

JDL Consultants Limited - Civil and Structural Consulting Engineers

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Job Title: RADSON PARK INN HEATHROW

By: DAZ

Project No:

Date: Jan'20

Sheet: 01

CONSIDER. 2mm ALUMINIUM BRACKETS AND FIXINGS
TO SUPPORT OVER CLAD AT THE ABOVE PROPERTY.

TO ENABLE THE CLADDING TO RUN FLUSH VERTICALLY THE
CLADDING IS SET PROUD BY 80mm.

THE BRACKETRY IS TO BE 2mm ALUMINIUM PLATE.

PANEL loading: $G_k = 0.20 W_{fm}^2$ PANEL 0.94 x 3m L.
(REFER MANUFACTURERS
DETAIL). WOREST CASE.

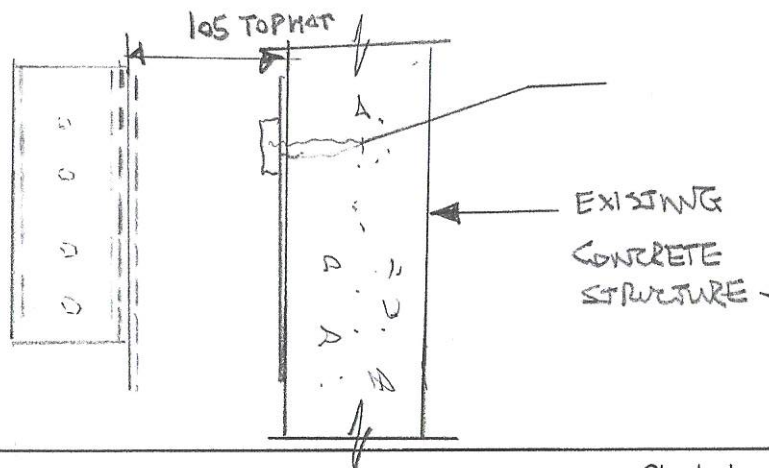
WIND loading:

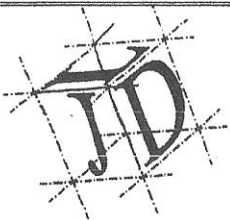
(DESIGN FOR CORNER PRESSURES) $q = 1.106 W_{fm}^2$.
REFER

FOR CONSISTENCY ALL STRUCTURAL FIXINGS BY. FIXFAST.

SYSTEM.

CONFIG. PLAN.





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Sheet: 02

CONSIDER INSULATION. FIX THRO CLADDING TO OUTER
'C' SECTION.

4 VERTICAL FIXINGS: PANEL 0.9×3

VERT LOADING $= 0.20 \text{ kN/m}^2$

VERT $= 0.54 \text{ kN}$

LATERAL $= 1.06 \text{ kN/m}^2$

DESIGN
SL3

$\times 0.9 \times 3$

$= 2.99 \text{ kN}$

SO LOADS/FIXINGS:

$\therefore V = 0.135 \text{ kN}$ DESIGN LOAD VERT SHEAR

$\therefore H = 0.75 \text{ kN}$ DESIGN LOAD PULLOUT

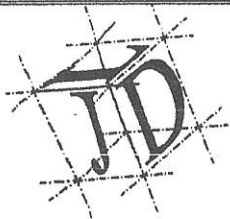
USE FIXFAST. DF12-SS-HT-5.5x15

4 NO.

2.8 kN. PULLOUT 4 mm
STEEL. DESIGN

AND 1.75 kN. DESIGN SHEAR.

SO COMBINATION CHECK: $\frac{0.135 \text{ kN}}{1.75 \text{ kN}} + \frac{0.75 \text{ kN}}{2.80 \text{ kN}} = 0.345 < 1.0$



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Project No:

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Sheet: 03.

CONSIDER. FIXING AND BRACKETRY FOR STANDARD
CASE. 'C' SECTION TO C SECTION.

VERTICAL LOADINGS - $3 \times 0.9 \times 0.20 = 0.54 \text{ kN}$. TOTAL.

CARRIED ON. 4 NO VERTICAL. FIXINGS. FASTFIX DF5-CF-5522
WORST CASE 0.5mm STEEL.

DESIGN VALUE 3 mm. STEEL $\approx 4.08 \text{ kN}$ TENSION.

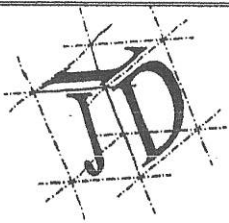
3 mm STEEL $\approx 1.46 \text{ kN}$ SHEAR

SO 4 NO. FIXINGS $\times 1.46 \text{ kN} = 5.84 \text{ kN} > 0.54 \text{ kN}$. OK. ON INDIVIDUAL.

CONSIDER. WIND. $1.106 \times 3 \times 0.9 = 3 \text{ kN}$.

$3/4 = 0.75 \text{ kN}$

SHEAR CHECK: $\sqrt{0.75^2 + 0.135^2} = 0.76 \text{ kN} < 1.46 \text{ kN}$.



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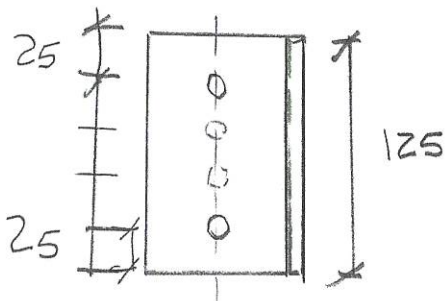
Date: JAN '20

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CONSIDER BM RESISTANCE TO OFFSET VERTICAL
LOADING = 0.54 kN CHARACTERISTIC.

OFFSET = 0.1 m.

SO BM = 0.054 kNm. I_a RESISTANCE =



SET @
900 VERT e_k .

$I_a = 0.075$ SO BM SHEAR = 0.72 kN

SO RESULTANT SHEAR =

$$= \sqrt{(0.76^2 + 0.72^2)}$$

$$= 1.05 \text{ kN} < 1.46 \text{ kN} - \text{OK}$$

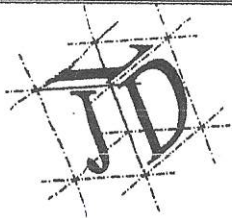
CONSIDER FIXINGS BACK TO TOP HAT

AT 900 VERT e_k . $O_k = 0.54 \times 0.20 = 0.11 \text{ kNm}$.

$I_a = 0.1$ SO T/FIXING = $1.1/2 = 0.55 \text{ kN}$.

SHEAR = 0.54 kN - OK.

+
WIND = $\frac{2.99}{2} = 0.75 \text{ kN}$
TENSION ON 4



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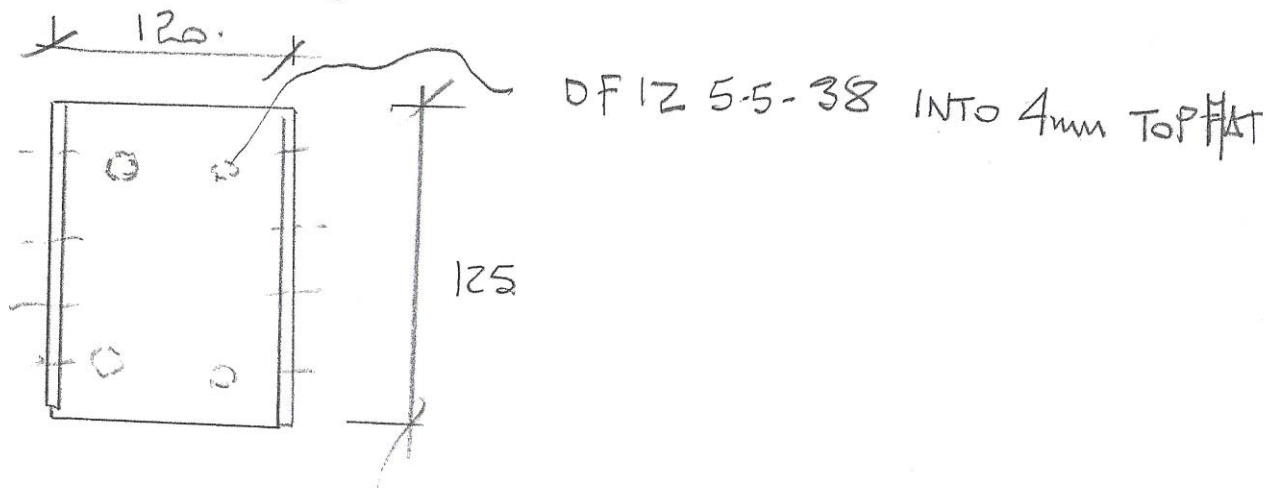
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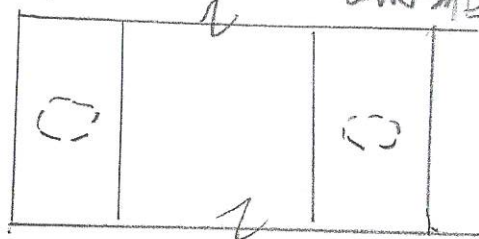
So $\sum T = 0.75 + 0.55 = 1.3kN$. CAPACITY = 2.8kN
TOP
FIXINGS OK

SHEAR PER BOLT $\frac{0.54}{4} = 0.135kN$ CAP = 1.46kN

So $\frac{1.3}{2.8} + \frac{0.135}{1.46} = 0.55 - OK$.

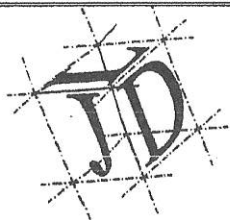


TOP HAT INTO CONCRETE: FIXINGS 2 NO @ 750.
SXR-10x100 - 2kN SHEAR 1.8kN TENSION.



TENSION/BOLT = $1.06 \times 3 \times 0.75 = 1.25kN$.
VERT SHEAR 0.27kN

PULL OUT = $\frac{0.54 \times 0.35}{2 \times 0.75} = 0.126kN$
PER BOLT



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Job Title: RADISON PARK NW HEATH

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$$\frac{20 \cdot 1.38}{1.8} + \frac{0.27}{2.0} = 0.9 < 1.0$$

CONCRETE BASE DETAIL TO OVERHANG
FRAMES AT. 600 c/c.

FIXINGS. DF5 CS. -5-5

$$\text{CONCRETE SHEAR FROM WIND} = 1.06 \times 0.6 \times 1.4 = 0.93 \text{ kN}$$

$$\text{ON 2 FIXINGS IN SHEAR} = \frac{1.46}{4} = 0.438 \text{ kN/FIXING}$$

$$\Sigma = 1.31 \text{ kN. - OK}$$

AN OTHER 2 NO FIXINGS.

$$\text{VERT T} = 0.2 \times 1.6 \times 0.6 = 0.192 \text{ kN} / 2 = 0.096 \text{ kN}$$

$$\text{CONC FIXINGS 2 NO OK VERT. SHEAR} = 1.06 \times 0.6 \times 1.6 = 0.21 \text{ kN - OK. } \frac{0.21}{2}$$