

CHAPTER 4

Data Collection

The author had traveled back to Phnom Penh at the end of 2015 to start doing survey and observation on houses for this research. But it is important to note that the access into the house was limited due to privacy violation and security concern of the house owners. This became a major obstacle for detail investigation.

Within this research, there were roughly 40 houses which were considered as having architectural style of the modern private houses of 1960s. However, due to the similarity of the houses, limit of time and effort, only 20 houses were selected for this study. Points of observation include size, high, design feature, material, and outside space function that can be seen from the outside. Most houses in this area belong to high ranking figure, wealthy business people or private company where security reason are the main concern.

4.1 Empirical Data

Fortunately, upon asking friends and people who worked in the construction and conservation field, the author could obtain very detail documented architectural drawings of two houses. The first house (Serial No. 18- address No. 15, St 310) was documented by a building renovation company before they did renovation on the house. According to the renovation company, the house was still in almost original condition when the survey was done. The second house (Serial No.04- address No. 34, St 322) was provided by Khmer Architecture Tour who made architectural survey of the house before the house was demolished. The detail information consisted of photographs, and drawing of floor plan and elevation. The design of these two houses was among the common design, such as roof, shape, planning, size and structure, size of land and foot print of house, material and texture of finishing. These two houses could be sued as an example to determine the size, form and hidden design of the others houses.

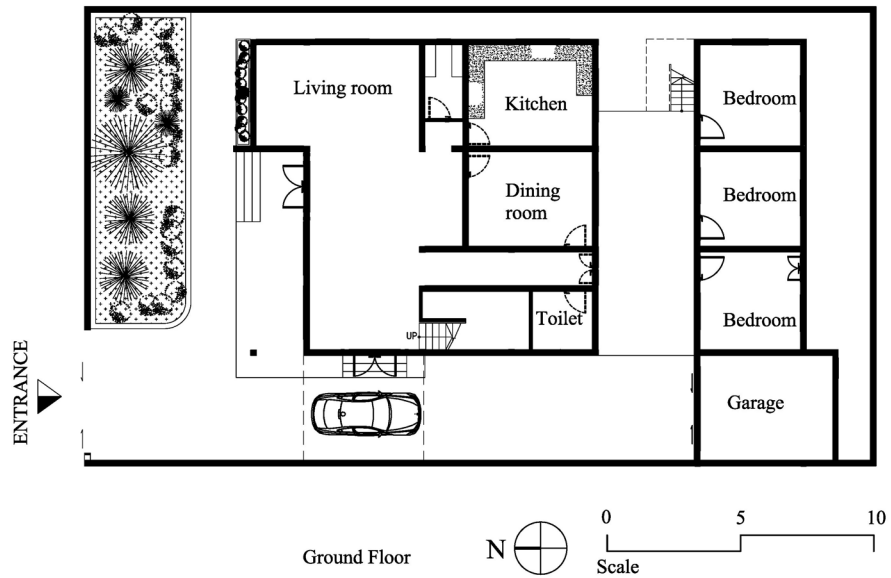
- House Serial No. 18- address No. 15, St 310

- Photographs

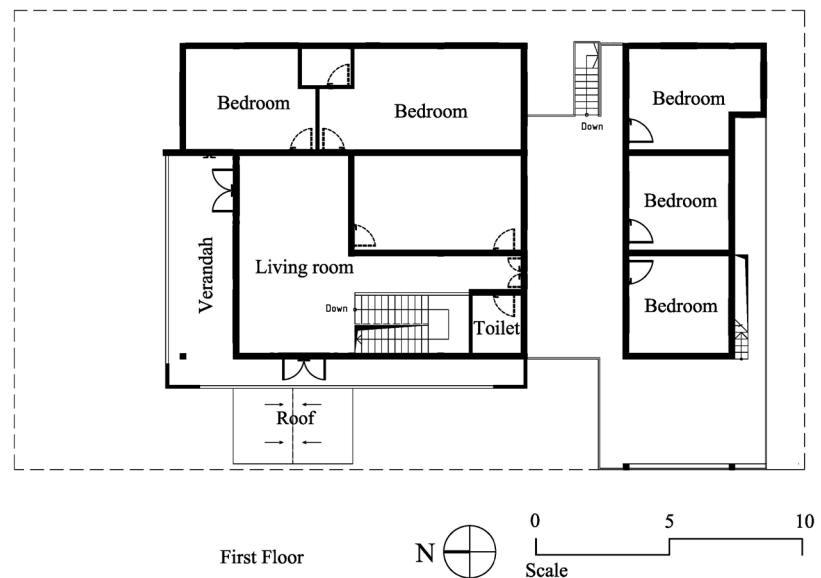


Figure 4.1 Photographs of house No.18

- Drawings



Ground Floor Plan

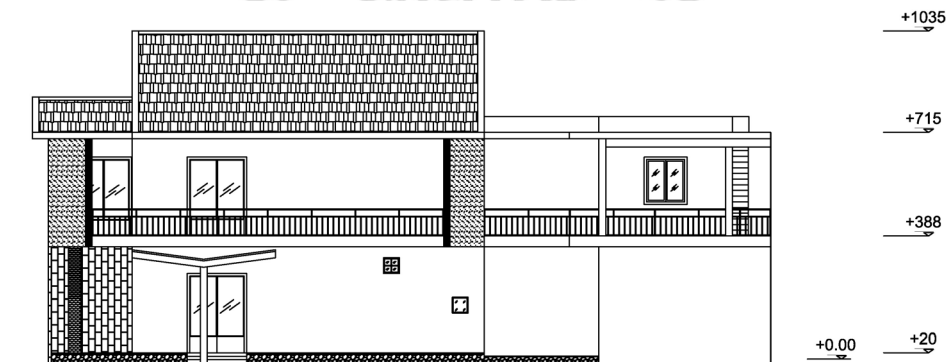


First Floor Plan

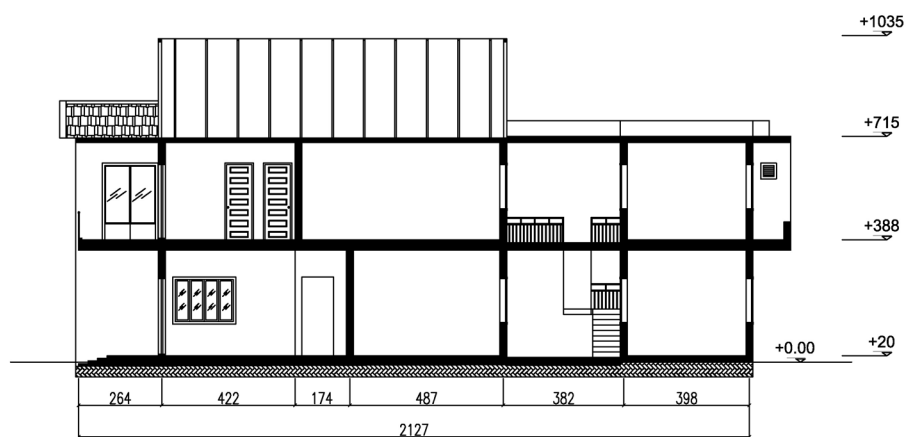
Figure 4.2 Drawing of floor plans of house No. 18



Front Elevation



Right Elevation



Section

Figure 4.3 Drawing of Elevations and section of house No. 18

- House Serial No.04- address No. 34, St 322

- Photographs



Figure 4.4 Photograph of house No. 04

○ Drawings

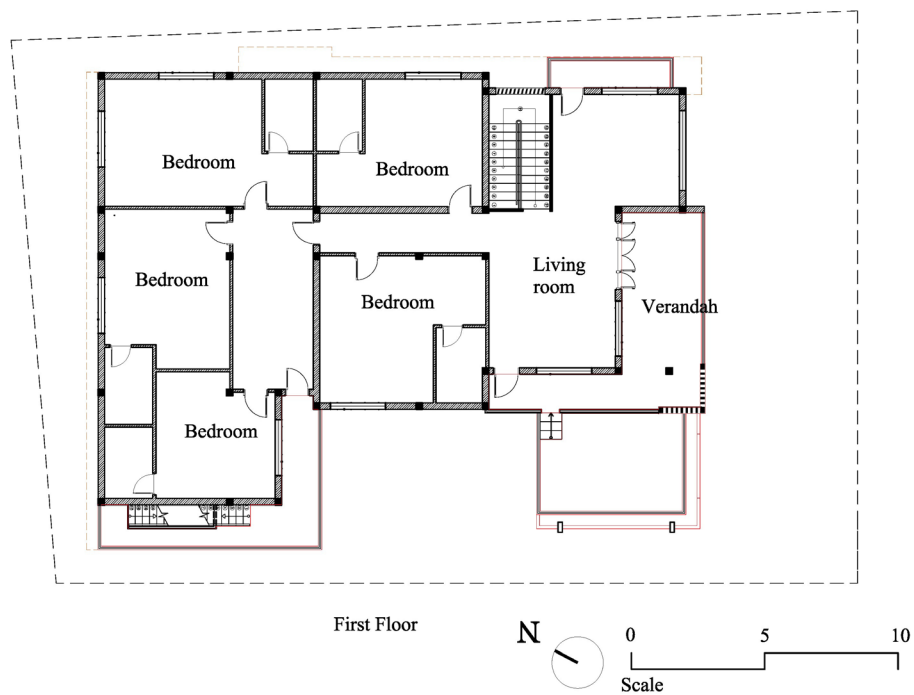
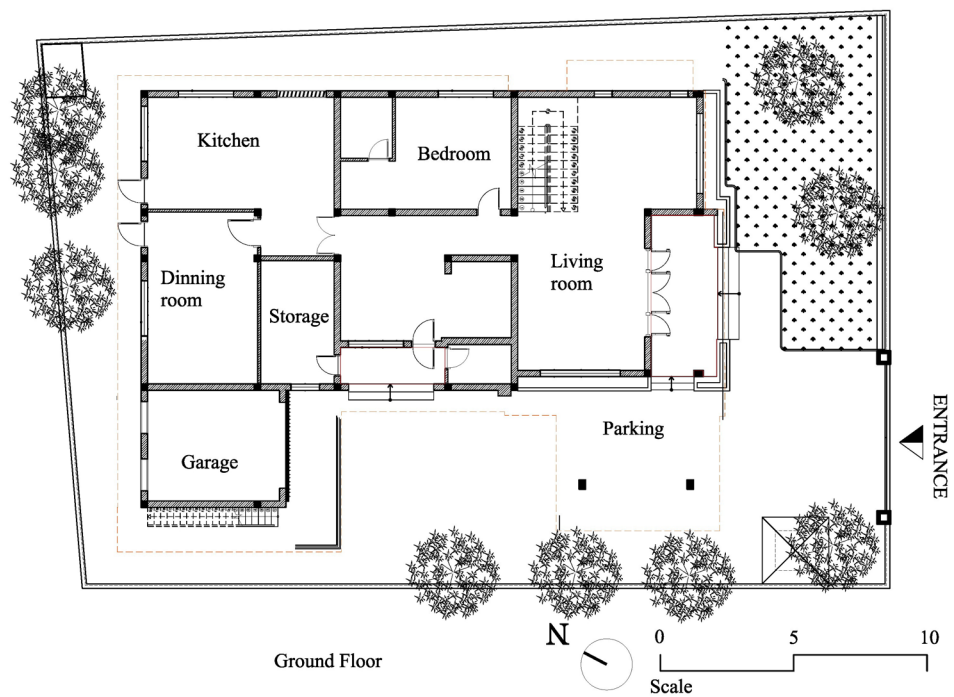
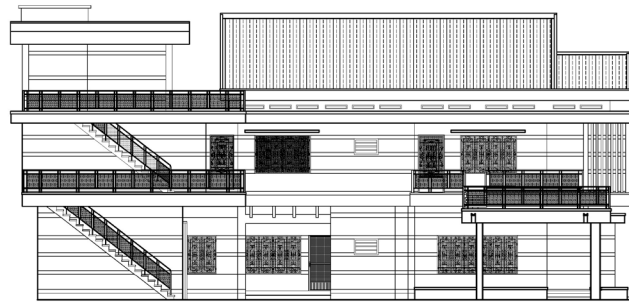


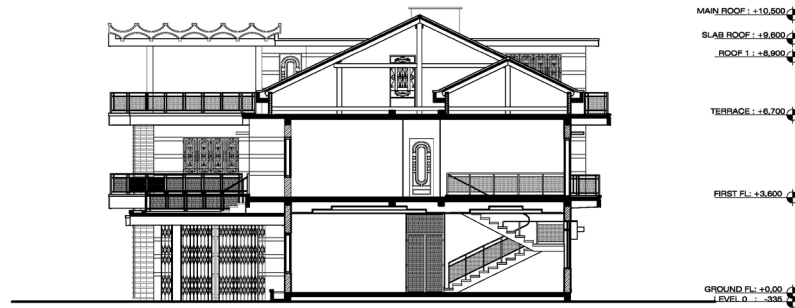
Figure 4.5 Drawing of floors plan of house No. 04



Front Elevation



Left Elevation



Section

Figure 4.6 Drawing of elevations and section of house No. 04

- Features of the 20 houses

The selected houses located in Boeung Keng kang. Code number were provided to each house in orderly way.

Key map



Phnom Penh city in 1968



Figure 4.7 Location map of the houses

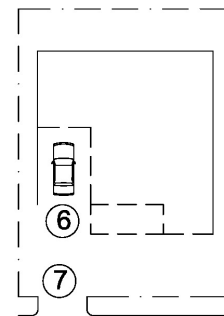


Sketched Drawing



FRONT ELEVATION

Scale bar ————— 4m



PLAN LAYOUT

Scale bar ————— 4m



Features

Present use : Residential

1- Roof : double gable roof (1),

2- Decorative features: small windows (2)

3- Materials : concrete, steel, terrazzo finishing

4- Climatic adaptation features: verandah (4), window canopies(3), large doors and windows

5- Space : approximate house footprint 16 m x 18m, 2 storeys, approximate land size 18m x 25m, cardrop off (6), entrance gate (7),

6- Structure : approximately 4m beam span, vertical column (5)

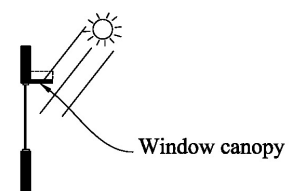
① Roof



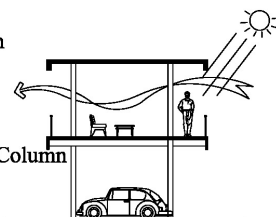
② Decorative element



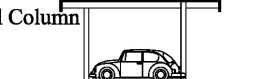
③ Window canopy



④ Verandah

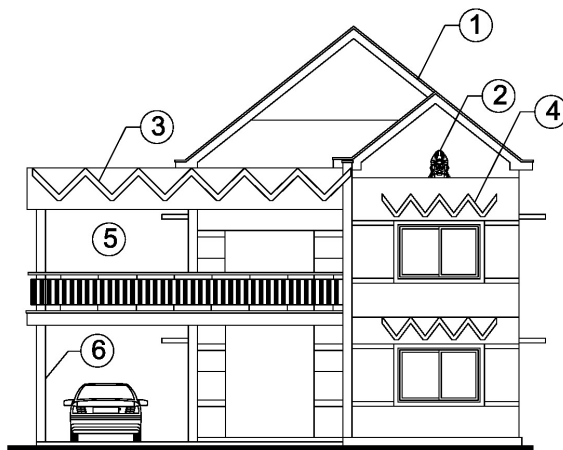


⑤ Vertical Column



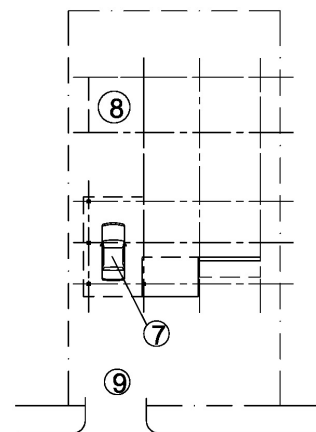


Sketched Drawing



FRONT ELEVATION

Scale bar ——— 4m



PLAN LAYOUT

Scale bar ——— 4m



Features

Present use : boutique hotel.

1- Roof : double gable roof (1),

2- Decorative features: symbol of temple (2), VVV-shape (3)

3- Materials : concrete, steel, terrazzo finishing

4- Climatic adaptation features: verandah (5), window canopy (4), large doors and windows

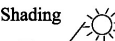
5- Space : approximate house footprint 12 m x 18m, 2 storeys, approximate land size 15 m x 25m, car drop off (7), garage (8), entrance gate (9)

6- Structure : approximately 4m beam span, vertical column (6)

③ VVV-shape element



④ Shading



Window canopy

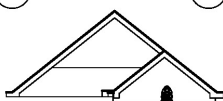
⑤ Verandah



⑥ Vertical column



① Roof

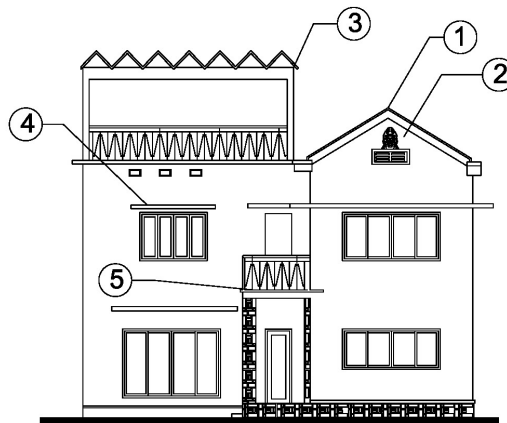


② Temple symbol



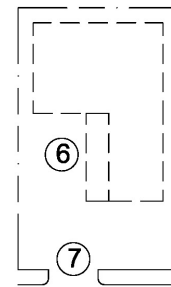


Sketched Drawing



FRONT ELEVATION

Scale bar ——— 4m



PLAN LAYOUT

Scale bar ——— 4m



Features

Present use : Residential

1- Roof : single gable roof (1),

2- Decorative features: temple symbol (2), VVV-shape (3)

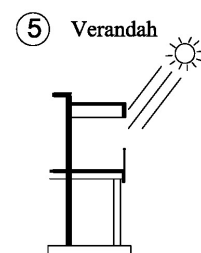
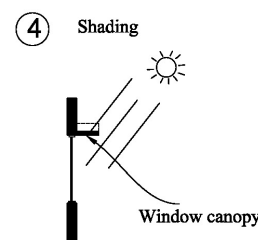
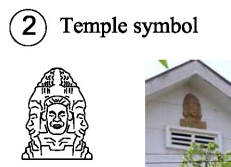
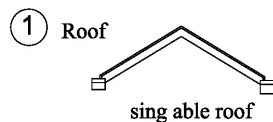
3- Materials : concrete, steel, terrazzo finishing

4- Climatic adaptation features: window canopies (4), verandah (5), large doors and windows

5- Space : approximate house footprint 2 m x 14m, 2 storeys, approximate land size 15m x 25m, car park(6), entrance gate (7)

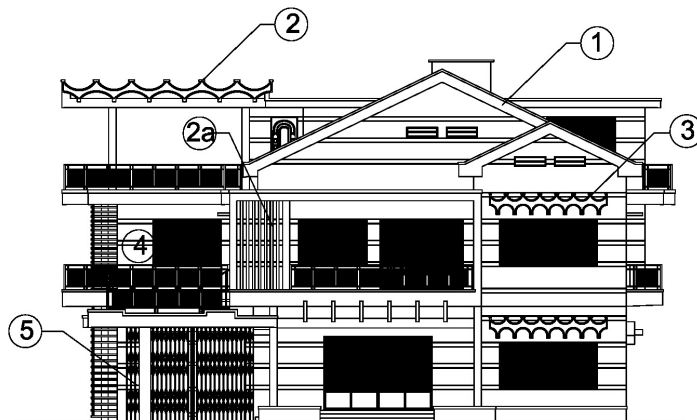
6- Structure : approximately 4m beam span

③ VVV-shape canopy



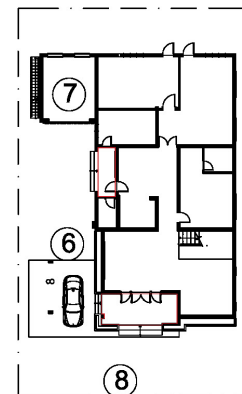


Sketched Drawing



FRONT ELEVATION

Scale bar ——— 4m



PLAN LAYOUT

Scale bar ——— 4m



Features

Present use : Residential

1- Roof : double gable roof (1),

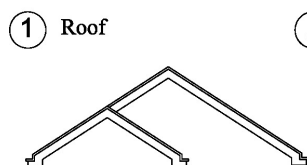
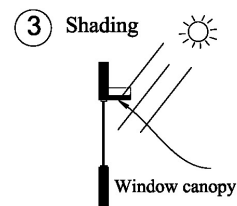
2- Decorative featurues: VVV-shape (2), Vertical fins (2a)

3- Materials : concrete, steel, terrazzo finishing

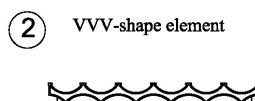
4- Climatic adaptation featurues: window canopy(3), veranda (4), large door and window

5- Space : approximate house footprint 16 m x 22m, 2 approximate storeys, land size 20m x 28m, car park(6), entrance gate (7)

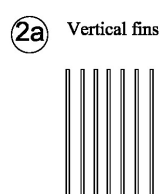
6- Structure : approximately 4m beam span



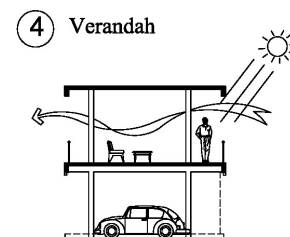
① Roof



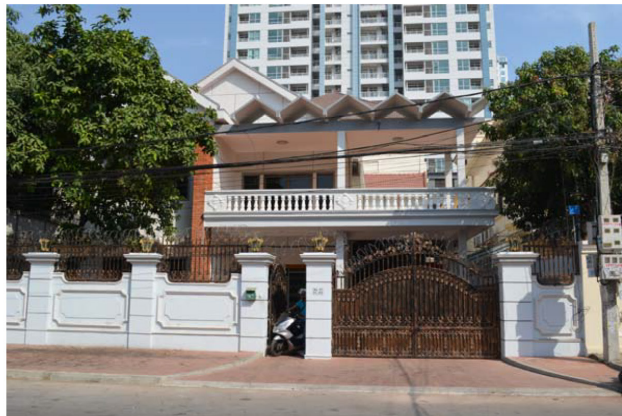
② VVV-shape element



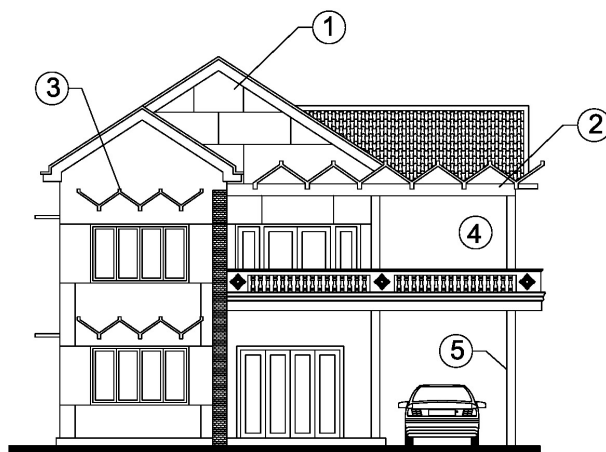
②a Vertical fins



④ Verandah

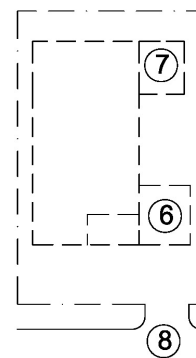


Sketched Drawing



Front Elevation

Scale bar ————— 4m



Plan Layout

Scale bar ————— 4m



Features

Present use : Residential

1- Roof : double gable roof (1),

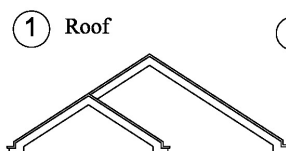
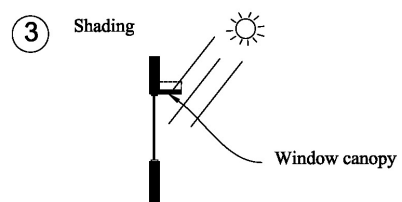
2- Decorative features: VVV-shape canopies (2) (3)

3- Materials : concrete, steel, terrazzo finishing

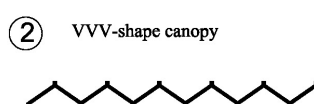
4- Climatic adaptation features: veranda (4), canopies (3), large doors and windows

5- Space : approximate house footprint 12m x 16m, 2 storeys, approximate land size 14m x 25m, car drop off (6), garage (7), Entrance gate (8)

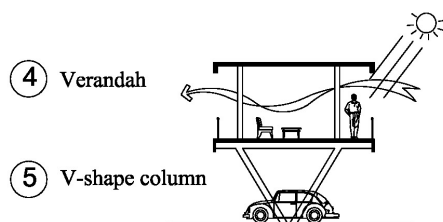
6- Structure : approximately 4m beam span, V-shape column



Double gable roof



VVV-shape canopy



Verandah

V-shape column

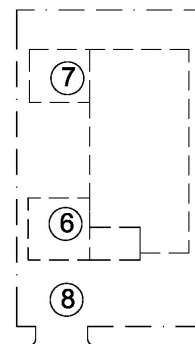


Sketched Drawing



Front Elevation

Scale bar ————— 4m



Plan Layout

Scale bar ————— 4m



Features

Present use : Residential

1- Roof : double gable roof (1),

2- Decorative features: temple symbols (2)

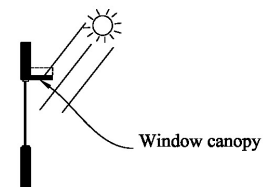
3- Materials : concrete, steel, terrazzo finishing

4- Climatic adaptation features: window canopies (3), verandah (4),
Door and window size

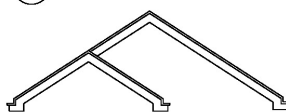
5- Space : approximate house footprint 15m x 120m, 2 storeys,
approximate land size 18m x 28m, cardrop off (6),
garage (7), entrance gate (8),

6- Structure : approximate 4m beam span, V-shape column

③ Shading



① Roof

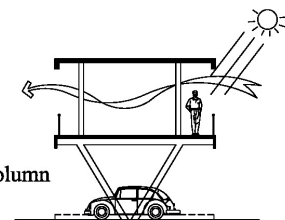


Double gable roof

② Temple symbol



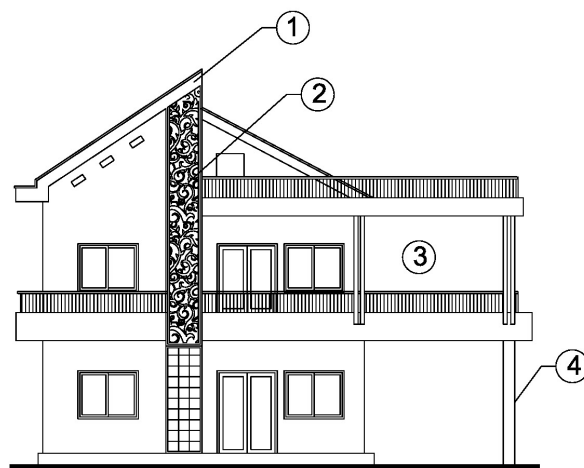
④ Verandah



④ V-shape column

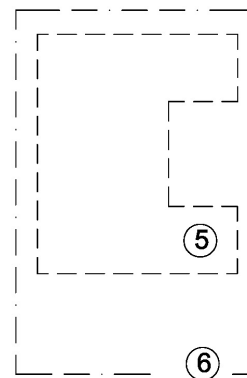


Sketched Drawing



Front Elevation

Scale bar ————— 4m



Plan Layout

Scale bar ————— 4m



Features

Present use : Residential

1- Roof : half gable roof (1),

2- Decorative features: traditional ornament (2)

3- Materials : concrete, steel, paint finishing

4- Climatic adaptation features: verandah (3), large doors and windows

5- Space : approximate house footprint 15m x 20m, 2 storeys,
land size approximately 18m x 25m, car drop off (6),
entrance gate (7)

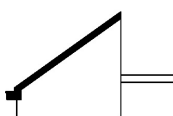
6- Structure : approximate 4m beam span, V-shape column

① Roof

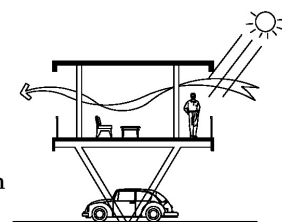
② Traditional Ornament

③ Verandah

④ V-shape column

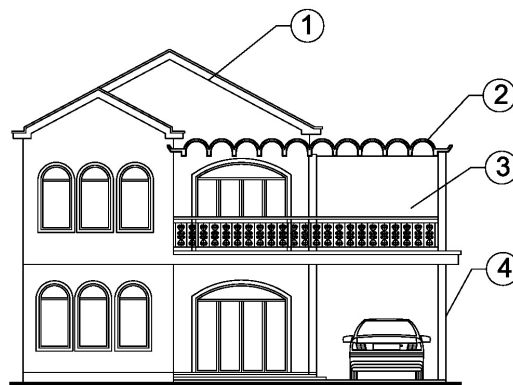


half gable Roof



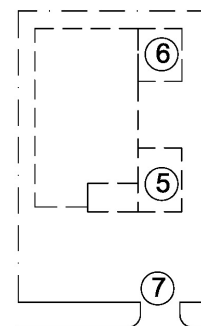


Sketched Drawing



Front Elevation

Scale bar ————— 4m



Plan Layout

Scale bar ————— 4m



Features

Present use : Residential

1- Roof : double gable roof (1),

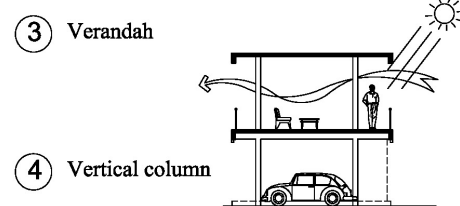
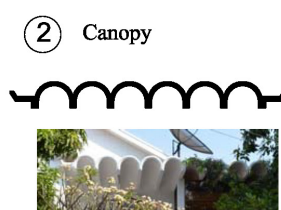
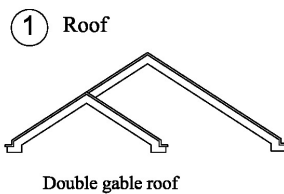
2- Decorative feartures: vvv-shape(2)

3- Materials : concrete, steel, white plaster finishing

4- Climatic adaptation feautres: verandah (3), doors and windows

5- Space : approximate house footprint 15m x 20m, 2 storeys,
approximate land size 18m x 25m, cardrop off (5),
garage (6), entrance grate (7)

6- Structure : approximate 4m beam span, vertical column (4)



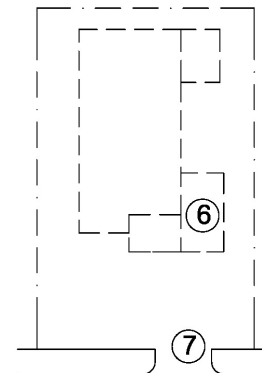


Sketched Drawing



Front Elevation

Scale bar ——— 4m



Plan Layout

Scale bar ——— 4m



Features

Present use : Residential

1- Roof : flate roof (1),

2- Decorative featurues: wave-shape (2)

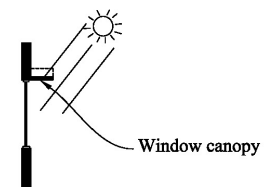
3- Materials : concrete, steel, white plaster finishing

4- Climatic adaptation featurues:window canopies (3), verandah (4), doors and windows

5- Space : approximate house footprint 14m x 20m, 2 storeys, approximate land size 16m x 25m, cardrop off (6), entrance grate (7)

6- Structure : approximate 4m beam span, vertical column (5)

③ Shading



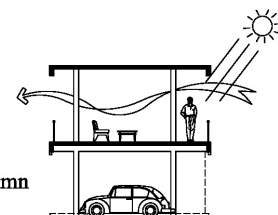
① Roof



② wave-shape



④ Verandah

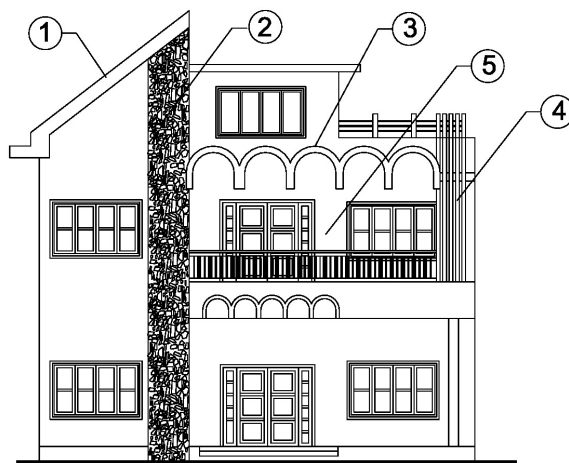


⑤ Vertical column



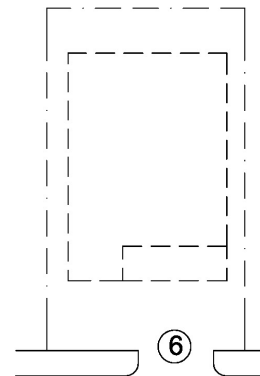


Sketched Drawing



Front Elevation

Scale bar — 4m



Plan Layout

Scale bar — 4m

Features

Present use : Residential

1- Roof : half gable roof (1),

2- Decorative features: Stone texture (2), U-shape(3)

3- Materials : concrete, steel, plaster finishing

4- Climatic adaptation features: Vertical fins (4), verandah (5), door and window

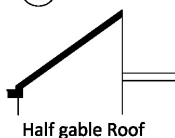
5- Space : approximate house footprint 14m x 20m, 2 storeys,
approximate land size 16m x 25m, entrance grate (6),

6- Structure : approximate 4m beam span

④ Vertical fins



① Roof



Half gable Roof

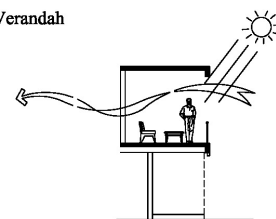
② Stone pattern



③ UUU-shape element

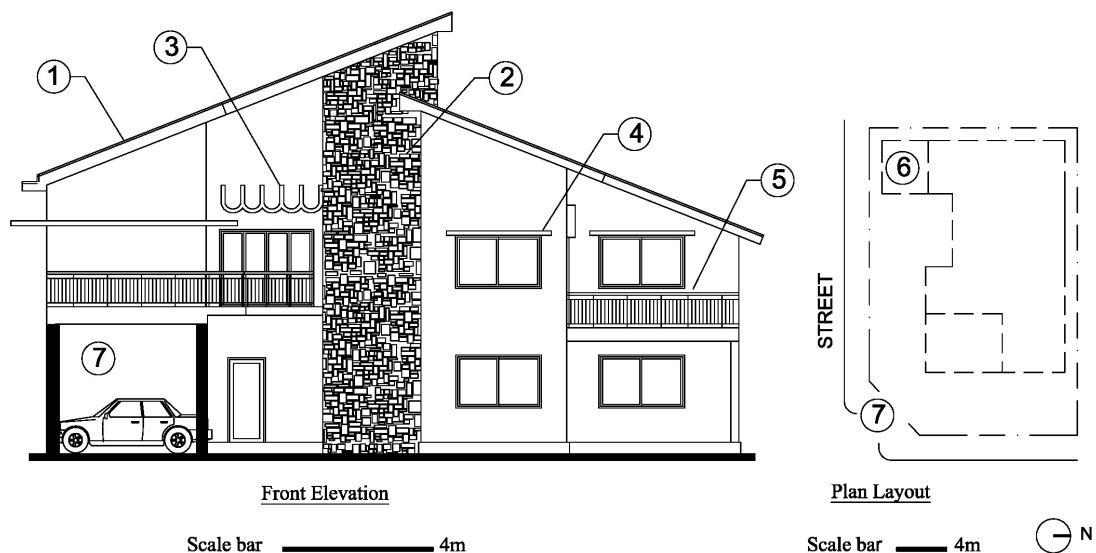


⑤ Verandah





Sketched Drawing



Features

Present use : Restaurant

1- Roof : half gable roof (1),

2- Decorative features: Stone texture (2), U-shape (3)

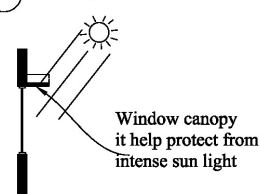
3- Materials : concrete, steel, paint finishing

4- Climatic adaptation features: window canopies (4), verandah (5), large doors and windows

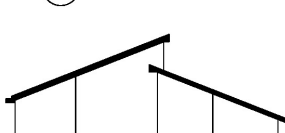
5- Space : approximate house footprint 14m x 20m, 2 storeys, approximate land size 16m x 25m, entrance gate (6),

6- Structure : approximate 4m beam span

④ Shading



① Roof



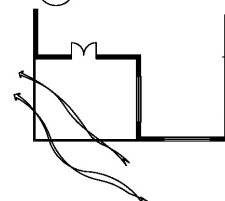
② Roof



③ Design feature

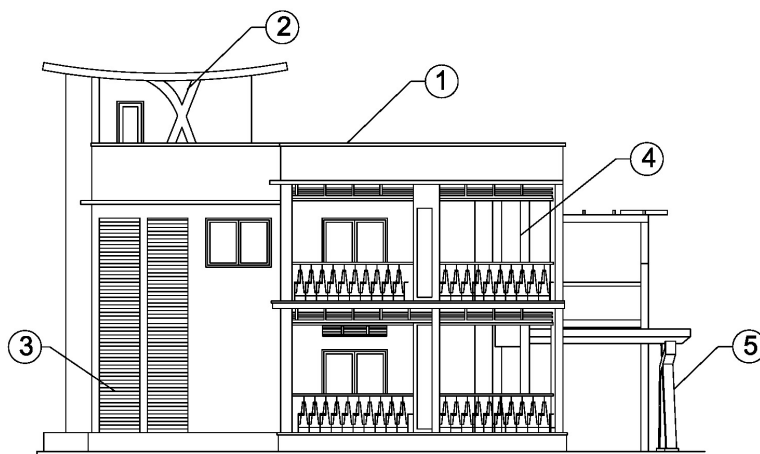


⑤ Verendah



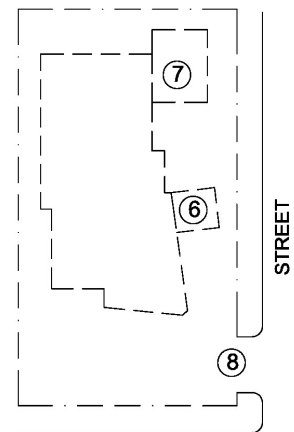


Sketched Drawing



Front Elevation

Scale bar — 4m



Plan Layout

Scale bar — 4m N

Features

Present use : Residence

1- Roof : flat roof (1),

2- Decorative features: X-shape (2),

3- Materials : concrete, steel, terrazzo finishing

4- Climatic adaptation features: louvers (3), verandah (4) large doors and windows

5- Space : approximate house footprint 14m x 24m, 2 storeys, approximate land size 18m x 26m, entrance gate (8),

6- Structure : approximately 4m beam span, X-shape column (5)

① Roof



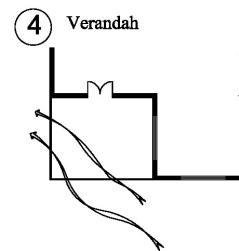
② x-shape



③ Ventilation



④ Verandah

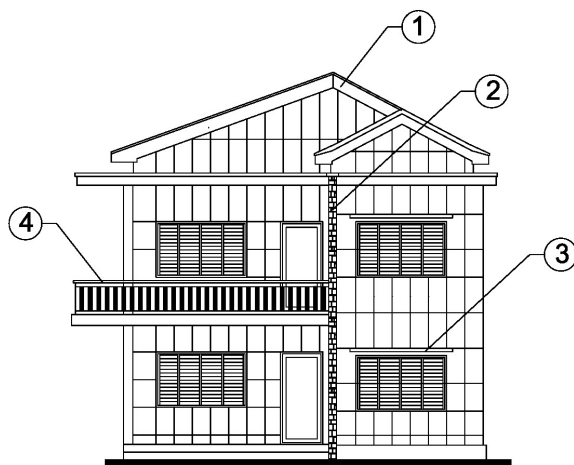


⑤ column shape



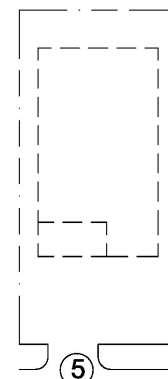


Sketched Drawing



Front Elevation

Scale bar ————— 4m



Plan Layout

Scale bar ————— 4m



Features

Present use : Residence

1- Roof : double gable roof (1),

2- Decorative features: stone pattern (2),

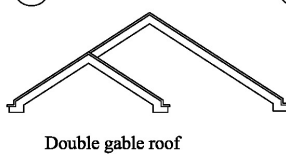
3- Materials : concrete, steel, terrazzo finishing

4- Climatic adaptation features: window canopies (3), verandah (4)
doors and windows

5- Space : approximate house footprint 8m x 16m, 2 storeys,
approximate land size 12m x 25m, entrance gate (5),

6- Structure : approximately 4m beam span

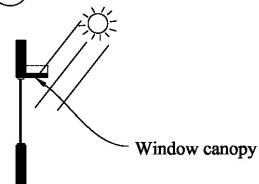
① Roof



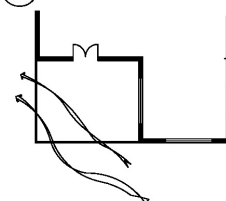
② Stone pattern



③ Shading

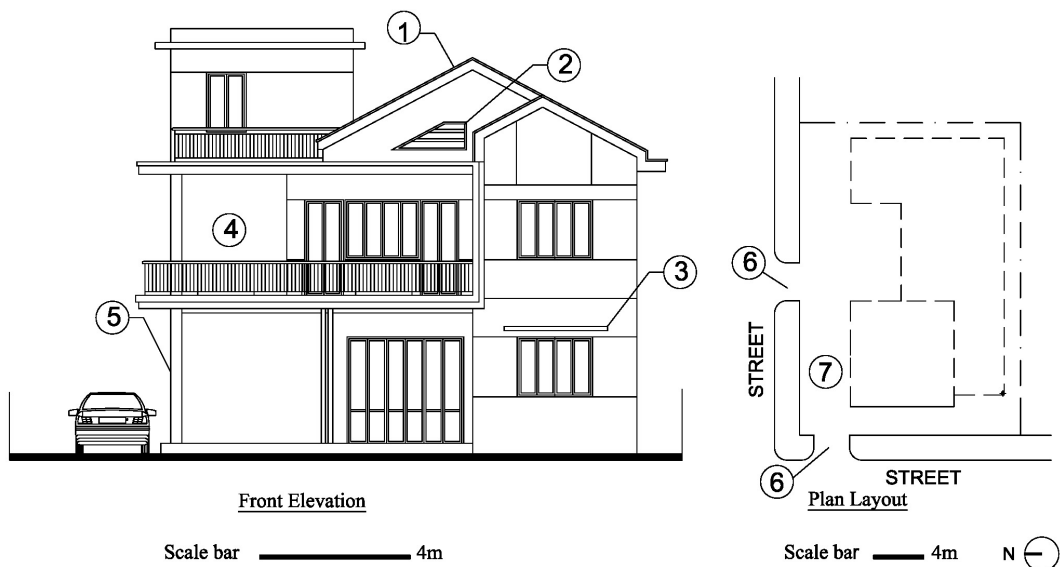


④ Verandah





Sketched Drawing



Features

Present use : Restaurant, tailor shop and office.

1- Roof : double gable roof (1),

2- Decorative features:

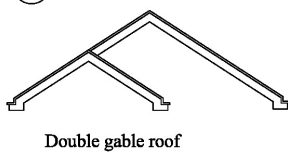
3- Materials : concrete, steel, terrazzo finishing

4- Climatic adaptation features: window canopies (3), verandah (4) doors and windows

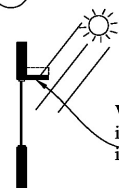
5- Space : approximate house footprint 14m x 20m, 2 storeys, approximate land size 18m x 25m, parking space (7) entrance gate (6)

6- Structure : approximate 4m beam span

① Roof

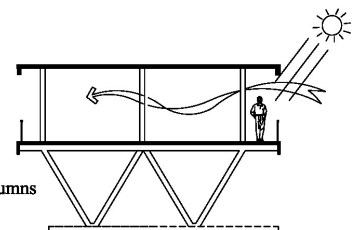


② Shading



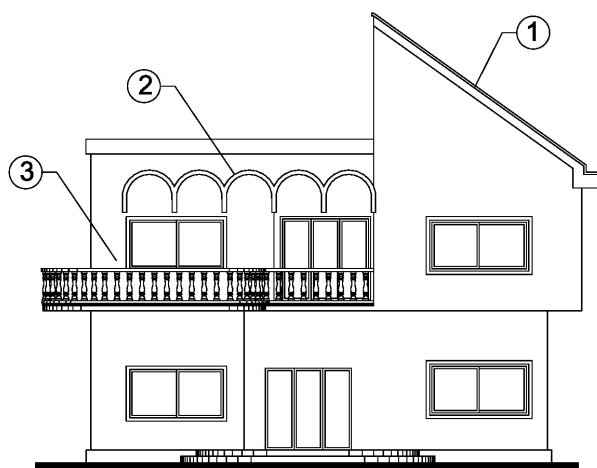
④ Verandah

⑤ V-shape columns



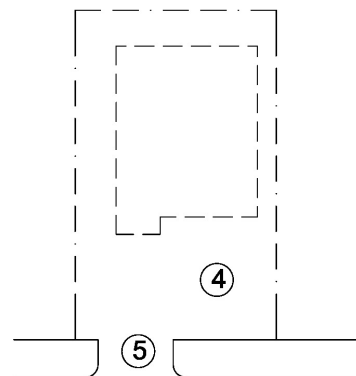


Sketched Drawing



Front Elevation

Scale bar ————— 4m



Plan Layout

Scale bar ————— 4m



Features

Present use : Residence

1- Roof : half gable roof (1), flat roof

2- Decorative features: UUU-shape

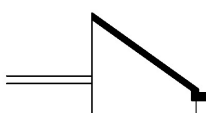
3- Materials : concrete, steel, plastering finishing

4- Climatic adaptation features: verandah (3) doors and windows

5- Space : approximate house footprint 12m x 20m, 2 storeys,
approximate land size 15m x 25m, parking space (4)
entrance gate (5),

6- Structure : approximate 4m beam span

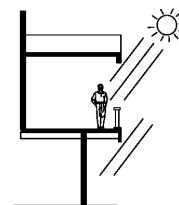
① Roof



② UUU-shape element



③ Verandah



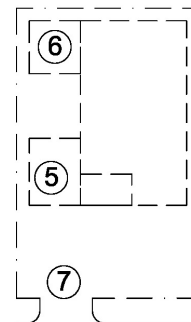


Sketched Drawing



Front Elevation

Scale bar ————— 4m



Plan Layout

Scale bar ————— 4m



Features

Present use : Office

1- Roof : half gable roof (1), flat roof

2- Decorative feartures: temple symbol

3- Materials : concrete, steel, plastering finishing

4- Climatic adaptation feautures: verandah (3) doors and windows

5- Space : approximate house footprint 14m x 20m, 2 storeys,
approximate land size 16m x 25m, parking space (5)
garage (6), entrance (7)

6- Structure : approximate 4m beam span, V-shape column (4)

① Roof

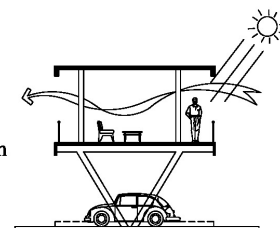


① Temple symbol



③ Verandah

④ V-shape column



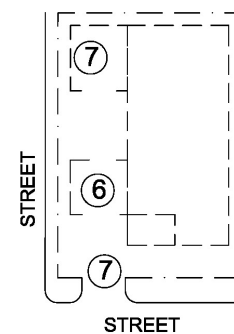


Sketched Drawing



Front Elevation

Scale bar ————— 4m



Plan Layout

Scale bar ————— 4m



Features

Present use : Clinic

1- Roof : half gable roof (1), flat roof

2- Decorative features: traditional ornament

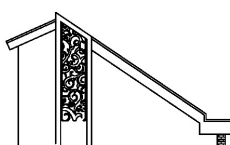
3- Materials : concrete, steel, plastering finishing

4- Climatic adaptation features: window canopies (3), verandah (4) doors and windows

5- Space : approximate house footprint 14m x 22m, 2 storeys, approximate land size 16m x 25m, parking space (6) garage (7), entrance (8)

6- Structure : approximate 4m beam span, V-shape column (4)

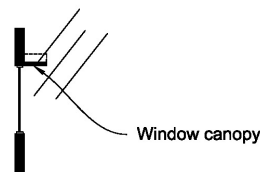
① Roof



② Traditional ornament

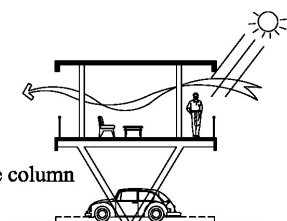


③ Shading



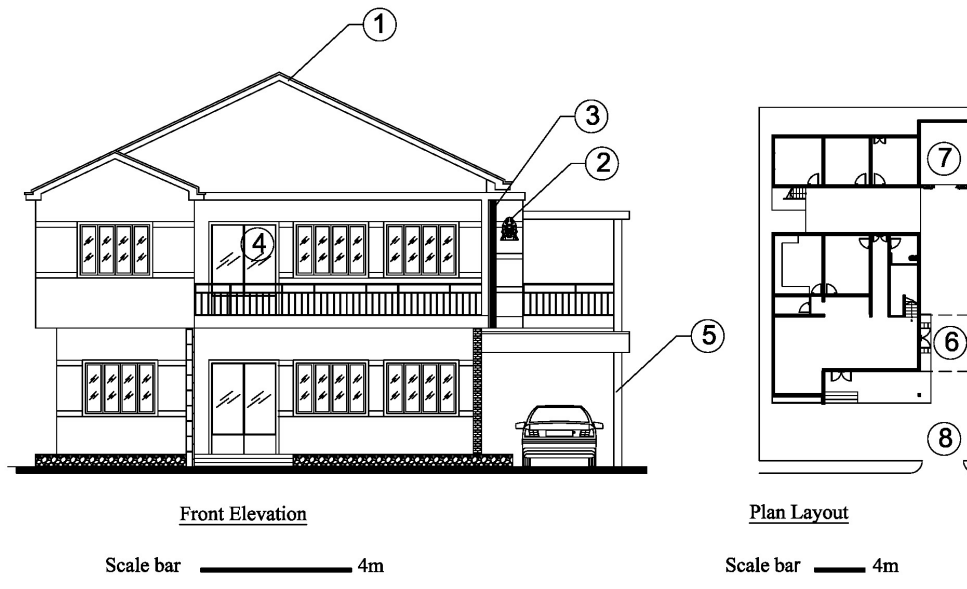
④ Verandah

⑤ V-shape column





Sketched Drawing



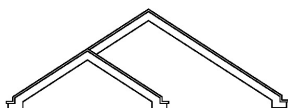
Features

- Present use : Clinic
- 1- Roof : double gable roof (1), flat roof
- 2- Decorative features: temple symbol (2), vertical fins (3)
- 3- Materials : concrete, steel, plastering finishing
- 4- Climatic adaptation features: verandah (4), doors and windows
- 5- Space : house footprint 16m x 22m, 2 storeys,
land size 17m x 29m, parking space (6), garage (7),
entrance (8)
- 6- Structure : approximate 4m beam span, vertical column (4)

- 5 Vertical column



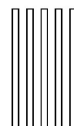
- 1 Roof



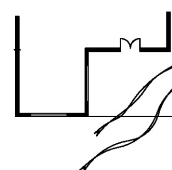
- 3 Divine statue



- 3 Vertical fins

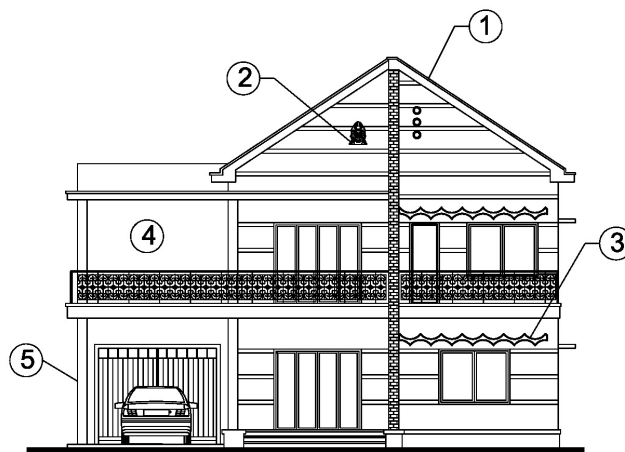


- 4 Verandah



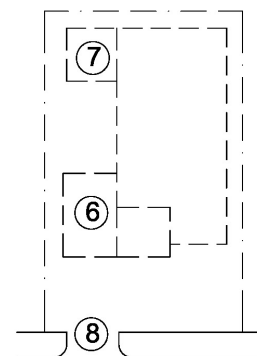


Sketched Drawing



Front Elevation

Scale bar ————— 4m



Plan Layout

Scale bar ————— 4m



Features

Present use : Clinic

1- Roof : half gable roof (1), flat roof

2- Decorative features: temple symbol (2), wave-shape (3)

3- Materials : concrete, steel, plastering finishing

4- Climatic adaptation features: verandah (4), doors and windows

5- Space : approximate house footprint 14m x 20m, 2 storeys,
approximate land size 16m x 25m, parking space (6),
garage (7), entrance (8)

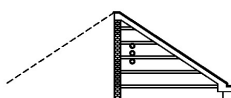
6- Structure : approximate 4m beam span, V-shape column (4)

① Roof

② Temple symbol

③ Wave-shape

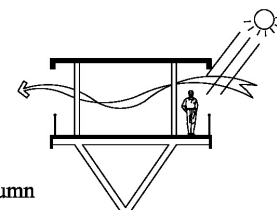
④ Verandah



Half gable roof

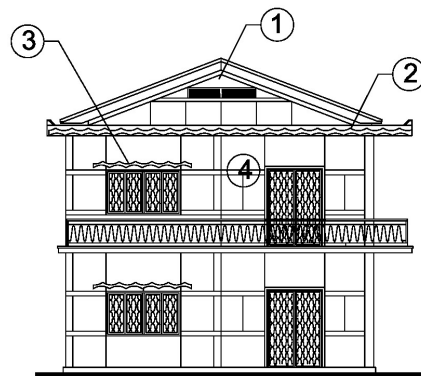


⑤ V-shape column



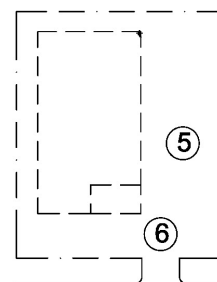


Sketched Drawing



Front Elevation

Scale bar 4m



Plan Layout

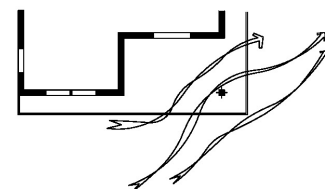
Scale bar 4m



Features

- Present use : Clinic
- 1- Roof : single gable roof (1), flat roof
- 2- Decorative features: wave-shape (2)
- 3- Materials : concrete, steel, plastering finishing
- 4- Climatic adaptation features: window canopy (3) verandah (4), doors and windows
- 5- Space : approximate house footprint 8m x 16m, 2 storeys, approximate land size 14m x 25m, parking space (5), entrance (6)
- 6- Structure : approximate 4m beam span

④ Verandah



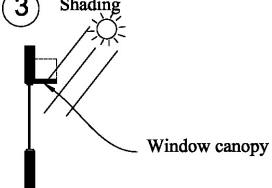
① Roof



② Roof edge



③ Shading



4.2 Data Summary

1- Roof Style

- 9 Houses have double gable roof
- 7 houses have half gable roof
- houses have flat roof
- houses have gable roof with flat roof.

2- Decorative Features:

- 11 houses have the zigzag-shape element.
- 7 houses had V-shape column design.
- 6 houses have symbol of temple

3- Material:

- all houses were constructed using reinforced concrete structure and brick wall.
- 6 houses use paint for exterior wall finishing,
- 15 houses use terrazzo with cement mortar for exterior wall finishing.
- 4 houses that have natural texture of material such brick pattern and natural stone pattern.

4- Climatic adaptation feature

- Most houses had verandah
- Most house large windows

5- Space, House size, and land size:

- Almost all of the houses are two storey and have the size of around 10m to 15 m in width and long respectively.
- 4m to 6 m of front offset are common length
- small offset, approximately 1 m, on the side.
- 12 houses have parking space or car-drop off.

6-Structure:

- Most house have three rows of column and have approximately 4m of beam span.