

LANDSCAPE APPRAISAL PORTSMOUTH GOLF CLUB IMPROVEMENTS



Prepared by Parkwood Consultancy Services Ltd



LANDSCAPE APPRAISAL

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PLANNING BACKGROUND & CONTEXT

Planning Background

Planning History

Three previous planning applications have been submitted to Havant Borough Council's Planning Department during the last decade, two of which had a positive outcome, one was refused. In 1999 an application was made (Ref. 99/53136/001) and approved without conditions, informative notes or appeals against it under the 'All Other Minor Developments' statutory class to erect a 4.5m high fence to part of southern boundary (adjacent to Farlington Redoubt). In January 2007 (06/53136/003) planning permission was granted with conditions to extend the existing golf course into adjoining fields, along with the erection of a timber field shelter and associated ground works, drainage and landscaping to alter the existing course layout and to create a 9 hole Academy Course. Earlier in 2006 the same application was refused on the grounds that the proposal had not demonstrated that the nature conservation interests of the site had been adequately assessed or safeguarded by way of mitigation measures proposed and was therefore contrary to policies E11 of the Hampshire County Structure Plan 1996-2011 (Review) and NC1, NC3, NC4 and NC5 of the Havant Borough District-Wide Local Plan 1996-2011. Secondly parts of the proposal, due to the form and content of the landscaping, would be detrimental to the visual amenity of the area and would not be appropriate to the distinct landscape character of Portsdown Hill and was therefore contrary to policies E6 and E8 of the Hampshire County Structure Plan 1996-2011 (Review) and L2 (L3), L3 (L4), L6 (L9), L7 (L10) and D1 (D4) of the Havant Borough District-Wide Local Plan 1996-2011. Thirdly the proposal was deemed not to make appropriate provision nor binding arrangements in respect of the proposed footpath at the eastern end of the site which was required to secure future pedestrian access to land to the north, subject to policy R3 (R4) of the Havant Borough District-Wide Local Plan 1996-2011 and was therefore contrary to policies T1, T8 (T15) and R3 (R4) of the Havant Borough District-Wide Local Plan 1996-2011. Lastly the proposed route of the pedestrian access at the eastern end of the site was deemed unsuitable as a result of the activity generated and inadequate screening to the amenities of the adjacent

residential properties. The proposal is therefore contrary to policies D1 (D4) of the Havant Borough District-Wide Local Plan 1996-2011.

Planning Policy Review relating to Landscape

Relevant National Policy: Planning Policy Statements

Planning Policy Statement 7 'Sustainable Development in Rural Areas'. The key principles of this policy statement relevant to the development are:

1. effective protection and enhancement of the environment conserve specific features and sites of landscape, wildlife and historic or architectural value, in accordance with statutory designations.
2. continued protection of the open countryside for the benefit of all, with the highest level of protection for our most valued landscapes and environmental resources.
3. While the policies in PPG2 continue to apply in green belts, local planning authorities should ensure that planning policies in LDDs address the particular land use issues and opportunities to be found in the countryside around all urban areas, recognising its importance to those who live or work there, and also in providing the nearest and most accessible countryside to urban residents. Planning authorities should aim to secure environmental improvements and maximise a range of beneficial uses of this land, whilst reducing potential conflicts between neighbouring land uses. This should include improvement of public access (e.g. through support for country parks and community forests) and facilitating the provision of appropriate sport and recreation facilities.
4. recognise that in areas statutorily designated for their landscape, nature conservation or historic qualities, there will be scope for tourist and leisure related

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developments, subject to appropriate control over their number, form and location to ensure the particular qualities or features that justified the designation are conserved.

5. allow appropriate facilities needed to enhance visitors' enjoyment, and/or improve the financial viability, of a particular countryside feature or attraction, providing they will not detract from the attractiveness or importance of the feature, or the surrounding countryside.

Planning Policy Statement 9 'Biodiversity & Geological Conservation'

The government's aims in planning are to:

- to promote sustainable development.
- to conserve, enhance and restore the diversity of England's wildlife and geology
- to contribute to rural renewal and urban renaissance

The key principles of this policy statement relevant to the development are:

- Plan policies and planning decisions should aim to maintain, and enhance, restore or add to biodiversity and geological conservation interests. In taking decisions, local planning authorities should ensure that appropriate weight is attached to designated sites of international, national and local importance; protected species; and to biodiversity and geological interests within the wider environment.
- The aim of planning decisions should be to prevent harm to biodiversity and geological conservation interests. Where granting planning permission would result in significant harm to those interests, local planning authorities will need to be satisfied that the development cannot reasonably be located on any alternative sites that would result in less or no harm. In the absence of any such alternatives, local planning authorities should ensure that, before planning permission is granted, adequate

mitigation measures are put in place. Where a planning decision would result in significant harm to biodiversity and geological interests which cannot be prevented or adequately mitigated against, appropriate compensation measures should be sought. If that significant harm cannot be prevented, adequately mitigated against, or compensated for, then planning permission should be refused.

- Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost it cannot be recreated. Local planning authorities should identify any areas of ancient woodland in their areas that do not have statutory protection (e.g. as a SSSI). They should not grant planning permission for any development that would result in its loss or deterioration unless the need for, and benefits of, the development in that location outweigh the loss of the woodland habitat. Aged or 'veteran' trees found outside ancient woodland are also particularly valuable for biodiversity and their loss should be avoided. Planning authorities should encourage the conservation of such trees as part of development proposals.
- Networks of natural habitats provide a valuable resource. They can link sites of biodiversity importance and provide routes or stepping stones for the migration, dispersal and genetic exchange of species in the wider environment. Local authorities should aim to maintain networks by avoiding or repairing the fragmentation and isolation of natural habitats through policies in plans. Such networks should be protected from development, and, where possible, strengthened by or integrated within it. This may be done as part of a wider strategy for the protection and extension of open space and access routes such as canals and rivers, including those within urban areas.

Planning Policy Statement 25: 'Development & Flood Risk'

Positive planning has an important role in helping deliver sustainable development (see Annex A) and applying the Government's policy on flood risk management. It avoids, reduces and manages flood risk by taking full account in decisions on plans and applications of:

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- present and future flood risk, involving both the statistical probability of a flood occurring and the scale of its potential consequences, whether inland or on the coast; and
- the wider implications for flood risk of development located outside flood risk areas.

Key Principles are:

Appraising risk

- identifying land at risk and the degree of risk of flooding from river, sea and other sources in their areas;
- preparing Regional Flood Risk Appraisals (RFRAs) or Strategic Flood Risk Assessments (SFRAs) as appropriate, as freestanding assessments that contribute to the Sustainability

Appraisal3 of their plans;

Managing risk

- framing policies for the location of development which avoid flood risk to people and property where possible, and manage any residual risk, taking account of the impacts of climate change;
- only permitting development in areas of flood risk when there are no reasonably available sites in areas of lower flood risk and benefits of the development outweigh the risks from flooding;

Reducing risk

- safeguarding land from development that is required for current and future flood management eg. conveyance and storage of flood water, and flood defences;
- reducing flood risk to and from new development through location, layout and design, incorporating sustainable drainage systems (SUDS);
- using opportunities offered by new development to reduce the causes and impacts of flooding eg. surface water management plans; making the most of the benefits of green infrastructure for flood storage, conveyance and SUDS; re-creating functional floodplain; and setting back defences

'Keepers of Time: A Statement of policy for England's Ancient and Native Woodland' (Forestry Commission & Defra 2005)

The government's vision is that "Ancient woodlands, veteran trees and other native woodlands are adequately protected, sustainably managed in a wider landscape context, and are providing a wide range of social, environmental and economic benefits to society".

The major threats are cited as: Climate change and fragmentation; Excessive browsing and grazing by deer and livestock; Inadequate or inappropriate management; Invasive and problem species; Diffuse pollution; and loss.

The priorities are to safeguard their value and for future generations we need to prevent further loss, improve condition and restore severely degraded sites.

'Standing Advice for Ancient Woodland' Natural England 2011

This standing advice from Natural England provides guidance on the protection of ancient woodland in relation to proposed developments. The key points of this document are:

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- Ancient woodland is an irreplaceable resource of great importance for its wild-life, its history and the contribution it makes to our diverse landscapes. Local authorities have a vital role in ensuring its conservation, in particular through the planning system.

- Local planning authorities must take into account Standing Advice, which, for the avoidance of doubt, is a material consideration in the determination of applications in the same way as a letter received from Natural England following consultation.

The guidance includes a specific checklist and flow diagram to illustrate the level of information required from the developer.

Regional Policy

The Green Infrastructure Strategy for the Partnership for Urban South Hampshire (PUSH), October 2009 has the following relevant green infrastructure guidance for Havant (as part of Area 4):

Area 4: The Urban Realm and its Setting

This area is formed of major settlements and their setting including the accessible countryside in the green gaps which separate the settlements. As with the other areas, all GI Themes are relevant, with Themes I, VI and VIII being especially relevant to the urban realm as they are closely related to where people live, work and how they keep themselves healthy. The area includes the two cities, the settlements at Fareham, Havant, Locks Heath and Eastleigh, as well as the two SDAs (Hedge End and North Fareham). The focus of GI in this area will be generally of a local nature ensuring that existing greenspace deficits are addressed, street trees are encouraged to green the environment and combat climate change effects, and that sustainable urban drainage is widespread. The provision of allotments and maximising use of existing allotments are further key components of green infrastructure in this area. These considerations apply to new and existing development locations. Smaller areas of countryside on the

urban fringe can help prevent coalescence and provide greenspace for local people.

Hampshires Biodiversity Action Plan

Hampshires Biodiversity Plan identify's Portsmouth Golf course as falling into Landscape Character Area 10; South Hampshire Coast. The Plan identify's key habitats within this Area 10 as:

- Ancient hedgerows.
- Fen/carr/marsh/swamp/reedbed.
- Shingle.
- Saltmarsh.
- Coastal grazing marsh.
- Sand dunes.
- Mudflats/eelgrass beds.
- Saline lagoons.
- Road verges.
- Ancient woodland (0-2hectares).
- Unimproved neutral grassland/fen (0-2hectares).
- Calcareous grassland (0-2hectares).
- Lowland heath/bog/acid grassland (0-2hectares).

Specific Biodiversity Action Plans differ slightly in their title. Those that are relevant to Portsmouth Golf Courses improvements are; Ancient Semi-natural Woodlands, Hedgerows and Standing Open Water and Rivers. Specific conservation objectives of each of the aforementioned categories are;

Ancient Semi-natural Woodland

- Ensure no further loss or degradation of ASNW.
- Ensure no further removal or conversion of ASNW.

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- Prevent degradation of ASNW by damaging management operations and other influences.
- Increase the extent of ASNW and reverse the effects of isolation and fragmentation.
- Restore ASNW on ancient woodland sites giving priority to linking valuable isolated fragments – 1,000 ha to be restored by 2010.
- Reverse the deleterious effects of isolation and fragmentation of ASNW by creating and managing links between woods.
- Improve the quality of ASNW habitat.
- Ensure more widespread favourable management of ASNW, including increasing the area of restored and in-cycle coppice from 2000 ha to 3000 ha by 2010.
- Ensure the requirements of all Priority Species associated with ASNW are met.
- Improve knowledge of ASNW and associated species in Hampshire through survey, research and monitoring.
- Communicate with, and provide information to, statutory and voluntary organisations, the forestry industry, landowners, community groups and the public.

Hedgerows.

- Ensure no further net loss of hedgerows.
- All hedgerow loss (through removal or neglect) should be mitigated by the planting of replacement hedges by 2005.
- Increase the extent of hedgerows.
- Promote new hedgerow planting and re-planting of former hedgerows to re-create 100 km of hedgerow by 2005.
- Enhance the habitat value of hedgerows.
- Promote good hedgerow management practices: Aim to achieve the

favourable management of 50% of hedges in Hampshire by 2005 and 80% by 2010.

- Maintain or increase the number of hedgerow trees: Ensure the management and retention of existing trees, and encourage management of new trees to achieve a balanced age structure and species mix. Ensure no net reduction in hedgerow trees by 2005.
- Ensure the requirements of all priority species found in hedgerow habitats are met.
- Improve knowledge of hedgerows in Hampshire through survey, research and monitoring.
- Increase available information and enhance understanding of the hedgerow resource of Hampshire.
- Promote the value of hedgerows and greater awareness of hedgerow issues.
- Communicate with key sectors including landowners, local authorities, schools and community groups, and increase the availability of hedgerow advice.

Standing and Open Water.

- Protect and maintain the full range of standing open waters including a variety of types based on size, water chemistry and hydrology and including both older ponds and lakes and newer lakes on mineral workings.
- Maintain the numbers and quality of existing older and well established ponds and lakes.
- Improve the condition of new lakes arising out of mineral workings and water supply reservoirs.
- Improve the water quality and biodiversity of standing open waters.
- Identify those standing open waters that have some degree of pollution or nutrient enrichment and undertake measures to improve their biodiversity.
- Increase the numbers of standing open water bodies.
- Facilitate the restoration of former ponds, now drained, to a biodiverse

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condition.

- Create new ponds close to high quality ponds to reduce isolation.
- Create new ponds in areas of extensively managed land (ie.unfertilised) where they have a better chance of developing high biodiversity.
- Encourage formation and restoration of ponds through the planning process as mitigation/enhancement measures for relevant development.
- Ensure that the needs of Hampshire priority species occurring in standing open waters are met.
- Improve knowledge of distribution, extent and status of standing open waters in Hampshire through survey, research and monitoring.
- Communication, Awareness and Promotion.
- Promote the importance of standing open waters, their associated species and threats to them. Communicate with and provide information to key sectors including statutory agencies, NGOs, landowners and managers, schools, community groups and members of the public.

Local Policy

Havant Borough Council Core Strategy

The Natural Environment and Our Heritage

Policy CS11 Protecting and Enhancing the Special Environment and Heritage of Havant Borough:

Planning permission will be granted for development that:

1. Ensures the key landscape and built form principles set out in the Havant Borough Townscape, Landscape and Seascape Character Assessment are protected and where possible enhanced by partnership working with developers, groups and the wider community.
2. Protects and where possible enhances the borough's statutory and non-statutory designated landscape, habitats and features of biological, hydrological or geological interest. Protection and enhancement will be achieved by appropriate adaptation and mitigation measures including wardening, education and information and the creation of new habitats, water bodies/courses planting of new trees and woodland.
3. Has particular regard to the following hierarchy of nature conservation designations within the borough (as identified on the Proposals Map):
 - (i) Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar [International].
 - (ii) Sites of Special Scientific Interest (SSSI) and National Nature Reserves [National].
 - (iii) Sites of Importance for Nature Conservation (SINC), Local Nature Reserves (LNR), other Ancient Woodland not identified in (ii) above [Local].
4. Protects and where appropriate enhances the borough's statutory and non-statutory heritage designations by appropriately managing development in or adjacent to conservation areas, listed buildings, scheduled ancient monuments, historic parks and gardens, archaeological sites, buildings of local historic or architectural interest.
5. Supports an ongoing programme of survey of habitats and species and designation of Sites of Importance for Nature Conservation.
6. Incorporates partnership working with conservation organisations to improve public understanding of biodiversity and to manage public access to designated sites, particularly on the coast, to reduce harm to nature conservation interests.

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7. Incorporates partnership working with landowners and developers to ensure land management practices restore, enhance and where appropriate create new valued landscapes, habitats and their soil structure, particularly the ancient woodland remnants of the Forest of Bere and coastal salt marsh.

8. Protects wildlife habitats and wildlife corridors to prevent the fragmentation of existing habitats and to allow species, for example Brent Geese, to respond to the impacts of climate change by making provision for habitat adaptation e.g. coastal managed realignment and species migration.

9. Maintains undeveloped gaps between the settlements of Emsworth/Havant; Havant/Waterlooville; Havant/Portsmouth; Emsworth/Westbourne and Leigh Park/Rowlands Castle as shown on the Proposals Map.

10. Protects the best and most versatile agricultural land that has the greatest potential for local food security.

11. Responds to the emerging evidence from the Solent Disturbance and Mitigation Project, the published recommendations, and future related research.

Policy CS13 Green Infrastructure

Development will be permitted that:

1. Maintains and manages the network of green infrastructure identified at the sub regional and local levels.
2. Incorporates, where appropriate, improvements to existing green infrastructure through the restoration, enhancement or creation of additional resources.
3. Does not undermine the functional integrity of the green infrastructure.

4. Creates, where appropriate, new green infrastructure (including access management measures) either through on site provision or financial contributions.

Development proposals that adversely affect green infrastructure will not be permitted unless superior alternative provision can be provided or where it is part of a service provider's plans to provide improved local services in equally accessible locations.

Policy CS16 High Quality Design

Planning permission will be granted for development that is designed to a high standard, which helps to create places where people want to live, work and relax.

All development should demonstrate that its design:

1. Responds to, draws inspiration from and respects local context and:
 - a) Identifies and responds positively to existing features of natural, historic or local character within or close to the proposed development site;
 - b) Integrates with existing local landscape features, promotes wildlife and biodiversity and/or applies characteristics of the local area into the design of a scheme wherever possible to create variety and interest;
 - c) Uses the characteristics of the locality to help inform the design of the new development including heights, massing, existing buildings lines, plot widths and depths, materials and proportions of windows and doors;
 - d) Is well connected to and integrates with the immediate local area and the wider area by linking to existing pedestrian and cycle routes and encouraging people to use public transport where possible; and
 - e) The development does not cause unacceptable harm to the amenity of

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neighbours through smell, the loss of privacy, outlook, noise and overlooking.

2. Produces a positive relationship between buildings, street and spaces both existing and proposed, where:

a) The layout of the development reduces opportunities for crime and antisocial behaviour; contributes to improving community safety; and makes provision for the management and maintenance of the development;

b) New streets are not dominated by vehicular traffic;

c) The layout of the development is legible, meaning it is easy to orientate oneself and move through.

3. Contributes to the improvement of the public realm close to the development, particularly sites close to town, district and local centres and other priority regeneration areas by using high quality hard and soft landscape material and street furniture; and where development is of a significant scale or prominence makes provision for public art.

4. Is inclusive by considering the needs of those with disabilities, ensuring safe and convenient access for all; and integrating affordable and supported housing with market housing through tenure blind design to minimise social exclusion and promote social integration.

5. Maximises opportunities for mixed use developments, particularly in town and district centres; and encourage higher densities (50+ dwellings per hectare) where appropriate.

6. Mitigates negative environmental impacts through sustainable design and construction methods, resource efficiencies, particularly water and the provision of facilities for waste recycling.

7. Adapts to the changing needs of the users and the changing climate over the lifespan of the building.

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Site Location

Site Location

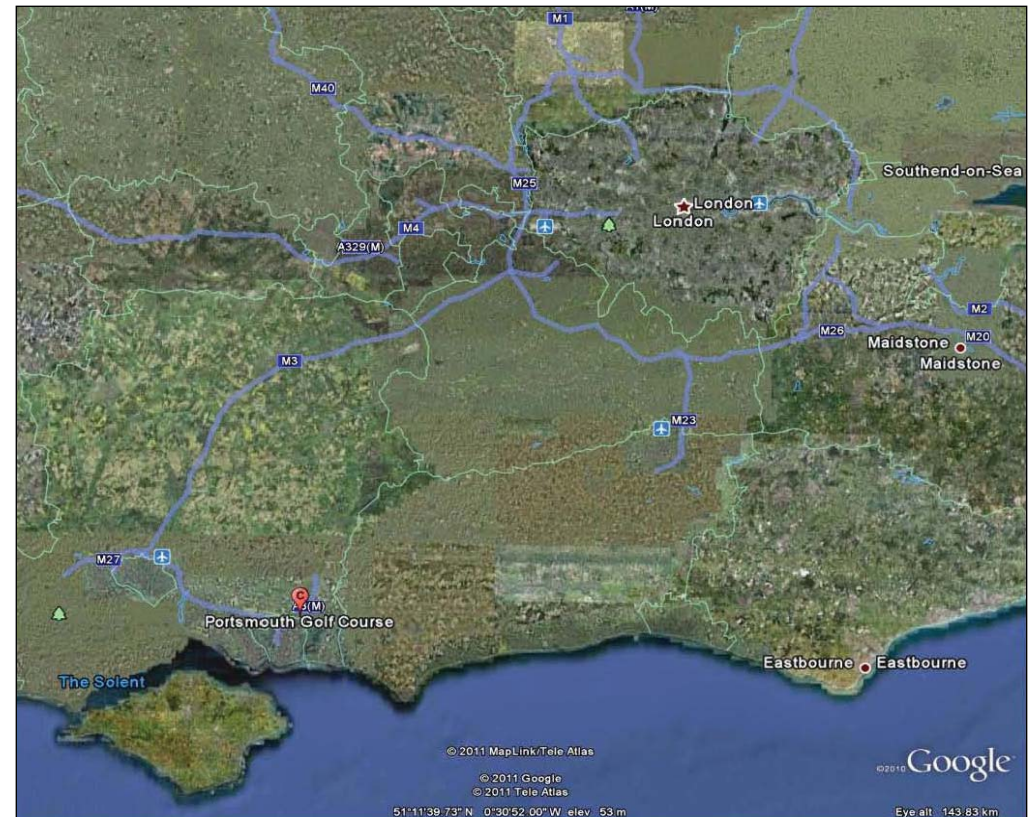
Glendale Golfs Portsmouth Golf Course is predominantly accessed from the east via Crookhorn Lane/College Road but is also open from the north via a public footpath leading off of Copse Close and from the south west via a gated access off the B2177, Portsdown Road. The Course itself is located just to the north east of Portsmouth Central Business District, in an area called Purbrook. Purbrook resides between the districts of Havant to the east, Drayton to the south, Cosham to the west and Waterlooville to the north. All of which are in the County of Hampshire. The Courses post code is PO7 5QL which is centred upon Grid Reference 50d 51'30. 58"N, 1d 02'02. 66"W at 65m above sea level.

Regional Location Plan



The City of Portsmouth “Britains only Island City” is a medium to large sized conurbation, with 207,100 (2001) residents located approximately 75 miles to south west of London and approximately 20 miles east of Southampton, of which it shares its unitary authority. The total area of the Golf Course to be improved currently stands at 62,400m². Location in relation to London - 75miles

National Location Map



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Site Location and Geology and Soils

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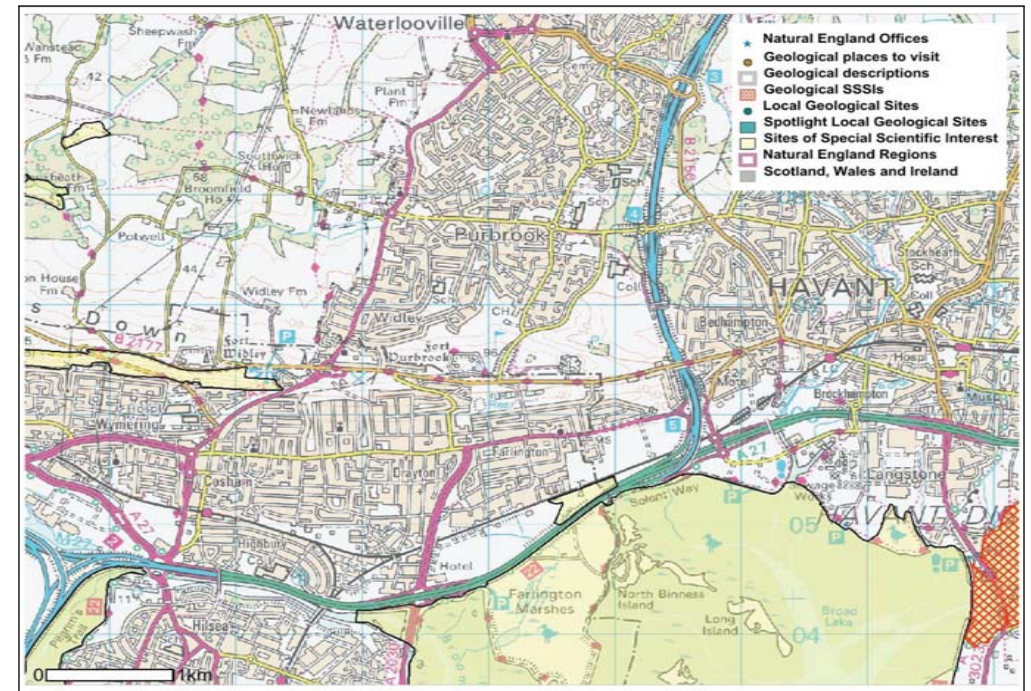
National Location Plan



Geology and Soils

Results returned for the Geology of the Site are at this stage very general. The reason for this generality is that the following content has been gathered from freely available online knowledge banks such as Natural England's web services and not via a site specific geological assessment such as those commissioned and provided for by Envirocheck Ltd on Portsmouth's sister projects: Airlinks, Duxbury, Castlepoint and Tilgate.

Natural England's Geological Data Map



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Geology and Soils

The geology of Hampshire and the Isle of Wight although relatively simple, comprising rocks and sediments from three periods of geological time, represents one of the richest sequences of fossiliferous deposits in Europe.

The oldest rocks in Hampshire are of Cretaceous age, and comprise the marine sands and clays of the Lower Greensand, Gault Clay and Upper Greensand that outcrop in East Hampshire and the overlying white, pure limestone of the Chalk which gives rise to the rolling downland of much of the County. The Chalk outcrop separates two areas of Tertiary sediments.

In the south are the sands and clays of the Hampshire Basin, which, where they are close to the surface, give rise to the largely free-draining, acidic soils of the New Forest. In the north of Hampshire, similar sediments outcrop and here also give rise to part of the heathland vegetation complex of the London Basin. Much of the New Forest area is capped by gravels of Quaternary age derived from the once extensive Solent River system.

The Isle of Wight is a diverse island landscape mirroring the geology of the Hampshire Basin, with Tertiary sediments dominating the north of the Island and Cretaceous (including the lower Cretaceous Wealden sediments) in the south. During the Alpine mountain-building phase, some 15-20 million years ago, the rocks of both the mainland and the Isle of Wight were folded, giving rise to the diverse structure of the area and contributing to the display of the superb range of outcrops seen on the Island.

The oldest rocks present in the area are the sands and clays of the Wealden Group, which are exposed on either side of the Isle of Wight at Sandown in the east and in Brighthelm Bay in the west. The various mottled, red and yellow clays and sandstones of the Wealden of the Isle of Wight were deposited

across a large area of river delta-flats by extensive braided rivers. The Wealden sediments contain much driftwood, fossil plants such as ferns, pine cones and freshwater mussels.

They are perhaps best known for the dinosaur remains that they have yielded over many decades. These include large numbers of bones of the large bipedal herbivorous dinosaur, *Iguanodon* amongst other species of extinct reptiles. The upper part of the sequence consists of shales and thin limestones which were laid down in large freshwater lagoons. At the top of the succession evidence of marine conditions and an advancing sea is provided by brackish and marine fossil shells.

Rocks of the succeeding Lower Greensand are exposed on the south coast of the Isle of Wight and in east Hampshire, although there are distinct differences in the rocks between the two areas. On the Isle of Wight the Lower Greensand comprises a thick sequence of marine deposited clays and sands that are well exposed in the south-west of the Island around Atherfield and again on the other side of the Island to the north of Sandown. Much of the sequence is not that fossiliferous, however, there are various horizons throughout the succession that yield the fossils of marine creatures. These include horizons of nodules which contain ammonites, clusters of brachiopods and bivalves and some beds which contain well-preserved fossil crabs and lobsters.

In East Hampshire the Lower Greensand succession is also of marine origin, but comprises different rock units, mainly sandstones, which outcrop at the western end of the Weald. The Lower Greensand gives way to the Gault Clay and the Upper Greensand, which on the Isle of Wight comprise sandy clays and sandstones. The upper part of the Upper Greensand is characterised by

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Geology and Soils

regular courses of chert and gives rise to the conspicuous cliff that dominates the Undercliff between Bonchurch and Blackgang.

The overlying Chalk dominates much of north and central Hampshire and forms the spine of higher ground running across the Isle of Wight. The Hampshire Downs are part of the broad belt of chalk linking the Dorset Downs and Salisbury Plain in the west with the South Downs in the east, and the Berkshire and Marlborough Downs to the north. The underlying chalk gives rise to a variety of contrasting landforms including broad strongly rolling downland, both deep and shallow valleys, and distinct hilltops and ridges with minor steep scarps in places.

The very pure limestone (up to 98 per cent calcium carbonate) of the chalk was deposited in a warm shallow tropical sea around 70-100 million years ago. Inland outcrops, apart from in quarries, are not common and it is best seen along the cuttings above the M27 at Portsdown and on the Isle of Wight where it forms the dramatic cliffs at Freshwater and the Needles. Throughout its area of outcrop, wherever agricultural practice is suitable, the chalk supports calcareous grassland vegetation that is rich in many plant species including orchids and herbs.

Tertiary (comprising Neogene and Palaeogene)

Rocks of Tertiary age occur in two basins on either side of the higher ground formed by the mass of the chalk. In the north, sands and clays belonging to the Reading Formation, London Clay and Bagshot Beds outcrop in the area around Farnborough, Aldershot and Kingsclere. These sediments record a change in environments from marshy mudflats crossed by river channels (the Reading Formation) to more open, marine conditions (the London clay) and shallow

water tidal sandflats (the Bagshot beds). The sands of the Bagshot beds give rise to free-draining soils which support the heathland vegetation that is typical of this part of the Thames Basin.

The same suite of Tertiary rocks occur in the southern part of the County (and the northern half of the Isle of Wight) in the Hampshire Basin, their outcrop running in a narrow band parallel to the edge of the chalk. However, here the Bagshot Beds are largely replaced by part of a much thicker sequence of marine, estuarine and freshwater sands and clays. These underlie much of the New Forest area and the coastal plain of the Solent Estuary and form the bulk of the northern half of the Isle of Wight. The clays and sands of the Bracklesham Group and overlying Barton Group were deposited under shallow marine to intertidal conditions and contain a very diverse assemblage of fossil molluscs, plant remains and reptiles (mainly turtles).

Unfortunately much of the Barton succession has now been covered by coastal defence works, but outcrops of it can still be seen on the Isle of Wight in Whitecliff Bay. The overlying marls, clays and limestones of the Solent Group indicate a shallowing of the Tertiary sea and the oncoming of more terrestrial conditions. These sediments are particularly well exposed on the Isle of Wight at either end of the Island.

The Bembridge Limestone of the Solent Group is a prominent freshwater limestone with ancient pondsnails and in the Bembridge area it forms extensive ledges. The overlying Bouldnor Formation includes a bed that yields fossil insects and a variety of mollusc shells. The variety of fossils indicates that salinity conditions varied from fresh to brackish to marine.

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Geology and Soils

Towards the end of the Tertiary the formation of the Alps (about 15 million years ago) caused squeezing and folding of rocks in southern England. The consequence of this is seen on the Isle of Wight in Alum Bay and Whitecliff Bay where the rocks are vertically tilted. This is part of a large scale fold known as the Purbeck – Isle of Wight Monocline which can be traced across East Dorset and the Hampshire Basin.

Over the last two million years ago the climate of Britain has varied tremendously with periods of temperate climate interrupted by repeated advances and retreats of glaciers and ice sheets. Collectively these have been known as the Ice Age and the actions of the ice sheets have been instrumental in forming the landscape we see today. However, unlike the rest of Britain, Hampshire did not experience the full effects of the repeated advances of ice sheets, as their southward movement did not extend into the County. However, during these glacial periods it is likely that much of the County resembled the tundra of today's arctic provinces.

In many areas the Tertiary succession of the New Forest is covered by Quaternary plateau gravels which are distinguished from those of the Tertiary mainly by the angularity of the flints they contain. It is possible that some of these represent marine beach deposits, laid down when sea-levels were significantly higher during some of the previous warmer phases of the Quaternary. Some of the gravel deposits may, however, be related to an ancient river system, known as the Solent River that flowed across south east Dorset and southern Hampshire and into a major 'English Channel' river.

The Solent River system may have developed back in the Anglian Glaciation, some 450,000 years ago, but would have been disrupted during sea-level rise

in subsequent interglacials when sea-level rose. Large amounts of gravel would have been carried by the river from the more upland areas following seasonal snow melt each year. Evidence from terraces of gravel around the Hampshire Basin indicate that this system was certainly in place during the late Devensian glaciation, 20,000 years ago when sea levels were as much as 120m below the present level. Rising sea levels over the last 10,000 years caused the river valley to become drowned and infilled by fluviially deposited gravels. The river deposited vast quantities of sand and gravel throughout its flood plain.

Away from the main Basin, the Chalk Downs of Hampshire were shaped to their present form of scarps, slopes and valleys by water erosion. Much of the erosion probably took place by increased run-off from the melting of semi-permanent ice-caps on the chalk plateau during seasonal snow melt and at the end of the last glaciation.

Geological highlights:

In 1992, in the Lower Cretaceous Wealden sediments (Wessex Formation) on the southwest coast of the Isle of Wight, the remains of a sauropod dinosaur were discovered. Though isolated sauropod bones are often found an unprecedented 40 per cent of this skeleton has been recovered making this the most complete sauropod known from rocks of this age in the UK. The sauropod was a large (approximately 15m long and 8m high), herbivorous dinosaur that is believed to have died on land and been inundated by flooding; there is evidence that the body was scavenged before it was fully buried.

The Tertiary clays, sands and organic deposits exposed on the Isle of Wight and the Hampshire coast are one of the most important sources of fossil vertebrates

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Geology and Soils

in Europe and the World. Over 45 species of fossil mammal have been described from the sediments exposed at places like Hordle Cliff and Headon Hill and include species such as tapir and other mammals indicating connections between Europe and south-east Asian faunas. These beds also yield excellent fossil reptile and bird faunas including species of turtles, crocodiles, lizards (Iguana), snakes, geese, plovers and falcons.

The Solent Group outcrops on the north coast of the Isle of Wight contain a thin limestone near the base of the Bembridge Marls. This is known as the 'Insect Limestone', and is the most important source of Tertiary fossil insects anywhere in Britain. Over 250 new species have been found within the limestone, including tree-ants and termites. The Insect Limestone also contains a unique flora of fossil plants, belonging to over 120 different species; 39 of these species have their type-locality here, and 20 are unique to this site in Britain. Of particular importance is the excellent preservation of the fossil plants, which allow the recognition of plant organs not usually seen in fossilised specimens.

The Quaternary gravels of the Hampshire Basin have yielded a large number of human-made artefacts of Palaeolithic age (500,000-10,000 years ago). These include flint hand axes, choppers and worked implements. Many artefacts have been recovered from the gravel deposits of the river valleys, or the gravel sequences exposed on the coast, where they have been transported by fast flowing glacial streams. However, a couple of sites showing occupation by man have been found. These include a recently discovered site near Ringwood, above the present-day valley of the River Avon. Here over 400 carefully made large blades and flakes, including knives, scrapers and borers have been found. A similar assemblage of tools has also been found at Hengistbury Head in Dorset, which has been dated to the end of the last glacial approximately 12,500 years ago.

The famous coloured sands of Alum Bay are a series of sands, clays and organic-rich layers (lignites) within the Tertiary aged Bracklesham Group. The sediments of the Bracklesham Group normally contain large numbers of marine fossils, but at Alum they are unusual for being both coloured and generally without marine fossils. The varying beds of sediment are orientated vertically, meaning that a much wider sequence of rocks is seen here than in other locations and making the variation in colours between the beds more conspicuous. The colours are largely due to their mineral content and the way in which they have weathered. Yellow and brownish sands owe their colour to limonite, which is oxidised iron. Red colouration also indicates oxidation and is associated with the weathering of iron compounds in ancient soils, although the colour could have also originated from more recent oxidation of pyrite. Green is provided by the mineral glauconite, which is common in some of the more marine units. Sands with a high quartz content can appear to be white while organic material, notably lignite can provide a black colouration.

Contours, Levels, Drainage & Arboricultural Survey

Contours and levels

Portsmouth Golf Courses area to the west of Crookhorn Lane housing holes ** to ** highest level is located on the northern boundary. From this level of approximately 86m above sea level, the site falls steeply both to the north east and the north west until it reaches its lowest point at the junction of the Course, the adjacent amenity parkland and Croft Close at approximately 56m above sea level. The substantial difference in level of 30meters or more makes for a steep site, but one with a more or less consistent fall across the contours from north to south. Man-made, localised flat spots and pits occur throughout the Course in the form of Greens, Tees, Bunkers and water features where these types of landform have been worked into the sites natural topography. This is consistent with this type of land use and management regime.

The eastern part of Portsmouth Golf Course to the east of Crookhorn Lane housing holes ** to ** has its highest point at which is approximately 87m above sea level. From the aforementioned highest point, the Course landform descends steeply, terminating in a narrow, wet valley or bowl at approximately 50m above sea level before rising again to the north up to College Road. As well as falling south to north the Course also falls dramatically from west to east. Upon entering the site via the underpass the landform is at approximately 70m above sea level from which point the Course falls rapidly (over 40m) to the east where it reaches its lowest level of 34m above sea level behind the 7th Green.

Drainage

Specific drainage information is limited at this point as no existing records were made available, a utilities package is yet to be commissioned and the

topographic survey is incomplete. What is apparent from the field survey is that there are a number of ponds and ditches that all aid surface and ground water collection from the surrounding Course. What is also apparent is that further improvements to the courses drainage system need to be commissioned to avoid future water logging issues in an ever warmer and wetter temperate albeit southern coastal climate.

Arboricultural Survey

An arboricultural survey is currently being undertaken by Glendale Managed Services and will be included once available in January 2012.

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Wildlife Habitats and Ecology

Wildlife Habitats and Ecology

A desktop study was carried out by ENIMS to determine if any legally protected species had previously been recorded within close proximity of the site, as was an extended Phase I Habitat Survey of the site following the Joint Nature Conservation Committee's habitat classification system. All accessible areas of the site were surveyed and the dominant flora, standard trees, presence of water bodies and other features of interest were recorded. Please refer directly to ENIMS Report for further detail. The following summarises ENIMS findings:

Phase I Habitat Plan Areas 1 & 2



Phase I Habitat Plan Area 3



Phase I Habitat Plan Areas 4 & 5



Areas 1 & 2

The course is made up of amenity grassland, dominated by ryegrass (*Lolium perenne*), greater plantain (*Plantago major*), white clover (*Trifolium repens*) and daisy (*Bellis perennis*). However, an area of less intensively managed grassland has been allowed to mature at the north of Area 1, with greater ecological value. Area 2 contains a pond (Pond 1), which was reported by grounds staff to be dry for the majority of the year.

Area 3

Area 3 is the site of the proposed new driving range. It currently consists of predominately amenity grassland, dominated by ryegrass (*Lolium perenne*), greater plantain (*Plantago major*), white clover (*Trifolium repens*) and daisy (*Bellis perennis*). Amenity grassland fairways are interspaced by rough areas of semi-improved grassland. A linear strip of broadleaved woodland dominated by white willow (*Salix alba*) and birch (*Betula pendula*), with ash (*Fraxinus excelsior*) and hazel (*Corylus avellana*) are also present towards the south of the Area. North of this is a patch of dense scrub, dominated by bramble (*Rubus fruticosus*), blackthorn (*Prunus spinosa*) and hawthorn (*Crataegus monogyna*).

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Wildlife Habitats and Ecology

Areas 4 & 5

Area 4 consists solely of amenity grassland, dominated by ryegrass (*Lolium perenne*), greater plantain (*Plantago major*), white clover (*Trifolium repens*) and daisy (*Bellis perennis*). However, Area 5 contains a patch of tall ruderal habitat with nettles (*Urtica dioica*) and bramble (*Rubus fruticosus*). The site boundary also encompasses broadleaved woodland, dominated by ash (*Fraxinus excelsior*), hazel (*Corylus avellana*) and blackthorn (*Prunus spinosa*), with frequent oak (*Quercus robur*) and birch (*Betula pendula*), and a ground cover of bramble (*Rubus fruticosus*).

Offsite Habitat

Habitats located outside the proposed works area are largely comparable with those found within the boundary. Notable features include two ponds and designated ancient woodland features interspersed between works boundaries in Areas 1 and 2.

Statutory Designated Sites

Coastal saltmarsh and mudflat habitats, located 1.7km south east of the site, comprise a number of statutory wildlife site designations. These are the Farlington Marshes Local Nature Reserve, the Chichester and Langstone Harbours Ramsar Site and Special Protection

Area, the Solent Maritime Special Area of Conservation and the Langstone Harbour Site of Special Scientific Interest.

These extensive mudflats and *Spartina* cord grass dominated tidal saltmarshes are of international importance, supporting high densities of intertidal

invertebrates and large populations of migrant and overwintering waders and waterfowl. These features are isolated from Portsmouth Golf Course, and their special interests are therefore not anticipated to be adversely impacted by the proposed relandscaping works.

No impact is anticipated.

Non-Statutory Designated Sites

A number of designated semi-natural Ancient Woodland features were identified within the search area. These sites, which include both semi-natural and replanted woodlands, are predominately isolated from the site of the proposed landscaping and will not be impacted by the proposed landscaping works. However, three small remnant patches of woodland within Portsmouth Golf Course border Areas 1 and 2 of the proposed works boundary.

Natural England standing advice on ancient woodland mitigation identifies the following potential impacts from development works occurring adjacent to ancient woodland features:

- Effects from root protection areas of individual trees.
- Reduction in area of other semi-natural habitats adjoining ancient woodland.
- Increased likelihood of exposure to pollutants from the surrounding area.
- Changes to the local hydrology.
- Increased public use near veteran trees such that safety works leading to possible damage to the tree may be needed.
- Change to the landscape context for ancient woods and veteran trees.

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Wildlife Habitats and Ecology

Of these, only impacts to the root zones of trees are considered applicable in this case. The roots of some trees, veterans in particular, will extend far beyond the canopy 'drip line'. The root systems are vulnerable to damage from development activities such as trenching and soil compaction.

Low negative impact anticipated.

European Protected Reptiles

No evidence of site usage by European protected reptile species was identified during the Phase 1 Assessment. No local records of these species were identified. The sand lizard and smooth snake have very defined habitat requirements, which are not satisfied by any of the habitats found on site. The former are heathland specialists, though occasionally found in mature grassland, and the latter exclusively occupy heathland and sand dunes. Consequently, there is no potential for these species to be present and thus impacted by works.

No impact is anticipated.

Widespread Reptiles

The Phase 1 survey was conducted during the reptile hibernation season, and therefore it is unsurprising that no incidental sightings were made. Grounds keeping staff were interviewed, and reported never having seen snakes or lizards at the site. However, particular habitats located within and adjacent to the proposed works boundary have potential to support widespread reptile species, in particular slow worm (*Anguis fragilis*) and grass snake (*Natrix natrix*). The habitats are the semi-improved grassland area at the north of Area

1 (Target Note 1), the scrub and adjoining semi-improved grassland in Area 3 (Target Note 6) and the tall ruderal vegetation in Area 5 (Target Note 10). If reptiles are present and works were to proceed without mitigation, potential would exist for the killing or injury of these species.

Impact assessment pending outcome of further surveys.

Great Crested Newts

Records within 2km within 10 years. Habitat Suitability Index proposed by Oldham et al. (2000) (Appendix D). Impact Assessment.

Bats

An inspection was made of mature trees within an adjacent to site, to assess their suitability for roosting bats. No evidence of any roosting activity was discovered. A single oak tree was noted to have a defect with the potential to support a roosting crevice-dwelling species, such as a pipistrelle.

The area within the proposed works boundary is likely to be used by foraging bats during the active season, however as no net loss of habitat will occur, and no increase in artificial lighting is proposed, no impact to foraging bats is envisaged.

No impact is anticipated.

Dormice

No evidence of dormice, such as nests or feeding remains, was discovered during

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Wildlife Habitats and Ecology

Area 5 where some woodland areas are to be cleared, are suitable to support this species. However, given the lack of connectivity between these areas and off-site habitats, it is considered highly unlikely that dormice will be present at site, and therefore potentially impacted by the proposed works.

No impact is anticipated.

Badgers

No records of the badger *Meles meles* were identified within 2km, dated within the past 10 years. Furthermore, no evidence of badger activity was discovered within or in habitats surrounding the site.

Badgers are widespread and abundant, and will persist in a variety of habitats. It is certainly possible that badgers will occasionally move through the site of the proposed works, however as no setts or other evidence were found of on-site activity were found, it can be said with confidence that badgers are likely to be unaffected by the proposals.

No impact is anticipated.

Water Voles

No records were identified of the water vole *Arvicola amphibious* within the 2km search radius, and no evidence of this species was recorded during the site inspection. There are no water course features with the potential to support this species which could be impacted by the proposed works.

No impact is anticipated.

Otters

No records were identified of the otter *Lutra lutra* within the 2km search radius, and no evidence of this species was recorded during the site inspection. There are no water course features with the potential to support this species which could be impacted by the proposed works.

No impact is anticipated.

Nesting Birds

Broadleaved woodland and scrub habitats within the site boundary present nesting opportunities for birds. Evidence of previous nesting activity was also recorded during the site inspection.

Features with the potential to support nesting birds during the appropriate season would need to be removed under the proposed landscaping works, and potential therefore exists for the destruction of eggs and nests.

Potential for high negative impact (without mitigation).

Schedule 1 Protected Birds

No evidence of site use by Schedule 1 listed bird species was discovered during the site survey.

The Schedule 1 listed species most commonly found on development sites are the barn owl *Tyto alba* and kingfisher *Alcedo* at this. The former typically roost in old agricultural built structures, and the latter are heavily associated with water courses. Other Schedule 1 listed species also have defined habitat requirements,

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Wildlife Habitats and Ecology

such as veteran trees, brownfield sites, or tidal salt marshes. These habitats are not present within the site boundary, or within a vicinity where landscaping works would likely result in disturbance to nesting birds.

It is considered highly unlikely that Schedule 1 listed bird species will occur within the site boundary.

No impact is anticipated.

Summary of Potential Impacts

Impacts to remnant patches of designated ancient woodland within Area 1 of the Golf Course have been identified through root compaction by landscaping works to adjacent land.

Potential exists for negative impacts to nesting birds, specifically the damage or destruction of nests and eggs, if clearance of particular habitat features (broad-leaved trees and scrub) occurs during the nesting season of March to September (inclusive).

Mitigation Requirements

Designated Ancient Woodland

In order to avoid impacts to designated ancient woodland, it is necessary to adjust the design of the works footprint to allow for an adequate buffer zone, or “root protection area”. This zone will be dynamic, changing according to the woodland composition adjacent to works areas. Target Notes 3a and 3b are dominated mature oak, which will require a significantly larger root protection area than 3c, which is dominated by planted birch and sycamore.

It is recommended that the design account for a root protection area of 15m linear radius from mature trees in designated ancient woodland, and 5m from understory shrubs and semi-mature or smaller tree species.

Nesting Birds

The removal of all habitat features with potential to support nesting birds must be completed either outside of the bird nesting season, or following a nesting bird check by an appropriately qualified ecologist if during the nesting season of March to September.

If during clearance a nesting bird is discovered, no works may occur within 5m of the nest until the young have fledged.

No impact is anticipated with mitigation.

Further survey Requirements

Widespread Reptile Species

It is recommended that the semi-improved grassland area at the north of Area 1 (Target Note 1), the scrub and adjoining semi-improved grassland in Area 3 (Target Note 6) and the tall ruderal vegetation in Area 5 (Target Note 10) be surveyed for the presence or likely absence of widespread reptile species. Between 6 and 10 surveys will be required, although the final number of surveys will be dependent upon the months across which they are carried out.

Summary of Time Constraints

The removal of features with the potential to support nesting birds should be completed during the months of October to February where possible. Removal of such features during the nesting season of March to September will require a nesting bird check within 24 hours prior to removal.

Widespread reptile surveys may only be conducted during the months of March to September, when the reptiles are active.

Potential Ecological Enhancements

There is potential to carry out a number of ecological enhancements during this project, as compensatory measures to mitigate any residual impacts that cannot be avoided. Potential enhancements include:

1. Provision of additional roosting features for bats by placing bat boxes on trees.
2. Provision of additional nesting features for birds by placing nest boxes on trees.
3. Use of native species in planting schemes to improve the wildlife potential of the site.
4. Incorporation of a net increase in “rough” areas as part of the relandscaping design. This will provide potential habitat for reptile species.
5. Removal of fish from Pond 2 to increase their suitability for amphibian breeding activity.

Climate

Portsmouth's climate is much milder than that of the surrounding areas. Winter frosts being light and short-lived and snow quite rare. Temperatures rarely drop much below freezing, as the City is surrounded by water and densely

populated.

Portisdown Hill also protects the city from the cold northerly winds during the winter months. Summer temperatures can also be higher than in some other south coast cities due to the “urban heat effect”, where heat is reflected and retained by buildings.

Located on the south coast, Portsmouth also receives more sunshine per annum than most of the UK. The average maximum temperature in January is 10 °C with the average minimum being 5 °C. The average maximum temperature in July is 22 °C, with the average minimum being 15 °C. The record high temperature is 35 °C and record low is -6 °C.[44]

Climate data for Portsmouth, England, UK													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Average high °C (°F)	9.6 (49.3)	8.8 (47.8)	10.6 (51.1)	12.6 (54.7)	16.4 (61.5)	19.2 (66.6)	21.5 (70.7)	21.6 (70.9)	19.0 (66.2)	15.8 (60.4)	12.0 (53.6)	10.0 (50.0)	14.76 (58.56)
Average low °C (°F)	5.2 (41.4)	4.4 (39.9)	5.4 (41.7)	6.4 (43.5)	9.6 (49.3)	12.2 (54.0)	15.0 (59.0)	15.0 (59.0)	13.0 (55.4)	11.0 (51.8)	7.6 (45.7)	6.0 (42.8)	9.23 (48.62)
Precipitation mm (inches)	65 (2.56)	50 (1.97)	52 (2.05)	45 (1.77)	28 (1.1)	40 (1.57)	30 (1.18)	40 (1.57)	62 (2.44)	78 (3.07)	66 (2.6)	80 (3.15)	636 (25.04)
Source: Met Office ^[45]													

This mild climate should be considered in the palette of planting to be used. Plant species requiring warmer conditions and less water should be concentrated upon. Native coastal species could also be considered.

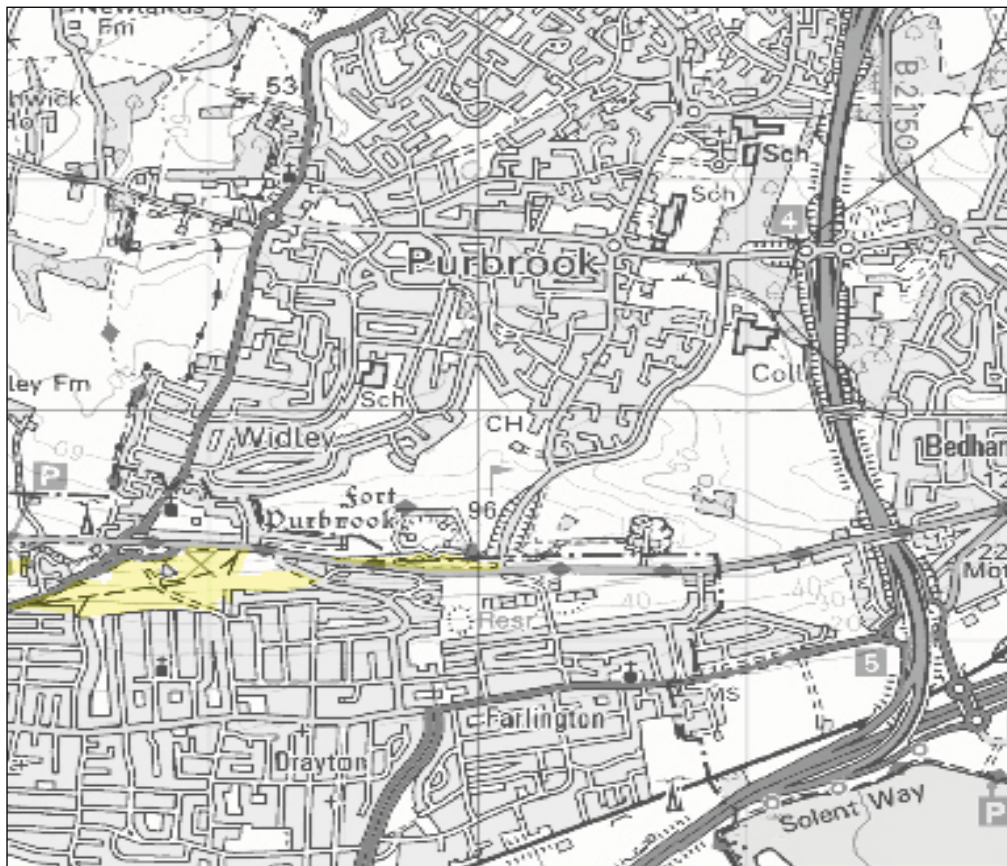
Public Rights of Way

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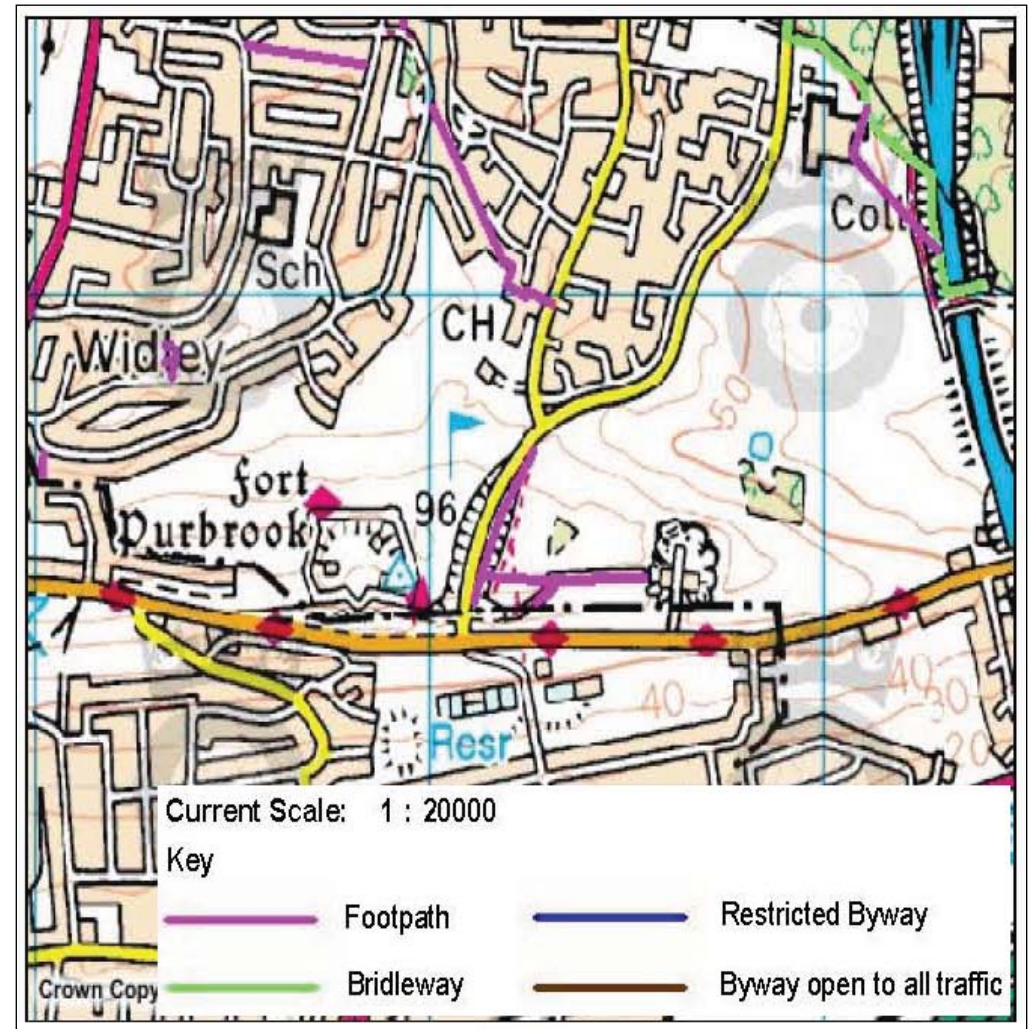
Public Rights of Way

According to Natural England's web resources Portsmouth Golf Course has no areas of right to roam land under the Countryside and Rights of Way Act, 2000 but has linked areas of country park to the south west.

Adjacent Country Park Plan



Public Rights of Way Local to Portsmouth Golf course



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Views into and out of the Site



Plate 1. View due West from the Northern edge of the 18th Green.



Plate 2. View along the back of the 18th Hole from the now defunct overspill car park.



Plate 3. View East from Crookhorn Lane towards the 8th Tee.



Plate 4. View due East down the 9th Hole and Portsmouth beyond.



Plate 5. View East up to the 7th, the location for the proposed new Driving Range.



Plat 6. View West from behind the 7th Tee looking back over the proposed Driving Range.

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Views into and out of the Site



Plate 7. View Southwest from before the 7th looking over Area 3 and the Driving Range.



Plate 8. View Southeast looking towards the 5th Tee and the 8th through trees.



Plate 9. View West back up to the 4th Tee.



Plate 10. View to show the location of the proposed new Pond.



Plate 11. View North west from behind the 8th Green.



Plate 12. View West from the 9th Tee.

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Views into and out of the Site



Plate 13. View Northeast from the 6th Tee along the fairway.



Plate 14. View Northeast from the 8th Ladies Tee showing the step path to be improved.



Plate 15. The 6th Holes existing Pond. To be protected.



Plate 16. View Northeast down and along the 6th Fairway to the green and the hills beyond.



Plate 17. The overgrown Pond midway along the north side of Fairway 9.



Plate 18. Open view in the scrub behind the 17th Green and 18th Tee.

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Views into and out of the Site



Plate 19. View inland over the 11th showing the wooded screen, housing and hills beyond.



Plate 20. View Northwest from the 10th Hole.



Plate 21. View North through the scrub at the back of the 18th Hole.



Plate 22. View of a good specimen on the 18th Hole.



Plate 23. View to the Tee of the 18th.



Plate 24. View North from the 18th of the adjacent Primary School.



Existing Services (Utilities), History and Archaeology

Existing Services (Utilities)

Information on the Courses existing services (utilities) is at present limited. It is our understanding that the Project Management Team will instruct a third party data search on Utilities information, such as Envirocheck Ltd following pre-application discussions with the Local Planning Authority.

A Brief History of Portsmouth

The City of Portsmouth is believed to have been started around about 1180 when a wealthy merchant and landowner called Jean De Gisors founded a small settlement/town in South-West corner of Portsea Island. By 1185 the small settlement had a grown substantially with its own Parish Church and a thriving Market. In 1194 the King granted Portsmouth a City Charter.

In the early 13th century Portsmouth was described as ‘one of England’s most important ports’ although the population was still quite small at approximately 1,200 people.

By the 14th century Portsmouth had an elected Mayor and an organised force of “Constables” responsible for arresting wrongdoers.

In 1369 a military Governor was appointed who was responsible for the defence of the town. However, Portsmouth was burned down 4 times during the 14th century resulting from a period of almost continuous warfare between England and France.

In 1494 Henry VII strengthened the towns fortifications by building the Square Tower. Henry also changed the destiny of Portsmouth when he built a Royal

dockyard in 1495. From then on Portsmouth became an important Naval port. Henry also built a castle, east of Portsmouth, overlooking the sea. Southsea castle, as it is now called, was built in 1544.

During the 16th century Portsmouth suffered a severe decline in importance, as other more technologically advanced dockyards were opened along the River Thames. Portsmouth also suffered an outbreak of plague in 1563 that killed around 300 of the population of 2,000.

Early in the 17th century Portsmouth was described as a “poor and beggarly town”, but under Charles I (1625-49) Portsmouth began to regain some of its former importance. Following the end of the civil war in 1646 Portsmouth prospered. In the late 17th century Portsmouth dockyard (and the town) continued to grow. In 1663 a new wharf was built for the exclusive use of the Navy and the dockyard.

At the end of the 17th century and the beginning of the 18th century Portsmouth Dockyard continued to expand. New docks and warehouses were built. Rows of houses were built in the dockyard for senior officers who needed to be close to their work. A naval academy for training naval officers was opened in the dockyard in 1733.

Meanwhile the town of Portsmouth had reached bursting point, so people began to build houses north of the town on land known as the “Common”. The first houses were built there around 1690.

In 1806 Isambard Kingdom Brunel was born in Portsmouth.

In the 18th century Portsmouth was limited to the South West corner of Portsea

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History and Archaeology

Island. During the 19th century it spread across the whole island. By the 1790s a new suburb was growing up around Commercial Road and Charlotte Street. It became known as Landport after the Landport Gate.

As Portsmouth grew it reached the village of Buckland. By the 1860s this village had been swallowed up, and in 1871 the population of Portsmouth had grown to 100,000. In the late 1870s and 1880s Stamshaw was built. At the same time the village of Fratton was also engulfed by the growing City.

Like all cities in the 19th century Portsmouth was dirty and unhealthy. In 1848-49 more than 800 people died in a cholera epidemic. However things improved later in the century. In 1865-70 the council built sewers. In 1875 a bylaw stated that any house within 100 feet of a main sewer must be connected to it. Portsmouth had a water supply as early as 1811. In 1858 the Council purchased the Company and improved the supply. Despite these improvements in public health 514 people died in a smallpox epidemic in 1872.

There were other improvements in amenities in Portsmouth. In 1836 Portsmouth gained its first modern Police force. In 1878 the first public park, Victoria Park, opened. In 1883 Portsmouth gained its first public Library. In 1885 the first telephone exchange opened. In 1894-96 streetlights in Portsmouth were converted from gas to electricity.

There were also improvements in transport in Victorian times. In 1840 the first horse drawn buses began running in Portsmouth. They were followed, in 1865 by horse drawn trams. In 1847 the railway reached Portsmouth.

In 1818-22 a canal was built across Portsea Island. The Portsmouth to Arundel

Canal began just outside the town where Arundel Street is today. It ran along the site of the railway between Portsmouth and Fratton. It then ran along the site of Goldsmith Avenue to Milton then ran south of Locksway Road to locks on the south eastern shore of Portsea Island. The barges were towed by steam tugs across the sea into Chichester harbour where the canal began again. The canal closed in 1838.

In 1862-68 a chain of forts was built along Portsdown Hill, which overlooks the town. Since the 18th century there had been earth rampart across the north of Portsea Island manned by Marines. In 1867 a Marine Barracks was built in the hamlet of Eastney.

In the 20th century Portsmouth continued to grow. By 1910 the village of Copnor had been engulfed by the expanding City. Growth also spread north to Hilsea. In 1920 the boundaries of Portsmouth were extended to include the village of Cosham north of Portsea Island and in 1932 to include Drayton and Farlington to the north east. By 1939 the population of Portsmouth reached 260,000.

There were 67 air raids on Portsmouth between July 1940 and May 1944. The worst were on 10 January 1941 when 171 were killed.

After the war the most pressing need was for new housing. More than 700 prefab houses were built in 1945-47.

In the 1960s and early 1970s a whole section of central Portsmouth was rebuilt including Landport, Somerstown and Buckland. As well as demolishing slums the Council gave people grants to improve their homes. From the late 1970s many new private houses were built in Portsmouth. In the late 1970s an estate

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History and Archeology

was built at Gatcombe Park in Hilsea. In the 1980s another estate was built at Anchorage Park on the North East corner of Portsea Island. In the 1990s a new estate and marina was built at Port Solent North West of Portsea Island. In the 1980s shopping malls were built, the Bridge Centre in Fratton and the Cascades Centre in Commercial Road.

In the early 20th century the main employer in Portsmouth was the dockyard. It employed 8,000 men in 1900. During the First World War the number rose to 23,000 but it fell to 9,000 when the war ended. From the 1930's the threat of another war led to an expansion of the dockyard workforce. Meanwhile other industries like brewing and corset making prospered. A new employer was the Airspeed factory, which made parts for aircraft.

During the latter part of the 20th and early part of the 21st Century tourism has also been a major industry in Portsmouth. The Mary Rose, the Tudor warship was raised from the seabed in 1982 and became a Museum. The D-Day museum opened in 1984 and in 1987 HMS Warrior, Britain's first iron warship, was moved to Portsmouth.

Archaeology

Wessex Archaeology Ltd were commissioned by Parkwood Project Management to produce a Desk Based Archaeological Assessment of the Courses areas for improvement in June 2011. Explicit extracts from that report are as follows. Please refer to the full report for greater detail.

Summary

Designated heritage assets within the Study Area comprise three Scheduled

Monuments, a single Grade II* and five Grade II Listed Buildings. The majority of these heritage assets lie at a significant distance from the site and it is considered that the proposed areas to be remodelled do not contribute to their setting in any material way. Fort Purbrook (a Scheduled Monument and Grade II* Listed Building) and its associated covered-way, lie to the south of the site. Given that their setting comprises an already heavily landscaped environment, the Golf Course, further remodelling within limited elements of that landscape will not impact on its setting.

Within the Study Area, the recorded archaeological resource comprises funerary activity of Neolithic, Bronze Age and Saxon date with additional evidence for Iron Age and Romano-British settlement and infrastructure. Further remains of post-medieval date are also recorded. Given the background data from the Study Area, the potential for remains dating to the Iron Age and Romano-British periods cannot be discounted. It is likely that archaeological material, if present, would comprise evidence for agricultural practice and/or stray finds, predominantly ceramics. With regard to later periods, the potential for the presence of archaeological remains is considered very low, particularly in light of the previous heavy woodland recorded over much of the area.

Evidence for human activity which predates the forestation is likely to have been impacted heavily. The action of generations of roots and the damage caused by the cyclic felling of trees through natural causes will have damaged or removed completely archaeological features leaving any associated finds scattered and out of context. This situation will have been further exacerbated by the removal of much of the woodland, with the grubbing up of root-boles causing further damage. Beyond the woodland and its subsequent removal, landscaping relating to the original construction of the Golf Course will have impacted on below

History and Archaeology/Flood Risk and Land Use

Conclusions

PPS5 states that ...the effect of the development proposals on identified heritage assets and their settings is a material consideration in determining a planning application.

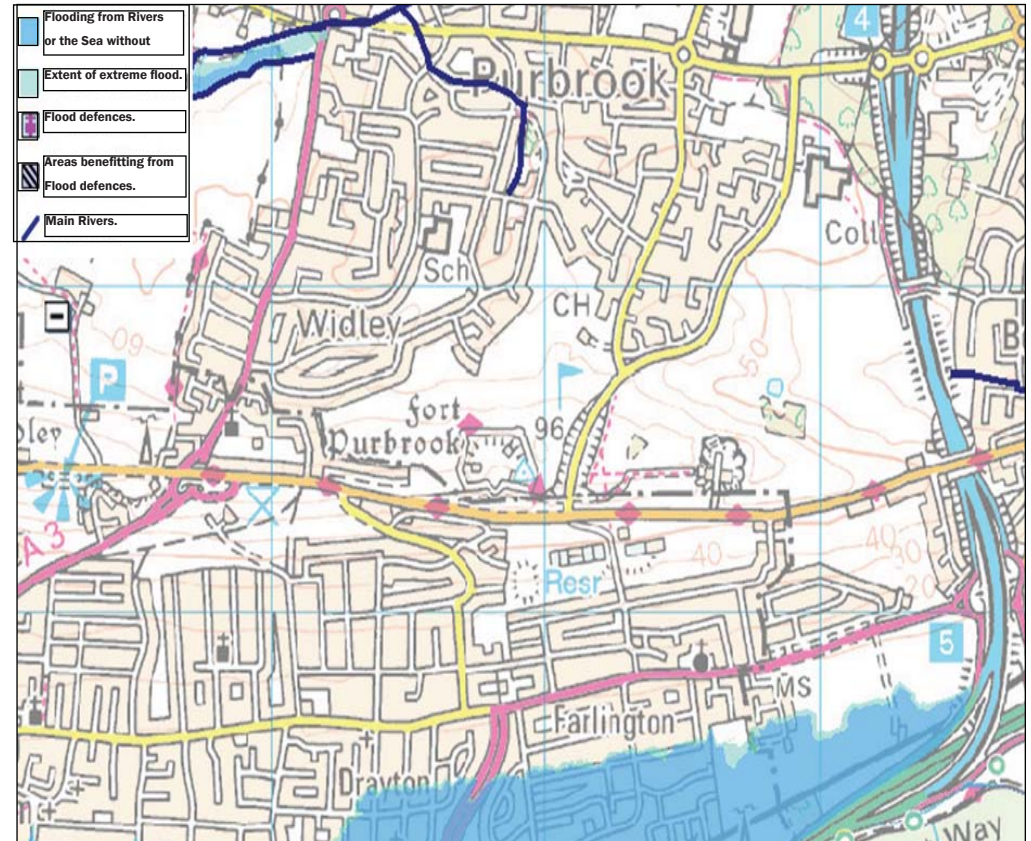
It has been assessed that, as a result of the proposed remodelling within the two elements which comprise the Site, no material change to the setting of any designated heritage assets will occur.

The potential for below ground, as yet unidentified, archaeological sites, remains or deposits to be impacted by groundworks is recognised, however, the potential for such remains to exist and/or survive intact within the Site is considered to be very low.

Some low-level monitoring of earth-moving operations within the remodelling process may be required as a condition of any planning consent granted, however, the need for and scope of such monitoring should be agreed through a consultative process with stakeholders and the statutory authorities.

Flood Risk

Information on the Courses existing Flood Risk is at present limited. It is our understanding that the Project Management Team will instruct a third party to prepare a full Flood Risk Assessment Report following pre-application consultation with the Local Planning Authority.



Existing Land Use

Land use is often confused with land cover. Land cover can be described as 'the observed physical and biological cover of the earth's land, as vegetation or man-made features'. Land use on the other hand is defined as 'the total of arrangements, activities, and inputs that people undertake in a certain land cover type'. A large

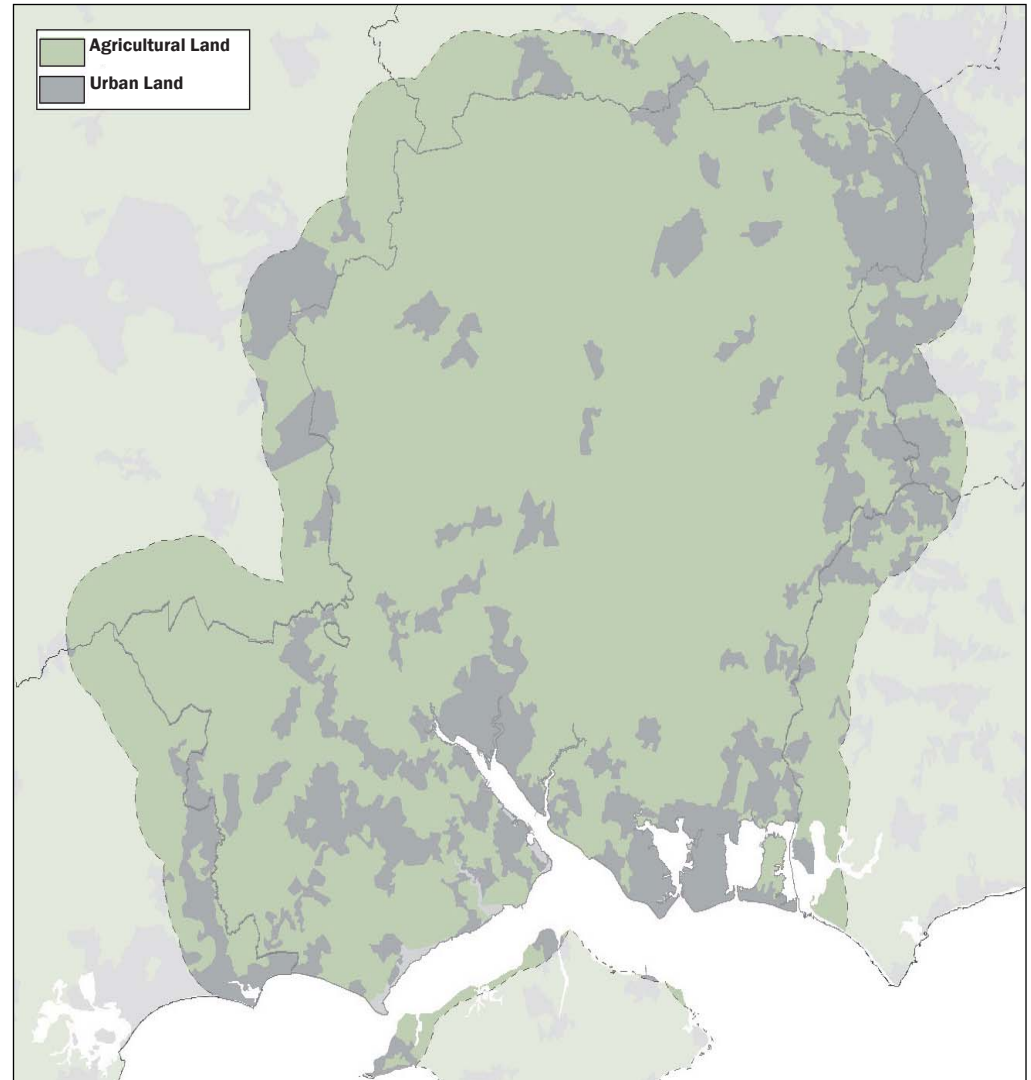
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Flood Risk and Land Use

proportion of Hampshire consists of major urban areas; comprising the Cities of Portsmouth (of which Glendale Golfs Course is part) and Southampton and other districts which are predominantly urbanised (such as Rushmoor, Gosport, Fareham and Havant). A larger proportion of Hampshire (58% in 2007) consists of farmland, contributing to approximately 18% of the South East region's total farmland. The figure overleaf shows a generalised view of Hampshire's land use by displaying urban areas and those classified as agricultural.

More locally, the Courses 'Land Cover' can be split down into the following categories according to the CEH (Centre for Ecology and Hydrology) classification system:

1. Broadleaved and mixed woodland.
2. Coniferous woodland.
3. Arable and horticultural land.
4. Improved grassland.
5. Semi-natural grasslands, bracken, fens and marshes.
6. Heath, bog and montane habitats.
7. Built up and gardens.
8. Coastal habitats.





Design Constraints Summary

1. Demonstrable compliance with PPS 7 'Sustainable Development in Rural Areas'.
2. Demonstrable compliance with PPS 9 'Biodiversity and Geological Conservation'.
3. Demonstrable compliance with PPS 25 'Development and Flood Risk'.
4. Demonstrable compliance with the 'Wildlife and Countryside Act, 1981'.
5. Demonstrable compliance with the 'Hedgerow Act, 2007'.
6. Demonstrable compliance with Havant Borough Core Strategy, Natural Environment and Heritage Policy CS11 'Protecting and Enhancing the Special Environment and Heritage of Havant Borough'.
7. Demonstrable compliance with Havant Borough Core Strategy, Natural Environment and Heritage Policy CS13 'Green Infrastructure'.
8. Demonstrable compliance with Havant Borough Core Strategy, Natural Environment and Heritage Policy CS16 'High Quality Design'.
9. Areas 1 and 2 of Portsmouth Golf Course house three patches of remnant Ancient Woodland and therefore the following potential negative impacts must be considered a design constraint:

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Development Constraints

- Protection of roots.
- Reduction in area of semi-natural habitats adjoining ancient woodland.
- Increased likelihood of exposure to pollutants.
- Changes to localised hydrology.
- Increased public use near trees requiring damaging health and safety driving tree works.
- Change to landscape context for ancient woods and veteran trees.

10. At present no Arboricultural Survey exists to reference. This lack of evidence must be considered a design constraint as an arboricultural survey of trees within the development area will reveal the following design influencing information:

- Condition of trees present and suitability for retention according to BS 5837: 2005 'Trees in Relation to Construction'.
- Trees to be removed.
- Trees of high quality and value to be retained.
- Trees of moderate quality and value to be retained where possible.
- Trees of low quality and value with little bearing on development.
- Tree protection.
- Root Protection Areas (RPA).
- Advisory Tree works in accordance with BS 3998: 2010 Tree Work Standard.
- Tree Preservation Orders present. (TPO's)
- Advice on damage to trees, the avoidance of damage, excavations and no dig techniques.

11. At present no Geological Survey exists to reference. This lack of evidence must be considered a design constraint as ground conditions cannot be locally

determined.

12. At present no Flood Risk Assessment exists to reference. This lack of evidence must be considered a design constraint as flood risk potential cannot be determined over and above that which is generally provided by the Environment Agency.

13. At present no Utilities Survey exists for reference. This lack of evidence must be considered a design constraint as existing service provision and routes cannot be determined and therefore avoided by way of the design.

14. A number of Ecological design constraints exist and should therefore be considered. These are:

- Habitat exists for Slow Worm and Grass Snake. A further 6 to 10 surveys will be required outside of the hibernation period incurring additional cost and programming alterations. If evidence of population is found mitigation must be undertaken.
- Habitat exists for Nesting Birds. Therefore, the removal of nesting bird habitat must be undertaken outside of the nesting season; March though to September or following a check by a suitably qualified ecologist. If a nest is found no works must be undertaken within 5m.
- Ecological Enhancements must be incorporated in the design proposals. These are the provision of bat boxes, bird boxes, wildlife focused plant species selection, incorporation of permanent 'rough' grassland areas and the removal of fish from Pond 2 to increase the suitability for amphibian breeding activity.
- Three small patches of Ancient Woodland border Areas One and Two of

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Development Constraints

the proposed works boundary. This cannot be removed or impacted upon in the following ways therefore the design must ensure; no adverse effect on the roots of the trees, no reduction in the area of ancient woodland, no likely increase in the exposure of pollutants, no changes to the local hydrology, no damage through increased public use, no change to the landscape context for ancient woods or veteran trees. A minimum 15m buffer zone is recommended.

15. Hampshire's Biodiversity Action Plan (BAP) specific action plans guidance should be considered and therefore form a design constraint. Relevant guidance is as follows:

Ancient and Semi-natural Woodland.

- Ensure no further loss or degradation of ASNW.
- Ensure no further removal or conversion of ASNW.
- Prevent degradation of ASNW by damaging management operations and other influences.
- Increase the extent of ASNW and reverse the effects of isolation and fragmentation.
- Restore ASNW on ancient woodland sites giving priority to linking valuable isolated fragments – 1,000 ha to be restored by 2010.
- Reverse the deleterious effects of isolation and fragmentation of ASNW by creating and managing links between woods.
- Improve the quality of ASNW habitat.
- Ensure more widespread favourable management of ASNW, including increasing the area of restored and in-cycle coppice from 2000 ha to 3000 ha by 2010.
- Ensure the requirements of all Priority Species associated with ASNW

are met.

- Improve knowledge of ASNW and associated species in Hampshire through survey, research and monitoring.
- Communicate with, and provide information to, statutory and voluntary organisations, the forestry industry, landowners, community groups and the public.

Hedgerows

- Ensure no further net loss of hedgerows.
- All hedgerow loss (through removal or neglect) should be mitigated by the planting of replacement hedges by 2005.
- Increase the extent of hedgerows.
- Promote new hedgerow planting and re-planting of former hedgerows to re-create 100 km of hedgerow by 2005.
- Enhance the habitat value of hedgerows.
- Promote good hedgerow management practices: Aim to achieve the favourable management of 50% of hedges in Hampshire by 2005 and 80% by 2010.
- Maintain or increase the number of hedgerow trees: Ensure the management and retention of existing trees, and encourage management of new trees to achieve a balanced age structure and species mix. Ensure no net reduction in hedgerow trees by 2005.
- Ensure the requirements of all priority species found in hedgerow habitats are met.
- Improve knowledge of hedgerows in Hampshire through survey, research and monitoring.
- Increase available information and enhance understanding of the

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- hedgerow resource of Hampshire.
- Promote the value of hedgerows and greater awareness of hedgerow issues.
- Communicate with key sectors including landowners, local authorities, schools and community groups, and increase the availability of hedgerow advice.

Standing and Open Water

- Protect and maintain the full range of standing open waters including a variety of types based on size, water chemistry and hydrology and including both older ponds and lakes and newer lakes on mineral workings.
- Maintain the numbers and quality of existing older and well established ponds and lakes.
- Improve the condition of new lakes arising out of mineral workings and water supply reservoirs.
- Improve the water quality and biodiversity of standing open waters.
- Identify those standing open waters that have some degree of pollution or nutrient enrichment and undertake measures to improve their biodiversity.
- Increase the numbers of standing open water bodies.
- Facilitate the restoration of former ponds, now drained, to a biodiverse condition.
- Create new ponds close to high quality ponds to reduce isolation.
- Create new ponds in areas of extensively managed land (ie.unfertilised) where they have a better chance of developing high biodiversity.
- Encourage formation and restoration of ponds through the planning

- process as mitigation/enhancement measures for relevant development.
- Ensure that the needs of Hampshire priority species occurring in standing open waters are met.
- Improve knowledge of distribution, extent and status of standing open waters in Hampshire through survey, research and monitoring.
- Communication, Awareness and Promotion.
- Promote the importance of standing open waters, their associated species and threats to them. Communicate with and provide information to key sectors including statutory agencies, NGOs, land owners and managers, schools, community groups and members of the public.

16. The warm, unusually sunny, exposed and salty climate should be considered a design constraint when selecting the palette of plant species, so as to maximise success rates and minimise maintenance as well as providing for a net increase in on site biodiversity.

17. The areas of the Course that are to be improved have generally very limited vehicular access and therefore access should be considered a design constraint. Careful design and phasing of the improvement works needs to be developed to avoid disturbance to users of the course during works, the local area and its inhabitants and the existing natural environment.

18. Although Wessex Archaeology's Desk Based Archaeological Assessment states that 'as a result of the proposed remodelling within the two elements which comprise the Site, no material change to the setting of any designated heritage site will occur' and that the 'potential for below ground, as yet unidentified, archaeological sites, remains or deposits to be impacted by groundworks is recognised,

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however, the potential for such remains to exist and/or survive intact within the Site is considered to be very low.' A low-level of monitoring of the earth moving operations may be required as a condition of planning and therefore considered a design constraint.

19. Although there are a number of statutory wildlife designated sites surrounding the Course such as the Farlington Marshes Local Nature Reserve, the Chichester and Langstone Harbours Ramsar Site and Special Protection Area, the Solent Maritime Special Area of Conservation and the Langstone Harbour Site of Special Scientific Interest the only designation to be considered an actual constraint due to it applying to the areas of mixed deciduous woodland within the Course are the SINC's. SINC's (Sites of Importance for Nature Conservation) are identified using data, gathered from a variety of sources. These may include biological surveys (conducted with owner permission) or documents such as the Inventory of Ancient Woodland for Hampshire. SINC's form part of a wider national network of non-statutory locally valued wildlife sites. These are generally administered by local authorities in partnership with conservation organisations. All sites are assessed against detailed criteria developed by Hampshire County Council, Natural England and the Hampshire & Isle of Wight Wildlife Trust. A site may qualify as a SINC due to the presence of a notable species or an important habitat. Key habitats include ancient woodlands, old meadows, chalk downland, heathland and wetlands. A site may also qualify if it supports a rich assemblage of species. In Hampshire this system supports over 3700 sites (9% of Hampshire's land area) which contributes significantly to delivering both UK and Hampshire Biodiversity Action Plan targets. Detailed data on the wildlife interest of each SINC is held by the Hampshire Biodiversity Information Centre (HBIC) which has been established to bring together information on Hampshire's natural environment. This information is available to all owners and managers

of SINC's and should be referred to prior to initiating the design process.