

Brian J. Jones

Consulting Engineer

Project <i>NEW DWELLING, COOKES ROAD, THURTON</i>		Job No. <i>4973</i>
Part of Structure		Sheet No. <i>101</i>
Calc. By <i>BJS</i>	Chck'd by <i>BSA</i>	Date <i>1/24</i>

Client: *Mr. + Mrs. C. JOHNSON.*

Information upon Which Design is Based: *PERCOLATION TESTS BY MICRO GEOTECHNICAL LTP OF HEVINGHAM.*

Function of Construction & Loading: *NEW DOMESTIC DWELLING + GARAGE.*

Description of Design to be carried out, or Elements to be Designed: *DESIGN OF SOAKAWAYS.*

	To be Confirmed on Site By Others	From S.I. Report	Not Included In Brief
Foundations:			
Allowable Bearing Pressure:			
Clay Heave / Shrinkage:			✓
Contaminated Ground:			✓
Melbane:			✓
Deep Excavation:			✓
High Water Table:			✓
Unstable Ground:			✓

Designs are based upon the following Standards, Codes of Practice, Guidance & stated Technical Information

BS 5268	STRUCTURAL USE OF TIMBER	
BS 5628	USE OF MASONRY	
BS 5950	STRUCTURAL USE OF STEELWORK IN BUILDING	
BS6099	DESIGN LOADING FOR BUILDINGS	
BSS004	FOUNDATIONS	
BS 8110	STRUCTURAL USE OF CONCRETE	
<i>BRE 365.</i>		✓

Party Wall Matters: *Party wall etc Act 1996 - Dealt with by others* ✓

- Notes:
- The following calculations only concern the elements of the construction & the client to which they specifically refer. No responsibility or liability is accepted in respect of any other element or part of the construction, or any other party.
 - The brief does not include any site inspections unless specifically instructed.
 - No construction or fabrication should be carried out until all statutory approvals are obtained.
 - All bearing stresses, dimensions and levels should be checked on site.
 - The Contractor shall ensure the stability of each element and the overall construction until the work is complete.

Terms and Conditions for Use and Issue

These calculations and any drawings and schedules related to them are provisionally issued to the Clients Design Team, for their approval and information. No authorization is intended or given for their subsequent issue by others to any other Party or for their inclusion in any submission to any Authority, until settlement of all associated fee accounts has been received by B J Jones Consulting from the Client in full. In the event that these criteria are not met, the calculations will be withdrawn by B J Jones Consulting from any such submission. In the meantime the calculations and drawings remain the property of B J Jones Consulting do all Rights over them until full payment is received.

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PERCOLATION TEST RESULTS, CARRIED OUT BY MICRO

GEOTECHNICAL LTD, HEVINGHAM.

JA01

6.28×10^{-5}

5.22×10^{-5}

5.13×10^{-5}

JA02

0.42×10^{-5}

0.25×10^{-5}

0.29×10^{-5}

JA03

1.62×10^{-5}

0.81×10^{-5}

0.72×10^{-5}

 20.74×10^{-5}

SOIL INFILTRATION RATE, AVERAGE,

$1 = 2.304 \times 10^{-5}$ mm/sec.

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DESIGN FOR JOCKWAYS IN ACCORDANCE WITH BRE 365.

$$r = 0.45$$

STORM

Z1

DESIGN RAINFALL

M5-30 = 20 mm x 0.82 = 16.4 mm

M5-60 = 20 x 1.0 = 20.0

M5-120 = 20 x 1.19 = 23.8

M5-180 = 20 x 1.285 = 25.7

M10-30 = 16.4 x 1.24 = 20.3

M10-60 = 20.0 x 1.24 = 24.8

M10-120 = 23.8 x 1.24 = 29.5

M10-180 = 25.7 x 1.24 = 31.9

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$$\begin{aligned} \text{AREA OF ROOFS} &= 7.306 \times 5.372 = 39.248 \text{ m}^2 \\ &6.020 \times 4.059 = 24.435 \\ &7.307 \times 6.694 = 48.913 \\ &6.413 \times 6.413 = 41.127 \\ &\hline &153.723 \text{ m}^2 \end{aligned}$$

ASSUME A 3 HOURS 10 YEAR STORM

$$\begin{aligned} \therefore I &= 153.723 \times 0.0319 \\ &= 4.904 \text{ m}^3 \end{aligned}$$

ASSUME 2 NO. SOAKAWAYS, 1.5 DIA x 1.5 DEEP IN
2.5 m SQUARE PITS FILLED WITH 75 WHOLE STONE, 30%
VOID RATIO.

$$\begin{aligned} a_{p50} &= 2 \times 0.5 \left(\frac{2.5}{2.5} = 1.5 \times 4 \right) \\ &= 15.0 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} D &= 15.0 \times 2.304 \times 10^{-5} \times 3 \times 60 \times 60 \\ &= 3.732 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} \text{STORAGE VOLUME } \textcircled{1} &= 17.0750^2 \times 1.5 \times 2 \\ &= 5.301 \text{ m}^3 \end{aligned}$$

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$$\begin{aligned} \text{STORAGE VOLUME (2)} &= \\ &= \left[(2 \times 2.5^2 \times 1.5) - (\pi \times 0.85^2 \times 1.5 \times 2.0) \right] \times 0.30 \\ &= (18.750 - 6.809) \times 0.30 = 11.941 \times 0.30 \\ &= 3.582 \text{ m}^3 \end{aligned}$$

$$\begin{aligned} \therefore \text{TOTAL STORAGE VOLUME} &= 5.301 + 3.582 = 8.883 \text{ m}^3 \\ &> 4.904 \text{ m}^3, \therefore \text{SATISFACTORY.} \end{aligned}$$

PROVIDE; 2 No. 1.5 m DIAMETER PRECAST CONCRETE
SOAKAWAYS WITH MINIMUM DEPTH OF 1.5 m
BELOW INLET INVERT LEVELS. THE
SOAKAWAYS SHALL BE CONSTRUCTED IN
SQUARE PITS OF 2.5 m SIDES WITH
75 mm WHOLE STONE PLACED BETWEEN
THE SOAKAWAY RINGS AND THE SIDES
OF THE PITS.

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