

Weißenhofsiedlung

eine Fallstudie der Sonne, Wind, und Licht

boodan, bui, makhalik, so, xia

weissenhoff apartments

ARCHITECT ludwig mies van der rohe

LOCATION stuttgart, germany

DATE 1927

CLIMATE temperate

BUILDING TYPE apartment housing

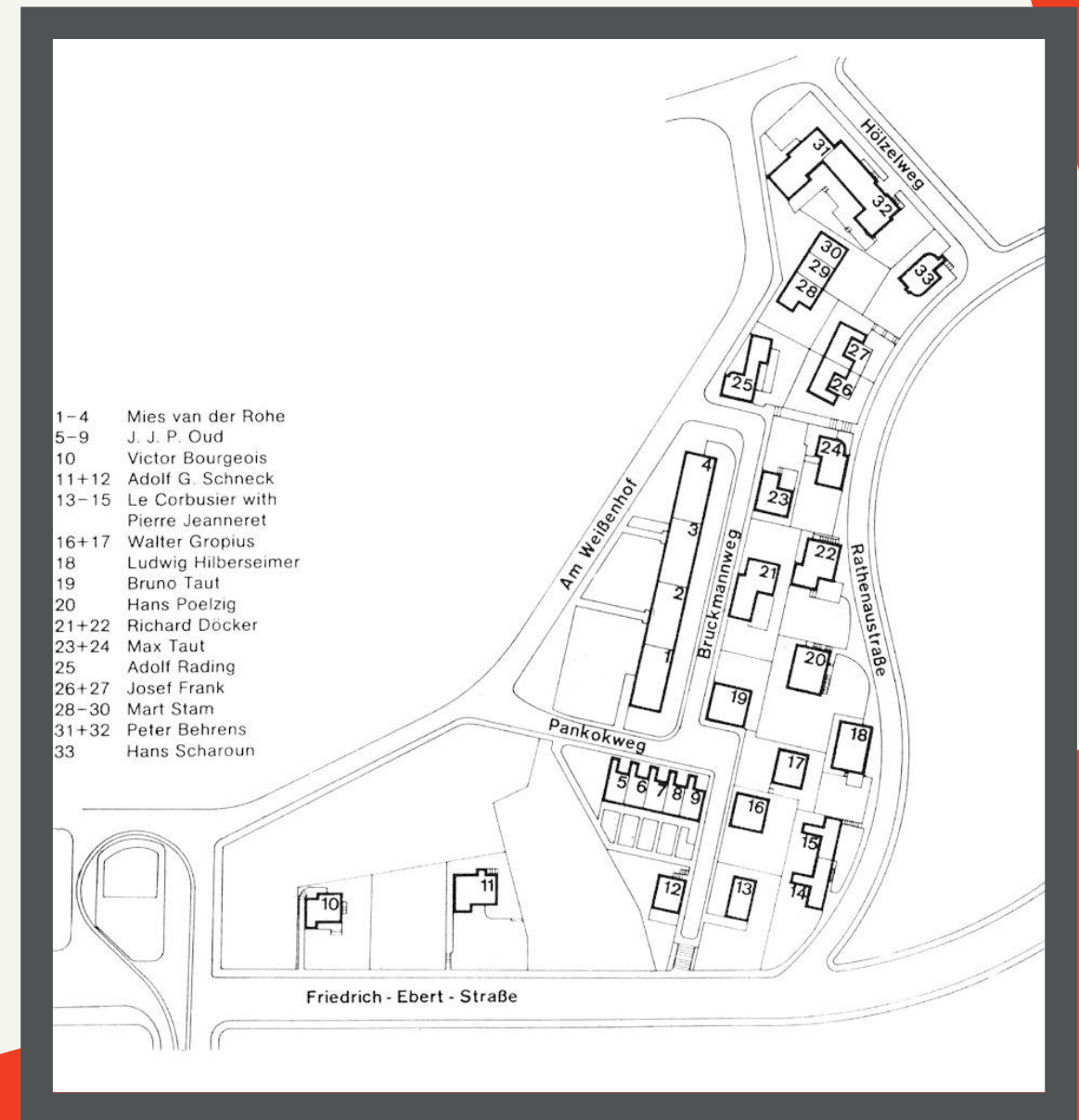
CONSTRUCTION iron filled frame with single tier brickwork,
plastered interior and exterior



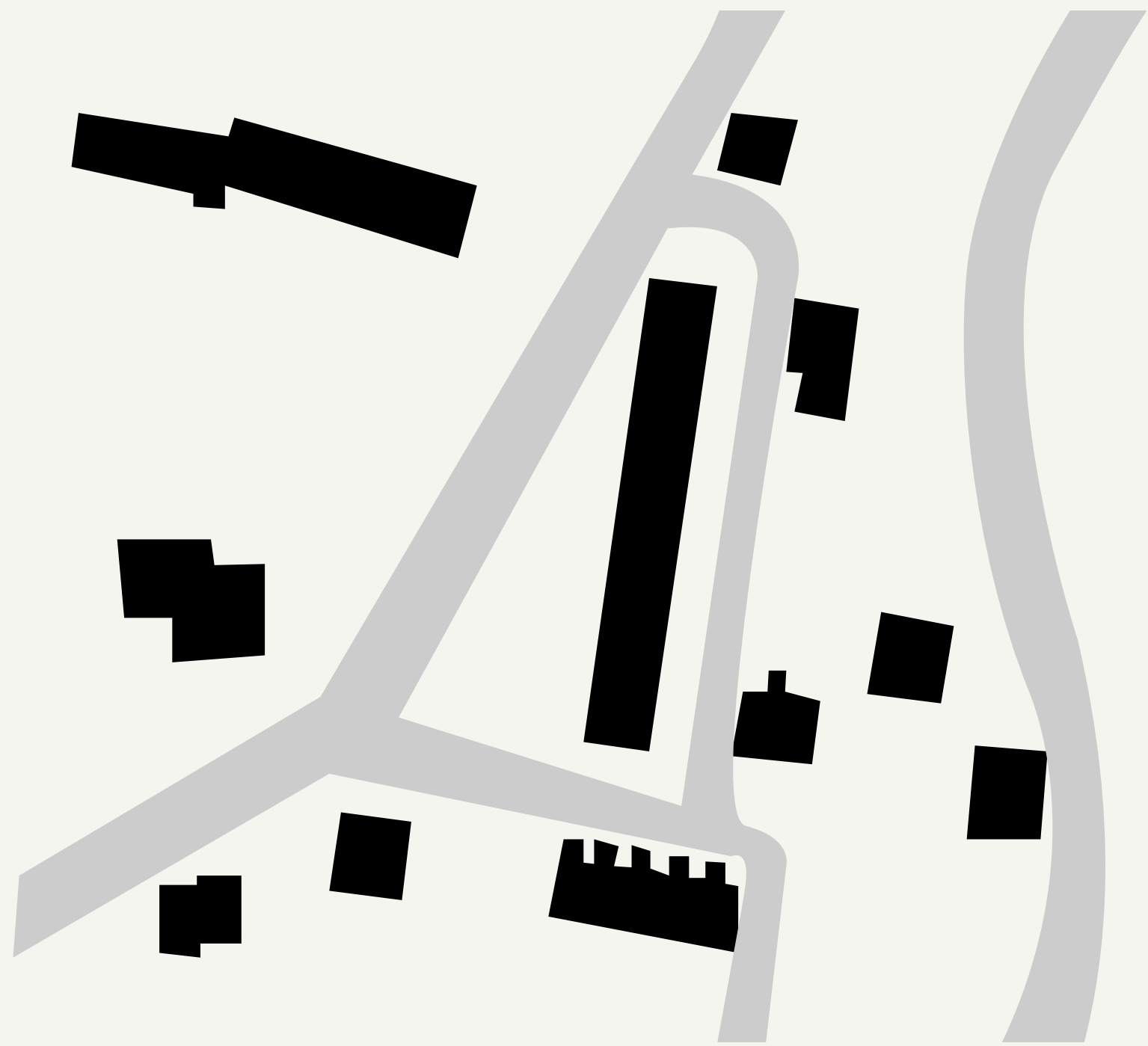
messe stuttgart

The Weissenhof Apartments were the first four official dwellings of the Deutscher Werkbund exhibition of 1927 in Stuttgart, Germany. The exhibition consisted of sixty dwellings intended for working class Germany, and was designed by seventeen European architects, chosen by Mies van der Rohe.

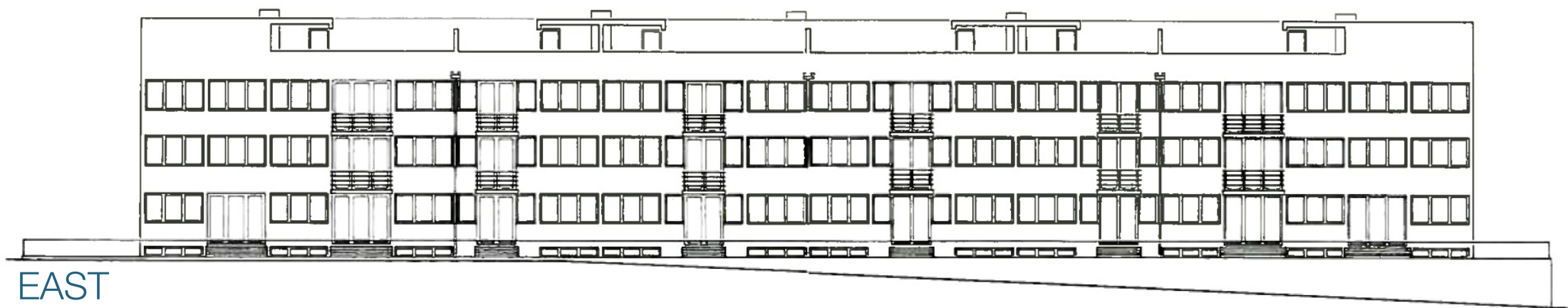
It was an international showcase of what later became known as the International style of modern architecture.



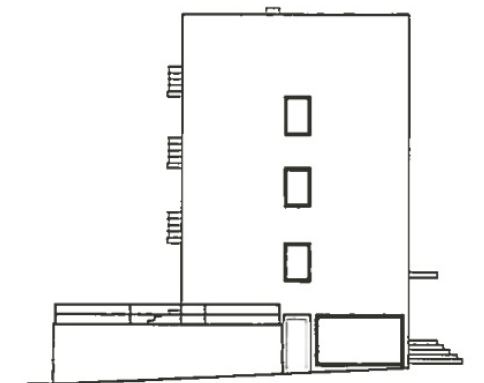




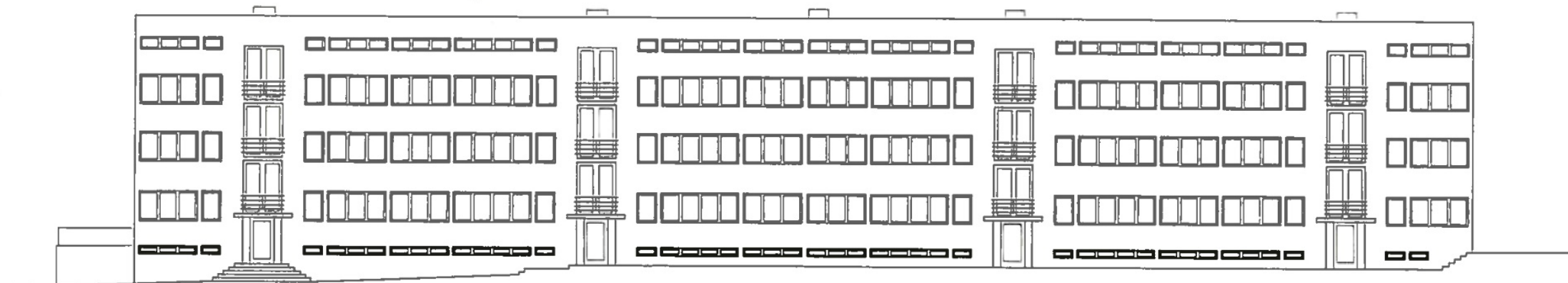




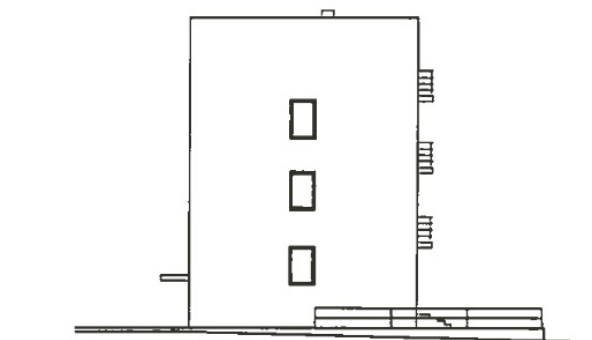
EAST



NORTH

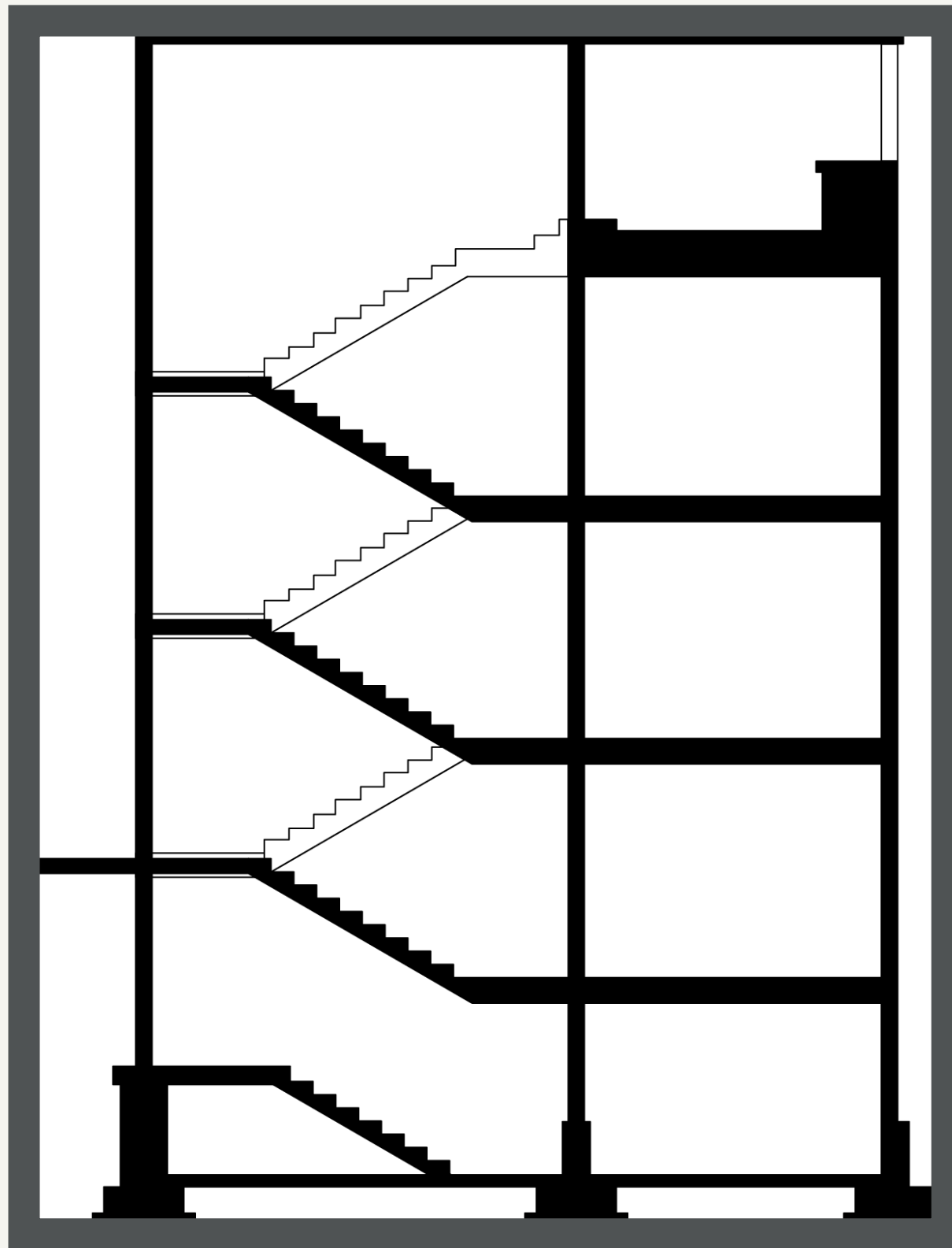


WEST

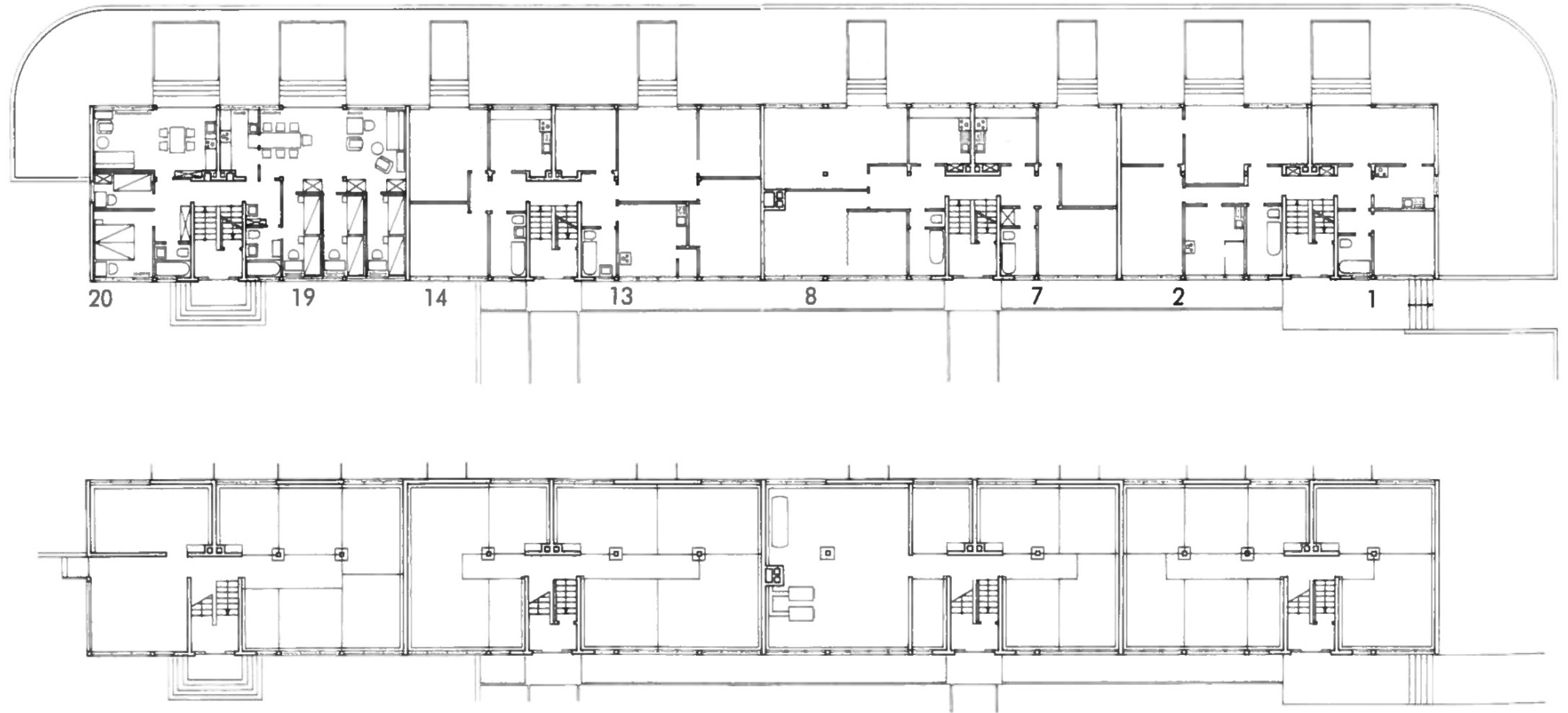


SOUTH

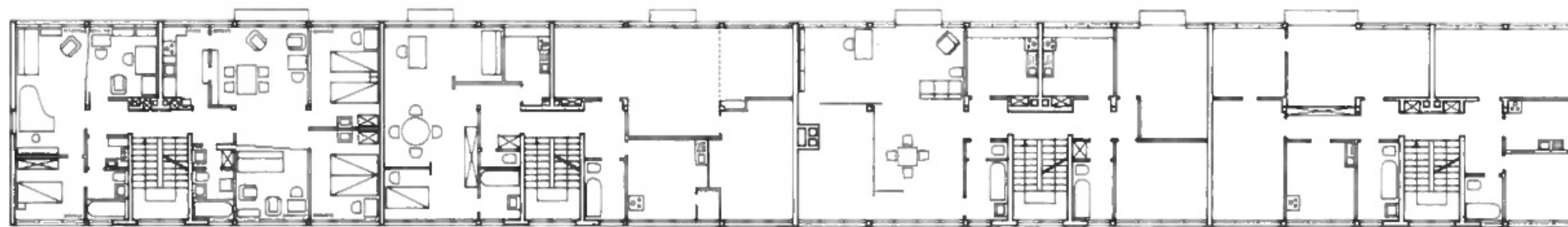
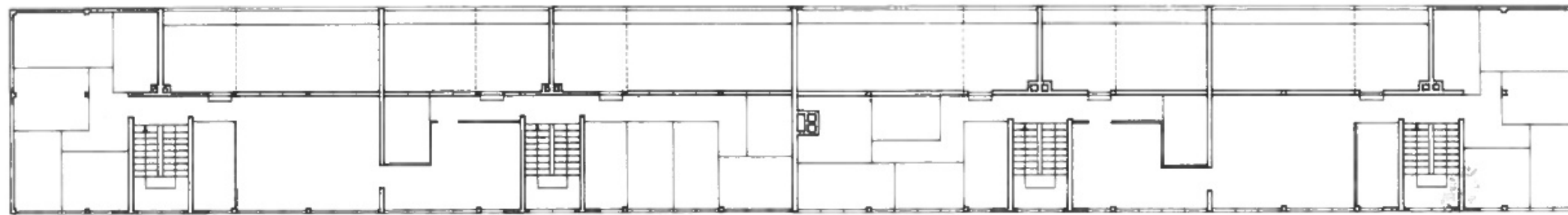
elevation



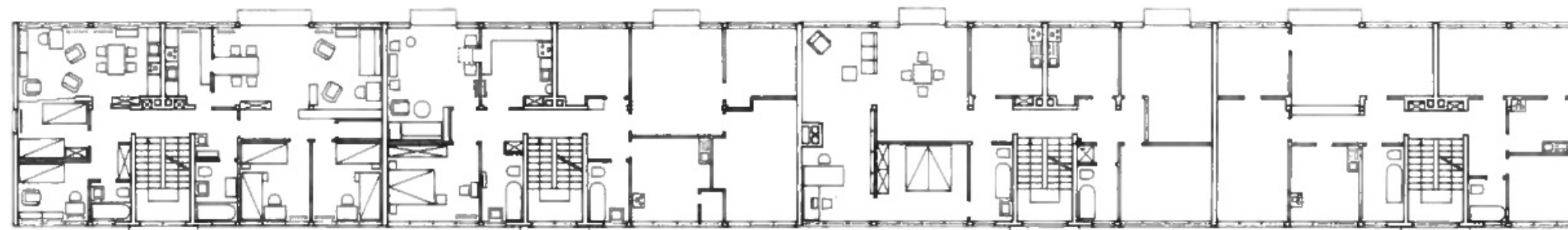
section



plan g - 1f



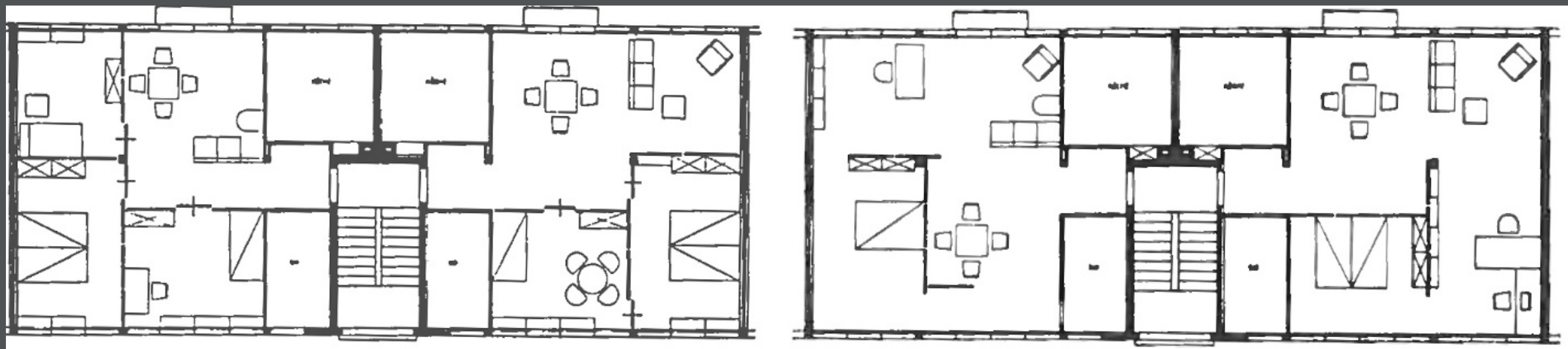
24 23 18 17 12 11 6 5



22 21 16 15 10 9 4 3

plan 2f - roof

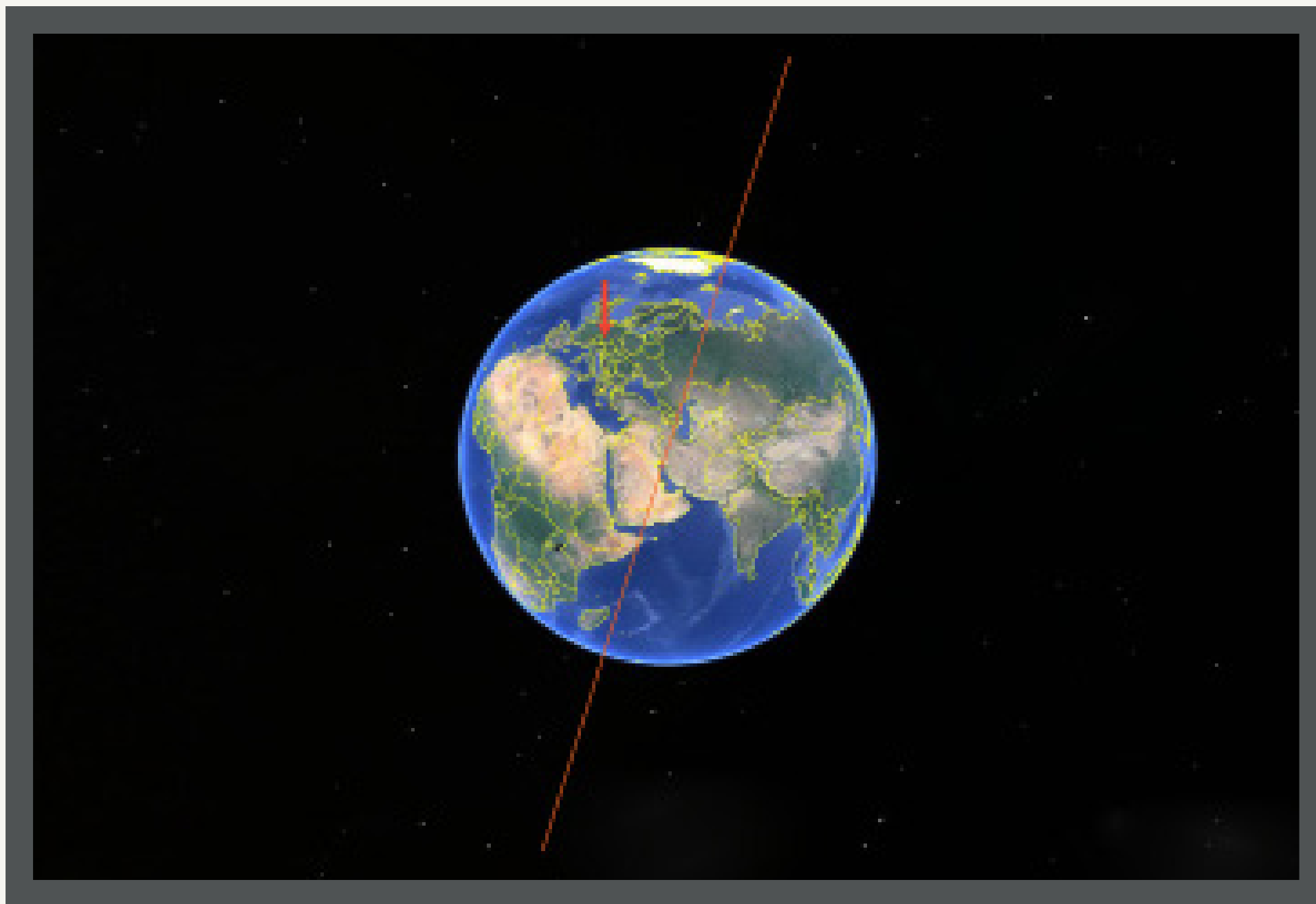
Mies designed the building to have flexible floor plans. He intended for only the stairwells and elevators to have fixed locations and walls. The units would have semi-permanent kitchens and bathrooms, but the rest of the floor would be open plan. Tenants could easily add walls to create rooms to suit their needs.



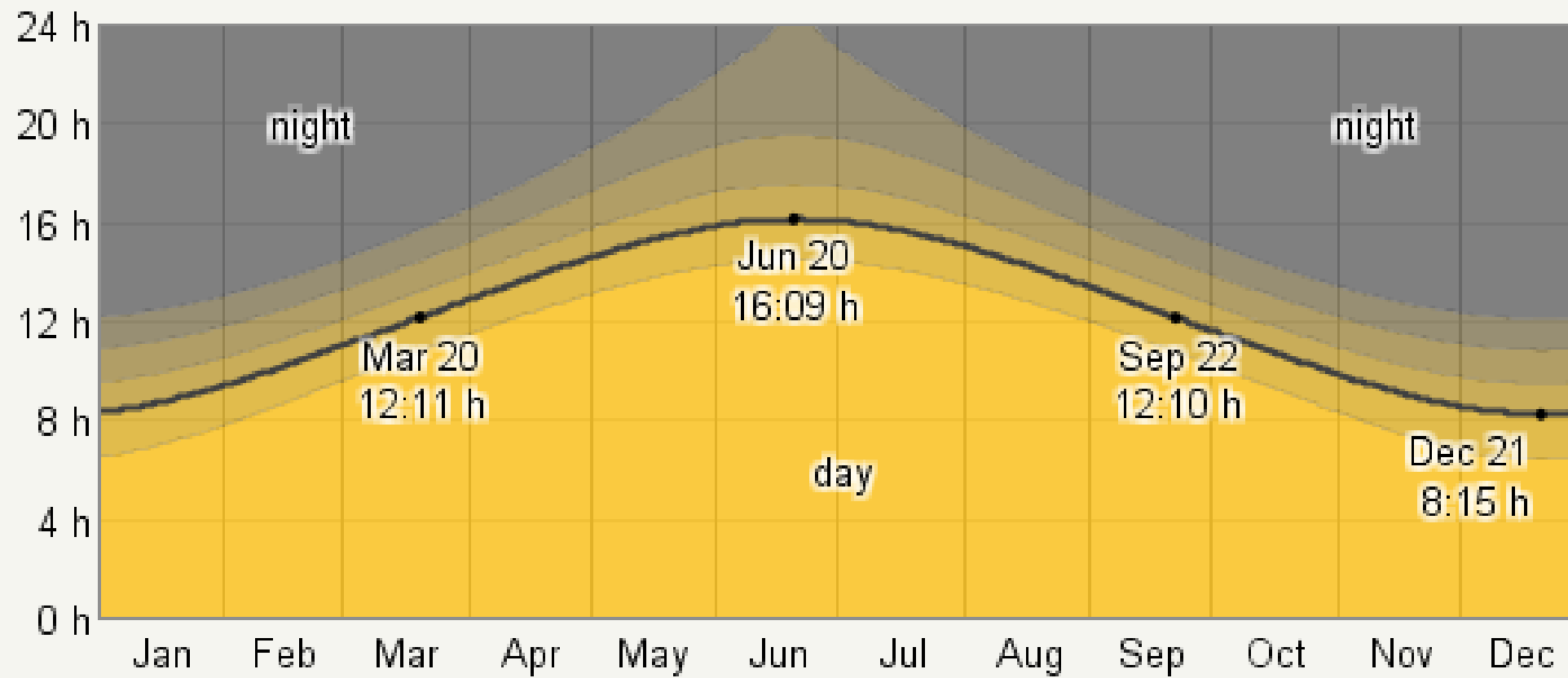
individual unit plan

sun

48°48'02.6"N
9°10'37.7"E

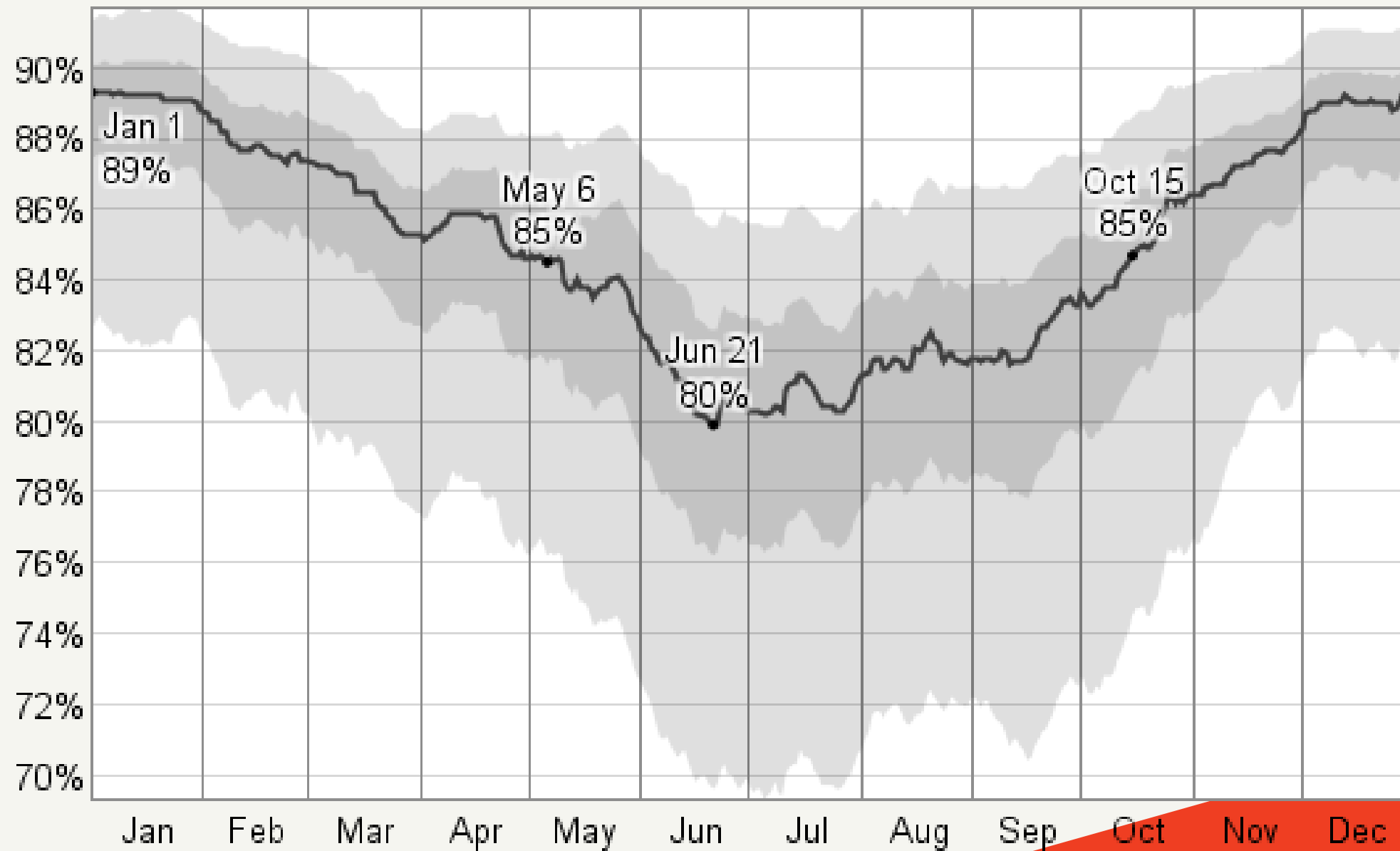


sun



The number of hours during which the Sun is visible (black line)

cloud



Q ■ ■

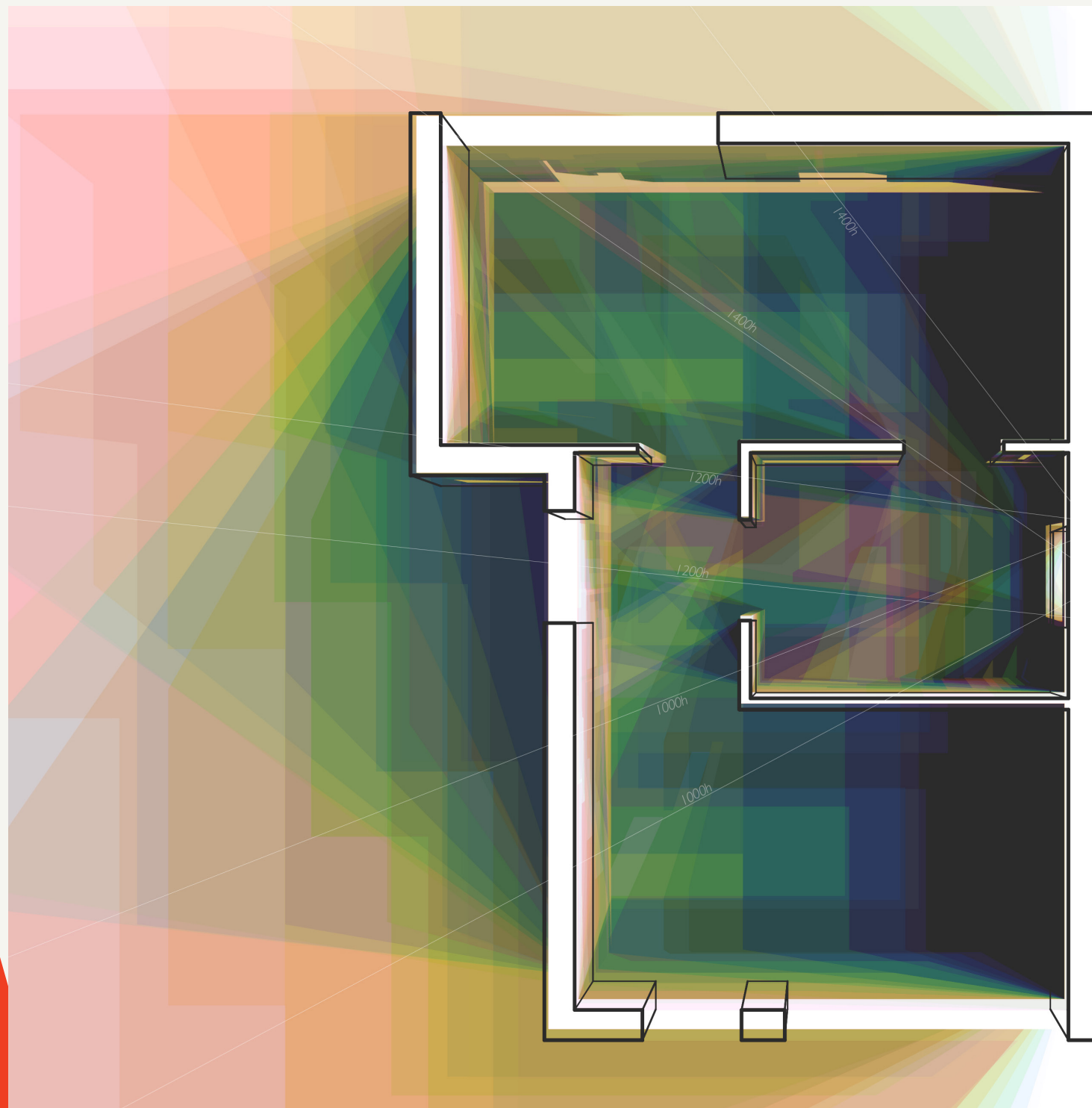
Is the spacing of the development adequate to provide good solar access for either passive heating or daylighting?

A:

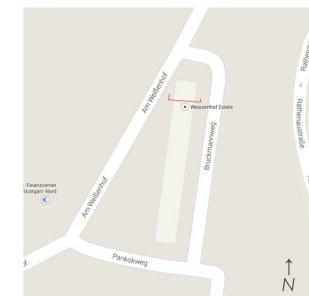
Yes, since the apartment employs a thin plan scheme, each unit has solar access both in the morning and afternoon. This permits convection of heat to occur without obstruction.

However, the units are oriented on a north-south axis and do not allow internal solar access or thermal conduction during afternoon hours. A majority of the glazing is situated on the east or west facades of the building which limits exposure times of thermal storage surfaces. Considering that this is a residential building and that most tenants will be absent during the day, east-west facing windows allow for morning and late afternoon sun exposure.

light



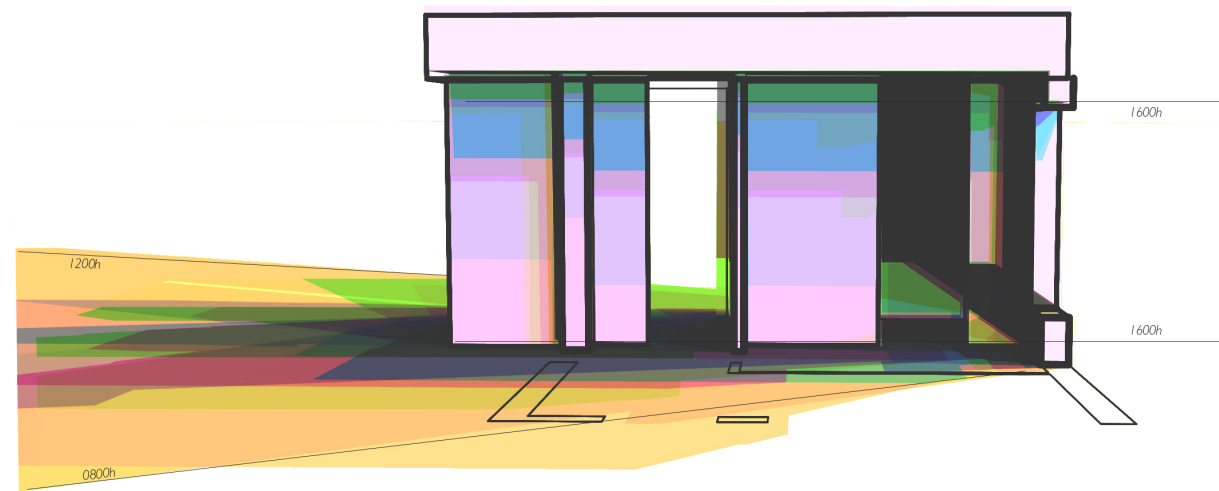
- DEC ■
- JAN ■
- FEB ■
- MAR ■
- APR ■
- MAY ■
- JUN ■
- NOV ■
- OCT ■
- SEP ■
- AUG ■
- JUL ■



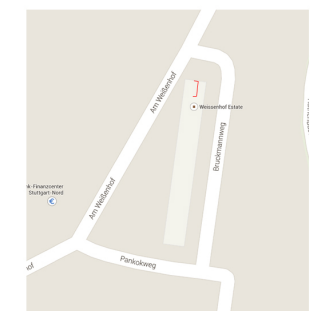
Weissenhof Estate
Stuttgart, Germany
48°48'02.5"N 9°10'37.8"E

Ian Boodan
201571618
2015 01 28 09⁰⁰

light



- DEC SOLSTICE
- MAR EQUINOX
- SUMMER SOLSTICE
- SEP EQUINOX



Weissenhof Estate
Stuttgart, Germany
48°48'02.5"N 9°10'37.8"E

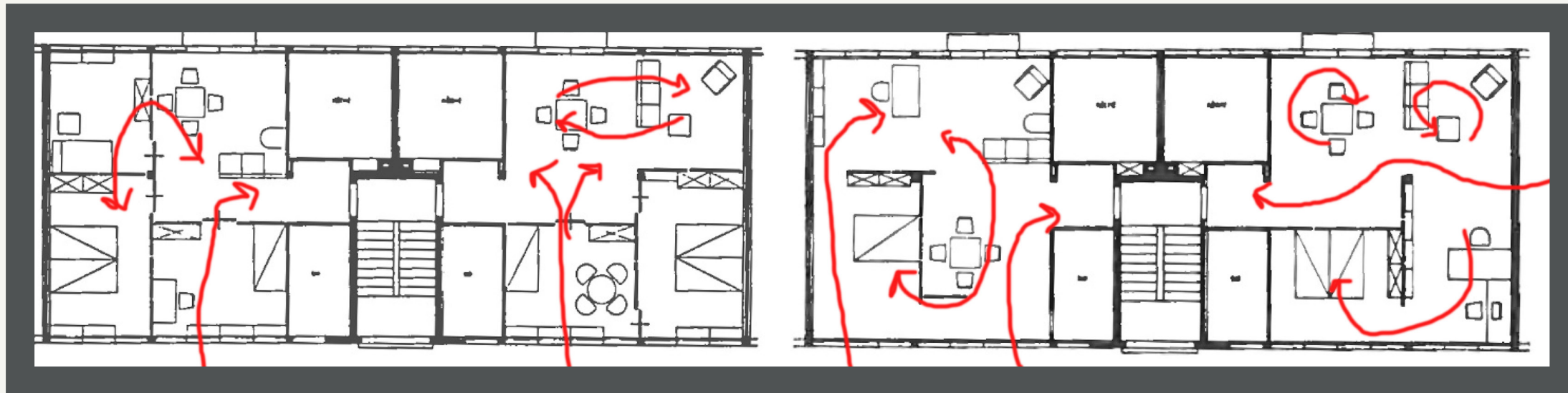
Ien Boodan
201571618
2015 01 28 09⁰⁰

Q

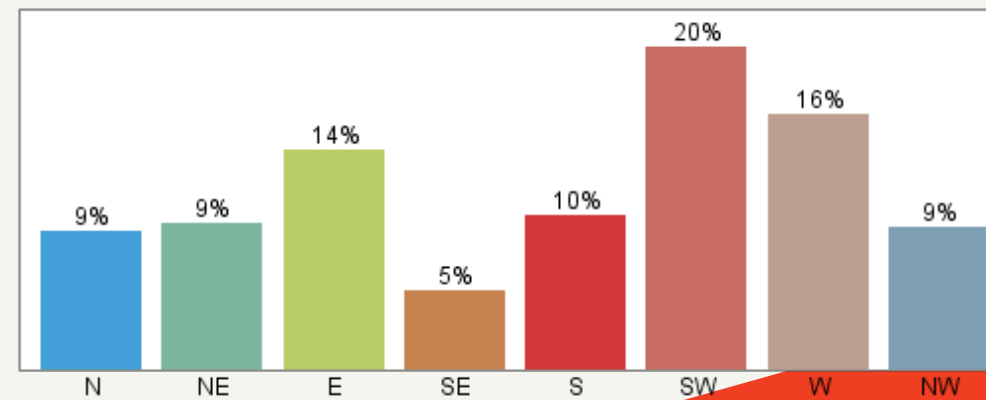
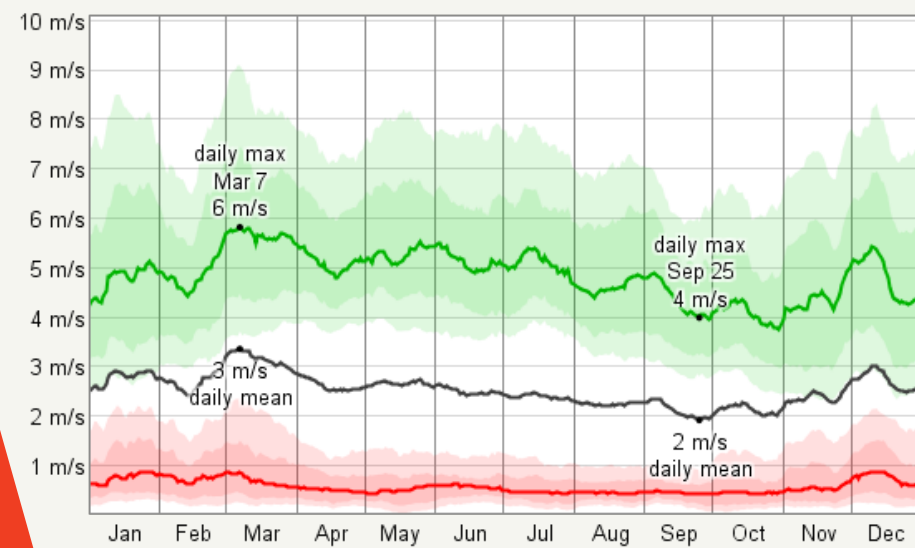
Is the floor planning of the units good for natural ventilation?

A:

Yes. Mies designed the apartment with flexible floor plans with the stairs and elevator shaft as the only fixed points in the plan. The hallway creates a direct path from one room's window through to the other room's window, allowing for natural ventilation within the unit. There are also balconies in each unit.



wind

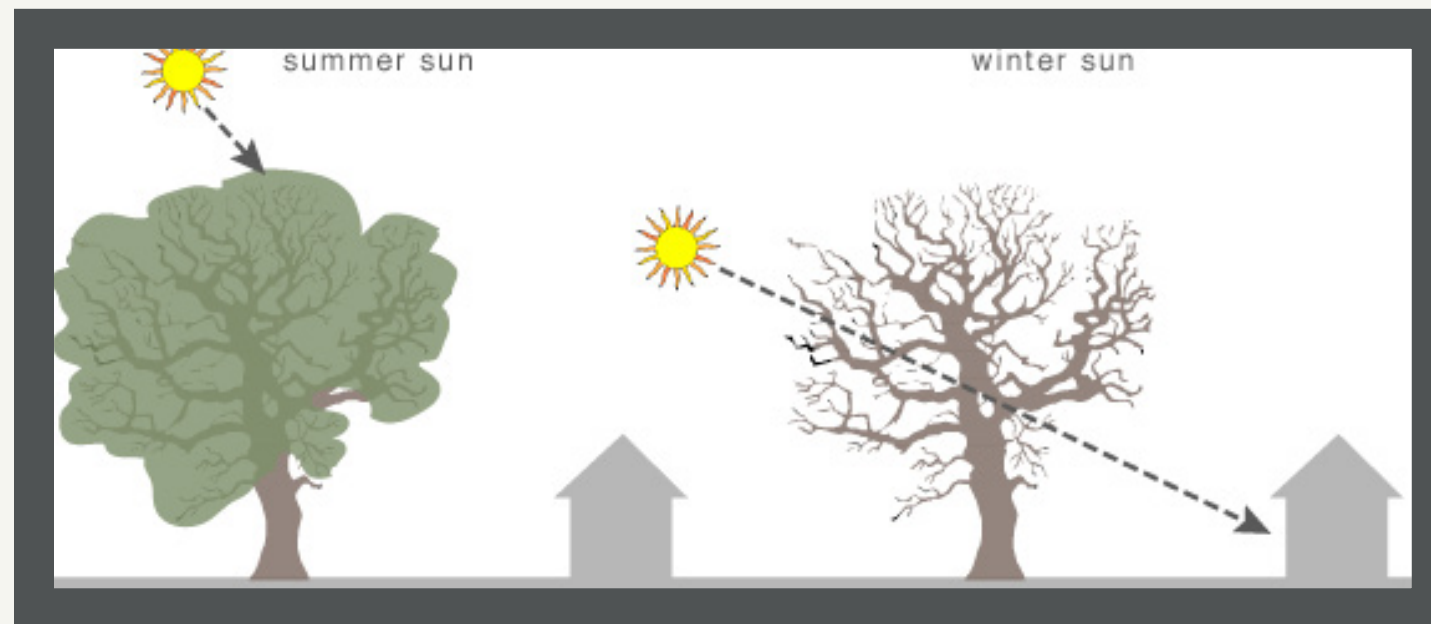


Q

What improvements need to be made to the site plan or siting of the building to improve its sustainable sites potential?

A:

Increase amount of deciduous trees in the periphery to control the microclimate. In the summer they would provide shade; in the winter they would lose their leaves allowing sun to penetrate.





Q ■
■

Does this development address solar shading for the buildings?

A: ■
■

Yes. The building has external shading devices that limit the sun's penetration. However, there are no overhangs, and the shading devices are thin and parallel to the windows. The windows are also almost pushed all the way to the front facades, exposing it more to the sun.

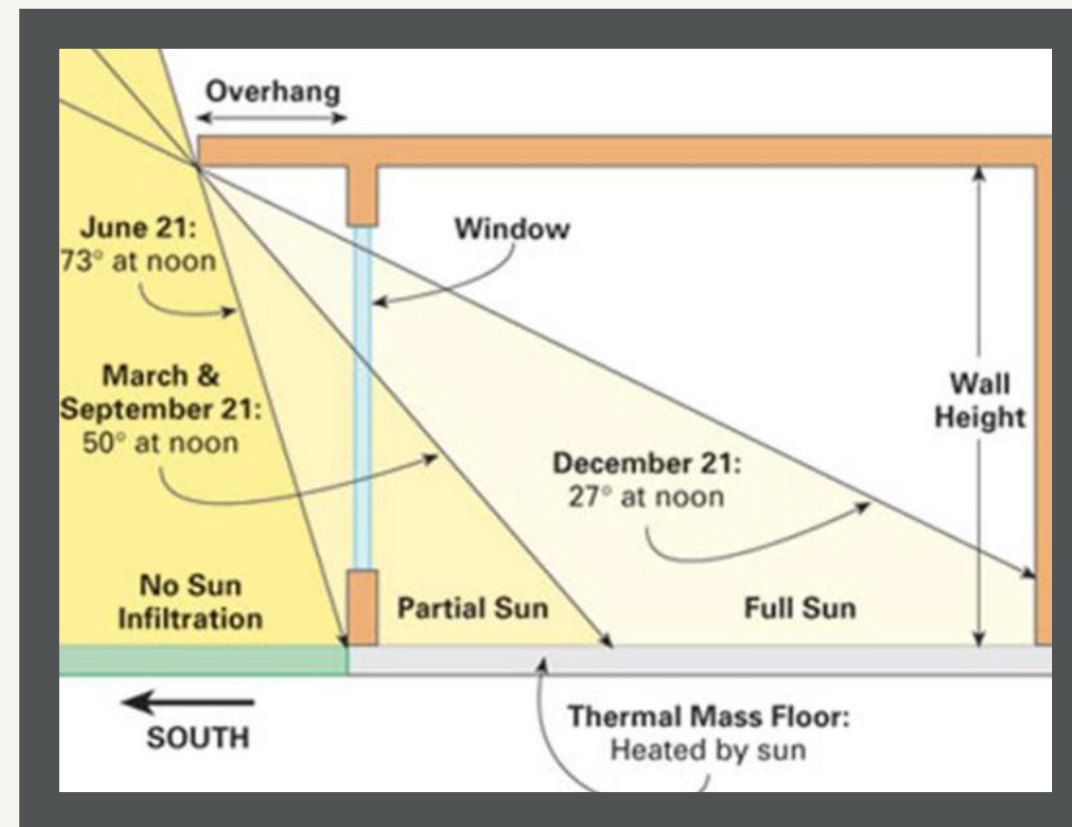
shading



shading

Remedial strategy:

A continuous overhang for each storey would be more effective, and provide shade under high summer sun, while permitting low winter sun to enter the apartments and heat the interior.



bibliography

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When you open your heart a little, and pull someone close to you,
Your feelings will surely reach them deeper, yeah...

CAST

神田空太	松岡禎丞
椎名ましろ	茅野愛衣
青山七海	中津真莉子
上井草美咲	高森奈津美
三鷹 仁	櫻井孝宏
メイちゃん	???
千石千尋	豊口めぐみ
神田優子	小倉 唯
藤沢和希	浅沼晋太郎
館林総一郎	日野 聡
姫宮沙織	藤村 歩
上井草風香	早見沙織
仙人	清川元夢



製作
TV TOKYO  デジタル
studio 

踏み込むぜアクセル 駆け引きは無いさ、そうだよ

danke SKYLINE 4+