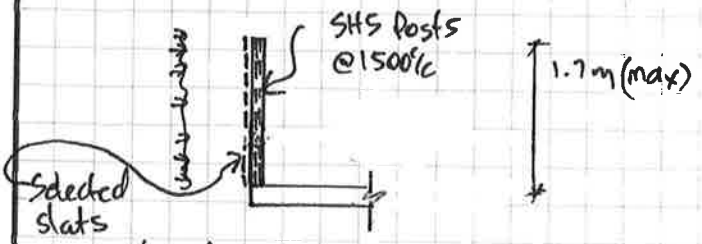
Ref.: 1806063
Date: 22/7/19
Design: FK
Page: SC2

Uprights to North facing walkway screening

Layout



•Design SHS Posts @ 1.5m max c/c

Loads

Barrier live load = 0.50kPa →
Wind load = 0.96kPa x 1.2 x 0.9 = 1.04kPa →
↑ reduction for porosity.

Strength Design

$w^* = w_u + \psi_c Q$
$= 1.04kPa + 0.4 \times 0.5$
$= 1.24kPa$

$\Rightarrow M^*_{post} = 1.24kPa \times 1.5m \times 1.7m^2/2$
$= 2.69kN.m$

Serviceability Design

$\Delta_{lim} = H/125$
$= 1700/125$
$= 13.6mm$

$w_{ser} = 1.24kPa \times 1.5m \times 0.67 = 1.25kN/m$

$\Rightarrow I_{req} = 1/8 \times \frac{1.25 \times 1700^4}{2 \times 10^5 \times 13.6}$
$= 0.480 \times 10^6 mm^4$

$\Rightarrow$ **Adopt 65 x 65 x 3.0 SHS for uprights**

($I_x = 0.638 \times 10^6$
$\phi M_s = 9.85kNm$)

Checked : .....
Date : ...../...../.....