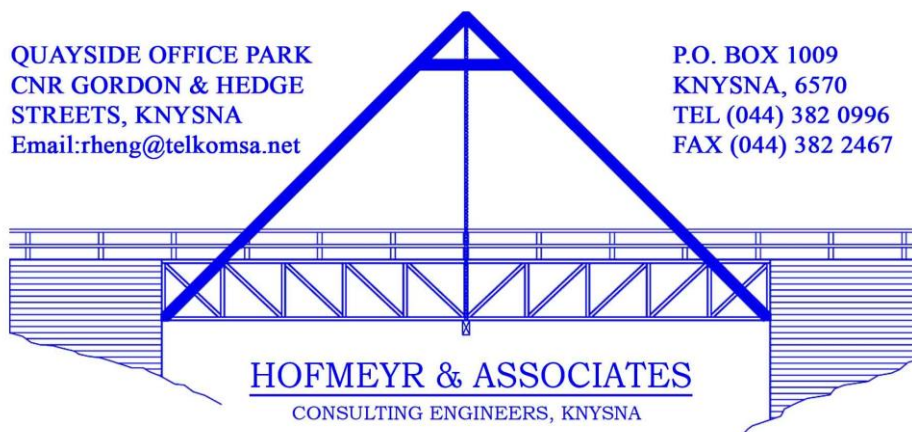


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Ref: 16/41

TYPICAL

### **3 BEDROOM HOUSE – ST HELENA ISLAND** **RATIONAL DESIGN CERTIFICATE**

#### **FENESTRATION**

In terms of SANS 10400XA if area of fenestration exceeds 15% of nett floor area a rational design on fenestration needs to be done. Refer to the attached fenestration calculations.

#### **GROUND FLOOR**

All windows & doors to be timber frame, single glazed in plain glass

It is important that fenestration complies with:

Max air leakage for openable glazing =  $2\ell / \text{s.m}^2$

Max air leakage for non openable glazing =  $0.31\ell / \text{s.m}^2$

When tested in accordance with SANS 613.

In terms of SANS 204, St Helena Island most closely resembles our climate zone 5 – Sub tropical coastal zone.

#### **WALL INSULATION**

T&B Log Homes construct their houses using their proprietary system of solid log walls. These walls are 100mm thick (minimum) SA Pine. The wall has an R-value of between 4.8 and 5.6 which exceeds the requirements specified in SANS 204 of R=1.9 for zone 5.

#### **FLOOR INSULATION**

SANS 204 does not specify a minimum R-Value for a suspended timber floor forming part of the building envelope in zone 5.

T&B Log Homes construct their floors using 22mm T&G Pine flooring on 18mm ply on timber joists.

The 14mm engineered bamboo floor on 3mm sponge underlay provides R=0.6 & the 18mm ply R=0.9. Total R=1.5

#### **SANS 10400 XA**

Roof insulation to comply with SANS 10400 XA for zone 5. Total R – Value of roof & insulation to be 2.7 or greater.

Entire electrical installation and water heating system is to comply with SANS 10400 XA.

**Rational design prepared by: R Hofmeyr Pr Eng 890277/1 (ECSA)**

**R.P. HOFMEYR Pr Eng 890277/1**