

**Tournerbury Farm
Tournerbury Lane
Hayling Island**

REPORT ON ROAD CONSTRUCTION

Client: The Tournerbury Woods Estate

EG/445567/EG

9 August 2022

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1.0 *Introduction*

This structural inspection report has been prepared at the request of The Tournerbury Woods Estate for which the new access road will be constructed and used for access. The report has been prepared from photographic evidence provided by the client.

2.0 *Brief*

The purpose of the report is to confirm the construction build up and construction techniques used for the access road are satisfactory to guidance on the design and construction of such access roads.

This report is based on photographic records of the works undertaken on site. No opening up works were carried out or trial pits excavated (other than those specifically mentioned). No inspections were made of woodwork or other materials which were covered unexposed or otherwise inaccessible, and we are therefore unable to report directly that such items are free from defect. Inspections for the presence of asbestos are specifically excluded, and it is recommended that you commission a specialist report if asbestos is suspected or if materials used in the construction are from unknown or unregulated sources.

3.0 *Guidance on the construction of such roads*

The new road is not a highway as such and should therefore not be compared or specified to be constructed as such. A much fairer assessment of the road would be a comparison with a residential road with regular usage of commercial vehicles.

4.0 *Access Road proposed use*

The access way is intended to serve a wedding venue, holiday cottage and agricultural / forestry estate. It will need to be capable of handling multiple vehicle movements daily including buses, coaches, lorries and heavy agricultural vehicles without deterioration.

5.0 *Access Road Construction observations (from photographic evidence)*

5.1 Material used in the road is clearly not properly graded as noted later in this report. The material used for the construction is not of uniform type or size. It can be seen that there is waste material within the road build that will degrade with time and road usage.

5.2 The planning consent for this access road (Havant Borough Council APP/17/00207 and APP/21/00536) specifies filled cellular containment in root protection zones in order to act as a tree protection measure to established trees. We have seen no photographic evidence that such measures, as specified as conditions in the grant of planning permission, have been adhered to.

6.0 Guidance on the construction of such roads

The new road is not a highway as such and should therefore not be compared or specified to be constructed as such. A much fairer assessment of the road would be a comparison with a residential access road with frequent use by commercial vehicles.

In order to design a road on the above basis it is usual to have subgrade compressive testing undertaken usually a CBR test description as below:

CBR Testing (California Bearing Ratio) is primarily undertaken to provide data for road pavement design. It was first developed by the California State Highway Department.

It is a penetration test which is used to evaluate the subgrade strength primarily of roads, pavements and foundations.

The CBR test often forms part of the overall site investigation and is useful for determining the thickness of materials needed for the proposed construction.

NHBC guidance for an access road with frequent use by commercial vehicles (Table 2a) is as given below:

Table 2a: Private road having frequent use by commercial vehicles

Construction ⁽¹⁾		Road type		
		Road (bituminous macadam)	Road (block pavers)	Footpath (bituminous macadam)
Sub-base	Granular sub-base material type 1 to clause 803 table 8/2 MCHW Volume 1 Series 800 ⁽²⁾	Table 3	Where California Bearing Ratio (CBR) is 5% or less = 150 ⁽³⁾ Where CBR is greater than 5% = Table 3	225 ⁽³⁾
Base (road base)	Dense bituminous macadam (100/150 pen paving grade bitumen) with crushed rock aggregate to BS 4987 (group 1 mix)	100 (0/32mm size to clause 5.2)	N/A	N/A
	Concrete designation (BS 8500-2 table 7)	N/A	N/A	N/A
Binder course (base course)	Dense bituminous macadam (100/150 pen paving grade bitumen) with crushed rock aggregate to BS 4987 (group 2 mix)	60 (0/20mm size to clause 6.5)	60 (0/20mm size to clause 6.5)	60 (0/20mm size to clause 6.5)
Surface course (wearing course)	Dense bituminous macadam (100/150 pen paving grade bitumen) with crushed rock aggregate to BS 4987 (group 3 mix)	30 (0/10mm size to clause 7.4)	N/A	20 (0/6mm size to clause 7.5)
	Hot rolled asphalt to BS 594-1	40 (designation 30% 0/14)	N/A	N/A
	Mastic asphalt to BS 1447	30 (grade S – 40% 0/10mm size)	N/A	N/A
	Concrete designation (BS 8500-2 table 7)	N/A	N/A	N/A
Bedding course	Sharp sand to BS 7533-3 category II of annex D	N/A	50	N/A
Pavers	Block pavers to BS 6717 of class markings W2, A2 and S3 (weathering, abrasion and slip/skid classes) ⁽⁶⁾	N/A	80	N/A

The subbase provided below these upper materials specified in table 2a is given in table 3 below, these relate to CBR test values:

Minimum sub-base thickness

The thickness of any required capping layer and the sub-base should be determined after investigations and on-site tests have been carried out, with consideration to the:

- CBR value
- frost susceptibility of the sub-grade; where susceptible to frost, a suitable capping layer should be included below the sub-base to a depth to ensure that construction will not be affected by frost heave.

Table 3: Minimum sub-base thickness for paved areas

CBR values	Minimum thickness (mm) of sub-base (consolidated in accordance with MCHW Volume 1 clause 801, table 8/1)	
	Without geotextile underneath	With geotextile underneath
Less than 2%	N/A	300
2-3%	325	225
3-5%	250	150
5-7%	150	N/A
7-20%	100	N/A

Sub-base material should be type 1 to clause 803 table 8/2 MCHW Volume I Series 800, see below extract:

Volume 1
Specification for Highway Works

Series 800
Road Pavements – Unbound, Cement and
Other Hydraulically Bound Mixtures

2 (02/16) The mixture shall comply with BS EN 13285 and the requirements of Table 8/1. The grading requirements for the mixture are summarised in Table 8/5.

TABLE 8/5: (02/16) Summary Grading Requirements for Type 1 and Type 4 Unbound Mixtures

Sieve size, mm	Percentage by mass passing		
	Overall grading range	Supplier declared value grading range	Tolerance on the supplier declared value
63	100		
31.5	75 – 99		
16	43 – 81	54 – 72	± 15
8	23 – 66	33 – 52	± 15
4	12 – 53	21 – 38	± 15
2	6 – 42	14 – 27	± 13
1	3 – 32	9 – 20	± 10
0.063	0 – 9		
Grading of individual batches – differences in values passing selected sieves			
Retained sieve size, mm	Passing sieve size, mm	Percentage by mass passing	
		Not less than	Not more than
8	16	7	30
4	8	7	30

This Type 1 material grading chart shows that 100% of type 1 material should pass a 63mm size sieve, therefore Type 1 is clearly not what has been used on the access road construction.

7.0 Comments from other parties for use in the assessment of the road

Comments from Ernie Frost Senior Technician
County Highways Laboratory
Hampshire County Council

The sampling locations for D3740 & D3742 are from stockpiles in the clients facility, not sampled from any particular site, this is stated on the materials certificates that were issued. The supplier would have to provide more evidence that the material supplied to your site comes from the same stockpile sampled in December 2019. Also what proof do you have that the material did originate from L & S? Do you have delivery tickets? Visually from the photograph it would look like the material laid at the front of the construction definitely contains oversized material; to comply, material must all pass 125mm sieve for 6F5 and 63mm sieve for Type 1 Subbase. I would also point out that there appears to be vegetation growing through it, which would also not meet the laying criteria for a road construction. Do you have proof of when the material was laid as vegetation growth suggests a substantial gap between laying and when the image was taken.

These comments would appear to indicate that the material shown to be used in the construction of the road, shown within photographs in Appendix A, is not the same as the samples taken for laboratory testing.

Comments from Lynsey Schembri
Illegal waste triage officer
Environment Crime Team

**Mr Graham Phillips
Tournerbury Farm
Tournerbury Lane
Hayling Island
PO11 9DL**

Environment Agency
Guildbourne House Office
Chatsworth road
Worthing
BN11 1LD

Date: 6th July 2021

To Mr Phillips

Illegal importation, storage and disposal at Tournerbury Farm, Tournerbury lane, Hayling Island, PO11 9DL.

Environmental Protection Act 1990 & Environmental Permitting Regulations (England and Wales) 2016.

We are writing to you to highlight our concerns and legal position on waste importation, storage and disposal.

Anyone who imports, treats, keeps or disposes of waste must have a suitable environmental permit or formally register a relevant waste exemption. This is to safeguard the environment from polluting emissions, regulate the environmental impacts of the waste industry and reduce nuisance to third parties. Burning waste can cause serious harm to human health and the environment because of toxins that are released.

If you are importing, storing or burning waste we must make you aware of its significance.

It is an offence to fail to comply with the requirements of the Environmental Protection Act 1990 and the Environmental Permitting Regulations (EPR) 2016. The penalties for disposing of waste without a permit or exemption under EPR are fines and/or imprisonment.

We have checked our Public Register and found that you do hold a U1 and D7 Waste Exemption in place for this type of activity. However, you do not have any waste transfer notes.

A waste transfer note is used to record the transfer of non hazardous commercial waste between different holders. This can be between the producer of the waste and the waste carrier, or the waste carrier and the

disposal site or transfer station. Both parties need to keep a copy of the waste transfer note for a minimum of 2 years.

Waste transfer notes allow everyone involved in the transfer to know what they are dealing with so they can manage it safely and properly. To know what type of waste you are excepting, where it has come from and how much you are receiving. This is also to be able to make sure that you are within your exemption limits.

For crushing taking place on site you need to apply for a part B process licence from your local authority.

The site will be monitored for future compliance. Should you have any further questions, please feel free to give me a call.

Yours sincerely



Lynsey Schembri

Illegal waste triage officer
Environmental Crime Team

Tel: 
Email: lynsey.schembri@environment-agency.gov.uk

8.0 Conclusions

The comments from third parties are relevant but we have not been asked to comment on those items as they are separate from this report on the road construction itself. Though it would appear from the Environment Agency that waste material, apparently illegally brought onto site and unlawfully crushed on site, without the required permits, has been used to construct the road. Without waste transfer notes from a fully licensed, regulated and inspected waste / aggregate operator, it is impossible to determine what materials have been crushed and used in this construction and if any of those materials are environmentally hazardous and pose a future risk to users or the local environment.

From a technical perspective it would appear that no compression testing or CBR testing has been carried out to calculate the required construction build ups for the road.

The photographs show, as noted by comments from a senior technician at County Highways Laboratory, that properly graded materials have not been used in the road construction.

The material used within the road contains vegetation, broken bricks and other waste material so it has clearly not been certified as Type 1 or 6F5 material as would be required in a certifiable designed access road. Further, the use of Type 1 and 6F5 materials to certain depths are specified as conditions of the planning consent for this access road (Havant Borough Council APP/17/00207 and APP/21/00536 before it can be brought into use.

For the type of use and traffic proposed to be using this access road it would not appear to have been satisfactory constructed to provide a long term solution for access, in terms of: materials used, construction methodology, tree protection measures adhered to and installation of appropriate drainage. There will be excessive maintenance required on the road and its failure is highly probable due to the mixture of materials used in its construction and their likely degradation over time and use.

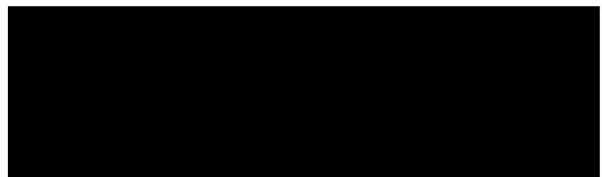
Drainage does not appear to have been implemented. Water is the main reason for road degradation over time. The road itself is unlikely to be permeable due to the high level of fine material clearly present in the subbase which will not allow water to percolate. It is not clear from photographs if the road has been laid to sufficient falls but there is clearly no drainage present to take water away.

Yours sincerely



ELVIN GOMERY B.Eng (Hons)
MICE

For and on behalf of Cowan Consultancy Ltd.



DAVID BUTTON BSc (Hons) CEng

APPENDIX A – PHOTOGRAPHIC EVIDENCE



Reduced level dig for new road, no CBR testing appears to have been carried out to enable road design



Road subbase laid on geotextile. Note presence of non uniform site material, clearly not properly graded, also clat pipes, bricks and other waste material which could degrade. Also note high level of fine material meaning road unlikely to be permeable



Thin layer of road planings as a finish. Clearly no drainage present to take water away from road. Edge levels also shown to be higher so water will not run off but will likely cause ponding and road degradation