APP/13/00317

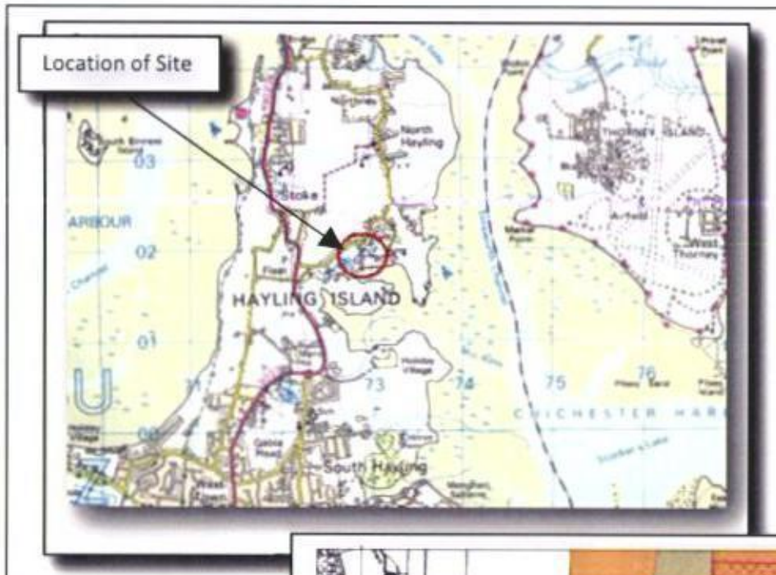
Yachthaven, Hayling Island

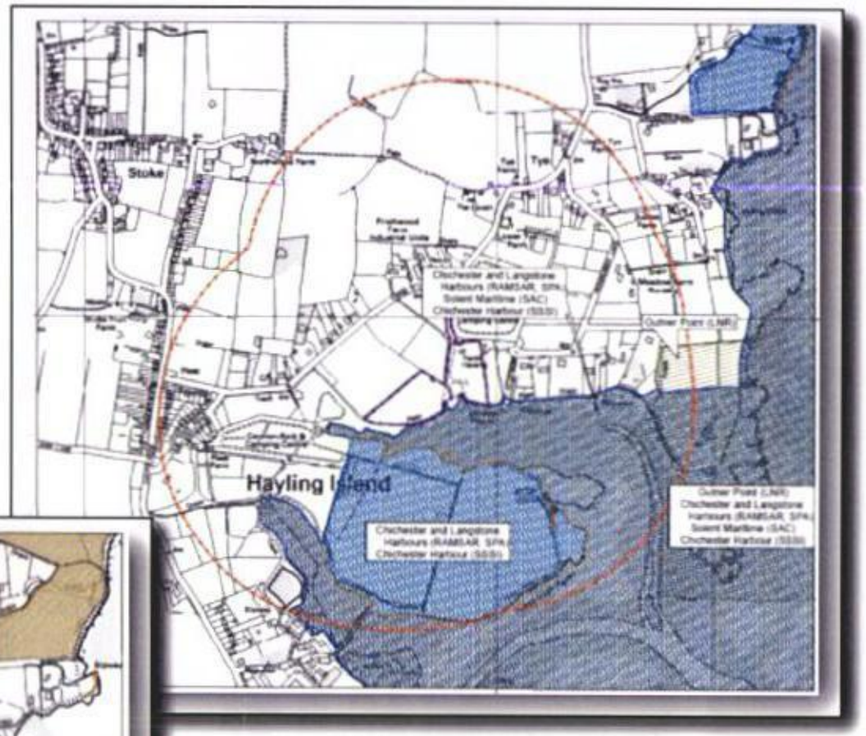
Revised Ecological Assessment

July 2012

Liam Russell BSc MSc MIEEM
John Norton BSc MIEEM
Dean Swensson

CDC







YACHTHAVEN, HAYLING ISLAND

MAP 1

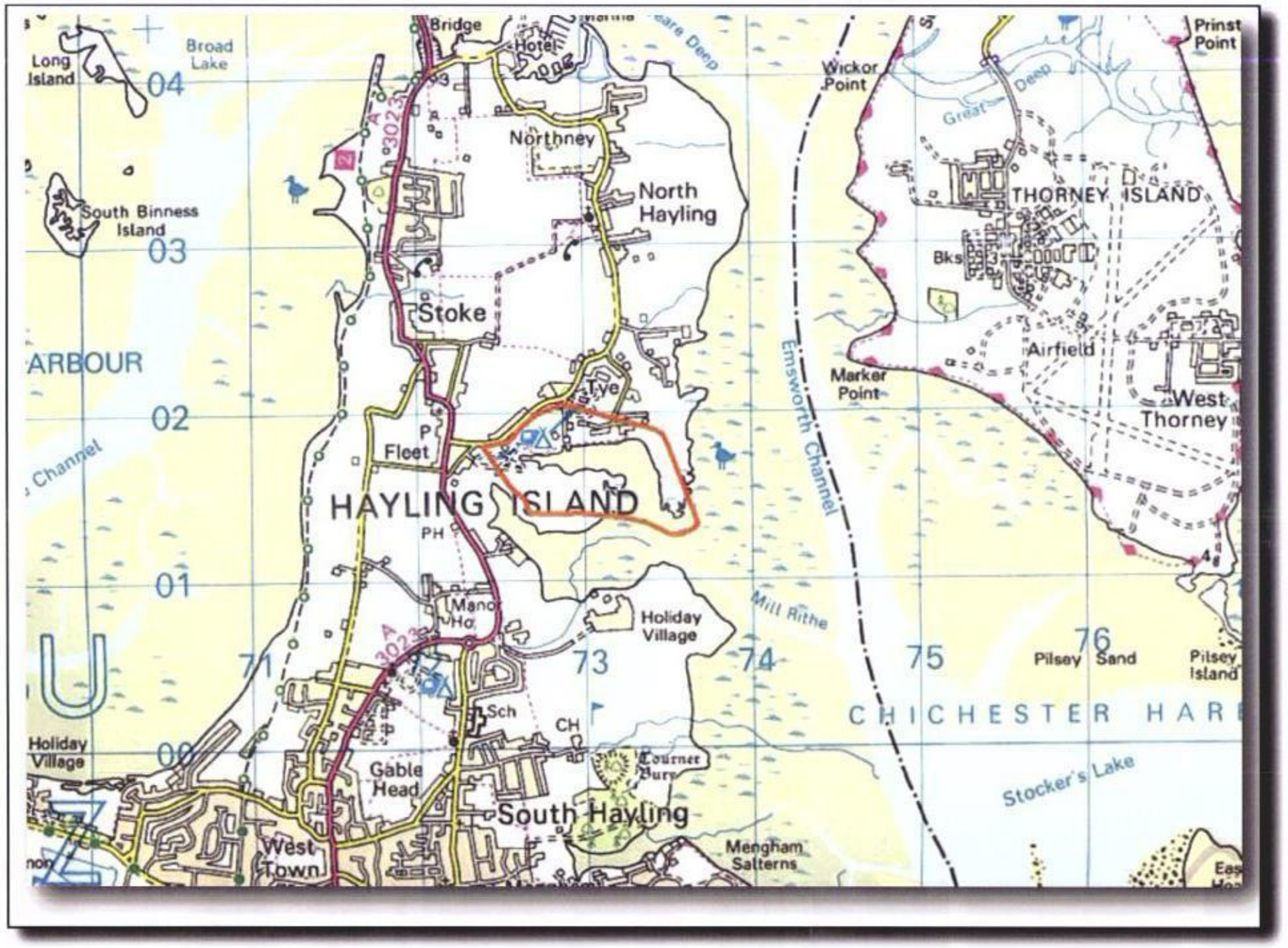
Site Location & Conservation Designations

- Location of site
- SINCs
- SSSIs
- SAC
- SPA

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YACHTHAVEN, HAYLING ISLAND



MAP 2

Zone Of Influence

Zone of influence

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YACHTHAVEN, HAYLING ISLAND

MAP 3

Habitats & Vegetation On The Site



- Approximate site boundary (to MHW)
- Hedgerow, trees and scrub (W10c, W21a, W24a)
- Unimproved, species rich grassland and marsh (mainly MG6)
- Rough, species poor grassland (MG1a, MG6a)
- Disturbed and man-made habitats (X = cleared scrub) (re-establishing MG1b & MG6a)
- Saltmarsh (SM6, SM8, SM13c, SM24)
- Extent of Golden-samphire on coastal bank
- Ditch / depression

Dominant species:

Qr	Pedunculate Oak *Quercus robur* (larger trees circled)
Sc	Grey Willow *Salix cinerea*
Cm	Hawthorn *Crataegus monogyna*
Ps	Blackthorn *Prunus spinosa*
Rf	Bramble *Rubus fruticosus* agg.
Bd	Buddleia *Buddleja davidii*

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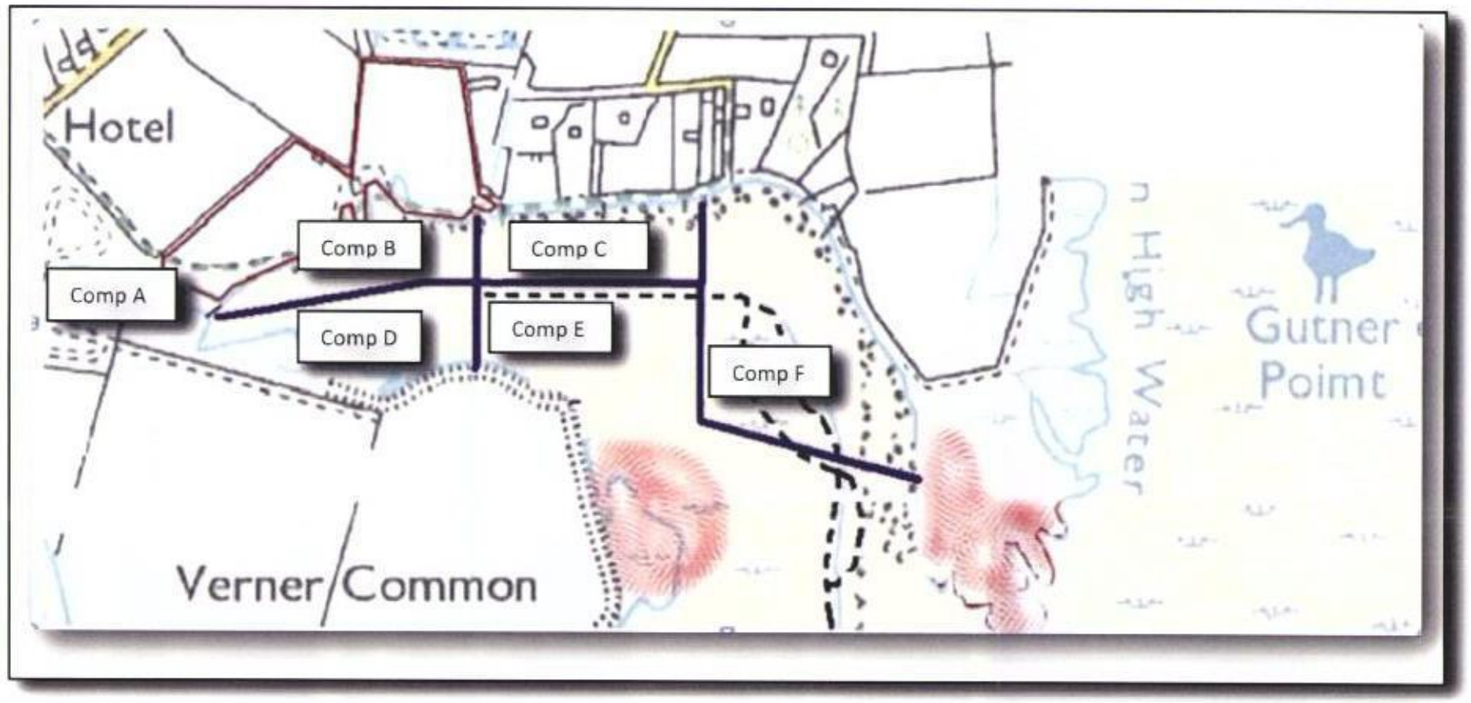
MAP 4

Solent Waders And Brent Goose Strategy Sites

(Awaiting information)

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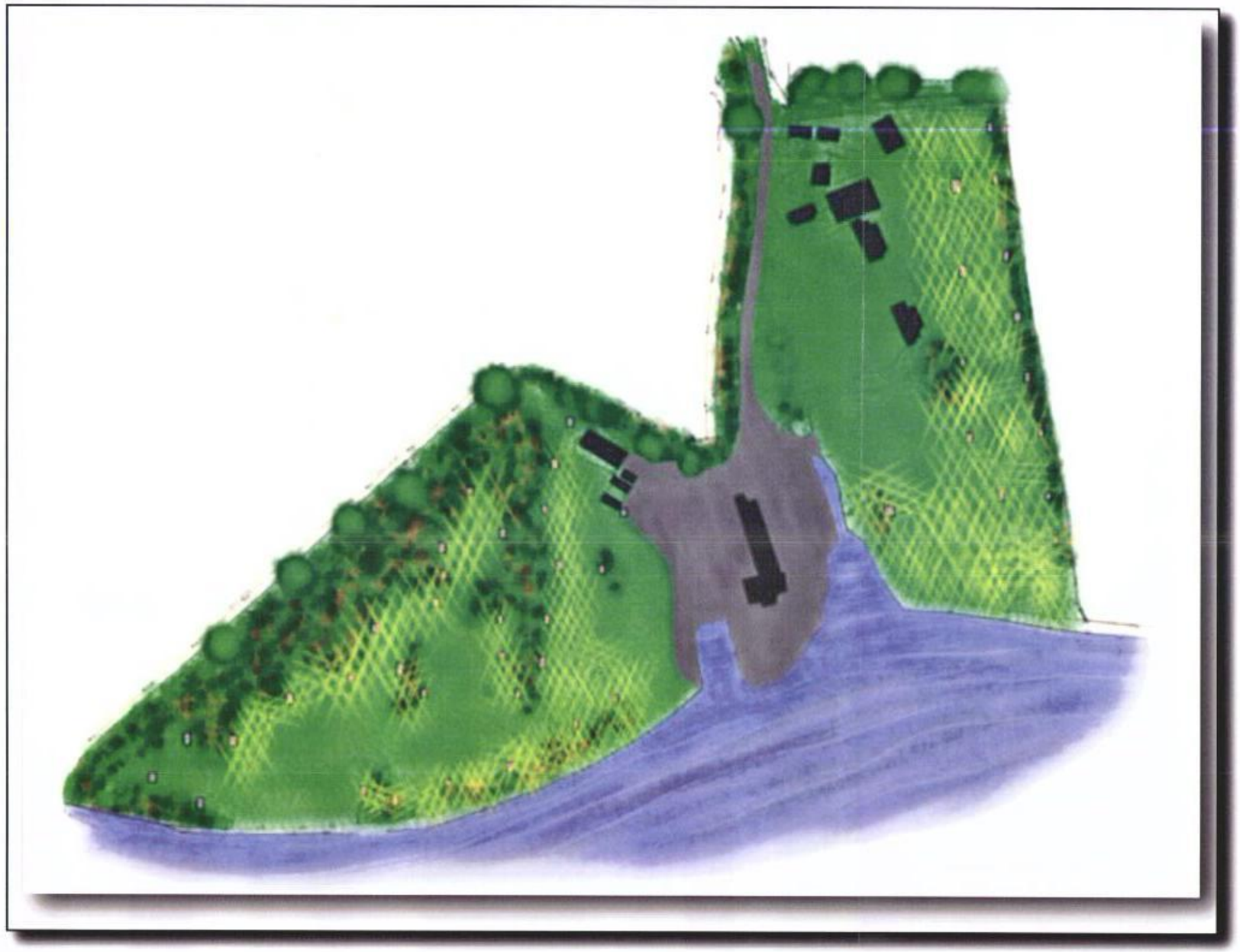
MAP 5

Bird Survey Areas

- Bird survey compartments
- Route of boat disturbance survey
- Site boundary
- High tide bird roosts

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YACHTHAVEN, HAYLING ISLAND

MAP 6

Reptile Survey

Location of reptile refugia

Suitable reptile habitats

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YACHTHAVEN

MAP 7

Coastal Mitigation

Measurements of Proposed Pontoon & Moored Boats

Main pontoon walkway = 107.50m^2

Main pontoon 'T head' 37.50m^2

4 x pontoon fingers = 22.50m^2

Total Area 167.5m^2

Hull area of 12 moored yachts based on maximum hull dimension of 40m^2 and 80% of hull sat on intertidal area = 384m^2

Total Area 551.50m^2

Area subject to clearance of existing metal pontoons and imported rubble and tarmac debris

240 m^2

55 m^2

78 m^2

545 m^2

Total: 918 m^2

Difference 366.5m^2

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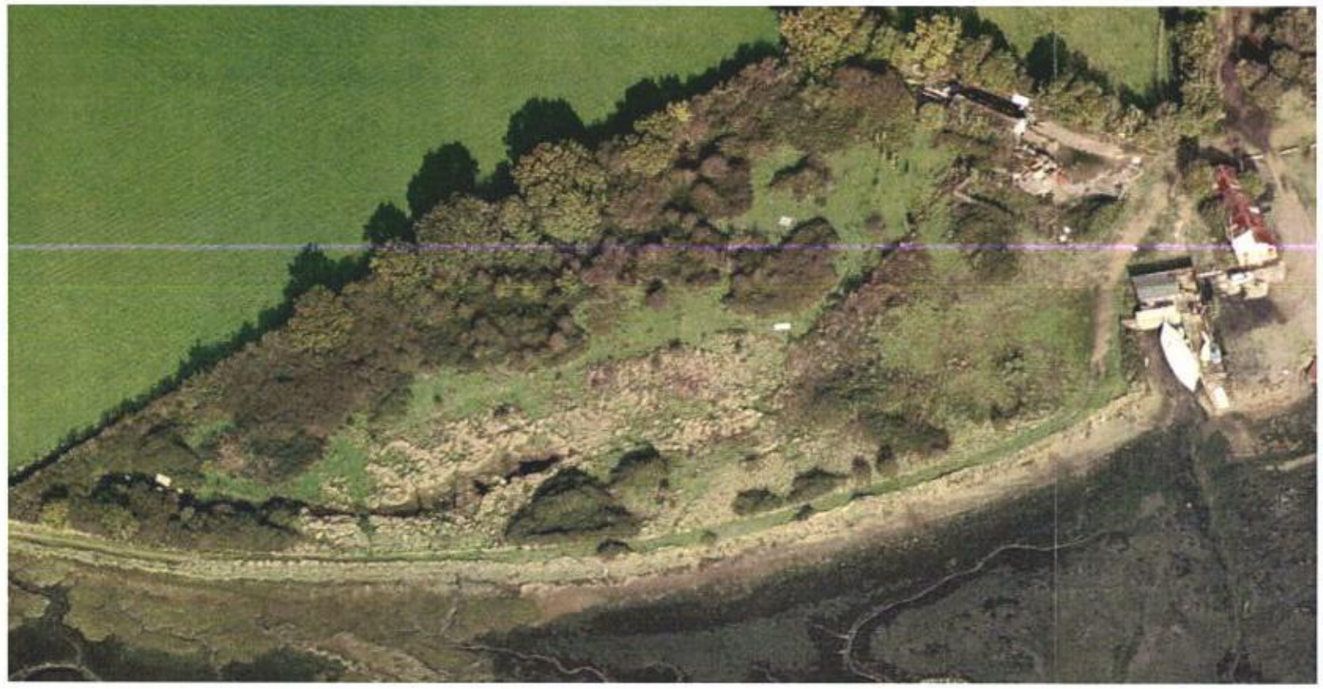


Image I. Approximate current extent of scrub and grassland although scrub likely to have increased significantly since this photograph

Image II. Proposed capital and log-term management to restore mix of grass and scrubland mix of 70/30 ratio

Existing scrub to be cleared to leave northern boundary hedgerow to screen public footpath

Scrub to be retained to screen footpath and Caravan Park

Stock fencing erected to minimise human and dog disturbance



YACHTHAVEN, HAYLING ISLAND

MAP 8

Coastal Grassland and Wetland Nature Reserve

Reptile Hibernacula incorporating suitable invertebrate habitat

Approximate location of Barn owl box

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YACHTHAVEN, HAYLING ISLAND

MAP 9

Yachthaven Coastal Grassland Nature Reserve

- Reptile/invertebrate hibernacula

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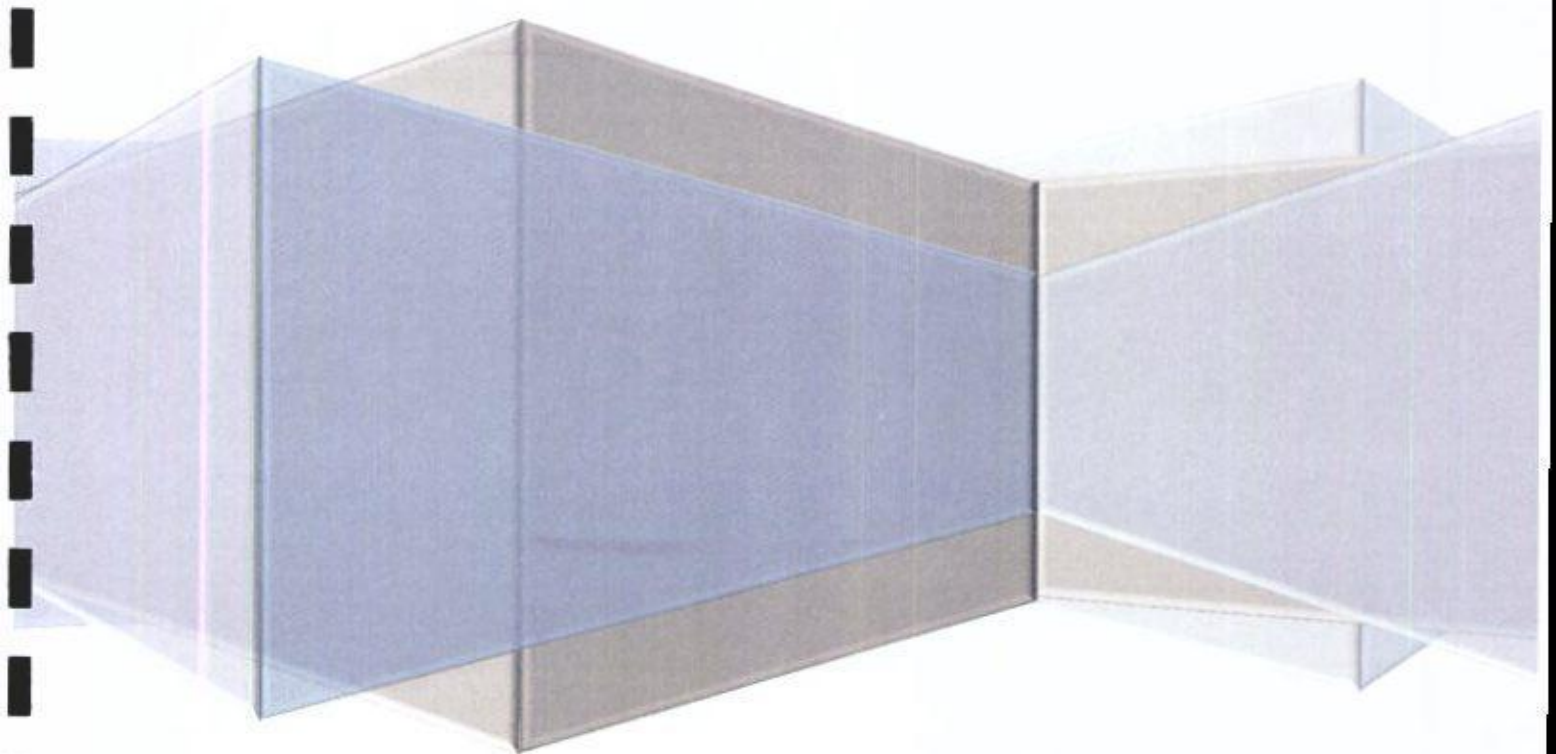
Opus International Consultants

Supporting Statement for the Proposed

Harbour frontage

At

The Yacht Haven, Hayling Island





Supporting Statement for the Proposed

Harbour frontage

At

The Yacht Haven, Hayling Island

Section 2 - Known Restrictions

2.1 The site frontage lies within habitats which form part of the Chichester Harbour Site of Special Scientific Interest (SSSI). This SSSI is part of the Solent Maritime Special Area of Conservation (SAC), Chichester and Langstone Harbour Special Protection Area (SPA) and Wetland of International Importance under the Ramsar convention (Ramsar site).

2.2 The SPA is designated for breeding birds over the summer months and also for over wintering birds. The Harbour also contains Annex 1 Habitats including Mud Flats, Spartina Swards and Atlantic Sea Meadows.

2.3 Any proposed works will also have to show compliance with regulation 61 of the Conservation of Habitats and Species Regulations 2010.

2.4 It is known that the area of the proposed pontoons contains outcrops of Zostra which will be protected as part of the proposed scheme.

Section 1 - Introduction

1.1 The existing frontage to the Harbour comprises an unprotected beach which is showing signs of erosion due to wave attack. The central area was at one time a slipway for what is believed to have been a boat yard. Historic maps indicate an inlet / berth on the site dating back to 1834.

1.2 The existing foreshore to the east section has been strengthened in the past with the introduction of old concrete piles laid along the beach to form a stepped structure to protect the alignment of the public footpath.

1.3 The central area of the site shows evidence of an old slipway.

1.4 There is evidence to suggest that boat building has been carried out at the location in previous years.



Figure 1 – Eastern Beach

1.5 A public foot path is seen to run along the harbour edge along the frontage of the site.

Section 3 - Proposals

3.1 The proposal is to re-create a facility in the area fronting the old slipway to allow the mooring of 11 craft, the moorings being connected directly with the proposed new house units.

3.2 The frontage is exposed to wind generated short period waves which is leading to continued erosion of the back shore / beach frontage.

3.3 Vegetation has been lost from the bank and thus allowing the continued washing away of the exposed face.

3.4 It is proposed to consider the West , East and central areas in different ways.

- To the West section it is proposed to remove all the broken detritus that has emanated from the footpath and to form a new granular surface path along the top of the bank. Over time the continued erosion of the bank will lead to the loss of the path and it is intended that the path will be maintained by the relaying of the granular path further inland as and when necessary, thus leaving the natural vegetation undisturbed.

- To the East section the original bank has had a number of concrete pile sections laid into the face which has helped to stabilise the bank and keep the footpath where it currently is. Three options are available here being to leave the face as is, to over face the concrete with riprap in a similar manor to that done recently in Bosham or to remove the piles and allow the bank to regress and realign the footpath over time as the top of the bank erodes back into the site. It is proposed to remove the concrete elements and allow the foreshore to naturally re-grade.

- In the central area the existing pontoons will all be removed together with all the detritus that currently exists on the foreshore.

3.7 The central section forming the heart of the site is to have a new concrete slipway laid on the footprint of what was originally there. It is not proposed to form any hard edges / quay wall structures

3.9 Coupled with this would be the introduction of a new pontoon facility supported by 4 steel piles, to cater for vessels with a brow to provide access to the foreshore. Craft are expected to be of the order of 10m max in length with a beam of 4m max.

3.11 The 'loss' of intertidal foreshore under the footprint of the pontoons and craft will be mitigated for with the removal of the rusting pontoon's and the removal of foreign detritus which currently lies on the foreshore and the concrete piles.

NOTES:

1. This drawing is to be read in conjunction with all other OPUS INTERNATIONAL CONSULTANTS (UK) LTD drawings, and any other relevant information.
2. No dimensions are to be scaled from this drawing, but must be taken from site and / or the details.
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6. Survey information taken from J. Brotherton & Partners drawing 2006/025 - 1st.dwt
7. All levels are in meters, and based on Ordnance Datum.
8. For sections BB, CC & DD locations refer to Opus drawing FA E-G 9158.00 101



GENERAL SITE LAYOUT
(Scale - 1:500)

Revision	Amendment	Approved	Revision Date
P1	ISSUED FOR PLANNING	JHB	22/08/11
P2	Issued for planning	JHB	21.11.11
P3	Issued for planning	JHB	05.07.12
P4	Issued for planning	RFP	18.07.12

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Drawn	Designed	Approved	Revision Date
TBT	JHB	JHB	AUGUST 2012

Project No.	Scale
FA E-G 9158.00	1:500

Project
PLANNING PROPOSALS
YACHTHAVEN MARINA
HAYLING ISLAND

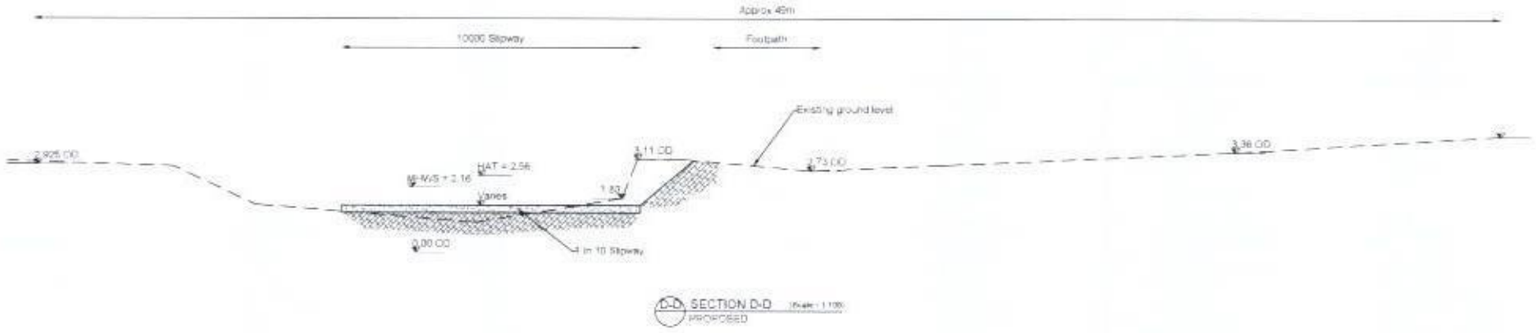
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SITE LAYOUT
FOR PLANNING

Drawing No.	Sheet No.	Revision
100		P4

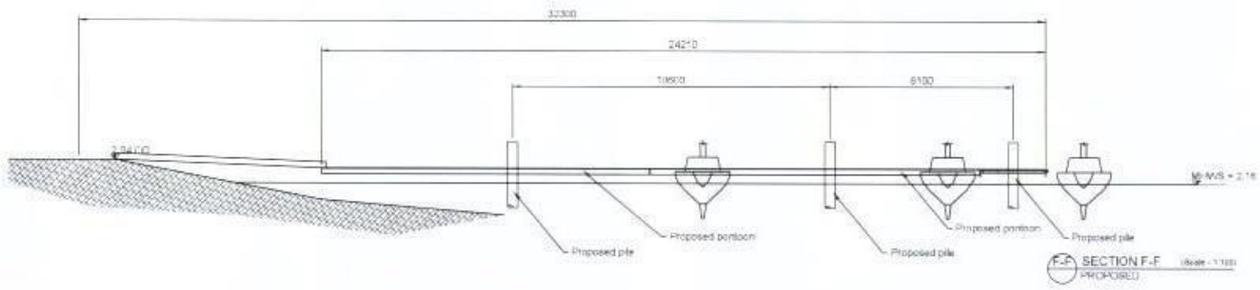
PLANNING

1:1 @ A1
1:2 @ A3
0 5 10 20 30 40 50 60 70 80 90 100 mm

Original Sheet Size A1 (841x594) Plot Date



D-D SECTION D-D (Scale - 1:100)
PROPOSED



F-F SECTION F-F (Scale - 1:100)
PROPOSED

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6. Survey information taken from J. Brotherton & Partners drawing 2000/025 - fastnet
7. All levels are in meters, and based on Ordnance Datum.

PLANNING

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1:2 @ A3
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Original Sheet Size A1 (841x594) Plot Date

Revision	Amendment	Approved	Revision Date
P1	ISSUED FOR PLANNING	JHB	22.06.11
P2	Issued for planning	JHB	21.11.11
P3	Issued for planning	JHB	09.07.12
P4	Issued for planning	RFF	18.07.12

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Drawn	Designed	Approved	Revision Date
TBT	JHB	JHB	AUGUST 2012

Project No.: FA E-G 9158.00
Scale:

Project:
PLANNING PROPOSALS
YACHTHAVEN MARINA
HAYLING ISLAND

Sheet:
SECTIONS & DETAILS
FOR PLANNING

Drawing No.	Sheet No.	Revision
101		P4

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6. Survey information taken from J. Brotherton & Partners drawing 2080/025 - Sealed.
7. All levels are in meters, and based on Ordnance Datum.
8. For sections BB, CC & DD locations refer to Opus drawing FA E-G-9158.00 101

KEY

x.xx Denotes existing level

x.xx Denotes proposed level

PLAN (Scale -1:200)

SECTIONS PLAN

PLANNING

Revision	Amendment	Approved	Revision Date
P3	Issued for planning	JHB	06.07.12
P4	Issued for planning	RPP	18.07.12

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Drawn	Designed	Approved	Revision Date
TBT	JHB	JHB	AUG 2011

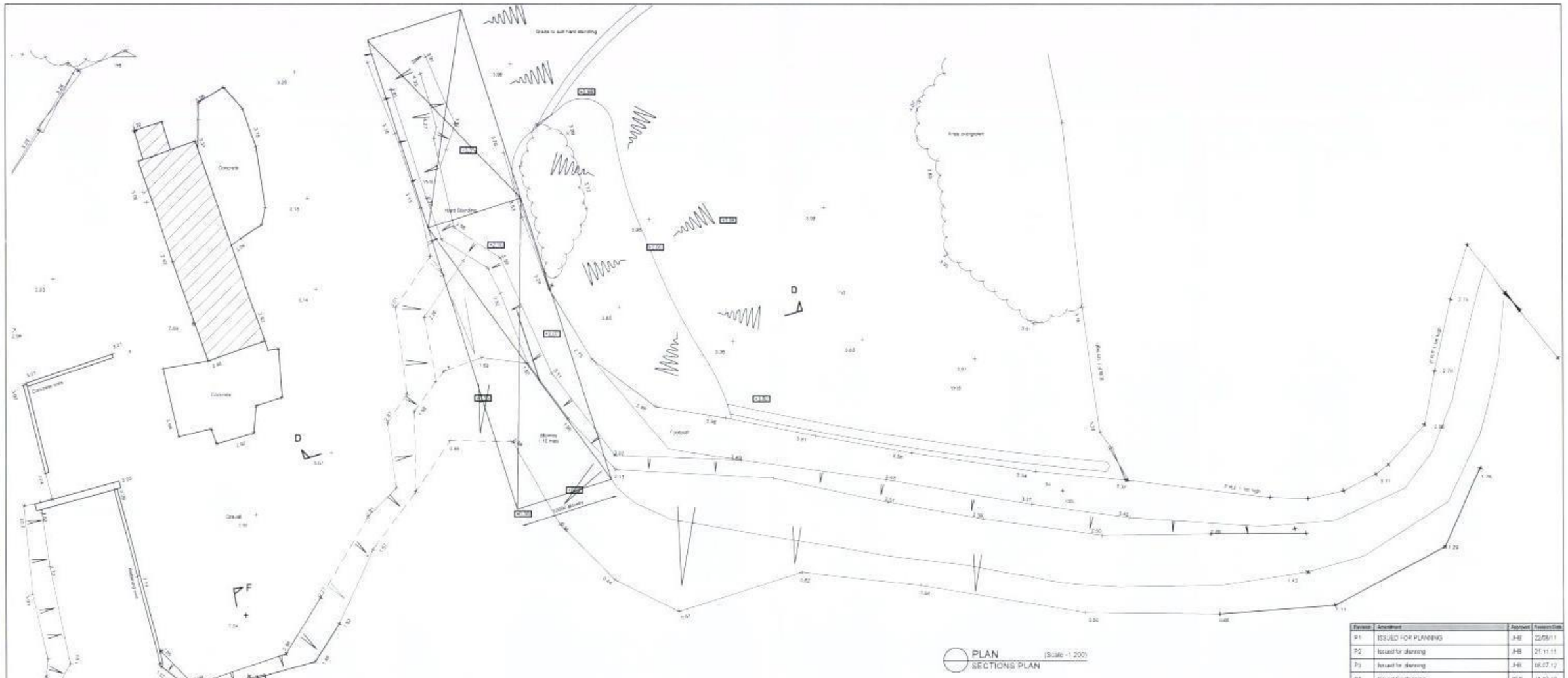
Project No.	Scale	Drawing No.	Revision
FA EG-9158.00	1:500	200	P4

Project
PLANNING PROPOSALS
YACHTHAVEN MARINA
HAYLING ISLAND

Sheet
GENERAL ARRAGEMENT
FOR PLANNING

1:1 @ A1
1:2 @ A3
0 10 20 30 40 50 60 70 80 90 100 mm

Original Sheet Size A1 (841x594) Plot Date



PLAN (Scale - 1:200)
SECTIONS PLAN

Standard Marina type pontoons on concrete covered polystyrene floats. Frames galvanized steel. Decking to be Ekki or similar.
Piles to be 339 x 12 thick steel tubes. Top level to be set 1m above HAT.
Access to shore to be via brow hinged on a simple concrete bridgehead.
fingers to be arranged to cater for 12 yachts varying in length up to 10m

Revision	Amendment	Approved	Revision Date
P1	ISSUED FOR PLANNING	JHB	22/09/11
P2	Issued for planning	JHB	21.11.11
P3	Issued for planning	JHB	06.07.12
P4	Issued for planning	RFF	16.07.12

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Drawn	Designed	Approved	Revision Date
TB1	JHB	JHB	AUGUST 2011

Project No.: FA E-G 9158.00
Scale:

Project:
PLANNING PROPOSALS
YACHTHAVEN MARINA
HAYLING ISLAND

Sheet:
SECTIONS & DETAILS
FOR PLANNING

Drawing No.	Sheet No.	Revision
201		P4

PLANNING

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1:2 @ A3
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Original Sheet Size A1 [841x594] Plot Date

YACHTHAVEN, HAYLING ISLAND

ENVIRONMENTAL STATEMENT

DECEMBER 2011

APPENDIX 4.1

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Proposed Residential Development

Yachthaven, Hayling Island

Visual Impact Assessment

T G D Landscape Ltd
Chartered Landscape Architects

Contents	Page No.
Introduction	3
Survey Conditions	3
Context	3
Natural Environment & Landscape	4
Designations	4
Details of Proposal	5
Methodology	6
Threshold Criteria	9
Scoping	7
Viewpoints Plan	8
Photographs	9 - 14
Application of Methodology	7
Summary	15
Conclusion	15
Appendix A	

1.0 Introduction

1.1 TGD Landscape Ltd have been appointed to undertake a Visual Impact Study in order to assess the potential visual impact of the re-development of previously neglected land, with the construction of 6 detached houses, a small boatyard and a marine office, together with ancillary landscape improvement works.

1.3 The location of the application site (hereafter referred to as 'the site') is shown on the plan below. The site is located between the villages of Tye and Fleet, on the east coast of Hayling Island, facing southwards across an inlet towards Verner Common.



The site is accessed off Copse Lane via a private driveway. The site was previously used for light industrial purposes but has been disused for sometime and is in a neglected and derelict state.

1.4 The site lies in the countryside and within the Island's Coastal Zone. The high water mark along the southern edge of the site marks the boundary with the Chichester Harbour Area of Outstanding Natural Beauty, the Site of Special Scientific Interest, Special protection Area and Ramsar Site. The site itself lies outside these designations. The local landscape is of high quality, with a sense of openness along the shoreline with attractive views of Verner Common to the south and Chichester Harbour to the east.

The proposed Landscape Masterplan acknowledges the sensitivity of the site and considerable care has been taken to ensure that the new development 'sits' comfortably in the local landscape.

1.5 This Visual Impact Assessment is based on the Guidelines for Landscape and Visual Impact Assessment, 2nd edition (GLVIA).

2.0 Survey Conditions

2.1 The survey was undertaken on 10th October 2011 at approximately noon during high tide.

2.2 Weather conditions were generally overcast, although there were regular breaks in the cloud cover, allowing brighter conditions to prevail for a time. There were slight breezes throughout the day.

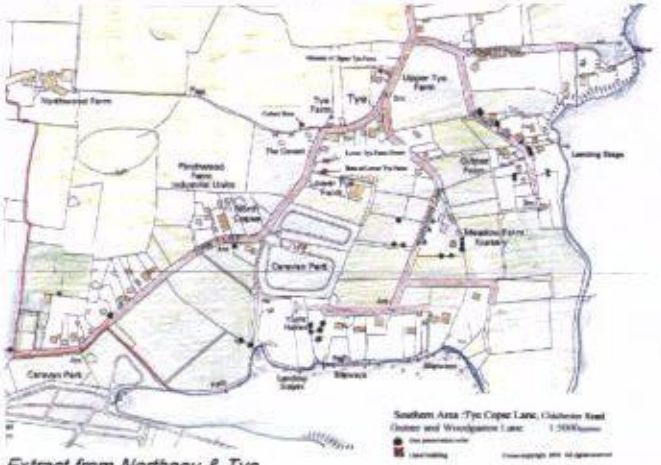
2.3 Since the survey was undertaken in October, any deciduous trees were still in full leaf. It is acknowledged that with no leaves on deciduous trees in winter months some views may become more open, however, the tracerwork of branches will still significantly soften views of the site.

3.0 Context

3.1 The site lies in an area that is predominantly flat, with a mosaic of land uses, which includes agricultural land (generally small enclosed fields) and residential areas, consisting mainly of large detached dwellings set within generous gardens. There are also sections of valuable coastal landscapes along the southern edge of the site and a number of established boundary hedgerows and mature hedgerow trees.

3.2 There are two caravan parks close to the site, one immediately to the north.

3.3 The site is well enclosed by existing hedgerows and trees along the north, west, and to a lesser extent, eastern boundaries.



Extract from Northney & Tye Village Design Statement

4.0 Natural Environment & Landscape

4.1 The site is identified in the Havant Borough Townscape, Landscape and Seascape Character Assessment as being just within the southern extremities of 'Stoke and North-West Hayling Landscape Character Area 30'.

Landscape Character Area 31 'Central Hayling Plain' which includes Verner Common abuts the southern edge of the site.

Some of the key elements in the landscape are:

- A predominantly flat landscape with some slight mounding.
- Soils are loamy with a naturally high water content.
- A patchwork of small pasture fields with thick boundary hedgerows and mature hedgerow trees. Small woodland copses are a feature at junctions around the enclosed hedged fields.
- The outer east borders of this character area have valuable coastal habitats which are included in the Chichester Harbour SSSI's. This area is also designated as SPA, SAC and Ramsar site.
- Long open views to the east of Chichester Harbour and Thorney Island.
- Land use is agricultural combined with a significant proportion of recreational and tourist related facilities.

4.2 The shore area is a rich habitat and the inter-tidal mud and salt marsh provides valuable feeding ground for waders and wildfowl.

4.3 There are relatively few public rights of way around the site. Copse Lane which runs to the north of the site, has a countryside character, being enclosed by mature hedgerow trees.

4.4 There is only one footpath that has any significant views of the site and this runs along the southern boundary, linking Copse Lane in the west with Woodgason Lane to the east.

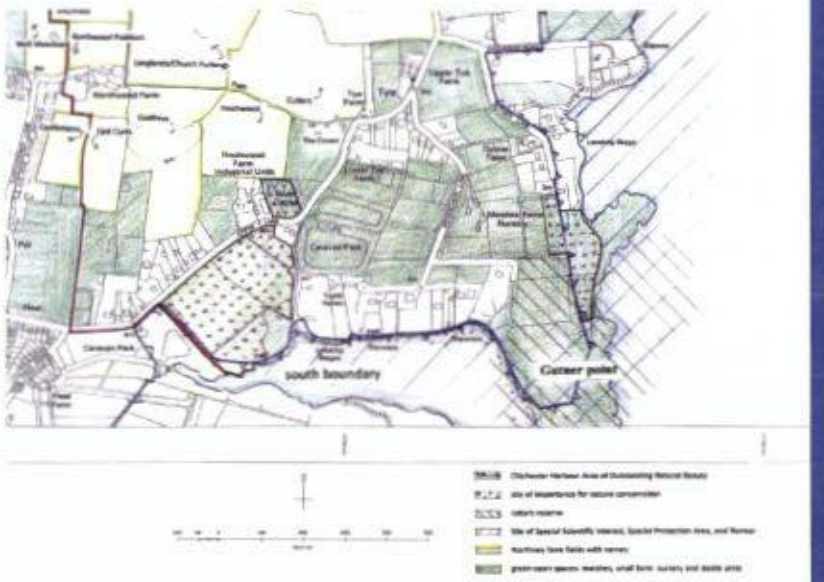
4.5 The combination of existing vegetation and the flat landscape significantly reduces potential views of the site from the north and west. Existing development screens views from the east . There are no publicly accessible viewpoints from Verner Common. The most significant views are from the open water to the south.

5.0 Designations

5.1 The following designations lie close to the site:

Chichester Harbour Area of Outstanding Natural Beauty
Chichester Harbour RAMSAR site
Chichester Harbour SPA
Solent Maritime SAC
Chichester Harbour SSSI
Gutner Farm SINC
Gutner Lane Meadow SINC

There is also an unnamed SINC immediately to the west of the site.



Extract from Northney & Tye Village Design Statement

6.0 Details of the Proposal

6.1 The proposal is for the redevelopment of previously developed land with a marine office, small boatyard for multi-hulled craft, a pontoon with 19 berths, a reinstated slipway and 6 detached houses. The remainder of the site will be decontaminated, the sea defences would be improved, the coastal footpath and sluice pond restored and a nature reserve created on conservation grassland and the western coastal meadow.

6.2 The landscape strategy for the site is as shown on TGD Landscape Ltd. Drawing Number 711 – 101, Landscape Strategy Plan. This shows the retention and strengthening of existing established hedgerows and boundary trees which provide valuable screening to the site.

6.3 The landscape proposals aim to protect the countryside character of the area by increasing tree cover and enhancing the existing screen planting. Some framed views of the new dwellings will be created, to add variety and interest for members of the public as they walk along the coastal footpath.

6.4 The replacement of the area of rubbish and rubble with a new habitat creation area will be a definite ecological gain and extend opportunities to encourage local wildlife.



7.0 Methodology

7.1 Approach

7.1.1 To demonstrate that the proposed development would have limited visual impact on publicly accessible views within the study area. The aim is to safeguard views from, and the character of, the surrounding countryside.

7.2 Methodology

7.2.1 The study is based on GLVIA, in particular guidance notes in Part 7 as follows:

The first task is the systematic identification of potential sources of effect.

7.2.2 The most prominent source of potential visual impact was identified as the tower on Plot 1. The ridgeline of the tower is 10m high. It should be noted that all other ridgelines are set at 6m high.

In assessments of views consideration is given as to:

7.2.3 The extent of the view that would be occupied by the development: full, partial, glimpse etc.

From most viewpoints the extent of any view is either partial or a glimpse only.

7.2.4 The proportion of the development that would be visible: full, most, small amount, none.

For this site the proportion of development visible is mostly a small amount, limited mainly to views of the roofline.

7.2.5 The distance of the viewpoint from the development.

For this site viewpoints up to just over 1km were generally considered as it was decided that in any views beyond this, the site would be barely discernible to the naked eye.

7.2.6 Whether the view is transient or one of a sequence of views, as from a moving vehicle or footpath.

For this site most views are sequential.

7.2.7 Seasonal differences of the degree of vegetative screening.

2.3 The survey was undertaken in October, so deciduous trees were still in full leaf. It is acknowledge that during winter months the potential impact will slightly increase.

7.2.8 Views considered.

Only Public viewpoints have been considered. However, it is worth recording that the impact on views from private properties in the area will be very low.

7.2.9 Sensitivity of visual receptors.

The sensitivity of views - views assessed along public footpaths, which run either along the coastline or through open countryside, are reduced by a combination of existing vegetation and existing residential development, whilst views from local roads are generally prevented by existing mature roadside trees and hedges. .

Many of the public footpaths are not heavily used so that any impact is reduced.

Views from the waterside are the most open and important.

In terms of considering the positive impact of any mitigation measures, the significant new tree and hedge planting as part of the new development will, over time, successfully filter views of the site and protect the local landscape character.

7.3 Threshold criteria adopted for describing photos

See GLVIA Appendix 6, Example 1 for details:

None

No part of the development, or work or activity associated with it, is discernible

Negligible

Only a very small part of the proposals is discernible and/or they are at such a distance that they are scarcely appreciated. Consequently they have very little effect on the scene

Slight

The proposals constitute only a minor component of the wider view, which might be missed by the casual observer or receptor. Awareness of the proposals would not have a marked effect on the overall quality of the scene

Moderate

The proposals may form a visible and recognisable new element within the overall scene and may be readily noticeable by the observer or receptor

Substantial

The proposals form a significant and immediately apparent part of the scene, that affects and changes its overall character

Severe

The proposals become the dominant feature of the scene to which other elements become subordinate and they significantly affect and change its character.

It should be noted that these definitions can apply to either existing or proposed situations and the impacts need not be detrimental.

8.0 Scoping

8.1 Following consultation with the Planning Officer at Chichester Harbour Conservancy it was agreed that the significant views to be assessed were limited to five locations as follows:

1) From the middle of the entrance into Mill Rythe by boat.

2) From the southern part of Mill Rythe looking northwards over Verner Common towards the site (from just east of the Hayling Yacht Company pontoons).

3) From the foreshore public footpath to the east of the site.

4) From the public footpath to the west of the site which leads from Copse Lane to the site.

5) From the caravan park to the north (not a public vantage point).

It will be very important that the photographs from the water are taken at High Tide, as these are the times when the site will be most visible.

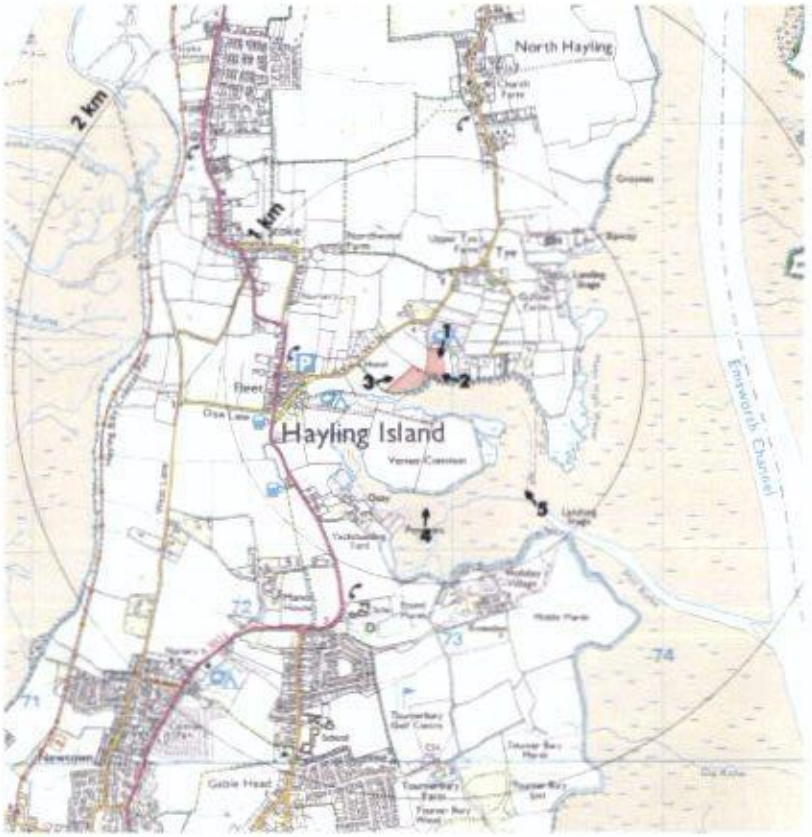
9.0 Application of Methodogy

9.1 Since the scoping work had identified the viewpoints to be photographed, a desktop study was not required. The five viewpoints are shown on Plan A on the following page.

9.2 The position of the tower was marked on site using a cherry picker with the platform set at 10m high. A high visibility orange card was attached to the platform to help identify the site in long views. Fieldwork was then undertaken, in which each potential view agreed during scoping was visited to take photographs. Views from the water were taken at high tide as requested by Chichester Harbour Conservancy

9.3 Photography utilised a digital camera, with a 15x optical zoom lens (the lens focal length is equivalent to 31 - 465mm on a 35mm camera).

9.4 Where the site was difficult to pick up in views, a telephoto shot was taken to allow the position of the site to be fixed. The position of the site is circled in red on the photographs for ease of reference.


North Hayling
2 km
1 km
Hayling Island
Fleet
Oyster Lake
Eastoke Corner
Gable Head
Thorney Bay
Emsworth Channel
1
2
3
4
5
North
The Site

Plan A

Viewpoint 1 From the caravan park to the north of the site

Note that this is not a publicly accessible view but was included as it is immediately adjacent the site



Impact - Negligible. Only limited glimpses of the rooflines may be possible during winter months. For most of the year views into the site will be screened by the boundary hedgerow and trees

Viewpoint 1 From the caravan park to the north of the site

Note that this is not a publicly accessible view but was included as it is immediately adjacent the site.



Impact - Negligible. Only limited glimpses of the rooflines may be possible during winter months. For most of the year views into the site will be screened by the boundary hedgerow and trees

Viewpoint 2 From the foreshore public footpath to the east of the site



Impact - Slight. The location of the tower is circled in red and can just be detected behind the existing trees. The majority of the new development will be screened by the boundary vegetation that is to be retained. There may be some limited and filtered views of the lower and lower rooflines, especially in winter months, but these will not be immediately apparent to the observer

Viewpoint 3 From the public footpath to the west of the site which leads from Copse Lane to the site.



Impact - None. The site is screened by the existing established field boundary hedgerow and mature trees

Viewpoint 4 From the southern part of Mill Rythe looking northwards over Vener Common towards the site (from just east of the Hayling Yacht Company pontoons).



Impact - Negligible. The location of the tower is circled in red and can just be discerned above existing scrub on Verner Common. This limited glimpse is transient. Travel a few metres either side this viewpoint position and the tower is hidden behind existing vegetation. It should be noted that the majority of ridge lines will be at 6m and will not be seen from this viewpoint. As such a small part of the development is discernible, and the view is at such a distance that the tower can be scarcely appreciated, it will have very little effect on the overall quality of the scene.

Viewpoint 5 From the middle of the entrance into Mill Rythe by boat



Impact - Slight. The proposed development will constitute only a minor component of the wider view, which may be missed by the casual observer. Awareness of the proposals would not have a marked effect on the overall quality of the scene. This view is just under one kilometre from the site. The existing tree belt provides a valuable backdrop to the site, and it is worth noting that the tower on Plot 1 does not extend above the top of this tree belt. As a result the development will 'sit' comfortably within the landscape.

Viewpoint 5. Zoom View. From the middle of the entrance into Mill Rythe by boat



This zoom view shows the cherry picker platform set at 10m to mark the ridgeline of the tower on Plot 1. The dashed red line marks the 6m ridge height of all other proposed houses. This view clearly demonstrates that the site is set against a backdrop or mature trees which enclose the site. The proposed dwellings when viewed from the waterside viewpoints will 'sit' comfortably in the scene.

10.0 SUMMARY

10.1 A combination existing vegetation, topography and residential development significantly restrict views of the site from publicly accessible viewpoints. The generally flat topography, in particular, limits potential long distance views of the site.

10.2 Of the five viewpoints photographed, one has no views of the site, two are ranked as having negligible impact and two are recorded as having slight impact.

No views were ranked as having moderate, substantial or severe impact.

(refer to photograph sheets 1 -5 for details)

Level of impact	*Photograph number*
No views	3
Negligible	1,4
Slight	2,5
Moderate	None
Substantial	None
Severe	None

10.3 All views of the site will be sequential and the most prominent view of the site, from entrance to Mill Rythe, will typically be from on board a moving boat.

10.4 Of the two locations ranked as having slight impact, the view from the south on the water from entrance to Mill Rythe (photograph 5), will be most obviously impacted by the new development, as the most open boundary of the site faces this direction.

The full width of the site will be perceptible in this view, however, care has been taken to design high quality dwellings of distinctive architectural character, set within an area of significant new tree planting, which will frame and filter views as the trees mature.

11.0 CONCLUSION

11.1 The combination of existing boundary vegetation, the generally flat topography and existing residential development substantially reduces the number of potential viewpoints from which the site can be seen.

11.2 The fieldwork demonstrates that ***the visual impact of the proposed development will be limited, with only one viewpoint out of the five visited having any significant views into the site. This view is ranked as having only slight impact and will not result in harm to the distinctive character of this Area of Outstanding Natural Beauty.***

11.3 ***Overall, the development would have very limited impact on the character of the surrounding countryside***. The proposal is to clean up and improve a derelict site by removing ***existing*** structures and rubbish. An area of habitat creation close to the shoreline will enrich opportunities for local wildlife. The proposed dwellings are designed to be an attractive feature in the local landscape, to be famed by new tree planting, not to be hidden behind screen planting.

11.4 The proposal is not large enough to result in a change in landscape character, with the houses well positioned 'sitting' comfortably in the landscape.

11.5 It is accepted that the most significant potential impact on views is from the south, from where the greatest extent of the new buildings will be seen. ***The established boundary tree belts will be retained and this vegetation will form an attractive backdrop to the scheme. The new planting within the site will filter and soften the views from the water, and over time, views of the dwellings from this direction will be framed by the new trees.***

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Proposed Residential Development

Yachthaven, Hayling Island

Visual Impact Assessment

Additional Viewpoints

T G D Landscape Ltd
Chartered Landscape Architects

Contents	Page No.
Introduction	3
Survey Conditions	3
Viewpoints Plan	4
Photographs	5-7
Conclusion	8

1.0 Introduction

1.1 TGD Landscape Ltd have already undertaken a Visual Impact Study for this site which has been submitted as part of the Application.

There was a misunderstanding with Chichester Harbour Conservancy who have raised concerns that views from the water directly to the south of the site, and from the public footpath along the shoreline directly in front of the site had not been photographed.

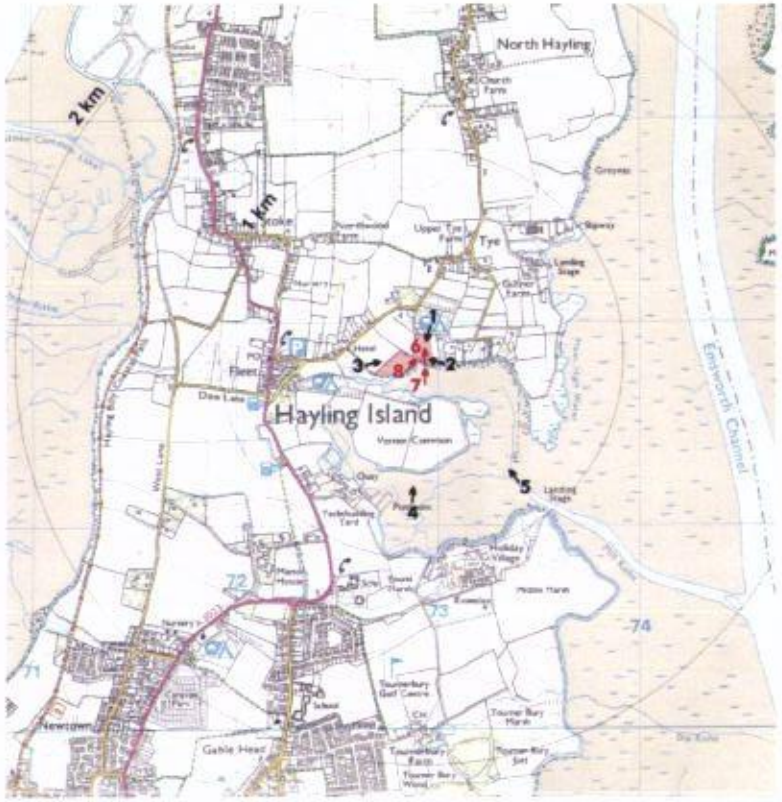
1.2 This report presents the missing views and explores the potential visual impact of the development on these viewpoints.

2.0 Survey Conditions

2.1 The survey was undertaken on Friday 1st June 2012, early in the morning when high tide occurred.

2.2 Weather conditions were variable, generally overcast with some extended breaks in the cloud cover, allowing brighter conditions to prevail for a time. There were slight breezes throughout the day.

2.3 Since the survey was undertaken in June, any deciduous trees were in full leaf. It is acknowledged that with no leaves on deciduous trees in winter months, some views may become more open.



3 Viewpoints included in original VIA report

8 Additional viewpoints as requested by Chichester Harbour Conservancy

North

The Site

Plan A

T G D Landscape Ltd
Chartered Landscape Architects

Viewpoint 6 From the foreshore public footpath immediately to the south of the site



Impact - Substantial. This is the closest and most open view of the proposed development which will form a significant and immediately apparent part of the scene. The location of the ridge height of the tower to Plot 1 is indicated by the orange marker circled in red. All other ridge heights will be at least 2m lower than this. Plots 2 & 3 will also be clearly visible from this viewpoint, although the proposed tree and hedge planting will soften the development over time so that the development is not perceived as a continuos 'block'. The development will affect the character of the site but it is worth noting that the existing view is not one of pristine countryside and the existing landuse has a negative impact on views.

Viewpoint 7 From the water immediately to the south of the site



Impact - Substantial. The proposed development will form an immediately apparent part of the scene but the existing run down development of the site and current land use is detrimental to the character of the area, and this will be replaced by quality housing set within a framework of tree and hedge planting. The existing boundary tree belt 'wraps' around and encloses the site and provides a valuable backdrop to the development. It is worth pointing out that although the tower on Plot 1 (the highest point of the development) does extend just above the top of the trees, the majority of the other ridge lines will be below this tree line thus reducing visual impact.

Viewpoint 8 From the public footpath to the west of the site



Impact - Substantial. The boatyard and parking area will form a significant and immediately apparent part of the scene in this view. The proposed housing will constitute only a minor component of the wider view, with the Tower on Plot 1 being the most prominent part of the housing visible from this viewpoint. A significant section of the proposed residential development will be hidden behind the existing boatyard (seen in the foreground of this view) which is to be retained. Once again, this view is not of unspoilt countryside and as part of the proposals the run down corrugated iron workshop which has a negative visual impact (seen in the background of this view) will be removed.

3.0 CONCLUSION

3.1 All three additional viewpoints have been ranked as having substantial impact. This is not surprising given that these views lie in close proximity to the site and the views are generally not softened by existing vegetation.

3.2 The site is not pristine countryside. In all the views it is noticeable that the existing run down buildings and the current land use do have a negative visual impact. The proposal is to clean up and improve a derelict site by removing existing neglected buildings and rubbish.

3.3 The proposed dwellings are set within a framework of new tree and hedge structure planting, so that the development is not perceived as a continuos 'block' of construction.

3.4 Although these additional close views are graded as substantial, the conclusion of the original Visual Impact Assessment remains largely unaffected.

3.5 The proposal is not large enough to result in an overall change in the landscape character of the area and in wider views the impact of developing the site will be limited.

3.6 It is acknowledged that the development will result in a change of character in nearer views, but in many ways this impact is positive, as the existing neglected state of the site will be replaced by quality development set within a strong framework of new planting.

T G D Landscape Ltd

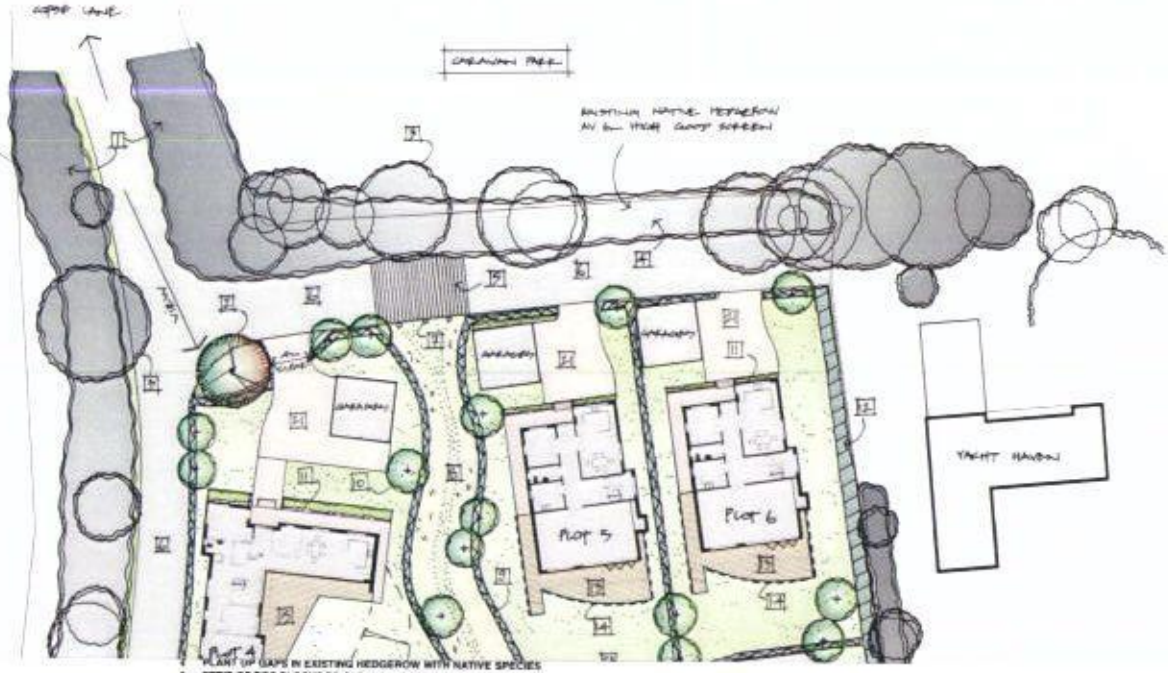
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LANDSCAPE PRINCIPLES

- ***Contaminated ground*** ameliorated
- ***Eyesore*** removed by dealing with derelict buildings and rubble/rubbish
- ***Existing boundary*** hedgerows and trees retained and protected
- Robust ***landscape framework*** to create attractive setting for the new development
- Route of ***Public footpath*** improved
- ***Habitat creation*** with significant new area of native grassland and re-excavated 'scrape'
- New ***wildlife corridor*** along eastern edge linking front and rear of site
- Proposed houses sensitively located with 'staggered' arrangement to reduce ***visual impact***
- Each new residence set within ***generous garden area***
- Informal ***footpath link*** down 'spine' of the development
- Significant ***tree and hedge planting*** arranged in random way to create natural effect
- ***Framed views*** for Plots 1 - 3



EXISTING TREES AND HEDGEROW RETAINED & PROTECTED

PROPOSED FEATURE TREE

PROPOSED TREE

NATIVE SCRUB PLANTING

NATIVE HEDGEROW TO CREATE NEW WILDLIFE CORRIDOR

CLIPPED NATIVE HEDGE

SHRUBS AND GROUNDCOVER

MOWN GRASS

NATIVE/WILDFLOWER GRASS SEED MIX (MAX. 2 CUTS PER YEAR)

BOUND GRAVEL

1.2M HIGH POST AND THREE RAIL TIMBER FENCE WITH STEEL MESH ATTACHED (TO CONTROL DOGS)

SQUARE STEEL MESH PLANTED WITH IVY TO CREATE SCREEN

BANK/SLOPE

4 PLANT UP GAPS IN EXISTING HEDGEROW WITH NATIVE SPECIES
5 STRIP OF PCC BLOCKS TO SLOW TRAFFIC
6 NEW ACCESS ROAD. BLACK BITMAC (+0.3M FROM EXISTING LEVEL
7 LOW TIMBER BOLLARDS @ EQUAL CENTRES TO PREVENT UNAUTHORIZED ACCESS
8 MOWN GRASS PATH TYPICALLY 1M WIDE WITH WILDFLOWER/NATIVE GRASS EITHER SIDE
9 NATIVE HEDGE CLIPPED AT MAX. 1.5M HIGH. LAID OUT ON SINUOUS LINE FOR NATURAL EFFECT
10 NATIVE TREES PLANTED IN RANDOM ARRANGEMENT FOR NATURAL EFFECT
11 SHRUB PLANTING TO SOFTEN BASE OF HOUSES
12 1.5M WIDE NATIVE BUFFER PLANTING TO CREATE WILDLIFE CORRIDOR LINKING THE FRONT AND THE REAR OF THE SITE
13 RAISED TIMBER DECK
14 STEEL SQUARE MESH PLANTED WITH IVY TO ENCLOSE AND SCREEN AREA UNDER TIMBER DECK
15 TIMBER DECK FLUSH WITH G.L.
16 GRADED BANK TO TAKE UP LEVEL CHANGE
17 FLOWERING AND FRUITING TREES TO 'FRAME' NODAL AREA
18 POSSIBLE LOCATION FOR TIMBER BENCH
19 PCC BLOCKS TO SLOW TRAFFIC
20 CURVED NATIVE HEDGE TO ENCLOSE SPACE
21 ALL DRIVES TO BE PERMEABLE BLOCKS
22 NATIVE HEDGES LINE EITHER SIDE OF ACCESS ROAD
23 MOWN GRASS IN PRIVATE GARDENS
24 SINUOUS LINE OF HEDGE TO SOFTEN DEVELOPMENT EDGE
25 TREE PLANTING ARRANGED IN NATURAL, RANDOM WAY WITH OCCASIONAL GAPS TO ALLOW 'FRAMED' VIEWS OF SEA
26 SMALL NATIVE TREES TO AVOID FUTURE CONFLICT WITH BOAT CRADLE
27 NATIVE 'SCRUB' SPECIES
28 AREA CLEARED OF RUBBLE AND RUBBISH, GRADED AND SOWN WITH NATIVE GRASSLAND SPECIES TO CREATE NEW HABITAT FOR WILDLIFE. SEE GPM ECOLOGY FOR ALL DETAILS
29 1.2M HIGH POST AND THREE RAIL TIMBER FENCE WITH SQUARE MESH ATTACHED (TO PREVENT DOG ACCESS)
30 REMOVE CONTAMINATED FILL FROM ORIGINAL POND TO CREATE 'SCRAPE' FOR WADING BIRDS. EXCAVATE DITCHES FEEDING INTO 'SCRAPE'. SEE GPM ECOLOGY FOR ALL DETAILS
31 RESTORE PUBLIC FOOTPATH. BOUND GRAVEL
32 REMOVE EXISTING CONCRETE SEA DEFENCE
33 RE-POSITIONED CONCRETE SEA DEFENCE
34 REMOVE HARDSTANDING, SPREAD SOIL AND GRASS SEED
35 NATIVE SHRUB PLANTING TO SOFTEN CLUBHOUSE
36 FEATURE TREE
37 LOW GROWING NATIVE TREE SPECIES SUCH AS HAWTHORN ONLY TO AVOID CONFLICT WITH FEEDING WADERS

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PROJECT
RESIDENTIAL DEVELOPMENT
YACHTHAVEN
HAYLING ISLAND

DRAWING
Landscape Strategy Plan

Scale: 1:250 @ A0
Drawn by: TG Date: April 2011

DRAWING NUMBER
711 - 101

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YACHTHAVEN, COPSE LANE, HAYLING ISLAND – TRANSPORT STATEMENT

1 INTRODUCTION

1.1 Yachthaven is an established industrial site on Hayling Island, fronting Chichester Harbour. Access is gained from the nearest adopted highway, Copse Lane, by way of a private drive which also serves the adjacent private dwelling, Yachthaven House (currently vacant and not within the application site). There is also an area of approximately 565 sq m comprising a single boat yard and mud berth surrounded by the application site but in other ownership.

1.2 This Transport Statement is intended to accompany a revised planning application to clear the industrial site and provide 6 new houses, together with a pontoon with 12 berths, improvements to the existing slipway and a small office with eight lockers for boat owners and six small stores for dinghies / canoes. The development would include the restoration of the coastal footpath and the creation of a nature reserve.

2 EXISTING PLANNING SITUATION

2.1 Whilst the site is currently unused with some derelict buildings, it has previously been occupied by various commercial uses including a boatyard, a car breaker's yard and a plant hire depot. Planning approval was granted in 1978 for 5,760 sq m (62,000 sq ft) of industrial floorspace.

2.2 Planning consents given in 1996 for 6 houses, 19 pontoon moorings, a replacement slipway, mast & sail store, boat compound and car / trailer parking, all in conjunction with revocation of the established commercial use, were not implemented and have now lapsed.

2.3 It was the applicant's understanding that the former industrial use remains valid. Therefore, for the purposes of this Transport Statement, in the absence of any past traffic survey information, the industrial floorspace covered by the 1978 approval has been used to estimate notional base traffic flows using trip rates derived from the nationally recognised TRICS database.

3 DEVELOPMENT PROPOSALS

3.1 As stated above, the current application is for six detached houses on the eastern part of the site, together with a small office with eight lockers for boat owners and six small stores for dinghies / canoes. The existing slipway will be replaced and pontoons provided to replace 12 of the 26 swinging moorings currently licensed to the site.

3.2 Six of the moorings will be for residents of the new houses and six will be for non-residents.

YACHTHAVEN, HAYLING ISLAND

ENVIRONMENTAL STATEMENT

DECEMBER 2011

APPENDIX 5.1

© Environmental Assessment Services Ltd

4 EXISTING ACCESS CONDITIONS

4.1 Copse Lane is generally rural in character with no footways or lighting and is subject to a 40 mph speed limit where it passes the site entrance, emphasised by '40' roundels and 'Slow' markings on the road. Whilst actual speed measurements have not been taken, it seems unlikely that most vehicles would be exceeding the speed limit along this stretch, owing to the curved road alignment, the warning signs and markings and the presence of other access points nearby.

4.2 There is no record of any accidents in this vicinity during the past six years (2005 – 2010).

4.3 The site access joins Copse Lane on the outside of a bend and there is good visibility to the right (the lead traffic side) from at least 2.4m behind the road edge; a vehicle approaching from that direction would be seen approximately 180m away. To the left the 'Y' distance is somewhat less at around 100m; this is slightly less than the 120m 'Y' distance recommended in DMRB*, but considerably more than the 66m required at a speed of 40 mph if the braking criteria used in Manual for Streets ('MfS') are applied.
*(*The Highways Agency's Design Manual for Roads & Bridges)*

4.4 These sightlines are indicated on drawing number 14894/1, a reduced scale copy of which is attached to this report for ease of reference.

4.5 Manual for Streets 2, published in 2010, ('MfS2') makes it clear that unless there is local evidence to the contrary, a reduction in visibility below recommended levels will not necessarily lead to a significant problem; this advice is based on research carried out during the preparation of MfS2. It also recommends that MfS should be used as the starting point for any scheme affecting non-trunk roads, although this may be subject to local context where the speed limit is 40 mph or greater.

4.6 The context here is a relatively lightly trafficked local road and in practical terms it can be readily seen from a site visit that the visibility in both directions is sufficient to allow approaching traffic to slow down or stop to avoid a vehicle leaving the access, or waiting to turn in, without any need for severe braking.

4.7 The access driveway itself is currently a single track lane constructed largely of road planings, in good condition, with a gate at the entrance which was installed fairly recently to prevent fly tipping. It will be necessary to raise driveway levels for flood risk purposes as part of the development and at the same time it could be widened in places, if required, to enable two vehicles to pass. The increased width can be achieved without the need to remove trees or hedges and the rise in levels will facilitate a form of construction which will not affect tree roots.

5 TRAFFIC GENERATION

Base Traffic Flows

5.1 As comprehensive traffic flow information is not available for the previous use of the site, and in any case could change significantly with a different occupier within the same use classes, the TRICS (Trip Rate Information Computer System) database has been consulted to derive a notional weekday traffic figure for the past industrial use. For this purpose, industrial units of 6,000 sq m or less have been used for comparison, with two sites being excluded from the selection as being very different in character from anything likely to have occupied the application site.

5.2 The resulting TRICS output is attached in Appendix A and indicates average two-way trip rates of 5.368 trips / 100 sq m in a 12-hour day, with 0.67 trips / 100 sq m in the peak hour (08:00 – 09:00). Therefore, peak hour flows are approximately 12.5% of 12-hour daily flows.

(Note: These survey results are for 12-hour days, Monday – Friday only. There would generally be very little movement to or from industrial units of this type outside the hours of 07:00 – 19:00 and no TRICS data are available for such times. Neither is there enough information available from TRICS to allow any sensible estimate of Saturday flows, presumably because industrial premises of this type tend not to open on Saturdays, or if they do, only for short periods).

5.3 For the 26 licensed moorings, TRICS sites for marinas have been used for comparison, excluding non-coastal marinas.

5.4 The resulting TRICS output for marinas is attached as Appendix B and indicates average two-way daily trip rates per berth of around 0.78 trips on a weekday (Friday) and 1.86 at weekends. The survey periods in both cases are longer than for the industrial units, extending to 21:00 or 22:00, although it can be seen that the traffic drops off noticeably in the later evening hours.

5.5 Using the TRICS data the average weekday traffic flow which may have arisen from the historical site use can be estimated as:

(5,760 / 100 x 5.368) + (26 x 0.78) = **329 vpd**.

5.6 The peak hour would be 08:00 – 09:00, when the combined two-way flow using the driveway can be estimated as:

(5,760 / 100 x 0.67) + (26 x 0.045) = **40 vph**
(i.e. 30 arrivals plus 10 departures).

5.7 Whilst there would be more leisure (marina) traffic at weekends, the total movements to and from the site would have been considerably less owing to the absence of industrial traffic, so it is not proposed to consider the weekend scenario further in this report.

5.8 Since undertaking this initial trip analysis we have been informed that the local planning authority does not necessarily agree that the previous industrial use of the site remains valid. However, it is clear that the access was historically used without difficulty by a much greater volume of traffic than will be generated by the proposed development.

Development traffic

5.9 For the residential development, TRICS sites for privately owned houses are being used, excluding developments in town centres or edge of centre, and those within very large population areas.

5.10 There will be no regular movement of boats by road, so very few movements if any, of large vehicles or trailers along the access driveway from Copse Lane.

5.11 The resulting TRICS output is attached as Appendix C and indicates an average two-way trip rate per dwelling of around 8.0 trips per 24-hour day, with around 0.6 trips / dwelling in the AM peak hour (08:00 – 09:00) and 0.8 trips / dwelling in the PM peak (19:00 – 20:00).

5.12 Six of the proposed pontoon berths will be associated with the new houses, so will not generate any more vehicular traffic than that normally associated with any other private houses. For the remaining six berths, the marina trip rates in Appendix B can again been used.

5.13 Therefore, the total weekday development traffic flows (two-way) are predicted to be of the following order of magnitude:

Land use	Daily trip rate	Daily vehicle movements	08:00 – 09:00 trip rate	08:00 – 09:00 veh. movements
6 houses (including berths)	8.0 / dwelling	48	0.6 / dwelling	4
6 berths	0.78 / berth	5	0.045 / berth	<1
Total		**53**		**5**

5.14 From this it is clear that the number of vehicles entering and leaving the site will be minimal, certainly much less than the past industrial traffic or that which might arise from any other economic use of the site.

7 ACCESSIBILITY BY OTHER TRAVEL MODES

7.1 The site is approximately 6 km (3.75 miles) by road from the centre of Havant and approximately 7 km (4.4 miles) from the Hayling Ferry in the other direction.

7.2 The nearest bus service is on Havant Road (Routes 30 & 31, with a daytime frequency of four buses an hour in each direction), approximately 1.2 km (0.75 miles) walking distance from the site, so it is unlikely that many journeys would be made to or from the site on foot.

7.3 However, both Havant town centre and the Hayling ferry giving onward access to Portsmouth and Southsea are within easy cycling distance and the terrain is generally flat, so cycling could be a realistic travel alternative for some journeys, either for leisure or commuting purposes.

7.4 However, it is accepted that most journeys to and from the site would be made by car and there is little realistic chance of significantly shifting that position.

8 SUMMARY & CONCLUSIONS

8.1 Yachthaven has in the past been occupied by various commercial and industrial uses and although no traffic survey figures are available from that period, on the basis of typical trip rates obtained from the TRICS database it is estimated that they may well have been in the region of 329 vehicle movements per day and 40 movements in a peak hour (two-way).

8.2 Planning consents given in 1996 for 6 houses, 19 pontoon moorings, a replacement slipway, mast & sail store, boat compound and car / trailer parking, all in conjunction with revocation of the established commercial use, were not implemented and have now lapsed. The present proposal is for a very much smaller development.

8.3 There would be little or no movement of boats by road, so very few movements, if any, of large vehicles or trailers along the access driveway from Copse Lane.

8.4 The access onto Copse Lane has good visibility in line with current published guidance and can be used without causing increased danger to road users.

8.5 There are no recorded accidents to suggest that any particular safety problem exists in Copse Lane.

8.6 The access driveway is currently single track only, but can be widened to provide passing places if required and the levels raised without requiring additional land or having an undue impact on existing trees or hedges.

8.7 Making reasonable assumptions based on nationally recognised traffic survey data, the development will generate much less traffic than the former industrial use.

8.8 Even if the previous use of the site is disregarded, the volume of traffic predicted to arise from the development (only 4 - 5 vehicle movements in a weekday peak hour) is insignificant and would not create any traffic problems.

8.9 Owing to its distance from local bus stops and other services, although not impossible to walk to a bus stop it is accepted that not many journeys would be made to or from the site on foot, other than recreational walks in the immediate vicinity (including the coastal path). However, both Havant town centre and Portsmouth city centre (via the Hayling Ferry) are within reasonable cycling distance and the generally flat terrain makes cycling a realistic alternative mode of travel.

8.10 Taking all the above into account, it is considered that the development would have no adverse effect on road safety or traffic in the local road network and there are no sustainable highways grounds for refusal of the planning application.

Ken Fry IEng FIHE
Principal Engineer, Mayer Brown Ltd
July 2012

APPENDIX A

TRICS Data – Industrial Units

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : C - INDUSTRIAL UNIT
VEHICLES

Filtering Stage 2 selection:

Parameter:	Gross floor area
Range:	300 to 4900 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/03 to 14/10/10

Selected survey days:

Monday	2 days
Tuesday	4 days
Wednesday	1 days
Thursday	4 days
Friday	1 days

Selected survey types:

Manual count	12 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	6
Edge of Town	5
Neighbourhood Centre (PPS6 Local Centre)	1

Selected Location Sub Categories:

Industrial Zone	8
Commercial Zone	2
Village	1
No Sub Category	1

LIST OF SITES relevant to selection parameters

1 **AR-02-C-02** **EMTEK, LURGAN** **ARMAGH**
SILVERWOOD ROAD
SILVERWOOD INDUSTRIAL AREA
LURGAN
Edge of Town
Industrial Zone
Total Gross floor area: 2980 sqm

2 **BR-02-C-01** **MECH. ENGINEERS, BRISTOL** **BRISTOL CITY**
NOVERS HILL
BEDMINSTER
BRISTOL
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 1100 sqm

3 **CF-02-C-01** **PLASTICS COMPANY, CARDIFF** **CARDIFF**
PARC-TY-GLAS
LLANISHEN
CARDIFF
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 1068 sqm

4 **DE-02-C-01** **C. LAMINATE SYS., LONDONDERRY** **DERRY**
MCLEAN ROAD
EGLINTON
LONDONDERRY
Edge of Town
Industrial Zone
Total Gross floor area: 1858 sqm

5 **EB-02-C-01** **BREWERY, EDINBURGH** **CITY OF EDINBURGH**
DRYDEN ROAD
LOANHEAD
MIDLOTHIAN
Edge of Town
Industrial Zone
Total Gross floor area: 1200 sqm

6 **FI-02-C-01** **REFRIGERATION, DUNFERMLINE** **FIFE**
HALBEATH PLACE

DUNFERMLINE
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 4900 sqm

7 **HE-02-C-01** **METAL. COATINGS, HEREFORD** **HEREFORDSHIRE**
COLLEGE ROAD

HEREFORD
Edge of Town
Commercial Zone
Total Gross floor area: 1880 sqm

8 **HF-02-C-01** **IND. UNIT, W. GARDEN CITY** **HERTFORDSHIRE**
BRIDGE ROAD EAST

WELWYN GARDEN CITY
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 1800 sqm

9 **NY-02-C-01** **FOOD PRODUCTION, MASHAM** **NORTH YORKSHIRE**
FEARBY ROAD

MASHAM
Neighbourhood Centre (PPS6 Local Centre)
Village
Total Gross floor area: 2491 sqm

LIST OF SITES relevant to selection parameters (Cont.)

10 **WA-02-C-01** **FOODS COMPANY, WATERFORD** **WATERFORD**
MAYPARK LANE

WATERFORD
Edge of Town
No Sub Category
Total Gross floor area: 2800 sqm

11 **WM-02-C-01** **METAL BEARINGS, S. COLDFIELD** **WEST MIDLANDS**
FORGE LANE
MINWORTH
SUTTON COLDFIELD
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 4200 sqm

12 **WM-02-C-02** **ARDONPRINT, BIRMINGHAM** **WEST MIDLANDS**
SYDNEY ROAD
SMALL HEATH
BIRMINGHAM
Suburban Area (PPS6 Out of Centre)
Commercial Zone
Total Gross floor area: 300 sqm

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

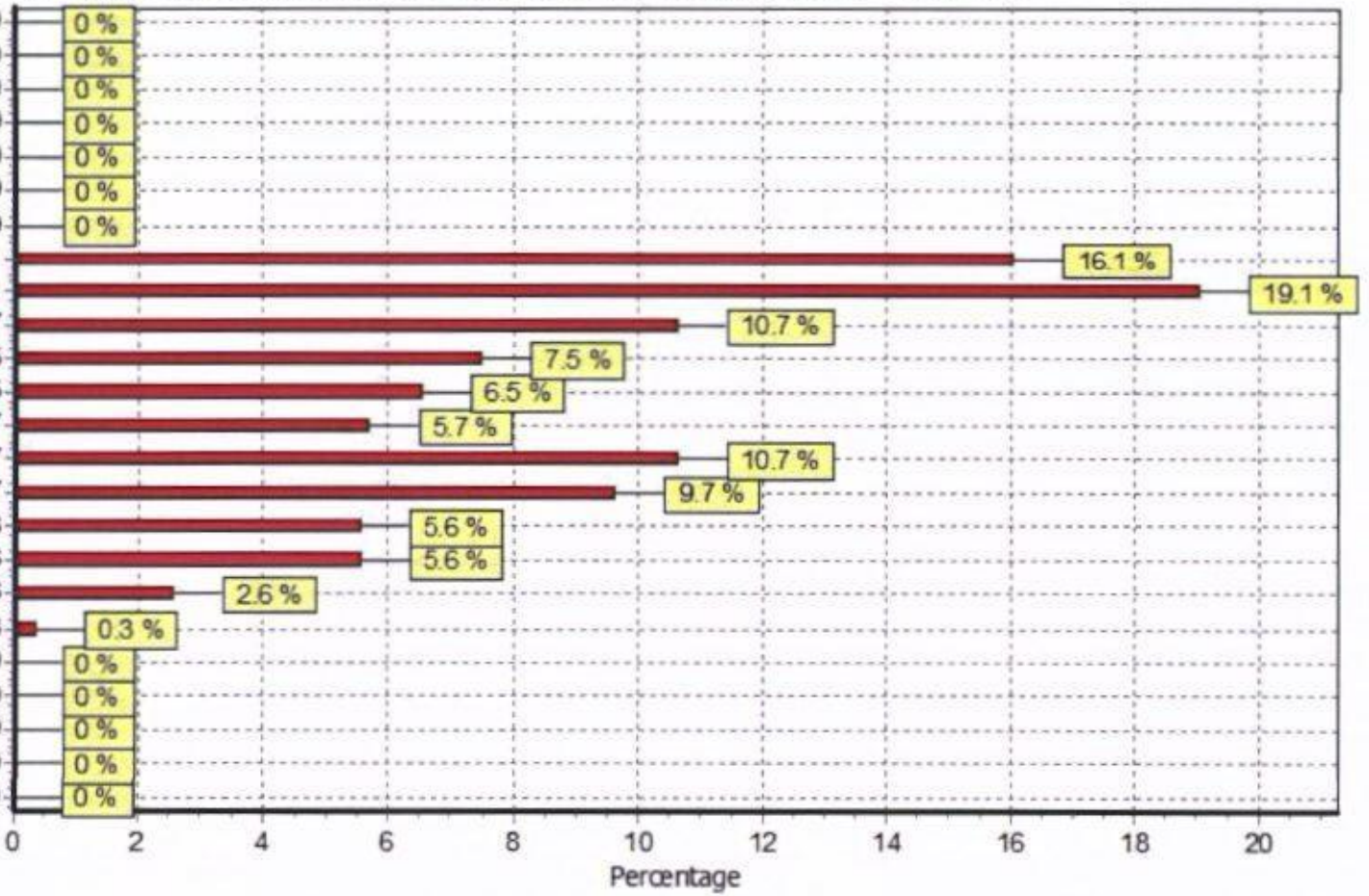
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	12	2215	0.425	12	2215	0.045	12	2215	0.470
08:00 - 09:00	**12**	**2215**	**0.504**	12	2215	0.166	**12**	**2215**	**0.670**
09:00 - 10:00	12	2215	0.282	12	2215	0.181	12	2215	0.463
10:00 - 11:00	12	2215	0.199	12	2215	0.184	12	2215	0.383
11:00 - 12:00	12	2215	0.173	12	2215	0.166	12	2215	0.339
12:00 - 13:00	12	2215	0.151	12	2215	0.226	12	2215	0.377
13:00 - 14:00	12	2215	0.282	12	2215	0.218	12	2215	0.500
14:00 - 15:00	12	2215	0.256	12	2215	0.184	12	2215	0.440
15:00 - 16:00	12	2215	0.147	12	2215	0.233	12	2215	0.380
16:00 - 17:00	12	2215	0.147	12	2215	0.482	12	2215	0.629
17:00 - 18:00	12	2215	0.068	**12**	**2215**	**0.515**	12	2215	0.583
18:00 - 19:00	11	1971	0.009	11	1971	0.125	11	1971	0.134
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			2.643			2.725			5.368

Parameter summary

Trip rate parameter range selected:	300 - 4900 (units: sqm)
Survey date date range:	01/01/03 - 14/10/10
Number of weekdays (Monday-Friday):	12
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	2

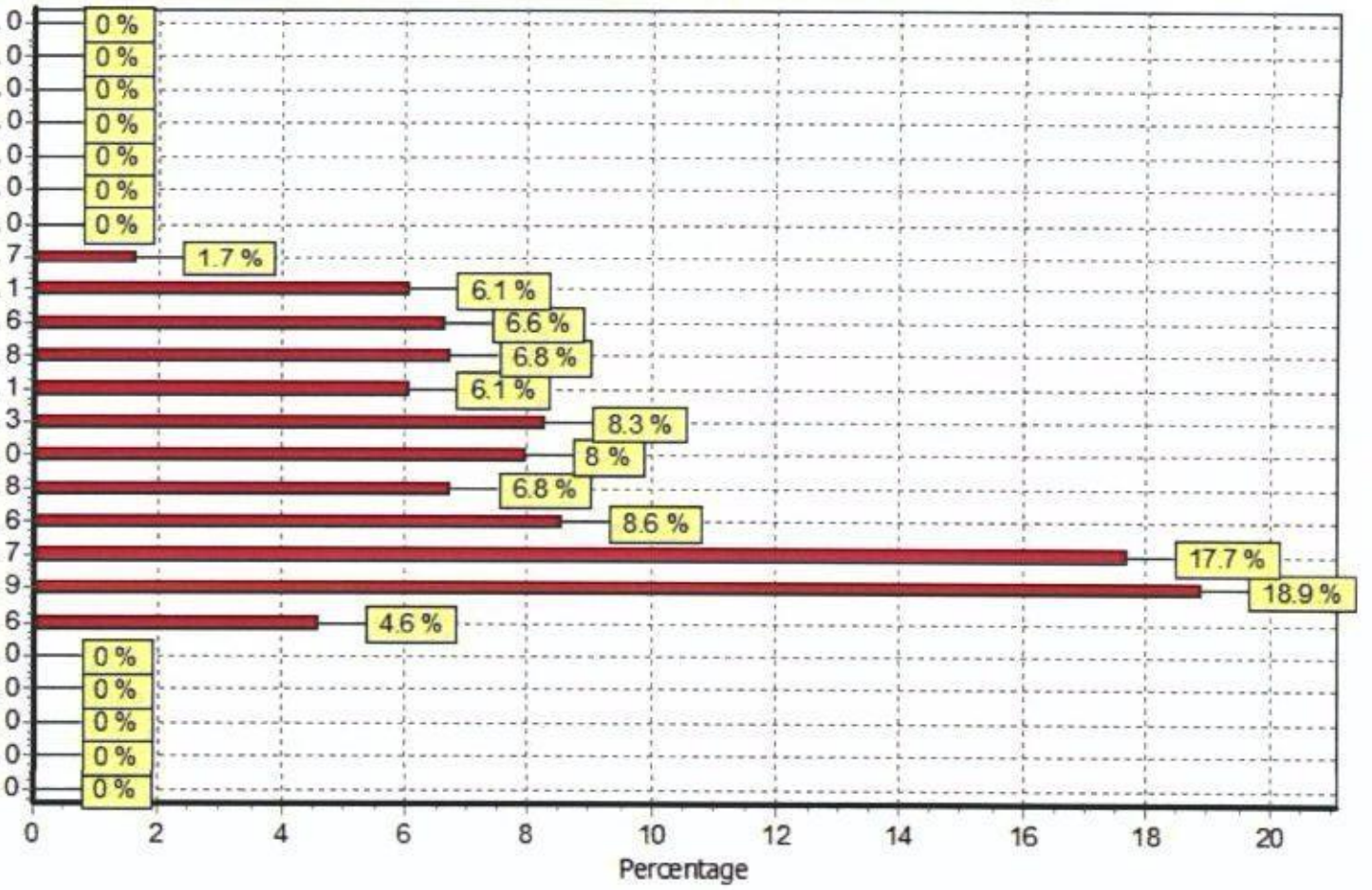
TRIP RATE GRAPH - ARRIVALS 02 - EMPLOYMENT C - INDUSTRIAL UNIT VEHICLES

TIME	RATE	%
00:00-01:00	0.000	0.0
01:00-02:00	0.000	0.0
02:00-03:00	0.000	0.0
03:00-04:00	0.000	0.0
04:00-05:00	0.000	0.0
05:00-06:00	0.000	0.0
06:00-07:00	0.000	0.0
07:00-08:00	0.425	16.1
08:00-09:00	0.504	19.1
09:00-10:00	0.282	10.7
10:00-11:00	0.199	7.5
11:00-12:00	0.173	6.5
12:00-13:00	0.151	5.7
13:00-14:00	0.282	10.7
14:00-15:00	0.256	9.7
15:00-16:00	0.147	5.6
16:00-17:00	0.147	5.6
17:00-18:00	0.068	2.6
18:00-19:00	0.009	0.3
19:00-20:00	0.000	0.0
20:00-21:00	0.000	0.0
21:00-22:00	0.000	0.0
22:00-23:00	0.000	0.0
23:00-24:00	0.000	0.0



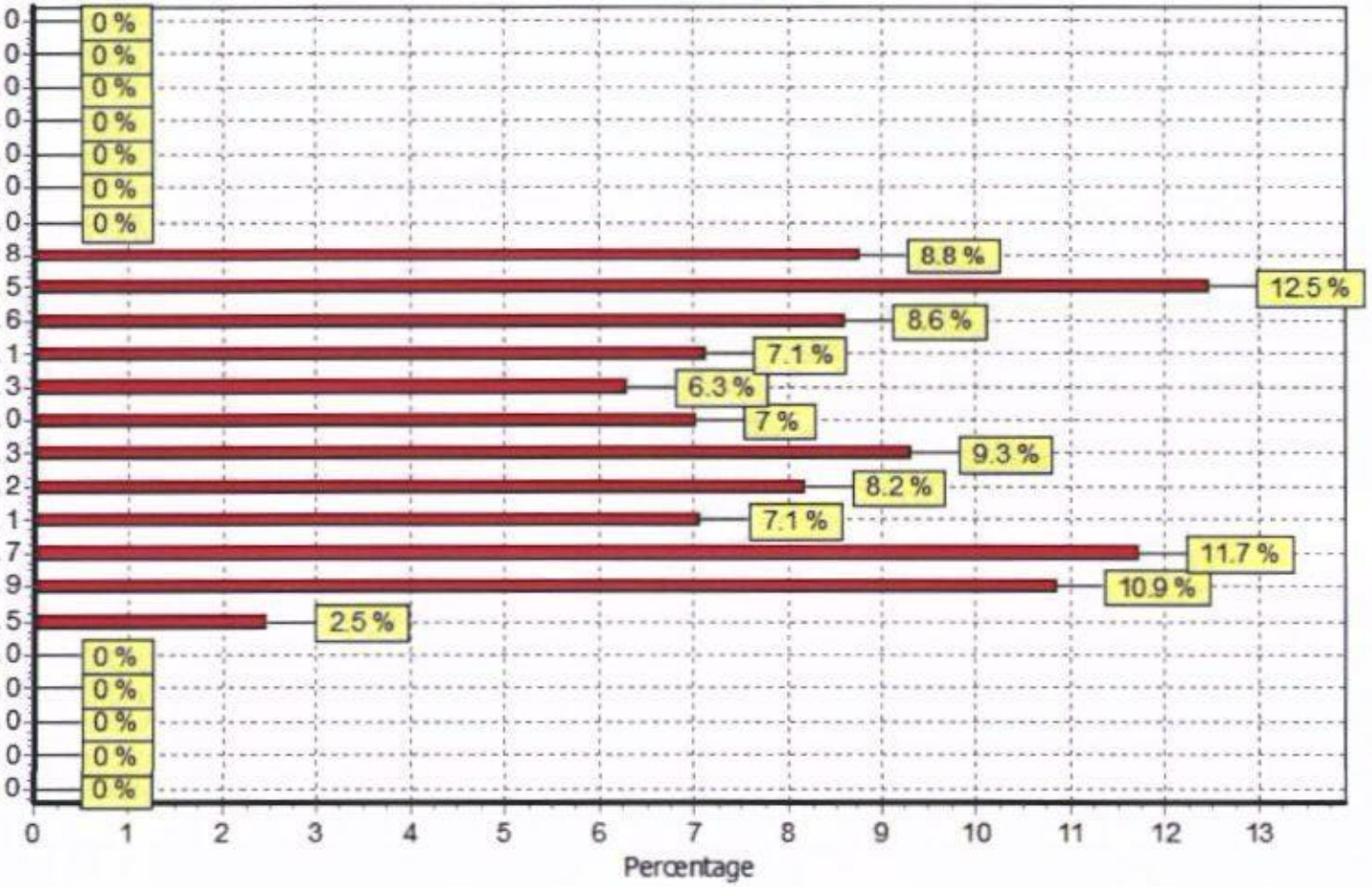
TRIP RATE GRAPH - DEPARTURES 02 - EMPLOYMENT C - INDUSTRIAL UNIT VEHICLES

TIME	RATE	%
00:00-01:00	0.000	0.0
01:00-02:00	0.000	0.0
02:00-03:00	0.000	0.0
03:00-04:00	0.000	0.0
04:00-05:00	0.000	0.0
05:00-06:00	0.000	0.0
06:00-07:00	0.000	0.0
07:00-08:00	0.045	1.7
08:00-09:00	0.166	6.1
09:00-10:00	0.181	6.6
10:00-11:00	0.184	6.8
11:00-12:00	0.166	6.1
12:00-13:00	0.226	8.3
13:00-14:00	0.218	8.0
14:00-15:00	0.184	6.8
15:00-16:00	0.233	8.6
16:00-17:00	0.482	17.7
17:00-18:00	0.515	18.9
18:00-19:00	0.125	4.6
19:00-20:00	0.000	0.0
20:00-21:00	0.000	0.0
21:00-22:00	0.000	0.0
22:00-23:00	0.000	0.0
23:00-24:00	0.000	0.0



TRIP RATE GRAPH - TOTALS 02 - EMPLOYMENT C - INDUSTRIAL UNIT VEHICLES

TIME	RATE	%
00:00-01:00	0.000	0.0
01:00-02:00	0.000	0.0
02:00-03:00	0.000	0.0
03:00-04:00	0.000	0.0
04:00-05:00	0.000	0.0
05:00-06:00	0.000	0.0
06:00-07:00	0.000	0.0
07:00-08:00	0.470	8.8
08:00-09:00	0.670	12.5
09:00-10:00	0.463	8.6
10:00-11:00	0.383	7.1
11:00-12:00	0.339	6.3
12:00-13:00	0.377	7.0
13:00-14:00	0.500	9.3
14:00-15:00	0.440	8.2
15:00-16:00	0.380	7.1
16:00-17:00	0.629	11.7
17:00-18:00	0.583	10.9
18:00-19:00	0.134	2.5
19:00-20:00	0.000	0.0
20:00-21:00	0.000	0.0
21:00-22:00	0.000	0.0
22:00-23:00	0.000	0.0
23:00-24:00	0.000	0.0



APPENDIX B

TRICS Data – Marinas

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 08 - MARINAS
Category : A - MARINAS
VEHICLES

Filtering Stage 2 selection:

Parameter: Number of berths
Range: 270 to 500 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/01 to 26/06/11

Selected survey days:

Friday	2 days

Selected survey types:

Manual count	2 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town Centre	1
Edge of Town	1

Selected Location Sub Categories:

Industrial Zone	1
Built-Up Zone	1

LIST OF SITES relevant to selection parameters

1 **DC-08-A-02** **MARINA, WEYMOUTH** **DORSET**
COMMERCIAL ROAD
WEYMOUTH HARBOUR
WEYMOUTH
Edge of Town Centre
Built-Up Zone
Total Number of berths: 270

2 **KC-08-A-02** **MARINA, GILLINGHAM** **KENT**
PIER ROAD

GILLINGHAM
Edge of Town
Industrial Zone
Total Number of berths: 500

TRIP RATE for Land Use 08 - MARINAS/A - MARINAS

VEHICLES

Calculation factor: 1 BERTHS

BOLD print indicates peak (busiest) period

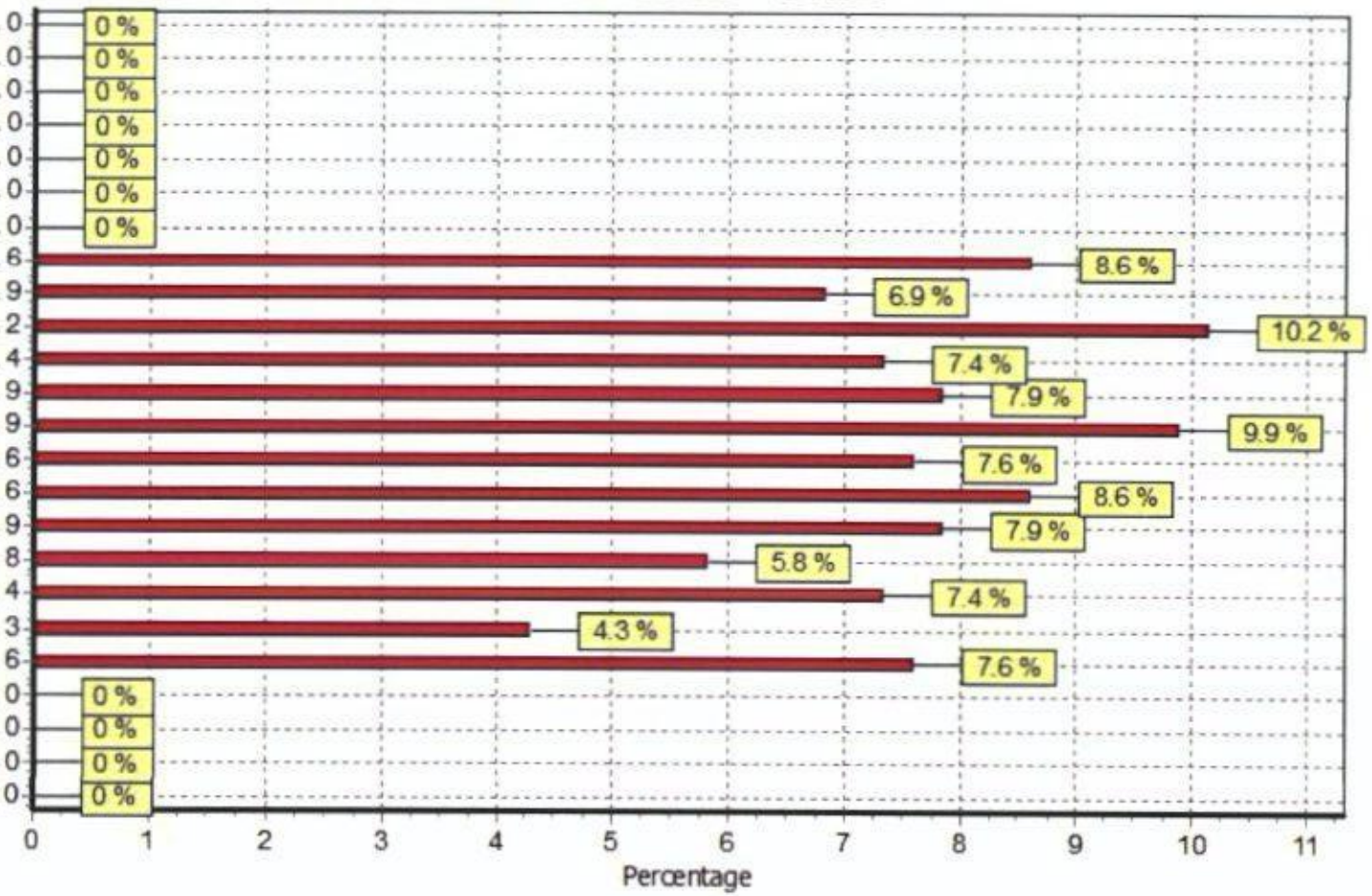
	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. BERTHS	Trip Rate	No. Days	Ave. BERTHS	Trip Rate	No. Days	Ave. BERTHS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	2	385	0.034	2	385	0.008	2	385	0.042
08:00 - 09:00	2	385	0.027	2	385	0.018	2	385	0.045
09:00 - 10:00	**2**	**385**	**0.040**	2	385	0.022	2	385	0.062
10:00 - 11:00	2	385	0.029	2	385	0.022	2	385	0.051
11:00 - 12:00	2	385	0.031	2	385	0.029	2	385	0.060
12:00 - 13:00	2	385	0.039	2	385	0.027	2	385	0.066
13:00 - 14:00	2	385	0.030	2	385	0.030	2	385	0.060
14:00 - 15:00	2	385	0.034	2	385	0.031	2	385	0.065
15:00 - 16:00	2	385	0.031	**2**	**385**	**0.049**	**2**	**385**	**0.080**
16:00 - 17:00	2	385	0.023	2	385	0.047	2	385	0.070
17:00 - 18:00	2	385	0.029	2	385	0.036	2	385	0.065
18:00 - 19:00	2	385	0.017	2	385	0.027	2	385	0.044
19:00 - 20:00	1	500	0.030	1	500	0.032	1	500	0.062
20:00 - 21:00	1	500	0.000	1	500	0.008	1	500	0.008
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.394			0.386			0.780

Parameter summary

Trip rate parameter range selected:	270 - 500 (units:)
Survey date date range:	01/01/01 - 26/06/11
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

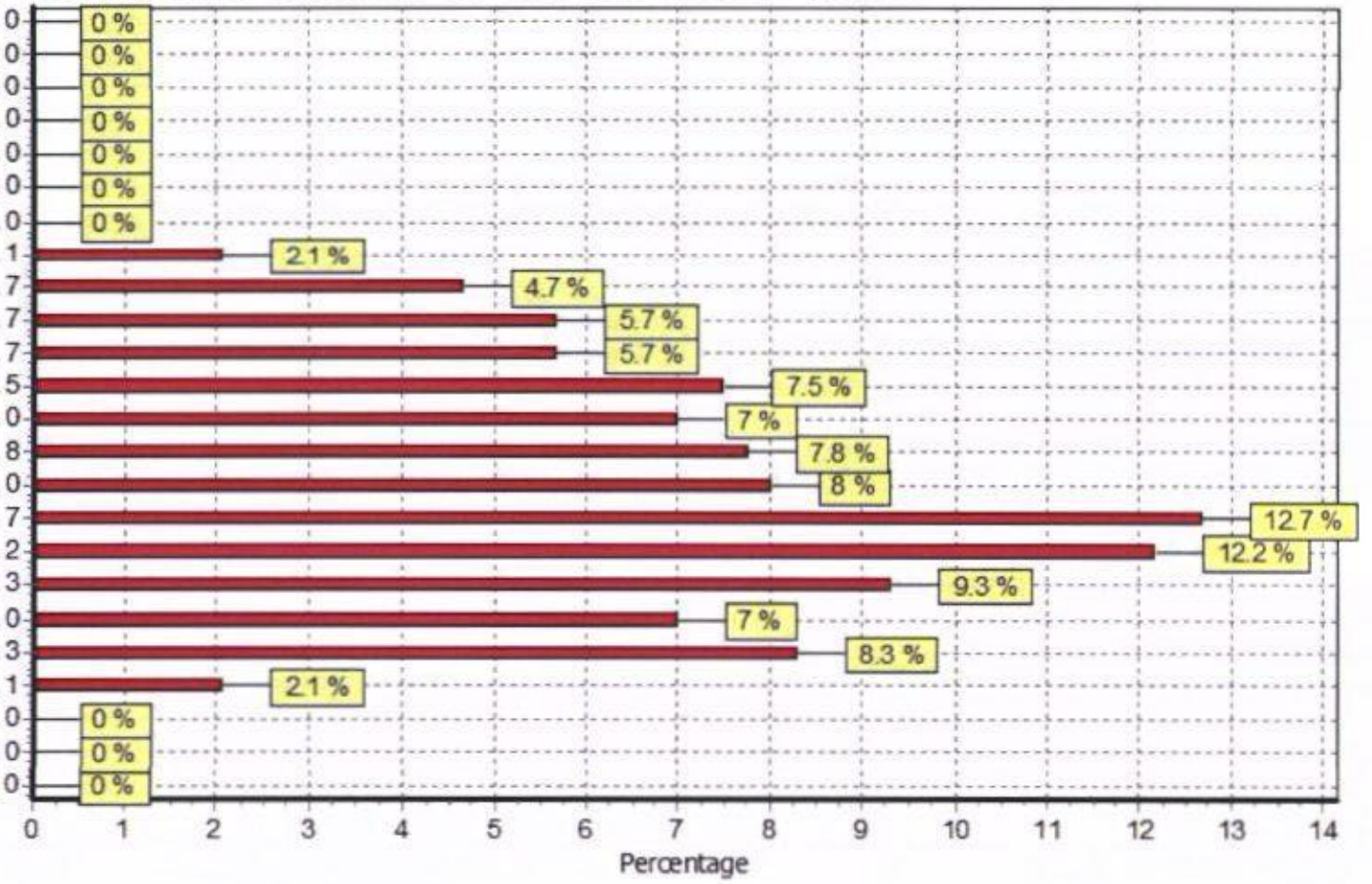
TRIP RATE GRAPH - ARRIVALS 08 - MARINAS A - MARINAS VEHICLES

TIME	RATE	%
00:00-01:00	0.000	0.0
01:00-02:00	0.000	0.0
02:00-03:00	0.000	0.0
03:00-04:00	0.000	0.0
04:00-05:00	0.000	0.0
05:00-06:00	0.000	0.0
06:00-07:00	0.000	0.0
07:00-08:00	0.034	8.6
08:00-09:00	0.027	6.9
09:00-10:00	0.040	10.2
10:00-11:00	0.029	7.4
11:00-12:00	0.031	7.9
12:00-13:00	0.039	9.9
13:00-14:00	0.030	7.6
14:00-15:00	0.034	8.6
15:00-16:00	0.031	7.9
16:00-17:00	0.023	5.8
17:00-18:00	0.029	7.4
18:00-19:00	0.017	4.3
19:00-20:00	0.030	7.6
20:00-21:00	0.000	0.0
21:00-22:00	0.000	0.0
22:00-23:00	0.000	0.0
23:00-24:00	0.000	0.0



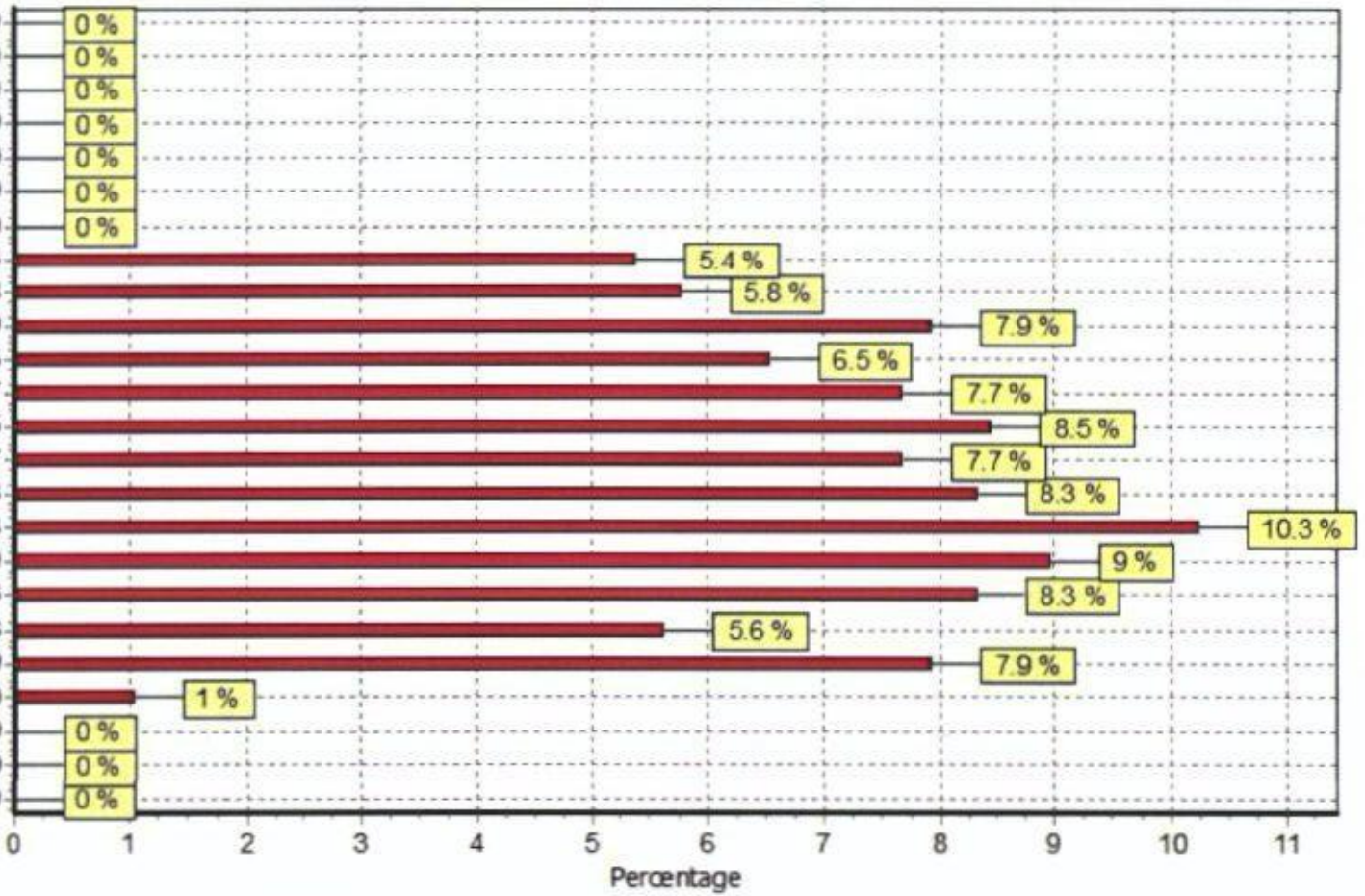
TRIP RATE GRAPH - DEPARTURES 08 - MARINAS A - MARINAS VEHICLES

TIME	RATE	%
00:00-01:00	0.000	0.0
01:00-02:00	0.000	0.0
02:00-03:00	0.000	0.0
03:00-04:00	0.000	0.0
04:00-05:00	0.000	0.0
05:00-06:00	0.000	0.0
06:00-07:00	0.000	0.0
07:00-08:00	0.008	2.1
08:00-09:00	0.018	4.7
09:00-10:00	0.022	5.7
10:00-11:00	0.022	5.7
11:00-12:00	0.029	7.5
12:00-13:00	0.027	7.0
13:00-14:00	0.030	7.8
14:00-15:00	0.031	8.0
15:00-16:00	0.049	12.7
16:00-17:00	0.047	12.2
17:00-18:00	0.036	9.3
18:00-19:00	0.027	7.0
19:00-20:00	0.032	8.3
20:00-21:00	0.008	2.1
21:00-22:00	0.000	0.0
22:00-23:00	0.000	0.0
23:00-24:00	0.000	0.0



TRIP RATE GRAPH - TOTALS 08 - MARINAS A - MARINAS VEHICLES

TIME	RATE	%
00:00-01:00	0.000	0.0
01:00-02:00	0.000	0.0
02:00-03:00	0.000	0.0
03:00-04:00	0.000	0.0
04:00-05:00	0.000	0.0
05:00-06:00	0.000	0.0
06:00-07:00	0.000	0.0
07:00-08:00	0.042	5.4
08:00-09:00	0.045	5.8
09:00-10:00	0.062	7.9
10:00-11:00	0.051	6.5
11:00-12:00	0.060	7.7
12:00-13:00	0.066	8.5
13:00-14:00	0.060	7.7
14:00-15:00	0.065	8.3
15:00-16:00	0.080	10.3
16:00-17:00	0.070	9.0
17:00-18:00	0.065	8.3
18:00-19:00	0.044	5.6
19:00-20:00	0.062	7.9
20:00-21:00	0.008	1.0
21:00-22:00	0.000	0.0
22:00-23:00	0.000	0.0
23:00-24:00	0.000	0.0



APPENDIX C

TRICS Data – Houses (privately owned)

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
VEHICLES

Filtering Stage 2 selection:

Parameter: Number of dwellings
Range: 4 to 437 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/03 to 15/07/11

Selected survey days:

Monday	15 days
Tuesday	17 days
Wednesday	10 days
Thursday	24 days
Friday	13 days

Selected survey types:

Manual count	75 days
Directional ATC Count	4 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	40
Edge of Town	34
Neighbourhood Centre (PPS6 Local Centre)	4
Free Standing (PPS6 Out of Town)	1

Selected Location Sub Categories:

Industrial Zone	1
Residential Zone	58
Built-Up Zone	2
Village	1
Out of Town	2
No Sub Category	15

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

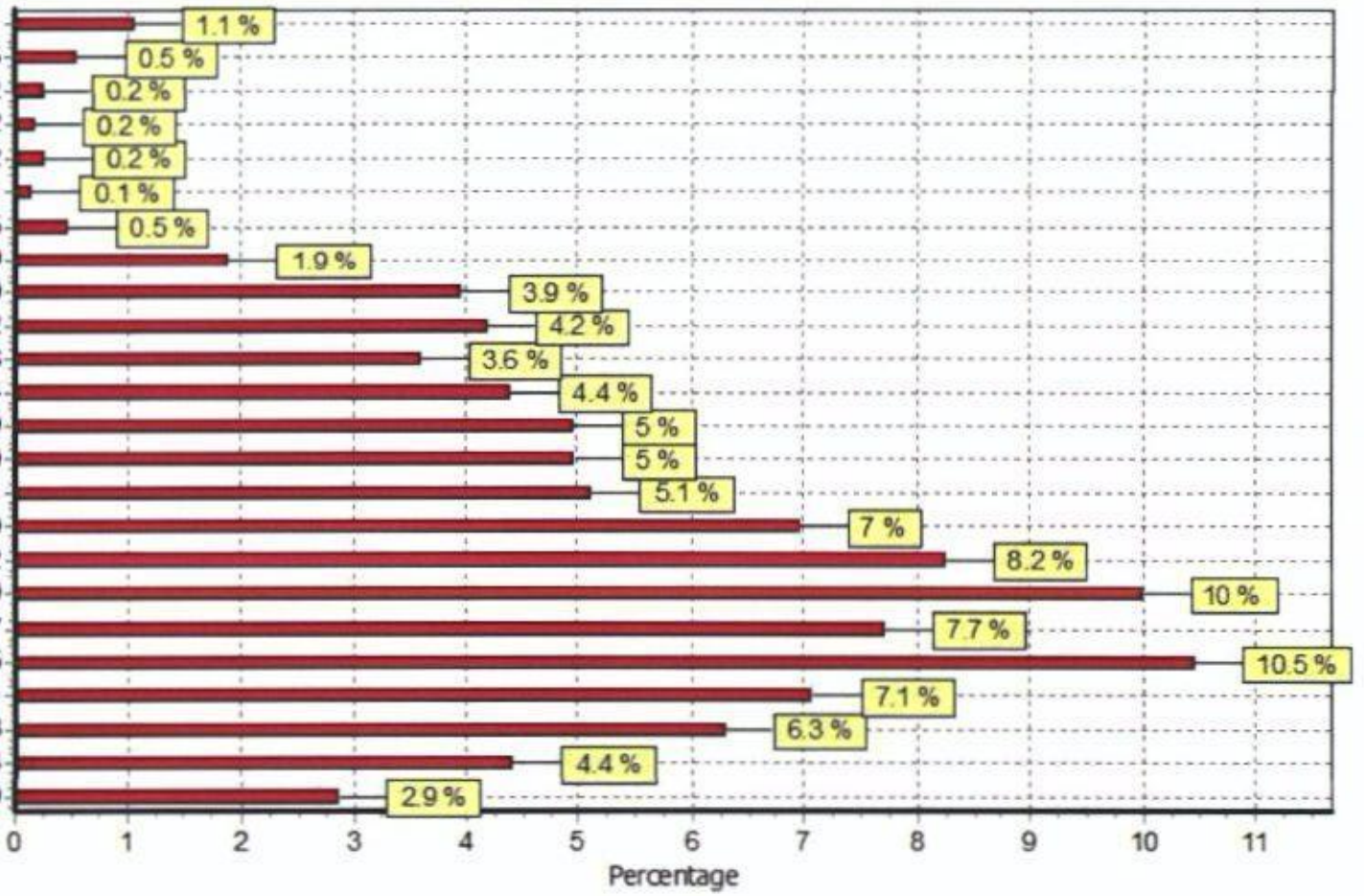
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	4	168	0.043	4	168	0.022	4	168	0.065
01:00 - 02:00	4	168	0.022	4	168	0.009	4	168	0.031
02:00 - 03:00	4	168	0.010	4	168	0.007	4	168	0.017
03:00 - 04:00	4	168	0.007	4	168	0.004	4	168	0.011
04:00 - 05:00	4	168	0.010	4	168	0.012	4	168	0.022
05:00 - 06:00	4	168	0.006	4	168	0.025	4	168	0.031
06:00 - 07:00	4	168	0.019	4	168	0.084	4	168	0.103
07:00 - 08:00	79	101	0.077	79	101	0.277	79	101	0.354
08:00 - 09:00	79	101	0.160	**79**	**101**	**0.432**	79	101	0.592
09:00 - 10:00	79	101	0.170	79	101	0.228	79	101	0.398
10:00 - 11:00	79	101	0.146	79	101	0.175	79	101	0.321
11:00 - 12:00	79	101	0.178	79	101	0.180	79	101	0.358
12:00 - 13:00	79	101	0.201	79	101	0.187	79	101	0.388
13:00 - 14:00	79	101	0.201	79	101	0.198	79	101	0.399
14:00 - 15:00	79	101	0.207	79	101	0.209	79	101	0.416
15:00 - 16:00	79	101	0.282	79	101	0.215	79	101	0.497
16:00 - 17:00	79	101	0.334	79	101	0.217	79	101	0.551
17:00 - 18:00	79	101	0.405	79	101	0.242	79	101	0.647
18:00 - 19:00	79	101	0.312	79	101	0.243	79	101	0.555
19:00 - 20:00	**4**	**168**	**0.424**	4	168	0.382	**4**	**168**	**0.806**
20:00 - 21:00	4	168	0.287	4	168	0.221	4	168	0.508
21:00 - 22:00	4	168	0.255	4	168	0.196	4	168	0.451
22:00 - 23:00	4	168	0.179	4	168	0.130	4	168	0.309
23:00 - 24:00	4	168	0.116	4	168	0.078	4	168	0.194
Total Rates:			4.051			3.973			8.024

Parameter summary

Trip rate parameter range selected:	4 - 437 (units:)
Survey date date range:	01/01/03 - 15/07/11
Number of weekdays (Monday-Friday):	95
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

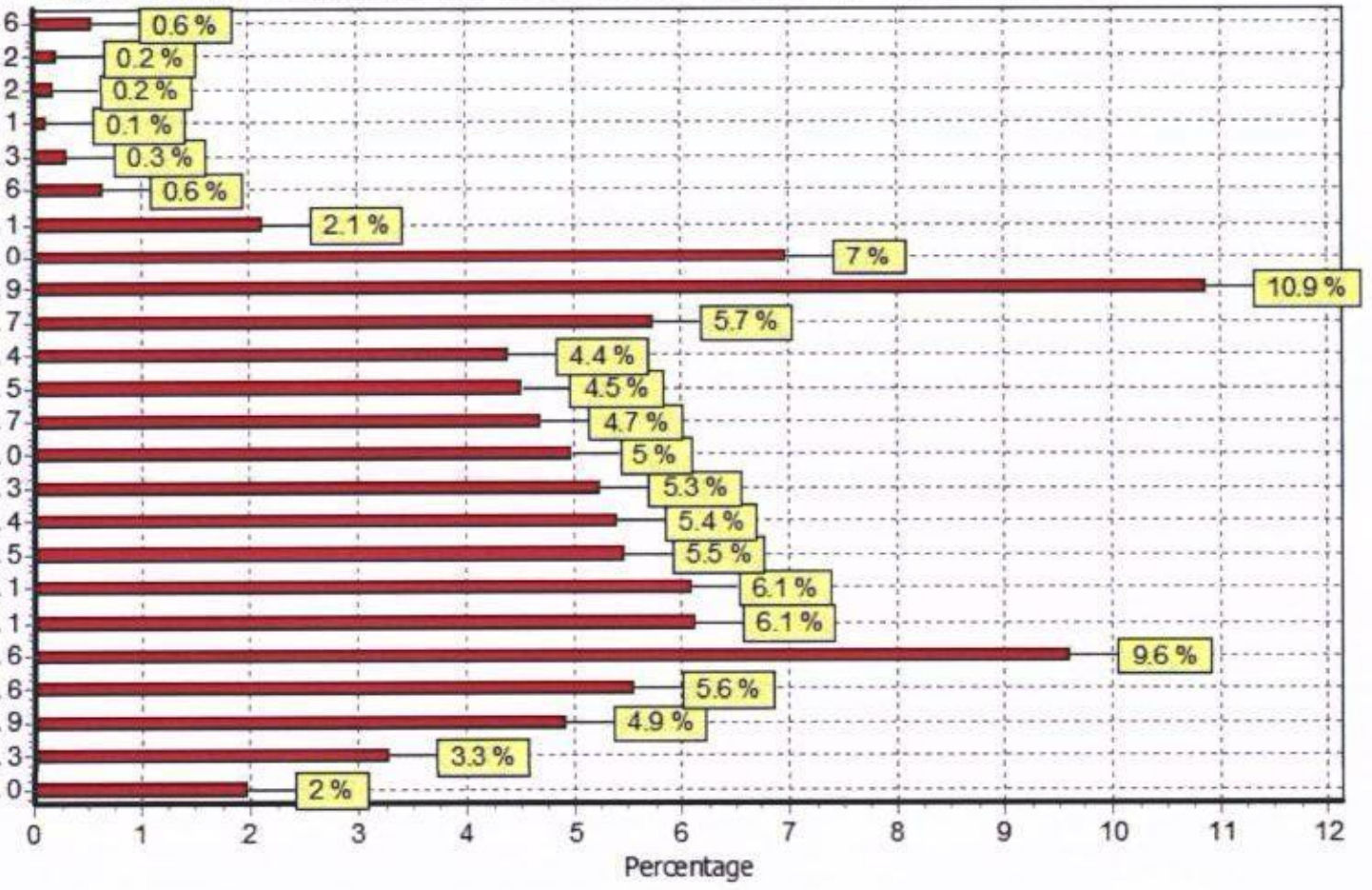
TRIP RATE GRAPH - ARRIVALS 03 - RESIDENTIAL A - HOUSES PRIVATELY OWNED VEHICLES

TIME	RATE	%
00:00-01:00	0.043	1.1
01:00-02:00	0.022	0.5
02:00-03:00	0.010	0.2
03:00-04:00	0.007	0.2
04:00-05:00	0.010	0.2
05:00-06:00	0.006	0.1
06:00-07:00	0.019	0.5
07:00-08:00	0.077	1.9
08:00-09:00	0.160	3.9
09:00-10:00	0.170	4.2
10:00-11:00	0.146	3.6
11:00-12:00	0.178	4.4
12:00-13:00	0.201	5.0
13:00-14:00	0.201	5.0
14:00-15:00	0.207	5.1
15:00-16:00	0.282	7.0
16:00-17:00	0.334	8.2
17:00-18:00	0.405	10.0
18:00-19:00	0.312	7.7
19:00-20:00	0.424	10.5
20:00-21:00	0.287	7.1
21:00-22:00	0.255	6.3
22:00-23:00	0.179	4.4
23:00-24:00	0.116	2.9



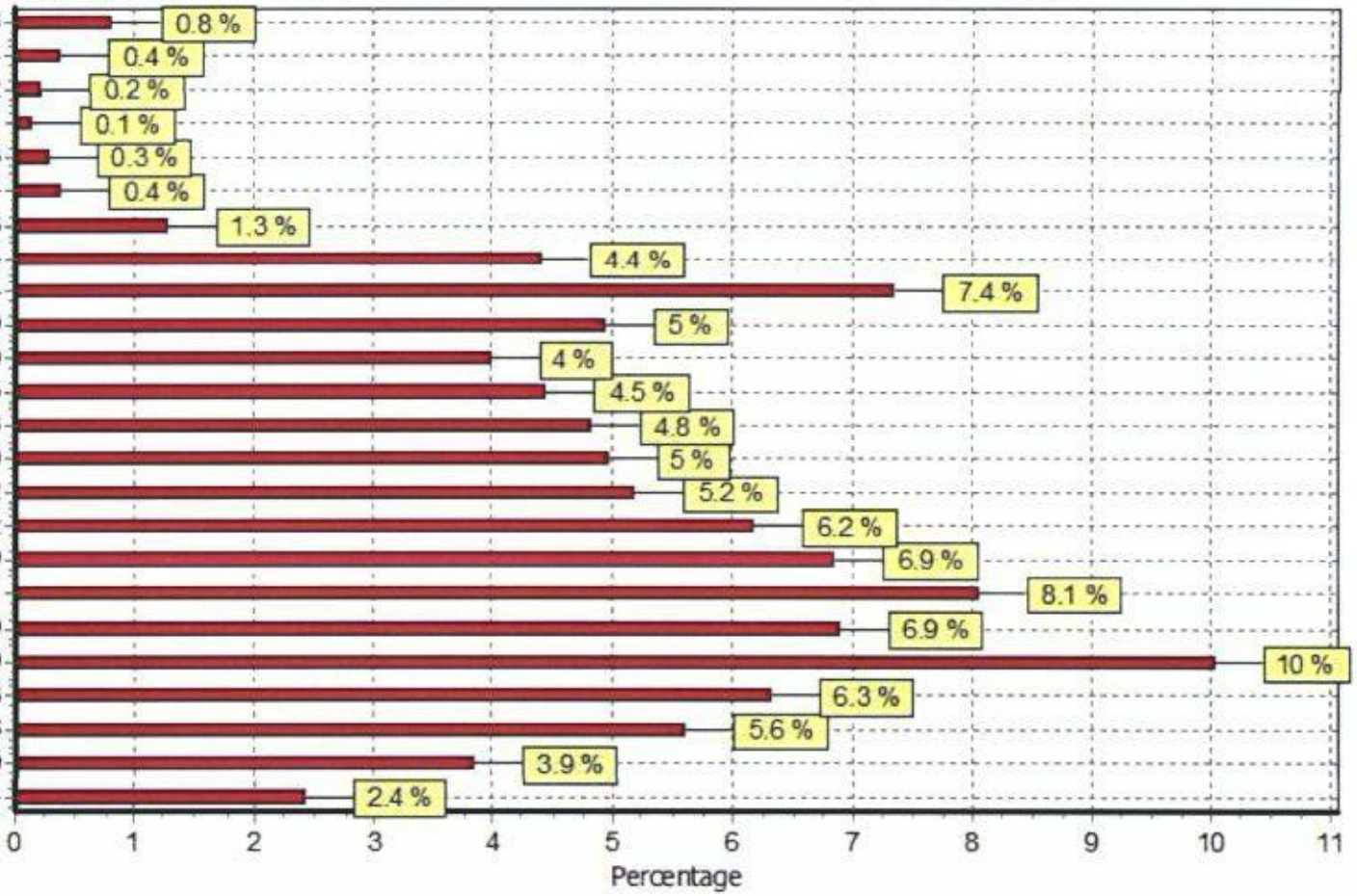
TRIP RATE GRAPH - DEPARTURES 03 - RESIDENTIAL A - HOUSES PRIVATELY OWNED VEHICLES

TIME	RATE	%
00:00-01:00	0.022	0.6
01:00-02:00	0.009	0.2
02:00-03:00	0.007	0.2
03:00-04:00	0.004	0.1
04:00-05:00	0.012	0.3
05:00-06:00	0.025	0.6
06:00-07:00	0.084	2.1
07:00-08:00	0.277	7.0
08:00-09:00	0.432	10.9
09:00-10:00	0.228	5.7
10:00-11:00	0.175	4.4
11:00-12:00	0.180	4.5
12:00-13:00	0.187	4.7
13:00-14:00	0.198	5.0
14:00-15:00	0.209	5.3
15:00-16:00	0.215	5.4
16:00-17:00	0.217	5.5
17:00-18:00	0.242	6.1
18:00-19:00	0.243	6.1
19:00-20:00	0.382	9.6
20:00-21:00	0.221	5.6
21:00-22:00	0.196	4.9
22:00-23:00	0.130	3.3
23:00-24:00	0.078	2.0



TRIP RATE GRAPH - TOTALS 03 - RESIDENTIAL A - HOUSES PRIVATELY OWNED VEHICLES

TIME	RATE	%
00:00-01:00	0.065	0.8
01:00-02:00	0.031	0.4
02:00-03:00	0.017	0.2
03:00-04:00	0.011	0.1
04:00-05:00	0.022	0.3
05:00-06:00	0.031	0.4
06:00-07:00	0.103	1.3
07:00-08:00	0.354	4.4
08:00-09:00	0.592	7.4
09:00-10:00	0.398	5.0
10:00-11:00	0.321	4.0
11:00-12:00	0.358	4.5
12:00-13:00	0.388	4.8
13:00-14:00	0.399	5.0
14:00-15:00	0.416	5.2
15:00-16:00	0.497	6.2
16:00-17:00	0.551	6.9
17:00-18:00	0.647	8.1
18:00-19:00	0.555	6.9
19:00-20:00	0.806	10.0
20:00-21:00	0.508	6.3
21:00-22:00	0.451	5.6
22:00-23:00	0.309	3.9
23:00-24:00	0.194	2.4



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rev.	amendment	date

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client
YACHTHAVEN (HAYLING) LTD

project
YACHTHAVEN
HAYLING ISLAND

scale	drawn by	checked by
1:500 @ A2	KWF	KWF
date	cad file	
FEBRUARY 2012	YACHTHVN.DWG	

title
ACCESS AND SIGHTLINES

drawing number	rev.
14894/1	

YACHTHAVEN, HAYLING ISLAND

ENVIRONMENTAL STATEMENT

DECEMBER 2011

APPENDIX 6.1

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STRUCTURAL, CIVIL AND BUILDING CONSULTANTS

NEW DEVELOPMENT OF 6 HOUSES TO EXISTING LAND ADJACENT TO YACHTHAVEN, HAYLING ISLAND

FLOOD RISK ASSESSMENT

Architects: PWP Architects

On Behalf of: YACHTHAVEN (HAYLING) LTD.

EG/320573/EG Rev A 2 January 2012

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Previously we have carried out a preliminary FRA outlining proposals relating to flood risk on the site. This preliminary FRA was commented upon by the Environment Agency in their letter dated 1st April 2010, a copy of which can be found in Appendix A.

A Planning Application is being submitted in connection with the proposed development at this site. A Flood Risk Assessment in accordance with the current recommendations given in the National Planning Policy Framework, which has recently superseded PPS25, has been requested in relation to the requirements of the code for sustainable homes.

Following a desk study and various discussions with local authorities and the Environment Agency, this report has been prepared to determine the risk of flooding on the site for the proposed development and to put forward recommendations to protect the development, its users and surrounding properties from any potential flood risk.

THE SITE AS EXISTING

Appendix B contains a location plan for the site. The proposed development on the site can be found at grid reference SU 729 018.

Appendix C contains a topographical survey drawing showing levels across the site. The levels were taken using an ordnance survey benchmark. The drawing shows existing levels around the site of approximately 2.900 to 4.200m AOD. It also shows levels along the access road to the site which range from 4.000 to 4.600m AOD.

The existing site was previously used for industrial purposes. The area of the site proposed for the residential units was a small industrial shed building with various smaller out buildings and caravans. The site is currently derelict and unused. The area of the site near the sea edge was previously used for boat repairs with a small boat birth directly adjacent to the shore.

THE PROPOSED DEVELOPMENT

Appendix D contains plans showing the proposed development. This consists of 6 new residential houses at the Northern end of the site with a small floating boat mooring structure at the waters edge to enable residents to moor their yachts.

POLICY BACKGROUND

The Government's sustainable development strategy makes it a requirement to assess appropriate forms of developments for areas at risk of flooding. This is to avoid any unnecessary increase in the requirement for flood defences. A requirement of the National Planning Policy Framework is that developers making planning applications on sites that are potentially at risk from flooding should consult with the Environment Agency, and where appropriate produce a flood risk assessment (FRA). The Environment Agencies flood matrix was consulted and showed that a flood risk assessment is appropriate for this site.

FLOOD RISK MAPS AND AVAILABLE INFORMATION

Appendix E contains a copy of the Environment Agency Flood Map for this area. This shows that the development for the six new houses is within flood zone 2 and is at risk from tidal flooding. The site is not at risk from fluvial flooding.

EFFECT ON EXISTING DRAINAGE STRATEGY

The change of use of the existing development will have very little effect on the existing storm drainage in the area. It is likely that the majority of storm water from the site runs directly off into the sea so the small increase in impermeable area on the site will not have any major effect on the storm water drainage regime. There will be a potential increase in the number of persons on the site so the foul water flow from the development will increase. However as the site is susceptible from flooding by the sea the increase in foul flow from the site will not effect the likelihood of flooding.

SEQUENTIAL TEST

The total area of the proposed development site is approximately 1 hectare. The EA flood risk matrix was consulted for a 1 hectare operational development in flood zone 2 with 'more vulnerability'. The following standing advice is appropriate for the development. The sequential test should be applied by the local planning authority and a flood risk assessment is required.

The sequential test for the development should be undertaken by the local planning authorities using the guidance given by the EA in their flood risk matrix document. The aim of the sequential test is to steer development towards flood zone 1. In the case of our proposed development an important part of the scheme is that the houses have access and are in relatively close proximity to the on-site boat mooring area. The residential development, comprising the six houses, has been moved as far to the North within the available site boundary as possible in an attempt to reduce the risk of flooding to the houses and to move

them to slightly higher ground. This is an important aspect of the development that should be considered by the planners during the sequential test.

The exception test requires to prove that developments provide wider sustainability benefits to the community that outweigh flood risk. It also states that the development should, where possible, be on developable, previously developed land. This site has previously been used as an industrial area. The development of the site into residential usage would reduce the chance of contamination to the site and also bring the land usage more in keeping with this area of Hayling Island. The proposed development is classed as 'more vulnerable' and is within flood zone 2. Consultation with the now superseded, though still useful as a reference, PPS 25 table D3 indicates that the development is appropriate with regard to the exception test. It is also of note that the development is to be constructed on land that has been previously developed and used for industrial use. This means that in order to develop the site a contamination assessment would be completed and, if required, a site clean up undertaken. It is also important that the development will not be undertaken on a 'green field site'.

RISK ASSESSMENT

Discussions have been held with the Environment Agency. The advice from the Environment Agency was that the development lies within flood zone 2. This means the site is within an area which has between a 1 in 200 and 1 in 1000 (0.5%-0.1%) annual chance of sea flooding. As the proposed buildings are for domestic use the predicted flood event must be considered for a 100 year lifetime. This means that the level of the predicted flood water is 4.500m for the year 2115. When allowing for a wave height on the site of 10%, this would give a predicted maximum flood water level on the site of 4.950m AOD, however the site is positioned well within a sheltered cove so the actual wave effects could be significantly less than this.

Any flooding on the site will be caused by the sea inundating the site from the South. There are no significant flood defences in this area of Hayling Island so flood defences cannot be relied upon to protect the site.

It is usual for the Environment Agency to require a free board of 600mm above the maximum predicted flood water level. This would indicate a finished floor level (FFL) of 5.100m AOD. This level would also protect the residential units from the maximum flood level including a 10% wave allowance whilst still providing a 150mm free board. Setting the ground floor of the building at this level would ensure that the properties were never flooded even during this extreme flood event. If this FFL level can be achieved then no flood resilient construction measures would need to be employed for the construction of the houses.

Access to and from the site during the extreme flood event would be along the access road which leads to Copse Lane. The first, approximately, 50m of access road is within flood zone 1 and not at risk from flooding. The remaining length of access road is within flood zone 2 as is the development site. This means that the effect of the flood water level of 4.500m AOD needs to be considered along the length of access road within flood zone 2 to ensure that access could be gained to and from the site during a flood event. As the access road is even further in land than the houses it is not deemed necessary to consider significant wave effects during the access exercise.

The levels along the access road range from approximately 4.000 to 4.600m AOD. This access road varies in construction from some tarmac areas to a gravel track; therefore it is feasible to slightly raise the access road levels to comply with the minimum level that would allow access during a flood event.

It is desirable to provide completely dry access to and from the site during an extreme flood event, however where this is not feasible a commonly used rule of thumb provided by the EA is to allow a maximum of 250mm water depth on the access, which will still allow emergency vehicles to access the site during a flood. This equates to a minimum access road level of 4.250m. Appendix F shows an access site level sketch which shows existing levels and proposed levels on the access road where adjustments are required to provide the minimum level of 4.250m AOD. This will be achieved by adding additional aggregate to the access road to increase levels.

CONCLUSIONS AND RECOMMENDATIONS

The predicted maximum flood water level at this development has been determined as 4.500m AOD using guidance from the Environment Agency. The maximum high water level on the site will be 4.950m AOD when allowing for waves. The predicted high water level, caused by waves, will only be sustained for very short periods due to tidal action. The existing flood defences in the area of the site are currently not able to defend against the predicted flood event.

In order to meet the Environment Agencies requirements the finished floor levels of the new houses within the proposed development should be set at 5.100m AOD, this will provide the full required 600mm of freeboard above the high tide flood level usually requested by the EA and will also still provide protection when allowing for full wave action. Providing the finished floor levels of the residential units are set at this level then the properties should not suffer in the event of flooding and flood resilient construction techniques need not be employed. As the existing site levels are considerably lower than this at present extensive ramping or steps will be required on the site to allow level access.

The access road to and from the development is lower in some areas than acceptable to allow access to and from the site during a flood event. Therefore levels in some areas of the access road will need to be raised to provide the minimum access road level noted earlier in this report.

The site should be registered with the environment agency online flood warning system and floodline telephone service to give warnings of any possible flood events. Local radio and television services should also be used for the same reason. Some warning of severe weather may also be available from the Met Office using its severe weather warning service. As the tidal event likely to cause flooding on this site is predictable the floodline will give warnings of potential flood events.

The site is primarily at risk from tidal flooding. Therefore the increase in foul and storm water run-off from the site should not have any major effect on the flooding regime of our site or nearby areas.

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ENVIRONMENTAL STATEMENT

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EG/320573/EG **Rev A 2 January 2012**

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For and On Behalf of Cowan Consultancy



Tree Belting

Ref. No.	Species	Plant Qty	Spacing
No.1	LRHK	520	3
No.2	LRHK	330	3.5
No.3	LRHK	450	3
No.4	LRHK	400	3
No.5	LRHK	250	2
No.6	DEAD	+80	3
No.7	LRHK	550	3
No.8	LRHK	600	3.5
No.9	LRHK	150	1
No.10	LRHK	600	6
No.11	LRHK	230	3
No.12	LRHK	340	3
No.13	LRHK	230	2.5
No.14	LRHK	500	3
No.15	LRHK	300	2
No.16	LRHK	300	3
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No.33	LRHK	250	2.5
No.34	LRHK	600	4.5
No.35	LRHK	300	3.5
No.36	LRHK	350	6
No.37	LRHK	300	3
No.38	LRHK	350	3
No.39	LRHK	250	2
No.40	LRHK	200	1
No.41	LRHK	270	3
No.42	LRHK	280	3
No.43	LRHK	150	2
No.44	LRHK	250	2
No.45	LRHK	400	3
No.46	LRHK	300	2.5
No.47	LRHK	300	2.5
No.48	LRHK	170	1.5
No.49	LRHK	320	3.5
No.50	LRHK	280	4
No.51	LRHK	200	2
No.52	LRHK	350	4.5
No.53	LRHK	250	2
No.54	LRHK	250	3
No.55	LRHK	130	1
No.56	LRHK	200	2
No.57	SB	10	1.2
No.58	LRHK	150	1
No.59	LRHK	250	3
No.60	LRHK	300	3
No.61	LRHK	300	2.5
No.62	LRHK	280	2.5
No.63	LRHK	400	3.5
No.64	LRHK	380	4
No.65	LRHK	350	3
No.66	LRHK	300	2.5
No.67	LRHK	450	3.5
No.68	LRHK	400	3.5
No.69	LRHK	130	1.5
No.70	LRHK	170	1.5
No.71	LRHK	180	1

SYMBOLS TABLE

APPENDIX A

ENVIRONMENT AGENCY CONSULTATION RESPONSE

Mr Elvin Gomery
COWAN CONSULTANCY LTD
Turnberry House (4400) Parkway
Whiteley
Fareham
PO15 7FJ

Our ref: HA/2010/109502/01-L01
Your ref: Yachthaven

Date: 01 April 2010

Dear Mr Gomery

6 NEW HOUSES
SITE ADJACENT TO YACHTHAVEN, HAYLING ISLAND

Thank you for your email of 19 March 2010 regarding the above proposed development. I can now answer your queries as follows.

Flood Risk
We broadly agree with the findings and recommendations of your preliminary FRA. Please note that you will need to demonstrate that the measures that you have noted including raised floor levels, a safe means of access in a design flood, and appropriate flood resilience and resistance techniques can be achieved at this site in a full Flood Risk Assessment. The Sequential Test, as you have noted, will also need to be passed.

If you'd like to discuss this site further please contact George Woodward in our Development and Flood Risk team on 01962 764832.

Contaminated Land
The development site lies partly on a mapped historic landfill known as Yachthaven, it is known to have received spoil materials and highway construction waste materials. The site was a licensed site accepting inert wastes (Licence No. EAHLD20818). Further information may be obtained from the local authority who are the lead regulator for the site.

A preliminary risk assessment and conceptual site model should be completed to determine the extent of the historic landfill and the potential risks associated to controlled waters. Any assessment should be completed to fulfil the requirements of "PPS23: Planning and Pollution Control, Annex 2: Development on Land Affected by Contamination". It is also recommended that you:

· Apply the risk- based framework set out in the Model Procedures for the Management of Land Contamination (CLR 11) and follow the guidance in that

document so that you can make the best decisions for your site

- Refer to the Environment Agency guidance on requirements for land contamination reports

- Use BS 10175 2001, *Investigation of potentially contaminated sites – Code of Practice* as a guide to undertaking the desk study and site investigation scheme

- Use MCERTS accredited methods for testing contaminated soils at the site

- Consult our website at www.environment-agency.gov.uk for further information about the above and any permissions which may be required.

Soakaways for the disposal of clean uncontaminated surface water will be acceptable in principle. However, no soakaways should be constructed in land affected by contamination.

Biodiversity
The Environment Agency is particularly interested in all wetland habitats and species. We would request that the following are taken into consideration when forming a planning application.

Detailed, up-to-date ecological surveys (habitats and species) should be undertaken at an appropriate time of year by a suitably qualified ecologist. The surveys should identify all wet habitats on and around the site, including less obvious wet grassland, marshy and boggy areas, as well as ponds/ditches. We would expect to see justification and at least like for like compensation for any wetland habitat/feature loss (and terrestrial habitat for wetland species e.g. Great Crested newts).

The applicant should also demonstrate no adverse impacts on the adjacent Chichester and Langstone Harbours Special Protection Area, Special Area of Conservation and Ramsar site.

We would also urge the applicant to refer to Natural England's standing advice for protected species and Brent geese. The information can be found on Natural England's external web site.
http://www.naturalengland.org.uk/regions/south_east/ourwork/standingadvice/default.aspx

The applicant should demonstrate if it is possible to avoid or mitigate against adverse effects, and any limitations of mitigation, including methods statements demonstrating how impacts will be minimised, and details of proposed post-development management and monitoring.

The proposed development is of significant size and therefore ecological enhancements should be an intrinsic part of the proposal. We would support proposed enhancements of existing habitats and habitat creation, particularly in line with local and UK Biodiversity Action Plans.

In addition to the above, it is also recommended that existing nature conservation features, within and adjacent to the proposed development site, such as mature trees, hedgerows, watercourses and other features be incorporated into site design and protected from change.

Cont/d..

If you have any further questions or queries please contact Adam Cave FRB Solent and South Downs on 01903 832325 alternatively email adam.cave@environment-agency.gov.uk

Please note that the view expressed in this letter by the Environment Agency is a response to a pre application enquiry only and does not represent our final view in relation to any future planning application made in relation to this site. We reserve the right to change our position in relation to any such application.

You should seek your own expert advice in relation to technical matters relevant to any planning application before submission

We are keen to help ensure that new development is as sustainable as possible and therefore appreciate the opportunity to comment on development proposals at this early stage.

Our guide for developers is designed to give practical advice on the environmental issues that may affect your site and provides some examples of sites where good practice has already been applied. Some of the topics covered in the guide include, managing the risk of flooding, using water wisely, wildlife & green space, managing waste and land affected by contamination. You can find this guide and links to further information at http://www.environment-agency.gov.uk/business/sectors/32695.aspx

I trust that the above comments are satisfactory but if you require any further information please contact me.

Yours sincerely

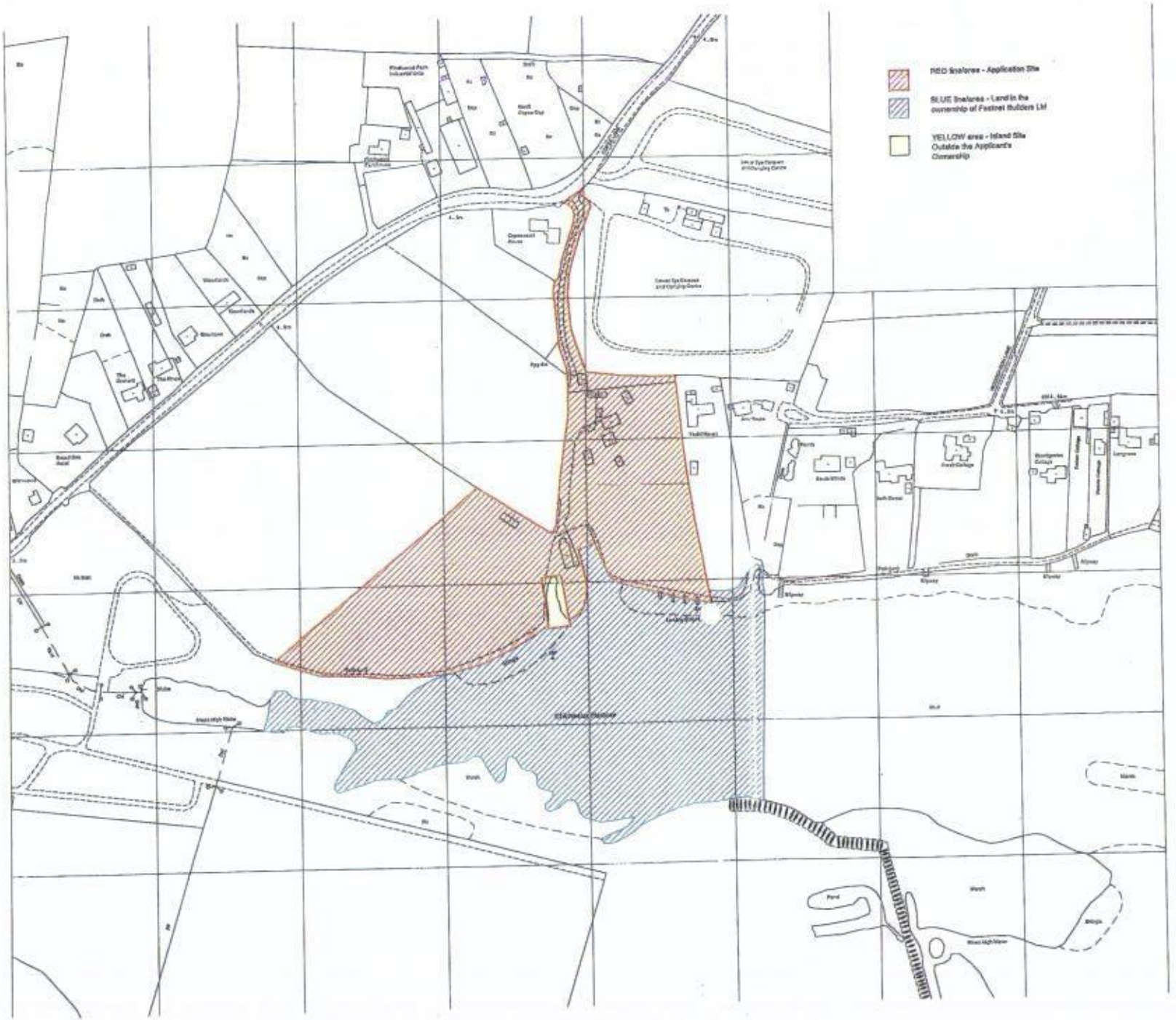
Miss Catherine McLeod
Planning Liaison Officer

Direct dial 01903 703858
Direct e-mail planning.southdowns@environment-agency.gov.uk

End

APPENDIX B

LOCATION PLAN



Chaplin Farrant Wiltshire Ltd

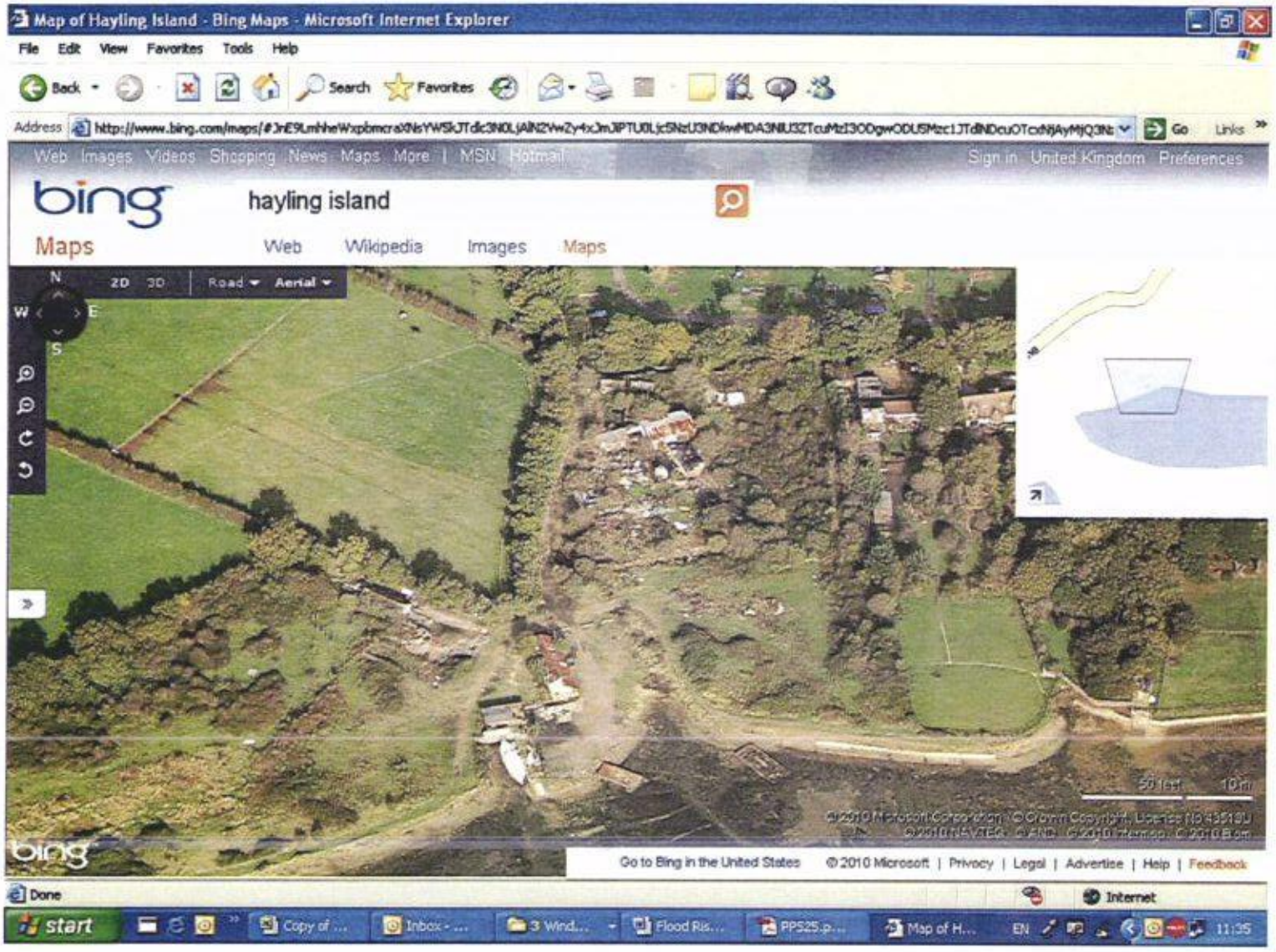
client Fastnet Builders

project Redevelopment and Restoration of Yachthaven, Hayling Island

drawing Location Plan

project ref.	drawing no.	revision
JOB4991Y	AP 100	A

scale	date	drawn by	checked by
1:2500 @ A3	Mar '99	JM	



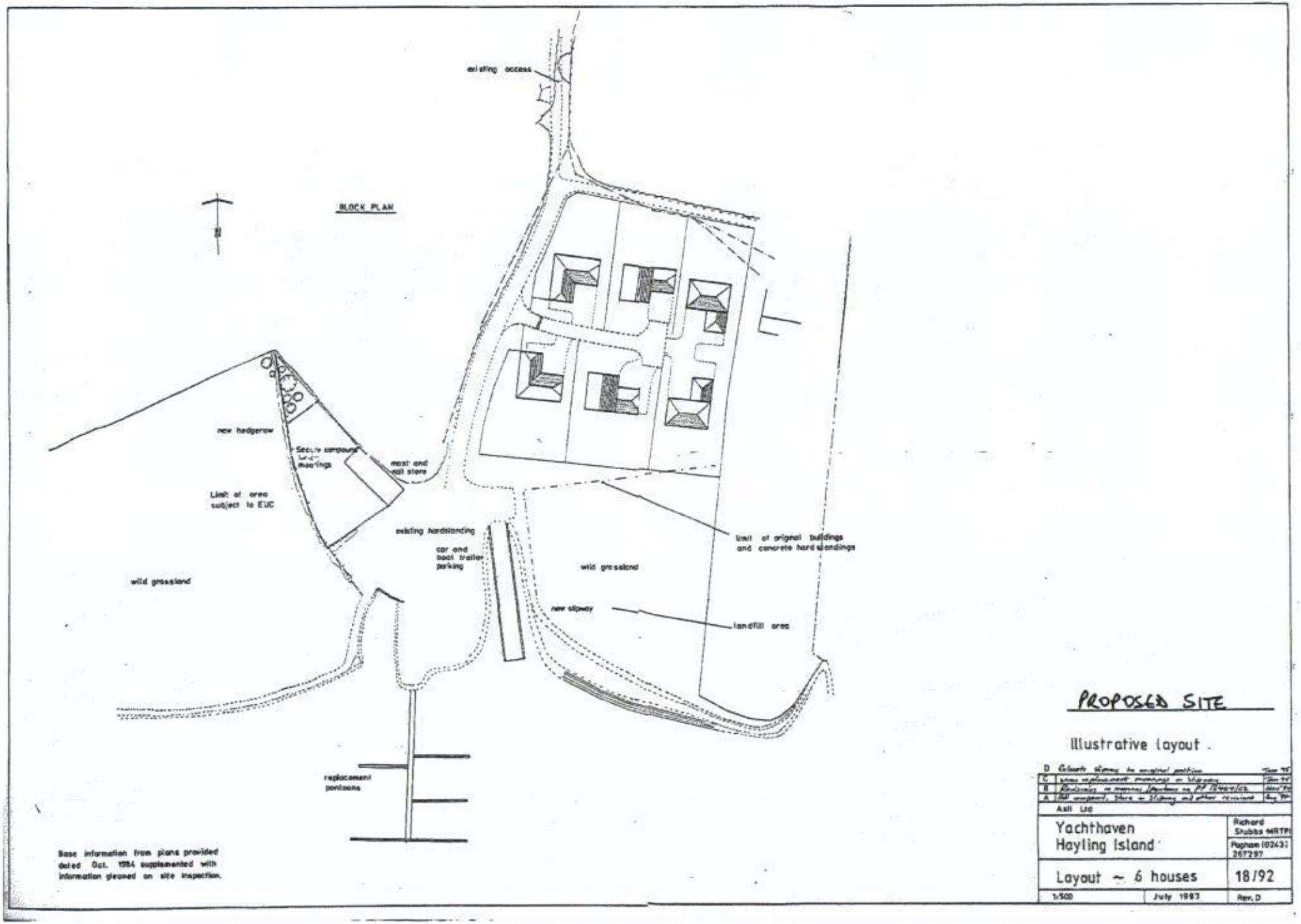
EXISTING SITE

APPENDIX C

TOPOGRAPHICAL SURVEY PLAN

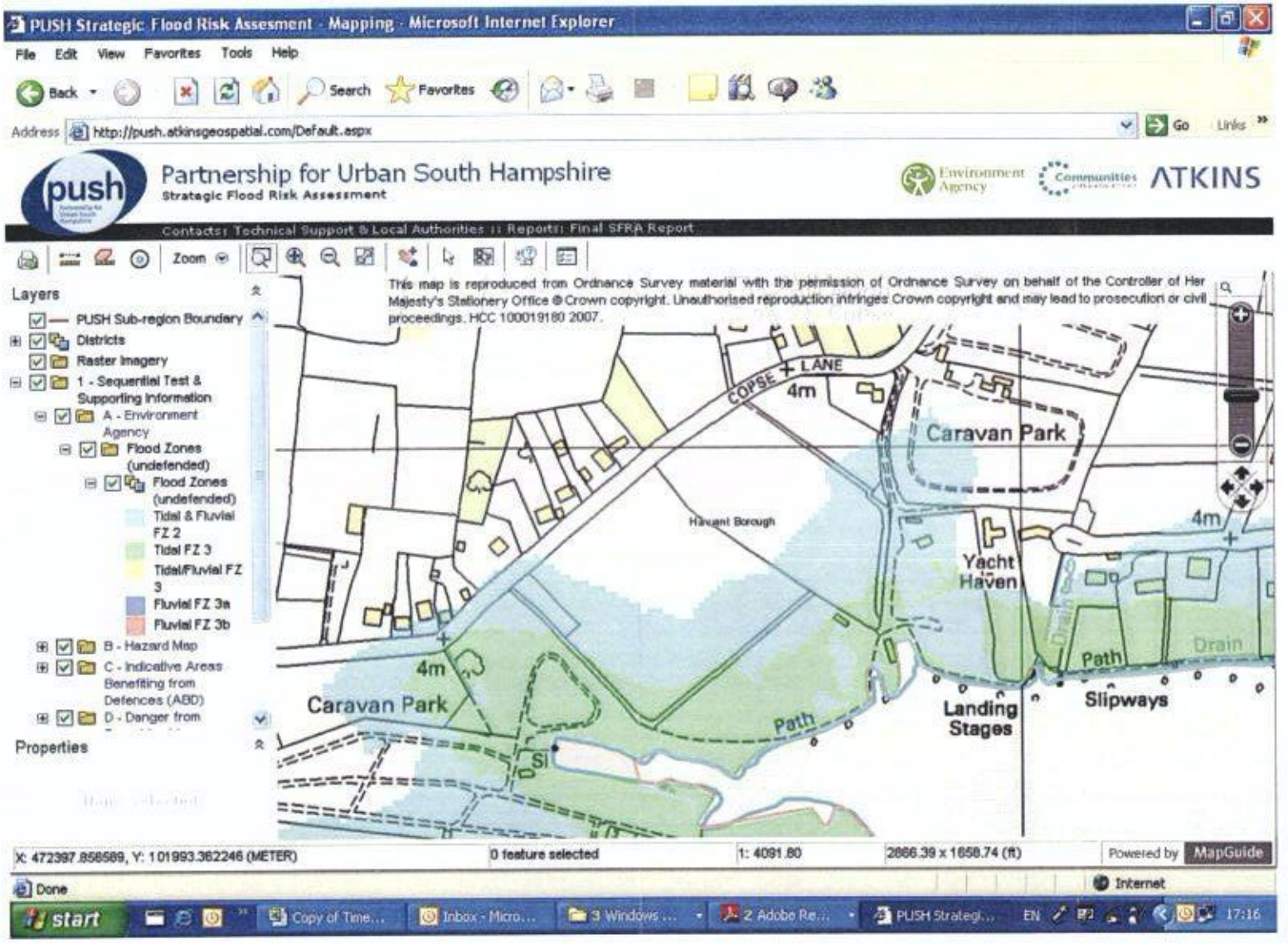
APPENDIX D

PROPOSED DEVELOPMENT DETAILS


existing access
BLOCK PLAN
new hedgerow
Limit of area subject to EUC
mast and rail store
existing hardstanding
car and boat trailer parking
wild grassland
wild grassland
limit of original buildings and concrete hardstandings
new slipway
landfill area
replacement pontoons
Base information from plans provided dated Oct. 1984 supplemented with information gleaned on site inspection.
PROPOSED SITE
Illustrative layout.
D Colours slipway to original position
C
B
A
Ash Ltd
Yachthaven
Hayling Island
Richard Stubbs MRTPI
Pagham (01243) 267297
Layout ~ 6 houses
18/92
1:500
July 1993
Rev. D

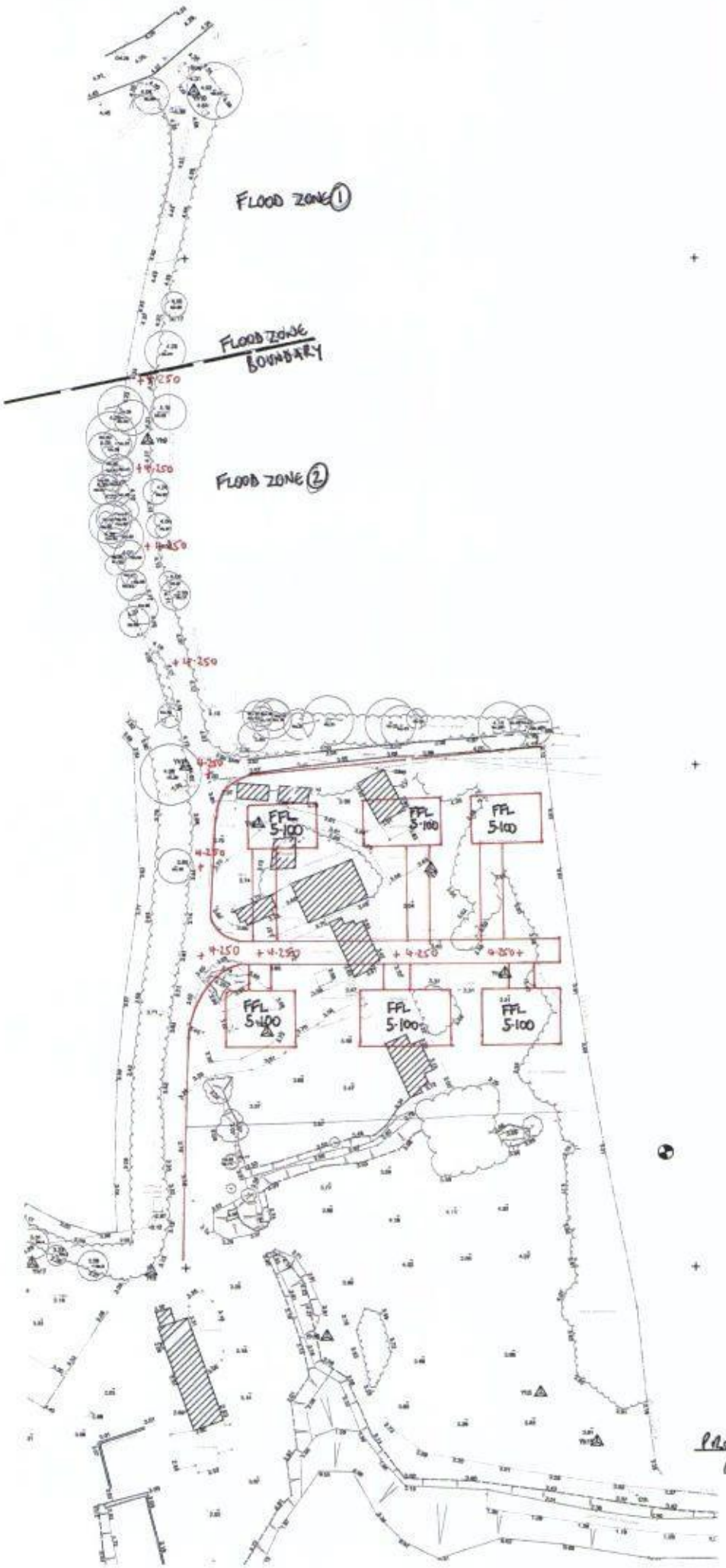
APPENDIX E

ENVIRONMENT AGENCY FLOOD MAP


PUSH Strategic Flood Risk Assesment - Mapping - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://push.atkinsgeospatial.com/Default.aspx
Go Links
push
Partnership for Urban South Hampshire
Strategic Flood Risk Assessment
Environment Agency
Communities
ATKINS
Contacts: Technical Support & Local Authorities :: Reports: Final SFRA Report
Zoom
Layers
PUSH Sub-region Boundary
Districts
Raster Imagery
1 - Sequential Test & Supporting Information
A - Environment Agency
Flood Zones (undefended)
Flood Zones (undefended)
Tidal & Fluvial FZ 2
Tidal FZ 3
Tidal/Fluvial FZ 3
Fluvial FZ 3a
Fluvial FZ 3b
B - Hazard Map
C - Indicative Areas Benefiting from Defences (ABD)
D - Danger from
Properties
This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. HCC 100019180 2007.
COPSE LANE
4m
Caravan Park
Havant Borough
Yacht Haven
Drain
Path
Slipways
Landing Stages
4m
Caravan Park
Path
X: 472397.856589, Y: 101993.362246 (METER)
0 feature selected
1: 4091.80
2666.39 x 1658.74 (ft)
Powered by MapGuide
Done
Internet
start
Copy of Time...
Inbox - Micro...
3 Windows ...
2 Adobe Re...
PUSH Strategi...
EN
17:16

APPENDIX F

PROPOSED SITE LEVEL AND BUILDING FFL



PROPOSED SITE LEVELS.
(NOT TO SCALE)

YACHTHAVEN, HAYLING ISLAND

ENVIRONMENTAL STATEMENT

DECEMBER 2011

APPENDIX 7.1

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NOISE ASSESSMENT METHODOLOGY.

Baseline.

Carry out continuous 24 hour weekday monitoring at one location on the site. This will require a secure location where the monitor can be installed.

Carry out short period (15 min) daytime measurements at four locations around the site to establish any noise variations around the site and relate to the 24 hour monitoring.

Noise Impact.

There no significant (non-natural) sources of noise on the site at present so the baseline survey will establish the background. This will also be taken as the background at the nearby receptors (principally Yacht Haven to the east and the caravan park to the north).

Noise impacts to be assessed are:

- Noise arising from construction. This will be assessed by calculation at the nearest receptors from noise sources typical to the construction methods likely to be used.

- Noise arising from the new dwellings. Again, this will be assessed by calculation and will include the additional traffic generated.

- Noise arising from marina operations. Whilst more remote from the receptors, this may be significant since some noise will be generated throughout the night in windy conditions. This noise source will be assessed by taking day and night measurements at a similar small marina operation in suitable weather conditions and the impact at the receptors calculated from this data.

Mitigation

The predicted noise impact will be compared with Havant's requirements and the need for mitigation assessed. Proposals will be made to reduce noise where appropriate.

James Mumford

From: "Laurent Lemagnen" <Laurent.Lemagnen@havant.gov.uk>
To: "'James Mumford'" <james@easltd.co.uk>
Sent: 26 September 2011 10:13
Subject: RE: Yachthaven, Hayling Island - Scoping Opinion, Noise

Dear Mr Mumford,

I have read the attached documents and have no comments to make of its content, which appears to be satisfactory.

I hope this helps

Regards
laurent

Mr. L. Lemagnen
Senior Environmental Health Officer
Tel: 02392 446671
Email: laurent.lemagnen@havant.gov.uk
Address: Civic Offices, Civic Centre Road, Havant, Hampshire, PO9 2AX

From: James Mumford [mailto:james@easltd.co.uk]
Sent: 26 September 2011 11:07
To: Laurent Lemagnen
Subject: Fw: Yachthaven, Hayling Island - Scoping Opinion, Noise

----- Original Message -----
From: James Mumford
To: laurent.lemagnen@havant.gov.uk
Sent: Wednesday, August 17, 2011 11:08 AM
Subject: Yachthaven, Hayling Island - Scoping Opinion, Noise

As discussed on the telephone today, I attach copies of the relevant page of the Scoping Opinion relating to the above development together with our proposed methodology for the addressing the noise issues set out in Section 10.

I would be grateful for your opinion on whether this methodology is likely to satisfy the requirements set out in the Opinion.

Please contact me if you require any further information concerning this matter.

Regards
James Mumford
Environmental Assessment Services Ltd
London Road
Hickstead
Haywards Heath
West Sussex RH17 5LZ
United Kingdom

+44 (0) 444 882552

YACHTHAVEN, HAYLING ISLAND)

ENVIRONMENTAL STATEMENT

DECEMBER 2011

APPENDIX 8.1

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FASTNET BUILDERS LIMITED

YACHTHAVEN, OFF COPSE LANE, HAYLING ISLAND

Contamination Assessment

September 2002

FASTNET BUILDERS LIMITED

YACHTHAVEN, OFF COPSE LANE, HAYLING ISLAND

Contamination Assessment

September 2002

1. CAUTION

This investigation relies largely on a superficial examination of the site plus a review of data from Havant Borough Council Planning and Environmental Health Departments, Hayling Library, the Environment Agency and on site investigation information provided by Fastnet Builders Ltd. Even where no potentially contaminating land use has been identified, it is possible that the site could be contaminated due to accidents; fly tipping or other unrecorded events. The age of a building may indicate probability but cannot be treated as proof of the absence or presence of asbestos. This report does not attempt to comment on the commercial value or viability of the site.

2. THE SITE

The site comprises of some 3.2 ha of land on the east side of Hayling Island on the foreshore of Chichester Harbour.

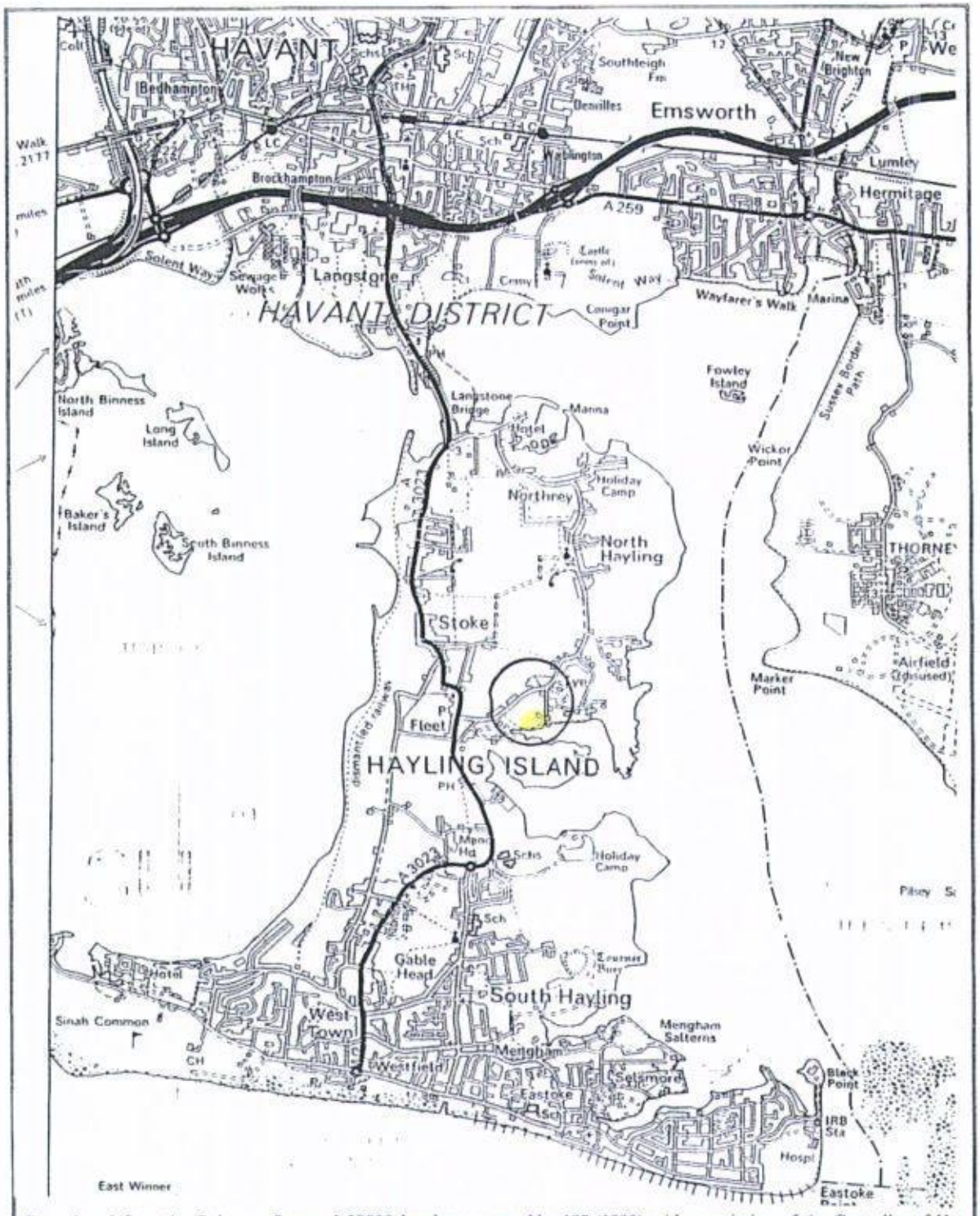
The Ordnance Survey (OS) map reference for the site is SU 728 018. The site elevation is approximately + 3 m OD. See Fig. 1 for site location plan.

3. GEOLOGY & HYDROGEOLOGICAL CONSIDERATIONS

According to the British Geological Survey (sheet No. 331 Portsmouth), most of the site lies on an outcrop of Palaeocene Reading Formation (inter-bedded sands and clays), which overlies Cretaceous Lower Chalk. The surrounding area is mainly on Quaternary Drift Deposits, including both Pleistocene River Terrace Gravels and Recent Marine Beach Deposits.

According to the NRA Groundwater Vulnerability Map (sheet No.45 West Sussex) the site is on a minor aquifer with a low soil vulnerability classification. The Environment Agency has confirmed that the site does not lie within a groundwater source protection zone.

The site is known to be partially filled with earth spoil and highway construction waste. It does not lie within 250m of any existing licenced landfill.



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FASTNET BUILDERS LIMITED

YACHTHAVEN, OFF COPSE LANE, HAYLING ISLAND

Contamination Assessment

Fig. 1 SITE LOCATION PLAN

September 2002 Scale 1:50000

4. SITE DEVELOPMENT HISTORY

4.1 The OS Plan of 1870 shows the site as agricultural fields. The area of the site to the west is divided into two sections, the remainder of the site is part of one large field. There is a pond or area of wetland to the south of the site, close to the shoreline. The surrounding area is shown undeveloped apart from the occasional dwelling or farm building. There is a large area of woodland to the north of the site named North Copse. The nearest settlements are the tiny hamlets of Fleet and Stoke. Oyster beds are shown on the foreshore along the inlet to the south and east of the site. See Figure 2.

4.2 The OS Plan of 1917 shows a large building on the eastern section of the site and (what appears to be) a small quay or jetty on the foreshore directly south of the building. Some trees or shrubs are indicated covering the northern section of the site. The section of land to the west now appears a single field. Woodgaston Cottage has appeared to the east of the site on the corner of Woodgason Lane. The surrounding area appears unchanged apart from the appearance of new houses and Gutner Farm buildings on Gutner Lane to the north-east and some reduction in the number of active oyster beds. See Fig. 3.

4.3 The 1938 OS Plan show four buildings on the eastern part of the site. One of these is the large building previously shown at the northern edge of the site; there are two smaller buildings to the south of this in line with the jetty. There is a smaller building to the north of the site close to the entrance. No development has occurred on the land to the west of the site. A previous investigation into development history indicated that the site had been used for the building, repair and maintenance of boats since 1933. Changes in the surrounding area include housing on the north side of Copse Lane, a house in the field immediately to the east of the site (South Winds?) and some expansion of housing at Fleet and Stoke, otherwise the vicinity has remained largely undeveloped. See Figure 4.

4.4 There was extensive activity in the vicinity during World War II. Numerous bomber attacks on nearby military installations at Thorney Island, Poling, Tangmere, Ford and Portsmouth showered the area with bombs and crashed aeroplanes. The build up to D-Day in 1944 crowded the vicinity with various kinds of military facilities and hardware. It is understood that the site was used by the military to test camouflage paints, reputedly for warships. No other specific war-time activities or incidents have been traced to the site.

4.5 The OS Plan of 1962 indicates the site as "Yachthaven". A slipway and a landing stage have appeared on the foreshore. Some form of large rack or gantry is shown in front of the main building. There is a new small building to the west of the site close to the fence-line. The surrounding area has remained largely undeveloped. The house now known as South Winds (to the east of the site) appears to have been called Sunny Bank at this time. Creek Cottage has appeared to the east of Sunny Bank. North Copse to the north of the site is now a much smaller area of woodland. There are several more houses within the hamlets of Fleet and Stoke. See Figure 5.

4.6 During 1978 planning permission was applied for and granted for a 62,000 ft^2 (6000 m^2) building for the sale of yachts, boats, fittings and equipment. This application is understood to have been for the replacement of the original building, previously destroyed by fire.

4.7 An area of the site was filled during 1984; this work was intended to include the provision of moorings and reinstatement of the seawalls.

4.8 A number of enforcement notices have been issued by the local planning authority with regards to the site:

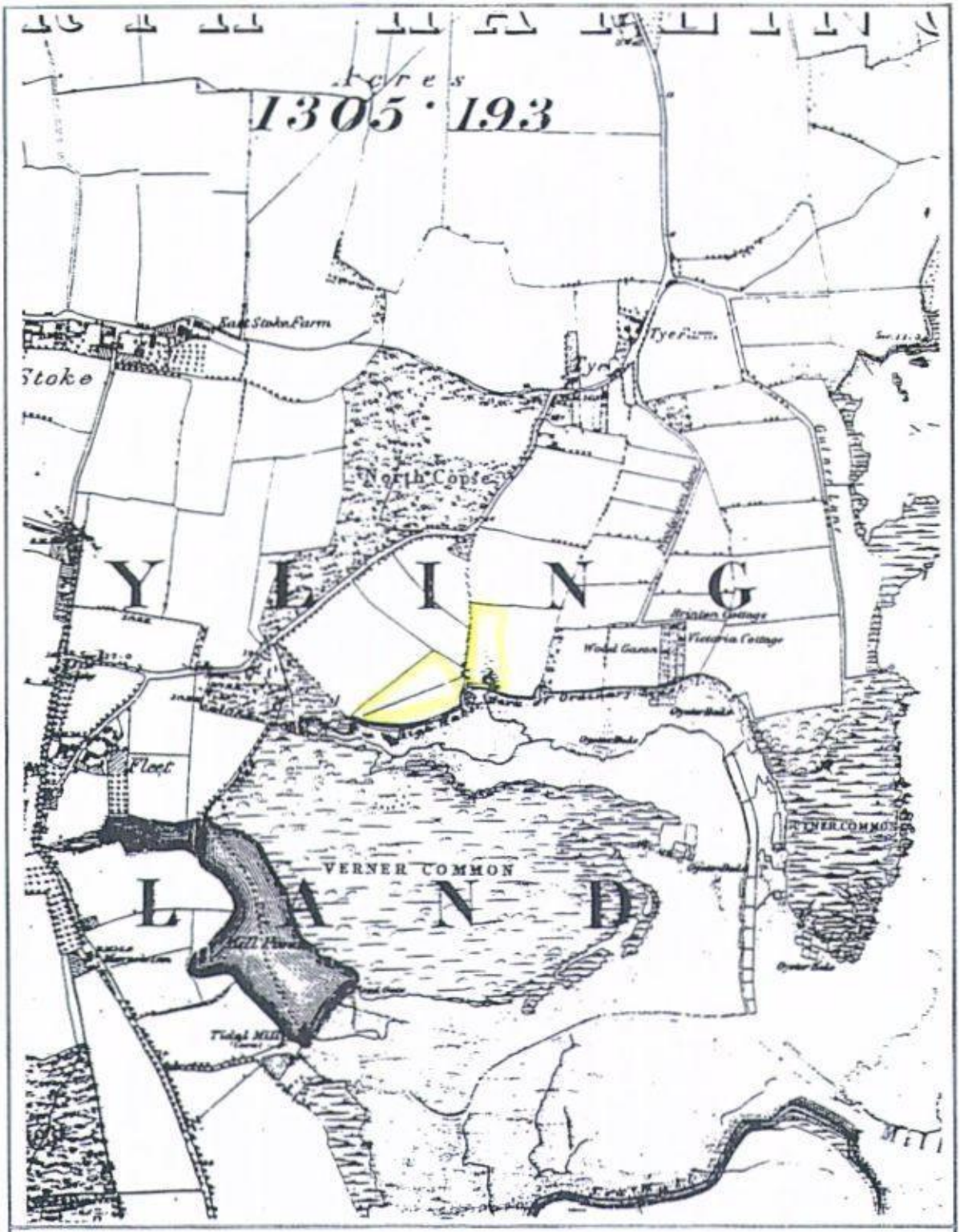
- In 1986 an enforcement notice required the cessation of tipping and filling of the site, with an order to return to a suitable surface (planning consent conditions had stipulated that filling should cease on 7 September 1985.
- In 1991 an enforcement notice was issued to stop the use of the site as a scrap/breakers yard and to remove all associated waste and equipment. There does not appear to have been any planning consent for this land use.
- In 1992 an enforcement notice was issued to stop the use of the site as a groundwork contractor's depot and requiring the removal of associated plant and equipment.

4.9 The OS Plan of 1996 shows the site with a number of small buildings to the north of the eastern section. There is one small building shown on the western side of the site close to the northern boundary. The slipway and landing stages appear to have been removed. Three more large detached houses (Yacht Haven, The House and North Corner) have been developed to the east of the site along the shoreline. The Lower Tye caravan and camping site lies to the north of the site. The pond or wetland area is still indicated close to the southern boundary of the site. See Figure 6.

4.10 The planning history for the site is summarised in Table 4.1 below:

TABLE 4.1
A summary of the planning applications for Yachthaven, off Copse Lane, Haying Island

REF. Nos.	DESCRIPTION	DECISION
	PRE 1988	
2395	Dwelling house	Permitted
16404/5	Redevelopment of boatyard as Yachthaven Marina with a new boatyard building	Refused
16404/7	House for the use of a member of the boatyards officers	Permitted
16404/10	Use of house for the manager of boat yard	Permitted
16404/12	Garage	Permitted
16404/16	Continuing occupancy of Yachthaven	Permitted
16404/18	Removal of restriction for continuing occupancy of house to persons connected with the adjoining boatyard	Refused
	POST 1988	
1988 – 50888	Retention of temporary covered building	Refused
1993 – 50888/02	Outline approval for residential development	Permitted 7/3/96
1994 – 50888/03	Outline approval for erection of a mast and sail storage building	Permitted 7/3/96
2000 – 50888/04	Slipway and replacement quay for 2 containers of fuel tanks and boundary treatment	Withdrawn 5/7/00
2000 – 50888/05	Retention of existing replacement quay walls and erection of temporary timber hut	Permitted 7/11/00
2000 – 50888/06	Demolition of existing industrial buildings and construction of 8 detached 6 bedroom houses with garages on east side of the site accessed via private road from Copse Lane	Awaiting decision
2000 – 50888/07	Demolition of existing industrial buildings and construction of 8 detached 6 bedroom houses with garages on east side of the site accessed via private road from Copse Lane	Awaiting decision
2000 – 50888/08	Demolition of existing industrial buildings and construction of 6 flats with garages on east side of the site accessed via private road from Copse Lane	No decision
2000 – 50888/02	Renewal of planning application for outline approval for residential development	No decision
2000 – 50888/02	Renewal of planning application for outline approval for residential development	No decision



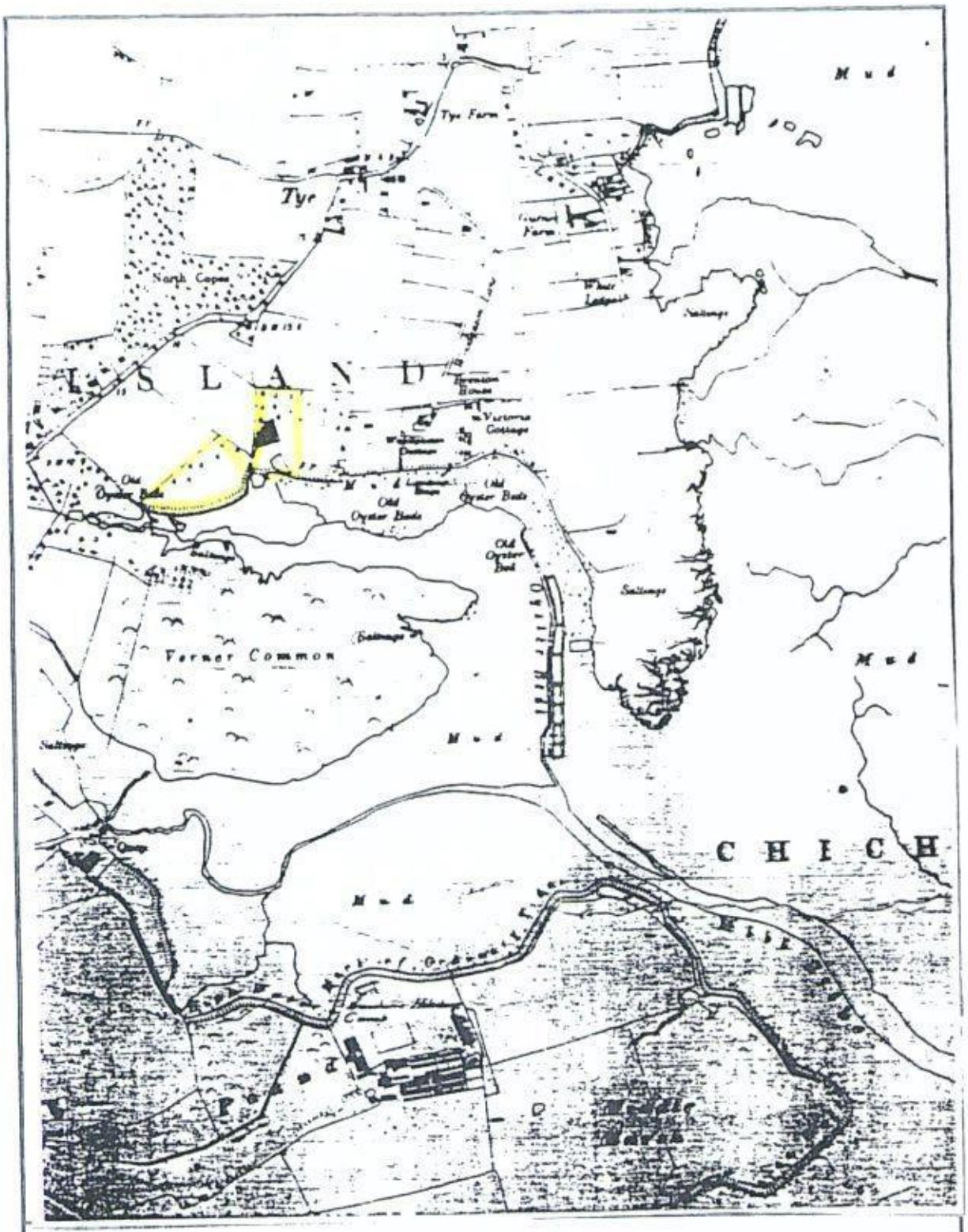
FASTNET BUILDERS LIMITED

YACHTHAVEN, OFF COPSE LANE, HAYLING ISLAND

Contamination Assessment

Fig. 2 THE SITE AS SHOWN ON THE OS PLAN OF 1870

September 2002 Scale 1:10560



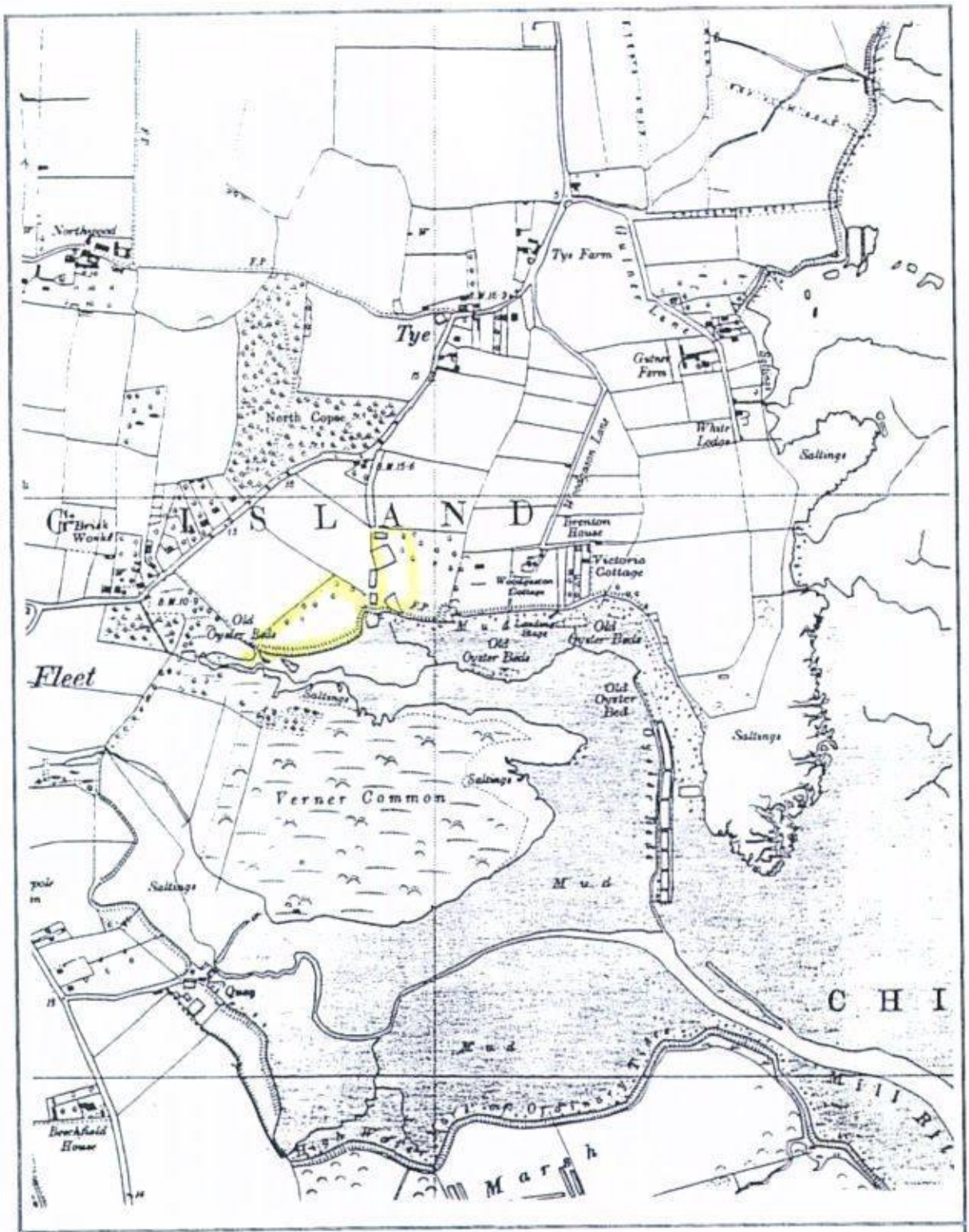
FASTNET BUILDERS LIMITED

YACHTHAVEN, OFF COPSE LANE, HAYLING ISLAND

Contamination Assessment

Fig. 3 THE SITE AS SHOWN ON THE OS PLAN OF 1917

September 2002 Scale 1:10560



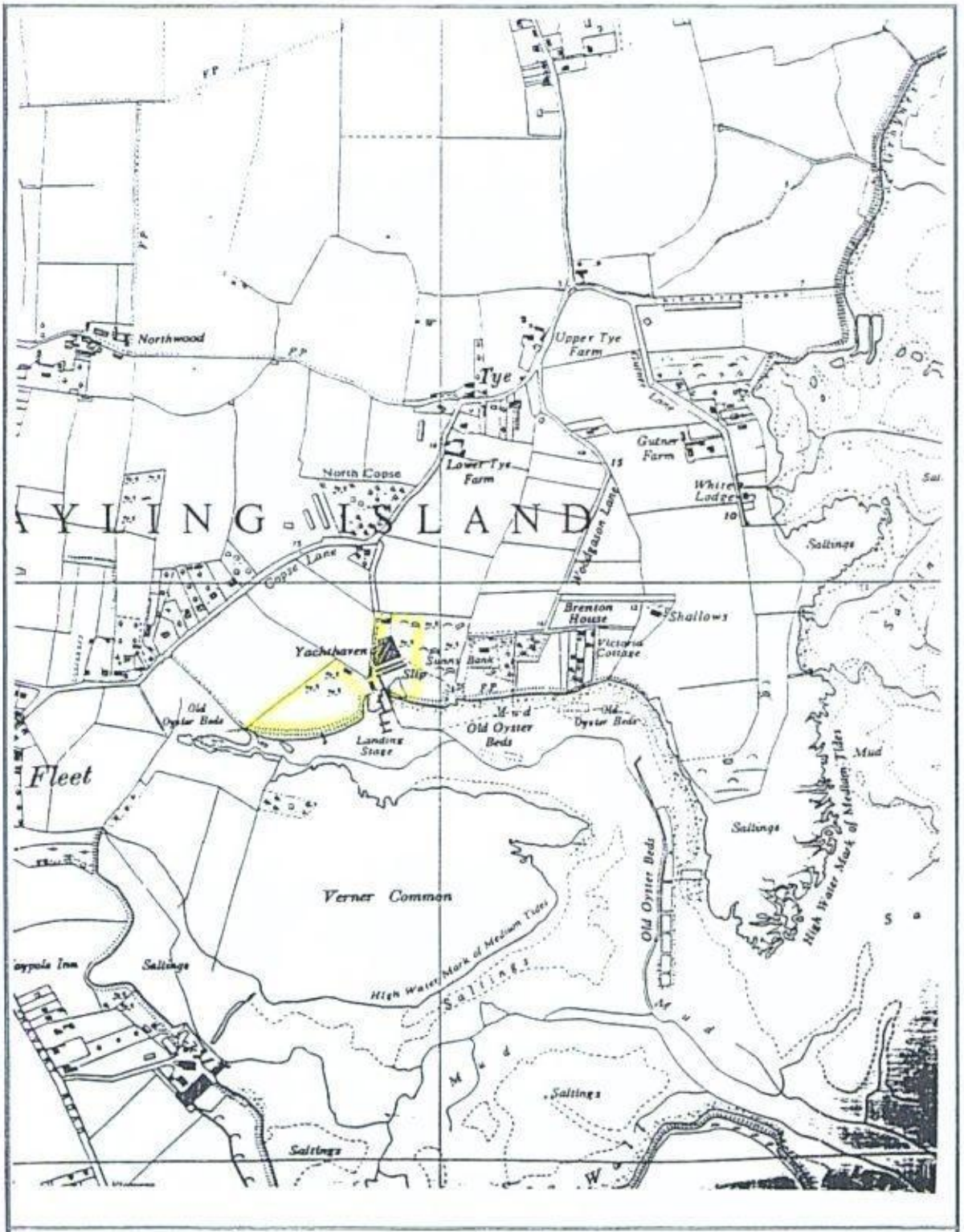
FASTNET BUILDERS LIMITED

YACHTHAVEN, OFF COPSE LANE, HAYLING ISLAND

Contamination Assessment

Fig. 4 THE SITE AS SHOWN ON THE OS PLAN OF 1938

September 2002 Scale 1:10560



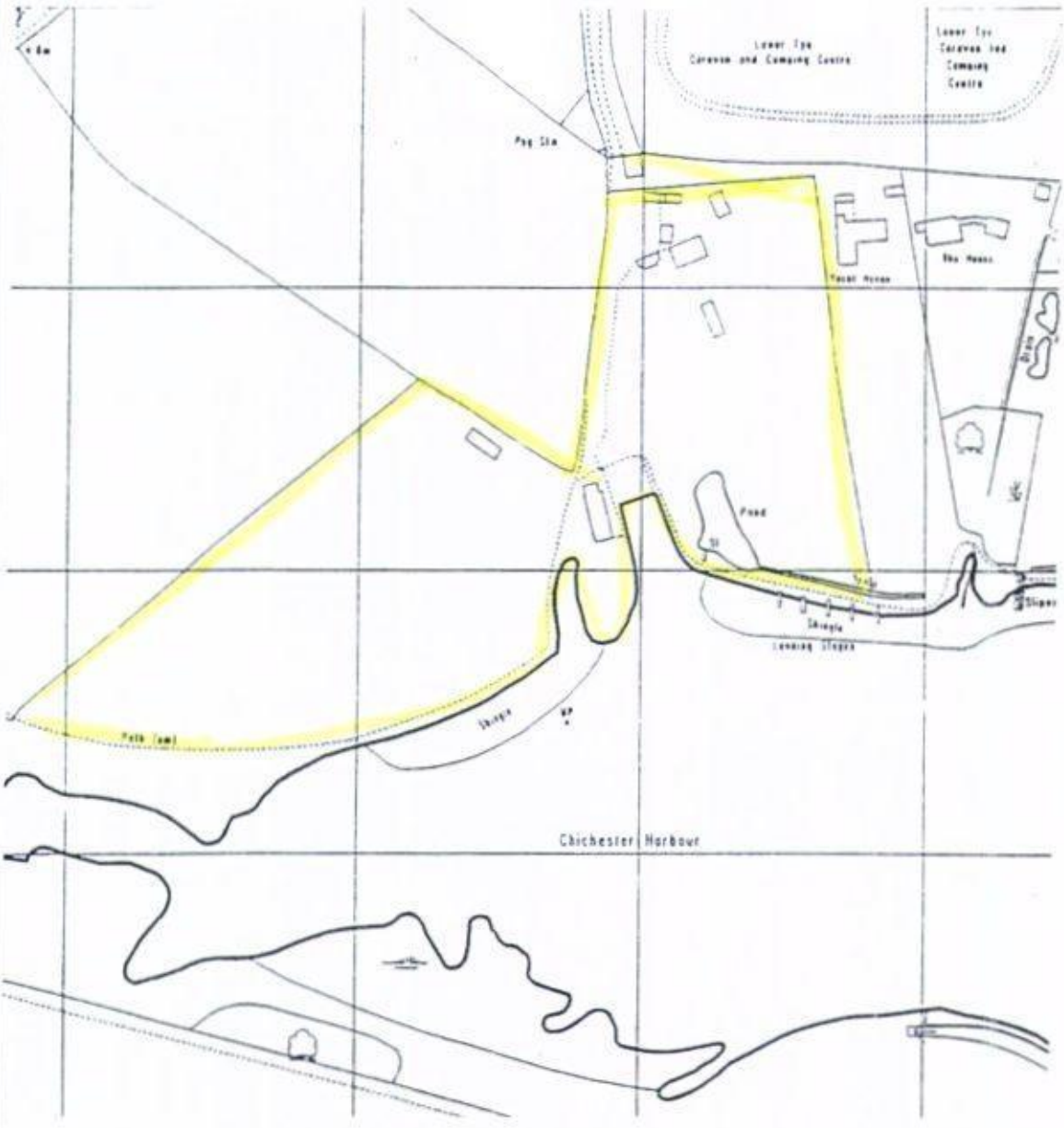
FASTNET BUILDERS LIMITED

YACHTHAVEN, OFF COPSE LANE, HAYLING ISLAND

Contamination Assessment

Fig. 5 THE SITE AS SHOWN ON THE OS PLAN OF 1962

September 2002 Scale 1:10560



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YACHTHAVEN, OFF COPSE LANE, HAYLING ISLAND

Contamination Assessment

Fig. 6 THE SITE AS SHOWN ON THE OS PLAN OF 1996

September 2002 Scale 1:2500

5. THE EXISTING SITE

5.1 The site has been visited on several occasions since 12 October 2001.

5.2 The site appears largely derelict, there are several disused buildings in various states of disrepair. A large area of the site is overgrown vegetation, with areas of dumped rubbish. As described below, the site can be divided into three main sections, north-east, south-east and west. See Figure 7.

5.3 **Section 1** North-east section

The site is accessed to the north west of this section from Copse Lane. The western boundary consists of a thick hedge with a hard standing unsealed track leading down to the water edge. There is approximately between 10 and 20 m of thick vegetation cover along the length of the eastern boundary.

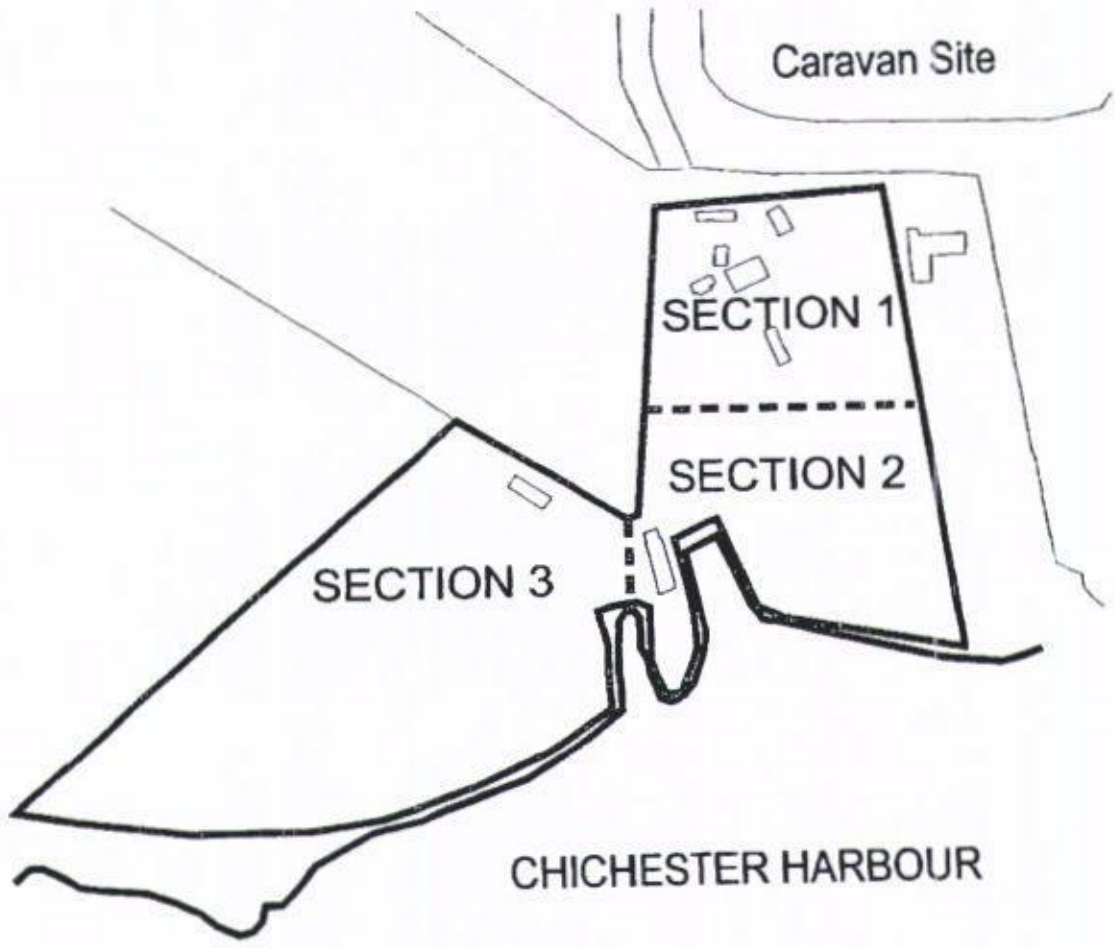
Within this section there are eight buildings, these are in various states of disrepair. The majority of the buildings have wooden frames with pitched roofs. The cladding varies from wooden slats to profiled steel and asbestos cement. One of the remaining buildings has been subject to fire (possibly in the early 1970's when the main building was destroyed by fire). There are three brick buildings, each single storey, two with flat concrete roofs, and one with a pitched corrugated asbestos cement roof.

The majority of the area is covered in an unsealed hard standing, this appears to be hardcore fill with a top coating of chippings. There are five concrete pad areas of varying sizes, these tend to be adjoining the existing buildings. The area to the east of the buildings is rough grassland with scrub and small bushes. This whole section appears to have been land-filled at some point with rubble and other construction waste. There does not appear to have been any topsoil placed over the fill on the site. As a result a mixture of rough vegetation is growing on the surface.

Much of the area within this section has been used as a dumping ground. A large variety of rubbish such as old tyres, oil drums, disused white goods, car parts, rubble, plastics, metal components etc have been deposited over a large area. Subsequent visits since October 2001 indicate that this dumping is continuing.

5.4 **Section 2** South-east section

This whole section appears to have been land-filled with rough construction waste material. The majority of the area is covered with coarse grassy vegetation. Along the eastern boundary is an approximately 10 m wide margin of denser vegetation. The southern boundary of this section is an informal revetment on Chichester Harbour foreshore with inter-tidal mud flats and creek bed beyond. There is a small inlet into this section of the site. The sea defence revetment along the southern boundary of this section comprises large concrete blocks (apparently reinforced concrete piles).



FASTNET BUILDERS LIMITED

YACHTHAVEN, OFF COPSE LANE, HAYLING ISLAND

Contamination Assessment

Fig. 7 SITE PLAN

September 2002 Not to Scale

There is one large building, wooden framed, with corrugated steel exterior. There are two concrete pads to the south and east of this building; the remaining area surrounding the building appears to be unsealed hard standing surface.

The area to the south west of the section comprises a jetty and shed within an enclosure. This is occupied by a Mr Rice and is not part of the site.

5.5 **Section 3** Western section

This area of the site appears to be less developed, the majority being undisturbed land. The north and west boundary are thick hedges. The southern edge borders the harbour.

In the north east of the site there is a large concrete surfaced compound with a building to its north. The building is wooden framed with a pitched roof and clad in corrugated steel with an asbestos cement roof. The area to the south east of the concrete is a rubble hard standing leading to the access track.

There appears to be an area of landfill to the south-east of this section, covered in rough vegetation. Along the western boundary there is thick vegetation approximately 30 m in width. Between the landfill and the thicker vegetation is an area of natural grassland. The majority of the thicker vegetation is bush and scrub with very few mature trees.

The sea defence revetment along this section of the site consists of informal dumped rubble and waste (including tarmac) bund. The public footpath runs along the top of the revetment.

6. POTENTIAL SOURCES OF CONTAMINATION

6.1 The land use history at the site appears to comprise:

- Agricultural until 1930's
- Boat building, repair and maintenance 1933 – circa 1980
- Possible military camouflage paint testing depot 1939 - 1945
- Landfill, scrap yard and construction depot 1980 – 1996
- Industrial use for engineering and civil works 1996 – 2001
- Vacant pending the outcome of current planning application March 2001 – date

The significant contamination risks are attached to the use of the land since its development in 1933 and subsequent industrial uses up to 1996. The fly-tipping of waste on the site, which appears to have continued up to date, also poses some contamination risks.

6.2 The camouflage paint testing reputed to have been carried out at the site between 1939 and 1945 appears to have been for warship paint. It is possible that soil and groundwater may have become contaminated during this time due to the use, storage and disposal of paint potentially containing toxic metals and, possibly, marine anti-fouling chemicals. It is extremely unlikely that any luminous or otherwise radioactive paints were used in camouflaging.

6.3 The use of the site from the 1930's to 1980's as boat builders, repair and maintenance yard required the storage and use of lubricants and fuels. It is therefore possible that soil and groundwater may have been contaminated due to spills and leakage from oil tanks and drums. It is probable that marine anti-fouling coatings were stored and applied during boat building. Boat repair work may have involved scraping off old anti-fouling coatings. These anti-fouling coatings could have included organotins.

6.4 The nature of the scrap yard on the site is unclear and the period of operation is not known. There is a potential risk associated with this land use; heavy metals from battery breaking and component cutting may have ended up in the soil. Oil and fuel leakages or spillages may have occurred when engines and fuel tanks were removed. It is possible that electrical components (transformers) containing PCB's were broken up at the site.

6.5 The content of the fill used on the site is uncertain. There is a potential risk that the fill used on the site may well contain some form of contamination. The fly-tipped waste on the site includes potential contaminants.

6.6 Asbestos cement components are apparent in buildings on the site, some of the asbestos is damaged and may be releasing fibres.

7. SITE INVESTIGATION/ANALYSIS OF SOIL SAMPLES

7.1 The conclusions of the original PCA report, produced December 2001, advised an intrusive site investigation in accordance with contaminated land procedures. Further consultations with the Environment Agency confirmed the locations of subsequent trial pits and bore holes as suggested in the PCA.

7.2 The site investigation was carried out to assess the risk of residual soil contamination at the site from historic land uses, notably the operations involving vehicle dismantling and the MOD test site. Residual contamination could require remediation and/or represent a potential liability for the site owner in terms of contamination related damage to third parties. The site investigation was carried out by L R Pimenta on behalf of Fastnet Builders in two phases, the first in December 2001 – January 2002 and the second in July 2002 with ongoing monitoring of the gas valves on boreholes.

7.3 Seventy-three trial holes were explored, in the two sampling sessions on the site, and 105 soil samples were taken for testing (with groundwater samples where encountered). Four boreholes were put down to install gas valves. The trial holes were sunk at the locations deemed most likely to have been at risk of contamination from historic land use (within the constraints imposed by the existing site development and utility services/apparatus). For a plan of the site, giving locations of samples and boreholes, see appendix C.

7.4 One soil sample was generally taken from the fill below the site surfacing, as this is the most probable place where contamination would have accumulated. In locations where the thickness of the fill was substantial and variable more than one sample was taken, as well as where natural ground was encountered below the fill. At locations where the pits showed no imported fill material and were away from buildings, sampling was considered to be unnecessary but some samples of the natural soil were taken anyway as 'control' samples to enable comparison with areas where there was fill. Three samples of groundwater were taken during the investigation and ten surface soil samples were taken for possible asbestos identification.

7.5 All sample locations were logged to record strata encountered and identified during sinking. The condition of the soil was examined during the sinking of the trial holes for visual and odour evidence of contamination. The borehole logs are given in Appendix D.

7.6 The analysis was carried out by Environmental Analysis Laboratories (EAL) of Hastings, East Sussex. EAL has the appropriate UKAS accreditations for the type of analysis required.

7.7 The results of the analysis may be compared with the Soil Guidline Values given in DEFRA Contaminated Land Report Soil Guideline Values (SGVs) and, for substances where no SGVs have yet been ascribed, may be compared with the Trigger Concentrations given in ICRCL 59/83 and Kelly's Tables. No specific guidelines for total petroleum hydrocarbons (TPH) concentrations in soils has yet been published and the suggested standard has been derived from other sources.

7.8 The results of the analysis of the soil samples and all of the relevant analysis certificates, provided by Environmental Analysis Laboratories, are reproduced in Appendix E.

8. CONCLUSIONS

8.1 The site is underlain by a minor aquifer with soils of low vulnerability and is not within a source protection zone. The site is in one of the least hydrogeologically sensitive locations on Hayling Island.

8.2 The majority of the site is on filled land, however, the fill appears to have been largely inert soil and construction waste. This type of waste is unlikely to be a significant source of landfill gas. The Environment Agency has confirmed that there is a former domestic waste landfill to the west of the site at SU 723 017, although this is not within 250m of the site. The distance and low permeability migration horizon suggests that there should not be any significant risk of landfill gas migration from the former landfill to the site.

8.3 The land use of the site as agricultural fields prior to its development in the 1930's is unlikely to have caused any contamination. However, there are significant contamination risks associated with the use of the site since its industrial development. These include the storage of oils and fuels and the use of the site as scrap yard and landfill.

8.4 Further investigation was required prior to consent for redevelopment of the land for residential housing. The further investigation included the analysis of soil and groundwater samples from boreholes and trial pits across the site. Samples were generally taken from the fill and upper natural ground. Samples were then analysed for substances listed in Tables 3 & 4 of ICRCL 59/83 plus total petroleum hydrocarbons, molybdenum, asbestos and PCB's in accordance with the recommended schedule of further investigation as approved by the Environment Agency.

8.5 The analysis of the soil samples revealed sporadic locations of significant contamination with a clearly defined north/south divide. The southern section of the site, incorporating mostly areas of fill, maintained significantly high levels of water soluble boron, down to depths of 1.5m, with two significant pockets of PAH. However, the northern section of the site had significant levels of contamination recorded throughout the site area. The main source of contamination in the northern section was heavy metals in the soil which were recorded at depths of up to 1m. In both sections the results exceeded the ICRCL and Soil Value Guideline thresholds for domestic gardens.

8.6 An asbestos content survey was carried out on ten surface soil samples at the site. There were no samples containing significant levels of asbestos dust recorded during this survey.

8.7 Three groundwater samples were obtained at the site, again these showed no significant contaminating results. These results imply that there is no significant contaminants leaching into or onto the neighbouring SSSI and Ramsar Sites.

8.8 There were four gas monitoring boreholes installed at the site during June 2002 and these were subsequently tested for soil gas composition on 16 July 2002, 24 July 2002, 2 August 2002 and 7 September 2002. Boreholes 1 & 2 have consistently shown results of no significant landfill gas concentrations, these being in the northern portion of the site where there was no significant fill over saltmarsh. Borehole 3 shows modest levels of gas concentrations typical of a good grassy soil horizon, whereas borehole 4 has consistently shown minor elevated levels of methane and carbon dioxide after its initial

peak value for methane just exceeding its Lower Explosive Limit (LEL) at the first recording. Subsequent readings indicate much reduced levels. Borehole 4 results have no significant landfill gas risk due the distance of the hole from the proposed property developments and the results obtained so far indicate that the borehole pierced an isolated pocket of marsh gas originating from the underlying salt marsh. This conclusion is supported by the high levels of oxygen found in all of the results, which indicates that there is no current methane gas production on this site. See Appendix F for all gas monitoring borehole data.

8.9 The results of the site investigations carried out at the Hayling Island Yacht Haven site suggested that the site is significantly contaminated in a way likely to constrain the proposed development or require remediation prior to redevelopment of the site for domestic housing. From the results of the site investigations, it is recommended that the less suitable upper soil be removed and replaced with clean topsoil in the proposed gardens to a depth of 0.6m. It is advised that the clean soil be placed on a geotextile membrane and capillary break sand layer.

8.10 Finally during site redevelopment extra care should be taken to ensure that no current site contaminants are displaced into the neighbouring SSSI and Ramsar sites. Guidelines should be in place prior to redevelopment commencing and adhered to throughout the construction phase of the site.

8.11 The overall environmental risk for the site is rated according to the risk assessment matrix in Table 8.1 below:

TABLE 8.1
RISK ASSESSMENT MATRIX

PROBABILITY OF IMPACT	CONTAMINATION POTENTIAL		
	SEVERE	MODERATE OR UNCERTAIN	MINIMAL
High	4	3	2
Medium	3	2	1
Low	2	1	1

8.12 In this case the rating would be 2, due to the significant contamination potential identified as being associated with the historic industrial land use of the site, reducing to category 1 once remediation measures and redevelopment are complete.

8.13 The site is not classified as a "special site" under the criteria given in the Contaminated Land (England) Regulations 2000. The site does not appear on Havant Borough Councils register of contaminated land.

APPENDIX A

ENVIRONMENT AGENCY

EAS Ltd
London Road
Hickstead
Haywards Heath
West Sussex
RH17 5LZ

11/10/01

Your Reference : FNB/I/MDM/SFH **Our Reference :** PNO1/2001/512

From : Paula Goodeve
Tel. No : 01962 713267
Fax No. : 01962 841573

Search Details

Environment search on Yacht Haven Off Copse Lane Hayling Island

Search Buffer : 250m
NGR : SU 72975 01915

Note: The content of this report comprises only the information that the Agency is able to make available for the search fee paid. Some questions posed may not have been answered fully. It is possible that the Agency has further information in its possession with respect to this site. Should you wish to enquire further, a subsequent fee may be payable, according to our Charging for Information Policy.

Map of Area of Interest

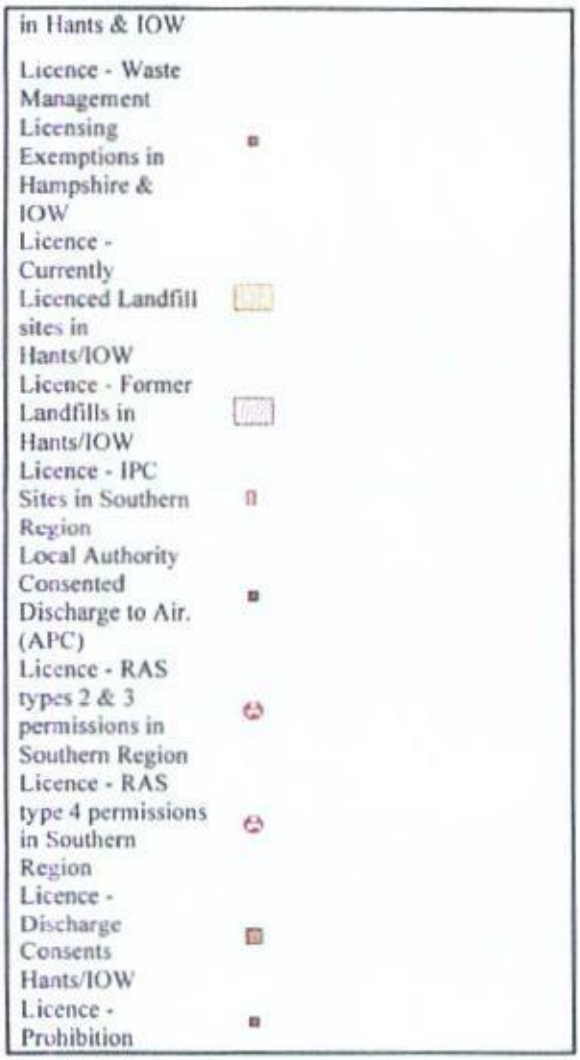


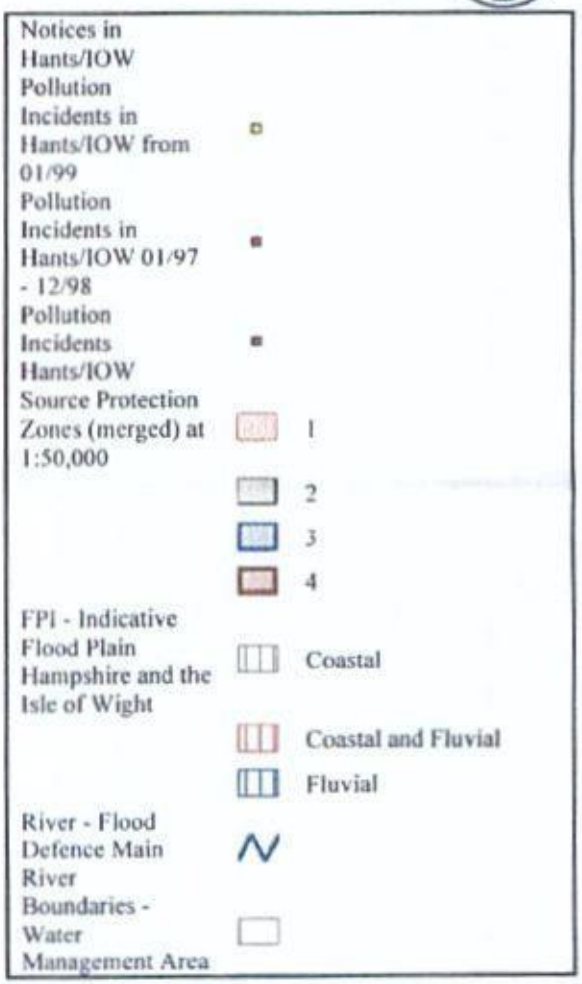
One Centimeter = 0.044 Miles

Miles 0.05 0.1 0.15 0.2 0.25 0.3 0.35

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Layer	Key
Licence - Water Impoundment licences in Southern Region	○
Licence - Water Abstraction Licences in Southern Region	●
Licence - Protected Rights in Isle of Wight	▪
Licence - Protected Rights in Hampshire	▪
Licence - Waste management licences (current)	▫





The following tables contain the results of the search :

Licence - Water Impoundment licences in Southern Region	**Impoundment Licences in Southern Region, live only, Extract from the NALD Database**
Feature	**Detail**
	No Records Selected

Licence - Water Abstraction Licences in Southern Region	Water Abstraction Licences in Southern Region (Live only), Extract from the NALD Database
Feature	**Detail**
No Records Selected	

Licence - Protected Rights in Hampshire	Water Abstraction Protected Rights in Hampshire
Feature	**Detail**
No Records Selected	

Licence - Waste management licences (current) in Hants & IOW	Waste management licences (current) derived from REGIS in Hampshire and the Isle of Wight
Feature	**Detail**
No Records Selected	

Licence - Waste Management Licensing Exemptions in Hampshire & IOW	Waste Management Licensing Exemptions in Hampshire & IOW registered after 1st June 2000. Derived from REGIS.
Feature	**Detail**
No Records Selected	

Licence - Currently Licenced Landfill sites in Hants/IOW	The locations of all currently licenced landfill sites holding a waste management licence (derived from REGIS).
Feature	**Detail**
No Records Selected	

Licence - Former Landfills in Hants/IOW	Known former landfill sites within the Hampshire & IOW Area including licenced and pre 1974 (non-licehced) sites. Completed landfill sites that have not yet surrendered their licence are NOT included in this dataset. .

Feature	Detail
1	Lfill_id : 403 Licence_re : 13/15 Os_ref : 729018 Site_addre : YACHTHAVEN, COPSE LANE, HAYLING ISLAND Waste_type : EARTHSPOILS & HIGHWAY CONSTRUCTION WASTE Gas_risk : Gassing

Licence - IPC Sites in Southern Region	Industrial Process sites in Southern Region. These are part A sites regulated by the EA under the Environmental Protection Act 1990. This DOES NOT include part B sites which are smaller and regulated by the local authority.

Feature	Detail
No Records Selected	

Local Authority Consented Discharge to Air. (APC)	Local Authority Consented Discharge to Air. (Environmental Protection Act 1990 (Part B))

Feature	Detail
No Records Selected	

Licence - RAS types 2 & 3 permissions in Southern Region	Type 2 radioactive substance permissions (sites subject to licensing under section 1 of the Nuclear Installations Act 1965 (2 licences both at Dungeness Power Station). Also Type 3 radioactive substance permissions allowing the accumulation & disposal of radioactive material within the conditions of the authorisation.

Feature	Detail
No Records Selected	

Licence - RAS type 4 permissions in Southern Region	Type 4 radioactive substance permissions allowing the ownership and use of radioactive material within the conditions of the authorisation.
Feature	**Detail**
No Records Selected	

Licence - Discharge Consents Hants/IOW	Discharge consents (All) in the Hampshire and IoW area. Includes revocations, variations etc. Data sourced from Charges for Discharges (CfD).
Feature	**Detail**
No Records Selected	

Licence - Prohibition Notices in Hants/IOW	Dataset of Prohibition Notices (No control, Conditional, Absolute) issued
Feature	**Detail**
No Records Selected	

Pollution Incidents in Hants/IOW from 01/99	Pollution Incidents logged in the Hampshire and IOW Area from 1/1/99
Feature	**Detail**
2	Ref_no : 5810 Easting : 472820 Northing : 101890 Location : YACHT HAVEN, ABOVE VERNER COMMON, HAYLING ISLAND Date : 2000-05-11 Pollutant : Industrial and Commercial waste Air : 4 Land : 4 Water : 4

Pollution Incidents in Hants/IOW 01/97 - 12/98	Pollution Incidents logged in the Hampshire and IOW Area between 1/1/97 and 31/12/98
Feature	**Detail**
	No Records Selected

Pollution Incidents Hants/IOW	Pollution incidents in the Hampshire and IoW area. Includes categories 1 to 4. For the period Jan 1992 to Dec 1998.
Feature	**Detail**
3	Incref : 169 Ngr : SU729019 Location : Yatch Haven, Copse Lane, Hayling Island Incdate : 26/06/92 Inctype : Miscellaneous Contwater : Surface water Catname : Unsubstantiated Polltype : Subtype : Premises : Other Industrial

The site identified lies within a tidal flood risk area, as identified on the Agency's most recent indicative floodplain maps.

The Agency's records therefore indicate that this site could be affected by tidal flooding if the defences are breached or overtopped. The estimated risk of flooding for the landward boundary line of a tidal floodplain is 0.5% annually, and estimated at reaching 3.7m above Ordinance Datum Newlyn for Eaststoke Point in the year 2060.

This level takes into account current corrections for global warming and land sinkage, but does not include variations in individual wave heights resulting from wind speed and direction or from variations in atmospheric pressure.

It is suggested that your client assess the levels of the property in question with respect to this level to more accurately estimate the risk of flooding from the sea.

Any property in the vicinity of a watercourse could be at risk to flooding in certain conditions. However, the Agency does not have any records of flooding with respect to this particular property, although not all such events are reported to the Agency.

As of 11/10/01, the Agency has no record of contaminated land associated with the site, or within 250m. However, the Agency would usually only become aware of the contamination of land, resulting from the previous uses of the site, through its other licencing and regulatory duties.

The above report does not include any information relating to the Agency's knowledge of Groundwater Quality, Agency Land Ownership or Enforcement Actions in relation to this search. This information can be supplied if requested.

The replies given are based on the information available to the officers of the Agency at the present time, and the Agency accepts no liability in respect thereof in the absence of negligence.

I hope this satisfies your request.

Yours sincerely

PAULA GOODEVE
Authorisations Assistant

Environment Agency, Colverdene Court, Wessex Business Park, Wessex Way, Colden Common, Winchester, Hants, SO21 1WP.

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Environment Agency, Colverdene Court, Wessex Business Park, Wessex Way, Colden Common, Winchester, Hants, SO21 1WP.

APPENDIX B

Havant
BOROUGH COUNCIL

Director of Environmental Services
Frank Campbell BA(Hons) MRTPI

Civic Offices
HAVANT
Hampshire PO9 2AX

Tel (023) 9247 4174
Fax (023) 9244 6588
DX 50005 Havant
www.havant.gov.uk

Sandra Holland
Environmental Assessment Services Ltd
London Road
Hickstead
Haywards Heath
West Sussex
RH17 5LZ

Our Ref: DES/EH/AG
Your Ref:
Direct Line: (023) 9244 6657
Ask For: Mr Gibbs
E-mail: andrew.gibbs@havant.gov.uk

02 October 2001

Dear Ms Holland

Contaminated Land: Yacht Haven, Copse Lane, Hayling Island.

With reference to your letter, dated 1st October 2001, my colleagues and myself have investigated the situation from our available information.

At the moment our Contaminated Land strategy is still being initialised and so we are working from past records, this means that the latest information is not available as yet.

To answer your questions in order:

1. We do not know of any soil or groundwater contamination in this area.
2. Therefore we do not have any related concerns or potential health worries in this area.
3. The register of contaminated sites is not presently up to date. There are files on this area showing the location of a brickworks at OS reference 723 018.

3a. At Yacht Haven we have records of an old landfill site used for earthspoils and construction rubble. (0.575 hectares). Also at OS reference 723 017 there is another old landfill site (0.715 hectares) which is said to contain household waste, a caravan park is now on this site.

4. There are no registered authorised processes being carried on in the immediate vicinity.

We have received no complaints or investigated hazards to health, due to the landfill sites, in this area. Residential development on this area would be subject to conditions due to the previous use of this land.

I hope this information is of use to you. Please contact me on the direct number above if you wish to discuss any points raised in this letter.

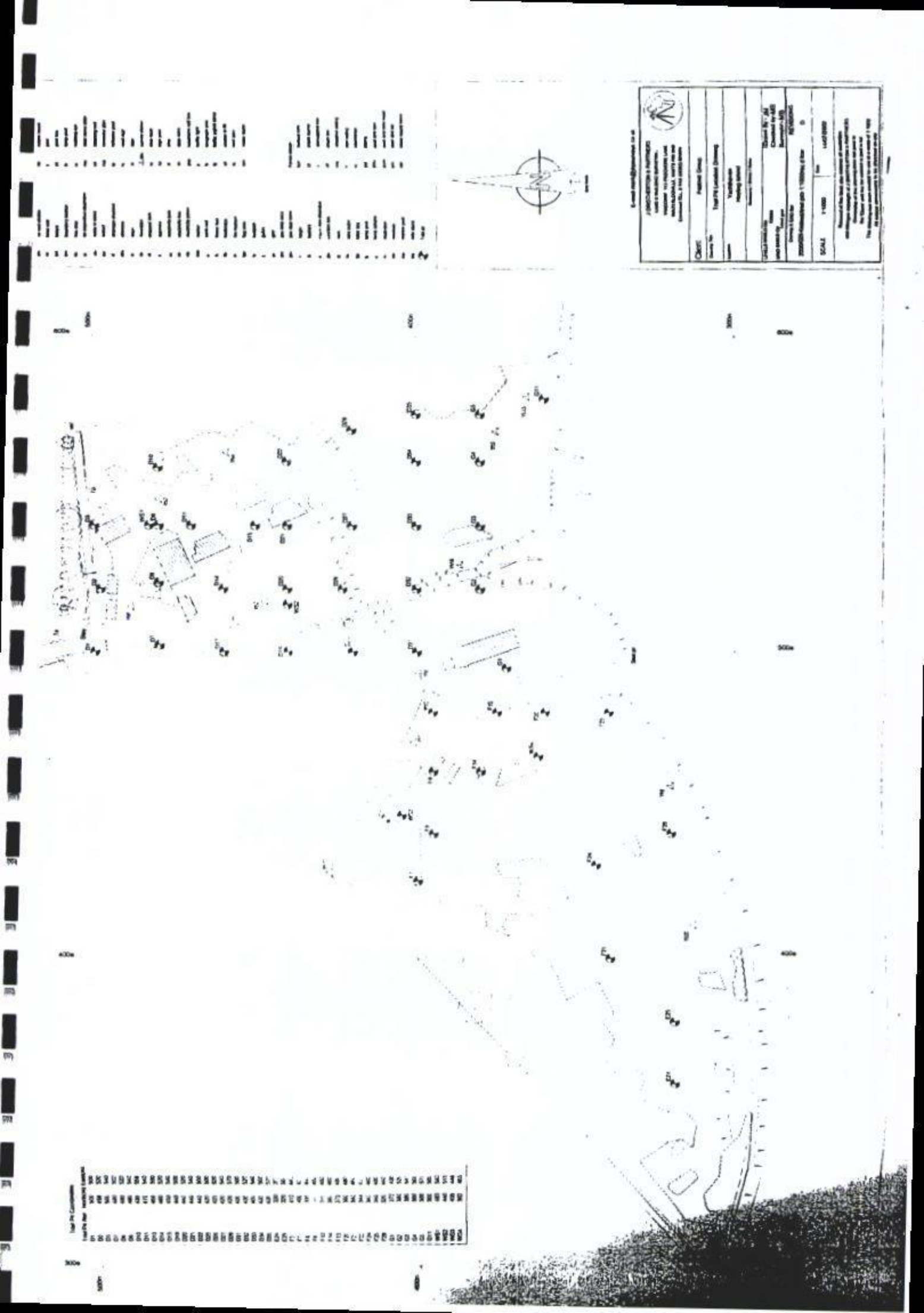
Yours sincerely

A.W. Gibbs

Andrew Gibbs
Senior Environmental Health Officer

INVESTOR IN PEOPLE

APPENDIX C



APPENDIX D

YACHTHAVEN, HAYLING ISLAND, HANTS
TRIAL HOLE LOGS FOR PRELIMINARY ASSESSMENT OF CONTAMINATION

TH D1
GL-0.5m Topsoil
0.5-0.7m Brown silty gravelly CLAY becoming orange brown gravelly CLAY
0.7-0.9m Dryish brown very silty very gravelly CLAY

TH D2
GL-0.1m Topsoil
0.1-0.6m Greenish brown silty becoming very gravelly CLAY
0.6-1.2m Firm orange/mottled red CLAY

TH D3
GL-0.1m MADE GROUND consisting of brick fragments in matrix of grey clay with roots
0.1-0.6m Brown silty gravelly CLAY becoming more gravelly with depth
0.6-1.0m Firm brown and orange CLAY

TH D7
GL-0.4m MADE GROUND consisting of fragments of brick and concrete with topsoil
0.4-0.5m Very gravelly CLAY
0.5-0.8m Firm to stiff brown/grey/orange CLAY

TH D8
GL-0.3m Topsoil and gravelly CLAY
0.3-0.7m Soft to firm orange brown CLAY

TH D9
GL-0.5m Topsoil
0.5-0.7m Soft grey CLAY
0.7-0.9m Firm orange/light grey CLAY

TH D13
GL-0.3m MADE GROUND consisting of fragments of brick with sand and gravel
0.3m-0.6m MADE GROUND consisting of gravelly brown CLAY
0.6-1.0m Orange brown clayey sandy gravel

TH D14
GL-0.5m MADE GROUND consisting of brick and concrete rubble
0.5m-0.8m Soft dark grey gravelly CLAY
0.8m-1.0m Soft to firm light brown CLAY

TH D15

GL-0.2m	Topsoil with brick fragments
0.2-0.5m	Orange red sandy gravelly CLAY
0.5m-1.0m	Soft orange red CLAY

TH D19

GL-0.75m	Dark brown topsoil and sandy gravel
0.75m-1.0m	Firm grey brown silty CLAY
1.0m-1.1m	Orange brown gravelly sandy CLAY
1.1-2.0m	Firm to stiff light grey CLAY

TH D20

GL-0.75m	MADE GROUND consisting of dark grey fine/medium/coarse gravel with occasional fragments of brick and bitumen
0.75-1.0m	Soft grey brown CLAY

TH D21

GL-0.8m	TOPSOIL
0.8-0.9m	Soft grey gravelly CLAY
0.9-1.2m	Soft to firm light brown /light grey CLAY

TH D22

GL-0.3m	TOPSOIL
0.3-0.5m	Soft grey brown silty CLAY
0.5-0.9m	Orangre brown gravelly CLAY

TH D25

GL-0.1m	Reinforced concrete slab
0.1-0.6m	TOPSOIL with roots
0.6-1.2m	Soft to firm light grey/light brown CLAY

TH D28

GL-1.0m	FILL consisting of moist grey sandy CLAY with fragments of brick and concrete
1.0-1.4m	Light grey gravelly CLAY
1.4-1.7m	Soft/soft to firm orange brown CLAY

TH D31 (on roadway)

GL-0.2m	Claycy gravel on limestone chippings
0.2-0.6m	Dark grey silty CLAY
0.6-1.0m	Soft to firm grey brown CLAY

TH F7

GL-0.2m	Natural topsoil
0.2-0.6m	Soft yellow brown CLAY

TH F9

GL-0.2	Topsoil with chalk fragments
0.2-0.3m	Soft grey CLAY
0.3-0.8m	Soft yellow brown CLAY

TH F10

GL-0.5m	FILL consisting of topsoil and concrete rubble
0.5-1.0m	Firm grey brown CLAY

TH F15

GL-0.5m	FILL consisting of concrete and brick rubble
0.5-1.4m	Soft dark grey CLAY
1.4-1.6m	Firm orange/red mottled CLAY

TH F20

GL-0.6m	FILL consisting of concrete and brick rubble
0.6-1.2m	Soft grey CLAY
1.2-1.6m	Soft to firm/firm light grey/orange CLAY

TH F28

GL-1.1m	FILL consisting of topsoil with fragments of brick and chalk
1.1-1.5m	Soft to firm dark grey CLAY
1.5-1.7m	Soft to firm light grey CLAY

TH G1

GL-1.1m	FILL consisting of topsoil, red clay gravel and chalk
1.1-2.0m	Dark brown very soft CLAY
2.0-2.2m	Soft/soft to firm light grey CLAY

TH G3

GL-1.2m	FILL consisting of flint gravel and brick fragments with brown clayey silt
1.2-2.4m	Dark grey very silty CLAY

TH G11

GL-1.1m	FILL consisting of gravel, brick rubble and brown silt
1.1m	Obstruction-trial pit abandoned

YACHTHAVEN, COPSE LANE, HAYLING ISLAND, HANTS
CONTAMINATION ASSESSMENT DECEMBER DEC 2001-JULY 2002

TRIAL HOLE LOGS

TH D1

GL-0.5m	Topsoil
0.5-0.7m	Brown silty gravelly CLAY becoming orange brown gravelly CLAY
0.7-0.9m	Dryish brown very silty very gravelly CLAY

TH D2

GL-0.1m	Topsoil
0.1-0.6m	Greenish brown silty becoming very gravelly CLAY
0.6-1.2m	Firm orange/mottled red CLAY

TH D3

GL-0.1m	MADE GROUND consisting of brick fragments in matrix of grey clay with roots
0.1-0.6m	Brown silty gravelly CLAY becoming more gravelly with depth
0.6-1.0m	Firm brown and orange CLAY

TH D7

GL-0.4m	MADE GROUND consisting of fragments of brick and concrete with topsoil
0.4-0.5m	Very gravelly CLAY
0.5-0.8m	Firm to stiff brown/grey/orange CLAY

TH D8

GL-0.3m	Topsoil and gravelly CLAY
0.3-0.7m	Soft to firm orange brown CLAY

TH D9

GL-0.5m	Topsoil
0.5-0.7m	Soft grey CLAY
0.7-0.9m	Firm orange/light grey CLAY

TH D10

GL-0.3m	Soft wet dark brown very silty clay and topsoil
0.3-0.6m	Soft to very soft grey CLAY

TH D11 No trial pit excavated. Location not on grid point
Sample taken from surface only for check on possible contamination from surrounding rubbish

TH D13

GL-0.3m	MADE GROUND consisting of fragments of brick with sand and gravel
0.3m-0.6m	MADE GROUND consisting of gravelly brown CLAY
0.6-1.0m	Orange brown clayey sandy gravel

TH D14

GL-0.5m	MADE GROUND consisting of brick and concrete rubble
0.5m-0.8m	Soft dark grey gravelly CLAY
0.8m-1.0m	Soft to firm light brown CLAY

TH D15

GL-0.2m	Topsoil with brick fragments
0.2-0.5m	Orange red sandy gravelly CLAY
0.5m-1.0m	Soft orange red CLAY

TH D19

GL-0.75m	Dark brown topsoil and sandy gravel
0.75m-1.0m	Firm grey brown silty CLAY
1.0m-1.1m	Orange brown gravelly sandy CLAY
1.1-2.0m	Firm to stiff light grey CLAY

TH D20

GL-0.75m	MADE GROUND consisting of dark grey fine/medium/coarse gravel with occasional fragments of brick and bitumen
0.75-1.0m	Soft grey brown CLAY

TH D21

GL-0.8m	TOPSOIL
0.8-0.9m	Soft grey gravelly CLAY
0.9-1.2m	Soft to firm light brown /light grey CLAY

TH D22

GL-0.3m	TOPSOIL
0.3-0.5m	Soft grey brown silty CLAY
0.5-0.9m	Orange brown gravelly CLAY

TH D25

GL-0.1m	Reinforced concrete slab
0.1-0.6m	TOPSOIL with roots
0.6-1.2m	Soft to firm light grey/light brown CLAY

TH D26

GL-0.7m	Disturbed top soil/silty clay. Possible material excavated from ditch
0.7-1.0m	Yellow brown silty sandy CLAY

TH D27

GL-0.3m	Dark brown silty clay and topsoil
0.3-0.6m	Yellow brown silty sandy CLAY

TH D28

GL-1.0m	FILL consisting of moist grey sandy CLAY with fragments of brick and concrete
1.0-1.4m	Light grey gravelly CLAY
1.4-1.7m	Soft/soft to firm orange brown CLAY

TH D31 (on roadway)

GL-0.2m	Clayey gravel on limestone chippings
0.2-0.6m	Dark grey silty CLAY
0.6-1.0m	Soft to firm grey brown CLAY

TH D32

Gl-1.1m	Fine/medium/coarse GRAVEL
1.1m	Large concrete obstruction

TH D33

GL-0.8m	FILL consisting of brown silt with brick, chalk and large lumps of concrete and some steel and timber. Occasional coal fragments also found

TH D34

GL-0.3m	Topsoil and brown silt with sandy GRAVEL
0.3- 1.0m	Brown silty CLAY

TH D35

GL-0.3m	Topsoil and brow silt with sandy GRAVEL
0.3-1.0m	Brown silty CLAY

TH E24

Gl-0.2m	Topsoil
0.2-1.0m	Soft brown and light grey CLAY

TH E25

GL-0.1	Topsoil
0.1-1.0m	Soft brown.light grey mottled red CLAY

TH F3

GL-1.0m	Dark brown and lighter brown CLAY with Occasional fragments of brick, charcoal and flint
1.0-1.5m	Soft orange brown and light grey CLAY

TH F7

GL-0.2m	Natural topsoil
0.2-0.6m	Soft yellow brown CLAY

TH F8

GL-0.3	Brown medium/coarse flint GRAVEL
0.3-1.0m	Soft to firm yellow/orange CLAY

TH F9

GL-0.2	Topsoil with chalk fragments
0.2-0.3m	Soft grey CLAY
0.3-0.8m	Soft yellow brown CLAY

TH F10

GL-0.5m	FILL consisting of topsoil and concrete rubble
0.5-1.0m	Firm grey brown CLAY

TH F14

GL-1.2m	Dark grey fine/medium/coarse sandy GRAVEL And slightly clayey medium/coarse SAND with inclusions of glass and large fragments of brick and concrete
1.2-1.5m	Soft grey/orange red CLAY

TH F15

GL-0.5m	FILL consisting of concrete and brick rubble
0.5-1.4m	Soft dark grey CLAY
1.4-1.6m	Firm orange/red mottled CLAY

TH F20

GL-0.6m	FILL consisting of concrete and brick rubble
0.6-1.2m	Soft grey CLAY
1.2-1.6m	Soft to firm/firm light grey/orange CLAY

TH F21

GL-0.2m	Topsoil
0.2-0.8m	Soft to firm grey/orange CLAY

TH F22

GL- 0.6m	Grass topsoil and grey silty CLAY
0.5-1.0m	Soft to firm grey/orange CLAY

TH F24

GL-1.4m	Made ground consisting of dark brown silty clay with inclusions of brick and flints
1.4-1.6m	Soft brown CLAY

TH F25

GL-1.0m	FILL consisting of dark grey topsoil, chalk, brick fragments
1.0-1.5	Soft brown CLAY

TH F28

GL-1.1m	FILL consisting of topsoil with fragments of brick and chalk
1.1-1.5m	Soft to firm dark grey CLAY
1.5-1.7m	Soft to firm light grey CLAY

TH G1

GL-1.1m	FILL consisting of topsoil, red clay gravel and chalk.
1.1-2.0m	Dark brown very soft CLAY
2.0-2.2m	Soft/soft to firm light grey CLAY

TH G2

GL-1.7m	FILL consisting of rubble of brick and concrete with Some dark brown silt
1.7-1.8m	Orange brown CLAY

TH G3

GL-1.2m	FILL consisting of flint gravel and brick fragments with brown clayey silt.
1.2-2.4m	Dark grey very silty CLAY

TH G4

GL-0.5	FILL consisting of concrete and brick rubble with Chalk with brown silty sand

TH G5

GL-1.0m	Topsoil with inclusions of concrete,and brick rubble and Some asphalt
1.0-1.5m	Brown CLAY

TH G11

GL-1.1m	FILL consisting of gravel, brick rubble and brown silt
1.1m	Obstruction-trial pit abandoned

(WS1, WS2, WS3 & WS4 see also drillers fieldnotes)

BH WS1

GL-0.3m	Concrete rubble FILL
0.3-0.5m	Firm orange brown CLAY
0.5-1.5m	Brown and light grey CLAY with flints
1.5-4.8m	Firm to stiff becoming very stiff to hard red CLAY

BH WS2

GL-0.6m	Loose sandy gravel FILL
0.6-0.8m	Clayey fine/medium GRAVEL
0.8-1.4m	Stiff orange/light grey CLAY
1.4-4.0m	Stiff light grey CLAY becoming very stiff to hard red CLAY

BH WS3

GL-0.2m	Turf and topsoil
0.2-0.6m	Firm brown silty gravelly CLAY
0.6-3.0m	Stiff light grey/mottled red CLAY
3.0-4.0m	Very stiff to hard light grey CLAY

BH WS4

GL-0.5m	Loose gravel and brick fill
0.5-1.0m	Soft dark brown and lighter brown clay FILL with fragments of brick, charcoal and flints
1.0-1.5m	Soft orange brown and light grey CLAY with flints
1.5-1.8m	Dark brown silty CLAY with numerous roots~possibly original topsoil
1.8-2.0m	Soft orange and light grey CLAY
2.0-3.0m	Stiff light grey mottled red CLAY
3.0-4.0 m	Soft light grey/red CLAY becoming very soft red/brown CLAY (possibly due to water ingress from unknown source)
4.0-5.9m	Firm becoming very stiff to hard light grey/red CLAY

APPENDIX E

ENVIRONMENTAL ANALYSIS LABORATORIES

15 Burgess Road, Ivyhouse Lane Industrial Estate, Hastings, East Sussex TN35 4NR
Tel: 01424 444433 Fax: 01424 442299 info@environmentalanalysis.com

ANALYTICAL REPORT No. R59082

Location: Yachthaven, Hayling Island

CLIENT: L R Pimenta
26 Selangor Avenue,
Emsworth, Hants, PO10 7LT

Reporting Date: 09/01/02

Soils			TP/BH	D1	D1	D2	D2	D3	D7	D8	D8	D9	D9
			Depth (m)	0.50	0.70	0.30	1.00	0.20	0.30	0.30	0.70	0.30	0.50
			Our ref	122153	122154	122155	122156	122157	122158	122159	122160	122161	122162
Arsenic	(mg/kg)	Y		14.5	24.3	15.0	7.2	18.8	11.8	11.8	9.3	108.2	14.5
Cadmium	(mg/kg)	Y		1.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.0	<0.5
Chromium	(mg/kg)	Y		33	44	40	38	51	35	36	51	69	31
Copper	(mg/kg)	Y		51	20	51	35	331	30	28	70	946	44
Nickel	(mg/kg)	Y		25	29	23	19	40	16	24	22	68	17
Lead	(mg/kg)	Y		390	32	230	33	84	35	61	34	3096	112
Mercury	(mg/kg)	N		0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	216.9	2.8
Selenium	(mg/kg)	N		0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	0.6	0.6	<0.5
Zinc	(mg/kg)	Y		192	36	206	35	96	43	59	69	1591	86
Water Soluble Boron	(mg/kg)	Y		1.2	0.5	1.1	0.6	0.9	0.9	1.1	0.6	<0.5	1.6
pH	(Value)	N		8.1	7.7	7.7	8.1	8.3	7.8	7.8	8.1	7.8	7.9
Total Sulphate	(% as SO_4)	Y		0.01	0.03	0.01	0.01	0.01	0.02	0.01	0.03	0.06	0.03
Total Phenols	(mg/kg)	N		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Cyanide	(mg/kg)	N		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Free Cyanide	(mg/kg)	N		n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Sulphide	(mg/kg)	Y		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Elemental Sulphur	(mg/kg)	Y		140	30	60	<20	30	110	20	<20	90	56
Total PAH	(mg/kg)	Y		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	23.7	<0.5
Thiocyanate	(mg/kg)	Y		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Hexavalent Chromium	(mg/kg)	Y		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2

Descriptions of methods available on request (V8)
Y - UKAS accredited test
N - Non accredited test
n/t = not tested
zw
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ENVIRONMENTAL ANALYSIS LABORATORIES

15 Burgess Road, Ivyhouse Lane Industrial Estate, Hastings, East Sussex TN35 4NR
Tel: 01424 444433 Fax: 01424 442299 info@environmentalanalysis.com

ANALYTICAL REPORT No. R59082

Location: Yachthaven, Hayling Island

CLIENT: L R Pimenta

26 Selangor Avenue,
Emsworth, Hants. PO10 7LT

Reporting Date: 09/01/02

Soils			TP/BH	D13	D13	D19	D19	D20	D20	D21	D21	D22	D22
			Depth (m)	0.20	0.60	0.40	0.80	0.50	1.00	0.50	0.70	0.30	0.60
			Our ref	122163	122164	122165	122166	122167	122168	122169	122170	122171	122172
Arsenic	(mg/kg)	Y		25.9	10.2	7.8	6.8	6.9	13.1	12.0	15.0	16.5	20.3
Cadmium	(mg/kg)	Y		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	0.7	<0.5	<0.5
Chromium	(mg/kg)	Y		34	27	14	31	11	47	23	41	34	32
Copper	(mg/kg)	Y		43	5	82	12	82	37	113	100	37	12
Nickel	(mg/kg)	Y		27	16	16	12	9	22	16	21	15	16
Lead	(mg/kg)	Y		92	14	145	25	90	67	267	428	63	24
Mercury	(mg/kg)	N		1.6	<0.5	1.2	<0.5	0.7	1.1	10.5	6.3	0.8	<0.5
Selenium	(mg/kg)	N		0.6	<0.5	<0.5	0.6	<0.5	1.0	<0.5	<0.5	<0.5	1.1
Zinc	(mg/kg)	Y		114	24	212	44	114	80	254	663	130	46
Water Soluble Boron	(mg/kg)	Y		0.8	<0.5	<0.5	<0.5	0.8	0.8	0.7	2.3	0.8	<0.5
pH	(Value)	N		8.1	7.4	8.7	7.8	8.7	8.2	8.3	7.3	8.1	8.1
Total Sulphate	(% as SO_4)	Y		0.01	0.01	<0.01	0.03	0.02	0.01	0.02	0.02	0.01	0.05
Total Phenols	(mg/kg)	N		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Cyanide	(mg/kg)	N		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Free Cyanide	(mg/kg)	N		n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Sulphide	(mg/kg)	Y		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Elemental Sulphur	(mg/kg)	Y		40	155	1065	260	609	50	710	270	40	20
Total PAH	(mg/kg)	Y		<0.5	<0.5	<0.5	<0.5	70.7	<0.5	38.3	<0.5	<0.5	<0.5
Thiocyanate	(mg/kg)	Y		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Hexavalent Chromium	(mg/kg)	Y		<2	<2	n/t	<2	n/t	<2	n/t	<2	<2	<2

Descriptions of methods available on request (V8)
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n/t - not tested
%

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ENVIRONMENTAL ANALYSIS LABORATORIES

15 Burgess Road, Ivyhouse Lane Industrial Estate, Hastings, East Sussex TN35 4NR
Tel: 01424 444433 Fax: 01424 442299 info@environmentalanalysis.com

ANALYTICAL REPORT No. R59082

Location: Yachthaven, Hayling Island

CLIENT: L R Pimenta

76 Selangor Avenue,
Emsworth, Hants. PO10 7LT

Reporting Date: 09/01/02

Soils	TP/BH		D25	D25	D28	D28	D31	D31	F9	F10	F10	F15
	Depth (m)		0.40	0.60	0.50	1.60	0.30	0.60	0.20	0.20	0.50	0.30
	Our ref		122173	122174	122175	122176	122177	122178	122179	122180	122181	122182
Arsenic	(mg/kg)	Y	34.0	9.5	14.5	6.5	9.7	8.2	6.0	14.2	13.6	8.8
Cadmium	(mg/kg)	Y	2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	0.5
Chromium	(mg/kg)	Y	99	35	19	33	29	35	23	32	32	16
Copper	(mg/kg)	Y	2402	80	29	16	15	13	25	91	14	17
Nickel	(mg/kg)	Y	366	24	17	12	12	14	19	29	15	10
Lead	(mg/kg)	Y	1315	64	83	27	41	39	105	156	20	43
Mercury	(mg/kg)	N	7.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5
Selenium	(mg/kg)	N	0.8	0.7	<0.5	0.6	<0.5	0.8	<0.5	<0.5	1.0	<0.5
Zinc	(mg/kg)	Y	7881	249	121	30	42	84	109	434	39	73
Water Soluble Boron	(mg/kg)	Y	1.2	<0.5	0.6	0.6	1.8	1.6	0.6	1.4	1.2	1.0
pH	(Value)	N	8.3	8.3	8.6	8.3	7.3	7.6	10.2	8.3	7.8	8.3
Total Sulphate	(% as SO_4)	Y	0.01	0.02	0.01	0.03	0.02	0.04	0.03	0.01	0.02	0.02
Total Phenols	(mg/kg)	N	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Cyanide	(mg/kg)	N	<1	<1	12.7	<1	<1	<1	<1	<1	<1	<1
Free Cyanide	(mg/kg)	N	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Sulphide	(mg/kg)	Y	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Elemental Sulphur	(mg/kg)	Y	280	90	30	30	950	420	278	360	419	90
Total PAH	(mg/kg)	Y	<0.5	<0.5	<0.5	<0.5	<0.5	116.7	<0.5	<0.5	<0.5	70.0
Thiocyanate	(mg/kg)	Y	<2	<2	<2	<2	<2	<2	##	##	<2	##
Hexavalent Chromium	(mg/kg)	Y	<2	<2	n/t	<2	<2	<2	n/t	##	<2	n/t

Analysis not possible due to matrix interference

Descriptions of methods available on request (V8)
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n/t = not tested

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ANALYTICAL REPORT No. R59082

Location: Yachthaven, Hayling Island

CLIENT: L R Pimenta

26 Selangor Avenue,
Emsworth, Hants. PO10 7LT

Reporting Date: 09/01/02

Soils		TP/BH	F15	F20	F20	F28	G1	G1	G1	G3	G3	G11
		Depth (m)	0.60	0.30	0.60	0.50	0.50	1.00	1.50	0.50	1.50	0.50
		Our ref	122183	122184	122185	122186	122187	122188	122189	122190	122191	122192
Arsenic	(mg/kg)	Y	7.9	11.5	8.8	8.2	10.1	14.6	12.1	11.0	15.3	13.8
Cadmium	(mg/kg)	Y	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	0.7
Chromium	(mg/kg)	Y	20	20	38	26	37	43	32	19	26	32
Copper	(mg/kg)	Y	10	25	13	36	61	36	19	22	53	65
Nickel	(mg/kg)	Y	9	19	15	17	37	19	17	17	20	27
Lead	(mg/kg)	Y	37	66	33	176	71	256	52	51	183	146
Mercury	(mg/kg)	N	<0.5	<0.5	<0.5	0.5	<0.5	1.2	<0.5	<0.5	1.5	<0.5
Selenium	(mg/kg)	N	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	0.5	<0.5	<0.5	<0.5
Zinc	(mg/kg)	Y	43	96	43	134	156	380	79	76	207	279
Water Soluble Boron	(mg/kg)	Y	1.1	4.8	4.9	1.8	1.7	7.0	12.1	1.5	4.6	2.2
pH	(Value)	N	8.0	8.5	7.5	8.7	8.8	7.8	8.1	8.3	8.0	8.2
Total Sulphate	(% as SO_4)	Y	0.04	0.03	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.04
Total Phenols	(mg/kg)	N	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Cyanide	(mg/kg)	N	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Free Cyanide	(mg/kg)	N	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Sulphide	(mg/kg)	Y	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Elemental Sulphur	(mg/kg)	Y	800	660	1010	70	513	840	1330	168	530	30
Total PAH	(mg/kg)	Y	<0.5	205.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thiocyanate	(mg/kg)	Y	<2	<2	##	<2	<2	<2	##	<2	<2	<2
Hexavalent Chromium	(mg/kg)	Y	n/t	n/t	##	<2	<2	<2	##	n/t	<2	<2

Analysis not possible due to matrix interference

Descriptions of methods available on request (V8)
Y - UKAS accredited test
N - Non accredited test
n/t = not tested

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ENVIRONMENTAL ANALYSIS LABORATORIES

15 Burgess Road, Ivyhouse Lane Industrial Estate, Hastings, East Sussex TN35 4NR
Tel: 01424 444433 Fax: 01424 442299 info@environmentalanalysis.com

ANALYTICAL REPORT No. R61619

Location: Yachthaven, Hayling Island

CLIENT: L R Pimenta
26 Selangor Avenue,
Emsworth, Hants, PO10 7LT

Reporting Date: 25/07/02

F.A.O: L R Pimenta

Soils			TP/BH	D1	D1	D2	D2	D3	D3	D7	D7
			Depth (m)	0.50	0.70	0.30	1.00	0.20	0.40	0.30	0.50
			Our ref	138782	138783	138784	138785	138786	138787	138788	138789
Arsenic	(mg/kg)	Y		10.2	11.4	19.7	16.7	12.7	23.5	5.6	14.0
Cadmium	(mg/kg)	Y		<0.5	<0.5	1.5	0.5	1.9	5.0	0.9	<0.5
Chromium	(mg/kg)	Y		22	29	34	30	30	61	14	31
Copper	(mg/kg)	Y		38	19	195	45	1030	320	47	24
Nickel	(mg/kg)	Y		13	11	32	15	46	38	10	8
Lead	(mg/kg)	Y		105	21	366	125	13700	346	121	32
Mercury	(mg/kg)	Y		<0.5	<0.5	1.7	1.1	0.7	1.6	<0.5	<0.5
Molybdenum	(mg/kg)	Y		<5	<5	5	<5	7	13	<5	<5
Selenium	(mg/kg)	Y		<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Zinc	(mg/kg)	Y		106	29	631	312	478	474	207	41
Water Soluble Boron	(mg/kg)	Y		n/t	n/t	n/t	n/t	n/t	1.3	n/t	<0.5
pH	(Value)	Y		n/t	n/t	n/t	n/t	n/t	8.0	n/t	7.9
Total Sulphate	(% as SO_4)	Y		n/t	n/t	n/t	n/t	n/t	0.01	n/t	0.02
Total Phenols	(mg/kg)	Y		n/t	n/t	n/t	n/t	n/t	<2	n/t	<2
Total Cyanide	(mg/kg)	Y		n/t	n/t	n/t	n/t	n/t	<1	n/t	<1
Free Cyanide	(mg/kg)	Y		n/t	n/t	n/t	n/t	n/t	<1	n/t	<1
Sulphide	(mg/kg)	Y		n/t	n/t	n/t	n/t	n/t	<2	n/t	4.8
Elemental Sulphur	(mg/kg)	Y		n/t	n/t	n/t	n/t	n/t	120	n/t	20
Total PAH	(mg/kg)	N		n/t	n/t	n/t	n/t	n/t	<0.5	n/t	<0.5
Thiocyanate	(mg/kg)	Y		n/t	n/t	n/t	n/t	n/t	<2	n/t	<2
Hexavalent Chromium	(mg/kg)	Y		n/t	n/t	n/t	n/t	n/t	<2	n/t	<2
PCB	(mg/kg)	N		<0.1	<0.1	0.3	0.1	0.2	0.2	<0.1	0.1
Total Petroleum Hydrocarbons	(mg/kg)	Y		<5	<5	<5	<5	8	8	<5	<5

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Tel: 01424 444433 Fax: 01424 442299 info@environmentalanalysis.com

ANALYTICAL REPORT No. R61559

Location: Yachthaven, Hayling Island

CLIENT: L R Pimenta

26 Selangor Avenue,
Emsworth, Hants. PO10 7LT

Reporting Date: 25/07/02

F.A.O: L R Pimenta -

Soils			TP/BH	D8	D8	D9	D9	D10	D10	D11	D13	D13	D14
			Depth (m)	0.30	0.60	0.30	0.80	0.00	0.30	0.00	0.20	0.60	0.00
			Our ref	138381	138382	138383	*38384	138386	138387	138389	138390	138391	138392
Arsenic	(mg/kg)	Y		7.9	16.6	16.9	9.1	10.3	24.3	20.4	7.0	9.4	7.4
Cadmium	(mg/kg)	Y		1.8	1.0	1.5	<0.5	1.4	2.5	0.8	<0.5	<0.5	<0.5
Chromium	(mg/kg)	Y		64	26	24	32	30	44	57	15	31	12
Copper	(mg/kg)	Y		242	136	125	65	184	135	1088	108	11	24
Nickel	(mg/kg)	Y		18	12	20	15	44	25	191	18	11	7
Lead	(mg/kg)	Y		329	493	265	75	415	2074	551	72	20	154
Mercury	(mg/kg)	Y		n/t	n/t	n/t	n/t	2.4	n/t	0.8	n/t	n/t	<0.5
Selenium	(mg/kg)	Y		n/t	n/t	n/t	n/t	<0.5	n/t	<0.5	n/t	n/t	<0.5
Zinc	(mg/kg)	Y		1632	929	596	103	605	2524	2605	214	35	180
Water Soluble Boron	(mg/kg)	Y		n/t	n/t	n/t	n/t	1.3	0.6	0.8	n/t	n/t	1.3
pH	(Value)	Y		n/t	n/t	n/t	n/t	7.9	8.1	7.9	n/t	n/t	7.8
Total Sulphate	(% as SO_4)	Y		n/t	n/t	n/t	n/t	0.01	0.05	0.03	n/t	n/t	0.12
Total Phenols	(mg/kg)	Y		n/t	n/t	n/t	n/t	<2	<2	<2	n/t	n/t	<2
Total Cyanide	(mg/kg)	Y		n/t	n/t	n/t	n/t	<1	<1	<1	n/t	n/t	<1
Free Cyanide	(mg/kg)	Y		n/t	n/t	n/t	n/t	<1	<1	<1	n/t	n/t	<1
Sulphide	(mg/kg)	Y		n/t	n/t	n/t	n/t	<2	*	12.8	n/t	n/t	<2
Elemental Sulphur	(mg/kg)	Y		n/t	n/t	n/t	n/t	400	30	310	n/t	n/t	210
Total PAH	(mg/kg)	Y		n/t	n/t	n/t	n/t	21.9	3.0	37.5	n/t	n/t	1.5
Thiocyanate	(mg/kg)	Y		n/t	n/t	n/t	n/t	<2	<2	<2	n/t	n/t	<2
Hexavalent Chromium	(mg/kg)	Y		n/t	n/t	n/t	n/t	<2	<2	<2	n/t	n/t	<2
Total Petroleum Hydrocarbons	(mg/kg)	Y		135	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB	(mg/kg)	N		0.5	0.1	0.2	<0.1	<0.1	0.2	0.1	<0.1	<0.1	<0.1
Molybdenum	(mg/kg)	Y		11	<5	5	<5	<5	*	17	6	<5	<5

*Insufficient sample

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ANALYTICAL REPORT No. R61559

Location: Yachthaven, Hayling Island

CLIENT: L R Pimenta
26 Selangor Avenue,
Emsworth, Hants, PO10 7LT

Reporting Date: 25/07/02

F.A.O: L R Pimenta

Soils			TP/BH	D15	D15	D19	D20	D25	D31	D32	D32	D33	D33
			Depth (m)	0.00	0.60	0.40	0.50	0.40	0.30	0.00	1.00	0.00	0.80
			Our ref	138394	138395	138395	138397	138398	138399	138400	138401	138402	138403
Arsenic	(mg/kg)	Y		9.6	8.8	18	39.4	97.3	9.2	10.7	23.1	14.6	10.1
Cadmium	(mg/kg)	Y		<0.5	0.5	<0.5	1.1	1.9	<0.5	0.5	0.6	0.7	<0.5
Chromium	(mg/kg)	Y		16	16	32	28	147	27	25	37	33	34
Copper	(mg/kg)	Y		32	44	11	524	2424	80	83	225	81	13
Nickel	(mg/kg)	Y		22	10	12	19	142	16	22	22	26	14
Lead	(mg/kg)	Y		242	555	16	1755	921	72	170	671	570	26
Mercury	(mg/kg)	Y		<0.5	1.9	n/t	n/t	n/t	n/t	0.5	10.6	0.7	<0.5
Selenium	(mg/kg)	Y		<0.5	<0.5	n/t	n/t	n/t	n/t	<0.5	<0.5	<0.5	<0.5
Zinc	(mg/kg)	Y		207	535	30	1787	4042	91	184	698	200	52
Water Soluble Boron	(mg/kg)	Y		<0.5	0.6	n/t	n/t	n/t	n/t	<0.5	1.6	<0.5	0.5
pH	(Value)	Y		7.6	8.1	n/t	n/t	n/t	n/t	8.2	8.0	8.1	8.1
Total Sulphate	(% as SO_4)	Y		0.05	0.09	n/t	n/t	n/t	n/t	0.04	0.16	0.03	0.07
Total Phenols	(mg/kg)	Y		<2	<2	n/t	n/t	n/t	n/t	<2	<2	<2	<2
Total Cyanide	(mg/kg)	Y		<1	<1	n/t	n/t	n/t	n/t	<1	<1	<1	<1
Free Cyanide	(mg/kg)	Y		<1	<1	n/t	n/t	n/t	n/t	<1	<1	<1	<1
Sulphide	(mg/kg)	Y		<2	<2	n/t	n/t	n/t	n/t	<2	<2	<2	<2
Elemental Sulphur	(mg/kg)	Y		120	150	n/t	n/t	n/t	n/t	1900	200	470	40
Total PAH	(mg/kg)	Y		8.5	5.8	n/t	n/t	n/t	n/t	15.6	17.4	13.6	4.4
Thiocyanate	(mg/kg)	Y		<2	<2	n/t	n/t	n/t	n/t	<2	<2	<2	<2
Hexavalent Chromium	(mg/kg)	Y		<2	<2	n/t	n/t	n/t	n/t	<2	<2	<2	<2
Total Petroleum Hydrocarbons	(mg/kg)	Y		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB	(mg/kg)	N		<0.1	<0.1	<0.1	0.6	1.6	<0.1	<0.1	0.4	<0.1	<0.1
Molybdenum	(mg/kg)	Y		<5	<5	<5	6	84	6	6	<5	7	<5

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ANALYTICAL REPORT No. R61559

Location: Yachthaven, Hayling Island

CLIENT: L R Pimenta
26 Selangor Avenue,
Emsworth, Hants, PO10 7LT

Reporting Date: 25/07/02

F.A.O: L R Pimenta

Soils			TP/BH	D34	D34	D35	D35	F3	F8	F9	F9	F10	F10
			Depth (m)	0.00	0.30	0.00	0.50	0.00	0.25	0.20	0.45	0.20	0.50
			Our ref	138404	138405	138406	138407	138408	138409	138410	138411	138412	138413
Arsenic	(mg/kg)	Y		9.5	11.3	9.1	7.3	6.1	10.0	<5	7.2	8.8	10.7
Cadmium	(mg/kg)	Y		<0.5	<0.5	0.9	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5
Chromium	(mg/kg)	Y		22	37	11	30	13	27	9	21	15	22
Copper	(mg/kg)	Y		26	20	15	70	67	6	18	16	29	21
Nickel	(mg/kg)	Y		15	16	8	18	13	10	5	8	11	9
Lead	(mg/kg)	Y		61	40	91	70	117	19	40	35	78	63
Mercury	(mg/kg)	Y		<0.5	<0.5	<0.5	0.6	<0.5	<0.5	n/t	<0.5	n/t	n/t
Selenium	(mg/kg)	Y		<0.5	<0.5	<0.5	<0.5	<0.5	0.6	n/t	<0.5	n/t	n/t
Zinc	(mg/kg)	Y		90	69	106	91	198	32	82	44	97	65
Water Soluble Boron	(mg/kg)	Y		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	n/t	0.6	n/t	n/t
pH	(Value)	Y		7.9	8.1	8.6	8.2	8.2	7.9	n/t	8.1	n/t	n/t
Total Sulphate	(% as SO_4)	Y		0.04	0.06	0.05	0.01	0.01	0.01	n/t	0.02	n/t	n/t
Total Phenols	(mg/kg)	Y		<2	<2	<2	<2	<2	<2	n/t	<2	n/t	n/t
Total Cyanide	(mg/kg)	Y		<1	11.0	<1	<1	<1	<1	n/t	<1	n/t	n/t
Free Cyanide	(mg/kg)	Y		<1	<1	<1	<1	<1	<1	n/t	<1	n/t	n/t
Sulphide	(mg/kg)	Y		<2	<2	<2	<2	<2	<2	n/t	<2	n/t	n/t
Elemental Sulphur	(mg/kg)	Y		400	30	2790	160	200	30	n/t	170	n/t	n/t
Total PAH	(mg/kg)	Y		7.6	<0.5	72.6	5.6	24.6	1.0	n/t	7.8	n/t	n/t
Thiocyanate	(mg/kg)	Y		<2	<2	<2	<2	<2	<2	n/t	<2	n/t	n/t
Hexavalent Chromium	(mg/kg)	Y		<2	<2	<2	<2	<2	<2	n/t	<2	n/t	n/t
Total Petroleum Hydrocarbons	(mg/kg)	Y		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB	(mg/kg)	N		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	(mg/kg)	Y		5	<5	5	<5	<5	<5	6	<5	<5	<5

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ANALYTICAL REPORT No. R61559

Location: Yachthaven, Hayling Island

CLIENT: L R Pimenta

26 Selangor Avenue,
Emsworth, Hants. PO10 7LT

Reporting Date: 25/07/02

F.A.O: L R Pimenta

Soils			TP/BH	F14	F14	F21	F21	F22	F22	F24	F24	F25	F25
			Depth (m)	0.00	1.20	0.00	0.30	0.00	0.60	0.00	1.40	0.00	1.00
			Our ref	138414	138415	138416	138417	138418	138419	138420	138421	138422	138423
Arsenic	(mg/kg)	Y		10.9	6.8	5.4	5.2	9.4	6.6	8.9	6.0	13.0	10.7
Cadmium	(mg/kg)	Y		0.8	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5
Chromium	(mg/kg)	Y		25	25	22	27	22	21	26	25	22	22
Copper	(mg/kg)	Y		60	16	18	20	30	12	55	11	44	139
Nickel	(mg/kg)	Y		22	9	9	9	14	7	12	8	16	15
Lead	(mg/kg)	Y		112	25	50	37	133	29	252	31	223	1656
Mercury	(mg/kg)	Y		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5
Selenium	(mg/kg)	Y		<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Zinc	(mg/kg)	Y		220	51	37	45	116	26	386	30	166	232
Water Soluble Boron	(mg/kg)	Y		<0.5	2.6	4.8	3.6	<0.5	1.2	0.5	3.0	1.0	1.8
pH	(Value)	Y		7.9	7.7	6.0	6.8	7.8	7.0	7.8	7.8	7.7	8.7
Total Sulphate	(% as SO_4)	Y		0.26	0.02	0.03	0.03	0.06	0.02	0.01	0.04	0.01	0.51
Total Phenols	(mg/kg)	Y		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Total Cyanide	(mg/kg)	Y		<1	2.1	<1	<1	<1	<1	<1	<1	<1	<1
Free Cyanide	(mg/kg)	Y		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sulphide	(mg/kg)	Y		<2	2.6	<2	<2	<2	<2	<2	<2	<2	26.3
Elemental Sulphur	(mg/kg)	Y		610	620	340	780	130	420	120	440	270	910
Total PAH	(mg/kg)	Y		57.2	1.8	1.5	3.7	6.5	0.8	2.8	0.9	7.5	42.4
Thiocyanate	(mg/kg)	Y		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Hexavalent Chromium	(mg/kg)	Y		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Total Petroleum Hydrocarbons	(mg/kg)	Y		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB	(mg/kg)	N		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
Molybdenum	(mg/kg)	Y		6	<5	<5	<5	<5	<5	<5	<5	<5	<5

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ANALYTICAL REPORT No. R61559

Location: Yachthaven, Hayling Island

CLIENT: L R Pimenta
26 Selangor Avenue,
Emsworth, Hants, PO10 7LT

Reporting Date: 25/07/02

F.A.O: L R Pimenta

Soils			TP/BH	E25	G1	31	G2	G2	G4	G5	G5	WS1	WS1
			Depth (m)	0.00	0.50	1.00	0.00	1.70	0.00	0.00	1.00	0.30	0.50
			Our ref	138424	138425	138426	138427	138428	138429	138430	138431	138432	138433
Arsenic	(mg/kg)	Y		8.5	13.7	11.2	6.0	15.3	7.6	10.9	10.0	13.2	15.9
Cadmium	(mg/kg)	Y		<0.5	1.1	0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	(mg/kg)	Y		14	50	31	14	40	16	19	27	29	33
Copper	(mg/kg)	Y		29	119	36	26	24	18	27	13	39	27
Nickel	(mg/kg)	Y		9	48	17	11	19	11	15	13	15	14
Lead	(mg/kg)	Y		62	220	118	48	37	68	86	50	69	21
Mercury	(mg/kg)	Y		<0.5	n/t	n/t	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5
Selenium	(mg/kg)	Y		0.6	n/t	n/t	<0.5	1.4	<0.5	<0.5	<0.5	<0.5	0.7
Zinc	(mg/kg)	Y		62	530	496	100	31	79	112	55	95	37
Water Soluble Boron	(mg/kg)	Y		14.7	n/t	n/t	<0.5	2.6	0.6	0.7	<0.5	1.7	<0.5
pH	(Value)	Y		6.4	n/t	n/t	8.3	8.6	8.2	7.8	8.0	7.6	8.1
Total Sulphate	(% as SO_4)	Y		0.12	n/t	n/t	0.01	0.13	0.01	<0.01	0.02	0.01	0.01
Total Phenols	(mg/kg)	Y		<2	n/t	n/t	<2	<2	<2	<2	<2	<2	<2
Total Cyanide	(mg/kg)	Y		<1	n/t	n/t	<1	<1	<1	<1	<1	<1	<1
Free Cyanide	(mg/kg)	Y		<1	n/t	n/t	<1	<1	<1	<1	<1	<1	<1
Sulphide	(mg/kg)	Y		<2	n/t	n/t	<2	<2	<2	<2	<2	<2	<2
Elemental Sulphur	(mg/kg)	Y		60	n/t	n/t	2060	30	2160	140	40	20	30
Total PAH	(mg/kg)	Y		4.1	n/t	n/t	44.5	5.3	33.2	6.4	2.0	1.4	9.5
Thiocyanate	(mg/kg)	Y		<2	n/t	n/t	<2	<2	<2	<2	<2	<2	<2
Hexavalent Chromium	(mg/kg)	Y		<2	n/t	n/t	<2	<2	<2	<2	<2	<2	<2
Total Petroleum Hydrocarbons	(mg/kg)	Y		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB	(mg/kg)	N		<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	(mg/kg)	Y		<5	*	*	<5	<5	<5	<5	<5	<5	<5

*Insufficient sample

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ANALYTICAL REPORT No. R61559

Location: Yachthaven, Hayling Island

CLIENT: L R Pimenta
26 Selangor Avenue,
Emsworth, Hants. PO10 7LT

Reporting Date: 25/07/02

F.A.O: L R Pimenta

Soils			TP/BH	WS2	WS2	WS4
			Depth (m)	0.30	0.80	0.00
			Our ref	138434	138435	138437
	Arsenic	(mg/kg)	Y	5.8	14.8	11.4
	Cadmium	(mg/kg)	Y	<0.5	<0.5	<0.5
	Chromium	(mg/kg)	Y	9	48	30
	Copper	(mg/kg)	Y	11	26	57
	Nickel	(mg/kg)	Y	6	13	26
	Lead	(mg/kg)	Y	291	24	140
	Mercury	(mg/kg)	Y	<0.5	<0.5	0.5
	Selenium	(mg/kg)	Y	<0.5	2.0	<0.5
	Zinc	(mg/kg)	Y	68	26	183
	Water Soluble Boron	(mg/kg)	Y	<0.5	<0.5	0.8
	pH	(Value)	Y	8.1	8.1	8.2
	Total Sulphate	(% as SO_4)	Y	0.01	0.08	0.01
	Total Phenols	(mg/kg)	Y	<2	<2	<2
	Total Cyanide	(mg/kg)	Y	<1	<1	<1
	Free Cyanide	(mg/kg)	Y	<1	<1	<1
	Sulphide	(mg/kg)	Y	<2	<2	<2
	Elemental Sulphur	(mg/kg)	Y	20	30	980
	Total PAH	(mg/kg)	Y	3.5	0.5	10.2
	Thiocyanate	(mg/kg)	Y	<2	<2	<2
	Hexavalent Chromium	(mg/kg)	Y	<2	<2	<2
	Total Petroleum Hydrocarbons	(mg/kg)	Y	<5	<5	<5
	PCB	(mg/kg)	N	<0.1	<0.1	0.1
	Molybdenum	(mg/kg)	Y	<5	<5	7

Descriptions of methods available on request (V8)
Y - UKAS accredited test
N - Non accredited test
n/t = not tested
«c
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ENVIRONMENTAL ANALYSIS LABORATORIES

15 Burgess Road, Ivyhouse Lane Industrial Estate, Hastings, East Sussex TN35 4NR
Tel: 01424 444433 Fax: 01424 442299 info@environmentalanalysis.com

ANALYTICAL REPORT No. R61559

Location: Yachthaven, Hayling Island

CLIENT: L R Pimenta
26 Selangor Avenue,
Emsworth, Hants, PO10 7LT

Reporting Date: 25/07/02

F.A.O. L R Pimenta

Waters		Sample ref	D9	D10	D14
		Our ref	138385	138388	138393
Arsenic	(µg/l)	Y	<10	<10	<10
Cadmium	(µg/l)	Y	<1	<1	<1
Chromium	(µg/l)	Y	<20	<20	<20
Copper	(µg/l)	Y	32	24	29
Nickel	(µg/l)	Y	<20	<20	<20
Lead	(µg/l)	Y	<20	<20	<20
Mercury	(µg/l)	N	<0.1	<0.1	<0.1
Selenium	(µg/l)	Y	<10	<10	<10
Zinc	(µg/l)	Y	70	59	<50
Boron	(µg/l)	Y	375	190	187
pH	(Value)	Y	*	*	*
Sulphate	(mg/l)	N	41	17	18
Total Phenols	(µg/l)	N	<5	<5	<5
Total Cyanide	(µg/l)	Y	<5	<5	<5
Sulphide	(mg/l)	Y	<0.1	<0.1	<0.1
Total PAH	(mg/l)	Y	*	*	*
Thiocyanate	(mg/l)	Y	<0.1	<0.1	<0.1
Hexavalent Chromium	(µg/l)	Y	<20	<20	<20
Elemental Sulphur	(mg/l)	N	<0.1	<0.1	<0.1
Free Cyanide	(µg/l)	Y	<5	<5	<5
Total Petroleum Hydrocarbons	(mg/l)	Y	<0.1	<0.1	<0.1
PCB	(µg/l)	N	<0.05	<0.05	<0.05

*Insufficient sample

Descriptions of methods available on request (V8)
Y - UKAS accredited test
N - Non accredited test
n/t = not tested
ic
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Location: Yachthaven, Hayling Island

CLIENT: L R Pimenta
26 Selangor Avenue,
Emsworth, Hants, PO10 7LT

Reporting Date: 25/07/02

F.A.O: L R Pimenta

Asbestos Identification

Sample ref:	**D10**
Depth (m):	**0.00**
Our ref:	**138386**
Description of Sample Matrix:	Soil
Overall Percentage of Asbestos Identified:	<0.001 %
Comments:	
No asbestos identified	

Sample ref:	**D11**
Depth (m):	**0.00**
Our ref:	**138389**
Description of Sample Matrix:	Soil
Overall Percentage of Asbestos Identified:	<0.001 %
Comments:	
No asbestos identified	

Sample ref:	**D13**
Depth (m):	**0.20**
Our ref:	**138390**
Description of Sample Matrix:	Sand/stones
Overall Percentage of Asbestos Identified:	<0.001 %
Comments:	
No asbestos identified	

Sample ref:	**D14**
Depth (m):	**0.00**
Our ref:	**138392**
Description of Sample Matrix:	Sand (shingle)
Overall Percentage of Asbestos Identified:	<0.001 %
Comments:	
No asbestos identified	

Descriptions of methods available on request (V8)
Asbestos identification - UKAS accredited method
Quantification of asbestos and tentative identification of non asbestos materials is not covered by UKAS accreditation
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ENVIRONMENTAL ANALYSIS LABORATORIES

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Tel: 01424 444433 Fax: 01424 442299 info@environmentalanalysis.com

ANALYTICAL REPORT No. R61559

Location: Yachthaven, Hayling Island

CLIENT: L R Pimenta

26 Selangor Avenue,
Emsworth, Hants, PO10 7LT

Reporting Date: 25/07/02

F.A.O: L R Pimenta

Asbestos Identification

Sample ref:	**D15**
Depth (m):	**0.00**
Our ref:	**138394**
Description of Sample Matrix:	Sand (small shingle)
Overall Percentage of Asbestos Identified:	<0.001 %

Comments:
No asbestos identified

Sample ref:	**D25**
Depth (m):	**0.40**
Our ref:	**138398**
Description of Sample Matrix:	Heavy soil
Overall Percentage of Asbestos Identified:	<0.001 %

Comments:
No asbestos identified

Sample ref:	**D31**
Depth (m):	**0.30**
Our ref:	**138399**
Description of Sample Matrix:	Sand (small shingle)
Overall Percentage of Asbestos Identified:	<0.001 %

Comments:
No asbestos identified

Sample ref:	**D32**
Depth (m):	**0.00**
Our ref:	**138400**
Description of Sample Matrix:	Soil
Overall Percentage of Asbestos Identified:	<0.001 %

Comments:
No asbestos identified

Descriptions of methods available on request (V8)
Asbestos identification = UKAS accredited method
Quantification of asbestos and tentative identification of non asbestos materials is not covered by UKAS accreditation
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Tel: 01424 444433 Fax: 01424 442299 info@environmentalanalysis.com

ANALYTICAL REPORT No. R61559

Location: Yachthaven, Hayling Island

CLIENT: **L R Pimenta**
26 Selangor Avenue,
Emsworth, Hants, PO10 7LT

Reporting Date: 25/07/02

F.A.O: L R Pimenta

Asbestos Identification

Sample ref:	**F21**
Depth (m):	**0.00**
Our ref:	**138416**
Description of Sample Matrix:	Soil
Overall Percentage of Asbestos Identified:	<0.001 %

Comments:
No asbestos identified

Sample ref:	**F22**
Depth (m):	**0.00**
Our ref:	**138418**
Description of Sample Matrix:	Soil
Overall Percentage of Asbestos Identified:	<0.001 %

Comments:
No asbestos identified

Descriptions of methods available on request (V8)
Asbestos identification = UKAS accredited method
Quantification of asbestos and tentative identification of non asbestos materials is not covered by UKAS accreditation.

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APPENDIX F

HAYLING ISLAND YACHT HAVEN SITE – SOIL GAS TEST RESULTS

Four soil gas monitoring boreholes designated WS-1, WS-2, WS-3, and WS-4, installed during a comprehensive Site Investigation in June 2002, were tested for soil gas composition on the 16 July and again on 24 July, 2002

A Geotechnical Instruments Infra-Red Soil Gas Analyser was used to determine methane, carbon dioxide and oxygen gas concentrations and the prevailing atmospheric pressure.

The weather was warm but overcast on both days with a moderately high but falling atmospheric pressure from highs above 1025 mbars over the preceeding weekends to 1016 and 1017 mbars on 16 and 24 July respectively.

RESULTS

16 July, 2002 – 5-00pm

	WS-1	WS-2	WS-3	WS-4
Methane	0.0	0.0	0.1, 0.1, 0.1, 0.1	5.5, 4.8, 4.1, 3.3
Carbon Dioxide	0.1	0.1	1.2, 1.1, 1.0, 0.9	2.5, 2.2, 1.8, 1.3
Oxygen	20.5	20.5	19.4,19.8,20.0,20.2	16.0,16.5,17.3,18.1

All results are given as % gas (v/v)
Boreholes WS-1 and WS-2 gave stable results throughout 4 mins monitoring
Boreholes WS-3 and WS-4 gave declining results as shown after 1, 2, 3 & 4 mins

24 July, 2002 – 12-00am

	WS-1	WS-2	*WS-3*	*WS-4*
Methane	0.0	0.0	0.1, 0.1, 0.1, 0.1	0.2, 0.1, 0.1, 0.1
Carbon Dioxide	0.1	0.1	1.1, 1.0, 1.0, 0,9	0.5, 0.2, 0.2, 0.1
Oxygen	19.8	19.7	19.2,19.4,19.6,19.7	19.3,19.7,19.9,20.0

DISCUSSION OF RESULTS

The boreholes WS-1 and WS-2 to the north side of the site, show consistent results of virtually zero soil gases - which are typical of fill/poor-soil conditions.

Borehole WS-3 consistently shows a typical good grassy-soil gas concentration, whilst WS-4 initially showed significantly elevated gas concentrations with the peak value for methane just exceeding its Lower Explosive Limit (LEL) on 16 July, but with much lower readings, similar to the other sites, recorded on the second visit just one week later. Both visits were made at similar high tide conditions and at similar atmospheric conditions and pressures.

RECOMMENDATIONS

Additional monitoring at approximately 2-weekly intervals for at least two months and at varying atmospheric and tidal levels is required to discover any trends in these results, whilst trying to discover the source of the elevated soil gas concentrations initially found in the

vicinity of WS-4. Initial indications could connect the gases etiher with outflow from a nearby small sewage treatment tank, or from burial of the natural shoreline salt marsh under the fill. However, the second visit – just one week later - which recorded just background levels of soil gases at this site, suggests that the initially high gas results might have been associated with disturbance of the underlying shoreline salt marsh during drilling, and that once dissipated, and the borehole consolidates, such elevated gas levels may not re-appear. Further tests are required to elucidate this situation.

CONTINUATION SOIL GAS MONITORING AT HAYLING ISLAND – YACHT HAVEN SITE

The third monitoring of the four gas monitoring wells at this site took place on Friday 2nd August at mid-day, whilst the tide was out, and there was no water visible in the nearby creek. Atmospheric pressure had been dropping from earlier highs of 1020 mbars, a few days previously, and was recorded at 1009 mbars at the mid-day time of monitoring.

Results are given in the table below.

	WS-1	WS-2	WS-3	WS-4
Methane	0.0	0.1	0.1, 0.1, 0.1. 0.1	0.2, 0.2, 0.2, 0.2
Carbon Dioxide	0.1	0.1	0.8, 0.7, 0.6, 0.5	1.6, 1.5, 0.9, 0.8
Oxygen	20.4	20.3	19.8 19.9,20.0,20.2	17.7,18.6,19.0,19.2

All results are given as % gas (v/v)
Boreholes WS-1 and WS-2 gave stable results through 4 mins. monitoring
Boreholes WS-3 and WS-4 gave declining results as shown after 1,2,3 & 4 mins.

Discussion

Similar results to previous week. WS-1 and 2 showing no soil gases due to poor soil /rubbly fill ground.

WS-3 shows modest levels of carbon dioxide due to good grassy soil horizon.

WS-4 shows minor methane and modest carbon dioxide levels , a little higher than last week, possibly due to the lower atmospheric pressure.

Recommendation

Another 1 or 2 soil gas monitorings to take place – perhaps into the Autumn season to capture a significantly low atmospheric pressure (< 990 mbars)

CONTINUATION SOIL GAS MONITORING AT HAYLING ISLAND – YACHT HAVEN SITE

The fourth monitoring of the four gas monitoring wells at this site took place on Saturday 7 September at 18-00 hrs, whilst the tide was fully out, and there was no water visible in the nearby creek. Atmospheric pressure had been dropping from earlier levels of 1010 mbars, a few days previously, and was recorded at 1005 mbars at the time of monitoring.

Results are given in the table below.

	WS-1	WS-2	WS-3	WS-4
Methane	0.0	0.1, 0.1, 0.1, 0.0	0.1, 0.0, 0.1, 0.0	0.1, 0.0, 0.1, 0.1
Carbon Dioxide	0.1	1.2, 0.9, 0.4, 0.2	0.1, 0.1, 0.1, 0.1	0.3, 1.0, 0.8, 0.6
Oxygen	20.5	17.8,18.5,19.5,20.0	19.8,19.9,20.0,20.2	19.7,19.6,19.8,20.1

All results are given as % gas (v/v)
Boreholes WS-1 gave stable results through 4- mins, monitoring
Boreholes WS-2, WS-3& WS-4 gave declining results as shown after 1,2,3 & 4 mins.

Discussion

A slightly different pattern of results observed to previously. Only WS-1 continues to show no gas at all , whilst WS-2 shows a small amount of soil gas had accumulated in the borehole during the 5-weeks since the previous measurement, but after 4-minutes pumping, this had cleared back to almost zero.

WS-3 shows significantly lower levels of carbon dioxide than previously.

WS-4 shows slightly lower results to previously

Recommendation

Another 1 or 2 soil gas monitorings to take place – into the Autumn season to capture a significantly low atmospheric pressure (< 990 mbars)

Also, a final measurement to be taken after a time interval of at least 6-weeks from any previous measurements, to determine if there is any significant rate of build-up of gases over time in any of the boreholes.

WEST WIGHT DRILLING
SITE INVESTIGATION SERVICES
DAILY REPORT

SITE HAYLING ISLAND -	DRILLER D. Jewson	BOREHOLE No. 1
CONTRACT NO.	GROUND LEVEL	BOREHOLE DIA mm.
DATE WEDNESDAY 26/6/02		METHOD Window Sampling

SIZE & DEPTH OF CASING	SAMPLES DEPTH		SAMPLES TYPE & No.	S.P.T. 75 mm	75 mm	75 mm	75 mm	75 mm	75 mm	U4 LENGTH	U4 BLOWS	STRATA DEPTH	DESCRIPTION	CH
	0.30		D1									GL	Concrete Rubble-Fill	
	0.40	0.70	B2									0.30	Firm Brown Clay	
	1.0	1.50	B3									0.50	Firm Grey Yellow Brown Silty	
	1.50	2.0	B4										Clay.	
	2.0	2.20	D5									1.50	Firm Stiff Red Grey Brown	
	2.30	3.0	B6										Silty Clay	
	3.0	3.60	B7										EOB 5.30m	
	3.70	4.05	D8											
	4.05	4.70	B9											
	4.80		D10	4	7	9	9	13	20-70mm			0.30		
												2.0		
												5.30		



REMARKS

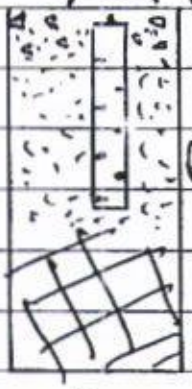
WATER LEVELS	TIME OF DAY			
	DEPTH TO WATER			
	DEPTH CASED			
	DEPTH OF HOLE			

FOREMAN'S SIGNATURE

CLIENT'S SIGNATURE

VEST WIGHT DRILLING
SITE INVESTIGATION SERVICES
DAILY REPORT

SITE HAYLING ISLAND.	DRILLER O. JOWSON.	BOREHOLE No. 2
CONTRACT NO.	GROUND LEVEL	BOREHOLE DIA mm.
DATE WEDNESDAY 26/6/02		METHOD WINDOW SAMPLING

SIZE & DEPTH OF CASING	SAMPLES DEPTH		TYPE & No.	S.P.T.						U4 LENGTH	U4 BLOWS	STRATA DEPTH	DESCRIPTION
	0.30		D1									GL	LOOSE SANDY GRAVEL FILL
	0.30	0.80	B2									0.60	FIRM ORANGE BROWN GREY
	0.80	1.0	D3										SILTY CLAY
	1.0	1.40	B4										
	1.40	2.40	W5										EOB 4.50m
	2.40	3.10	W6										
	3.10	4.0	W7										PROTECTIVE COVER CAP
	4.0		D8	4	5	6	8	10	12			0.30	
													
												2.0	
												4.50	BACKFILLED WITH ARI
													50mm SLOTTED PIPE WITH GRAVEL
													INSTALLED AT 2.0m.

REMARKS

WATER LEVELS	TIME OF DAY			
	DEPTH TO WATER			
	DEPTH CASED			
	DEPTH OF HOLE			

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CLIENT'S SIGNATURE

VEST WIGHT DRILLING
ITE INVESTIGATION SERVICES
AILY REPORT

TE Hayling Island.	DRILLER D. Johnson	BOREHOLE No. 3
ONTRACT NO.	GROUND LEVEL	BOREHOLE DIA mm.
ATE Wednesday 26/6/02		METHOD Window Sampling

ZE & TH OF SING	SAMPLES DEPTH		TYPE & No.	S.P.T						U4 LENGTH	U4 BLOWS	STRATA DEPTH	DESCRIPTION	CHI
						75 mm	75 mm	75 mm	75 mm					
	GL	1.0	B1									GL	Turf + Topsoil	
	1.0	1.50	B2									0.20	Firm Brown Silty Clay + occasional Gravel.	
	1.50	2.0	B3									0.60	Firm orange Brown Silty Clay	
	2.0	3.0	W4									2.70	Firm Stiff Red Grey Brown Silty Clay.	
	3.80		D5	3	4	5	6	8					EOB 4.30m.	
													Protective Cover Cemented On	
												0.30	Pea Gravel Filter	
												2.0		
												4.30	Backfilled with Arisings	
													50m Slotted Pipe with Gas Tap Installed At 2.0m	

REMARKS

WATER LEVELS				
TIME OF DAY				
DEPTH TO WATER				
DEPTH CASED				
DEPTH OF HOLE				

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VEST WIGHT DRILLING
ITE INVESTIGATION SERVICES
AILY REPORT

ATE HAMLIN, IRELAND	DRILLER D. JOHNSON	BOREHOLE No. 4
ONTRACT NO.	GROUND LEVEL	BOREHOLE DIA mm. 150
ATE WOODSIDE 26/6/02		METHOD WINDOW SAMPLING

ZE & TH OF SING	SAMPLES DEPTH		TYPE & No.	S.P.T. n n 75 mm 75 mm 75 mm 75 mm	U4 LENGTH	U4 BLOWS	STRATA DEPTH	DESCRIPTION	CH
	0.30	0.60	D1				GL	LOOSE GRAVEL + BRICK FILL	
	0.60	1.0	D2				0.50	FIRM BROWN CLAY FILL	
	1.0	1.50	B3				1.90	FIRM ORANGE BROWN SILTY CLAY	
	1.50	1.80	B4				2.50	FIRM STIFF RED GREY BROWN	
	1.80	2.0	D5					SILTY CLAY.	
	2.0	3.0	W6					FOR 5.90m.	
	3.0		D7						
	3.0	3.60	W8					PROTECTIVE COVER CONCRETE	
	4.0		D9				0.30		C
	4.80		D10	2 2 2 2 2 3					
	5.30		D11	4 4 4 5 6 6				POOR GRAVEL HOLE	
							2.0		
							5.90	BACKFILLED WITH ARISINGS	
								50mm SLOTTED PIPE WITH	
								GAS TAP INSTALLED AT 2.0m.	

EMARKS

WATER LEVELS				
TIME OF DAY				
DEPTH TO WATER				
DEPTH CASED				
DEPTH OF HOLE				

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CLIENT'S SIGNATURE

YACHTHAVEN, HAYLING ISLAND

ENVIRONMENTAL STATEMENT

DECEMBER 2011

APPENDIX 8.2

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DESK STUDY REPORT FOR

YACHTHAVEN COPSE LANE

HAYLING ISLAND

Report prepared by
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pimenta @btinternet.com

26 October 2010

DESK STUDY REPORT FOR YACHTHAVEN COPSE LANE HAYLING ISLAND PO11 ORH

Introduction

Yachthaven (also referred to as Yacht Haven) is a vacant area of land of approximately 31000 sq.m which lies on the eastern shores of Chichester Harbour and proposals are being considered for the construction of six dwellings with mooring facilities.

The purpose of this report is to make a preliminary risk assessment with respect to possible contamination of the soil within and around the proposed boundaries in order to develop an initial source~pathway~receptor conceptual site model (CSM) and to propose the scope for further work that may be necessary to refine the CSM and thereby enable a more reliable risk assessment to be made.

Site Location

A recent map of the area is attached

Postal area PO11ORH

Grid Reference 472860 101830

Average altitude The site slopes from about 4m in Copse Lane in the north to to about 1.0m above sea level in the south.

Site History

The following history of the site has been compiled from an examination of old OS maps.

1870

The site is shown as an open field with Oyster Beds beyond the shoreline. A large excavation possibly for clay or gravel is shown on the southern boundary

1890

This still shows an open field but the Oyster Beds appear to have been abandoned. The excavation appears to have not been filled in. A footpath on the southern boundary is shown as a Public footpath.

1900

No change from previous map

1910

No change from previous map

1930

This map shows the site as a partially wooded field with old Oyster Beds close to the shoreline. No access road to Copse Lane is present.

1940

A large building (probably a boat shed is shown constructed on the site together with two or three sheds and a slipway. The public footpath is shown on the southern boundary of the site alongside the shoreline. An access road from Copse Lane is shown.

1950

This shows landing stages in the southern shoreline

1960

This shows further developments of the slipway and landing stages.
The excavation shown in previous maps is now indicated as a pond
The oyster beds are no longer present

2010

The very large building/shed on the site is not present and a caravan park and camping centre has been developed north of the site. A dwelling appears on the east of the site but the land to the west of the site is still open fields.
The pond is not shown in this map and appears to have been filled in.

Walkover survey

A walkover survey of the site was made on 21 October 2010.
Access to the site from Copse Road has been closed by a substantial gate thus preventing the site from being used for fly tipping. There appeared to be no noticeable changes since the site was last visited in July 2002. The sheds are mostly in a poor state of repair and apart from one have not been used but there was some evidence of their use as workshops. A considerable amount of builders rubble was seen including large precast concrete beams and quantities of scrap metal. Empty oil drums and paint cans were also visible. Detailed inspection of the inside of the sheds was not possible at the time of the visit. The site was not overgrown suggesting that in a large part of the site the old topsoil has been removed and made up ground is not suitable for plant growth.

Geology of area

According to a geological map of the area (BGS Sheet 331 Solid and Drift Edition) the expected soil at the site is a recent deposit of beach material (silt, sand and gravel) overlying the clays and sands of the Lambeth Group.
The Lambeth Group (formerly known as Reading Beds) in this are consist of reddish brown clays with occasional layers of sands.

Sitecheck Review

Landmark Information Group have carried out a Sitecheck review of the site and their report SCC 32781252 1 1 dated 19 October 2010 is attached. A summary of their findings is as follows.

1. The total site area is 31371 m^2
2. The likelihood of the site having contaminants is low to moderate
3. The expected natural soil at the site is superficial recent deposits of beach and tidal flat material (sand, silt and gravel) overlying the Lambeth Group.
4. A registered landfill site for construction and demolition waste is located to the southeast of the site.
5. The site is located in a highly sensitive environmental setting
6. Ground conditions could represent an environmental liability for current and Future owners.
7. Intrusive investigations are recommended to qualify possible risks.
8. The existing sheds on the site may be a source of asbestos.
9. The LA planning department may require a flood risk assessment to be Made
10. A ecological scoping report may be required.
11. Possible receptors of contamination from the site include Chichester and Langstone Harbours.
12. The site is not in a radon affected area.
13. There is a moderate risk of swelling/shrinking of clay soils at the site
14. Most of the southern half of the site may have been made up to current level by landfill.
15. A contemporary trade directory lists the following trades being carried out less that 250m from the site.
    Garage services, pet foods and animal feeds, catering equipment, tents, car

body repairs, concrete products.

16. Past industrial activities within 500m of the site include manufacture of clay bricks and tiles and quarrying for sand and clay
17. There is at least one area of unknown filled ground within 250m of the site.

Previous contaminaton survey of site.

A fairly comprehensive contamination survey was carried out on the site by the present author in July/August 2002. This survey included the putting down of four window sampling boreholes and twenty two mechanically excavated trial pits . Forty samples of soil were taken from various depths and each sample was tested for contaminants as specified in the now defunct ICRCL suite.

Gas monitoring was also carried out in the locations of the four window sampling boreholes. The results of all these tests was submitted to Havant Borough Council in 2002 as part of a planning application and is summarized as follows.

Contaminant	Max recorded	Min recorded	Site Average mg/kg
Arsenic	108	6.0	15
Cadmium	2	<0.5	0.6
Chromium	99	11	32
Nickel	366	9	29
Lead	3096	25	206
Mercury	217	<0.5	6.6
Selenium	1.1	<0.5	0.6
Zinc	7881	24	368
Boron	12.1	<0.5	1.7
pH	8.7	7.3	8.1
Total Sulphate	0.04	0.01	0.02
Total Phenols	<1	<1	<1
Total Cyanide	<1	<1	<1
Sulphide	<2	<2	<2
Elemental Sulphur	1330	<20	316
Total PAH	117	<0.5	12.5
Hexavalent Chromium	<2	<2	<2

Gas monitoring

Levels of methane, carbon dioxide and oxygen were measured in the four window sample boreholes on site in 2002. This was done on three occasions 16 July , 2 August and 7 September. Although some methane and carbon dioxide were recorded in July these levels had dropped to negligible amounts by September.

Comments on results of July/August 2002 contamination tests

The average values quoted above are for forty tests for the same contaminant taken at different locations and different depths in the top 1.5m.

The results above confirm the Landmark report that a moderate amount of contamination is to be expected on the site in view of the past usage of the site. However the site averages for the contaminants tested for are in general lower than that allowable for residential development with plant uptake although there are undoubtedly 'hot spots' on the site where these levels have been exceeded for some of the contaminants.

Initial Site Conceptual Model

Source

By virtue of the past usage of the site there areas where contamination levels may be high are to be expected.

Pathway

Rain water could to wash soluble contaminants into Chichester Harbour.

Plant uptake is a possibility.

Receptors

Marine life in Chichester Harbour could be affected by pollution from the site. Site workmen involved in excavation work may inhale contaminated dust or have dermal contact. Asbestos fibres if present could disperse by wind to adjoining sites.

Preliminary Risk Assessment

If the site is left untouched the risk of further contamination of Chichester Harbour may be regarded as low.

If no precautions are taken during demolition of the existing buildings the risk of asbestos fibres being freed may be regarded as moderate to high.
Workers on site may require personal protection equipment until all hot spots are cleared.

Conclusions and recommendations for further work

The information on the site that is currently available suggests that the level of contamination or gases on the site is not serious enough to warrant major remedial works to be carried out but further testing is recommended.
The Sitecheck Report and the previous contamination survey results suggest that further work is desirable in order to improve upon the initial site conceptual model.
In view of the great sensitivity of the area it is suggested that the Local Planning Authority be contacted so that a scheme for this further work can be agreed and implemented.

L R Pimenta MSc
26 October 2010

Sitecheck Review

In Conjunction with:

RPS Consultants
RISK MANAGEMENT

Jenny Kendall BSc (Hons) MSc AIEMA
Telephone: 020 7261 1091
Email: SitecheckReview@rpsgroup.com

Yachthaven Hayling Island, Copse Lane, Hayling Island, Hampshire

Prepared for:
Mr L Pimenta
Leander Pimenta
26 Selangor Avenue
Emsworth
Hampshire
PO10 7LT

Report Reference: SCC_32781252_1_1

Report Date: 19-OCT-2010

Customer Reference: Yachthaven Hayling Island

National Grid Reference: 472860 101830

Site Area: 31371 m²





If you have any questions on the contents of this Report please contact Landmark Customer Helpdesk which is open from 9:00am - 5:30pm, Monday - Friday, via one of the following channels:

Telephone: 0844 844 9966
Fax: 0844 844 9980
Email: info@landmarkinfo.co.uk
Website: www.sitecheck.co.uk

Landmark Information Group

Sitecheck Review

RPS Consultants
RISK MANAGEMENT

RPS Risk Assessment

Current Use

Vacant

Proposed Use

6x Residential dwellings with marina facilities

Summary of Findings

FURTHER ACTION ADVISED (SEE RECOMMENDATIONS)

Likelihood of significant ground contamination existing beneath the site 

Likelihood to be defined as 'contaminated' under Part IIA of EPA (1990) in its current use 

Likelihood to be defined as 'contaminated' under Part IIA of EPA (1990) for proposed use 

Note: Where redevelopment is proposed, the RPS risk rating for the proposed use has assumed that no further contaminated land investigation / remediation work will be carried out. However, in reality, where the risk is 'moderate' or 'high' it is likely that the Local Authority will require further investigation (and possible remedial works) as a standard condition of planning to ensure that the site does not meet the definition of 'contaminated land' under Part IIA of the EPA 1990, and that the is considered suitable for its proposed use. This is a requirement of Planning Policy Statement 23: Planning and Pollution Control; Annex 2 - Development on Land Affected by Contamination.

Other Factors

Low Potential for Collapsibility
Low Potential for Running Sand
Moderate Potential for Compressibility
Moderate Potential for Running Sand
Moderate Potential for Swelling and Shrinking Clay
Occasional: Localised small scale mining may have occurred but restricted in extent
Unlikely: Some small scale mining may have occurred but restricted in extent

Contaminated Land Assessment

Drift Geology: Beach and Tidal Flat Deposits (Clay, Silt, Sand and Gravel) and River Terrace Deposits (Sand, Silt and Clay)
Solid Geology: Lambeth Group (Clay, Silt and Sand)

Detailed historical maps (incl. scales of 1:1250 and 1:2500) indicate that the site comprised vacant land from at least 1879, until c.1969 when a large building labelled 'Yachthaven' and smaller associated buildings and slipways were developed. By c.1993 the large building and slipways were no longer recorded. RPS has been advised that the site is currently vacant. Data within the report indicates that a registered landfill, which was licensed to accept construction and demolition waste, excavated natural material and road making materials, is located in the southeast of the site. No significant contaminative land uses have been identified in the vicinity.

Due to the potentially contaminative land use recorded on the site, there is a low to moderate likelihood of significant ground contamination (including leachate and ground gas) beneath the site.

The site is considered to be located in a highly sensitive environmental setting. It is above a Secondary Aquifer relating to the variably permeable Clay, Silt and Sand strata and it is located within an Area of Outstanding Natural Beauty, a Ramsar site, a SSSI, a Special Area of Conservation and a Special Protection Area in relation to a surface watercourse (Chichester Harbour) located in the south. Residential properties are located adjacent to the northwest and east and RPS understands that the site is proposed to be redeveloped to comprise six residential properties with marina facilities.

Given the historical industrial use of the site (and therefore the potential for contamination), its proximity to sensitive receptors (underlying aquifer, watercourse, environmentally sensitive sites and residential properties) and its proposed change to a residential (sensitive) end use, ground conditions may represent an environmental liability for the owner or occupier, owing to the potential source-pathway-receptor linkage.

Accordingly, it is possible that the site may be defined as 'contaminated' by the Regulators under Part IIA of the Environmental Protection Act (EPA) 1990. Further enquiries should be undertaken to qualify this possible risk.

Recommendations

RPS understands that it is proposed to redevelop the site for a partly residential end use. It is likely that an environmental report (i.e. Phase 1 Report) and possibly an intrusive site investigation will be required to assess the potential contamination status of the site, as part of any standard environmental planning conditions set under Planning Policy Statement 23: Planning and Pollution Control. Consequently, in order to clarify the potential risk of environmental liability, assess the site's suitability for its proposed use, and enable the design of an appropriate scope of works for a site investigation (if required), the recommendation below should be followed:

· A Phase 1 Environmental Review including a site visit, additional historical map review, assessment of the environmental setting, review of existing reports, direct consultation with regulatory bodies and overall assessment of the site's suitability for use / possible regulatory action / any redevelopment constraints and provide costs should any site investigation work be required. If applicable for lending purposes, the report will also determine the acceptability of the site as security from an environmental risk perspective. Cost Estimate: £1,250-£1,500+VAT.

An RPS Phase 1 report can generally be provided within 10 working days of commission (draft), with the final report prepared on receipt of all regulatory responses (usually within 15 days).

Other Environmental Issues

(i) RPS understands that the buildings may have been constructed at a time when asbestos was commonly used in building materials (buildings constructed or refurbished between 1950 to the mid 1980s are most at risk). Under current legislation (The Control of Asbestos Regulations 2006), asbestos is presumed present unless confirmed otherwise. Given the proposed redevelopment of the site, a formal Demolition / Refurbishment Asbestos Survey should be conducted prior to any demolition work commencing. An RPS quote is available on request.

(ii) The site is located in an area at risk of potential flooding not benefiting from flood defences. Given the proposed redevelopment, planning permission may require a Flood Risk Assessment in accordance with Planning Policy Statement PPS25 'Development and Flood Risk'. This should be confirmed with the Environment Agency during the planning consultation stage. An RPS quote for a full Flood Risk Assessment is available on request.

(iii) The site is considered to have the potential to support sensitive ecology / protected species. In view of the proposed change of use (understood to involve redevelopment) and as required under the Wildlife and Countryside Act 1981, it is considered prudent to undertake an ecological scoping report prior to any work commencing on site. This would involve inspecting the site and its surroundings to identify any features, habitats or species, which could represent a constraint / delay on the proposed development if not undertaken at an early stage. An RPS quote is available on request.

(iv) It is now a mandatory requirement for developers to provide homebuyers with clear information about the sustainability of a dwelling(s). This includes a rating against the 'Code for Sustainable Homes', a national scheme introduced by the Government for the assessment of new dwellings. There may also be planning requirements relating to sustainability, including achieving a certain level of this Code or incorporating on-site renewable energy generation. Please contact RPS for further advice.

Sitecheck® Review

RPS Consultants RISK MANAGEMENT

Reliance

Reliance of this report is permitted for a lender and/or a third party for up to six months from the date it was produced. Please see the Terms and Conditions at the back of this report for more details.

Any further work undertaken by RPS will be carried out under RPS Standard Terms and Conditions.

Services

If you require RPS to carry out any work on your behalf, please fax confirmation on 020 7403 8858 or email to SitecheckReview@rpsgroup.com.

Following completion of the recommendations provided within this report, or on receipt of new information, a RPS follow-up report can be produced clarifying or amending the risk assessment relating to ground contamination. A charge may be made for the review of new information (dependent on the volume of information), but this will be confirmed in advance.

Should you require any further information on this report, please contact Sitecheck Customer Services on 0844 844 9966 or the RPS Commercial Advice line on 020 7261 1091.

Lending Assessment - if required, this Sitecheck report can be used in conjunction with a Debt Finance Assessment in support of a funder's requirements for environmental liability assessment. Please contact RPS on the number above for further details.

Completed by:
RPS Environmental Risk Team

RPS Consultants RISK MANAGEMENT

The RPS Risk Assessment is based only on the information as shown by data sources collected by Landmark Information Group Ltd and supplied within the associated Sitecheck Review Report with RPS Risk Assessment including further information provided by the client. The RPS Risk Assessment should be read in conjunction with the Guidance Notes and the Sitecheck Review Report. No responsibility can be accepted for any error or omissions in the data supplied to RPS. No physical inspection of the property has been carried out. The RPS Risk Assessment is subject to the Landmark Terms and Conditions.

Sitecheck® Review

Contents

Report Sections and Details	Page
Summary of Site This section comprises source, pathway and receptor information found on site. Other factors which may affect the site are also included.	-
Aerial Photo The aerial photo gives an overall view of the area. The smaller large-scale Ordnance Survey map includes the site boundary and search zone buffer at 250m.	1
Location Map The accurate large-scale Ordnance Survey map confirms the boundary of the subject site. The descriptive text may identify other features which could be of relevance but not reported. The smaller aerial photo includes the site boundary.	2
Summary Table This section comprises of a summary table of the information found on site and in its vicinity.	3
Current Land Use (Waste and Landfill Sites) This section contains a map, which shows current land use features related to waste and landfill. The following pages detail these features and identify the Reference Number and direction.	7
Current Land Use (Statutory Authorisations) This section contains a map, which shows current land use features related to statutory authorisations. The following pages detail these features and identify the Reference Number and direction.	9
Current Land Use (Potential Contamination) This section contains a map, which shows current land use features related to potential contamination. The following pages detail these features and identify the Reference Number and direction.	11
Historical Land Use This section contains a map, which shows historical land use features. The following pages detail these features and identify the Reference Number and direction. A table listing all the maps used to source this information is included.	13
Sensitivity This section contains a map, which shows pathway and receptor features. The following pages detail these features and identify the Reference Number and direction. This section also contains a separate Flood Map and flood details.	17
Other Factors This section contains information on other factors which may affect the site and its vicinity.	21
Guidance Notes for the Practitioner This section gives guidance on the purpose, methodology and scope of the RPS Risk Assessment.	23
Useful Information This section contains information which may be of use when interpreting the report.	25

Useful Contacts

26

All textual information is linked by the 'Contact Ref' to this quick reference list of contacts. These contacts may be able to supply additional information or answer any subsequent query relating to that record.

Current Land Use (Waste and Landfill Sites) Waste/Landfill Sites	Page No.	Reference Number (Map ID)
Registered Landfill Sites		
Licence Holder: Wal-Leisure Ltd, Site Location: Yachthaven,Copse Lane,Hayling Island,Hampshire, Licence Reference: 13/ 5, Status: Licence lapsed/cancelled/defunct/not applicable/surrendered,Cancelled, Positional Accuracy: Positioned by the supplier, Boundary Quality: Good, Contact Ref: 2	8	1
Licence Holder: Wal-Leisure, Site Location: Yacht Haven,Copse Lane,Hayling Island,Hampshire, Licence Reference: 13/ 15, Status: Licence lapsed/cancelled/defunct/not applicable/surrendered,Cancelled, Positional Accuracy: Manually positioned to the address or location, Boundary Quality: Not Applicable, Contact Ref: 2	8	2

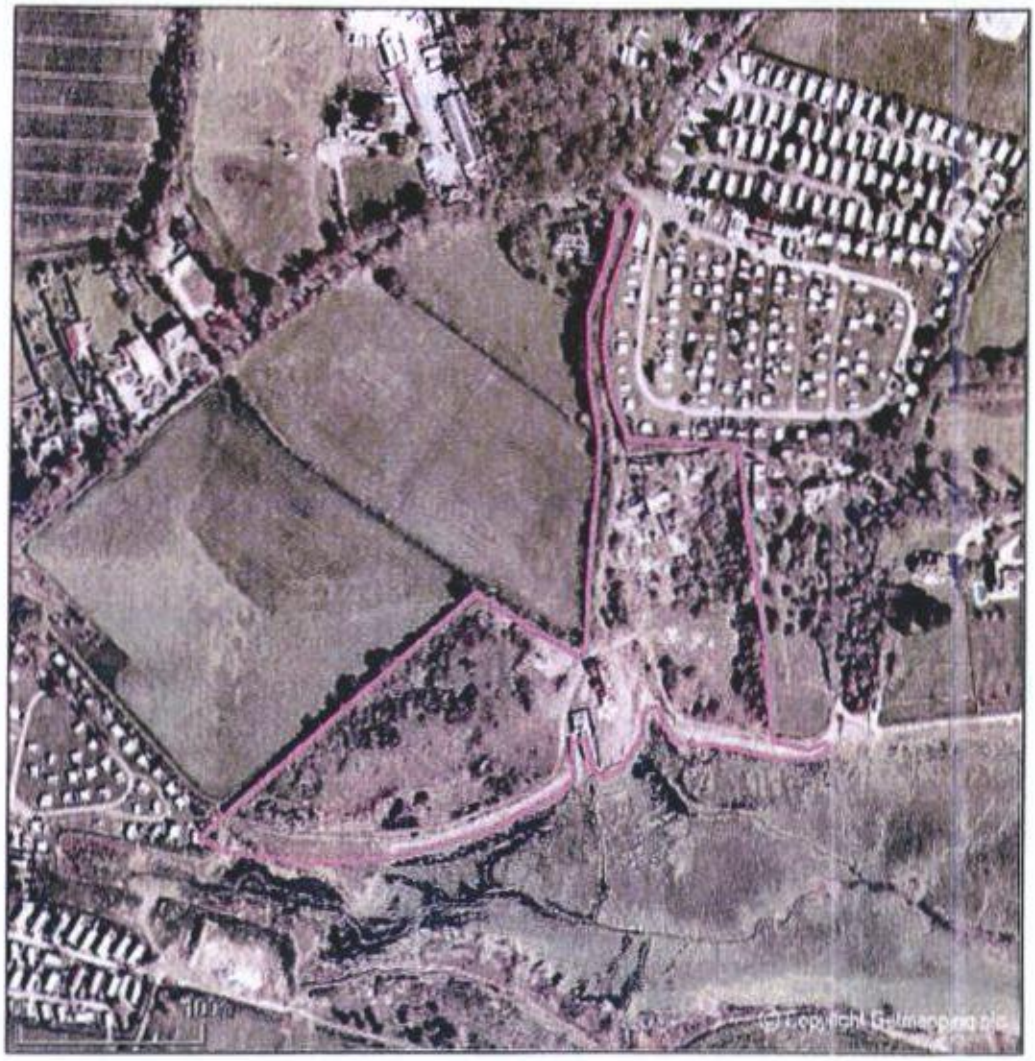
Sensitivity Pathways	Page No.	Reference Number (Map ID)
Groundwater Vulnerability		
Geological Classification: Inland water or sea, Soil Classification: Not classified, Map Scale: 1:100,000, Map Name: Sheet 45 West Sussex And Surrey, Contact Ref: 2	19	-
Geological Classification: Minor Aquifer (Variably permeable) - These can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although not producing large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers, Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater, Map Scale: 1:100,000, Map Name: Sheet 45 West Sussex and Surrey, Contact Ref: 2	19	-
Geological Classification: Minor Aquifer (Variably permeable) - These can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although not producing large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers, Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment, Map Scale: 1:100,000, Map Name: Sheet 45 West Sussex and Surrey, Contact Ref: 2	19	-
Extreme Flooding from Rivers or Sea without Defences		
Type: Extent of Extreme Flooding from Rivers or Sea without Defences, Contact Ref: 2	19	-
Flooding from Rivers or Sea without Defences		
Type: Extent of Flooding from Rivers or Sea without Defences, Contact Ref: 2	19	-

Sensitivity Environmentally Sensitive Receptors	Page No.	Reference Number (Map ID)
Areas of Outstanding Natural Beauty		
Chichester Harbour, Designation Date: 29th February 1964, Total Area: 73161989.53(m2), Contact Ref: 3	20	3
Nearest Surface Water Feature		
Distance: 0m	20	4
Ramsar Sites		
Chichester And Langstone Harbours,Designation Date: Not Supplied Total Area: 58109478.02(m2), Contact Ref: 3	20	5
Sites of Special Scientific Interest		
Name: Chichester Harbour, Total Area: 37325326.07(m2), Reference: 1003245, Contact Ref: 3	20	6
Special Areas of Conservation		
Solent Maritime,Designation Date: Not Supplied Total Area: 112431797.18(m2), Status: Candidate, Contact Ref: 3	20	7
Special Protection Areas		
Chichester And Langstone Harbours,Designation Date: Not Supplied Total Area: 58109478.02(m2), Contact Ref: 3	20	8

Sensitivity Protected Countryside Areas	Page No.	Reference Number (Map ID)
Nitrate Vulnerable Zones		
Name: Not Supplied, Description: Eutrophic Water, Contact Ref: 4	20	9

Other Factors Geological	Page No.	Reference Number (Map ID)
BGS 1:50,000 Geological Mapping Coverage		
Map Sheet No: 331, Map Name: Portsmouth, Map Date: 1994, Bedrock Geology: Available, Superficial Geology: Available, Artificial Geology: Available, Faults: Available, Landslip: Available, Rock Segments: Not Available Contact Ref: 1	21	-

Other Factors Geological	Page No.	Reference Number (Map ID)
BGS 1:50,000 Superficial Deposits		
LEX Code: BTFU, Rock Name: Beach and Tidal Flat Deposits (Undifferentiated), Rock Type: Clay, Silt, Sand and Gravel, Min Age: Quaternary, Max Age: Quaternary Contact Ref: 1	21	-
LEX Code: RTDU, Rock Name: River Terrace Deposits (Undifferentiated), Rock Type: Sand, Silt and Clay, Min Age: Quaternary, Max Age: Quaternary Contact Ref: 1	21	-
BGS 1:50,000 Bedrock Geology		
LEX Code: LMBE, Rock Name: Lambeth Group, Rock Type: Clay, Silt and Sand, Min Age: Paleocene, Max Age: Paleocene Contact Ref: 1	21	-
Non Coal Mining Areas of Great Britain		
Hazard Potential: Unlikely, Contact Ref: 1	21	-
Radon Potential - Radon Affected Areas		
Description: The property is not in a radon affected area, as less than 1% of homes are above the action level, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	21	-
Radon Potential - Radon Protection Measures		
Radon Protection Measures: None, Contact Ref: 1	21	-
Potential for Collapsible Ground Stability Hazards		
Hazard Potential: Low, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	21	-
Potential for Compressible Ground Stability Hazards		
Hazard Potential: Moderate, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	21	-
Potential for Landslide Ground Stability Hazards		
Hazard Potential: Very Low, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	22	-
Potential for Running Sand Ground Stability Hazards		
Hazard Potential: Moderate, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	22	-
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
Hazard Potential: Moderate, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	22	-



Site
Yachthaven Hayling Island,Copse Lane,Hayling Island,Hampshire

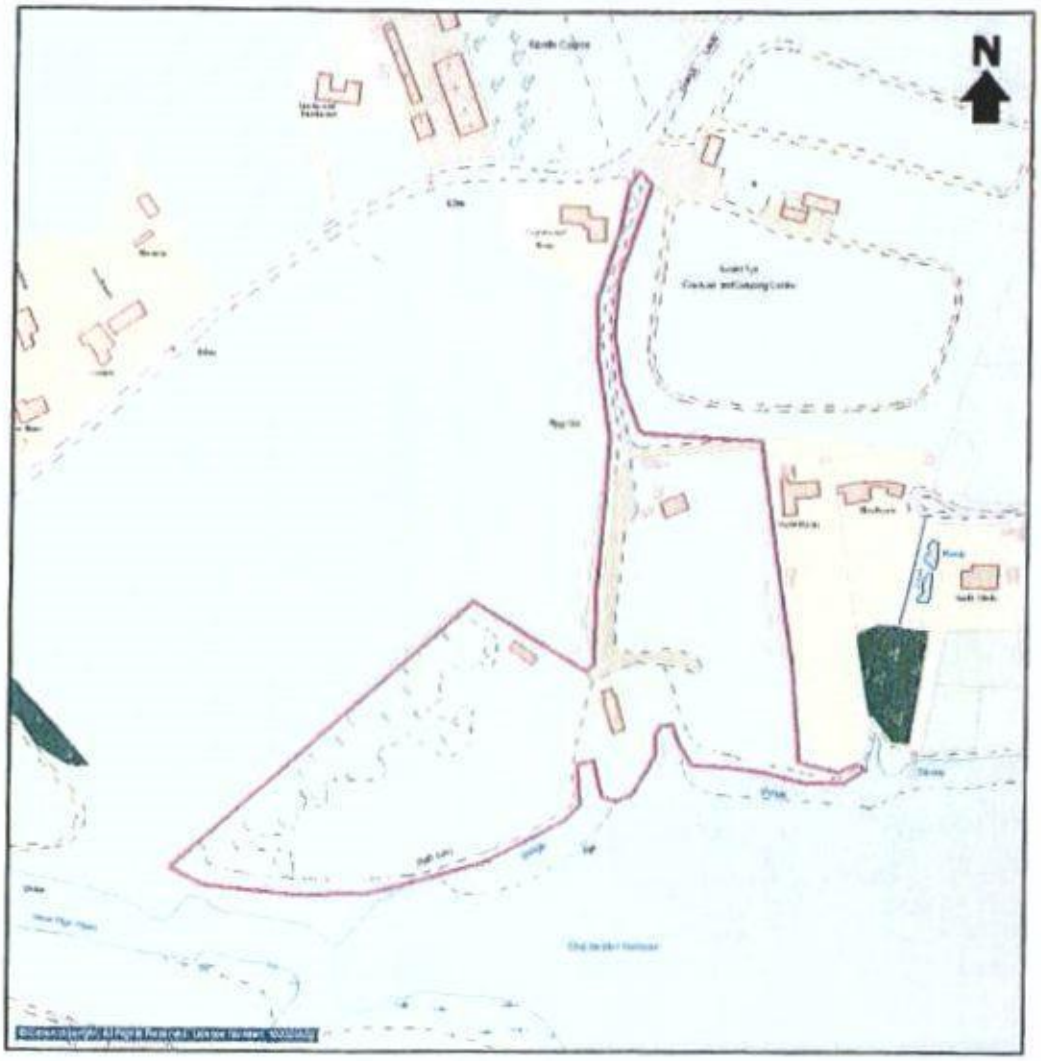
Grid Reference
472860, 101830

Report Reference
SCC_32781252_1_1

Customer Reference
Yachthaven Hayling Island

Size of Site
31371 m²





Site
Yachthaven Hayling Island,Copse Lane,Hayling Island,Hampshire

Grid Reference
472860, 101830

Report Reference
SCC_32781252_1_1

Customer Reference
Yachthaven Hayling Island

Size of Site
31371 m²



Current Land Use Sources	On Site 2	0-250m 1	250-500m 0	500-1000m 3
Waste/Landfill Sites				
BGS Recorded Landfill Sites	0	0	0	0
Licensed Waste Management Facilities (Landfill Boundaries)	0	0	0	0
Licensed Waste Management Facilities (Locations)	0	0	0	2
Local Authority Recorded Landfill Sites	0	0	0	0
Registered Landfill Sites	2	0	0	0
Registered Waste Transfer Sites	0	0	0	n/a
Registered Waste Treatment or Disposal Sites	0	1	0	1

Current Land Use Sources	On Site 0	0-250m 0	250-500m 1	500-1000m 0
Statutory Authorisations				
Local Authority Pollution Prevention and Controls	0	0	0	n/a
Contaminated Land Register Entries and Notices	0	0	0	n/a
Registered Radioactive Substances	0	0	0	n/a
Discharge Consents				
Discharge Consents	0	0	1	n/a
Water Industry Act Referrals	0	0	0	n/a
Industrial Processes				
Integrated Pollution Controls	0	0	0	0
Integrated Pollution Control Registered Waste Sites	0	0	0	0
Integrated Pollution Prevention And Control	0	0	0	n/a
Local Authority Integrated Pollution Prevention And Control	0	0	0	n/a
Contraventions				
Local Authority Pollution Prevention and Control Enforcements	0	0	0	n/a
Enforcement and Prohibition Notices	0	0	0	n/a
Planning Hazardous Substance Enforcements	0	0	0	n/a
Prosecutions Relating to Authorised Processes	0	0	0	n/a
Prosecutions Relating to Controlled Waters	0	0	0	n/a
Substantiated Pollution Incident Register	0	0	0	n/a

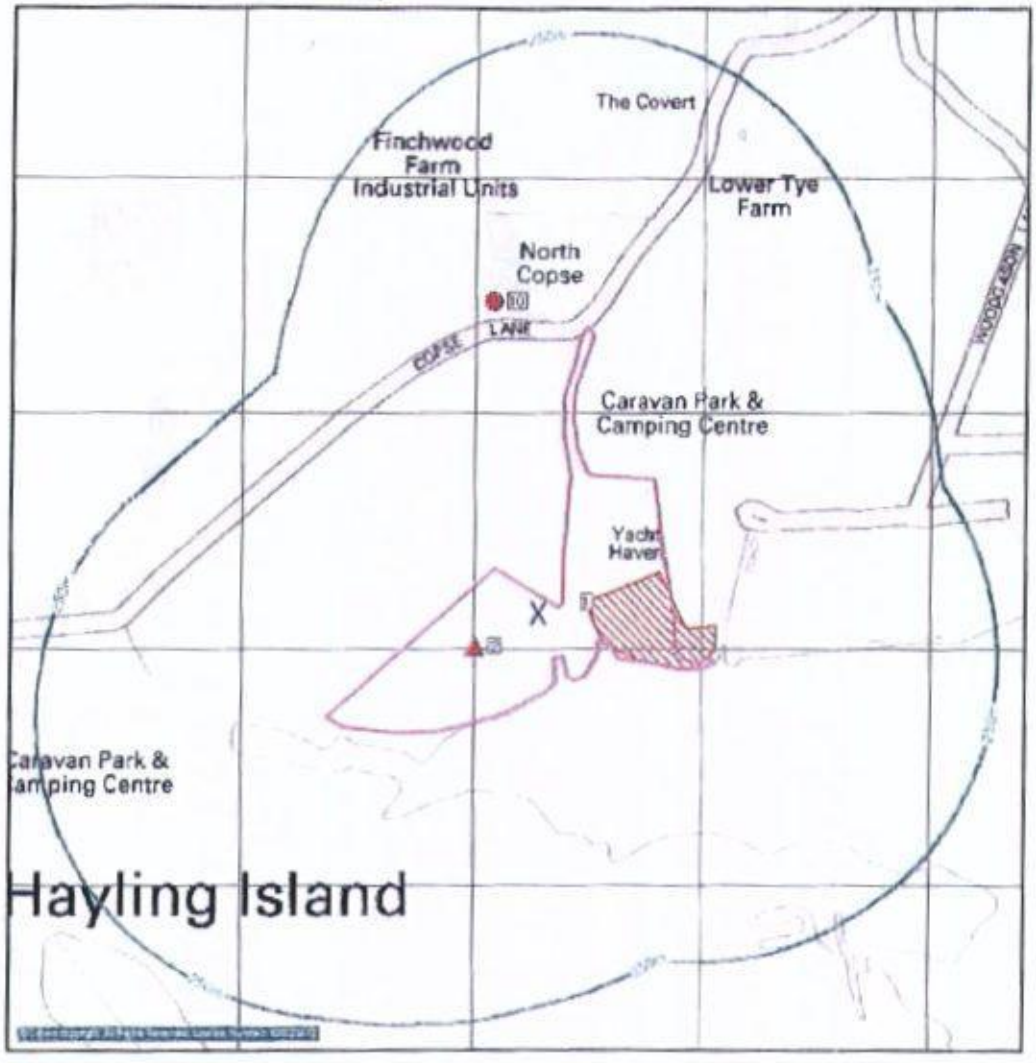
Current Land Use	On Site	0-250m	250-500m	500-1000m
Sources	0	7	0	0
Storage of Hazardous Substances				
Control of Major Accident Hazards Sites (COMAH)	0	0	0	0
Explosive Sites	0	0	0	n/a
Notification of Installations Handling Hazardous Substances (NIHHS)	0	0	0	n/a
Planning Hazardous Substance Consents	0	0	0	n/a
Potentially Contaminative Uses				
Contemporary Trade Directory Entries	0	7	0	n/a
Fuel Station Entries	0	0	0	n/a
Miscellaneous				
BGS Recorded Mineral Sites	0	0	0	0

Historical Land Use	On Site	0-250m	250-500m
Sources	0	3	9
Potentially Contaminative Uses			
Historical Tanks And Energy Facilities	0	1	0
Potentially Contaminative Features from Historical Building Plans	0	n/a	n/a
Potentially Contaminative Industrial Uses (Past Land Use)	0	1	4
Potentially Infilled Land			
Former Marshes	0	0	0
Potentially Infilled Land (Non-Water)	0	1	3
Potentially Infilled Land (Water)	0	0	2

Sensitivity Pathways and Receptors	On Site 12	0-250m 1	250-500m 1	500-1000m 0
Pathways				
Groundwater Vulnerability	3	1	n/a	n/a
Drift Deposits	0	0	n/a	n/a
Historical Flood Liabilities	0	0	0	0
Extreme Flooding from Rivers or Sea without Defences	1	0	n/a	n/a
Flooding from Rivers or Sea without Defences	1	0	n/a	n/a
Areas Benefiting from Flood Defences	0	0	n/a	n/a
Flood Water Storage Areas	0	0	n/a	n/a
Flood Defences	0	0	n/a	n/a
River Quality Biology Sampling Points	0	0	0	0
River Quality Chemistry Sampling Points	0	0	0	0
Environmentally Sensitive Receptors				
Areas of Outstanding Natural Beauty	1	0	0	0
Environmentally Sensitive Areas	0	0	0	0
Local Nature Reserves	0	0	1	0
Marine Nature Reserves	0	0	0	0
National Nature Reserves	0	0	0	0
Nearest Surface Water Feature	1	0	0	0
Ramsar Sites	1	0	0	0
Sites of Special Scientific Interest	1	0	0	0
Source Protection Zones	0	0	0	0
Special Areas of Conservation	1	0	0	0
Special Protection Areas	1	0	0	0
Licenced Water Abstractions	0	0	0	0
Protected Countryside Areas				
Forest Parks	0	0	0	0
National Parks	0	0	0	0
National Scenic Areas	0	0	0	0
Nitrate Sensitive Areas	0	0	0	n/a
Nitrate Vulnerable Zones	1	0	0	n/a

Other Factors	On Site	0-250m	250-500m	500-1000m
Geological	**12**	**4**	**0**	**0**
BGS 1:50,000 Geological Mapping Coverage	1	n/a	n/a	n/a
BGS 1:50,000 Mass Movement	0	n/a	n/a	n/a
BGS 1:50,000 Artificial Ground	0	n/a	n/a	n/a
BGS 1:50,000 Superficial Deposits	2	n/a	n/a	n/a
BGS 1:50,000 Bedrock Geology	1	n/a	n/a	n/a
BGS 1:50,000 Faults and Rock Segments	0	n/a	n/a	n/a
Brine Compensation Area	0	0	0	0
Coal Mining Affected Areas	0	0	n/a	n/a
Mining Instability	0	0	n/a	n/a
Man-Made Mining Cavities	0	0	0	0
Natural Cavities	0	0	0	0
Non Coal Mining Areas of Great Britain	1	0	n/a	n/a
Radon Potential - Radon Affected Areas	1	1	n/a	n/a
Radon Potential - Radon Protection Measures	1	1	n/a	n/a
Potential for Collapsible Ground Stability Hazards	1	0	n/a	n/a
Potential for Compressible Ground Stability Hazards	1	0	n/a	n/a
Potential for Ground Dissolution Stability Hazards	0	0	n/a	n/a
Potential for Landslide Ground Stability Hazards	1	0	n/a	n/a
Potential for Running Sand Ground Stability Hazards	1	1	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	1	1	n/a	n/a

Waste and Landfill Map



General

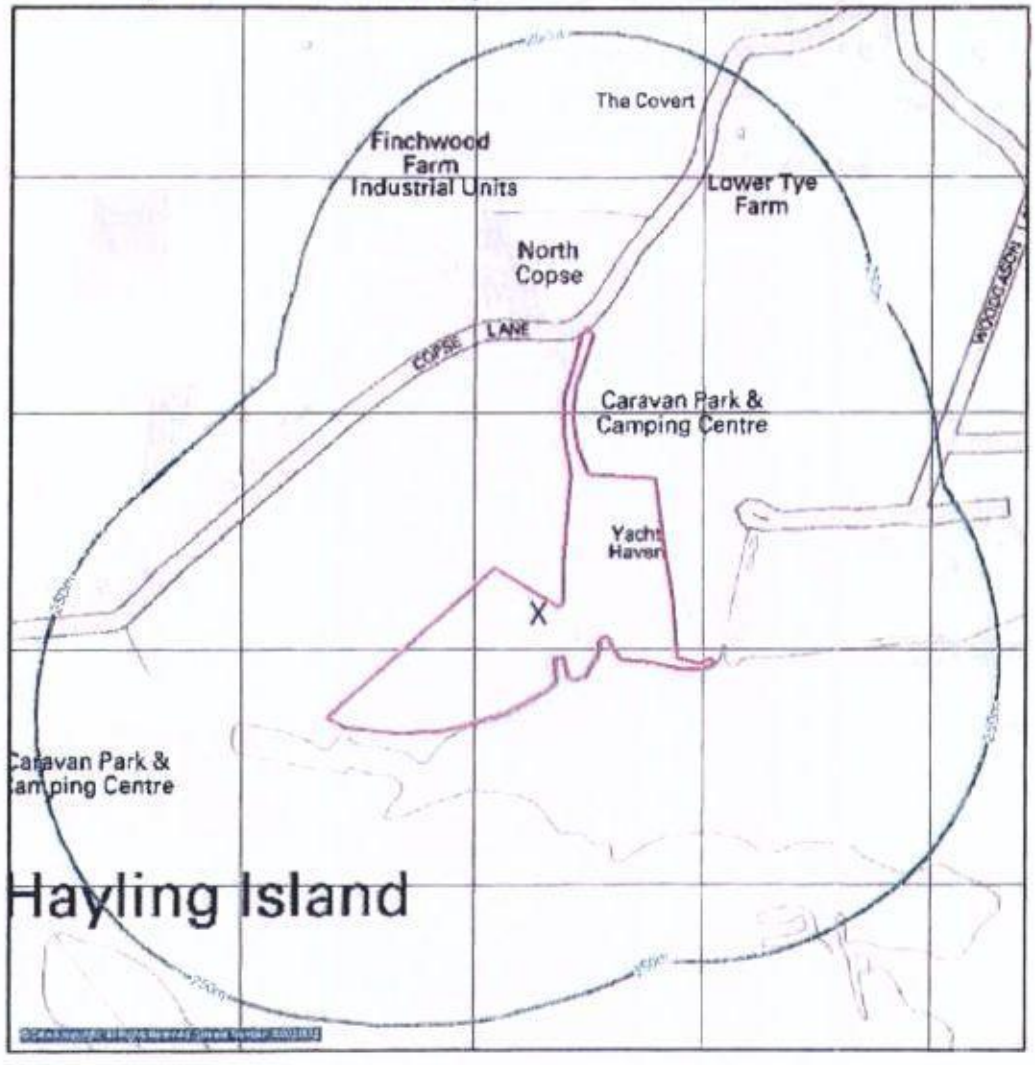
- Site Boundary
- Search Buffer
- X Bearing Reference Point
- Reference Number

Waste/Landfill Sites

- BGS Recorded Landfill Site
- Licensed Waste Management Facilities (Landfill)
- Local Authority Recorded Landfill Site
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site
- Registered Landfill Site
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Landfill Site (Point)
- BGS Recorded Landfill Site (Point)
- Licensed Waste Management Facilities (Location)
- Local Authority Recorded Landfill Site (Point)
- Registered Waste Transfer Site (Point)
- Registered Waste Treatment or Disposal Site (Point)

Sources Waste/Landfill Sites	Ref No.	Search Buffer	Direction
Local Authority Landfill Coverage			
Name: Havant Borough Council, - Has supplied landfill data, Contact Ref: 5	-	On Site	SE
Name: Hampshire County Council, - Had landfill data but passed it to the relevant environment agency, Contact Ref: 6	-	On Site	SE
Licensed Waste Management Facilities (Locations)			
Location: Land / Premises At,Mill Rythe Lane,Hayling Island,Hampshire,PO11 0QG, Licence Number: 10241, Site Category: End of Life Vehicles, Licence Status: Issued,IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m, Contact Ref: 2	-	500-1000m	SW
Location: Freezer Boat Yard,Mill Rythe Lane,Hayling Island,Hampshire,PO11 0QG, Licence Number: 10250, Site Category: End of Life Vehicles, Licence Status: Issued,IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m, Contact Ref: 2	-	500-1000m	SW
Registered Landfill Sites			
Licence Holder: Wal-Leisure Ltd, Site Location: Yachthaven,Copse Lane,Hayling Island,Hampshire, Licence Reference: 13/ 5, Status: Licence lapsed/cancelled/defunct/not applicable/surrendered,Cancelled, Positional Accuracy: Positioned by the supplier, Boundary Quality: Good, Contact Ref: 2	1	On Site	E
Licence Holder: Wal-Leisure, Site Location: Yacht Haven,Copse Lane,Hayling Island,Hampshire, Licence Reference: 13/ 15, Status: Licence lapsed/cancelled/defunct/not applicable/surrendered,Cancelled, Positional Accuracy: Manually positioned to the address or location, Boundary Quality: Not Applicable, Contact Ref: 2	2	On Site	SW
Registered Waste Treatment or Disposal Sites			
P J Thomas, Unit 1 Finchwood Farm, Copse Lane, Hayling Island, Hampshire, Reference: HV 035, Status: Licence lapsed/cancelled/defunct/not applicable/surrendered,Cancelled, Positional Accuracy: Manually positioned to the address or location,Boundary Quality: Not Supplied Contact Ref: 2	10	0-250m	N
F Howard Ltd, 2 Mill Rythe Lane, HAYLING ISLAND, Hampshire, PO11 0PG, Reference: 13/ 24, Status: Licence lapsed/cancelled/defunct/not applicable/surrendered,Cancelled, Positional Accuracy: Manually positioned to the address or location,Boundary Quality: Not Supplied Contact Ref: 2	-	500-1000m	SW

Statutory Authorisations Map



General
- Site Boundary
- Search Buffer
- Bearing Reference Point
- Reference Number

Discharge Consents
- Discharge Consent
- Water Industry Act Referral

Contraventions
- Local Authority Pollution Prevention and Control Enforcement
- Enforcement and Prohibition Notice
- Planning Hazardous Substance Enforcement
- Substantiated Pollution Incident Register
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters

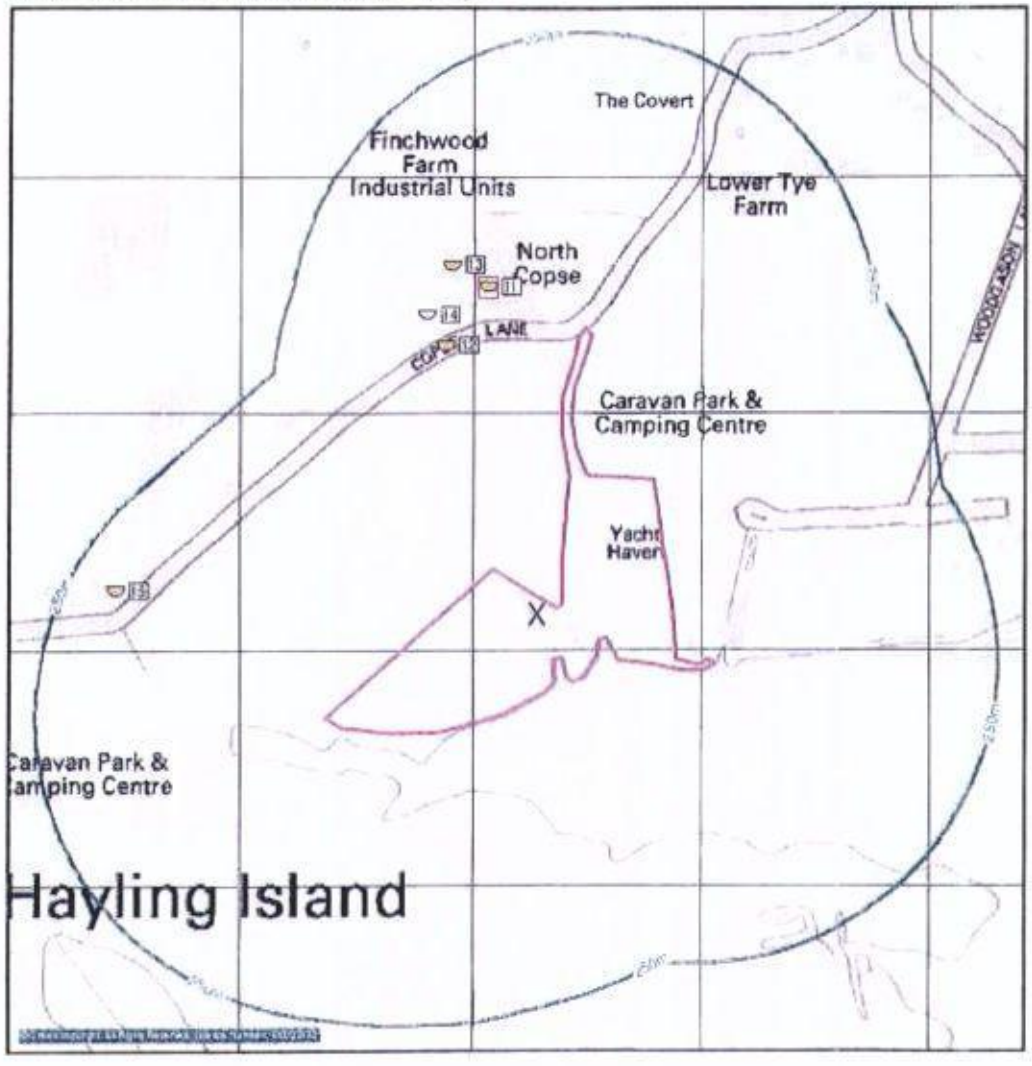
Statutory Authorisations
- Local Authority Pollution Prevention and Control
- Contaminated Land Register Entry or Notice (Pink)
- Contaminated Land Register Entry or Notice
- Registered Radioactive Substance

Industrial Processes
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Integrated Pollution Control Registered Waste Site
- Local Authority Integrated Pollution Prevention and Control

If you would like any further assistance regarding this report then please contact
Landmark on (Tel) 0844 844 9966, (Fax) 0844 844 9980, Email: info@landmarkinfo.co.uk

Sources Discharge Consents	Ref No.	Search Buffer	Direction
Discharge Consents			
Operator: Mr & Mrs Myatt, Location: Meadow Farm Nursery Woodgaston Lane,Northney,Hayling Island,Hampshire,Po11 0rl, Reference: G00134, Permit Version: 1, Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995), Positional Accuracy: Located by supplier to within 10m, Contact Ref: 2	-	250-500m	NE

Potential Contamination Map



General

- Site Boundary
- Search Buffer
- Bearing Reference Point
- Reference Number

Storage of Hazardous Substances

- COMAH
- Planning Hazardous Substance Consent
- Explosive Site
- NIHHS

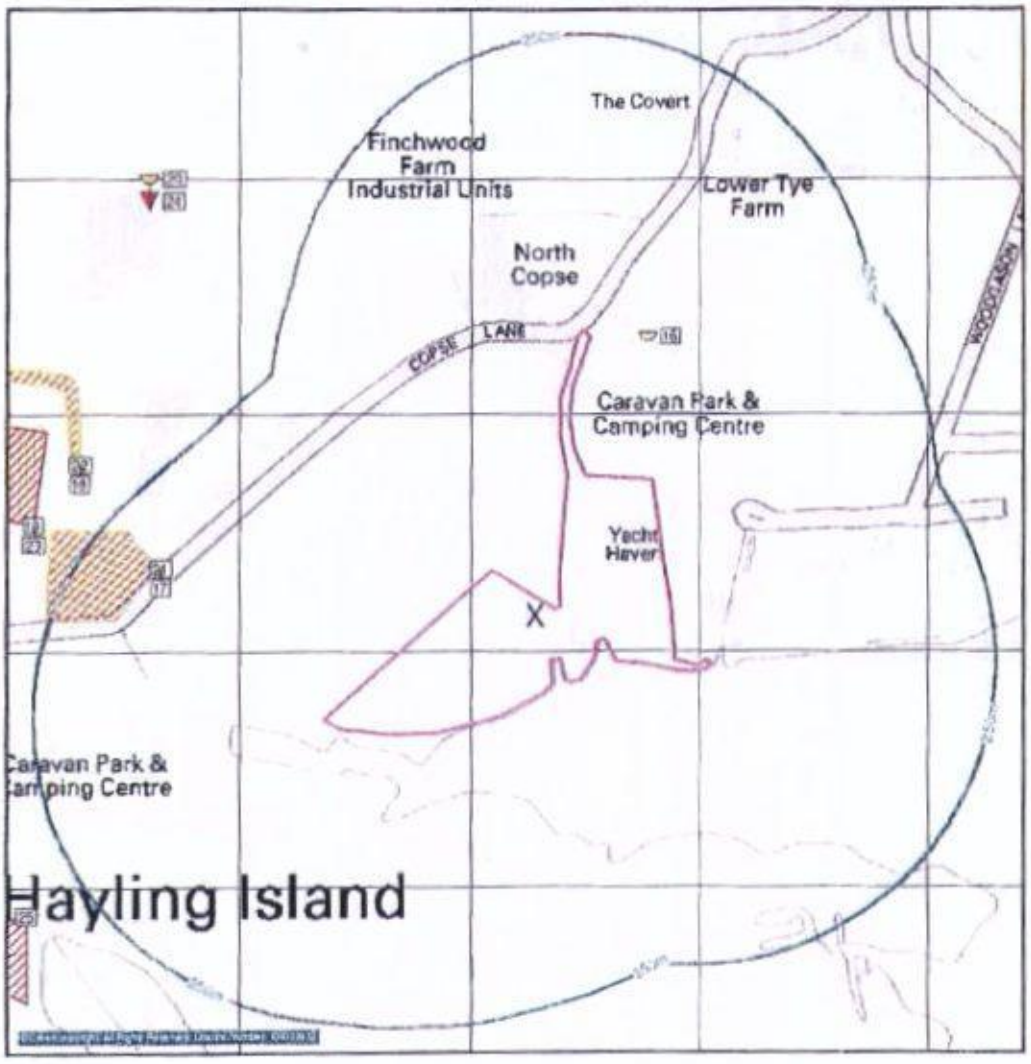
Potentially Contaminative Use

- Potentially Contaminative Use

Miscellaneous

- BGS Recorded Mineral Site

Sources Potentially Contaminative Uses	Ref No.	Search Buffer	Direction
Contemporary Trade Directory Entries			
Name: T A Blake, Location: Finchwood Farm,Copse Lane,Hayling Island,Hampshire,PO11 0QB, Classification: Garage Services, Status: Active, Positional Accuracy: Automatically positioned to the address	11	0-250m	N
Name: Warrior, Location: Finchwood Farm,Copse Lane,Hayling Island,Hampshire,PO11 0QB, Classification: Pet Foods & Animal Feeds, Status: Inactive, Positional Accuracy: Automatically positioned to the address	11	0-250m	N
Name: Abbey Catering Equipment, Location: Finchwood Farm,Copse Lane,Hayling Island,Hampshire,PO11 0QB, Classification: Catering Equipment, Status: Active, Positional Accuracy: Automatically positioned to the address	11	0-250m	N
Name: Town & Country Awnings, Location: 8 Copse La,Hayling Island,Hampshire,PO11 0QB, Classification: Blinds, Awnings & Canopies, Status: Inactive, Positional Accuracy: Manually positioned to the road within the address or location	12	0-250m	N
Name: Darth Engineering, Location: Unit 10 Finchwood Farm,Hayling Island,Hampshire,PO11 0QB, Classification: Garage Services, Status: Inactive, Positional Accuracy: Manually positioned to the address or location	13	0-250m	N
Name: Prep "N" Paint, Location: Unit 6,Finchwood Ind Est,Hayling Island,Hampshire,PO11 0QB, Classification: Car Body Repairs, Status: Active, Positional Accuracy: Manually positioned within the geographical locality	14	0-250m	N
Name: B Evans Ltd, Location: Copse View,Copse Lane,Hayling Island,Hampshire,PO11 0QB, Classification: Concrete Products, Status: Inactive, Positional Accuracy: Automatically positioned to the address	15	0-250m	W



General	Potentially Contaminative Use	Potentially Infilled Land	Potentially Contaminative Features from Historic Building Plans
Site Boundary	Point Feature	Point Feature	Point Feature
Search Buffer	Area Feature	Area Feature	
Bearing Reference Point	Line Feature	Line Feature	
Reference Number			

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Landmark on (Tel) 0844 844 9966, (Fax) 0844 844 9980, Email: info@landmarkinfo.co.uk

Sources Potentially Contaminative Uses	Ref No.	Search Buffer	Direction
Historical Tanks And Energy Facilities			
Use: Tanks, Date of Mapping: 1969 Mapping Scale: 1:2,500	16	0-250m	N
Historical Building Plan Extents			
No Data Available	-		-
Potentially Contaminative Industrial Uses (Past Land Use)			
Clay bricks & tiles [manufacture], 1913	17	0-250m	W
Quarrying of sand & clay, operation of sand & gravel pits, 1953	18	250-500m	W
Clay bricks & tiles [manufacture], 1938	19	250-500m	W
Quarrying of sand & clay, operation of sand & gravel pits, 1913	20	250-500m	NW
Transport manufacturing and repair, 1972	-	250-500m	SW

Potentially Infilled Land	Ref No.	Search Buffer	Direction
Potentially Infilled Land (Non-Water)			
Unknown Filled Ground (Pit, quarry etc), Date of Mapping: 1972	21	0-250m	W
Unknown Filled Ground (Pit, quarry etc), Date of Mapping: 1972	22	250-500m	W
Unknown Filled Ground (Pit, quarry etc), Date of Mapping: 1972	23	250-500m	W
Unknown Filled Ground (Pit, quarry etc), Date of Mapping: 1972	24	250-500m	NW
Potentially Infilled Land (Water)			
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1879	25	250-500m	SW
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1913	-	250-500m	W

Map Details

The following maps have been analysed for Historical Tanks and Energy Facilities

1:2,500	Mapsheet	Published
Ordnance Survey Plan	SU7201	1969
Ordnance Survey Plan	SU7202	1969
Ordnance Survey Plan	SU7301	1969
Ordnance Survey Plan	SU7302	1969

The following maps have been analysed for Potentially Contaminative Uses and Potentially Infilled Land information

1:10,000	Mapsheet	Published
Ordnance Survey Plan	SU70SW	1972
1:10,560	**Mapsheet**	**Published**
Sussex	060_00	1879
Hampshire & Isle Of Wight	084_00	1879
Hampshire & Isle Of Wight	084_NE	1896
Sussex	060_SW	1899
Hampshire & Isle Of Wight	084_NE	1910
Sussex	060_SW	1913
Hampshire & Isle Of Wight	084_NE	1938
Sussex	060_SW	1953
Ordnance Survey Plan	SU70SW	1962

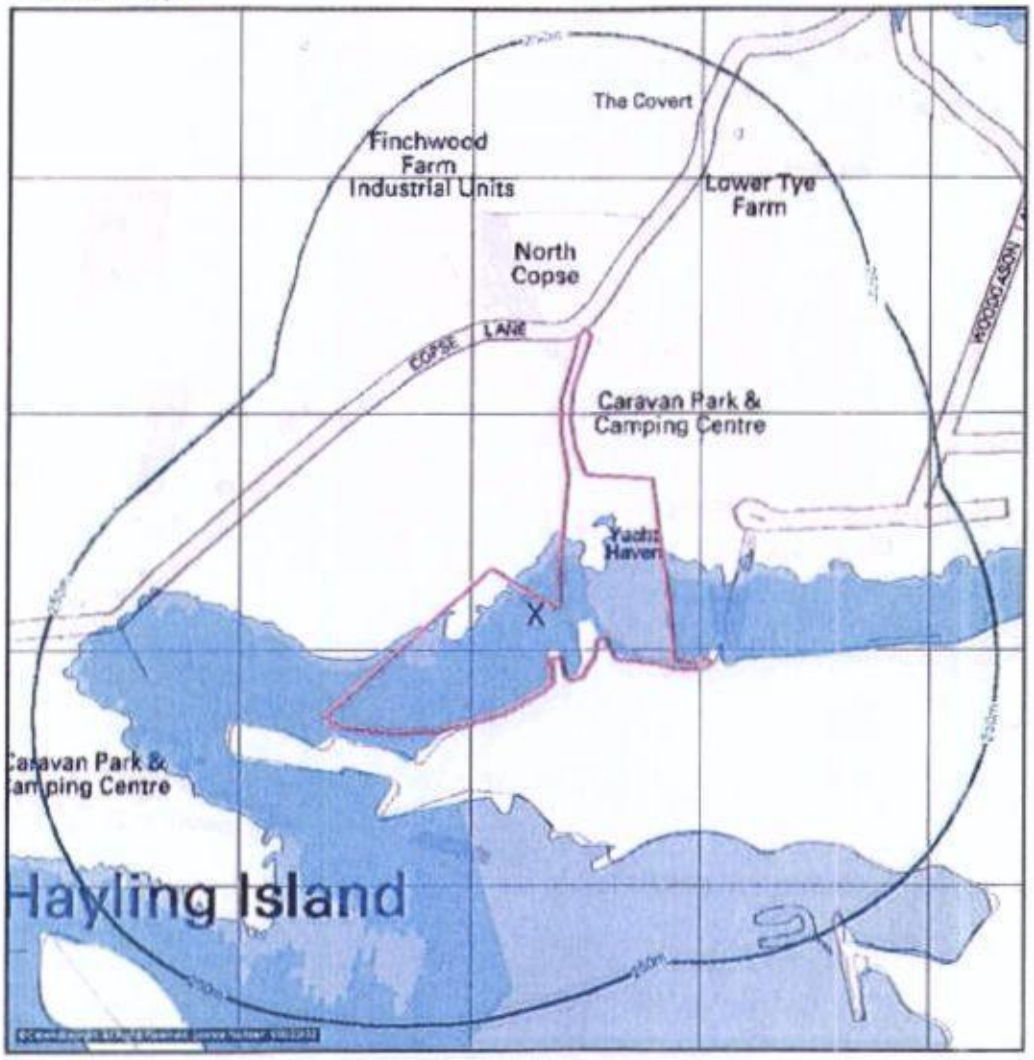
The following maps have also been reviewed by RPS during the Risk Assessment process

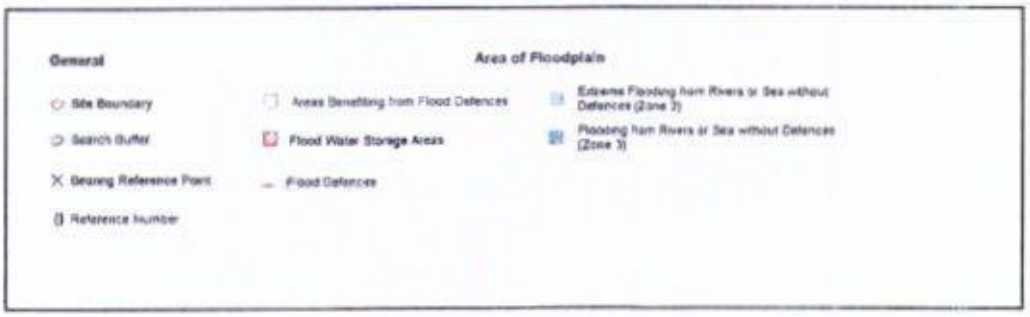
1:2,500	Mapsheet	Published
Hampshire & Isle Of Wight	084_03	1879
Hampshire & Isle Of Wight	084_04	1879
Hampshire & Isle Of Wight	084_07	1879
Hampshire & Isle Of Wight	084_08	1879
Hampshire & Isle Of Wight	084_03	1897
Hampshire & Isle Of Wight	084_04	1897
Hampshire & Isle Of Wight	084_08	1897
Hampshire & Isle Of Wight	084_07	1898
Hampshire & Isle Of Wight	084_03	1909
Hampshire & Isle Of Wight	084_04	1909
Hampshire & Isle Of Wight	084_07	1909

1:2,500	Mapsheet	Published
Hampshire & Isle Of Wight	084_08	1909
Hampshire & Isle Of Wight	084_03	1932
Hampshire & Isle Of Wight	084_04	1932
Hampshire & Isle Of Wight	084_07	1932
Hampshire & Isle Of Wight	084_08	1932

1:10,000	Mapsheet	Published
Ordnance Survey Plan	SU70SW	1972

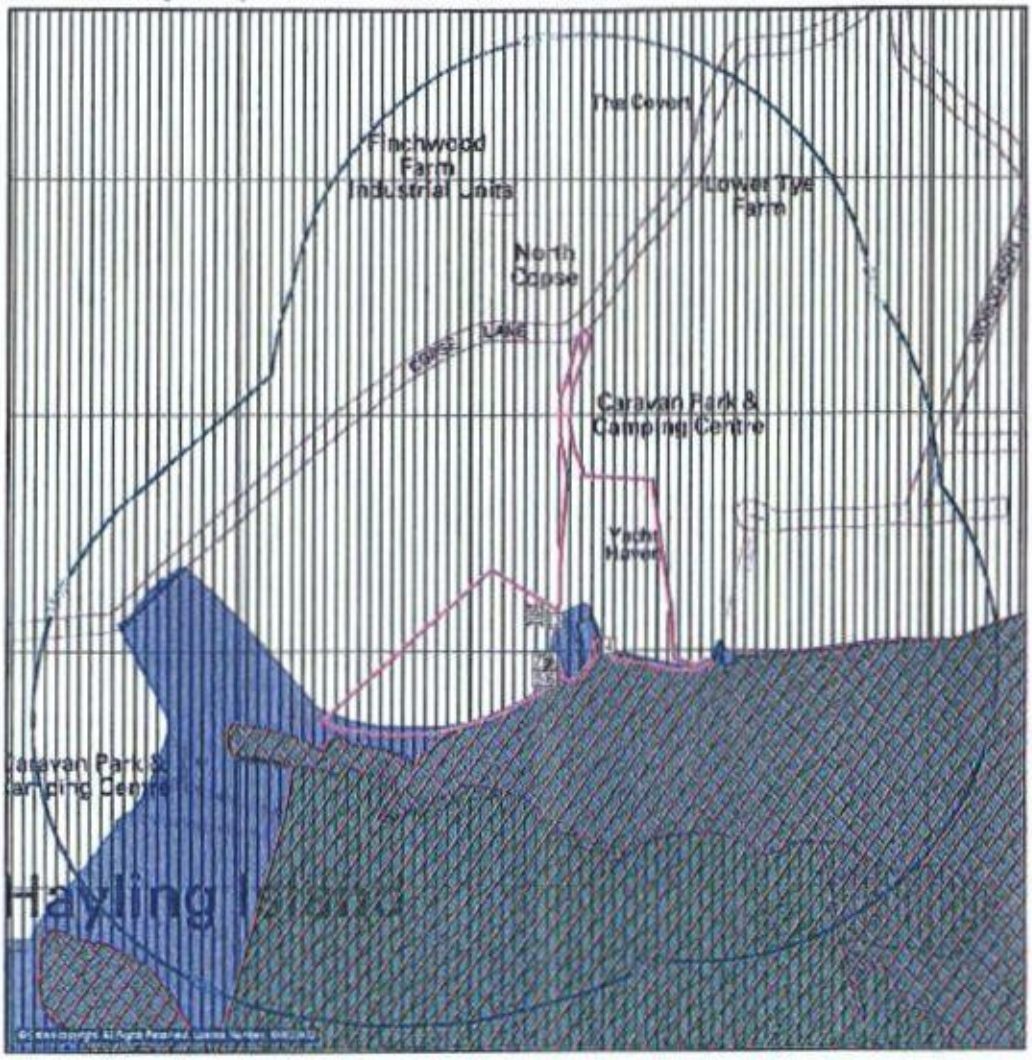
Flood Map





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Landmark on (Tel) 0844 844 9966, (Fax) 0844 844 9980, Email: info@landmarkinfo.co.uk

Sensitivity Map



General

- Site Boundary
- Search Buffer
- Bearing Reference Point
- Reference Number

Environmentally Sensitive Land Use

- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- Nearest Surface Water Feature
- Water Abstractions

Protected Coutryside Areas

- Forest Park
- National Park
- National Scenic Area
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone

If you would like any further assistance regarding this report then please contact
Landmark on (Tel) 0844 844 9966, (Fax) 0844 844 9980, Email: info@landmarkinfo.co.uk

Pathways and Receptors Pathways	Ref No.	Search Buffer	Direction
Groundwater Vulnerability			
Geological Classification: Inland water or sea, Soil Classification: Not classified, Map Scale: 1:100,000, Map Name: Sheet 45 West Sussex And Surrey, Contact Ref: 2	-	On Site	S
Geological Classification: Minor Aquifer (Variably permeable) - These can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although not producing large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers, Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater, Map Scale: 1:100,000, Map Name: Sheet 45 West Sussex and Surrey, Contact Ref: 2	-	On Site	NE
Geological Classification: Minor Aquifer (Variably permeable) - These can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although not producing large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers, Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment, Map Scale: 1:100,000, Map Name: Sheet 45 West Sussex and Surrey, Contact Ref: 2	-	On Site	SE
Geological Classification: Minor Aquifer (Variably permeable) - These can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although not producing large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers, Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater, Map Scale: 1:100,000, Map Name: Sheet 45 West Sussex and Surrey, Contact Ref: 2	-	0-250m	SE
Drift Deposits			
None	-		-
Extreme Flooding from Rivers or Sea without Defences			
Type: Extent of Extreme Flooding from Rivers or Sea without Defences, Contact Ref: 2	-	On Site	SE
Flooding from Rivers or Sea without Defences			
Type: Extent of Flooding from Rivers or Sea without Defences, Contact Ref: 2	-	On Site	SE
Areas Benefiting from Flood Defences			
None	-		-
Flood Water Storage Areas			
None	-		-
Flood Defences			
None	-		-

Pathways and Receptors Environmentally Sensitive Receptors	Ref No.	Search Buffer	Direction
Areas of Outstanding Natural Beauty			
Chichester Harbour, Designation Date: 29th February 1964, Total Area: 73161989.53(m2), Contact Ref: 3	3	On Site	E
Local Nature Reserves			
Gutner Point,Dated: Not Supplied Area: 688701.01(m2), Contact Ref: 3	-	250-500m	E
Nearest Surface Water Feature			
Distance: 0m	4	On Site	SE
Ramsar Sites			
Chichester And Langstone Harbours,Designation Date: Not Supplied Total Area: 58109478.02(m2), Contact Ref: 3	5	On Site	S
Sites of Special Scientific Interest			
Name: Chichester Harbour, Total Area: 37325326.07(m2), Reference: 1003245, Contact Ref: 3	6	On Site	S
Special Areas of Conservation			
Solent Maritime,Designation Date: Not Supplied Total Area: 112431797.18(m2), Status: Candidate, Contact Ref: 3	7	On Site	S
Special Protection Areas			
Chichester And Langstone Harbours,Designation Date: Not Supplied Total Area: 58109478.02(m2), Contact Ref: 3	8	On Site	S

Protected Countryside Areas	Ref No.	Search Buffer	Direction
Nitrate Vulnerable Zones			
Name: Not Supplied, Description: Eutrophic Water, Contact Ref: 4	9	On Site	SE

Other Factors Geological	Search Buffer	Direction
BGS 1:50,000 Geological Mapping Coverage		
Map Sheet No: 331, Map Name: Portsmouth, Map Date: 1994, Bedrock Geology: Available, Superficial Geology: Available, Artificial Geology: Available, Faults: Available, Landslip: Available, Rock Segments: Not Available Contact Ref: 1	On Site	SE
BGS 1:50,000 Superficial Deposits		
LEX Code: BTFU, Rock Name: Beach and Tidal Flat Deposits (Undifferentiated), Rock Type: Clay, Silt, Sand and Gravel, Min Age: Quaternary, Max Age: Quaternary Contact Ref: 1	On Site	SE
LEX Code: RTDU, Rock Name: River Terrace Deposits (Undifferentiated), Rock Type: Sand, Silt and Clay, Min Age: Quaternary, Max Age: Quaternary Contact Ref: 1	On Site	NW
BGS 1:50,000 Bedrock Geology		
LEX Code: LMBE, Rock Name: Lambeth Group, Rock Type: Clay, Silt and Sand, Min Age: Paleocene, Max Age: Paleocene Contact Ref: 1	On Site	SE
Brine Compensation Area		
No		-
Coal Mining Affected Areas		
In an area which may not be affected by Coal Mining		-
Non Coal Mining Areas of Great Britain		
Hazard Potential: UnlikelyContact Ref: 1	On Site	SE
Radon Potential - Radon Affected Areas		
Description: The property is not in a radon affected area, as less than 1% of homes are above the action level, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	On Site	SE
Description: The property is in a radon affected area, as between 1 and 3% of homes are above the action level, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	0-250m	SW
Radon Potential - Radon Protection Measures		
Radon Protection Measures: None, Contact Ref: 1	On Site	SE
Radon Protection Measures: None, Contact Ref: 1	0-250m	SW
Potential for Collapsible Ground Stability Hazards		
Hazard Potential: Low, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	On Site	NW
Potential for Compressible Ground Stability Hazards		
Hazard Potential: Moderate, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	On Site	SW

Other Factors Geological	Search Buffer	Direction
Potential for Ground Dissolution Stability Hazards		
No Hazard		
Potential for Landslide Ground Stability Hazards		
Hazard Potential: Very Low, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	On Site	SE
Potential for Running Sand Ground Stability Hazards		
Hazard Potential: Moderate, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	On Site	SW
Hazard Potential: No Hazard, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	0-250m	SW
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
Hazard Potential: Moderate, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	On Site	SE
Hazard Potential: Low, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 1	0-250m	NE

RPS

RPS Consultants Ltd ('RPS') is part of the RPS Group plc, the largest European Environmental Consultancy with over 4,500 staff and a network of offices throughout the UK, Europe and key offices worldwide. As a leading advisor to the financial and property sector on potential environmental liabilities it has over thirty years experience advising on contaminated and 'brownfield' sites in the UK, and acts as a panel advisor to the majority of the UK's clearing banks, property developers/agents and the legal profession.

The expertise of RPS staff together with the company's in-depth knowledge and experience in the marketplace can help you find economic solutions for even the most difficult sites.

Purpose of the Assessment

The purpose of the RPS Risk Assessment is to assist parties involved in property transactions in assessing the implications of certain environmental risks identified in the Report. Implementation of Part IIA of the Environmental Protection Act 1990 places liability for contaminated land on the current owner or occupier where the 'polluter' cannot be found. In June 2001 The Law Society warned all solicitors to be aware of the liabilities attached to contaminated land. Further details and guidance are available in The Environmental Handbook, Fifth Edition, published by The Law Society. The Environment Agency, Local Authorities and other statutory bodies do not provide all the necessary range of information required to determine risks for environmental issues in property transactions. As a consequence, an expert assessment, of the type contained in this report, is essential. The RPS Risk Assessment determines if a sufficient risk is present for the site to be defined as contaminated, and provides a clear set of recommendations and actions where necessary. The client also has access to a technical helpline offering free initial advice and consultation by the RPS panel of environmental consultantswho provide the assessments.

RPS Risk Assessment Methodology and Scope

The RPS Risk Assessment is based on the site boundary defined by the client. It is provided by a panel of consultants following a detailed manual review of the Report and a review of potentially contaminative historical land uses identified from published 1:1250 (where available), 1:2500, 1:10,000 and 1:10,560 scale historical mapping and unpublished "Supply of Unpublished Survey Information" (SUSI), "SIM" and Large Scale National Grid Data" for the site and its immediate surrounding area.

RPS uses the Source-Pathway-Receptor framework to make assessments regarding land contamination. The 'source' refers to a potential source of contamination, 'pathway' to a potential route it may take, and 'receptor' to the end point. For a potential liability to arise each stage of the complete pollution linkage must be present. The RPS Risk Assessment uses information contained in the Report relating to the 'source' of contamination through a study of statutory registers, current and historical land use. Analysis of the environmental information (including the geology, ground and surface water) is used to detect 'pathway' and 'receptor' stages.

Importantly, the RPS Risk Assessment is also based upon the current and proposed use of the site, which enables a more accurate assessment of the pollution linkage and implication of potential contamination. It also enables appropriate advice to be given where a change of use or redevelopment are planned.

RPS Risk Ratings

The classes of risk referred to within the RPS Risk Assessment take into account the land use (current and proposed) and the environmental site setting. The risk ratings can be defined as follows:

Low Risk - it is considered unlikely that ground contamination will give rise to a liability/cost for the owner of the site.

Moderate Risk - it is possible but not certain that ground contamination will give rise to a liability/cost for the owner of the site.

High Risk - there is a high potential that ground contamination will give rise to a liability/cost for the owner of the site.

Asbestos

Under the Control of Asbestos Regulations 2006 and HSE Guidance Note MDHS 100, any commercial property where asbestos may be present legally requires an appropriate survey, an up to date asbestos register and a non-generic management plan. Buildings constructed or refurbished between 1950 and the late 1980s are most at risk. If the property was constructed prior to 1990 you can contact RPS for further advice to ensure compliance.

Ground Investigation, Remediation, Tax Advice/Credit

Should there be a significant risk of ground contamination, RPS can provide the necessary additional services to ensure the risk is assessed and placed in an appropriate commercial context as well as providing all necessary geotechnical assessments. RPS is the largest planning consultancy in the UK and can advise on the requirements for obtaining planning permission for any form of development. RPS can also advise on opportunities to obtain both contaminated land qualifying relief at 150% of the capital cost as well as landfill tax exemptions during remediation. Their contact details can be found below.

Contact Information

Sitecheck - for queries regarding the contents of the Report, please contact the Sitecheck customer helpdesk on 0870 606 1700

RPS - for further information regarding the RPS assessment, or for general environmental consultancy advice including remediation, site inspections and tax, please contact RPS on 020 7261 1091

Limits of the Report

If you have any queries regarding the information in this report and how to use it, please do not hesitate to contact the Sitecheck helpdesk.

The RPS Risk Assessment comments upon the potential risk of the land being defined as 'contaminated land' as defined in Part IIA of the Environmental Protection Act 1990. It is based on the Sitecheck Review Report and information supplied by the client. It is not based on any physical inspection of the site or condition of the land.

In addition to the risk assessment, the Report includes data on risks such as Flooding, Radon Gas, Natural Subsidence and Coal Mining. These are set out, together with appropriate guidance, in the Other Factors Section of the report. (These risks are outside the definition of 'contaminated land' because they are outside the scope of Part IIA of the Environmental Protection Act 1990.

Where higher levels of risk are identified within the report, it does not necessarily mean that a site will be designated as contaminated land or as a Special Site. Such designation requires that the Local Authority (or Environment Agency) carry out a detailed inspection to determine whether or not the land is contaminated.

RPS use the best available public sources of information to identify possible risks and sources of land use. However, we cannot guarantee that all potentially contaminative land uses or features, whether past or current, will be identified in this report using these sources.

Registered Landfill Sites

At present no complete national data set exists for landfill site boundaries, therefore a point grid reference, provided by the data supplier, is used for some landfill sites. In certain cases the point grid references supplied provide only an approximate position and can vary from the site entrance to the centre of the site. Where the exact position of the site is unclear, Landmark construct either a 100 metre or 250 metre "buffer" around the point to warn of the possible presence of landfill. The size of this "buffer" relates to the positional accuracy that can be attributed to the site. The "buffer" is shown on the map as an orange cross-hatched circle and is referred to in the map legend as Potential Landfill Buffer. Where actual boundaries are available, the landfill site area is shown on the map as a red diagonal hatched polygon and referred to in the map legend as Registered Landfill Site.

Local Authority Recorded Landfill Sites

Local Authority landfill data are sourced from individual local authorities that were able to provide information on sites operating prior to the introduction of the Control of Pollution Act (COPA) in 1974. Appropriate authorities are listed under Local Authority Landfill Coverage with an indication of whether or not they were able to make landfill data available. Details of any records identified are disclosed. You should be aware that if the local authority 'Had landfill data but passed it to the relevant environment agency' it does not necessarily mean that local authority landfill data is included in our other Landfill datasets. In addition if no data has been made available, for all or part of the search area, you should be aware that a negative response under 'Local Authority Recorded Landfill Sites' does not necessarily confirm that no local authority landfills exist.

Flooding

The Sitecheck report flood map plots all flood related features revealed within the search area as supplied by the relevant agency. However, to avoid confusion, the text entry in the body of the report only reveals the detail of the nearest feature in each flood data set. This is also reflected in the summary table where only a single entry is included to indicate the search buffer of the nearest occurrence.

Mining Instability Data

The Mining Instability data was obtained on Licence from Ove Arup + Partners Limited (for further information, contact mining.review@arup.com). No reproduction or further use of such data is to be made without the prior written consent of Ove Arup + Partners Limited. The information and data supplied in the Product are derived from publicly available records and other third party sources and neither Ove Arup + Partners nor Landmark warrant the accuracy or completeness of such information or data.

The information in this Sitecheck Review Report is derived from a number of statutory and non-statutory sources. While every effort is made to ensure accuracy, Landmark cannot guarantee the accuracy or completeness of such information or data, nor to identify all the factors that may be relevant. If you are a private individual using this report Landmark recommend that you discuss its contents in full with your professional advisor. It is essential to read this report in conjunction with the Product User Guide and your attention is drawn to the scope of the report section within this guide.

The Sitecheck Review User guide is available free of charge from our website www.sitecheck.co.uk

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Ordnance Survey Licensed Partner

Environment Agency

SEPA Scottish Environment Protection Agency

Landmark Information Group

THE COAL AUTHORITY

British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL

Contact Names and Addresses

1 British Geological Survey Enquiry Service

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
Nottinghamshire
NG12 5GG

Telephone 0115 936 3143
Fax 0115 936 3276

enquiries@bgs.ac.uk
www.bgs.ac.uk

2 Environment Agency National Customer Contact Centre (NCCC)

PO Box 544
Templeborough
Rotherham
S60 1BY

Telephone 08708 506 506

enquiries@environment-agency.gov.uk

Please note that the Environment Agency/SEPA have a charging policy in place for enquiries

3 Natural England

Northminster House
Northminster Road
Peterborough
Cambridgeshire
PE1 1UA

Telephone 0845 600 3078
Fax 01733 455103

enquiries@naturalengland.org.uk
www.naturalengland.org.uk

4 Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)

Government Buildings
Otley Road
Lawnswood
Leeds
West Yorkshire
LS16 5QT

Telephone 0113 2613333
Fax 0113 230 0879

5 Havant Borough Council Environmental Health Department

Civic Offices
Civic Centre Road
Havant
Hampshire
PO9 2AX

Telephone 023 92474174
Fax 01705 446659

env.services@havant.gov.uk
www.havant.gov.uk

6 Hampshire County Council Minerals and Waste Planning

Room 130
Ashburton Court West
The Castle
Winchester
Hampshire
SO23 8UD

Telephone 01962 841841
Fax 01962 847055

www.hants.gov.uk

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RG9 6AB

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Definitions

"**Authorised Reseller**" means an agent or reseller of Landmark whom Landmark has duly appointed to resell its Reports and Services.

"**Content**" means any data, computing and information services and software, and other content and documentation or support materials and updates included in and/or supplied by or through the Websites in Reports or Services or in any other way by Landmark and shall include Landmark developed and Third Party Content.

"**First Purchaser**" means the first person, or legal entity to purchase the Property Site following provision of a Report.

"**First Purchaser's Lender**" means the funding provider for the First Purchaser.

"**Information Pack**" means a pack compiled by or on behalf of the owner or prospective buyer of the Property Site designed to aid the marketing or purchase of the Property Site and containing information provided by or on behalf of the owner or prospective buyer of the Property Site.

"**Intellectual Property Rights**" means copyright, patent, design right (registered or unregistered), service or trade mark (registered or unregistered), database right or other data right, moral right or know how or any other intellectual property right.

"**Order**" means the request for Services from Landmark by You.

"**Property Site**" means a land site on which Landmark provides a Service.

References to "**We**", "**Us**" and "**Our**" are references to Landmark Information Group Limited ("Landmark"), whose registered office is 7 Abbey Court, Eagle Way, Exeter, EX2 7HY. Where You are not ordering the Services directly from Landmark, but from an Authorised Reseller, references to "Landmark" or "We", "Us" and "Our" shall be construed so as to mean either Landmark and/or the Authorised Reseller as the context shall indicate.

References to "You/Your/Yourself" refer to the contracting party who accesses the Website or places an Order with Landmark.

"**Report**" includes any information that Landmark supplies to You including all reports, services, datasets, software or information contained in them.

"**Services**" means the provision of any service by Landmark pursuant to these Terms including without limitation, any Report.

"**Landmark Fees**" means any charges levied by Landmark for Services provided to You.

"**Suppliers**" means any organisation who provides data or information or any form to Landmark.

"**Terms**" means these Terms & Conditions.

"**Third Party Content**" means the services, software, information and other content or functionality provided by third parties and linked to or contained in the Services.

"**Websites**" means websites hosted by Landmark and includes the Content and any report, service, document, data set, software or information contained therein derived therefrom or thereby.

1 Terms & Conditions

a. These Terms govern the relationship between You and Landmark whether You are an unregistered visitor to the Website or are purchasing Services. Where these Terms are not expressly accepted by You they will be deemed to have been accepted by You, and You agree to be bound by these Terms when You place any Order, or pay for any Services provided.

b. If the person communicating with Landmark is an Authorised Reseller, they must ensure that You agree to these Terms.

c. The headings in these Terms are for convenience only and shall not affect the meaning or interpretation of any part of these Terms.

d. Landmark may modify these Terms, and may discontinue or revise any or all other aspects of the Services at our sole discretion, with immediate effect and without prior notice, including without limitation changing the Services available at any given time. Any amendment or variation to these Terms shall be posted on our Websites. Continued use of the Services by You shall be deemed an acceptance by You to be bound by any such amendments to the Terms.

e. These Terms, together with the prices and delivery details set out on our Websites, Landmark's Privacy Policy and Your Order comprise the whole agreement relating to the supply of Services to You by Landmark. No prior stipulation, agreement, promotional material or statement whether written or oral made by any sales or other person or representative on our behalf should be understood as a variation of these Terms. Save for fraud or misrepresentation Landmark shall have no liability for any such representation being untrue or misleading.

f. These Terms shall prevail at all times to the exclusion of all other terms and conditions including any terms and conditions which You may purport to apply even if such other provisions are submitted in a later document or purport to exclude or override these Terms and neither the course of conduct between parties nor trade practice shall act to modify these Terms.

2 Services

a. Landmark will use reasonable care and skill in providing the Services to You, however, the Services are provided on the express basis that the information and data supplied in the Services are derived from third party sources and Landmark does not warrant the accuracy or completeness of such information or data. Such information is derived solely from those sources specifically cited in the Services and Landmark does not claim that these sources represent an exhaustive or comprehensive list of all sources that might be consulted.

3 Intellectual Property

a. You acknowledge that all Intellectual Property Rights in the Services are and shall remain owned by either Landmark or our Suppliers and nothing in these Terms purports to transfer, assign or grant any rights to You in respect of the Intellectual Property Rights.

b. Subject always to these Terms You may, without further charge, make the Services available to:

i. the owner of the Property at the date of the Report;

ii. any person who purchases the whole of the Property Site;

iii. any person who provides funding secured on the whole of the Property Site;

iv. any person for whom You act in a professional or commercial capacity;

v. any person who acts for You in a professional or commercial capacity; and

vi. prospective buyers of the Property Site as part of an Information Pack but for the avoidance of doubt Landmark shall have no liability to such prospective buyer unless the prospective buyer subsequently purchases the Property Site, and the prospective (or actual) buyer shall not be entitled to make the Service available to any other third party.

Accordingly Landmark shall have the same duties and obligations to those persons in respect of the Services as it has to You.

c. Each of those persons referred to in clause 3.b. shall have the benefit and the burden of Your rights and obligations under these Terms. The limitations of Landmark's liability as set out in clause 6 shall apply to all users of the Service in question in aggregate and Landmark shall not be liable to any other person.

d. All parties given access to the Services agree that they will treat as strictly private and confidential the Services and all information which they obtain from the Services and shall restrict any disclosure to employees or professional advisors to enable the relevant party to conduct its internal business. The requirement in this clause to treat the Services as confidential shall include a requirement to maintain adequate security measures to safeguard the Services from unauthorised access, use or copying.

e. Each recipient of the Services agrees (and agrees it will cause its employees, agents or contractors who may from time to time have access to the Services to agree) it will not, except as permitted herein or by separate agreement with Landmark:

i. effect or attempt to effect any modification, merger or change to the Service, nor permit any other person to do so; or

ii. copy, use, market, re-sell, distribute, merge, alter, add to or carry on any redistribution, reproduction, translation, publication, reduction to any electronic medium or machine readable form or commercially exploit or in any other way deal with or utilise or (except as expressly permitted by applicable law) reverse engineer, decompile or disassemble the Services, Content or Website; or

iii. remove, alter or in any way change any trademark or proprietary marking in any element of the Services and You shall acknowledge the ownership of the Content, where such Content is incorporated or used into Your own documents, reports, systems or services whether or not these are supplied to any third party.

iv. create any product which is derived directly or indirectly from the data contained in the Services.

f. The mapping contained in any Services is protected by Crown Copyright and must not be used for any purpose outside the context of the Services or as specifically provided by these Terms.

g. You are permitted to make five copies of any Report, but are not authorised to re-sell the Report, any part thereof or any copy thereof unless you are an Authorised Reseller. Further copies may not be made in whole or in part without the prior written permission of Landmark who shall be entitled to make a charge for each additional copy.

4 Charges

a. VAT at the prevailing rate shall be payable in addition to the Landmark Fees. You shall pay any other applicable indirect taxes related to Your use of the Services.

b. An individual or a monthly invoice showing all Orders created by You will be generated subject to these Terms. You will pay the Landmark Fees at the rates set out in Landmark's or its Authorised Reseller's invoice. The Landmark Fees are payable in full within 30 days without deduction, counterclaim or set off. You acknowledge that time is of the essence with respect to the payment of such invoices. Landmark reserves the right to amend the Landmark Fees from time to time and the Services will be charged at the Landmark Fee applicable at the date on which the Service is ordered.

c. We may charge interest on late payment at a rate equal to 3% per annum above the base lending rate of National Westminster Bank plc.

d. Landmark or its Authorised Reseller shall not be obliged to invoice any party other than You for the provision of Services, but where Landmark or its Authorised Reseller does so invoice any third party at Your request, and such invoice is not accepted or remains unpaid, Landmark or its Authorised Reseller shall have the option at any time to cancel such invoice and invoice You direct for such Services. Where Your order comprises a number of Services or severable elements within any one or more Services, any failure by Landmark or its Authorised Reseller to provide an element or elements of the Services shall not prejudice Landmark's or its Authorised Reseller's ability to require payment in respect of the Services delivered to You.

5 Termination

a. Landmark may suspend or terminate Your rights under these Terms without any liability to You with immediate effect if at any time:

i. You fail to make any payment due in accordance with clause 4;

ii. You repeatedly breach or commit or cause to be committed any material breach of these Terms; or

iii. You commit a breach and You fail to remedy the breach within 7 days of receipt of a written notice to do so; additionally, without prejudice to the foregoing, Landmark may remedy the breach and recover the costs thereof from You.

b. If Your rights are terminated under this clause and You have made an advance payment We will refund You a reasonable proportion of the balance as determined by Us in relation to the value of Services previously purchased.

c. Landmark reserves the right to refuse to supply any or all Services to You without notice or reason.

6 Liability

a. We provide warranties and accept liability only to the extent stated in this clause 6 and clause 7.

b. Nothing in these Terms excludes either party's liability for death or personal injury caused by that party's negligence or wilful default, and the remainder of this clause 6 is subject to this provision and Your statutory rights.

c. As most of the information contained in the Services is provided to Landmark by others, Landmark cannot control its accuracy or comprehensiveness, nor is it within the scope of Landmark's Services to check the information on the ground. Accordingly, Landmark will only be liable to You for any loss or damage caused by its negligence or wilful default and subject to clause 6.e below neither Landmark nor any person providing information contained in any Services shall in any circumstances be liable for any inaccuracies, faults or omissions in the Services, nor shall Landmark have any liability if the Services are used otherwise than in accordance with these Terms.

d. Save as precluded by law, Landmark shall not be liable for any indirect or consequential loss, damage or expenses (including loss of profits, loss of contracts, business or goodwill) howsoever arising out of any problem, event, action or default by Landmark.

e. In any event, and notwithstanding anything contained in these Terms, Landmark's liability in contract, tort (including negligence or breach of statutory duty) or otherwise howsoever arising by reason or in connection with this Contract (except in relation to death or personal injury) shall be limited to an aggregate amount not exceeding £1 million if the complaint is in relation to a Report on residential property and an aggregate amount not exceeding £10 million in respect of any other Report or Service purchased from Landmark.

f. Landmark will not be liable for any defect, failure or omission relating to Services that is not notified to Landmark within six months of the date of the issue becoming apparent and in any event within twelve years of the date of the Service.

g. You acknowledge, that:

i. Subject to clause 6.e below You shall have no claim or recourse against any Third Party Content supplier nor any of our other Suppliers. You will not in any way hold us responsible for any selection or retention of, or the acts of omissions of, Third Party Content suppliers or other Suppliers (including those with whom We have contracted to operate various aspects or parts of the Service) in connection with the Services (for the avoidance of doubt Landmark is not a Third Party Content supplier). Landmark does not promise that the supply of the Services will be uninterrupted or error free or provide any particular facilities or functions, or that the Content will always be complete, accurate, precise, free from defects of any other kind, computer viruses, software locks or other similar code although Landmark will use reasonable efforts to correct any inaccuracies within a reasonable period of it's becoming known to us.

ii. Landmark's only obligation is to exercise reasonable skill and care in providing environmental property risk information to persons acting in a professional or commercial capacity who are skilled in the use of property and environmental information and You hereby acknowledge that You are such a person.

iii. no physical inspection of the Property Site reported on is carried out as part of any Services offered by Landmark and Landmark do not warrant that all lay/ uses or features whether past or current will be identified in the Services. The Services do not include any information relating to the actual state or condition of any Property Site nor should they be used or taken to indicate or exclude actual fitness or unfitness of a Property Site.

for any particular purpose nor should it be relied upon for determining saleability or value or used as a substitute for any physical investigation or inspection. Landmark recommends that You inspect and take other advice in relation to the Property Site and not rely exclusively on the Services

iv Subject to clause 6 c below, Landmark shall not be responsible for error or corruption in the Services resulting from inaccuracy or omission in primary or secondary information and data, inaccurate processing of information and data by third parties, computer malfunction or corruption of data whilst in the course of conversion, geo-coding, processing by computer or electronic means, or in the course of transmission by telephone or other communication link or printing

v Landmark will not be held liable in any way if a Report on residential property is used for commercial property or more than the one residential property for which it was ordered

vi the Services have not been prepared to meet Your or anyone else's individual requirements, that You assume the entire risk as to the suitability of the Services and waive any claim of detrimental reliance upon the same, and You confirm You are solely responsible for the selection or omission of any specific part of the Content

vii Landmark offer no warranty for the performance of any linked internet service not operated by Landmark

viii You will on using the Services make a reasonable inspection of any results to satisfy Yourself that there are no defects or failures. In the event that there is a material defect You will notify us in writing of such defect within seven days of its discovery

ix Any support or assistance provided to You in connection with these Terms is at Your risk

h All liability for any insurance products purchased by You rests solely with the insurer. Landmark does not endorse any particular product or insurer and no information contained within the Services should be deemed to imply otherwise. You acknowledge that if You Order any such insurance Landmark will deem such as Your consent to forward a copy of the Report to the insurers. Where such policy is purchased, all liability remains with the insurers and You are entirely responsible for ensuring that the insurance policy offered is suitable for Your needs and should seek independent advice. Landmark does not guarantee that an insurance policy will be available on a Property Site. All decisions with regard to the offer of insurance policies for any premises will be made solely at the discretion of the insurers and Landmark accepts no liability in this regard. The provision of a Report does not constitute any indication by Landmark that insurance will be available on the property

i Professional opinions contained in Reports are provided to Landmark by third parties, and such third parties are solely liable for the opinion provided. For the avoidance of doubt, those parties providing assessments or professional opinions on Landmark products include RPS Plc & Wilbourn Associates Limited, and any issues with regard to the provision of such opinion should be taken up with the relevant third party.
If Landmark provides You with any additional service obtained from a third party including but not limited to any interpretation or conclusion, risk assessment or environmental report or search carried out in relation to a Report on Your Property Site, subject to clause 6 c below Landmark will not be liable in any way for any information contained therein or any issues arising out of the provision of these additional services to You. Landmark will be deemed to have acted as an agent in these circumstances and the supply of these additional services will be governed by the terms and conditions of those Third Parties

j In any event no person may rely on a Service more than 12 months after its original date

k If You wish to vary any limitation of liability as set out in these Terms, You must request such variation prior to ordering the Service. Landmark shall use its reasonable endeavours to agree such variation but shall not be obliged to do so

l Time shall not be of the essence with respect to the provision of the Services

m Ordnance Survey have undertaken a positional accuracy improvement programme which may result in discrepancies between the positioning of features used in datasets in the Services and the updated Ordnance Survey mapping. Subject to clause 6 c below, Landmark and its Suppliers exclude all and any liability incurred as a result of the implementation of such positional accuracy improvement programme

n Where Landmark provides its own risk assessment in connection with any Report, Landmark shall carry out such assessment with all reasonable skill and care but shall have no liability for any such risk assessment conclusion which is provided for information only, save where Landmark conducted the same negligently, in which case the provisions of clause 6 shall apply. Notwithstanding the provision of any such risk assessment conclusion you should carefully examine the remainder of the Report and should not take or refrain from taking any action based solely on the basis of the risk assessment. For the avoidance of doubt, the provisions of this clause 6n apply solely to risk assessments conducted by Landmark, and the provision of any other risk assessment by a third party shall be governed by such third party's terms in accordance with the provisions of clause 6i above

o Landmark obtains much of the information contained in its Report from third parties. Landmark will not accept any liability to You for any negligent or incorrect entry, or error or corruption in the Third Party Content supplied to Landmark, but Landmark's Suppliers may be liable for such negligent or incorrect entries, or errors or corruptions, subject to the terms and conditions on which they supply the Third Party Content to Landmark

7 Contribution

a Save where expressly provided, this clause 7 shall apply solely to Envirosearch Residential Reports (regardless of the result of such Report). Nothing in this clause 7 shall operate to override or vary the provisions of clause 6

b Landmark are prepared to offer, at their sole discretion, and without any admission or inference of liability a contribution towards the costs of any remediation works required under a Notice (as defined below) on the terms of this clause 7 ("the Contribution")

c In the event that a Remediation Notice is served on the First Purchaser or First Purchaser's Lender of a Property Site under Part II(A) of the Environmental Protection Act 1990 ("the Notice") Landmark will contribute to the cost of such works as either the First Purchaser or First Purchaser's Lender (but not both) are required to carry out under the Notice subject to the provisions of this clause 7 and on the following terms:

i the Contribution shall only apply to contamination or a pollution incident present or having occurred prior to the date of the Report

ii the Contribution shall only apply where the Property Site is a single residential dwelling house or a single residential flat within a block of flats. For the avoidance of doubt, this obligation does not apply to any commercial property, nor to any Property Site being developed or redeveloped whether for residential purposes or otherwise.

iii the Contribution is strictly limited to the cost of works at the Property Site and at no other site

iv the Contribution will not be paid in respect of any of the following:
Radioactive contamination of, whatsoever nature, directly or indirectly caused by or contributed to or arising from ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel or the radioactive toxic, explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof.
Asbestos arising out of or related in any way to asbestos or asbestos containing materials on or in structures or services serving the structures.
Naturally occurring materials arising from the presence or required removal of naturally occurring materials except in circumstances where such materials are present in concentrations which are in excess of their natural concentration.
Intentional non compliance arising from the intentional disregard of or knowing wilful or deliberate non-compliance by any owner or occupier of the Property Site with any statute, regulation, administrative compliance notice of violation, or notice letter of any Regulatory Authority.
Any condition which is known or ought reasonably to have been known to the First Purchaser or the First Purchaser's Lender prior to the purchase of the Report.
Any condition which is caused by acts of War or an Act of Terrorism.
Any property belonging to or in the custody or control of the First Purchaser which does not form a fixed part of the Property Site or the structure.
Any fines liquidated damages punitive or exemplary damages.
Any bodily injury including without limitation death illness or disease mental injury anguish or nervous shock.
Any financial loss in respect of any loss of any rental, profit, revenue savings or business or any consequential indirect or economic loss damage or expense including the cost of rent of temporary premises or business interruption.
Any losses incurred following a material change in use of, alteration or development of the Property Site.

d The maximum sum that shall be contributed by Landmark in respect of any Contribution shall be limited to £50,000. In the event that more than one Report is purchased on the Property Site the Contribution will only be payable under the first Report purchased by or on behalf of any First Purchaser or First Purchaser's Lender and no Contribution will be made in respect of subsequent Reports purchased by or on behalf of such First Purchaser, First Purchaser's Lender or any person connected to them.

e Landmark shall only pay a Contribution where the Notice is served within 36 months of the date of the Report.

f Any rights to a Contribution under this Clause 7 are not assignable in the event of a sale of the Property Site and Landmark will not make any Contribution after the date of completion of such sale.

g In the event the First Purchaser or First Purchaser's Lender wishes to claim any Contribution, it shall notify Landmark in writing within 3 months of the date of the Notice. The First Purchaser or First Purchaser's Lender (as applicable) shall comply with all reasonable requirements of Landmark with regard to the commission and conduct of the remediation works to be carried out under the Notice, and in the event the First Purchaser or First Purchaser's Lender (as applicable) does not do so, including without limitation, obtaining Landmark's prior written consent to any estimates for such works or complying with any other reasonable request by Landmark, Landmark shall not be required to pay any Contribution. Notwithstanding the payment of the Contribution by Landmark the First Purchaser or First Purchaser's Lender as applicable shall take all reasonable steps to mitigate any costs incurred in connection with the conduct of works required under the terms of any Notice.

h In the event that the First Purchaser or First Purchaser's Lender receives any communication from a statutory authority to the effect that there is an intent to serve a notice received under Part II(A) of the Environmental Protection Act 1990 they will advise Landmark within a maximum period of two months from receipt of such communication. This clause 7h and the service of any notice under it shall not affect the provisions of clauses 7 e and g, and any such communications, even if advised to Landmark will not operate as notice under clause 7e.

i Landmark reserve the right at any time prior to a claim for Contribution being made in accordance with clause 7 g) above, to withdraw the offer of payment of Contributions without further notice.

8 Events Beyond Our Control

a You acknowledge that Landmark shall not be liable for any delay, interruption or failure in the provision of the Services which are caused or contributed to by any circumstance which is outside our reasonable control including but not limited to lack of power, telecommunications failure or overload, computer malfunction, inaccurate processing of data, or delays in receiving, loading or checking data, corruption of data, whilst in the course of conversion, geo-coding, processing by computer in the course of electronic communication, or printing.

9 Severability

a If any provision of these Terms are found by either a court or other competent authority to be void, invalid, illegal or unenforceable, that provision shall be deemed to be deleted from these Terms and never to have formed part of these Terms and the remaining provisions shall continue in full force and effect.

10 Governing Law

a These terms shall be governed by and construed in accordance with English law and each party agrees irrevocably submit to the exclusive jurisdiction of the English courts if any dispute arises out of or in connection with this agreement (a "Dispute") the parties undertake that, prior to the commencement of Court proceedings, they will seek to have the Dispute resolved amicably by use of an alternative dispute resolution procedure acceptable to both parties with the assistance of the Centre for Dispute Resolution (CEDR) if required, by written notice initiating that procedure. If the Dispute has not been resolved to the satisfaction of either party within 60 days of initiation of the procedure or if either party fails or refuses to participate in or withdraws from participating in the procedure then either party may refer the Dispute to the Court.

11 General; Complaints

a Landmark may assign its rights and obligations under these Terms without prior notice or any limitation.

b Landmark may authorise or allow our contractors and other third parties to provide to Landmark and/or to You services necessary or related to the Services and to perform Landmark's obligations and exercise Landmark's rights under these Terms, which may include collecting payment on Landmark's behalf.

c No waiver on Landmark's part to exercise, and no delay in exercising, any right power or provision hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any right, power or provision hereunder preclude the exercise of that or any other right, power or provision.

d Unless otherwise stated in these Terms, all notices from You to Landmark must be in writing and sent to the Landmark registered office (or in the case of an Authorised Reseller, to its registered office address) and subject to paragraph e below all notices from Landmark to You will be displayed on our Websites from time to time.

e Any complaints in relation to the Services should, in the first instance, be in writing addressed to the Customer Service Support Manager at the Landmark registered office. Landmark or its agents will respond to any such complaints in writing as soon as practicably possible.

f A person who is not a party to any contract made pursuant to these Terms shall have no right under the Contract (Right of Third Parties) Act 1999 to enforce any terms of such contract and Landmark shall not be liable to any such third party in respect of any Services supplied.

g Landmark's Privacy Policy as displayed on the Website governs the use made of any information You supply to Landmark.

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YACHTHAVEN, HAYLING ISLAND

ENVIRONMENTAL STATEMENT

DECEMBER 2011

APPENDIX 8.3

© Environmental Assessment Services Ltd

YACHTHAVEN (HAYLING) LTD

Environmental Impact Assessment
Contamination Assessment
Update Report

October 2011

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Environmental Assessment Services Ltd

APPENDIX 8

CONTAMINATION RISK ASSESSMENT

Update Report

October 2011

1 BACKGROUND

1.1 The site of the proposed development is currently disused industrial land previously used for a boatyard and subsequently for materials, vehicle and plant storage. The levels of much of the site were raised with fill as part of this earlier development.

1.2 It is now intended to restore and redevelop the site partially for residential use, partly for use as a small boatyard with marina for leisure craft. The remainder of the site will be returned to a natural habitat for environmental enhancement.

1.3 As a consequence of:

- The site's previous history and use as a commercial boatyard since the 1930s, wartime use for camouflage paint testing and subsequently for materials and vehicle storage.
- The extensive made ground covering the site.
- The proximity of the site to Chichester Harbour and to environmentally important areas.

It was required that the risk of contamination of the soils should be assessed particularly in respect to:

- The risk to users of the site, particularly within the gardens of the residential development.
- The risk to persons involved during construction, particularly on earthworks.
- The risk of contaminated runoff into the Harbour with its consequent impact on the neighbouring ecologically sensitive areas.

1.4 In view of the above, the site has been subjected to the following site and soils investigations:

- The Contamination Assessment carried out by Environmental Assessment Services Ltd and dated September 2002.
- Desktop Study Report prepared by L R Pimenta dated October 2010.

© Environmental Assessment Services Ltd

1.5 Havant Borough Council issued a Scoping Opinion relating to the proposed development on 19 July 2011 in which it stated that:

- The results of the contamination testing of 2002 should be updated with further sampling to establish any changes in the condition of the site over the period.
- The contamination results should be compared against current standards as provided in CLR11 including for the conceptual model.

As a consequence of this, additional trial pits and soil testing was carried out in October 2011 with the results of this testing, and of the previous investigations, assessed against the current standards.

1.6 This report sets out the conclusions for this update study.

2 STUDY OF OCTOBER 2002

2.1 This study followed a comprehensive investigation of the site, which included:

- A review of the development history of the site.
- A site investigation including 73 trial holes and 4 boreholes with the findings logged to provide a record of the soils across the site.
- The taking and the testing of 105 soils and groundwater samples. Landfill gas monitoring was also carried out at the four borehole positions.
- An assessment of the results of the testing against the then current ICRCL standards and recommendations concerning the overall contamination risk at the site and remedial measures required.

2.2 The resulting borehole and trial pit logs and the results of the soil, groundwater and landfill gas testing were given in a report. The report concluded:

- *The site is underlain by a minor aquifer with soils of low vulnerability and is not within a source protection zone. The site is in one of the least hydrogeologically sensitive locations on Hayling Island.*
- *The majority of the site is on filled land, however, the fill appears to have been largely inert soil and construction waste. This type of waste is unlikely to be a source of landfill gas. The Environment Agency has confirmed that there is a former domestic waste landfill to the west of the site at SU 723 017, although this is not within 250 m of the site. The distance and low permeability migration horizon suggests that there should not be any significant risk of gas migration from the former to the site.*

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- *The land use of the site as agricultural fields prior to its development in the 1930s is unlikely to have caused any contamination. However, there are significant risks associated with the use of the site since its industrial development. These include the storage of oils and other liquid chemicals, the use of the site as a scrap yard and subsequent fly-tipping.*

- *Further investigation was required prior to consent for redevelopment of the land for residential housing. The further investigation included the analysis of soil and groundwater samples from boreholes and trial pits across the site. Samples were generally taken from the fill and upper natural ground. Samples were then analysed for substances listed in Tables 3 and 4 of ICRCL59/83 plus total petroleum hydrocarbons, molybdenum, asbestos and in accordance with the recommended schedule of further investigation as approved by the Environment Agency.*

- *The analysis of the soil samples revealed sporadic locations of significant contamination with a clearly defined divide. The southern section of the site, incorporating mostly areas of fill, maintained significantly high levels of water soluble boron, down to depths of 1.5 m with two significant pockets of PAH. However, the northern section of the site had significant levels of contamination recorded throughout the site area. The main source of contamination in the northern section was heavy metals in the soil, which were recorded at depths of up to 1 m. In both sections the results exceeded the ICRCL and Soil Value Guideline thresholds for domestic gardens.*

- *An asbestos content survey was carried out on ten surface soil samples at the site. There were no samples containing significant levels of asbestos dust recorded during this survey.*

- *Three groundwater samples were obtained at the site, again these showed no significant contaminating results. These results imply that there are no significant contaminants leaching into or onto the neighbouring SSSI and Ramsar Sites.*

- *There were four gas monitoring boreholes installed at the site during June 2002 and these were subsequently tested for soil gas composition on 16 July 2002, 24 July 2002, 2 August 2002 and 7 September 2002. Boreholes 1 & 2 have consistently shown results of no significant landfill gas concentrations, these being in the northern portion of the site where there was no significant fill over saltmarsh. Borehole 3 shows modest levels of gas concentrations typical of a good grassy soil horizon, whereas borehole 4 has consistently shown minor elevated levels of methane and carbon dioxide after its initial peak value for methane just exceeding the Lower Explosive Limit (LEL) at the first recording. Subsequent readings indicate much reduced levels. Borehole 4 results have no significant landfill gas risk due the distance of the hole from the proposed property developments and the results*

obtained so far indicate that the borehole pierced an isolated pocket of marsh gas originating from the underlying salt marsh. This conclusion is supported by the high levels of oxygen found in all of the results, which indicates that there is no current methane gas production on this site.

- *The results of the site investigations carried out at the Hayling Island Yacht Haven site suggested that the site is significantly contaminated in a way likely to constrain the proposed development or require remediation prior to redevelopment of the site for domestic housing. From the results of the site investigations, it is recommended that the less suitable upper soil be removed and replaced with clean topsoil in the proposed gardens to a depth of 0.6 m. It is advised that the clean soil be placed on a geotextile membrane and capillary break sand layer.*

- *Finally, during site redevelopment extra care should be taken to ensure that no current site contaminants are displaced into the neighbouring SSSI and Ramsar sites. Guidelines should be in place prior to redevelopment commencing and adhered to throughout the construction phase of the site.*

2.3 The overall environmental risk for the site was rated as 2, on a scale of 1 to 4, due to the significant contamination potential identified as being associated with the historic industrial land use of the site, reducing to category 1, low, once remediation measures and redevelopment are complete.

3 STUDY OF OCTOBER 2010

3.1 This report was commissioned for the purposes of the current planning application and included the following:

- A review of the 2002 report.
- An up-to-date Sitecheck report.
- A walkover survey of the site to assess the current condition and any material changes since 2002.
- An initial site Conceptual Model.

3.2 The report on the October 2010 study concluded that:

The level of contamination or gases on the site is not serious enough to warrant major remedial works to be carried out but further testing is recommended.

4 TESTING OF OCTOBER 2011

4.1 Additional samples were obtained from six trial pits adjacent to the 2002 trial pits referenced D33, D11, D21, F20, E25 and G5 in order to give comparative results at these typical positions. The location of these trial pits is shown on the plan attached to the 2002 report. The results of this testing is attached in Appendix A of this report.

4.2 Gas tests were carried out at the four original borehole positions. It is reported that:

The gas measurements were much the same as before and no detectable concentrations of methane were found and the carbon dioxide levels were not significantly above normal background. [see Appendix A]

4.3 No groundwater samples could be recovered, probably due to the recent long period of dry weather.

5 REVIEW OF RESULTS

5.1 Changes since 2002

5.1.1 The results of the soil and gas testing are set out in Appendix A. These results are also summarised on Table 5.1 where the results are compared with samples taken at comparable locations in 2002.

5.1.2 The conclusions from this comparison is that there has been no significant change in the contamination in the site over that period. The soil gas readings support the previous view that the elevated readings obtained in 2002 were due to pockets of trapped gas without potential for continued gas generation.

5.2 Assessment against Current Standards

5.2.1 The soil sample pH values were found to be generally neutral to alkaline (7.0 – 10.1) with two samples (E25 and F21) giving acid results down to 6.2.

5.2.2 The results of the analysis of the soil samples have been compared with the current CLEA Soil Guideline Values for metals (summarised in Table 5.2 below), and the LQM/CIEH Generic Assessment Criteria Values for Human Heath Risk Assessment (2nd edition 2009).

5.2.3 The most sensitive land use for which SGVs are given is residential + plant uptake, which has been used to assess the soil sample results in this case.

TABLE 5.1

Summary of the results of the soil sample analysis for 2001 and 2011
(Samples taken from equivalent positions and depths for comparison)

SUBSTANCE	UNITS	TRIAL PIT No. / DATE / DEPTH (m)											
		D33 2002 d=0.0	D33 2011 d=0.1	D11 2002 d=0.0	D11 2011 d=0.2	D21 2002 d=0.5	D21 2011 d=0.2	F20 2002 d=0.6	F20 2011 d=0.5	E25 2002 d=0.0	E25 2011 d=0.0	G5 2002 d=0.0	G5 2011 d=0.2
Arsenic	mg/kg	10.1	8	20.4	14	12.0	17	8.8	7	8.5	4	10.9	6
Cadmium	mg/kg	<0.5	<0.5	0.8	0.5	0.5	0.7	<0.5	0.6	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	34	14	57	25	23	24	38	13	14	21	19	14
Copper	mg/kg	13	22	1088	25	113	43	13	28	29	17	27	12
Nickel	mg/kg	14	13	191	13	16	14	15	9	9	7	15	11
Lead	mg/kg	26	79	551	51	287	126	33	88	62	35	86	40
Mercury	mg/kg	<0.5	<1	0.8	1	10.5	3.8	<0.5	<1	<0.5	<1	<0.5	<0.5
Selenium	mg/kg	<0.5	<3	<0.5	<3	<0.5	<3	<0.5	<3	0.6	<3	<0.5	<3
Zinc	mg/kg	52	350	2605	89	254	135	43	103	62	44	112	52
Boron (water sol.)	mg/kg	0.5	1.4	0.8	2	0.7	2.2	4.9	<1	14.7	4.8	0.7	<1
PH	value	8.1	7.4	7.9	7.7	8.3	7.9	7.5	7.6	6.4	7.8	7.8	7.8
Total Cyanide	mg/kg	<1	<2	<1	<2	<1	<2	<1	<2	<1	<2	<1	<2
Water soluble Sulphate	g/l	0.07	0.28	0.03	0.05	0.02	0.05	0.01	0.07	0.12	0.20	<0.01	0.13
Sulphide	mg/kg	<2	-	12.8	-	<2	-	<2		<2	-	<2	-
Elemental Sulphur	mg/kg	40	-	310	-	710	-	1010		60	-	140	-
TPH	mg/kg	<5	-	<5	-	-	-	<5		<5	-	<0.5	-
Total PAH	mg/kg	4.4	<1.6	37.5	<1.6	38.3	<1.6	<0.5	20.94	4.1	<1.6	6.4	10.81
Benzene	mg/kg	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2
Toluene	mg/kg	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5
Ethyl Benzene	mg/kg	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10

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5.2.4 From comparison of the results in Table 5.1 and in the Appendix with the SGVs given in Table 5.3 and the LQM / CIEH values in Table 5.4, 5.5 and 5.6 it is apparent from the results of the analysis that:

- Site average results as shown in Table 5.2 are within guideline values for a residential land use - except for mercury, which is within guideline values for allotments.

- There is a substantial variation in potential contaminant concentrations across the site but with the exceedences over current guidelines for a residential land use confined to the previously developed eastern part of the site.

- PAH values are within current guidelines for a residential land use and the TPH values in the 2011 testing do not indicate any evidence of significant fuel spillage or leakage.

- An asbestos content survey was carried out on ten surface soil samples at the site. There were no samples containing significant levels of asbestos dust recorded during this survey.

- Three groundwater samples were obtained in 2002 at the site, again these showed no significant contaminating results. These results imply that there are no significant contaminants leaching into or onto the neighbouring SSSI and Ramsar Sites.

TABLE 5.2
Summary of Results from 2001 Study

		Max Recorded	Min Recorded	Site Average
Arsenic	mg/kg	108	6.0	15
Cadmium	mg/kg	2	<0.5	0.6
Chromium	mg/kg	99	11	32
Copper	mg/kg			
Nickel	mg/kg	366	9	29
Lead	mg/kg	3096	25	206
Mercury	mg/kg	217	<0.5	6.6
Selenium	mg/kg	1.1	<0.5	0.6
Zinc	mg/kg	7881	24	386
Boron (water sol.)	mg/kg	12.1	<0.5	1.7
PH	value	10.2	6.4	8.1
Total Cyanide	mg/kg	<1	<1	<1
Water soluble Sulphate	g/l	0.04	0.01	0.02
Sulphide	mg/kg	<2	<2	<2
Elemental Sulphur	mg/kg	1330	<20	316
TPH	mg/kg			
Total PAH	mg/kg	117	<0.5	12.5

TABLE 5.3
Soil Guideline Values (SGV s)

Concentrations in mg/kg dry weight

Substance		Soil Guideline Values (mg/kg dry weight)		
		Land Use		
		Residential	Allotment	Commercial
Arsenic		32	43	640
Cadmium		10	1.8	230
Chromium		130	200	5000
Mercury	Elemental	1	26	26
	Inorganic	170	80	3600
	Methyl	11	8	410
Benzene		0.33	0.07	95
Nickel		130	230	1800
Phenol		420	280	3200 (38000)
Xylene	*o*-xylene	250	160	2600
	m-xylene	240	180	3500
	p-xylene	230	160	3200
Selenium		350	120	13000
Lead		450	450	750
Toluene		610	120	4400
Ethylbenzene		350	90	2800

TABLE 5.4
The LQM / CIEH Generic Assessment Criteria for Human Health Risk Assessment (2nd edition) Paul Nathanail *et al* (2009)

	Residential	Allotment	Commercial
Boron	291	45	192000
Cadmium	3	0.53	348
Chromium	4.3	2.1	35
Copper	2330	524	71700
Zinc	3750	618	665000

TABLE 5.5

Petroleum hydrocarbons for the residential land use at 1%, 2.5% and 6% Soil Organic Matter (SOM)

Residential land use	LQM/CIEH GAC for Petroleum Hydrocarbons (mg kg^{-1} DW)		
	1% SOM	2.5% SOM	6% SOM
Aliphatic EC 5-6	30	55	110
Aliphatic EC >6-8	73	160	370
Aliphatic EC >8-10	19	46	110
Aliphatic EC >10-12	93 (48)	230 (118)	540 (283)
Aliphatic EC >12-16	740 (24)	1700 (59)	3000 (142)
Aliphatic EC >16-35	45000 (8.48)	64000 (21)	76000
Aliphatic EC >35-44	45000 (8.48)	64000 (21)	76000
Aromatic EC >5-7 (benzene)	65	130	280
Aromatic EC >7-8 (toluene)	120	270	611
Aromatic EC >8-10	27	65	151
Aromatic EC >10-12	69	160	346
Aromatic EC >12-16	140	310	593
Aromatic EC >16-21	250	480	770
Aromatic EC >21-35	890	1100	1230
Aromatic EC >35-44	890	1100	1230
Aliphatic + Aromatic EC >44-70	1200	1300	1300

TABLE 5.6

Polycyclic Aromatic Hydrocarbons for residential land use At 1%, 2.5% and 6% SOM

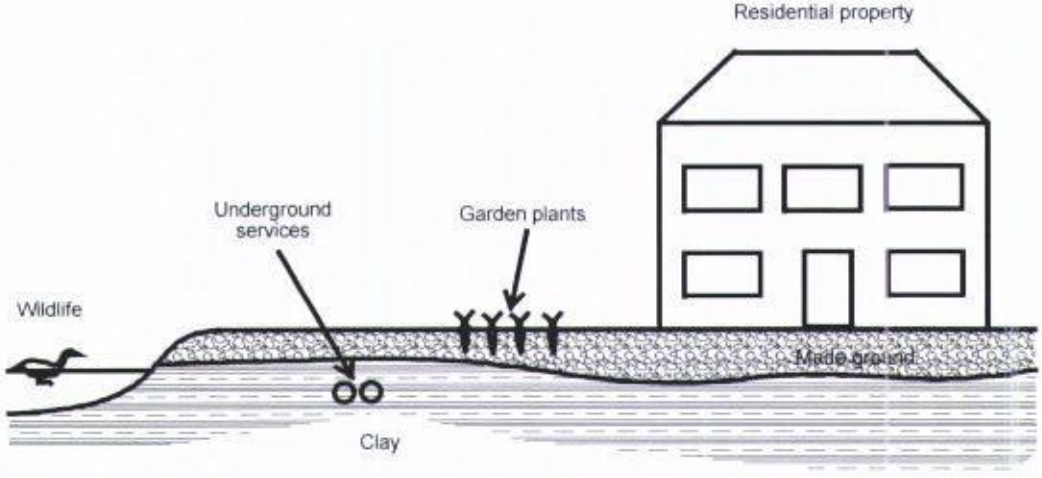
Residential land use	LQM/CIEH GAC for Polycyclic Aromatic Hydrocarbons		
PAH Congener	1% SOM	2.5% SOM	6% SOM
Acenaphthene	210	480	1000
Acenaphthylene	170	400	850
Anthracene	2300	4900	9200
Benz(a)anthracene	3.1	4.7	5.9
Benzo(a)pyrene	0.83	0.94	1.0
Benzo(b)fluoranthene	5.6	6.5	7.0
Benzo(ghi)perylene	44	46	47
Benzo(k)fluoranthene	8.5	9.6	10
Chrysene	6.0	8.0	9.3
Dibenz(ah)anthracene	0.76	0.86	0.90
Fluoranthene	260	460	670
Fluorene	160	380	780
Indeno(123-cd)pyrene	3.2	3.9	4.2
Naphthalene	1.5	3.7	8.7
Phenanthrene	92	200	380
Pyrene	560	1000	1600

6 CONCEPTUAL MODEL AND CONTAMINATION RISK ASSESSMENT

6.1 The contamination risk assessment has been prepared in accordance with the recommendations given in the DETR/CIRIA publication "Contaminated Land Risk Assessment – a guide to good practice". 2001.

6.2 For contamination to be significant, there must be three elements present: *Contamination* (a significant concentration of a hazardous substance), a *receptor* (a person potentially at risk from the hazardous substance) and a feasible *pathway* between substance and receptor. See Figure 6.1 below.

FIGURE 6.1
Site Specific Conceptual Model



6.3 The model may be applied to four cases:

i. Future residents and site users (*receptor*) using the site and the gardens (*pathway*). The receptor assumed to be adults and children.

ii. Construction workers (*receptor*) engaged in proposed and future construction on the site (*pathway*) and exposed to contamination. The receptor assumed to be an adult.

iii. Impacts on the wider environment and on wildlife (*receptor*). Includes off-site contamination migration (*pathway*), contamination of Chichester Harbour etc.

iv. Impacts on buildings and services.

6.4 See summary of conceptual model in Table 6.1 below.

TABLE 6.1
Conceptual Model for Current Conditions

Source		Pathway	Receptor	Risk
Contaminated soil	**Contaminated groundwater**			
Moderate contamination identified from testing and resulting from previous use of the site.	Testing demonstrates no significant contamination of groundwater	Contact with contaminated soil.	Future site users residential and leisure use.	✓
		Ingestion of or skin contact with contaminated soil or dust.	Maintenance or construction workers engaged in groundworks on the site.	✓
		Contact with contaminated soil.	Building & services	?
		Leeching of site contaminants into groundwater.	Wider environment	×

Key: ✓Significant risk × No significant risk ? Uncertain risk

6.5 The site, presently vacant following former commercial/industrial use, is to be redeveloped for residential and leisure use with wildlife reserves. Future residents will come into contact with the soil in their gardens and soft landscaped areas. Future site users contact with the underlying soil is unlikely in the marina or boatyard and not very likely in wildlife areas. Construction and maintenance workers required to work in excavated service trenches will have contact with the underlying soil.

6.6 No contamination likely to potentially impact on services has been identified. However, the stricter WRAS standards would apply for any new polyethylene water main laid within the site.

6.7 Finally during site redevelopment extra care should be taken to ensure that no current site contaminants are displaced into the neighbouring SSSI and Ramsar sites. Guidelines should be in place prior to redevelopment commencing and adhered to throughout the construction phase of the site.

6.8 The overall environmental risk for the site is rated according to the risk assessment matrix in Table 6.2 below.

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TABLE 6.2
Risk Assessment Matrix

PROBABILITY OF IMPACT	CONTAMINATION POTENTIAL		
	SEVERE	MODERATE OR UNCERTAIN	MINIMAL
High	4	3	2
Medium	3	2	1
Low	2	1	1

6.9 In this case the rating would be 2, due to the contamination potential identified as being associated with the historic industrial land use of the site, reducing to 1 (low) once recommended remediation measures (see below) and redevelopment are complete.

7. SUMMARY OF RECOMMENDATIONS

7.1 Remove all deposited superficial waste together with demolition waste as part of site clearance. Concrete and brick from demolished buildings, etc., may be crushed and recycled on site for granular fill, road base, etc.

7.2 All garden and soft landscaping areas to have the less suitable upper soil (made ground) removed and replaced with clean topsoil from an uncontaminated source to a depth of 0.6 m. The clean topsoil to be placed on a geotextile membrane and capillary breaker sand layer where the underlying ground in not natural undisturbed soil.

7.3 The condition of soil exposed during site clearance and in excavations should be monitored during the work and any evidence of significant contamination should be investigated, treated and/or removed from site as necessary.

7.4 In the wildlife areas, the superficial waste deposits should be removed and the area should be enhanced with brash and wood piles, south facing soil banks (where practicable) and open compost heaps. Apart from the foregoing suggestions, the wildlife areas should be disturbed as little as possible.

✪ ✪ ✪ ✪ ✪ ✪ ✪

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YACHTHAVEN, HAYLING ISLAND

ENVIRONMENTAL STATEMENT

DECEMBER 2011

APPENDIX 9.1

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Yachthaven: Archaeology & Historic Buildings



Hampshire County Council

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Legend

- Archaeological sites
- Historic Buildings
- Cropmarks (vector)

Hampshire County Council

Archaeology and Historic Buildings Record

Site UID: 23508 Early Bronze Age macehead from Tye Farm — Havant (unparished) — FINDSPOT
SU70SW 5 — SU 73170 02420 — Additional Info Held ? Y

EVENT FINDSPOT — Unassigned
Early Bronze Age - -2200 to -1501

An early bronze age macehead with an hour-glass perforation. 12cm long, 7.6cm wide and 1 and 3.5cm thick.

EVENT MODERN EVENT — Stray Finds - Verified
Modern - 1920

Found in 1920 at Tye Farm. It is now in Portsmouth City Museum (1955, confirmed 1962). Langstone Harbour Project No. HI.37.

Site UID: 23519 Possible Occupation Site — MONUMENT
SU70SW 13 — SU 73400 01670 — Additional Info Held ? Y

EVENT HEARTH — Unassigned
Early Iron Age to Late Iron Age - - 800 to 42

(1) One of four hearths visible in the section of a low sea cliff opposite Verner Common. The hearths are thought to be iron age although no finds were retrieved (1969).

EVENT MODERN EVENT — Recorded Observation
Modern - 1969

EVENT OCCUPATION SITE — Created
Early Iron Age to Late Iron Age - - 800 to 42

Four Iron Age hearths (Monuid 23520, 23521, and 23522) visible in the section of a low sea cliff opposite Verner Common may represent an occupation site.

Site UID: 23520 — MONUMENT
SU70SW 14 — SU 73420 01640 — Additional Info Held ? Y

EVENT HEARTH — Unassigned
Early Iron Age to Late Iron Age - - 800 to 42

(1) One of four hearths visible in the section of a low sea cliff opposite Verner Common. The hearths are thought to be iron age although no finds were retrieved (1969).

EVENT MODERN EVENT — Recorded Observation

Hampshire County Council

Archaeology and Historic Buildings Record

Modern - 1969

Site UID: 23521
SU70SW 15

MONUMENT
SU 73450 01510 Additional Info Held ? Y

EVENT HEARTH Unassigned

Early Iron Age to Late Iron Age - - 800 to 42

(1) One of four hearths visible in the section of a low sea cliff opposite Verner Common. The hearths are thought to be iron age although no finds were retrieved (1969).

EVENT MODERN EVENT Recorded Observation

Modern - 1969

Site UID: 23522
SU70SW 16

MONUMENT
SU 73450 01460 Additional Info Held ? Y

EVENT HEARTH Unassigned

Early Iron Age to Late Iron Age - - 800 to 42

(1) One of four hearths visible in the section of a low sea cliff opposite Verner Common. The hearths are thought to be iron age although no finds were retrieved (1969).

EVENT MODERN EVENT Recorded Observation

Modern - 1969

Site UID: 23523
SU70SW 17 A

FINDSPOT
SU 73450 01570 Additional Info Held ? Y

EVENT FINDSPOT Unassigned

Lower Palaeolithic to Late Iron Age - -500000 to 42

(1) A thin layer of black burnt material is visible extending 75ft (22.86m) along a section created by a low sea cliff. The layer contains burnt flint pot boilers and is sealed by alluvium and may represent land clearance (1969)

EVENT FINDSPOT Unassigned

Enhanced with indexing standards from English Heritage and mda. Data within this report may be derived from the NMR © English Heritage

Lower Palaeolithic to Late Iron Age - -500000 to 42

(1) Burnt flint pot boilers were observed in a layer of burnt material (A) visible in the section of a low sea cliff (1969).
EVENT MODERN EVENT Stray Finds - Non verified

Modern - 1969

Site UID: 23525 FINDSPOT
SU70SW 18 SU 73300 01700 Additional Info Held ? Y

EVENT FINDSPOT Unassigned

Lower Palaeolithic to Late Iron Age - -500000 to 42

(1) A scatter of burnt flint pot boilers were found on the beach at this location in 1968. (1969).
EVENT MODERN EVENT Stray Finds - Non verified

Modern - 1969

Site UID: 23526 Havant (unparished) MONUMENT
SU70SW 19 SU 73600 01700 Additional Info Held ? Y

EVENT MODERN EVENT Stray Finds - Non verified

Modern - 1964

EVENT OCCUPATION SITE Unassigned

Early Mesolithic to Roman - -10000 to 409

A layer of black, burnt material approx. 4 inches (10cm) thick is visible extending for 15ft (4.6m) along a section created by a low sea cliff. The layer may represent land clearance or possibly salt production.

Site UID: 23536 Havant (unparished) FINDSPOT
SU70SW 26 A SU 72160 02690 Additional Info Held ? Y

EVENT FINDSPOT Unassigned

Uncertain - 9999

(1) A human skull was found with a sherd of Romano-British pottery (B) and a coin (C) when a sewer trench was being dug in 1967. The finds were made where the trench cut through an old tidal channel. The finds are with Portsmouth City Museum (1969).

EVENT MODERN EVENT Stray Finds - Non verified

Modern - 1969

Site UID: 23537 Havant (unparished) FINDSPOT
SU70SW 26 B SU 72160 02690 Additional Info Held ? Y

EVENT FINDSPOT Unassigned

Roman - 43 to 409

(1) A grey Romano-British pot base, a human skull (A) and a coin (C) were found while digging a sewer trench in 1967. The finds were made where the trench cut through an old tidal channel. The pot base is now in Portsmouth City Museum (1969).

EVENT MODERN EVENT Stray Finds - Non verified

Modern - 1969

Site UID: 23538 Havant (unparished) FINDSPOT
SU70SW 26 C SU 72160 02690 Additional Info Held ? Y

EVENT FINDSPOT Unassigned

Uncertain - 9999

(1) An undated coin was found with a human skull (A) and a sherd of Romano- British pottery when a sewer trench was dug in 1967. The finds were made where the trench cut through an old tidal channel. The location of the coin is now unknown (1969).

EVENT MODERN EVENT Stray Finds - Non verified

Modern - 1969

Site UID: 23539 Havant (unparished) FINDSPOT
SU70SW 26 D SU 72160 02690 Additional Info Held ? Y

Enhanced with indexing standards from English Heritage and mda. Data within this report may be derived from the NMR © English Heritage

EVENT FINDSPOT Unassigned

Lower Palaeolithic to Late Iron Age - -500000 to 42

(1) Briquetage and burnt flint 'pot-boilers' (E) were found in two U-shaped features sectioned by the digging of a sewer trench in 1967. They lay immediately south of an old tidal channel which also produced finds (1969).

EVENT MODERN EVENT Stray Finds - Non verified

Modern - 1969

Site UID: 23540 Havant (unparished) FINDSPOT

SU70SW 26 E SU 72160 02690 Additional Info Held ? Y

EVENT FINDSPOT Unassigned

Lower Palaeolithic to Late Iron Age - -500000 to 42

(1) Burnt flint 'pot boilers' and briquetage (D) were found in two U-shaped features sectioned by a sewer trench in 1967. They lay immediately south of an old tidal channel which also produced finds (1969).

EVENT MODERN EVENT Stray Finds - Non verified

Modern - 1969

Site UID: 23541 Havant (unparished) MONUMENT

SU70SW 26 F SU 72160 02690 Additional Info Held ? Y

EVENT HEARTH Unassigned

Uncertain - 9999

(1) To the south of the old tidal channel the sewer trench also sectioned a number of hearth sites which were visible just beneath the turf lines (1969).

EVENT MODERN EVENT Recorded Observation

Modern - 1969

Site UID: 23542 Havant (unparished) FINDSPOT

SU70SW 27 SU 72150 02590 Additional Info Held ? Y

EVENT FINDSPOT Unassigned

Roman - 43 to 409

(1) Three Romano-British sherds of pottery were found at this location. The pottery is now with Portsmouth City Museum (1969).

EVENT MODERN EVENT Stray Finds - Non verified

Modern - 1969

Site UID: 23543 Havant (unparished) FINDSPOT

SU70SW 28 SU 72150 02590 Additional Info Held ? Y

EVENT FINDSPOT Unassigned

Early Iron Age to Late Iron Age - - 800 to 42

(1) A single sherd of iron age pottery was found with 3 Romano-British pottery (A) sherds during the digging of a sewer trench. The pottery is now with Portsmouth City Museum (1969).

EVENT MODERN EVENT Stray Finds - Non verified

Modern - 1969

Site UID: 23554 Havant (unparished) MONUMENT

SU70SW 33 SU 73190 02250 Additional Info Held ? Y

EVENT HEARTH Unassigned

Late Bronze Age to Early Iron Age - -1000 to - 401

1) A large hearth was revealed during the cutting of foundations for a bungalow in 1968. The hearth is thought to be possibly late bronze age or early iron age in date although no finds have been recorded from it (1969).

EVENT MODERN EVENT Recorded Observation

Modern - 1969

Site UID: 24373 Havant (unparished) MONUMENT

SU70SW 84 SU 72200 01400 Additional Info Held ? N

EVENT MODERN EVENT Unknown

Modern - 1989

EVENT PILLBOX Unassigned

Modern - 1901 to 2050

Pillbox - unclassified. Weapon support slots on each shelf.

Site UID: 24374 Havant (unparished) MONUMENT
SU70SW 85 SU 72300 01300 Additional Info Held ? N

EVENT MODERN EVENT Unknown

Modern - 1989

EVENT PILLBOX Unassigned

Modern - 1901 to 2050

Pillbox - Type 22. External Blast wall demolished.

Site UID: 33028 Site of Hayling Island Tide Mill Havant (unparished) MONUMENT
SU70SW 96 SU 72600 01200 Additional Info Held ? N

EVENT CORN MILL Recorded

Post Medieval - 1843 to 1893

(2) Recorded as "corn mill" on First Edition OS Map.

EVENT MILL DAM Unassigned

Post Medieval - 1540 to 1900

(1) At low water it is possible to see a considerable part of the embankment which once dammed the tide pond.

EVENT MODERN EVENT Bibliographic Reference

Modern - 1978

(1) Water and Wind Mills in Hampshire and the Isle of Wight, M. Ellis.

EVENT MODERN EVENT Cartographic Depiction

Post Medieval - 1843 to 1893

(2) First Edition Ordnance Survey Map.

EVENT TIDE MILL Unassigned

Post Medieval - 1540 to 1900

(1) On the edge of the quay stands a brick building which could be part of the original tide mill.

Site UID: 33670 LATTERS, CASTLEMAN LANE Havant (unparished) FINDSPOT
SU70SW 94 SU 72250 02300 Additional Info Held ? N

EVENT FINDSPOT Unassigned

Early Medieval - 410 to 1065

1.Mid-Saxon pottery found during development.

EVENT MODERN EVENT Stray Finds - Non verified

Modern - 1994

Site UID: 41047 Findspot, Bronze Age Hoard, Hayling Island Havant (unparished) FINDSPOT
SU70SW 108 SU 72172 01780 Additional Info Held ? Y

EVENT FINDSPOT Unassigned

Middle Bronze Age - -1500 to -1001

1) A Middle Bronze Age hoard of 20 palstaves was found in this location and is now in Havant Museum.

EVENT MODERN EVENT Stray Finds - Verified

Modern - 1995

Detected on the edge of a garden in January 1995. Information from Dave Allen Andover Museum.
Location uncertain - Hayling Island (near Fleet?).

Site UID: 41071 Stoke Havant (unparished) NAME
SU70SW 111 SU 72010 02410 Additional Info Held ? N

EVENT MODERN EVENT Placename Evidence

Modern - 1996

(1) Part of the RCHME Medieval Settlement project.
EVENT SETTLEMENT First mentioned

Medieval - 1327

(1) First documented in AD 1327 as Stoke (=?).

Site UID: 41072 Tye — Havant (unparished) — NAME SU 73100 02300 — Additional Info Held ? N
SU70SW 112

EVENT MODERN EVENT Placename Evidence

Modern - 1996

(1) Part of the RCHME Medieval Settlement project.
EVENT SETTLEMENT First mentioned

Medieval - 1280

(1) First documented in AD 1280 as TYA (Home of William Tya, or enclosed).

Site UID: 41298 Fleet — Havant (unparished) — NAME SU 72200 01700 — Additional Info Held ? N
SU70SW 114

EVENT MODERN EVENT Placename Evidence

Modern - 1996

(1) Part of the RCHME Medieval settlement project
EVENT SETTLEMENT First mentioned

Medieval - 1248

(1) First documented in AD 1248 as De la Flete (Homes of De la Flete family/water channel).

Site UID: 54706 Modern decoy pond, Gutner Point — Havant (unparished) — MONUMENT SU 73487 01691 — Additional Info Held ? Y

EVENT DECOY POND Recorded

Modern - 1919 to 1943

(1) A decoy pond used to net wildfowl. It once had a pipe which was destroyed when the pond was dug deeper to hold fresh water in the 1950s. (2) Marked on the fourth edition OS map, but not on the earlier ones.

EVENT MODERN EVENT Cartographic Depiction

Modern - 1919 to 1943

(2) Fourth edition 25" OS map.

EVENT MODERN EVENT Personal Observation

Modern - 2002

(1) Information from an elderly resident of Hayling Island 5/11/2002.

Site UID: 54707 Post Medieval drainage ditches, Gutner Point Havant (unparished) MONUMENT

SU 73546 01540 Additional Info Held ? N

EVENT DRAINAGE DITCH Unassigned

Post Medieval - 1600 to 1799

(1) An area of ditches below the sea wall which were dug to drain the salt marsh and increase the grass growth. They are possibly C17/C18 in date.

EVENT MODERN EVENT Personal Observation

Modern - 2002

(1) Information from an elderly resident 5/11/2002 - see monuid 54706 for back up file.

Site UID: 54708 Modern ploughing ridges, Gutner Point Havant (unparished) MONUMENT

SU 73471 01865 Additional Info Held ? N

EVENT DITCH Unassigned

Modern - 1940 to 1959

(1) A ditch was apparantly dug to connect the water furrows by the informant's uncle in the 1940s/1950s.

EVENT MODERN EVENT Personal Observation

Modern - 2002

(1) Information from an elderly resident 5/11/2002 - see monuid 54706 for back up file.

EVENT STEAM PLOUGHED RIG Unassigned

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Modern - 1901 to 2050

(1) The ridges behind the sea wall are apparantly narrow rig ploughing used to drain the upper salt marsh for arable cultivation.

Site UID: 54709 Site of oyster beds, Gutner Point — MONUMENT
SU 73428 01489 Additional Info Held ? N

EVENT MODERN EVENT Cartographic Depiction

Post Medieval - 1841 to 1891

(2) First edition 6" OS map.

EVENT MODERN EVENT Personal Observation

Modern - 2002

(1) Information from a local elderly resident 5/11/2002 - see monuid 54706 for back up file.

EVENT OYSTER BEDS Recorded

Post Medieval - 1841 to 1891

(1) There were 74 oyster beds along the W side of the point. The four square structures visible on aerial photography (millenium aerial photographs) are also oyster beds. They formed a part of a major local industry that was wiped out c.1906 by extremely hard frosts that killed all the oysters in the beds. (2) Marked on the first edition 6" OS map.

Site UID: 54710 Undated hearth, E of Gutner Point — MONUMENT
SU 73627 01952 Additional Info Held ? N

EVENT HEARTH Unassigned

Uncertain - 9999

(1) One of two hearths seen eroding out of the saltmarsh on E side of Gutner Point in 2000. The ones on the W side are thought to be Iron Age.

EVENT MODERN EVENT Personal Observation

Modern - 2000

(1) Information from an elderly resident, he saw them in 2000 - see monuid 54706 for back up file.

Site UID: 54711 Undated hearth, E of Gutner Point — Havant (unparished) — MONUMENT
SU 73602 01898 Additional Info Held ? N

EVENT HEARTH Unassigned

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Hampshire County Council

Archaeology and Historic Buildings Record

Uncertain - 9999

(1) One of two hearths seen eroding out of the saltmarsh on E side of Gutner Point in 2000. The ones on the W side are thought to be Iron Age.
EVENT MODERN EVENT Personal Observation

Modern - 2000

(1) Information from an elderly resident, he saw them in 2000 - see monuid 54706 for back up file.

Site UID: 54863 Site of hearth, Gutner Point Havant (unparished) MONUMENT
SU 73600 01800 Additional Info Held ? N

EVENT HEARTH Unassigned

Lower Palaeolithic to Late Bronze Age - -500000 to - 801

(1) Burnt flints collected at this location in 2000. Probable site of hearth.
EVENT MODERN EVENT Stray Finds - Non verified

Modern - 2000

(1) Found at Gutner Point in 2000.

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Hampshire County Council

Archaeology and Historic Buildings Record

Site UID: 282 West Stoke House — Havant (unparished) — HISTORIC BUILDING
SU 71909 02439 — Additional Info Held ? N

EVENT HOUSE — Listing

Post Medieval - 1800 to 1835

House. Early C19. Roughcast walls, tiled roof. Symmetrical (west) of 2 storeys, 2 windows. Brick dentill eaves. Sashes in exposed frames. Doorcase with cornice on brackets, and architrave. The rear elevation (to the double pile) is similar, with a north side wing. Red brick boundary wall in Flemish garden wall bond, with doorway entrance.

STATUS Listed Building — Grade II

Site UID: 1325 Old Fleet Manor — Havant (unparished) — HISTORIC BUILDING
SU 72231 01679 — Additional Info Held ? Y

EVENT HOUSE — Altered

Post Medieval - 1700 to 1799

See list description

EVENT HOUSE — Built

Medieval to Post Medieval - 1500 to 1599

See list description

EVENT MODERN EVENT — Listing

Modern - 1952

House. C16. Timber-frame, with a thatch roof. 2 storeys and attic, 4 main bays, each with a window. Hipped roof, brought to a low eaves in a north-end outshot, one gabled and tiled former (with tiled roof below); shafted stack. Exposed frame with arch bracing, filled with painted brickwork. Casements. Old solid doorframe, with C18 2-panelled door.

STATUS Group Value

STATUS Listed Building — Grade II

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Hampshire County Council

Archaeology and Historic Buildings Record

Site UID: 6833 Barn at Lower Tye Farm, on East Side of Farmyard — Havant (unparished) — HISTORIC BUILDING
SU 73033 02221 Additional Info Held ? N

EVENT BARN Listing

Post Medieval - 1758

Barn. Dated 1758. Timber frame with weatherboarded cladding on brick plinth, the plinth mostly rebuilt late C20. Thatch roof. 3 bays with rear aisle. Yard elevation: tall, central, double, board
cart door; small glazed opening to right. One small opening to right return, and two to left return, one boarded across. Interior; jowelled posts arch braced to arcade plate and to tie beams, the tie beam on left of cart entrance with date and initials "R" raking Queen Strut roof trusses clasping through purlins; old rafters.

STATUS Group Value

STATUS Listed Building Grade II

Site UID: 6834 Lower Tye Farmhouse and Attached Outbuilding — Havant (unparished) — HISTORIC BUILDING
SU 73033 02271 Additional Info Held ? N

EVENT FARMHOUSE Listing

Post Medieval to Modern - 1800 to 1990

Farmhouse and attached outbuilding. Early C19 with C20 alterations and restoration 1988. Red brick with blue brick headers; in Flemish bond to front and rear, Sussex bond to returns; outbuilding
of brick in stretcher bond. Plain tile roof. 2 storeys, 2 bays, 2 parallel ranges under m roof; one storey one bay having late C20 door and gabled Tuscan porch. Late C20 2 light, small pane windows in openings with projecting sills and on ground floor segmental brick dentilled eaves and hipped roof. Rear: 1950's single storey gabled addition on left is not of special interest. Central old 2 panel door with wood frame and hood. 2 segmental arched windows to right, of 2 and 1 lights; two 2 light, 4 pane windows set under eaves. Stepped dentilled eaves. End stair to right. Board door to outbuilding. Interior: on ground floor front range, formerly 2 rooms, has small brick fireplace at right end and larger fireplace with timber bressumer at left end; fireplace in rear left room has bread oven on left side and formerly a set-pot on right side (removed). Old doors on 1st floor, the front rooms being the principal rooms and having 2 panel doors and cupboards with clothes pegs flanking fireplaces.

STATUS Group Value

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Archaeology and Historic Buildings Record

STATUS Listed Building Grade II

Site UID: 6856 Forge Cottage Havant (unparished) HISTORIC BUILDING
SU 72191 01837 Additional Info Held ? N

EVENT HOUSE Listing
Post Medieval - 1735 to 1765

House, and forge building. Mid C18. Roughcast, brick, with a C20 tile roof. 2 storeys, 4 above 2 windows. Modillion cornice to the eaves, 1st floor band, plinth: red brickwork to the forge. Upper casements, lower sashes in exposed frames. C20 doorway, with large glazed porch, forge has an old boarded door in a solid frame.
STATUS Listed Building Grade II

Site UID: 6857 Stoke Cottage Havant (unparished) HISTORIC BUILDING
SU 72204 02049 Additional Info Held ? N

EVENT HOUSE Listing
Post Medieval - 1600 to 1799

House C17, with C18 additions. Timber framed house with later roughcast cladding. 1 storey and attic, 1 above 2 windows. Thatched roof, large central eyebrow, catslide at rear. Modern casements and small porch. Later single storeyed wing at the east side.
STATUS Listed Building Grade II

Site UID: 6858 Cottrell Farmhouse Havant (unparished) HISTORIC BUILDING
SU 72070 02231 Additional Info Held ? N

EVENT FARMHOUSE Listing

Post Medieval - 1765 to 1799

House. Late C18, brick, with a tile roof. Symmetrical front (west) of 2 storeys, 2 windows. Brick walling in blue headers with red flush dressings; eaves fascia, rubbed arches (openings narrowed), vertical bands and quoins, (projecting) first floor band, cill height plinth. Early C19 sashes. Canopy on brackets above a plain doorway.

STATUS Listed Building Grade II

Site UID: 6861 Oakdene Havant (unparished) HISTORIC BUILDING

SU 72043 02313 Additional Info Held ? N

EVENT HOUSE Listing

Medieval to Post Medieval - 1500 to 1599

House. C16. Timber framed narrow house, with a thatched roof. 1 storey and attic, irregular fenestration. 1/2 hipped thatch roof, with eyebrow to dormer. Exposed framing with infill of stone rubble, plaster and brick-work, lower walls of brickwork at the north and south (C20) gables. Casements. Boarded door with a gabled hood on brackets.

STATUS Listed Building Grade II

Site UID: 6862 Vine Cottage Havant (unparished) HISTORIC BUILDING

SU 72011 02422 Additional Info Held ? N

EVENT HOUSE Listing

Post Medieval - 1700 to 1799

House. C18. Roughcast walls, roof of thatch and tiles. 1 storey and attic, 2 windows. Eaves raised above the upper windows, which have cills at eaves level. Casements. Late C20 panelled door.

Lead fire insurance sign. The rear has a tiled catslide roof.

STATUS Listed Building Grade II

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Hampshire County Council

Archaeology and Historic Buildings Record

Site UID: 6932 Middlestoke Farmhouse — Havant (unparished) — HISTORIC BUILDING
SU 72257 02411 — Additional Info Held ? N

EVENT FARMHOUSE — Listing

Post Medieval - 1600 to 1835

House. C17, early C19 alterations. A timber framed house with a late addition, forming an l-shape. Roughcast and brick walls, thatch and tile roof. Symmetrical south front of 2 storeys, 2 windows; roughcast walls, casements, and plain boarded door. The east elevation shows the line of the earlier casements, and plain boarded door. The east elevation shows the line of the earlier catslide roof as a roughcast gable, the north side (of 2 storeys, 2 windows) having red brick walls in Flemish bond with blue headers; sashes in exposed frames, and a C20 doorway. Within the angle there are tile roofed outshots, tile valleys, and a small exposure of the timber frame.
STATUS Listed Building — Grade II

Site UID: 6973 Granary (10 yds N of Upper Tye Farm) — Havant (unparished) — HISTORIC BUILDING
SU 73151 02443 — Additional Info Held ? N

EVENT GRANARY — Built

Post Medieval - 1765 to 1799

See list description
EVENT MODERN EVENT — Listing

Modern - 1984

Granary. Late C18. Timber frame on 6 staddles, bricknogged. Hipped tile roof.
STATUS Listed Building — Grade II

Site UID: 6974 Granary (30 yds W of Tye Farm) — Havant (unparished) — HISTORIC BUILDING
SU 72981 02324 — Additional Info Held ? N

EVENT GRANARY — Built

Post Medieval - 1800 to 1835

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See List Description
EVENT MODERN EVENT BAR Survey

Modern - 2005

As of 31/12/2005: In poor state of repair, still plate on saddle stones showing signs od failure and weatherboards are slipping or missing.
EVENT MODERN EVENT Building Survey

Modern - 1990 to 2000

Buildings at Risk Survey
EVENT MODERN EVENT Listing

Modern - 1984

Large granary. Early C19. Timber frame on 7 x 3 staddles. 1/2 hipped corrugated iron roof. Boarded walls.
STATUS Building at Risk

STATUS Listed Building Grade II

Site UID: 6989 72 Havant Road Havant (unparished) HISTORIC BUILDING
SU 72098 02220 Additional Info Held ? N

EVENT BARN Built

Post Medieval - 1812

See list description.
EVENT BARN Demolished

Modern - 1987 to 2000

Barn demolished following severe storm damage.
EVENT HOUSE Built

Modern - 1988 to 2000

New house built reusing some material from demolished barn.
EVENT MODERN EVENT Listing

Modern - 1988

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Hampshire County Council

Archaeology and Historic Buildings Record

1) Originally listed as The Barn, Cottrell Farm (10-Nov-1988), and had the following description: Barn. Dated 1812 but reusing earlier timbers. Built of brick in English bond with half hipped slate roof. 4 bays with opposite cart entrances in penultimate bay to south. Decorative diamond shaped brick ventilation slits opening in each gable. Interior has roof with angled brick queen struts, ridge piece and staggered purlins. Date of 1812 and initials I W S carved on penultimate tie beam to south. Date of 1607 carved on reused timber, forming collar beam under north half tip. 2) Removed from statutory list on 22-Dec-2000. Was apparently severely damaged in the 1987 storm(S). Following this, a new dwelling (No.72 Havant Road) has been created on the same site, re-using materials from the now destroyed barn. Database record changed to 'not graded'. (Additional information via DCMS. [9-Dec-2000. Plansn]).

STATUS Listed Building Grade II

STATUS Unlisted Building

Site UID: 6990 The Granary, Cottrell Farm Havant (unparished) HISTORIC BUILDING

SU 72080 02219 Additional Info Held ? N

EVENT GRANARY Altered

Post Medieval to Modern - 1900 to 1988

See list description

EVENT GRANARY Built

Post Medieval - 1800 to 1835

See list description

EVENT MODERN EVENT Listing

Modern - 1988

Granary. Early C19. Timber framed granary clad in weatherboarding with half hipped roof now covered in asbestos sheeting on mushroom shaped staddle stones. Square building 3 x 3 bays. Entrance by boarded door. Interior retains grain bin. Included for group value.

STATUS Group Value

STATUS Listed Building Grade II

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Archaeology and Historic Buildings Record

Site UID: 7035 Granary (10 yds E of Old Fleet Manor) Havant (unparished) HISTORIC BUILDING
SU 72249 01665 Additional Info Held ? N

EVENT GRANARY Built

Post Medieval - 1700 to 1799

See list description
EVENT MODERN EVENT Listing

Modern - 1984

Granary. C18 timber frame, bricknogged, on staddles. Hipped thatched roof.
STATUS Group Value

STATUS Listed Building Grade II

Site UID: 42576 Stables 50m SSW of Lower Tye Farmhouse Havant (unparished) HISTORIC BUILDING
SU 73016 02220 Additional Info Held ? N

EVENT STABLE Recorded Observation

Post Medieval - 1865 to 1879

Unlisted Stable at Lower Tye Farm. Late C19, certainly there by 1879 (OS 1st Series mapping). Low, single-storey range, attached to the south-west corner of the barn (MONUID.6833) and effectively forming the south side of the farmyard. Mostly of brick or brick dressings, with panels or areas of coursed flint pebbles. Pitched roof of thatch, hipped at the west end. Split doors to loose boxes, in north side.
STATUS Unlisted Building

Site UID: 42588 Upper Tye Farmhouse Havant (unparished) HISTORIC BUILDING
SU 73149 02424 Additional Info Held ? N

Hampshire County Council

Archaeology and Historic Buildings Record

EVENT FARMHOUSE Altered

Post Medieval to Modern - 1800 to 1991

See list description
EVENT FARMHOUSE Built

Post Medieval - 1700 to 1799

See list description
EVENT MODERN EVENT Building Survey

Modern - 1983

Listing Survey Sketches: Havant Borough
EVENT MODERN EVENT Recorded Observation

Modern - 1980 to 1990

Unlisted Farmhouse at Upper Tye Farm. C18, though probably earlier, altered and extended in C20. One-and-a-half storey timber-framed house, with wattle and daub infill panels, now largely rendered. Half-hipped thatched roof with decorated block ridge. Large central brick stack and smaller tall brick stack at west end. Rear thatched roof slope, brought down to low eaves (later rear extension?) With heavy eyebrow dormers. Later, modern, pent-roofed bay window at ground floor of east gable end. In centre of main entrance front (south elevation) is a later thatched roof, brick porch, with wavy-edged weatherboarded gable pediment. Modern, lean-to, pent-roofed (corrugated plastic) extensions to either side of this porch.
STATUS Unlisted Building

Site UID: 42589 Stables 15m East of Upper Tye Farmhouse Havant (unparished) HISTORIC BUILDING
SU 73175 02425 Additional Info Held ? N

EVENT STABLE Recorded Observation

Post Medieval - 1865 to 1879

Unlisted Stable range at Upper Tye Farm. Late C19, certainly there by 1879 (OS 1st Series mapping). Rectangular, one-and-a-half storey building, of flint pebbles with red brick quoins and dressings, built along the roadside on the east of the farmyard. Pitched roof of slate. Internally; wooden divisions between loose boxes, hayloft over. This stables was originally part of a longer range, extending to the north, but the building now adjoining here (of concrete block, brick dressings and slate roof), is a more recent replacement or rebuild.
STATUS Unlisted Building

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Hampshire County Council

Archaeology and Historic Buildings Record

Site UID: 42591 Garage 20m ENE of Old Fleet Manor — Havant (unparished) — HISTORIC BUILDING
SU 72261 01684 — Additional Info Held ? N

EVENT GARAGE — Altered
Modern - 1901 to 1991

See list description
EVENT MODERN EVENT — Recorded Observation
Modern - 1980 to 1990

Unlisted former Stable at Fleet Manor Farm, now altered and converted into a garage. Late C19, certainly there by 1879 (OS Historic mapping). Timber-framed building of relatively small scantling, being the remains of a stable sited on the south-east side of the former farmyard here. Converted in the modern period (certainly before 1991) into a garage: timber frame now exposed, with modern (rendered and painted) infill panels. Half-hipped roof is covered in tile. At one end (north?), A pair of modern, wooden double doors have been inserted, above which is modern door in what may have been the original hayloft door at that end.
STATUS Unlisted Building

Site UID: 55950 Site of The Barn, Cottrell Farm — Havant (unparished) — HISTORIC BUILDING
SU 72098 02220 — Additional Info Held ? N

EVENT BARN — Built
Post Medieval - 1812

See list description.
EVENT BARN — Demolished
Modern - 1987 to 2000

Barn demolished following severe storm damage.
EVENT MODERN EVENT — Listing
Modern - 1988

Barn. Dated 1812 but reusing earlier timbers. Built of brick in English bond with half hipped slate roof. 4 bays with opposite cart entrances in penultimate bay to south. Decorative diamond shaped brick ventilation slits opening in each gable. Interior has roof with angled queen struts, ridgepiece and staggered purlins. Date of 1812 and initials I W S carved on penultimate tie beam to south. Date of 1607 carved on reused timber forming collar beam under north half hip.

Hampshire County Council

Archaeology and Historic Buildings Record

STATUS Listed Building Grade DL

STATUS Unlisted Building

Indicative North

Yacht Haven

G1 G2 G3 G4 G5 G6 G7 G8

YACHTHAVEN CONSERVATION GRASSLAND
AREA TO TO BE CLEARED (IF ANY) AND NATURAL SEED MIXTURE GRASSLAND (NATURE RESERVE) WITH NO PEDESTRIAN ACCESS. PLEASE SEE DPM ECOLOGY REPORT FOR RECOMMENDATIONS

ecourban consulting

ECO 2 - TREE PROTECTION MEASURES AT YACHTHAVEN, HAYLING ISLAND

SCALE: 1:500 @ A1

COMPOSITE PLAN: LAND SURVEY OUTLINED IN GREY, PROPOSED DEVELOPMENT SHOWN IN BLUE

G1 BS Category A: Trees of high quality and value

G1 BS Category C: Trees of low quality and value

Tree protective barriers with construction exclusion zone

Area outside barriers where existing road level is to be raised using a 'low invasive' construction technique

Area outside barriers where existing road is to be reinforced with ground protection

YACHTHAVEN, HAYLING ISLAND

ENVIRONMENTAL STATEMENT

DECEMBER 2011

APPENDIX 10.1

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Arboricultural Implications Assessment and Method Statement

YACHTHAVEN, COPSE LANE, HAYLING ISLAND

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Arboricultural Consultant

Report Ref: **11149-AIA**

Report Date: **31 March 2011**

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1 INTRODUCTION

1.1 **Instruction:** I am instructed by Yachthaven (Hayling) Ltd to survey the trees that could be affected by a development proposal at Yachthaven, Copse Lane, Hayling Island and prepare a Arboricultural Implications Assessment (AIA) and Arboricultural Method Statement (AMS) report.

1.2 **Scope of report:** All my observations are of a preliminary nature, and the tree survey was carried out from ground level without detailed investigations. I have not checked the accuracy of the positions of the trees shown on the provided plans, and I have estimated all dimensions unless otherwise indicated.

1.3 **Document disclosure:** I have been provided with a topographical survey, drawing number 2000/025-fastnet. This shows the positions of the significant trees on or near the site, together with the existing buildings and other important features. I was also supplied with a copy of the proposed layout, drawing number 4784 1105 1.

1.4 **The Tree Protection Plan (TPP)**: This is included in Appendix 1, and is a composite drawing derived from the information provided. It shows the existing landscape features (from the land survey) in grey, and the proposed layout shown superimposed over the top in blue. This allows the relationship between the two to be clearly seen. The TPP has also been annotated to show proposed tree protection measures, and areas where there are activities in Root Protection Areas (RPAs), along with any tree management intentions.

1.5 **Qualifications and experience:** This report is based on my site observations, and I have come to my conclusions in the context of my experience as a former local government tree officer and a private practice arboricultural consultant. I have qualifications in both arboriculture and forestry, and details of these, together with a career summary are provided in Appendix 7.

1.6 **Ecological constraints and statutory tree protection:** Providing guidance on ecological issues is not within my sphere of expertise. However, trees and other vegetation can often provide nesting, roosting and feeding opportunities for protected species.

Therefore, before any work proceeds on site, I advise that guidance is sought from a qualified ecologist to check whether any statutory wildlife constraints apply to the site.

In addition, I have not checked with the council whether any of the trees on this site are covered by tree preservation orders, or whether it is located in a conservation area. Any person intending to carry out any operations involving trees, before a formal planning consent is issued should consult the council before any works are carried out.

2 SITE VISIT, DESCRIPTIONS, OBSERVATIONS AND SURVEY METHODOLOGY

2.1 **Site visit:** I visited the site on 25 October 2010 to gather my tree data. The weather at the time of my survey was clear, still and dry, with good visibility.

2.2 **Description of site and surrounds:** Yachthaven is located off of Copse Lane on Hayling Island (Figure 1). The site is accessed from the southern side of the road, via an unmetalled track and consists of an area of disused land (with some derelict buildings) which is located immediately adjacent to the nearby shore. A public footpath runs along the southern perimeter of the site (adjacent to the shore) and this links to another footpath which runs adjacent to part of the western boundary, before it heads in a north-westerly direction to meet Copse Lane.

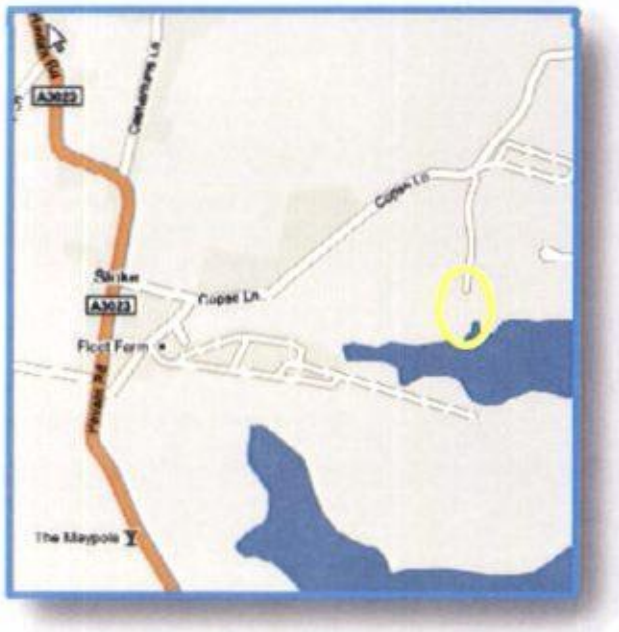


Figure 1: Approximate geographical location of the site in yellow

2.3 **Observations of trees and other vegetation:** Groups of larger trees (with smaller understorey planting) are located for the most part between the public footpath and the western and north western boundaries of the site and also flanking the northern periphery of the main part of the site. The principal canopy class species within these groups is oak.

2.4 **Description of proposed development:** This development proposal is for a new marina, with residential development.

2.5 **Tree survey methodology:** My inspection of the trees was visual, and did not involve any climbing or exploratory investigation. During my visit, I identified obvious groups where this was appropriate and I assigned an identification number to each tree or

group, as shown on the plan in Appendix 1. I then collected the tree data included in Appendices 2 and 3 and placed each individual tree or group in one of four categories (A, B, C or R), as set out in British Standard (BS) 5837: Trees in relation to construction – Recommendations. I have included the BS categorisations in Appendix 6 for easy reference. Where of relevance, I also estimated the crown spreads for each tree at the appropriate cardinal compass points, and this information is shown in the tree schedule in Appendix 2.

Attributing arboricultural values to tree belts/tree groups in this context is not especially helpful in assessing their importance. I have therefore (for the most part) categorised the trees based on their visual importance using the BS 5837 (2005) landscape criteria. I have assigned the more visually prominent trees to the A2 category, with those smaller, poorer quality or less prominent trees and groups assigned to the BS C2 Category accordingly.

Although this document is not meant to be a full and detailed report on tree health and safety, any significant visible structural defects or physiological conditions identified, together with preliminary tree works, are also noted in the appropriate columns in the tree schedule in Appendix 2. However, a full post development tree inspection is recommended to establish that the trees retained during construction pose acceptable levels of risk once the development has been completed.

2.6 **Data interpretation:** The tree data and Root Protection Area (RPA) calculations are shown in Appendix 3. As set out in paragraph 5.2.4 of the BS, the RPAs may have been adjusted as a matter of arboricultural judgement, to indicate the estimated likely position of tree roots. These modified (or unmodified) RPAs dictate the location of the tree protection barriers and other protective measures as shown on the plan included in Appendix 1. Where there is a need for incursions into RPAs, an initial assessment of the implications of these activities is set out in Section 3 (Arboricultural Implications Assessment) of this report. Where appropriate, details of suitable work methodologies to mitigate any impact are set out in Section 5 (Arboricultural Method Statement).

3 ARBORICULTURAL IMPLICATIONS ASSESSMENT

3.1 **Overview of the implications of the development proposal on trees:** BS 5837 (2005) – Trees in relation to construction – Recommendations sets out in some detail how trees on development sites should be managed. In general terms, the best quality trees or those belonging to the higher BS categories (A and B) are considered as potential constraints on any development proposal, whereas those belonging to Category C would not normally be retained where they would impose a significant constraint on site development or redevelopment. Category R trees are in such poor condition that they are normally removed for sound arboricultural management reasons, regardless of any development proposal. Therefore, these trees can be effectively discounted in the context of the planning process.

On this site a total of EIGHT individual trees and groups were recorded during the tree survey and were assigned to the BS 5837 (2005) categories, as set out in Figure 1 below:

Category A and B trees	A total of SIX trees and groups (G1, G2, G3, T4, G5 and G7) were rated Category A
Category C trees	A total of TWO groups (G6 and G8) was rated Category C
Category R trees	No trees or groups were rated Category R

Figure 1: Tree numbers and BS categories

I have focussed on the implications of the development proposal mainly on the important trees on or near the site (Category A) in terms of tree loss/retention and by the extent of any incursions into and/or disturbance to Root Protection Areas (RPAs).

Of the total of EIGHT trees and groups surveyed, SEVEN can potentially be retained, with only ONE group perhaps needing to have some changes to its existing configuration. Of the remaining trees and groups, FOUR will have activities arising from the development occurring within their RPAs. I have summarised the implications in Figure 2 below and set these aspects out in more detail in the following paragraphs.

Trees to be removed for development		Activities in RPAs arising from the development proposal	
Category A and B	Category C	Category A and B	Category C
-	G6 (partial)	G2, G3 T4 and G5	

Figure 2: Trees lost and activities in RPAs arising from the development proposal

3.2 **Direct implications of the development proposal - Tree retention and tree loss**

3.2.1 **BS Category A and B trees to be retained (trees of high and moderate quality and value):** All the high category trees surveyed will be retained and protected in accordance with the guidance set out in BS 5837 (2005). Consequently, no high category trees will need to be removed.

3.2.2 **BS Category C trees to be removed (or those of low quality and value):** As discussed, trees belonging to Category C are not normally retained where they would impose a significant constraint on the development or redevelopment of a site. In this instance, some category C trees/shrubs from group G6 may need to be removed to facilitate the development proposal. This group is located on (or close to) the eastern boundary of the site and consists of a reasonably diverse collection of trees/shrubs orientated in a north/south direction in a more or less linear formation. Many of the trees/shrubs are small in size, whilst others do not appear to be in particularly good condition. In addition, when viewed from a distance the planting gives an overall impression of being uncoordinated, with some trees having tall, drawn up form, whilst others have a more shrubby type appearance. There are also some gaps in the overall formation. Nonetheless, this group occupies a prominent position of the eastern boundary. Some of the vegetation in this area may need to be removed, but this will also provide an opportunity for some new tree and shrub planting that could be more visually coordinated and in keeping with the new development and its maritime environment. I do not perceive this potential limited loss of vegetation to be a particular problem,

provided there is sufficient replanting to maintain (and potentially improve) the boundary screening in this area.

3.3 **Additional implications arising from the development proposal**

3.3.1 **BS Category A and B trees and activities in RPAs:** Groups G2, G3 and G5 and tree T4 will have activities arising from the development occurring in their RPAs, as follows:

- **Upgrading of existing road infrastructure:** The construction of existing roads around the perimeter of the site close to trees in groups G3 and G5 and also tree T4 appears to be compacted aggregate fill. For the new development, it will be necessary to formalise the road access arrangement and also raise the levels slightly above the existing. The consensus following preliminary on-site discussions with PWP Architects is that this could be achieved using a 'low invasive' construction technique that would represent minimal risk of harm to the nearby trees. Clearly, the final design will need appropriate engineering input, but in principle the sub base for the new road configuration could be a cellular confinement system. This will negate the need for significant excavation and excessive disturbance in the RPAs of nearby trees, with the change in levels accommodated by selection of the appropriate depth of cell and also by the use of appropriate aggregate fills, if required. The use of cellular confinement systems is fully supported in BS 5837 (2005 - para 11.8). The removal of the existing compacted informal aggregate road close to the trees and its replacement with a suitably designed, carefully constructed and permeable surfacing would potentially would also be of benefit to the trees and be an improvement on the current situation.

- **Protection of trees adjacent to main access during construction:** There are important groups of trees (G1 and G2) positioned on either side of the existing access drive into the site. Issues regarding the movement of construction traffic in and out of the site have not been fully explored. However, in the event that construction traffic would utilise the existing access, appropriate consideration needs to be given to the potential implications of this on the nearby trees to be retained. The trees either side of the existing drive have RPA radii in the 5.5m to 8m range and I would tentatively suggest that the roots from these trees are likely to be

present under the existing access drive. Therefore, the individual BS derived RPAs of the trees can be viewed as coalescing to form a single sensitive area under the drive that needs to be protected. The drive is unmetalled and appears to be mainly compacted aggregate fill. Consequently, this will need to be upgraded to provide some degree of tree root protection, if the intention is to bring construction traffic into the site using the existing access. The protection of the ground and trees could be achieved by either the placing of a cellular confinement system (this could be temporary or permanent depending on the final intentions for surfacing), or could be achieved by the installation of a temporary metal roadway, such as that provided by Eve Trakway (www.evetrakway.co.uk). The protective barriers around the trees would need to be set back to allow sufficient space for construction traffic to enter and exit, with a combination of ground protection and tree barriers effectively protecting the trees during this crucial phase.

I have reviewed the above very carefully and considered any possible implications on the nearby trees arising from these activities close to their positions. My view is that provided these activities are appropriately supervised and correctly implemented, the trees indicated can be successfully retained with minimal risk of adverse effects.

3.4 **Protection of trees during construction and mitigation for trees to be lost**

3.4.1 **Tree protection during development:** The means of protecting trees on development sites can include the installation of protective barriers/ground protection, as well as the prohibition of potentially damaging activities. An Arboricultural Method Statement is included in Section 5 setting out the various issues associated with successful tree retention and protection in a development context on this site.

3.4.2 **Strategy for new tree planting:** At the current time the main part of the site is bereft of trees. The development proposal is therefore an opportunity to provide some substantial new tree planting that will complement the existing groups of trees located on the periphery of the site. The new trees will need to be carefully selected to ensure that they are in keeping with the development and appropriate to the maritime environment. However, my view is that with appropriate arboricultural input, the site

could accommodate new tree planting that would be able to attain a significant size in maturity, adding considerable amenity to an area that is currently devoid of trees.

4 SUMMARY OF THE IMPLICATIONS OF THE DEVELOPMENT ON TREES

4.1 **Summary:** Of the total of EIGHT trees and groups surveyed, SEVEN will be retained, with only ONE group needing to be remodelled, possibly requiring the removal of some of the existing shrubs and trees. Of the retained trees and groups, FOUR will have activities arising from the proposed development occurring within their RPAs. These activities include the installation of ground protection in the main access drive during the construction phase of the project and also the upgrading and formalising of the existing road infrastructure close to nearby trees. Details relating to these aspects, together with tree protection information are included in this report.

I have considered the situation in some detail, and my view is that in principle the development is arboriculturally acceptable. If careful planning is undertaken and appropriate care is adopted during construction, I believe that there will be little risk of any adverse impact on the nearby trees to be retained and any contribution that they make to public amenity or local landscape character.

5 ARBORICULTURAL METHOD STATEMENT

5.1 Tree protection issues

5.1.1 **Tree Protection Plan (TPP):** The plan in Appendix 1 is illustrative, and based on the layout drawings and topographical survey provided. Therefore, all scaled measurements should be checked against the original design documents. The attached plan and all other information in this report should only be used for dealing with the tree protection issues and all other uses are prohibited, unless authorised by Ecourban Consulting. Normally, all the existing trees will have been numbered, with high categories (A and B) highlighted in green and blue rectangles and low categories (C and R) highlighted in grey and red respectively. However, on this site no Category B or R trees were recorded. The plan also shows the locations of the proposed protective measures, including areas where special care may be required.

5.1.2 **Protective barriers:** Information on barrier design based on BS 5837 (2005) guidance is included in Appendix 4, and the approximate location of the barriers is illustrated on the plan in Appendix 1. The protective barriers would need to be erected before any materials or machinery are brought onto the site, and before any clearance or construction activities occur. Once the protective barriers have been positioned, these will stay in situ for the duration of the construction, unless previously agreed with the arboricultural consultant or council's tree officer. There will be no access into the protected area, and the storage of excavated debris and building materials will be prohibited in RPAs, unless authorised by the arboricultural consultant, after discussion with the council's tree officer. No fires or fuel storage will be allowed within or near to protected areas under any circumstances.

5.1.3 **Ground protection:** The position of suitable ground protection is shown on the plan included in Appendix 1. This would need to be installed before any materials or machinery are brought onto the site, and before any clearance or construction activities occur. The final specification for the ground protection is to be finalised at a later date, but options include a temporary metal roadway or installation of a suitable load spreading cellular system to be installed as set out in 5.2.2 below.

5.2 Arboriculturally sensitive operations

5.2.1 **Activities in Root Protection Areas (RPAs):** Work in RPAs must be done with care, as set out in the following text. Additionally, qualified arboricultural supervision is also needed to minimise the risk of misinterpretation and to reduce the chances of tree injury occurring. Accordingly, site personnel would need to be properly briefed before any activities start and all sensitive work will be inspected regularly during the course of operations. I have detailed appropriate work practices in the following paragraphs to reduce the potential of damage occurring to any nearby trees.

5.2.2 **Upgrading of existing road infrastructure:** Trees and groups G3, T4 and G5 may be affected by this activity. I have shown the position of 'low invasive' type surfacing on the plan included in Appendix 1, based on the BS derived RPAs. This would also need to act as ground protection for the parts of the trees RPA's that are outside the protective barriers, and so will need to be installed before any other construction activity occurs on site. The use of a cellular confinement system is advocated in BS 5837 (2005) as an appropriate way to achieve hard surfacing over tree roots, and the following guidance is based on this principle. However, the information below and the specifications included in the Appendix 5 will need to be reviewed by an engineering specialist at an early stage to ensure that the final construction is appropriate from an engineering viewpoint, suitable for the purpose intended and ties in with the new site levels.

- **General points:** Extensive areas of surfacing in RPAs will generally be of a permeable construction to allow water ingression to tree roots, and to assist the movement of gases in and out of the soil profile. To avoid localised compaction and other ground disturbance, the sub base for the surfacing will generally be a cellular and load spreading construction, requiring no excavation (or very limited excavation) during installation.

- **Installation:** Generally, any required changes in topography will be accomplished by raising levels rather than lowering, negating the need for any significant root disturbance. Any level changes will be achieved using uncompacted granular, permeable fills such as crushed stone or sharp sand. In this instance, the removal of the top layer of aggregate fill to a depth of 50-100mm (to provide a flat surface

APPENDIX 1: TREE PROTECTION PLAN

1 A1 plan

5.3.5 **Tree works:** Any tree pruning or tree removal operations are set out in the tree schedule included in Appendix 2.

5.3.6 **Planning, communication and timing of events:** It is not unusual for the details of timing of operations that could impact on important trees to only be finalised once planning consent has been given. Site managers, clearance and construction teams, and other important personnel are normally only appointed at this stage and it is these people who will be crucial in delivering the tree protection detailed in this report. My experience is that the pre commencement site meeting is critical in terms of avoiding damage to trees and this particular aspect, along with tree protection issues should be specifically referenced in a suitably worded planning condition imposed by the council. In the intervening time I propose the following cascading timetable of events to help minimise any risk of impact on important trees. However, the following schedule may be modified at the pre-commencement meeting, subject to discussion with all parties and agreement with the council:

1. Pre-commencement site meeting
2. Extent of arboricultural supervision agreed
3. Tree works undertaken
4. Protective barriers erected before any clearance or construction activities occur on site
5. Ground protection installed before any clearance or construction activities occur on site
6. Installation of new surfacing – Where this is to also act as ground protection, this must be installed before any clearance or construction activities occur on site
7. Installation of services

Barrie Draper BSc (Hons) Arb TechCert(ArborA) CertArb(RFS)

Arboricultural Consultant

Date: **31 March 2010**

planning condition and approved by the council before any construction activity occurs on site.

5.3 Additional tree-related issues

5.3.1 **Site supervision:** Whilst it is possible to work within RPAs, high levels of care and supervision will generally be required. Qualified arboricultural supervision is essential during arboriculturally sensitive operations to minimise the risk of any confusion, which could result in mistakes and damage occurring. Therefore, site personnel will be properly briefed (where appropriate) before any work starts, and the ongoing activities will be inspected by the arboriculturalist at crucial times to assure that the work is carried out in accordance with this document and any conditions imposed by the council.

5.3.2 **Installation of new services or upgrading of existing services:** Final details relating to services are traditionally left until after planning consent has been granted by the council. Where practicable, all new services will be outside RPAs, but where existing services within RPAs require upgrading or new provision is required, great care will be taken to minimise any disturbance. Trenchless installation will be the preferred option, but if this is not feasible, any excavation will be carried out by hand in accordance with the guidelines set out in NJUG Volume 4 - Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.

5.3.3 **Storage of materials, cement mixing and washing points:** All construction storage areas, cement mixing and washing points for equipment and vehicles will be outside RPAs, unless otherwise agreed with the council.

5.3.4 **Contractors car parking, site offices and welfare facilities:** Whilst it is possible to have site offices and welfare facilities within RPAs, care is needed in their positioning and also in the connection of water, electricity and drainage to service them. Therefore, these will generally be sited outside the RPAs, unless agreed previously with the council. Contractor's car parking facilities will also be located away from retained trees.

for the installation of the sub base) is unlikely to encounter or damage any tree roots. Any additional excavation will need to be assessed by the arboriculturalist, in consultation with the council's tree officer.

In exceptional circumstances where roots may need to be cut, those less than 25mm in diameter will normally only be cut under appropriate supervision. Any exposed roots over 25mm will only be severed on the advice of the arboriculturalist, in consultation with the council's tree officer.

- **Sub base and final wearing courses:** Once a level surface has been formed, the load spreading construction will be installed on top of the existing soil, with no compaction of the existing soil structure. For cellular load spreading constructions, the infill will be crushed stone (typically 20-40mm, clean angular stone), with no fines, as per the manufacturer's specification. This is to ensure acceptable levels of moisture penetration and gaseous exchange. A temporary wearing course of tarmac and/or aggregate, separated by a geotextile membrane is likely to be the most appropriate way of providing a suitable ground protection/working surface during the clearance and construction phase of the project. At the final stages of the construction, the temporary wearing course will be removed (under arboricultural supervision), and the final surfacing will be installed. Suitable final wearing courses include bonded gravel, paving slabs, washed gravel or block paviours set on a sand base, although other surfacing may be suitable after consultation with the arboriculturalist.

- **Edge retention:** The use of pre-formed edging, wooden boards or railway sleepers is suggested in BS 5837 (2005) as effective edge supports in RPAs, to be secured by metal rods, track or road pins or wooden pegs. This, or a similar approach (negating the need for excessive disturbance in RPAs) will be used to minimise any adverse risk of impact on trees.

- **Illustrative specifications:** Final drawings will be prepared by the project engineer. These will be based on the illustrative manufacturers specifications for special surfacing included in Appendix 5, or an alternative 'low invasive' construction technique. These definitive plans can be secured by way of a suitably worded

APPENDIX 2: TREE SCHEDULE AND INVENTORY

Background fill colour represents BS 5837 codes: A Category trees have green backgrounds, B Category trees have light blue backgrounds, C Category trees have grey backgrounds and R Category trees have red backgrounds.

Tree number	Species	Height (m)	Stem diameter (cm)		Branch spread (m)				Height crown clearance (m)	Age class	Notes: Including physiological and structural condition	Management proposals	BS category
			@1.5 m	Base	N	E	S	W					
All trees												Crown clean all trees. Where appropriate, crown lift trees to 4m over site and 5m over public carriageway	
G1	Oak	<12	<65		<8	<8	<8	<8	4	M	Two trees flanking the entrance to the site. Ivy on main stems		A2
G2	Oak with mainly hawthorn and field maple understorey	<12	<45*		<8	<8	<8	<8	n/a	MA	Trees with similar attributes flanking the side of the compacted aggregate access drive into the site.		A2
G3	Oak with mainly hawthorn and field maple understorey	<10	<45*		<6	<6	<6	<6	n/a	MA	Trees with similar attributes adjacent to northern boundary, with compacted aggregate drive to south		A2
T4	Oak	12	58		<8	<8	<8	<8	4	MA	Single tree positioned between G2 and G5		A2
G5	Oak with mainly hawthorn and field maple understorey	<9	<40*		<5	<5	<5	<5	n/a	MA	Trees with similar attributes adjacent to western and north western boundary		A2

APPENDIX 2: TREE SCHEDULE AND INVENTORY

Tree number	Species	Height (m)	Stem diameter (cm)		Branch spread (m)				Height crown clearance (m)	Age class	Notes: Including physiological and structural condition	Management proposals	BS category
			@1.5 m	Base	N	E	S	W					
G6	Mixed species including poplar with goat willow, hawthorn and field maple shrubs	<13		<40*	<6	<6	<6	<6	n/a	MA	Poorer quality boundary planting toward western perimeter. Gappy and sporadic in places	Remodel group removing trees and shrubs where appropriate and replanting with new suitable species	C1/C2
G7	Oak with mainly hawthorn and field maple understorey	<14	<80		<8	<8	<8	<8	n/a	M	Trees with similar attributes adjacent to far western boundary		A2
G8	Mainly hawthorn and blackthorn	<4		<25*	<4	<4	<4	<4	n/a	MA	Scattered individual and groups of small trees/shrubs with similar attributes		C2

ABBREVIATIONS:

Abbreviations	Meaning	Abbreviations	Meaning	Abbreviations	Meaning
T	*Individual tree*	M	*Mature*	RPA	*Root Protection Area*
G	*Groups of trees*	MA	*Maturing*	<	*Less than*
H	*Hedge*	Y	*Young*	>	*More than*

APPENDIX 2: TREE SCHEDULE AND INVENTORY

TREE SCHEDULE GUIDANCE NOTES:

Tree number	*Assigned during the site visit and also referenced on the plan in Appendix 1.*
Species	*Common name and referenced to scientific name in the above list. Where I have some doubt over the actual tree species, the genus will have been noted followed by sp. Where trees are numerous and present in groups, not every individual species may have been noted.*
Height	*Measurement of total tree height using a laser hypsometer to nearest metre.*
Stem diameter	*Measurement of stem diameter either at ground level or 1.5m above ground with a forester's girth measuring tape. Diameters followed by asterisk symbol indicate estimated diameters because of access difficulties, presence of ivy or other obstructions. Where trees are present in a group, the tree with the largest stem diameter within the group will have been measured/estimated.*
Branch spread	*Where appropriate and where ground conditions allow, an estimate of the crown spread at each of the cardinal compass points. Where only part of the site is affected by trees, measurement may be in one or two directions only*
Height crown clearance	*Distance in metres from where main crown begins to ground level and the point beyond where crown lifting would not be appropriate.*
Age class	*Simplistic estimate of tree age in one of three categories (young, maturing or mature).*
Notes	*Although this document is not intended to be a full and detailed report on tree health and safety, any significant structural defects or physiological conditions have been identified where these were visible. Where no entries are recorded, this indicates no observable issues were identified. Where there is restricted access to the base of a tree, its attributes are assessed from the nearest point of access. Climbing inspections are not carried out during a walkover tree survey and, if heavy ivy is present, tree condition is assessed from what can be seen from the ground.*
Management proposals	*The inspection of all trees was of a preliminary nature and only defects visible from the ground have been identified. Each individual tree may not have been inspected closely because of access difficulties and only defects visible from the inspection point have been identified. Monitoring may be indicated where tree risk can be adequately managed by increased frequency of site inspections. Further investigation may be indicated where additional data may be required beyond a purely visual assessment. However, a full post development tree inspection is recommended to establish that the trees retained during construction pose acceptable levels of risk once the development has been completed.*
BS 5837 (2005) Category	*Either R, A, B or C based on the BS 5837 (2005) guidance.*

APPENDIX 2: TREE SCHEDULE AND INVENTORY

TREE INVENTORY:

Common Tree Names	Scientific Tree Names		Common Tree Names	Scientific Tree Names
Blackthorn	*Prunus spinosa*		Hawthorn	*Crataegus monogyna*
Field maple	*Acer campestre*		Oak	*Quercus robur*
Goat willow	*Salix caprea*		Poplar	*Populus* sp

APPENDIX 3: ROOT PROTECTION AREA (RPA) DATA

Tree No	Diameter (cm)		RPA radius (m)	RPA area (m^2)
	@1.5m	Base		
G1	<65		7.8	191
G2	<45*		5.4	92
G3	<45*		5.4	92
T4	58		7.0	152
G5	<40*		4.8	72
G6		<40*	4.0	50
G7	<80		9.6	290
G8		<25*	2.5	20

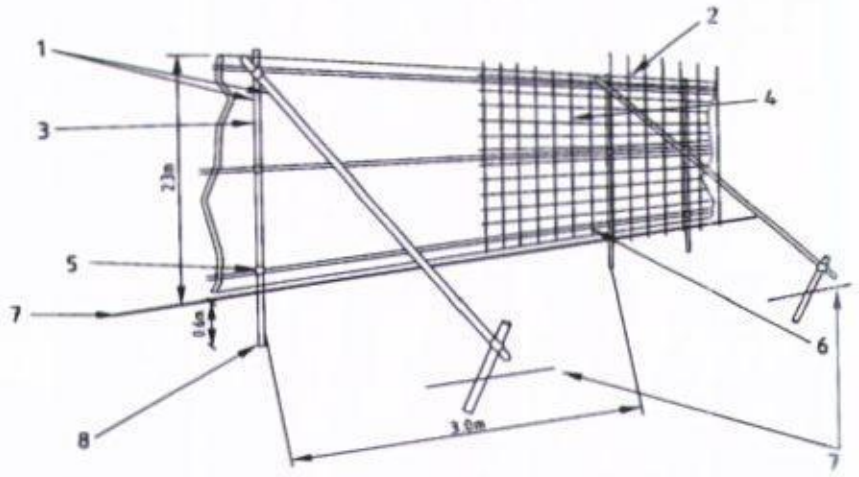
Notes:

General	*Tree numbers and stem diameters are the same as those identified in the tree schedule in Appendix 2. RPA radius and RPA area calculations have been undertaken in accordance with the guidance set out in BS 5837 (2005).*

APPENDIX 4: ILLUSTRATIVE SPECIFICATION FOR TREE PROTECTION BARRIERS







1 Standard scaffold poles
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and where necessary standard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6 m driven into the ground

Illustration taken from British Standard (BS) 5837: Trees in relation to construction – Recommendations.

'Barriers shall be fit for purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around retained trees. On all sites, special attention should be paid to ensuring that barriers remain rigid and complete. In most cases barriers should consist of a scaffold framework, comprising a vertical and horizontal framework, well braced to resist impacts, with vertical tubes spaced at maximum interval of 3m. Onto this, weld-mesh panels should be securely fixed with wire or scaffold clamps.'
– BS 5837 (2005)

Ref: Tree Protection Barriers	Drawing No. TPB1
Scale: N/A	

APPENDIX 5: ILLUSTRATIVE SPECIFICATION FOR 'LOW INVASIVE' TYPE SURFACING IN RPAs





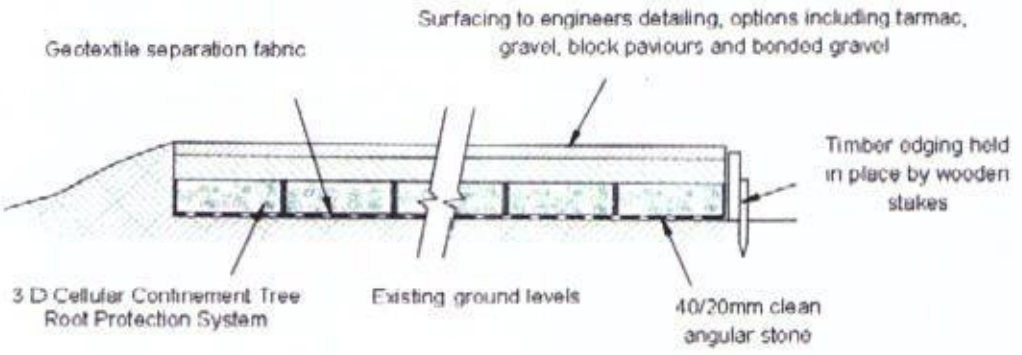


Illustration adapted from original drawings provided by Geosynthetics Ltd.

'Where the construction of hard surface access cannot be avoided within the root protection area, a no-dig design should be used to avoid root loss due to excavation. In addition the structure of the hard surface should be designed to avoid localized compaction by evenly distributing the carried weight over the track width and wheelbase of any vehicles that will use the access. Such designs might include the use of a three dimensional cellular confinement system as an integral component of the sub-base, to act as a load suspension layer....Where the new access would cover in excess of 20 % of the RPA or be wider than 3 m within it, it should be constructed so as to allow moisture infiltration and gaseous diffusion.... If a hard surface is proposed above the granular material, a permeable and gas-porous finished surface (wearing course) should be installed'.

– BS 5837 (2005)

Ref: No dig surfacing	Drawing No. NDS1
Scale: N/A	

APPENDIX 5: ILLUSTRATIVE SPECIFICATION FOR 'LOW INVASIVE' TYPE SURFACING IN RPAs

CellWeb

GEOSYNTHETICS

The CellWeb System uniquely prevents rutting action of sub-soils by confining infill material within the hoop structure of the panel, increasing the infills shear strength. The use of a CellWeb System increases the load capacity of granular infill by up to 50% reducing the overall construction depth required. Perforated cell walls permit through drainage and also provides frictional interlock of the infill again increasing the shear strength of the system.

A non woven geotextile filtration/separation membrane is used beneath the system to prevent migration of materials and also to aid with drainage vertically through the system.

The CellWeb panels are infilled with a clean angular gravel which provides load support and permits air and moisture transfer to the roots ensuring the long term preservation of the tree root structure. *(fig. 5)*

Surfacing materials are at the discretion of the client, however for specific advice please contact our sales office.

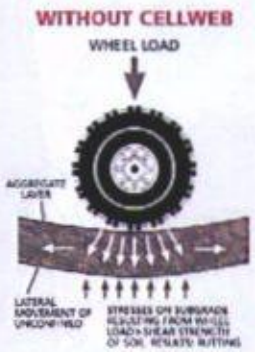


fig. 3

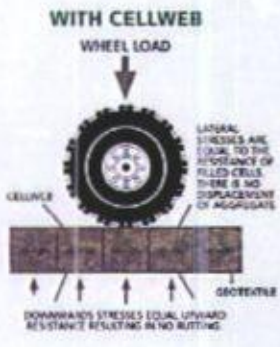
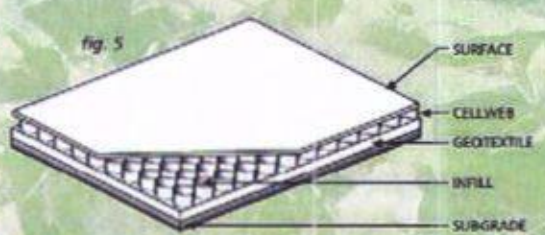


fig. 4

Benefits of using CellWeb

- Reduction in construction depth.
- Prevent compaction of sub-soils.
- Prevent oxygen/nutrient depletion.
- Environmentally friendly option.
- Fast and economic installation.
- Technical support available.

fig. 5



CellWeb is available in four cell depths; 75mm, 100mm, 150mm and 200mm.

The cell depth required is dependant upon specific site conditions. For specification details or project specific design assistance please contact our sales office.

Please contact:

Geosynthetics Limited
Fleming Road,
Harrowbrook Ind. Estate,
Hinckley, LE10 3DU.

Telephone: 01455 617139
Facsimile: 01455 617140 Email: sales@geosyn.co.uk

www.geosyn.co.uk

APPENDIX 6: BS 5837 (2005) – ASSESSMENT CATEGORIES

TREES FOR REMOVAL

Category and definition	Criteria	Identification on plan
Category R Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R Category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality NOTE Habitat reinstatement may be appropriate (e.g. R Category tree used as a bat roost: installation of bat box in nearby tree).	RED

TREES TO BE CONSIDERED FOR RETENTION

Category and definition	Criteria — Subcategories			Identification on plan
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation	
Category A Those of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested)	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	GREEN
Category B Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A Category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	BLUE
Category C Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits	GREY
	NOTE: Whilst C Category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation			

APPENDIX 7: QUALIFICATIONS AND EXPERIENCE OF BARRIE DRAPER

1 **Qualifications:** I have a BSc degree (with Honours) in Arboriculture from the University of Central Lancashire. I also hold a BTEC Higher National Diploma (HND) in Forestry (Lowland Management), the Arboricultural Association's Technician's Certificate in Arboriculture (Tech Cert), the Royal Forestry Society's Certificate in Arboriculture (Cert Arb) and the National Examinations Board Certificate in Forestry.

2 **Career experience:** I began my arboricultural career in 1993 as an arborist with Portsmouth City Council. During my time with the council I worked for both the direct labour organisation and for a private contractor where I obtained valuable hands on experience in all aspects of arboriculture. From 1999 to 2002 I was employed as Senior Arborist by Parchment Housing Group, a housing association based near Portsmouth. I managed the Groups' tree stock on their behalf, carrying out tree inspections and practical management operations. I have worked in local government, spending time with Thurrock Borough Council in Essex where I was the Tree and Landscape Officer, and with Winchester City Council, where I was Arboricultural Officer for a period of 2 years. During my time working in local government I was responsible for making Tree Preservation Orders, administering applications to work on protected trees and advising on planning applications when trees were considered material constraints on development. Working within a planning environment allowed me to gain valuable experience in the management of trees in development situations and an understanding of the planning process and how it relates to trees. More recently, (since January 2005) I worked for Barrell Tree Consultancy Ltd advising clients on a wide range of tree related issues. I left the company in September 2008 and have been working as an independent consultant since.

3 **Continuing professional development:** I also keep professionally current through regular attendance at seminars and conferences.



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T: 01962 877 397
E: barrie@ecourbanconsulting.co.uk
M: 07532 373 563
W: www.ecourbanconsulting.co.uk

YACHTHAVEN, HAYLING ISLAND

ENVIRONMENTAL STATEMENT

DECEMBER 2011

APPENDIX 10.2

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Havant BOROUGH COUNCIL

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Ms C Silver
Environmental Assessment Services Ltd
Unit 3 Westside
London Road
Hickstead
Haywards Heath, West Sussex
RH17 5LZ

Our Ref: GEN/11/01435
Direct Line: (023) 9244 6525
Ask For: Mr J Gargett
Email: planning.development@havant.gov.uk

04 November 2011

Dear Ms Silver

Site Location: Yacht Haven, Copse Lane, Hayling Island, PO11 0RH
Re: Status of trees on site

I am writing to you following the receipt of your enquiry of the 25th October 2011 regarding the above address.

Please see the plan attached to this email displaying the location of protected trees at the site in question. The key is as follows:

Individual Trees

T8 - T16 (inclusive)	TPO 0567 Common Oaks

Groups

G1	TPO 1231 Common Oaks
G3, G4 & G5	TPO 0567 Common Oaks

Dark Blue Area
Woodland Order 1878

Yours sincerely

C. D Murray

Mr Chris Murray
Service Manager (Planning Development)
Our Ref: GEN/11/01435

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YACHTHAVEN, HAYLING ISLAND

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N
GENERAL DEPTH TO THE TOP OF THE CABLE WHERE LAID
METHOD m m m
FOOTPATH 0.45m 0.45m 0.90m 0.80m
ROAD CROSSING 0.60m 0.60m 0.75m 0.90m
AGRICULTURAL 0.90m 0.90m 0.75m 0.90m
LV systems - up to 1000V.
H.V. - over 1000V to 11,000V
E.H.V. - 22,000V to 132,000V
WARNING
There may have been subsequent alterations to the surface levels. Trial holes must be taken to determine positions and depth of cables. HS (G) 47 Received from the Health and Safety Executive - Avoiding Danger from Buried Cables - should be consulted before commencing excavation work (available from HMSO)
WHEN WORKING IN THE VICINITY OF OVERHEAD LINES THE HEALTH AND SAFETY GUIDANCE NOTE GS6 SHOULD BE CONSULTED (AVAILABLE FROM HMSO)
Yorkhill and Govan Lane Blaydon Island Jamie
UNCONTROLLED COPY
Subject to Revision. Master held at
Scottish and Southern Energy
L.V. MAINS RECORD
GRIDREF. SU72970188
SCALE 1:1250
DATE 27/10/2011
MS0428052

N

NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID

	across	in	in	elsewhere
FOOTPATH	0.72m	0.45m	0.60m	0.60m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m
AGRICULTURAL	0.60m	0.60m	0.75m	0.90m

- up to 1000V
- over 10 kV to 11,000V
- 22,000V to 132,000V

WARNING

There may have been subsequent alterations to the surface levels. Trial holes must be taken to determine positions and depth of cables. HSG 47 Booklet from the Health and Safety Executive - Avoiding Danger from Buried Cables - should be consulted before undertaking excavation work (available from HMSO)

WHEN WORKING IN THE VICINITY OF OVERHEAD LINES THE HEALTH AND SAFETY GUIDANCE NOTE GS6 SHOULD BE CONSULTED. (AVAILABLE FROM HMSO)

Yorkshire Copper Laser Shafting Island
Leeds

UNCONTROLLED COPY
Subject to Revision Master held at

Scottish and Southern Energy

H.V. MAINS RECORD

If you are unsure & need to seek advice before commencing excavations please contact
PORTSMOUTH
023-9262-4200

GRIDREF: SU7297018B
SCALE: 1:1250
DATE: 27/10/2011
MSS228922

YACHTHAVEN, HAYLING ISLAND

ENVIRONMENTAL STATEMENT

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APPENDIX 11.2

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SEWER RECORDS PAGE 1 OF 2

102155



101577

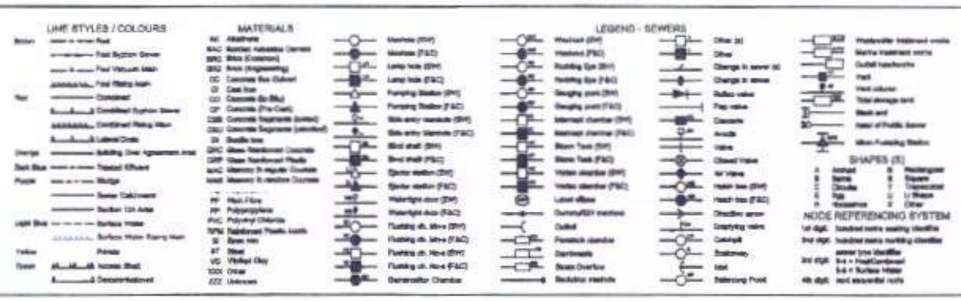
472525

473471

O.S. REF. SU7201NE	Drawn by: roysaya	The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determnined on site. WARNING: BAC pipes are constructed of Bonded Asbestos Cement WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement	N
	Scale: 1:2500		
Title: 126673_Yachthaven Copse Lane H	Date: 26/10/2011	Based upon Ordnance Survey Digital Data with the permission of the controller of H.M.S.O. Crown Copyright Reserved Licence No. WU 298530.	Southern Water

SEWER RECORDS PAGE 2 OF 2

Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape
0901X	4.38	0.34	150	PVC	CIRC																		
0902X	4.35	0.38	150	PVC	CIRC																		
0903X	4.24	0.82	150	PVC	CIRC																		
1901X	4.19	1.14	150	PVC	CIRC																		
1902X	4.29	1.48	150	PVC	CIRC																		
2801X			UNK	UNK	CIRC																		
2901X	4.26	2.25	150	PVC	CIRC																		
2903X			UNK	UNK	CIRC																		
2905X			UNK	UNK	CIRC																		
2909X			150	PVC	CIRC																		
5901X	4.28	2.24	225	BAC	CIRC																		
5902X	4.36	2.3	225	BAC	CIRC																		
5903X	4.48	2.6	225	BAC	CIRC																		
6901X	4.64	2.72	225	BAC	CIRC																		
6902X	4.49	2.98	225	BAC	CIRC																		
6901X	4.09	2.66	150	BAC	CIRC																		
6902X	3.59		225	PVC	CIRC																		
690PX			100	PVC	CIRC																		
9001X	4.65	3.34	150	BAC	CIRC																		
9901X	3.9		150	PVC	CIRC																		
9902X	4.02	-0.13	150	PVC	CIRC																		



Drawn by:	roysaya
Title:	126673_Yachthaven Copse Lane H
Date:	26/10/2011

Southern Water

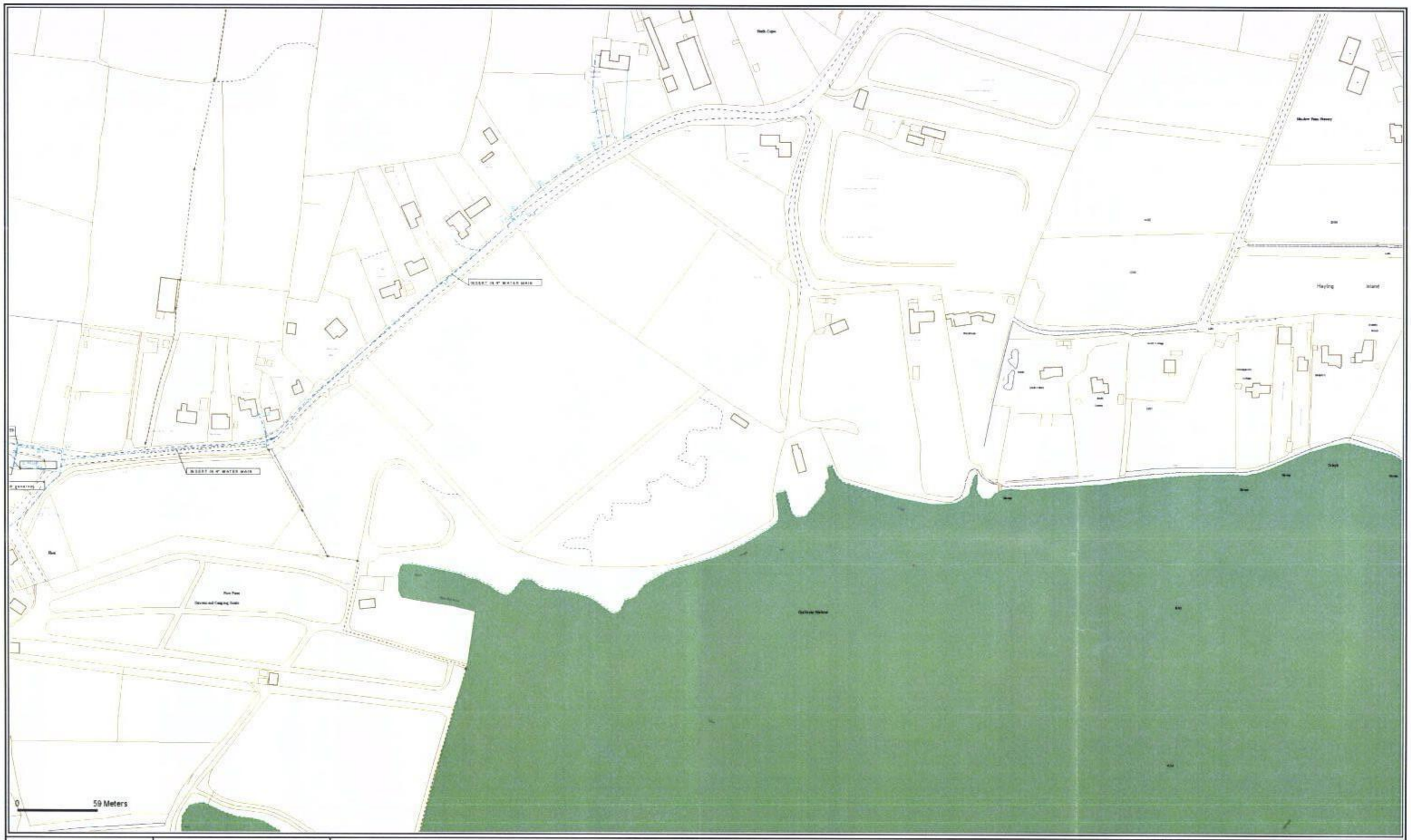
YACHTHAVEN, HAYLING ISLAND

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DECEMBER 2011

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SCALE	1 : 2548
USER ID	am54938
DATE	08/11/2011
INTERNAL USE ONLY	
GRID REFERENCE :	E472817, N101845, SU7201

LP MAINS
MP MAINS
IP MAINS
LHP MAINS
HISTORY DATA
LAs
GTs
SSSIs

Some examples of Plant Items
Valve | Syphon | Depth of Cover | Diameter Change | Material Change

This plan shows the location of those pipes owned by Scotia Gas Networks ("SGN") by virtue of being a licensed Gas Transporter (GT). Gas pipes owned by other GTs, or third parties, may also be present in this area and are not shown on this plan. Information with regard to such pipes should be obtained from the relevant owners. No warranties with regard to the accuracy of the information shown on this plan. Service pipes, valves, siphons, sub-connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by SGN or its agents, servants or sub-contractors for any error or omission contained herein. Safe digging practices, in accordance with HS (G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (whether direct labour or sub-contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

Intranet MAPS Version 1.8

Hampshire County Area

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Scotia Gas Networks

YACHTHAVEN, HAYLING ISLAND

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Lower Tye Farm
Pond
Drain
Strawberry Fields
Finchwood Farm Industrial Units
Finchwood Farmhouse
North Copse
4x SERVICES TO VICTORIA COTTAGE BRENTON WOODGASTON COTTAGE AND CREEK COTTAGE
4x SERVICES TO NORTH CORNER SOUTH WINDS RHU HOUSE AND YACHT HAVEN
Lower Tye Caravan And Camping Centre
Company site
Copsewood House
Meadow Farm Nursery
Saltings Cottage
Lower Tye Caravan and Camping Centre
Lower Tye Caravan and Camping Centre
Lower Tye Caravan And Camping Centre
Umatata
Woodlands
Woodlands
Casario
The Orchard
The Pines
Pigg Sta
Hayling Island
Shallows
Broad Oak Hotel
Glenwood
Cedar Orchard
Copse View
Goose Meadow Lodge
Hawkstone
Track
Yacht Haven
Rhu House
Ponds
South Winds
North Corner
Creek Cottage
Woodgaston Cottage
Brenton Cottage
Victoria Cottage
Langness
Seafield House
YACHT HAVEN RHU HOUSE SOUTH WINDS NORTH CREEK COTTAGE WOODGASTON COTTAGE BRENTON ARE SUPPLIED FROM COPSE LANE
Path (um)
Slipway
Shingle
Sluice
Mean High Water
Fleet Farm Caravan and Camping Centre
Chichester Harbour
Mud
Track
Woodgaston Lane
Copse Lane
Def
RH
SD
TA H
CH
CR
CF
MP
4.6m
4.3m
4.5m
4.4m
4.2m
3.5m
7k
2007C

EXISTING MAIN
ABANDONED MAIN
PROPOSED MAIN
COMPANY WASHOUT
WASHOUT FIRE HYDRANT
FIRE HYDRANT
PROPOSED FIRE HYDRANT
WO TO BE CUT OUT UNLESS PURCHASED BY LOCAL AUTHORITY
FH TO BE CUT OUT UNLESS PURCHASED BY LOCAL AUTHORITY
WOFH TO BE CUT OUT UNLESS PURCHASED BY LOCAL AUTHORITY

Portsmouth Water
Registered Office
P.O. BOX NO. 8, West Street, Havant, Hampshire. PO9 1LG.
Registered in England No. 2646560
Telephone: (023) 9249 1000
Fax: (023) 9249 2632
Website: www.portsmouthwater.co.uk

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The information supplied is given in good faith as a guide to locating underground apparatus. Its accuracy cannot be guaranteed, nor does it include comprehensive information about the existence or location of service pipes or cables to individual premises. The responsibility for locating and avoiding damage to apparatus on site shall be that of the person proposing to excavate in the street who shall be liable to the apparatus owner and any third party who may be affected in any way for any loss or damage caused by their failure to do so.

Drg. No:
Job No:
OS Ref: SU73510E
Scale: 1:1,250
Date: 03/11/2011