4
Site Survey

The current condition of the parks, and their features, is a key consideration in restoration planning. The following presents a range of site surveys undertaken by various consultants during Spring 2105.

4.1 Landscape and Visual Appraisal

A landscape and visual appraisal of the parks was undertaken by HEA.

The River Dour

The River Dour has a place at the heart of the project, linking Russell Gardens and Kearsney Abbey grounds, and is central to the rich heritage of these complementary parks.

This waterway provided the reason for the establishment of the numerous mills - 13 of them - in this valley; it is the backbone of the designed layout of both parks, and continues to provide an attractive and compelling focus for visitor activity.

Within Kearsney Abbey Park, the substantial lake defines the spaces and the activities that go on around it – and on it, in the case of model boating. Separate to this, and contrasting with the still and reflective lake water, are a series of discrete sunken channels with fast-running water, that form part of the overspill watercourse that is broadly parallel with the lake, but which is mainly hidden in a culvert. Improving the condition of the lake edges is important in terms of functionality, safety, public access and aesthetics. Access to the water is desirable, although obviously, safety considerations form an important part of any considerations of changes to the current *status quo*.

The presence of a second watercourse feeding in to the boating lake, is indicated by an additional, short, length of open channel that seems to flow beneath the ice-house, which is then culverted as far as the lake.

Both culverts are showing signs of further potential collapse, evidenced by ground settlement along the lines of the watercourses.

The river and lake are controlled by a number of 'in-channel' structures including sluices, weirs, and culverts, all of which provide interest and character; bridges offer elevated vantage points and a different experience of the water, while lake islands enhance the visual experience and provide valuable protected habitat.

Within Russell Gardens, by contrast, the River Dour has been contained and constrained within a formal canal setting, which flows into a more naturalistic channel at the eastern end of the park. The channel passing from Russell Gardens under the road and into Kearsney Abbey grounds provides a physical water link in the landscape, connecting the two parks.

Downstream of the lake, the river weaves and braids as it approaches the site of the old mill; the banks of the old mill pond are eroded and are all but impassable for visitors, particularly in wet weather or times of high water. The landscape is wilder, providing a naturalistic "conclusion" to the sequence from the formal layout of Russell Gardens, through the more informal, sweeping curves of lake and hillsides that characterise the Kearsney Abbey landscape.

In both parks, water is a key component and the way in which it is experienced is important, both in how people perceive the parks aesthetically and how people engage with the spaces. It is a central feature from a historical perspective – indeed, Mawson's design depends upon it; but the River Dour is highly significant not only because of its central role in Dover's industrial history, but also because it is a chalk stream, which is an internationally rare and declining habitat. Last, but not least, the clear and clean flowing water is inviting and ought to offer children – and adults – opportunities for natural play.

Russell Gardens

The original design intentions of Thomas Mawson, who is described as "the leading designer of the early C20" (cited by Kent Gardens Trust), must be central to any restoration considerations for Russell Gardens. Within his designs, Mawson placed a considerable emphasis on his opinion that any project should form a "unit"; house and garden should be designed together and should follow the application of his three guiding principles in garden design: realism, romanticism and symbolism (or mysticism).

However, the house and garden are now in split ownership and restoration that fully acknowledges and reinstates Mawson's original ideals by completely reuniting house and grounds is simply not possible.

Notwithstanding this situation, the publicly accessible areas of the gardens are in need of restoration work, and have the potential to provide a beautiful and special testament to Mawson's vision. Key landscape elements include the formal pond framed by its covered bridges; the low, planted terraces; the meandering river; and the lily pond centred between adjacent recreation courts. Careful restoration of the built structures and the water channel needs to be complemented by the reinstatement of Mawson's planting intentions; the interest, detail and delight of Mawson's planting has been lost, with only structural planting such as remnant yew hedges, overgrown conifers and longer lived forest trees surviving today.

A play area has also been located within Mawson's garden setting which detracts from the harmony and formality of the design, and impacts badly upon the set piece of the canal and pavilion bridges. Its appropriateness within its current location is questionable; however, it provides a facility for younger visitors, and if the garden is to be more than a 'museum', it needs to respond to the C21 by providing appropriate opportunities and facilities' for a wide range of potential visitors.

Interpretation within Russell Gardens for visitors needs to be considered and integrated. Improved accessibility has also been identified as a key factor that needs to be addressed - footpath links and provision for disabled access is currently inadequate. The results of an access audit are set out more fully, below.

Trees and woodlands

The parks have a great resource of mature trees, recognised by the existence of a tree trail (although this is now quite old and needs to be updated). The trees have been surveyed and analysed, and the results of the analysis are set out in more detail in a later section of this chapter.

Remnant tree avenues exist but have lost their dominance and purpose

in the landscape. Woodland regeneration has changed the character of the southern part of Kearsney Abbey park, where there is now dense woodland, and is also encroaching on the open chalk grassland at the crest of the hill. The spatial and visual relationships of the terraces within Russell Gardens, are also much altered by encroaching woodland regeneration.

Present day views and vistas

The main views and vistas that are present within the parks today are shown in **Figure 4.1**.

Within Russell Gardens, the historical views and vistas have been reduced over time. The long view between the pavilion bridges along the canal remains, as impressive as when the gardens were laid out. However, the other key axial view, north-south from the upper house terrace, is truncated, stopping at the foot of the steps leading up to the bastion.

The vantage point of the bastion and views from the upper terraces are now lost to park visitors as a result of land ownership changes. Most significantly, there is no visual connection between Kersney Court and the garden any longer, owing to dense vegetation on either side of the bastion which obscures the views to and from the upper terraces and effectively disconnects the house from its garden setting.

Conversely, around the canal, many mature trees have been lost, and this feature is now more exposed to views from the adjacent terraces, than was intended when it was designed. There are also views out from the lower terraces, between trees and over the hedge on the Alkham Road boundary, to the road, and to housing on the valley side to the south.

Loss of shrubbery and dense woodland understorey on the western boundary has resulted in views opening up through the boundary into Bushy Ruff Park; and similar lack of vegetation on the eastern boundary means that housing built along the line of the drive is visually exposed and detracts from the garden experience.

Within Kearsney Abbey grounds, there has been a similar reduction to the spatial arrangement and structure of views over time. Where there were once views over the islands, present day views are focused between the islands because of island vegetation. The eastern arm of the lake is no longer obscured by planting in views from the main house, but is exposed in long views from the café terrace.

Views along the avenues to the south of the lake, are still focused on the fountain between the two main islands. However, the views southwards along the avenues no longer run up the hillside to conclude at Scots Pine clumps, whose dark foliage would have contrasted with the bright foliage of the limes; they peter out into the secondary woodland on the scarp face.

Looking northwards, the clarity of views along both avenues is blurred by conifers and other trees along the lake edge. The eastern avenue concludes at the car park, an unfortunate result of the use of the original house terrace. The western avenue, which aligns on Kearsney Manor and may well have ‘borrowed’ the group of the buildings there as a focus, now concludes visually at the area around the ice house, which is lacking in any focal point but is distinguished by some magnificent mature trees.

While there is still a view from the main bridge, eastwards over the lake, this view has lost its focus and its draw. There is no longer a bridge at the east end of the lake, from which the mill pond would have been viewed; and views over the mill pond area are obstructed by alder and willow carr.

From Coxhill Mount, for those who make the climb, there are wide views out across the valley. While Kearsney Abbey grounds are obscured, and indeed, there is no sense of being ‘in the park’, Kearsney Court on the opposite side of the valley can be seen, and the copper beeches that form ‘punctuation marks’ in Mawson’s woodland planting are clearly distinguishable. Wider features can also be appreciated, including the line of the railway, the modern A2 along the ridge line, Temple Ewell church, and to the east, Dover Castle stands proudly on the skyline. It would be a good location for a panorama panel with some key features identified.

Festival of Britain Theatre

The site of this open-air theatre, in the angle between the two lines of remnant avenues, has lost its setting and its original hedged backdrop that formed the wings and defined the stage area. There is a desire among the public to see the theatre restored and used again; in order for this to be successful a number of things need to be considered, including the restoration of its setting as a feature within the wider historical parkland; its relationship to visitor facilities and car parking; the infrastructure needed to operate it successfully (lighting / power, water, WCs, permanent and / or temporary facilities etc.); and the ongoing management of the feature as part of the wider grassland area.

General park infrastructure

Neither park has ever benefited from planned infrastructure renewal on a co-ordinated and comprehensive basis. As is all too often the case in public parks, changes and modifications are made over time in smaller ways, frequently in reaction to an immediate opportunity, and without reference to a long-term, considered, masterplan.

Improvements to park features and infrastructure including some gateways and park entrances, fencing, paths, signage, seating, play spaces, planting renewal, and removal of redundant features is needed across the park. Desirable infrastructure improvements are extensive and will need to be prioritised.

Park boundaries are important; at a basic level, they define the edge and extent of DDC’s responsibilities, but they also have an important role in presenting the parks to the public, to visitors and to potential visitors, and in raising expectations. Some boundaries are well defined, and are important features of the parks’ history in their own right, such as the flint and brick walls alongside the Alkham Road; in other area, park boundaries are a practical response to the need for enclosure and security, but have little to do with the design ethos, such as the chainlink fencing that separates Russell Gardens from Bushy Ruff Park, and the closeboard fence on the east boundary of Russell Gardens. Other parts of the park have no boundary fence or marker, and it is unclear where the park starts and stops; the boundary between Frandham Wood and Kearsney Abbey, and the boundary between Russell Gardens and Palmtree Hill Plantation.

Although both parks contain impressive mature trees, renewal and regeneration of planting is needed at all the different layers of planting, from grassland and bulb layers, through the ornamental herbaceous and shrub plantings, to the trees and woodlands. Particularly, the interest of that most misunderstood of garden features, the shrubberies, has been lost over time, and is worthy of renewal in order to return horticultural delight and appreciation – one of the key aspects of our public parks – to these well loved gardens.

Accessibility of the higher ground on Coxhill Mount is difficult; improvements are needed to enable more people to appreciate this part of the park, and the spectacular views it offers. The ecological condition of the “chalk grassland” needs to be urgently addressed as the area is rapidly being taken over by scrub and pioneer woodland.

The parks lack of a clear policy that addresses the demand for memorials in the parks, particularly in relation to memorial trees and benches, of which there are many.

Access, parking and circulation

Kearsney Abbey grounds, particularly, suffers from intense visitor pressures during the summer period, which causes parking problems at the site and on surrounding residential roads. The situation will be exacerbated by any increase in visitor numbers to the parks,

Pedestrian circulation and orientation is fragmented. Within Kearsney Abbey, some paths survive from the historical garden layout, while others have been lost, and as a consequence there is a lack of connectivity and only 'desire line' or mown grass paths are provided on desirable routes, for example along the south side of the lake.

Within Russell Gardens, the result of the division in ownership of the original designs has also resulted in fragmentation of circular routes. Clumsy responses have been made to provide ramped access as alternatives to the stepped bridge pavilions, but these do not function well (see details below) and are also unsympathetic to the carefully designed landscape setting.

The relationship between Kearsney Abbey Park and Russell Gardens is of particular concern; fast traffic, lack of defined pedestrian crossing, inadequate pedestrian island in the middle of the Alkham Road, and indirect footpath links between the parks, act as a barrier to visitor movement between the two sites.

Children's Play

Dover District Council recognises the important place of play provision within the parks and each of the parks contains a play area. The play area within Kearsney Abbey is particularly intensively used. While many visitors would expect to find a designated play area within any sizeable town park, there are numerous opportunities within both parks to widen the experience of play, as well as to integrate play opportunities more sympathetically within the designed landscape.

Interpretation

Both parks are lacking in interpretation: there is no information about their long heritage, their features, or how they came to be the parks that visitors love today. Good interpretation seeks to inspire, inform and engage people through exploring history and heritage values in a wide variety of ways, and currently, potential to enrich visitors' experiences in this way is being missed.

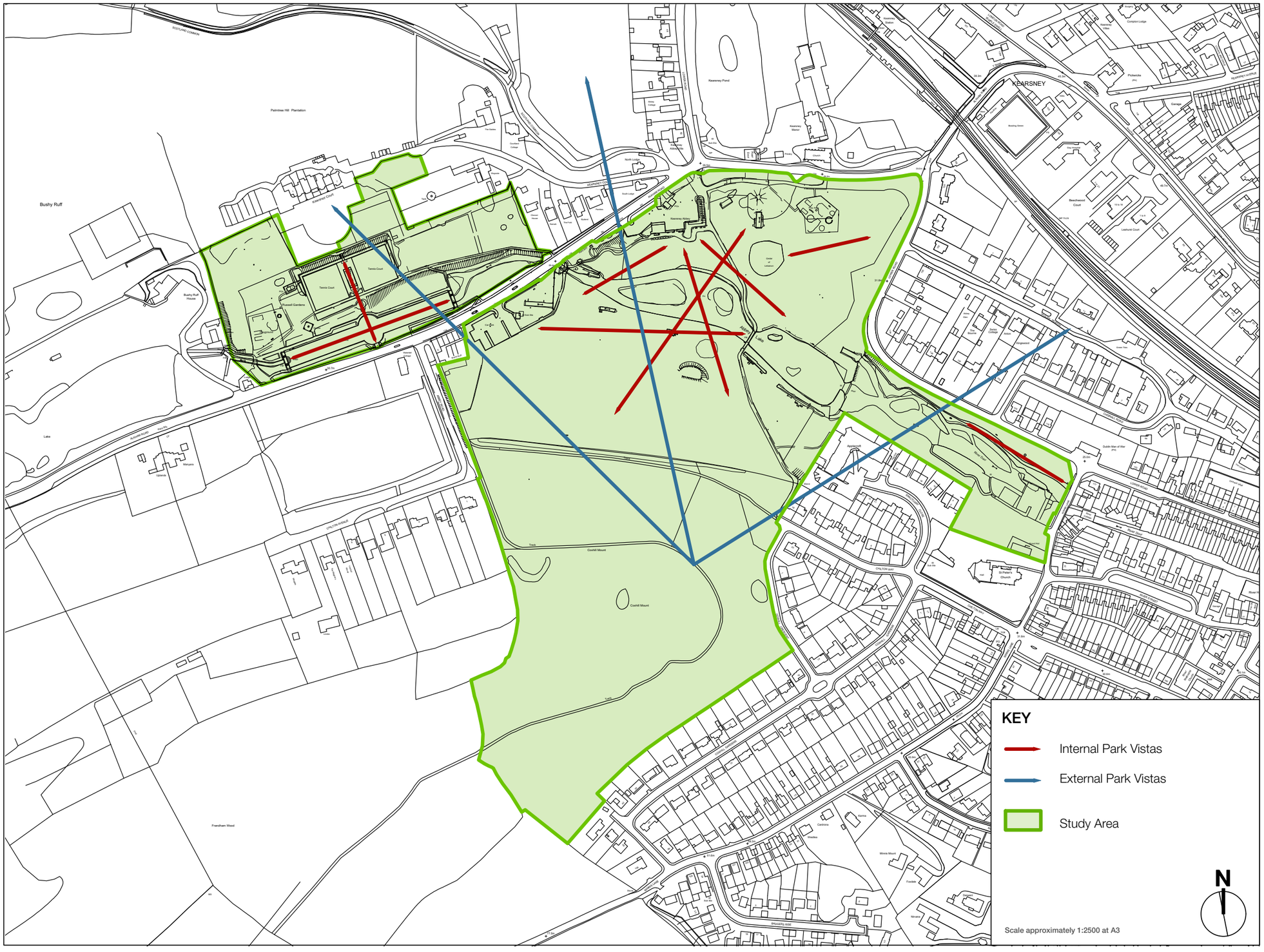

Figure 4.1
Main Views and Vistas

Figure 4.2
Entrances

4.2 Access and circulation

An access audit was conducted by Mace Mark in March 2015 which has been used as the basis for this section of this report.

Pre-visit information that is available electronically suggests that there is no provision for accessible parking at the site, but this is inaccurate; there is limited provision but it is not easily accessed from Russell Gardens.

Children's play grounds are a feature of both parks, and although both are easy to get to, neither of the play areas has equipment that has been inclusively designed, which means that children with disabilities cannot benefit from the equipment offered.

Access to the WC facilities in Kearsney Abbey is good. The access into, size and layout of the current accessible WC facility falls well below current standards, which limits the number of wheelchair users and others who would be able to use it. Lack of an effective alarm system is also a concern.

The cafe is a popular feature, but is not inclusive due to lack of circulation space both at the entrance and once inside.

Generally, both sites currently provide practical access to key areas and both offer affordable and time flexible access, since there is no parking charge and the parks are open 24hrs. They both have potential to be fully inclusive for all visitors.

Wayfinding

Both Kearsney Abbey and Russell Gardens have relatively intuitive layouts in their main areas with sight lines across wide spaces, which assist in orientation. Both parks lack signposts and information boards. Addition of such facilities, when they include orientation, distances and information in regard to gradients and surfaces finishes, helps people to decide where to go and also ensures they are aware of all facilities and all areas of the parks.

Entrances

All entrances to the parks are shown in **Figure 4.2**.

Kearsney Abbey site entrances

Pedestrian access from Temple Ewell (Lower Road): E1

This entrance has a safety barrier and then a self-closing gate. The surface finish is generally worn and uneven and the turning area within the corral is too tight for a standard wheelchair and would be difficult for medium and larger sized mobility scooters to use.

Plate 4.1: Temple Ewell (Lower Road entrance)

Pedestrian access Lower Road River: E2

This is an informal gated entrance, with no hard surface or dropped kerb approach on the highways side and a stepped compact earth surface finish on the Abbey site, which gets very muddy in wet weather, limiting access for a number of visitors.

Plate 4.2: Pedestrian access Lower Road

It is not signposted and seems to be used predominantly by local people. As there are alternative entrances, it would be reasonable not to pursue inclusive access design in this particular area unless local residents raise this as a particular issue. There are safety aspects to consider in relation to the ongoing use of this entrance as it is located on a blind bend, and there is no footpath on the park side of the road.

Minnis Lane entrances: E3 and E4

There are two gated entrances from Minnis Lane into Kearsney Abbey grounds. One provides access to a small area of the park south of the mill ruins, where the Scout Hall is located (E4). The second (E3) serves as a main entrance from the River. The approach to entrance E3 includes dropped kerbs and limited on street parking.

The gate is latched and users have to reach over at high level to gain access, which is out of reach of wheelchair users, necessitating them to either be accompanied or to wait for a member of the public to assist. The clear opening width of the gates is good.

Plate 4.3: Minnis Lane entrance

Chilton Way / Coxhill Crescent entrance: E5

This entrance has both pedestrian and vehicular gates; however the latter is restricted to site maintenance vehicles. As with the Minnis Lane entrance the gate release mechanism is out of reach of people with limited reach. The approach surfaces, and the path within the park are hard surfaced with level transition; however once in the park, the main path has a steep gradient down and there are no handrails. Resting points need to be more obvious and include benches to make the gradient manageable for visitors with mobility issues.

Entrance from former Kearsney Abbey Walled Garden E6

A tarmac surface that leads to a gate in the old kitchen garden wall to what is now a retirement home. Residents may be using this entrance as a local route to the park. The gate is controlled by a key code pad.

Plate 4.4: Chilton Way / Coxhill Crescent entrance

Coxhill Crescent additional entrances E7

There are a number of informal and semi formal entrances into Kearsney Abbey from Coxhill Crescent. All these entrances have compact earth surfaces and are un-gated. The levels vary according to the entrance used and lead into steeply sloping woodlands. They seem to be used mainly by local residents.

Plate 4.5: Coxhill Crescent entrances

Frandham Wood Entrance E8

There is no clear boundary demarcation between Frandham Wood and the park. The woodland path leads gradually from dense woodland into more open scrub and coarse grassland on Coxhill Mount, with no indication that the walker has entered the park.

Chilton Avenue Entrance: E9

This is a strong desire-line from Chilton Avenue housing up to Coxhill Mount. This is an informal entrance, probably mostly used by local people, with no indication that a visitor is entering the park.

Plate 4.6: Chilton Avenue entrance

Abbey Road Entrance E10

Sections of the Abbey Road boundary with Kearsney Abbey park are unfenced, and the gap leading to the east-west track across the parkland is used as a park entrance. This is also an informal entrance and there is no signage or way-marking.

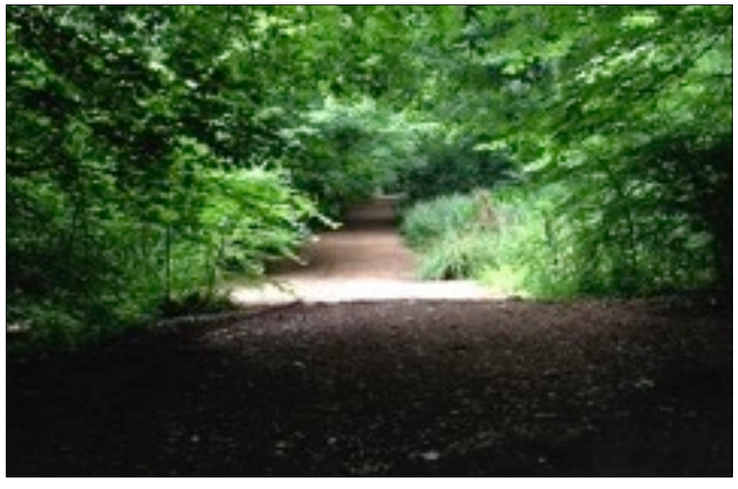

Plate 4.7: Abbey Road entrance

Russell Gardens Entrances

There is good access via the pavement from the bus stops on Alkham Road. There is also access from Kearsney Abbey via two island crossing points (with tactile paving) over Alkham Road. This is a busy road; although the islands provide a mid crossing haven, the area protected by the island is not big enough to comfortably accommodate a buggy or a person in a wheelchair.

Main Alkham Road Entrance: E11

There is a wooden self-closing gate at the entrance. An informal sign (with pictogram) on the gate shows the location of the level access path, to the east, suggesting that visitors in the past have needed direction. This sign is 'homemade' and does not give distances.

Plate 4.8: Russell Gardens main entrance

Plate 4.9: Detail of the sign on the gate above

Easy Access entrance: E12

This entrance from the Alkham Road offers level access into Russell Gardens through a wide, easy to operate, gate onto a path that grades

gently to the level of the first garden terrace and provides a route to traverse the entire length of the site.

Bushy Ruff Entrance: E13

This link with neighbouring Bushy Ruff Park is hard surfaced and in places too narrow for pushchairs, wheelchairs or mobility scooters to pass.

Plate 4.10: Bushy Ruff entrance

Alkham Road gates: E14, E15 & E16

There are three more entrances into the Russell Gardens, marked by wooden gates; these lead directly out of the gardens onto the Alkham Road. On the park side, two of the gates lead directly onto grass whilst the wide vehicular gate connects with the path leading from the main entrance to the east pavilion bridge; the wide gate is used primarily for maintenance vehicle (mower) access.

Palmtree Hill Plantation: E17

(At the north western edge of the site, a desire line leads up to the privately owned Palmtree Hill Plantation. The path runs uphill into dense vegetation on a worn earth surface.

Car Parks

Kearsney Abbey car parks

Both car parks offer free 24hr parking, which helps those on lower incomes with cars to make use of the park facilities.

Western car park

This car park has marked out, but worn, parking bays but lacks disabled parking bays. The tarmac car park surface is damaged with potholes, which makes it difficult for some people including people using mobility equipment to use, and hard for people who are blind or partially sighted to negotiate. Only part of the car park has footpaths, although these do have dropped kerbs. There are directional signs but these do not indicate if the car park has disabled parking bays or not.

Information signs are presented in words only (no symbols) and with block capital text, which makes them difficult for some people to read and understand.

Plate 4.11: Western car park

Cafe car park

This car park is tarmac surfaced. It is located close to the main visitor amenities in Kearsney Park, including the café and the WC block.

The road access into the car park is steeply sloping and has no footpath. There are four disabled parking bays offering easy access into the park, and to the WC block and the cafe.

There is a conflict between pedestrians moving across the car park between the café and WC and traffic movements, as well as between visitors and maintenance vehicles (the maintenance compound is sited behind the WC block).

Russell Gardens car park:

There is a small parking area located at the western end of Russell Gardens, opposite Bushy Ruff Cottages. However, this is only signposted from the highway on approach from the west, so is not obvious if travelling out of Dover.

This car park offers a level hard surface, however the parking bays are not marked out. There is level pedestrian access, via a wooden bridge, into the gardens.

Plate 4.12: Russell Gardens car park

Circulation

Kearsney Abbey general circulation

Path from western car park to café

This path is mainly 1.8 m wide; where it narrows, passing places have been added allowing two wheelchair users or buggies to pass. The edges are all protected and the surface is generally good but has been lifted in places due to tree roots. Some short sections are steeper than 1:20 gradient.

The path crosses the river and sluice via two narrow bridges. The approach route to the bridges on both sides offers good sight lines. At one end there is a self-closing gate that meets DDA requirements.

East the bridges, the path slopes up towards the cafe. This is a longer and steeper gradient and is challenging for some wheelchair users and people with stamina and mobility issues. There is scope to reduce the gradient to bring it within a maximum 1:21slope.

Two short ramps from Cafe car park to park

Two short ramps lead from the car park, near the café. One is very steep, lacks a dropped kerb in the car park and is covered in moss, suggesting that is rarely used.

The shorter ramp, on the west side of the café, is very steep, very short, has a marked cross fall and a stepped kerb that is partially obstructed by parked cars.

Path to River paper mill

This path connects the Minnis Lane entrance into the main body of Kearsney Abbey park. It is compacted earth, and has been improved with bark chips in places. It is worn wide, with no definition of edges.

Plate 4.13: Path to River paper mill

Near the entrance from Lower Road, the levels become more uneven and there are cobble steps set out in a semi-circular pattern. Access across this area is difficult for most users, exacerbated by the steep cross fall towards the river. The lower levels of the path flood. Adjustment of ground levels and a surfaced path in this area would provide a level route from Minnis Lane to Alkham Road and open up access to the mill ruins to visitors.

Plate 4.14: Children's Playground

Path to ice house and playground

This path offers level access to Kearsney Park children's play area. Although the path narrows to 1200mm, passing places have been provided.

Children's Playground

The play area is fully enclosed with gated access. Entry gates offer wide (>1m) level access, are easy to open and have colour contrast with the surrounding fencing. Access within the playground is via surfaced paths, which vary in width but offer reasonable circulation except at very busy periods.

Access to seats in the playground is not always level and there are few opportunities for a wheelchair user to sit alongside. There is level access to all play equipment. The play equipment itself is varied and interesting but does not include any active inclusive play opportunities for disabled children, and only limited access to seated / standing interactive play.

Sunken seating areas

There are a number of sunken seating areas within the park where there are open culverts, all accessed by steps. These steps do not meet current design standards and may be difficult for some users due to lack of handrails and uneven risers. Surfaces vary from 'crazy' paving to compacted earth, and are usually uneven.

Plate 4.15: Sunken seating area

Path from cafe to lake bridge

This path offers good access with wide asphalt surface. The approach to the bridge on the cafe side is steep, with a marked cross fall and a kerb on the east side which could be hazardous for wheelchair users or partially sighted people.

There is steep gradient off the bridge on the south side, and a gate. The gate has a >1m clear opening and is easy action.

Woodland and chalk pasture land

A sizable section of the park is steep woodland with a compacted earth route leading to the rough grassland on the hilltop. The path width at the lower sections is good but at the higher levels has a number of pinch points between trees and in areas where the ground falls away. There is also an access issue in relation to exposed roots. With modest maintenance, the route could offer an adventurous route for disabled people should they wish to take it on and be suitable for outdoor adventure wheelchairs.

Russell Gardens circulation

Pathway routes through garden

There are two main routes through the gardens, one at canal level and one at tennis court level. The paths are both accessible from the western end of the gardens, but the river path terminates at the pavilion bridges, whereas the tennis court path continues to the level pedestrian entrance at the east end of the garden. There is no path on the south side of the canal.

There are also two ramps, which provide connections between the main routes. Both of these are steeply sloped. An informal path along the highest terrace is accessed via the steps near the former lily pond.

The main paths are surfaced. The one nearest the canal has some short, fairly steep, level changes and a marked cross fall in one section. There is good visual contrast between the path and the adjacent grass and water.

Plate 4.16: Path to Coxhill Mount

The path alongside the tennis courts offers good access for most users, with an even asphalt surface. However, at the eastern end, it narrows to 1200mm wide at the entrance, which is too narrow to allow a wheelchair or a pushchair to pass another person.

There is level access into the tennis courts and to the former lily pond area. Although the lily pond has been converted to a sunken garden accessed by steps only, there is no tangible advantage of being at the lower level.

North of the former lily pond, there is a flight of steps to the upper level of the park. These are original steps. The upper path is narrow with unprotected edges.

Plate 4.17: Lower terrace path

Plate 4.18: Tennis court path

Plate 4.19: Steep path link

The two ramps are both steep; the eastern one is very steep and long. It has a handrail on one side for part of its length but is too steep for too great a distance to provide inclusive access. It prevents people who are unable to manage the gradient and distance, from completing a circular route along the bottom and top terrace.

Pavilion Bridges

The two bridges are a major feature of the gardens and provide a crossing point over the river for visitors who can manage steps.

Plate 4.19: East pavilion bridge

The steps lack the tactile warnings that assist people who are blind or partially sighted; there are no handrails and the riser heights are uneven. There are alternative step free routes for people unable to manage the steps.

Gazebo

The gazebo has level access from the path by the tennis courts and stepped access from the path alongside the canal. The steps have no tactile warnings or handrails and the treads and risers are in poor condition. Access to the gazebo paved surface lacks a hard surfaced level route, but once in the gazebo the circulation space is good. The seats are in poor repair and have no arms to help people to stand and sit down.

Plate 4.20: Gazebo

Plate 4.21: Lime Walk

Pleached Lime Walk:

The pleached lime tree walk is over compacted earth, and slopes steeply upwards; it does not lead anywhere.

Kearsney Abbey Facilities

Cafe

The cafe is accessed either via a short ramp or two steps. The ramp is narrow at 1350mm, and it should offer minimum 1500mm clear width to meet current standards.

WC block

The WC block at Kearsney Abbey serves both the Abbey grounds and Russell Gardens. It is located in the Cafe car park. The facilities include male, female and accessible WCs. The male and female facilities lack visual contrast between the cubicle walls, doors and wash hand basins.

Plate 4.22: Kearsney Abbey toilets

Russell Gardens facilities

Playground

Access into the playground is via firm surfaces with wide, easy to use gates in contrasting colours. Seating within the play area has space for a wheelchair user to sit alongside and the site is reasonably level. The play equipment does not include equipment accessible for children with a disability although there is space to add this.

Plate 4.23: Russell Gardens playground

WC block

WC provision within Russell Gardens is now boarded up. It is important to provide signposts with distances to the facilities in Kearsney Abbey grounds, showing alternative routes with ramps and steps.

The lack of WC facilities within Russell Gardens also needs to be made clear in pre-visit information on the web site, in leaflets etc.

Plate 4.24: Russell Gardens toilets

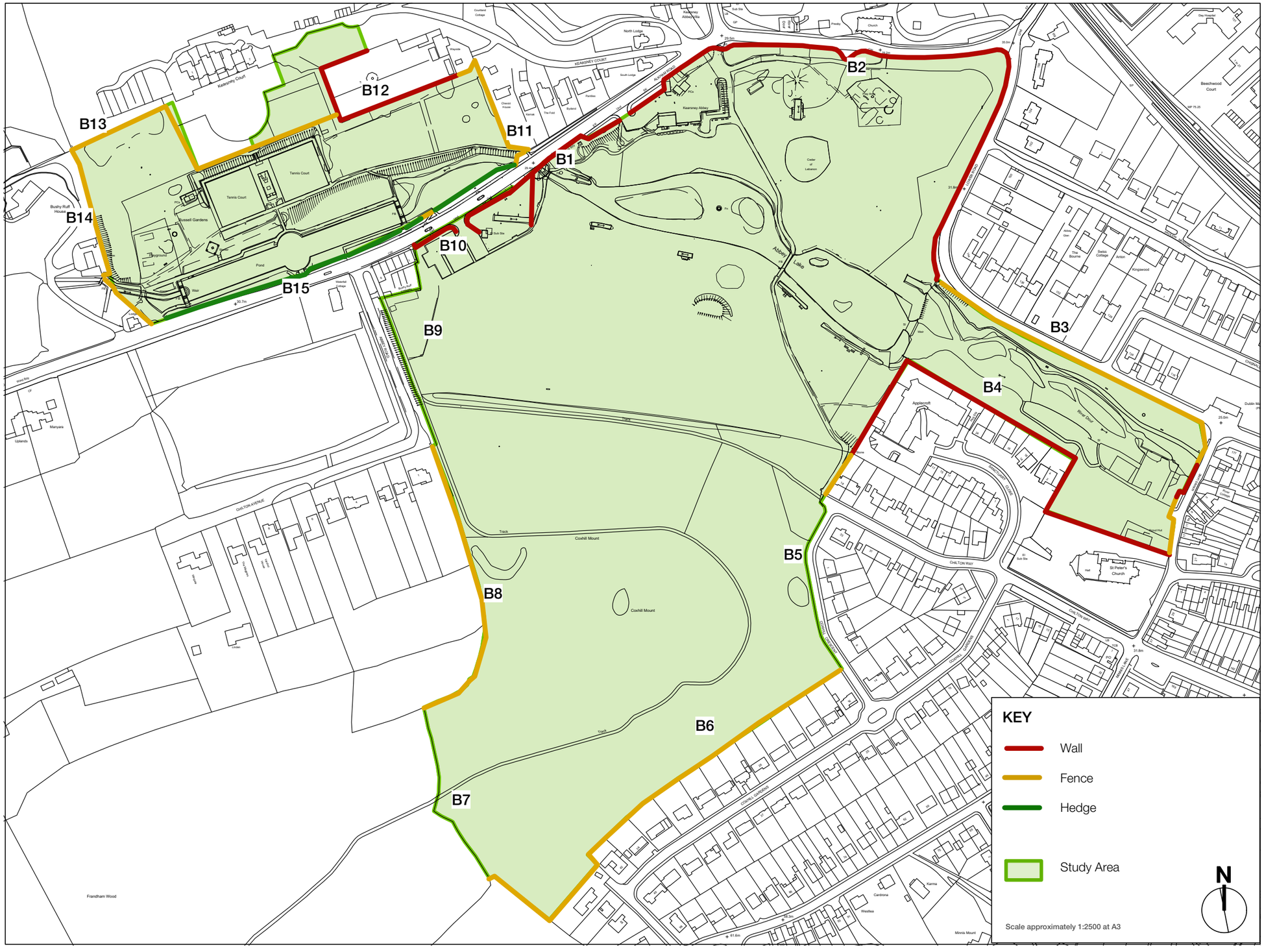

Figure 4.3
Boundaries

4.3 Boundaries

The flint and brick boundary wall was surveyed by the Morton Partnership in March 2015. Other boundaries were surveyed by HEA in May 2015. Boundary types are summarised in **Figure 4.3.**

Listed Walls - B1 and B2

Flint and brick walls define the northern boundary of Kearsney Abbey gardens and run from the old mill site adjacent to the Alkham Road to a sharp right-angle bend on Lower Road where the main body of the park meets the area of the old mill pond.

The sections of wall adjacent to the old mill (B1) are listed Grade II. They were created as mock ruins, incorporating the C16 Old Town Mill. They consist predominantly of flint and brick, with brick buttresses and some ashlar masonry at previous and present entrances. In-filled openings and entrances are identified by brick quoins and arches, which form decorative features, including the blocked Ogee and Tudor archways that form an impressive feature on the outside, Alkham Road face, of the wall (Plate 4.47).

Some areas of urgent work are needed around the mill ruins where repointing and recapping are needed to ensure the historic fabric does not deteriorate further.

Plate 4.25: Walls around the old mill

East of these 'ruins' (B2), the park boundary wall mainly consists of a brick wall with flint panels and is broken up into regular bays. On the external, roadside, elevation, a flint panel toothed into the surrounding flush brickwork defines each bay. The park elevation is a mirror image of the external elevation, although on the park side, each bay is defined with brick buttresses. The wall's capping consists of half rounded coping bricks laid flat with a protruding stringer course beneath it.

Generally the boundary walls are in very good condition. What damage there is, is related to the use of soft clay bricks in conjunction with a hard cement mortar and a poor masonry detail. In places, the half-rounded coping bricks have been replaced with flat capping brickwork, which has allowed moisture to infiltrate the upper sections of the brick panels, and in turn has led to spalling of facing bricks through frost action. There is an almost continuous loss of mortar along a horizontal line through each panel.

Plate 4.26: Section of wall showing flint panels

The flint panels are in excellent condition and exhibit very little damage.

Some of the brick and flint bays along the Alkham road lean inwards to the park, and a horizontal crack across the flint panels signals movement, although the cracking does not seem to be recent. Additional brick buttressing on the park side of the leaning section shows that action has been taken to counteract the inward movement.

Some young trees growing near the wall, are causing early signs of structural movement in nearby brick and flint panels. At present, these cracks are relatively minor, but if trees are left to develop then problems will follow: trees can be most destructive in these situations, if left.

Large sections of wall have been repaired or rebuilt fairly recently, and unfortunately, most of these repairs have been carried out with cement-based mortar which lacks the necessary flexibility to allow small movements in the wall, and thus leads to cracks, spalling and the evitable opening of joints to water ingress and consequential vegetation growth and freeze / thaw damage.

Most of the damage identified in the survey relates to the loss of mortar between joints. This is particularly evident on the upper sections of masonry, where large areas have deep open joints and pockets of vegetation. These opening joints are allowing moisture into the upper sections of the wall, and are responsible for underlying structural issues.

Lower Road Boundary – B3

The boundary along Lower Road consists of a timber palisade fence with three timber rails and concrete pillars, approximately 1.8m high.

Plate 4.27: Lower Road palisade fence

This provides a fairly open barrier to the road and busy traffic and is not robust enough to deter local residents from creating their own way into to the park opposite Chisnall Road.

Plate 4.28: Entrance to the old kitchen garden showing scale of original walled garden walls (Kearsney Abbey)

Old Walled Garden – B4

The high brick walls that once defined the Kearsney Abbey kitchen garden now separate the park from new houses and an old people's residence. Standing well over 3m high in places, this brick structure is reinforced regularly along its length with buttresses, although there are sections that are beginning to bow.

Due to lack of clarity on ownership, a structural survey has not been carried out.

Coxhill Crescent – B5

Along Coxhill Crescent, the park boundary is unfenced, but is also fairly impenetrable, comprising a steep bank covered in maturing scrub vegetation.

Local users have created occasional paths up the steep bank into the woodland.

Plate 4.29: Coxhill Crescent boundary scrub

Coxhill Gardens – B6

Running along the backs of Coxhill Gardens, there are various fences maintained by residents. The visual diversity of these differing styles is generally hidden by dense woodland. Some private garden entrances have been created and land-take for garden use is happening.

Plate 4.30: Rear garden fencing along Coxhill Gardens

Frandham Wood – B7

This section of the park boundary is not defined at all; woodland on Coxhill Mount merges with Frandham Wood and there is no fence or boundary marker where the park and the adjacent SSSI meet.

Plate 4.31: Barbed wire fence protecting neighbouring housing

Chilton Avenue Housing – B8

Along this boundary is a cleft pale and barbed wire fence that runs immediately alongside the woodland path which links the lower areas of the parkland with Frandham Wood. The barbed wire is particularly unpleasant and hazardous alongside this narrow path, which runs up the steep incline.

Abbey Road – B9

This part of the park boundary is generally open; where the park meets Abbey Road there is a change in level, which may be an old hedge-bank or field boundary. A short length of estate fencing is still present; mapped evidence suggests this fencing was once extensive in the park as a stock proof boundary.

Plate 4.32: Old parkland fencing

Western Car Park – B10

Plate 4.33: Car park walling

The western car park is separated from Alkham Road by a low brick wall; east of the entrance, this is softened by a beech hedge.

Kearsney Court Road housing – B11

The boundary with the houses built in the former grounds of Kearsney Court consists of a 1.8 - 2m high timber close board fence. Its alignment makes the path that provides universal access into the gardens, too narrow for people with buggies or wheelchairs to pass.

Plate 4.34: B11 Close board fencing at disabled access entrance

Kearsney Court Walled Garden – B12

This boundary brick wall of the former Kearsney Court walled garden is 2m or more high. There is still a gateway between the old walled garden area and the park, with the door hanging off its hinges. Clarity of responsibility for this wall – and the door – is needed.

Plate 4.35: B12 Wall of the old Kearsney Court walled gardens

Kearsney Court – B13

Chestnut paling has been used along this boundary, to separate the public areas from the privately owned woodland around the bastion. The fence does not provide a secure boundary, and has been trampled to gain access to the woodlands; a desire line has been created, leading to the higher areas of park, towards Palmtree Hill Plantation.

Plate 4.36: B13 Chestnut pale fence

Western Boundary – B14

Chain link fencing approximately 1.8 – 2m high separates the park from the adjacent site of Bushy Ruff House. Some sections have been damaged to create access, but most of the fence is in reasonable repair.

Plate 4.37: B14 Wire mesh fence on western boundary

The boundary with Palmtree Hill plantation, west of Kersney Court, is undefined.

Alkham Road hedge – B15

Plate 4.38: B15 mixed hedge boundary to Alkham Road

The entire length of the boundary of Russell Gardens along the Alkham Road is defined by a clipped hedge, predominantly evergreen and about 1.6m high.

Figure 4.4
Structures

4.4 Structures

The main historic structures in the park were surveyed by the Morton Partnership in March 2015 in a whole series of short reports that consider a group of historic features at a time. This work is complemented by a survey of all the water features and watercourses by JBA Consulting in May 2015. These two surveys form a detailed gazetteer for the park. This section draws on their detailed reports, summarising their key findings. Given the detail and quality of their work a gazetteer was thought unnecessary and for further detail on structures these documents should be consulted.

The location of all the structures in this section are shown in **Figure 4.4**.

1 Steps to Bastion

There are three flights of steps on the central axis of the park, leading from the bastion down to the former lily pond. The lower flight is wholly owned by DDC, while the upper two flights are partly owned by the council and partly by the residents of Kearsney Court. The bastion wall itself is owned by residents of Kearsney Court.

Steps that form the lower and middle flights appear to be suspended over a void. Construction is believed to involve cross supporting walls with the concrete steps bearing onto these walls and onto the side walls, as well as onto each other down the flight of steps. The concrete steps are generally level and reasonable condition, but their supporting structures are vulnerable and need to be investigated.

The brick side walls of the middle and upper flights are capped with semi-circular coping bricks, and the brick piers, which have been reduced from their original heights, are capped with concrete coping stones. The condition of the masonry particularly for the upper steps is poor and in need of repair.

Adjacent to the lower flight of steps, brick retaining walls stretch eastwards and westwards for approximately 35m in each direction.

Coping stones are missing and / or broken on several of the piers as well as a segment of the side wall of the upper steps. Coping bricks and stones contribute to the water shedding capabilities of the walls, and thus generally maintain the fabric of the masonry below and they should therefore be reinstated.

There is a large tree very close to the upper flight of steps; in some areas the large branches are only 100mm from the steps. Surprisingly, this has caused no visible damage to the steps themselves. However damage could be caused by large branches moving or dropping, and by physical pressure from the tree roots next to the footings.

Overgrown the trees and vegetation should be removed, in conjunction with masonry repairs, which will greatly improve the condition of the steps, and thus their lifespan.

Plate 4.38: Steps to Bastion

2 Lily Pond

The pond walls are formed of mass concrete, lined with a 100mm brick skin and capped with half-round coping bricks. The concrete wall steps out at the base to support the brick lining wall. The overall dimensions of the former lily pond are approximately 17m x 7m.

Steps have been added at the north and south ends of the former pond, and the base has been covered in many areas with soil and pavers to create a sunken garden. A mass concrete slab is visible next to the southern steps, and it is assumed that this forms the base of the pond.

A small fountain has been constructed in the centre of the sunken area, consisting of a brick pillar with low brick walls, one of which forms a small pool.

The pond walls are in need of masonry repairs, which should be undertaken as soon as practical to limit further deterioration.

If the pond is to be reinstated as a water feature, then more investigation of the condition of the concrete walls and slab is needed, to determine water tightness or the extent of repairs / reconstruction needed. The sunken garden feature will have to be cleared before this can be done.

Plate 4.39: Lily Pond

3 WC Block (Russell Gardens)

This building is boarded up and so has not been inspected internally.

The gutters are in need of clearing and maintenance. On the south elevation, there is a leaking gutter that has caused damp in the adjacent brickwork. There are also some slipped and broken tiles on the roof, which requires minor repairs.

Plate 4.40: Disused toilet block

4 Gazebo

The modern masonry has no defects of note. Bolts that fix the timbers together may require replacement in time, but at this stage the corrosion that they show is only superficial. Bench repairs or replacements are also needed.

Plate 4.41: Gazebo

5 West Bridge Pavilion and

6 Boathouse and

7 East Bridge Pavilion

Plate 4.42: West Bridge

All three of these features are listed buildings.

The bridge pavilions are formed of brick walls with a brick arch over the canal. The bridge deck forming the walkway is of concrete, as are the steps and the coping stones. Some of the steps have been replaced with in-situ concrete repairs which lack the curved nosing of the originals, and which has exposed aggregate.

The pavilion bridges span over the water where the river flows into and out of the canal. The bridges face east / west onto the watercourse, and the arches span north to south, with steps up to the bridge deck from the north and south.

The boathouse pavilion is located at the midpoint of the canal; it spans over the water to create the boat chamber, but there is no water flow through this area.

The roof covering of all three pavilions is plain clay tiles, and the hipped roofs are probably formed of cut timber. The roof is supported on brick piers at the ends with intermediate, timber clad, Doric columns.

The covered area of the pavilions has a finished ceiling; it is assumed this is painted plaster.

Both of the bridge pavilions show signs of past settlement. This may have been caused by water flow eroding the soil. Poured concrete below the western bridge and on the riverbed in this area, seems to have been used as a remedial method to prevent further erosion. The eastern bridge pavilion seems to have a concrete footing, but it is not clear if this was a remedial measure or part of the original structure.

Generally, the masonry of all three pavilions is in need of repointing, and repairs to the coping stones are required. Restoration work, including replacing clumsy and inappropriate repairs with work that matches the original, for example, to fully restore the flights of steps, is also desirable.

Plate 4.43: Boathouse

Plate 4.44: East Pavilion Bridge

8 Canal

The canal is a 2,650m2 (approximately 160m long and between 15m and 28m wide) manmade pond with a concrete base slab and brickwork walls.

The canal is the main formal feature of the Gardens. It was dug out of wet meadowland, lined and filled by rerouting the Drellingore tributary of the river Dour. At each end of the canal lie the pavilion bridges whilst halfway, lies the boathouse.

The canal has between 50-70cm of silt lining the concrete base leaving a similar depth of water and there is considerable aquatic vegetation present.

There is historic and anecdotal evidence that indicates the canal periodically fails to retain water, including an incidence of the pond draining within 24 hours following the 2007 earthquake.

There are multiple factors that could result in the pond draining, either individually or in combination including cracks in the pond base, poor pond construction, or degradation of the concrete base, allowing water to drain through the permeable chalk underneath; and imbalance in flows, if the drawdown is passing a larger flow than water entering the pond from the upstream river then the pond will drain.

JBA Consulting has undertaken a specialist study of the canal and their findings included in later recommendations .

Plate 4.45: Canal

9 Tennis hut

This is a derelict timber hut, sited within the shrubberies to the east of the tennis courts, which was used as a pay point for tennis and pitch and putt. It is now redundant and should be removed, together with the unsightly chain link fence and gate.

Plate 4.46: Derelict hut

10 Boundary Walls

See section 4.3, above.

Plate 4.47: Part of the 'folly ruin' boundary wall

11 Café

Plate 4.48: Kearsney Abbey Grounds

The café in Kearsney Abbey grounds was created in the billiard room, the only surviving part of the former mansion. It is rectangular in plan, constructed of solid masonry, rendered and painted. The roof is pitched, and slate covered, with a modern glass lantern over the original glass lantern.

The west elevation has a lean-to extension of fair-faced brick, probably a later addition. Its pitched roof is covered with slate tiles, and a small block added to this elevation has roof of corrugated metal sheeting.

The main elevation of the café is on the south side, with four glazed door openings with transom windows above. The south and east elevation walls have crenelated parapet walls; some of the high level masonry is loose and needs immediate attention as it is a safety risk to the public.

Internally, the café is finished with wood panelling on the walls and ceiling. The ceiling has beams supported on corbels, which are mainly decorative.

The café roof has previously been repaired, including the addition of a concrete ring beam at eaves level. Roofing repair works were carried out in early 2015, with slate tiles removed and a flat roof membrane added.

There are signs of movement in the south wall of the café, which may explain the presence of the concrete edge beam at the eaves. There are no signs that this movement is on-going but the condition of the wall should be continued to be monitored.

Emergency roof repairs in 2015 may have addressed water ingress, but there are other areas at roof level that require assessment and repair including the gutter outlets and the lantern glazing.

12 Maintenance Building

Plate 4.49: Maintenance building and toilet block

The maintenance building is a simple building of solid wall masonry with a single pitched roof covered in corrugated steel sheeting.

The east elevation of the maintenance building has not been inspected, nor has the inside. Generally, though, the building seems to be sound.

13 Pump House

The concrete capping of the pump chamber is broken in a small area at the base of the dome. Bricks are exposed in this area and have weathered. There is also some minor pattern cracking in the concrete in this area.

Plate 4.50: Dome of the Pump House

Generally, it seems to be in a sound and stable condition. Minor superficial repairs to the render are needed. The condition of the interior could be inspected with a boroscope through a small drill hole, and is recommended if any further signs of deterioration are seen on the outside.

14 Pump House Bridge

Plate 4.51: Pump House Bridge (TMP photograph)

At the base of the south elevation of the west bridge wall, there are deep open joints in the masonry. Consolidation and repairs are needed, including repointing with an appropriate mortar.

Hard cement mortar has been used to repoint the stone work and coping stones on the bridge walls and over time this will lead to erosion of the stonework. Restoration should include repointing in a suitable heritage mortar. Roots of a large tree on the north river bank are causing movement in the brickwork; the bank itself appears stable. Repairs of this area are not practical unless the tree is removed.

Handrails are loose and should be re-fixed.

Ice House

The ice house is wholly concealed and has therefore not been inspected.

Typically, ice houses are a vaulted brick dome over a sunken, brick lined, pit with an opening that forms an entrance at ground level. They are often partially covered with earth for additional insulation. Drainage was always key to their effective operation, and at Kearsney that seems to be provided by the culverted leat from Kearsney Manor mill pond.

There is potential to investigate the construction of Kearsney's ice house through archaeological excavation.

Plate 4.52: Ice House (TMP photograph)

The Bridge

The bridge consists of a brick arch spanning over the lake at its narrow mid-point; it is embellished with flint infill panels between the arch and parapet wall.

The bridge walls are finished with concrete coping stones and ornamental iron railings. The walls are embellished with octagonal brick piers, which also have copings and railings.

The footpath over the bridge is paved with asphalt, which appears to be in reasonable condition. This may have been built up over time, as the parapet wall is quite low in relation to the path.

The bridge is in fair condition, but is in need of masonry repairs to several areas; these repairs are not considered urgent but will prolong the fabric and prevent further deterioration.

Plate 4.53: Bridge

The underside of the bridge shows signs of water ingress and minor erosion of the masonry and mortar joints. This area should be continued to be monitored, and may need repointing.

Masonry below the water level was not inspected. There are no signs structural movement or other vulnerabilities, but they should be inspected if coffer dams are employed for re-pointing under the arch, or if the lake is drained down at any point in the future, and any necessary repairs should be carried out at the same time.

The iron railings require restoration.

Arch over River

Plate 4.54: Arch over river

This arch forms the headwall, where the culverted leat from Kearsney Manor mill pond flows into the park, near the east boundary..

There are open joints in the coping bricks, where vegetation has penetrated the brickwork. There are also missing bricks around the northern pier. The underside of the arch shows signs that water has penetrated the masonry and is eroding the structure.

Generally this archway is in fair condition, but like many of the park structures it would benefit from locallised repairs and repointing with an appropriate heritage mortar

Remains of the Eye-catcher

Plate 4.55: Remains of the eye catcher

Where the lake exits the park over a weir that flows into the former River mill pond, are remains of the former abutments that supported the eyecatcher. These have fallen away from their original positions and will erode over time.

On the embankments, there are remains of the end pillars. On the east bank, only a nib of the former pier remains; the masonry that does remain is stable.

The east bank wall is severely cracked because of the proximity of a large tree. Coping stones are also missing in this area and much of the embankment wall south of this area is derelict.

The pier on the west bank is intact. Where the wall would have met the pier, there is missing brickwork. There is dense vegetation on the upper courses of bricks, and the coping stones were not inspected.

The brick walls lining the river embankment require consolidation and stabilisation works if they are to be prevented from eroding away completely.

Remains of River paper mill

The remaining masonry that survives from the mill ruins is reasonably stable.

With vegetation growth and the erosion caused by the water course, these ruins will continue to weather over time. Regular monitoring of the taller segments of masonry is advised, and any remedial or stabilistation works needed should be carried out, to limit any risk to the public.

Plate 4.56: Remains of River paper mill

Archway

This arch spans the leat that runs to the south of the lake, where it enters the former mill pond. It is generally in a stable condition, although some repairs and remedial work are advised.

The north pier is missing its coping stone; replacement would prolong the lifespan of the brickwork. The lower three courses of brickwork have eroded pointing.

The coping bricks have been repointed with a cement mortar, which has accelerated erosion of the bricks. This should be removed and repointing with a suitable mortar carried out. However, it may not be practical to remove the cement mortar if it is very much harder than the adjacent bricks, and a test patch should be done before carrying out any works.

The embankments adjacent to this arch are formed of brick and flint. The masonry in this area is also in need of repointing and consolidation. There is a large tree on the north embankment which has caused movement to the wall.

Plate 4.57: Archway

Scout Hut

This is a timber building, in the south-east corner of the park. It was not inspected as part of the work to prepare this report.

Plate 4.58: Scout Hut

Figure 4.5
Tree Species

Figure 4.6
Tree Condition

Figure 4.7
Tree Age

4.5 Vegetation

Trees

A survey of the parkland trees was undertaken by Islington Tree Service in April 2015. This section is based on their findings. In all, 773 trees were surveyed, excluding woodland areas.

Species

The survey found 63 species with 15 unidentified; some of the 15 unidentified were dead making identification difficult.

The primary canopy is made up predominantly of sycamore (16.7% of the total tree number), lime (10.1%), ash (7.3%) and beech (3.9%) – see **Table 4.1**. Many of these trees are over a hundred years old and contribute strongly to the character of the park. There is also a very significant evergreen component to the secondary canopy comprising yew (18.4%), holly (4.7%) and thuja (1.9%) that in many cases represents remnants of C19 shrubberies where yew and holly were common species and being long-lived, persist for longer than other species which have disappeared.

***Table 4.1:** Species number for a selection of the most common trees*

Tree Species	Number	% of tree on site (total survey 773 trees)
Alder	10	1.3
Ash	56	7.3
Beech	30	3.9
Elm	17	2.2
Field Maple	12	1.6
Holly	36	4.7
Horse Chestnut	14	1.8
Lime	78	10.1
Sycamore	129	16.7
Thuja	15	1.9
Poplar	24	3.1
Yew	142	18.4

The distribution of some of the main species is shown in **Figure 4.5**. The plan shows the strong presence of sycamore along the western boundary of Russell Gardens, around the western borders and the car park of Kearsney Abbey, and to the east around the former River paper mill. While some trees appear to have been deliberately planted it is likely that the east and west boundaries developed more naturally with invasive saplings developing into the mature trees found today.

Ash, although less common, follows a similar distribution, again suggesting invasive establishment, although there are examples of intentional planting bordering Lower Road and the Alkham Road, adjacent to the boundary walls.

Lime dominates the southern parkland of Kearsney Abbey forming the main species of the two historic avenues that radiate south from the lake. Lime also forms one of the distinctive formal features of Russell Gardens where an avenue of pleached trees borders a narrow footpath. Lime is otherwise found scattered across both parks.

Beech and Horse Chestnuts are also major trees within the parkland; beech is an important component of the northern Kearsney Abbey parkland adjacent to the Alkham Road, and also within Russell Gardens.

Yew forms a strong evergreen component of the boundaries to Alkham and Lower Roads where there is map evidence that they once were part of shrubberies and have now become overgrown. There is another section of overgrown yew in Russell Gardens where a hedge has been left unmanaged adjacent to the former WCs.

There are a variety of ornamental trees that contribute to the picturesque qualities of the landscape. Cedars add interest to the east of the Abbey house site, as do pines and ornamental oaks and maples. In the southern parkland, a group of Turkey Oaks are a strong feature. Dotted around the parks are various other ornamental 'forest' trees (species that reach a good height and spread) such as walnut, Tulip tree and Tree of Heaven, as well as more exotic conifers such as Dawn and Coastal Redwoods.

Quality

The survey analysed the quality of the tree stock (BS 5837: 2012 – Trees in relation to design, demolition and construction – recommendations). Using this method, trees graded A or B are normally worthy of retention, those graded C are of less importance and could be removed for development and trees graded U should be removed.

The distribution of this assessment is shown in **Figure 4.6**. This shows concentrations of lower quality trees around River paper mill in the east, in the western parkland of Kearsney Abbey and a fairly even scatter throughout Russell Gardens.

***Table 4.2:** Tree quality*

BS5837 :2012 Category	Number of trees /group
A	36
B	541
C	132
U	23
TOTAL ASSESSED	732

There is a strong correlation between quality and the health assessment of the trees with all those dead and requiring removing within class U, and those trees in poor health generally within class C.

Age

An estimate of tree ages has been made using experience and map evidence. In general the tree growth rates appear slow and this is probably due to a combination of aspect, soil and substrate and competition. **Figure 4.7** shows the distribution of the older trees. This illustrates that only a few trees are likely to be above 200 years old, hence in place before the major historical changes to Kearsey Abbey.

The Avenues

The precise age of the parkland trees cannot be confirmed without taking cores, but the predominantly lime avenues are clearly shown on the 1872 Ordnance Survey plan. This would indicate that the trees are at least 143 years old.

The average diameter of the older trees measured was 85 cms. Mitchell[i] advises that for most trees a general rule of thumb is one inch of circumference is equivalent to one year of growth. This applies to open grown trees with no competition. For avenue trees, Mitchell amends his rule of thumb to two-thirds of an inch of circumference to a year of growth. Applying this formula to the average diameter of 85 cms produces an average circumference of 267 centimetres or 105 inches. Using two-thirds of an inch of circumference for a year of growth produces trees with an age of around 158 years or a planting year of around 1857. Such calculations are not exact but a mid-C19 planting date seems likely.

The course of the eastern avenue is now absorbed into the relatively

[i] Mitchell, Alan *The Trees of Britain and Northern Europe* 1982

recent scarp face woodland but is still discernible. Along the lines of the avenue three further trees are located in woodland on the eastern side and six on the western side. Of these nine trees, five are lime, two are beech plus one ash and one horse chestnut.

Along the southern edge of the parkland, just to the north of the track at the foot of the scarp, is a row of mature trees, located along what was historically a field boundary. The natural regeneration of the scarp slope has extended northwards into the area around this row of trees such that they no longer register as individual specimens. They are nearly all magnificent trees that would benefit from release of all of the natural regeneration surrounding them and their return to an open parkland setting.

Woodlands

Woodland clothes the northern scarp face of Coxhill Mount in Kearsney Abbey grounds, and this abuts older woodland along the south east facing slope that runs parallel to the housing at Coxhill Gardens.

The northern escarpment woodland has relatively recent origin, having grown up over the last 50 years. Aerial photographs from the mid 1960s show the entire area that is now wooded, the scarp face and Coxhill Mount, as open grassland.

The southern escarpment woodland is more established and appears on the 1872 Ordnance Survey plan. **(Figure 4.5)**

Frandham Wood, immediately to the south of the park, is ancient woodland and forms part of the Alkham, Lydden and Swingfield Woods Site of Special Scientific Interest.

The Scarp Face

The woodland extends all the way across the scarp face. One old sycamore was found at the top of the slope in a central position and this is likely to have acted as seed source for much of the natural regeneration. The lower slopes of the scarp are dominated by lime with sycamore and ash becoming more dominant moving up the slope. It is likely that the parkland limes are the seed source on the lower slopes with the lighter sycamore and ash seeds able to be blown further up the slope or down from the older sycamore. Elm is quite a common component of the stand on the eastern side with occasional wild cherry also found.

In the central area there is sparse ground cover with lots of bare earth very prone to surface erosion. The understorey is confined to yew and holly in most places with occasional field maple and hawthorn plus young ash regeneration. Occasional regeneration of wild cherry, Horse Chestnut and oak was also observed.

All of the area has regenerated naturally and all is relatively young, being mostly pole stage with a few slightly older ash specimens. A significant number of ash have severe crown die back and some are dead. Though no active signs of Chalara were seen it is most likely that Ash Die Back is causing the die back and death of the ash and that in time all ash on the site will be lost.

Whilst, apart from the ash, the stand is healthy, the overall quality of the trees is poor and generally the stand is overstocked. Even if retained, it would benefit from thinning to remove dead and diseased trees and favour better specimens where the stocking is too high.

The ‘1872’ Woodland

This woodland has been so named as it appears on the 1872 Ordnance Survey plan and lies on the south east slope of Coxhill Mount. It is clearly distinguishable from the woodland that has invaded the top of Coxhill Mount as it still contains a number of much older trees. Around 25 mature specimens were counted during the survey with a similar number either showing remnants as stumps or standing snags or lying where they had fallen on the ground. There is a particularly fine example at the southern end of the woodland where a large lime has fallen into the wood with the root plate now vertical but the roots remaining intact. The tree has continued to grow with what were once branches forming a number of vertical stems. The older trees are beech, lime, horse chestnut, ash and, towards the southern end, a few oak. These species reflect the species used to plant the parkland and it is probable that this woodland was planted at the same time as the parkland.

One small area to the rear of houses on Coxhill Gardens has been recently cleared and three large black plastic containers now stand on part of the cleared area.

Over many years the woodland has not been managed; fallen trees have been left where they lie and other species have regenerated to fill the gaps. The main species that have regenerated are ash, sycamore, horse chestnut and elm. Holly and yew are the principal understorey species with some field maple and hawthorn also present. Significant areas of hazel coppice are to be found towards the top of the slope.

Coxhill Mount Scrub

This area is the last remnant of the once significant area of grassland that covered Coxhill Mount and the scarp face to the north. This area is in the process of reverting to scrub: presumably grazing was removed from the area in the middle to latter part of the C20. Given the relative rates of woodland colonisation on the slopes and this flatter land it may be that grazing was removed from the more difficult to manage slopes before the flatter top land. The area still has some grass but there are thickets of blackthorn and prolific regeneration of hawthorn and ash. Much of the ash has dieback and one area of young ash 2 to 3 metres tall is all dead. It is presumed that this death and die back of the ash has been caused by Chalara and that all of the ash in the area will be lost within a few years. A few oaks and some guelder rose are also regenerating.

Woodland on Coxhill Mount

Large specimens of ash found on the northern edge of Frandham Wood have undoubtedly acted as a seed source for the woodland invasion of the top of Coxhill Mount. The western part of the flatter land is dominated by ash (from pole stage to slightly larger) much of which is dying back, almost certainly due to Chalara. Some sycamore and elm is also present in this area. The eastern part of the flatter land has much more sycamore present, with ash and elm also regenerating. The ground layer is much more mixed than elsewhere with dog’s mercury in patches, also some wild garlic and large areas of ivy. There are also some clumps of lonicera, which may indicate that the area was once part of an informal shoot, as this species is commonly used to provide cover for pheasants. Where there is an understorey, it comprises hazel, hawthorn and the occasional field maple.

Whilst, apart from the ash, the stand is healthy, the overall quality of the trees is poor and generally the stand is overstocked. Even if retained, it would benefit from thinning to remove dead and diseased trees and favour better specimens where the stocking is too high.

A Norway maple, one ash, two black pine and two beech were found at the end of the line of sight of the western parkland avenue. These specimens are much older than the rest of the stand and were obviously a feature at the end of this avenue. Further up the slope, a group of 12 pine also survive, of a similar age, which would have formed a distinctive focal point before they were subsumed into secondary woodland.

Two black pine survive on the scarp face at the end of the eastern avenue, and probably served a similar function.

Shrubs and Hedges

The majority of the ornamental planting within the parks is in Russell Gardens adjacent to the canal. Remnants of the original Mawson gardens can be seen in established yew hedging near the site of the former summerhouse, now the open pergola; there is a walk parallel to the canal which is bordered by yew hedges.

Most of the planting has been removed but a more recent rockery area has been created to the west of the main north-south axis, along the northern banks of the canal. The ground level of part of the canal bank has been raised and rockeries created using what appears to be demolition rubble, perhaps the remains of the summerhouse foundations and walls. Planting is a modern mixture of bedding and shrubs.

Within Kearsney Abbey grounds, the C19 shrubberies have virtually disappeared, and what remains within this planting layer is of C20 and C21 public park origin; occasional shrubs are mainly concentrated around the sunken seating areas alongside the open sections of the leats. They are generally neglected, and in need of pruning or replacement.

Grassland

Most of the amenity grassland in the parks is improved and close mown. South of the lake, the grass is allowed to grow longer, to about 15-20cm in places, creating an informal character and acting as a transition between the formal areas to the north of the lake and the 'natural' woodlands on Coxhill Mount.

On Coxhill Mount, the once floristically rich chalk grassland which was traditionally managed by grazing, is rapidly becoming dominated by false brome grass tussocks, invasive hawthorn and other scrubby species, since grazing has ceased.

KEY

Study Area

BAP Habitats

Agriculture and improved grassland

Arable field margin

Calcareous grassland

Lowland calcareous grassland;

Woodland

Scrub woodland

Beech and yew woodland

Wet woodland

Other grassland of importance

Calcareous grassland

Semi-improved lowland calcareous grassland

Neutral grassland

Semi-improved lowland meadow

(This figure is taken from the Bramley Associates Phase I Habitat Survey)

Figure 4.8

Ecological Designations

4.6 Ecology/Land Use – Phase 1 survey

This section of the report draws upon a Phase 1 ecological survey of Kearsney Parks, carried out by Bramley Associates in March 2015.

Within the parks are three areas of potential Biodiversity Action Plan (BAP) habitat, namely lowland calcareous grassland, beech and yew woodland and some small patches of wet woodland. Surrounding the parks are a number of statutory and non-statutory protected habitats, including Alkham, Lydden and Swingfield Woods SSSI, and part of the Local Wildlife Site DO38 Chalk Banks, Alkham and Lydden Valleys lie within Kearsney Abbey.[ii]

Figure 4.8 shows the results of the Phase 1 ecological survey undertaken by Bramley Associates: the figure is taken directly from their report.

Kearsney Abbey

Improved grassland

The majority of the grassland (**TN1**) within Kearsney Abbey is improved grassland, dominated by perennial rye-grass *Lolium perenne* with frequent daisy *Bellis perennis*. These lawns are currently managed by regular mowing to maintain a very short turf, which is also grazed by waterfowl and rabbits with further impacts from the public and dogs.

The grassland is slightly more diverse in the peripheral more shaded areas under the canopy of large mature beech *Fagus sylvatica* trees (**TN2**). In addition to perennial rye-grass, species found here include cock's-foot *Dactylis glomerata*, false brome *Brachypodium sylvaticum*, creeping-bent *Agrostis stolonifera*, bramble *Rubus fruticosus agg.*, creeping buttercup *Ranunculus repens*, wood avens *Geum urbanum*, wood sedge *Carex sylvatica*, hairy violet *Viola hirta*, hogweed *Heracleum spondylium*, Lords and Ladies *Arum maculatum* and some naturalised crocus. Within the improved grassland areas are a number of veteran, mature and specimen trees, both native and non-native species (**TN3**). These included mature and veteran trees such as a very fine cedar and a notable Wych Elm, which have previously been recorded on the Kent Heritage Tree map (TCV, 2015). Also within the grassland are several groups of yew *Taxus baccata*, avenues of lime *Tilia x europaea* and some mature beech trees among others. Overall, these trees provide valuable habitats, particularly roosting potential for bats and nesting sites for birds.

Wet woodland

At the eastern end of the site, along the River Dour (in the area of the former mill pond), there are a series of islands with wet woodland species (**TN4**), including mature alder *Alnus glutinosa* and ash *Fraxinus excelsior*. This area is classified as a BAP priority habitat, wet woodland (WB34) in the recent Kent Habitat Survey (ARCH, 2012). The shrub layer on higher ground here includes holly *Ilex aquifolium*, yew, wild privet *Ligustrum vulgare* and non-native shrubs (laurel species and rhododendron). There is some standing dead-wood habitat on the islands, valuable habitat for invertebrates and other species. The grassland area adjacent to the river is worn and muddy from public impact, ground flora include greater willowherb *Epilobium hirsutum*, pendulous sedge, common nettle *Urtica dioica*, Lords and Ladies, wood avens, creeping buttercup, lesser celandine *Ficaria verna*, hart's-tongue fern *Phyllitis scolopendrium*, perennial rye-grass and dock, *Rumex* species.

The islands in the main park lakes contained a mixture of wet woodland alders, and non-native pines and shrubs including rhododendron.

Semi-natural broad-leaved woodland

The woodland habitat (**TN5**) is mainly mature beech with yew, sycamore *Acer pseudoplatanus* and ash with an understorey of holly, elder *Sambucus nigra* and occasional non-natives such as horse chestnut *Aesculus hippocastanum*, butterfly-bush *Buddleja davidii* and boxleaf honeysuckle *Lonicera nitida*. There is a degree of bramble scrub and the ground flora is rather disturbed and species-poor being dominated by ivy *Hedera helix* with other species, including cow-parsley *Anthriscus sylvestris*, dock species, Lords and Ladies, Cleavers *Galium aparine* and common nettle. To the south this woodland becomes less Yew abundant and becomes more broad leaved (**TN6**). Despite the level of public impact, this woodland has plenty of fallen dead wood habitat and shows signs of natural woodland regeneration, including young beech saplings. This woodland is considered to be important on this site for birds and invertebrates and also provides a buffer and linkage to neighbouring SSSI woodland.

Chalk grassland

There is a remnant area of chalk grassland (**TN7**) on a north-facing slope surrounded by the woodland described above. On examination this was found to be rank chalk grassland dominated by tall tussocks of tor-grass *Brachypodium pinnatum*.

There are some areas of grassland kept shorter by trampling and rabbit grazing, especially along and at junctions of the pathways. The grassland has not been managed for several years and has developed a scattered scrub of hawthorn *Crataegus monogyna*, bramble and dog rose *Rosa canina* agg. and some small thickets of blackthorn *Prunus spinosa*. There is also naturally seeded ash saplings frequent throughout the grassland.

Overall, the grassland sward is dominated by tor-grass but other occasional species include upright brome *Bromopsis erecta*, wild marjoram *Origanum vulgare*, red fescue *Festuca rubra*, sheep's fescue *Festuca ovina*, germander speedwell *Veronica chamaedrys*, ribwort plantain *Plantago lanceolata*, black medick *Medicago lupulina*, creeping cinquefoil *Potentilla reptans*, common knapweed *centaurea nigra,* hedge bedstraw *Galium album*, cock's-foot, agrimony *Agrimonia eupatoria* and perforate St. John's-wort *Hypericum perforatum*.

There are also occasional common ragwort *Senecio jacobaea*; this is a notifiable weed and an invasive species which is highly toxic to grazing animals, and its spread must be controlled by law.

Russell Gardens

Improved grassland

Russell Gardens is laid out in general as more formal ornamental gardens and the majority of the grassland (**TN8**) is improved grassland, dominated by perennial ryegrass with frequent daisy. The grassland is managed by regular mowing to maintain its amenity use.

The grass contains spring bulbs such as daffodils and crocus as well as species including creeping buttercup, wood avens and hairy bittercress *Cardamine hirsuta*. Shrubs and trees such as sycamore, lime, London plane *Platanus* x *hispanica*, holly, yew, rhododendron and laurel species are also present. The steeper banks are slightly more botanically diverse with additional species including ribwort plantain and wild strawberry *Fragaria vesca.*

The most diverse grassland area is a small patch hidden away on the bank above the tennis courts where the grass is less disturbed and well drained. Species in this area include frequent oxeye daisy *Leucanthemum vulgare* with dove's-foot crane's-bill *Geranium molle*, parsley-piert *Aphanes arvensis*, self-heal *Prunella vulgaris*, bristly oxtongue *Helminthotheca echioides*, spear thistle *Cirsium vulgare*, herb Robert *Geranium robertianum*, dandelion *Taraxacum* agg., black medick, hedge bedstraw, wild strawberry, common ragwort, false brome, red fescue and a sedge *Carex* species.

[ii] Habitats found in the survey are described according to Phase 1 descriptions (JNCC, 2010) and the Kent 2012 survey. Where useful a number of Target notes (TN) are included within the habitat descriptions and these correspond to those displayed in Figure 4.8.

Scrub woodland

There is an area of scrubby woodland (TN9) with a ground flora of ivy, bramble and hart's-tongue fern towards the northern site boundary. Other parts of this boundary comprise yew and non-native shrubs, including butterfly-bush, with some scrub of bramble, ivy and old man's-beard *Clematis vitalba*.

The north west part of the formal gardens are grassland under a canopy of trees (TN10). In many places this is bare ground with common moss species and very little grass but frequent wood sedge *Carex sylvatica*. Here also is ground ivy *Glechoma hederacea*, common nettle, daisy, Lords and Ladies, hairy bittercress, dandelions and dog's mercury *Mercurialis perennis*. Naturalised spring ornamentals found here included snowdrop, crocus and daffodil.

Pond and River Dour

The River Dour has an interesting chalk stream ecology typical of this area. Whilst the areas of canalization are less interesting, the more natural areas of the stream adjacent to the River Paper Mill have greater vegetation interest.

Fauna

Numerous waterfowl were seen on the site visit including several common species such as mallard, coot, mute swan and moorhen. A kingfisher was also seen and the gardens overall provide habitat for a good range of bird species.

Searches of the café on the site found no signs of bats within the building, though this building did have several potential roosting areas on outer walls and below roofing features. A survey was undertaken by Bramley Associates in spring and summer 2015 to investigate whether the café was a roosting site for bats. No bats were found to be roosting but four species of bat were recorded nearby. Noctule and Natterer's made passes by the building whilst two species of pipistrelle, Common and Soprano were recorded as commuting past the building to forage on the lake to the south.

The pond and wetland areas of the gardens have some potential for amphibians; from historical records, water vole were once known to occur along the River Dour.

Some boundary areas and the relic chalk grassland on Coxhill Mount have potential for reptile species, including slowworm and adder.

4.8 Hydrology

Russell Gardens and Kearsney Abbey designed landscapes have evolved around the river Dour and its tributary the Drellingore. Indeed the rivers have featured prominently in their designs and add interest and focal points to their landscapes.

The Alkham valley has been a source of water power to mills from Medieval times and this has led to large scale interference with the natural course of these rivers.

The Drellingore, which is the river that runs along the bottom of the Alkham valley, has been dammed immediately upstream of Russell Gardens in present day Bushy Ruff park. This was to feed one of the mills just outside the boundary of the study area.

As the river flows into Russell Gardens it passes under the western pavilion bridge and into the spectacular 170m long concrete lined canal. From the canal the Drellingore passes under the eastern pavilion bridge and curves towards the Alkham Road, at which point it disappears into an underground culvert and, thence into Kearsney Abbey at the site of the former Old Mill.

Below the Old Mill the river is dammed to form a lake that was created as an ornamental feature in the Kearsney Abbey landscape. At the eastern end of the before it flows into a more natural watercourse, the former mill pond of River Mill, before flowing out of the park through the remains of River Mill itself.

The Dour proper flows from Temple Ewell in the north into Kearsney Pond, millpond of a former mill. It flows in culverts under the Alkham Road and meets the Drellingore in the former millpond area of River Mill, just downstream of Kearsney Lake.

The rivers are chalk streams. This means that they have fluctuating water levels depending on the abundance of water in the feeder chalk aquifers and, in dry periods, they can experience low water flows or in extremely dry conditions cease to flow periodically.