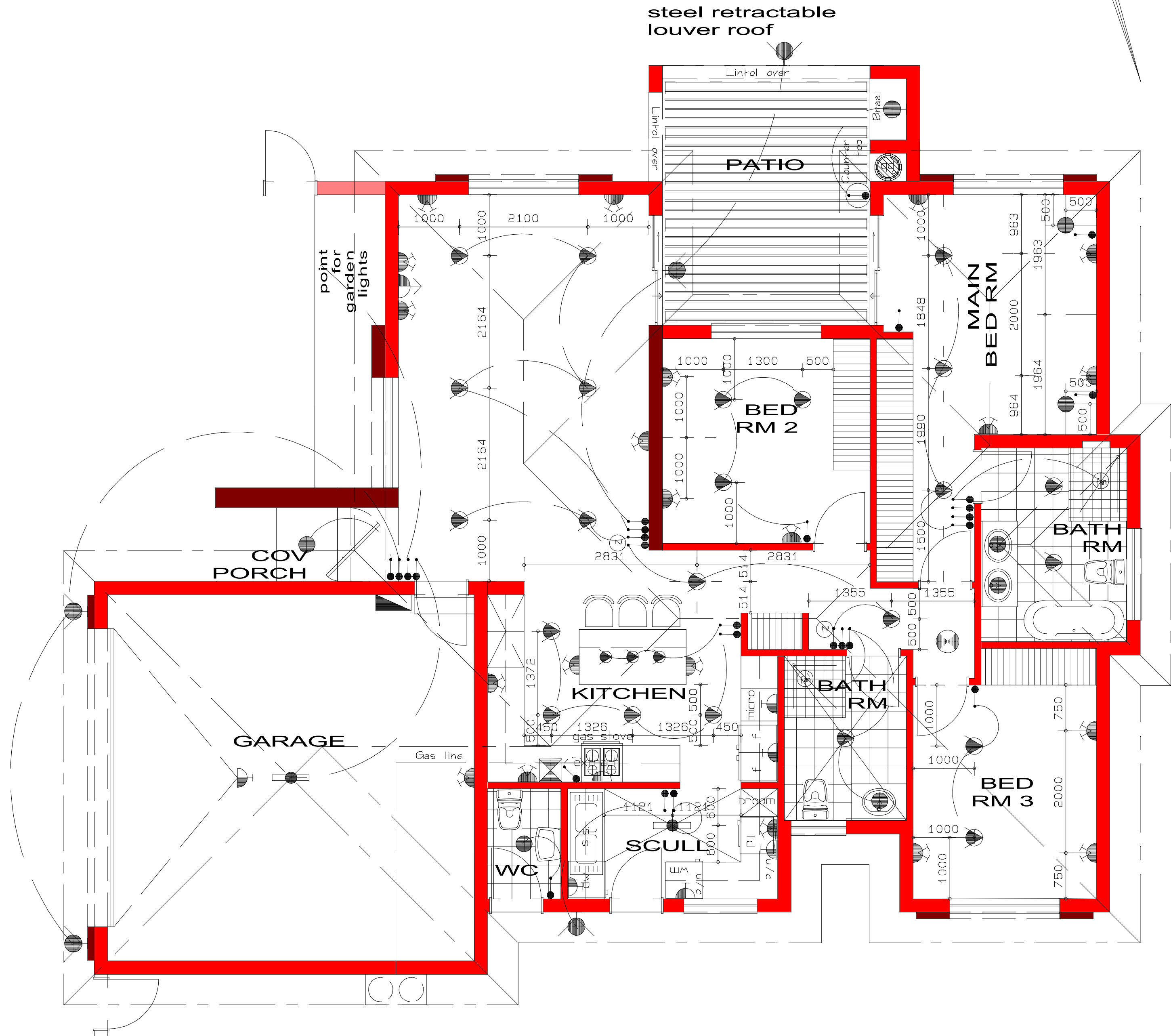
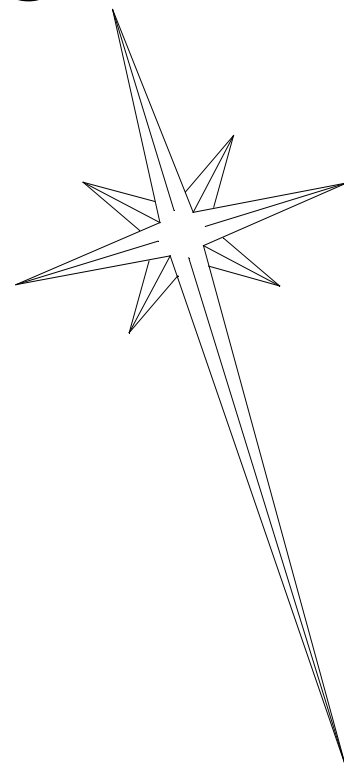


STAND 410 CHANCLIFF EST.



ELECTRICAL LAYOUT 1:50

ELECTRICAL LEGEND.

- Surface mounted ceiling light - Energy saving Bulbs 12W
- Surface mounted downlighter Energy saving Bulbs 7W
- Wall mounted light point
- Flood light
- Waterproof wall mounted light point 12W
- Surface mounted fluorescent light
 - 0.590m - 18W
 - 1.2 m - 36W
 - 2.4m - 75W
- Light switch
- Dimmer light switch
- 2 Way light switch
- 15 Amp plug
- Double 15 amp plug
- Television point at 220 (or as indicated)
- Geyser connection point
- Telephone point at 220 (or as indicated)
- Stove / oven connection point
- Stove / oven isolator
- Distribution board
- Waterproof stand light on armour cable solar lights - 0w

LIGHTING CALCULATIONS:

CLIMATIC ZONE: ZONE 1

1. ENERGY DEMAND:

ALLOWED: 5W/m²
5W/m² x 165 m² = 825 W

TOTAL - W

ceiling light - 12w x 3= 36W
downlighters -7w x 40= 280W
wall lights -12w x 1 = 12W
flowrecant - 18w x 2 = 36W
external light - 12w x 6 = 72W
Total = 436W

ALLOWED:

825 W

USED :

436W



OR

436 W / 165 m² = 2.6 W / m²

2.6W/m² < 5W/m²



1. ENERGY CONSUMPTION:

ALLOWED: 5kWh/m².a OR 5kWh/m² [a = 1year]

ASSUME LIGHTS ARE ON FROM 17:00 - 22:00 EACH DAY
(THAT IS 5H/DAY)

52(WEEKS) X 7(DAYS) X 5(HOURS) = 1 820h.a

ceiling light - 12w x 3= 36W
downlighters -7w x 40= 280W
wall lights -12w x 1 = 12W
flowrecant - 18w x 2 = 36W
external light - 12w x 6 = 72W
Total = 436W
0.436 kW X 1 820h.a = 793.52 kWh.A (<825 kW.A)

ALLOWED:

825 W

USED :

793.52W



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SANS 10400-XA2011: PART 4

4.1 Hot Water Supply:
4.1.1 (a) Volume of annual average hot water heating requirements - SANS 10252-1:2004
4.1.1 b) Solar water heating systems - SANS 1307, 10106, 10254 & 10252-1
4.1.3 Hot water service pipe cold with insulation - Min R-value - Table 1 & 6

4.2 Energy usage and building envelope:
4.2.1 (a) Building occupancy classified in Regulation A20 must have a competent person certify that such building (incl. garage & stores) has a theoretical annual energy consumption based on the design assumption in 4.3 less than or equal to Table 3-3.3 OR
4.2.1 (b) building occupancy classified in Regulations A20 tables 2, 3, 4, 5 & 6 the orientation is in accordance with SANS 204

4.3 Design Assumptions
(a) Where artificial ventilation systems are provided:
1) Design occupancy - Table 4
2) Space temperature lies within the range 19°C to 25°C for 98% plant operation time
3) Ventilation is provided - SANS 10400-Q
4) Internal Heat Gains in the building from:
i) Design population according to Table 5 average rate 750W per person
ii) Hot meals in dining, restaurants, @ rate of 20W/person, Table 5
iii) Appliances & Equipment - Table 6
iv) Artificial lighting - Table 4
(b) Hot Water Supply:
(c) Max. energy demand & usage calculated @ total building & not tenancies - Table 4.1

4.4 Building Envelope:
4.4.1 Orientation -
4.4.1.1 * Compact in plan
* Most used rooms North for winter solar heat to penetrate glazing
* Living spaces on North side
* Unhabited rooms, bathrooms & storerooms West & South
* Longer axis of the house runs East/West
4.4.1.2 * Roof overhang on North/West sufficient to shade windows - SANS 204
* Windows on East & West are limited to min. light & ventilation

4.4.3 External Walls -
4.4.3.1 * Non-masonry walls must achieve R-value of
a) climate zones 1 & 6 = 2.2 R-value
b) climate zones 2, 3, 4 & 5 = 1.9 R-value
4.4.3.2 * These masonry walls comply with the R-value requirements:
a) Double-skin masonry with NO cavity, plastered internally or rendered externally
b) Single leaf masonry nominal thickness greater than or equal to 140mm, plastered and rendered internally & externally
4.4.4 Fenestration -
4.4.4.1 Buildings with up to 15% fenestration area to net floor area per storey comply with the min. energy performance requirements
4.4.4.2 Buildings exceeding 15% fenestration area to net floor area per storey shall comply to - SANS 204
4.4.4.3 All fenestration air filtration comply to - SANS 613
4.4.5 Roof Assembly:
4.4.5.1 Roof assembly total min. R-value to comply to - Table 7
4.4.5.2 Metal sheeting fixed to purlins, metal rafters or battens must have a thermal break consisting of material with an R-value not less than 0.2 installed between metal sheeting and supporting member (isolation)
4.4.5.3 Metal sheeting to comply to - Table 8
4.4.5.4 Clay tile assembly to comply to - Table 9

NOTE: TOWNSHIP IS IN JHB
CLIMATE ZONE 1: COLD INTERIOR - JHB, BLM

ENGINEER SIGNATURE:

OWNERS SIGNATURE:

ARCHITECTS SIGNATURE:

PROJECT DETAILS:

PROPOSED NEW DWELLING
ON ERF 410
CHANCLIFF ESTATE XT 32
FOR: OWNERS

SHEET DETAILS: ELECTRICAL LAYOUT

SHEET NUMBER:
WD - 04

REVISION
O

DATE:
01-08-2020

DRAWN BY:
AW

CHECKED BY:
MNP

Architecture Interior Design Decor

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