>
<th>Identification on Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category R</strong>&lt;br&gt;Those in such a condition that any existing value would be lost within ten years and which should, in the current context, be removed for reasons of sound arboricultural management</td>
<td>- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R Category trees (i.e., where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)&lt;br&gt;- Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline.&lt;br&gt;- Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g., Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality.&lt;br&gt;<strong>NOTE:</strong> Habitat reinstatement may be appropriate (e.g., R Category tree used as a bat roost; installation of bat box in nearby tree).</td>
<td><strong>DARK RED</strong></td>
</tr>
</tbody>
</table>

## TREES TO BE CONSIDERED FOR RETENTION

<table>
<thead>
<tr>
<th>Category and Definition</th>
<th>Criteria – Subcategories</th>
<th>Identification on Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category A</strong>&lt;br&gt;Those of a high quality and value: no such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested)</td>
<td>1 Mainly arboricultural values&lt;br&gt;Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g., the dominant and/or principal trees within an avenue)</td>
<td><strong>LIGHT GREEN</strong></td>
</tr>
<tr>
<td></td>
<td>2 Mainly landscape values&lt;br&gt;Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g., avenues or other arboricultural features assessed as groups)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 Mainly cultural values, including conservation&lt;br&gt;Trees, groups or woodlands of significant conversation, historical, commemorative or other value (e.g., veteran trees or wood-pasture)</td>
<td></td>
</tr>
<tr>
<td><strong>Category B</strong>&lt;br&gt;Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)</td>
<td>Trees that might be included in the high category, but are downgraded because of impaired condition (e.g., presence of remediable defects including unsympathetic past management and minor storm damage)</td>
<td><strong>MID BLUE</strong></td>
</tr>
<tr>
<td></td>
<td>Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g., trees of moderate quality within an avenue that includes better A Category specimens) or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality</td>
<td></td>
</tr>
<tr>
<td><strong>Category C</strong>&lt;br&gt;Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm</td>
<td>Trees not qualifying in higher categories</td>
<td><strong>GREY</strong></td>
</tr>
<tr>
<td></td>
<td>Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trees with very limited conservation or other cultural benefits</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** Whilst C Category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem of less than 150mm should be considered for relocation.
APPENDIX 5: SURVEY METHODOLOGY

- The trees on the site were surveyed without reference to site layout as detailed in paragraph 4.2 of BS5837:2005.
- The position of the trees were either plotted with reference to the supplied base map data or plotted by eye where trees had been not been surveyed.
- Trees with a stem diameter <75mm were generally not surveyed as they could be easily replaced or relocated.
- Each individual tree has been given a tree identification number and the groups clearly defined for the purpose of this report.
- The tree species have been recorded with both common and botanical name. All heights were assessed using a clinometer (with an accuracy of approximately ± 10%) and where indicated in groups, the height of the tallest tree was measured unless otherwise stated.
- All stem diameters were measured at 1.5m above ground level, unless otherwise stated ("gl" is an abbreviation for ground level where diameter was measured just above root flare, “E” is an estimate and “av” is an average).
- The approximate crown spread is recorded in either the four cardinal points or is given as an average diameter for the crown especially in groups or where the crown is evenly weighted.
- The height of the ground clearance is given in metres and is an estimate of the height of the first branch union above ground level. In reality the branches of trees hang lower than this, especially in trees with a pendulous habit.
- In the absence of detailed information on the age, the following classification has been used:
  
  Yng    Young trees less than 1/3 life expectancy  
  Mid    Middle age trees 1/3 – 2/3 life expectancy  
  Mat    Mature trees over 2/3 life expectancy  
  O/mat  Over-mature – declining or moribund trees of low vigour  
  Vet    Veteran trees – specimens exhibiting features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.  

  Age class is indicative and will vary between species.

- The physiological condition has been recorded to provide an indication of the tree’s general health and vitality. The trees have been described thus:
  
  Good    Generally in good health typical of the species  
  Fair    Reasonable health with few defects  
  Poor    Has significant defects which are irremediable or tree is in decline  
  Dead    Tree has died
• The structural condition of the trees has been assessed and is summarised as:
  - Good       Few minor defects of little overall significance
  - Fair       A significant defect or several small defects
  - Poor       Major defect present or many small defects

• Each tree was individually assessed and comments, where appropriate, were recorded for the condition of each tree’s roots, main stem and crown. General comments have also been made where appropriate with recommendations where relatively immediate works are required.

• Estimated remaining contribution has been categorised as: less than 10 years, 10-20 years, 20-40 years or over 40 years, based upon an assessment of the tree’s potential safe useful life expectancy.
APPENDIX 6: CELLWEB SPECIFICATION

CellWeb – Tree Root Protection System
CellWeb

Tree Root Protection System
CellWeb Tree Root Protection System provides a flexible and permeable solution for protecting tree roots while creating a strong stable surface for traffic.

CellWeb
Tree Root Protection System

With increased urbanisation and more redevelopments of existing properties, the need to be mindful of the impact on the surrounding environment is more important than ever.

The demand for building site access, driveways and parking around existing trees can have a potentially fatal impact on the tree if carried out incorrectly. Tree preservation orders (TPO’s) ensure that trees are not wilfully damaged. However the need for vehicle access over and around tree roots can still cause the following problems:

Problems:
- Compaction of subsoils (especially by construction traffic) causing oxygen and nutrient depletion
- Creating an impermeable surface that prevents water reaching the roots
- Changes in ground level and water table
- Damage caused during excavation
- Contamination of the subsoil

By using CellWeb Tree Root Protection System you can avoid these problems and ensure the tree’s long-term future. BS 5837:1991 (revised 2005) and APN 1 provide information for the protection of trees during the construction process, and CellWeb is a well-established solution that conforms to these guidelines.
Cellweb’s patented design with its unique cellular structure and perforated cell walls reduces the vertical load pressure on tree roots and prevents damage. With clean granular materials as infill, air and moisture can reach the roots to encourage healthy growth.

With no-dig solutions being the preferred option of most Arboricultural Consultants and Tree Officers, CellWeb is ideal as only the surface vegetation need be removed. As well as avoiding disruption to the roots this reduces installation time and saves money.

What’s more CellWeb also cuts down the depth required for the subbase – in most cases by 50% for further cost savings. CellWeb also significantly reduces surface rutting, increasing the long-term performance of the finished surface.

Using CellWeb for tree root protection gives you these benefits:

- Reduced depth of excavation required
- Preventing the compaction of subsoils
- Preventing oxygen and nutrient depletion
- Environmentally sound
- Quick, easy and cost-effective installation
- Free technical support available

CellWeb gives you the cost-effectiveness you need at the same time as helping to preserve trees.

Geosynthetics Ltd is a leading dis....
Final surfacing

The CellWeb Tree Root Protection is totally confined within the clean stone sub-base, therefore you can choose whichever surface materials are most appropriate for your installation. Some materials are more suitable than others and serious consideration should be given to the porosity of the surface for continued healthy growth of the tree. An ideal surfacing are DuoBlocks: a grass reinforcement and gravel retention system. Geosynthetics can supply these systems for a visually attractive surface that also has the advantage of being fully porous.

Loose or bonded gravels can be used as an alternative hard landscaping and CellWeb can also be used with block paviors whose porous joints will permit moisture and air transfer to the roots. Where planning allows, porous asphalt is yet another possible surfacing treatment.

Call our sales office on 01455 617 139 for more information.
Certified quality

Cellweb™ is manufactured in accordance with an ISO 9001 Quality Management System with perforated walls, and a comprehensive range of cell diameters and depths. The perforated system improves the frictional interlock of infill material giving greater stability and facilitating lateral drainage.

Advice and product selection

Geosynthetics Limited has been supplying the CellWeb Tree Root Protection System for many years and as a result have acquired a vast amount of experience and knowledge. No two contracts are the same, and we understand the factors that need to be taken into account to specify the right CellWeb product for the right situation.

We provide a FREE consultation, design and advisory service to give you the reassurance that your project will be cost-effective and beneficial to existing trees. The service includes product selection, CAD drawings and full installation instructions and will help you from conception stage all the way through to completion.

Call our sales office on 01455 617 139 for specification details and project specific design assistance.
# Technical specification

## Product Specifications

<table>
<thead>
<tr>
<th>Properties</th>
<th>Standard Cell</th>
<th>Large cell</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Virgin HDPE</td>
<td>Virgin HDPE</td>
</tr>
<tr>
<td>Wall thickness</td>
<td>1.25mm</td>
<td>1.25mm</td>
</tr>
<tr>
<td>Seam welding</td>
<td>Ultrasonic to 100% of seam length</td>
<td>Ultrasonic to 100% of seam length</td>
</tr>
<tr>
<td>Cell depth</td>
<td>75, 100, 150, 200 and 300mm</td>
<td>75, 100, 150, 200 and 300mm</td>
</tr>
<tr>
<td>Width of expanded panel</td>
<td>2.56m</td>
<td>2.56m</td>
</tr>
<tr>
<td>Length of expanded panel</td>
<td>8.1m</td>
<td>13.72m</td>
</tr>
<tr>
<td>Cell diameter (expanded)</td>
<td>259 x 224mm</td>
<td>508 x 475mm</td>
</tr>
</tbody>
</table>

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Please call - **01455 617 139**
or email sales@geosyn.co.uk for more technical advice and further information.

**Geosynthetics Limited**
Fleming Road, Harrowbrook Industrial Estate
Hinckley, Leicestershire LE10 3DU.
Fax: 01455 617 140
Email: sales@geosyn.co.uk
APPENDIX 7: TREE PROTECTION

Tree Protection Fence Specification
APPENDIX 8: PHOTOGRAPHS
Plate 1 – Group 1, adjacent to Kirby Road.

Plate 2 – Ash T2.

Plate 3 – Lilac T3 with ash T2 behind.

Plate 4 – Fencing and railings to be removed for construction access.

Plate 5 – Construction access area: cherry G4 with ash T2 in the background.