

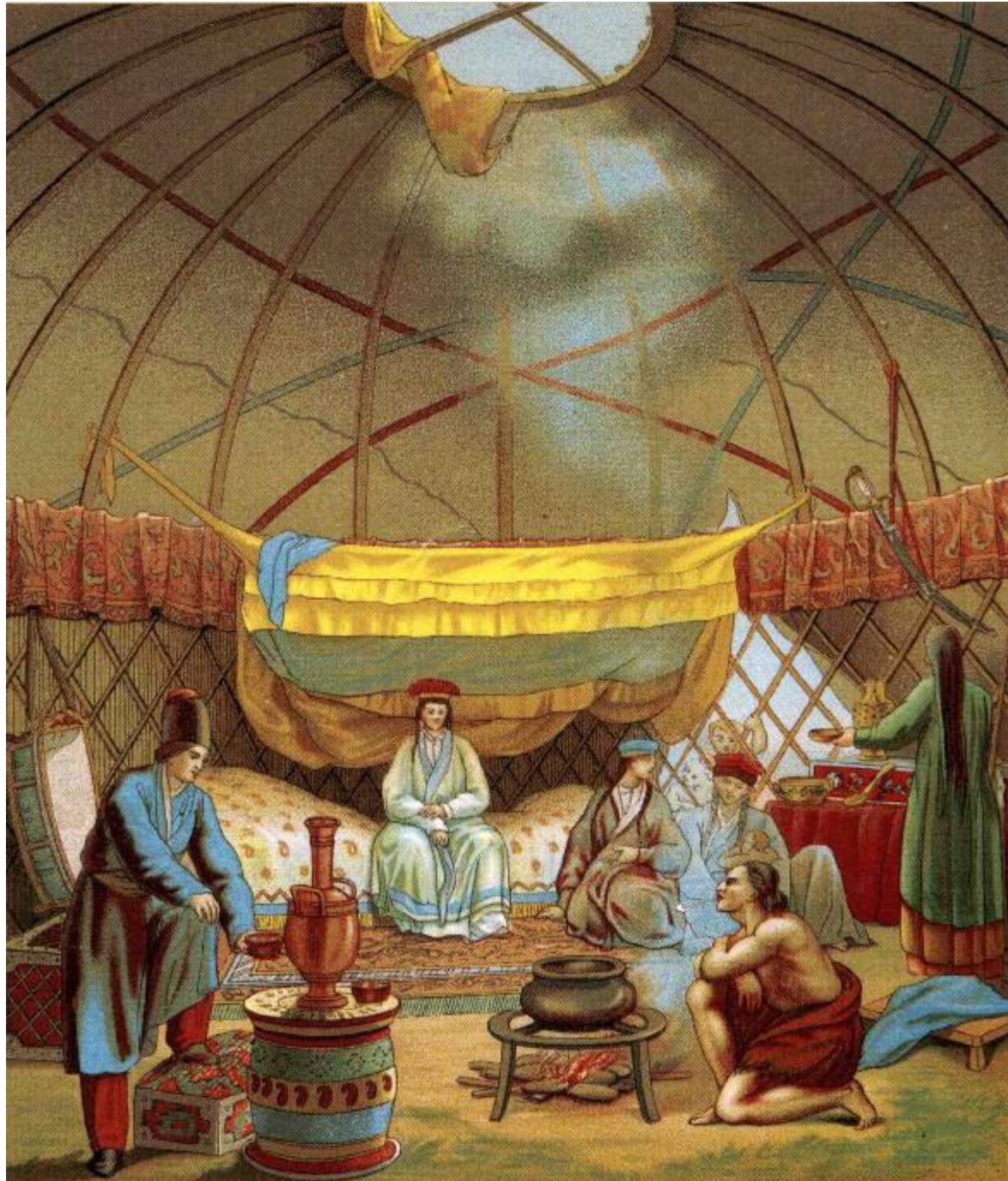
Fig. 22: *Typical Mediterranean vernacular buildings in Portugal (Alentejo), reflecting the influence of the local climate (from Veiga, 1992)*



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Mongolia

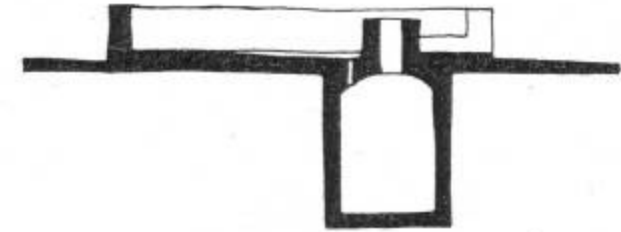
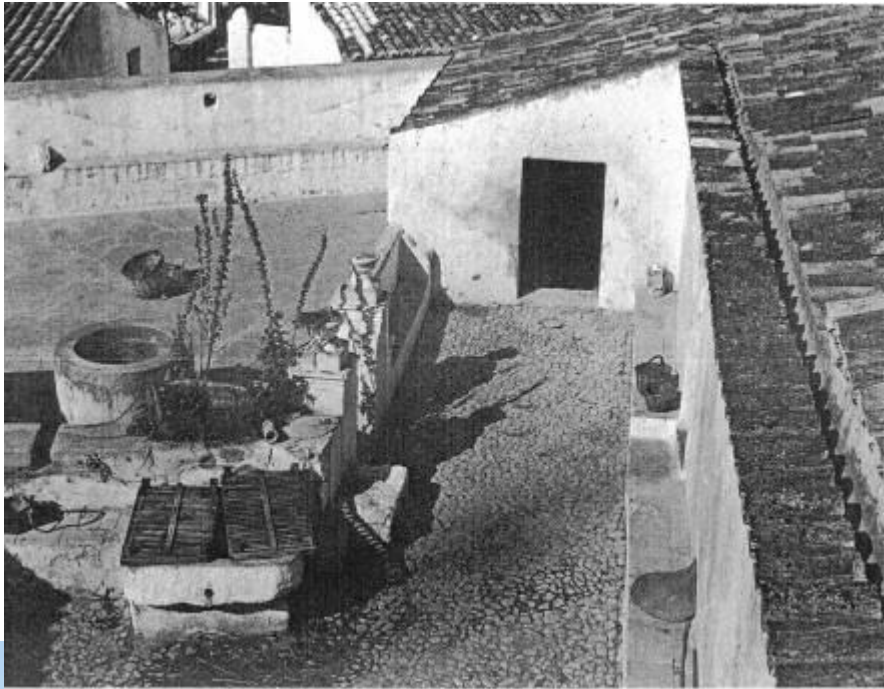


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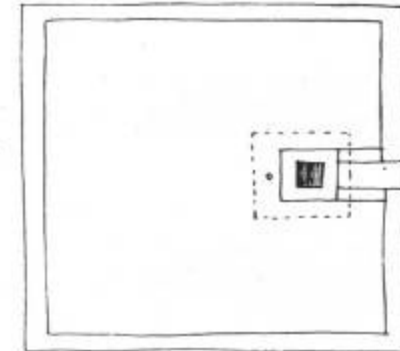


Marrakesh, Marrocos

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Eirado e cisterna



- Water pumping systems
- Rainwater collecting systems
 - (Algarve)



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De Montford Univ, UK

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ventilation. Consequently, they are sized simply to satisfy the pressure drop requirements. They can be in the form of a single linear chimney or several smaller chimneys distributed around the building to suit the required ventilation flowpath. For example, if the building faces a busy road, it would be possible to place the inlets on the facade away from the noise and pollution source with the chimneys on the road side. An example of chimney ventilation is shown in Figure 3.10, based on the De Montfort University case study in section 6.

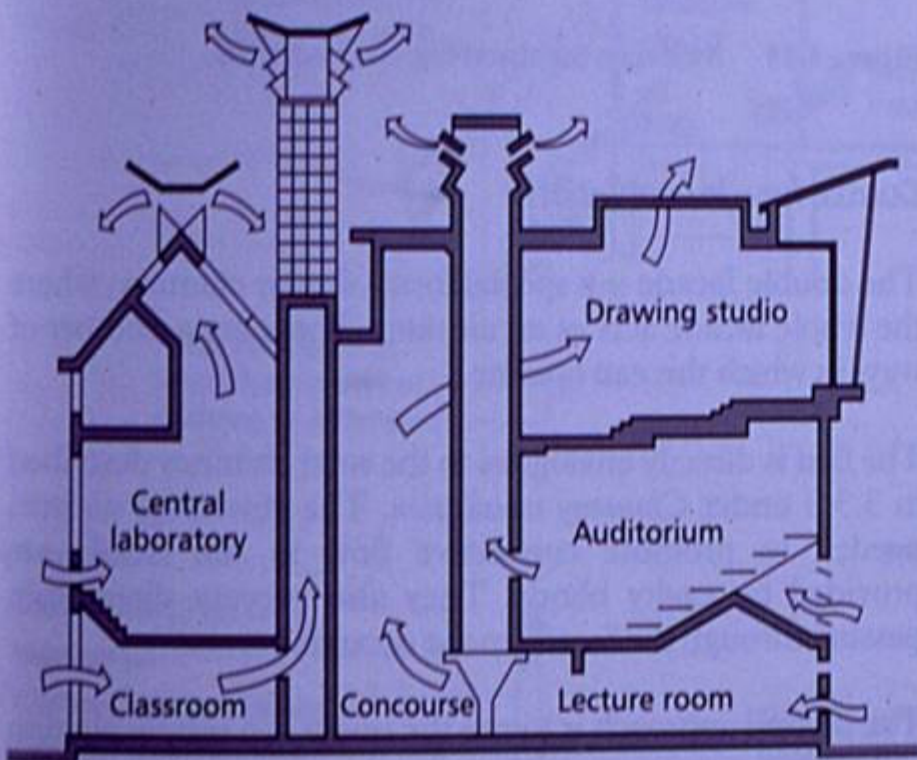


Figure 3.10 Chimney ventilation at De Montfort University (see 6.4)

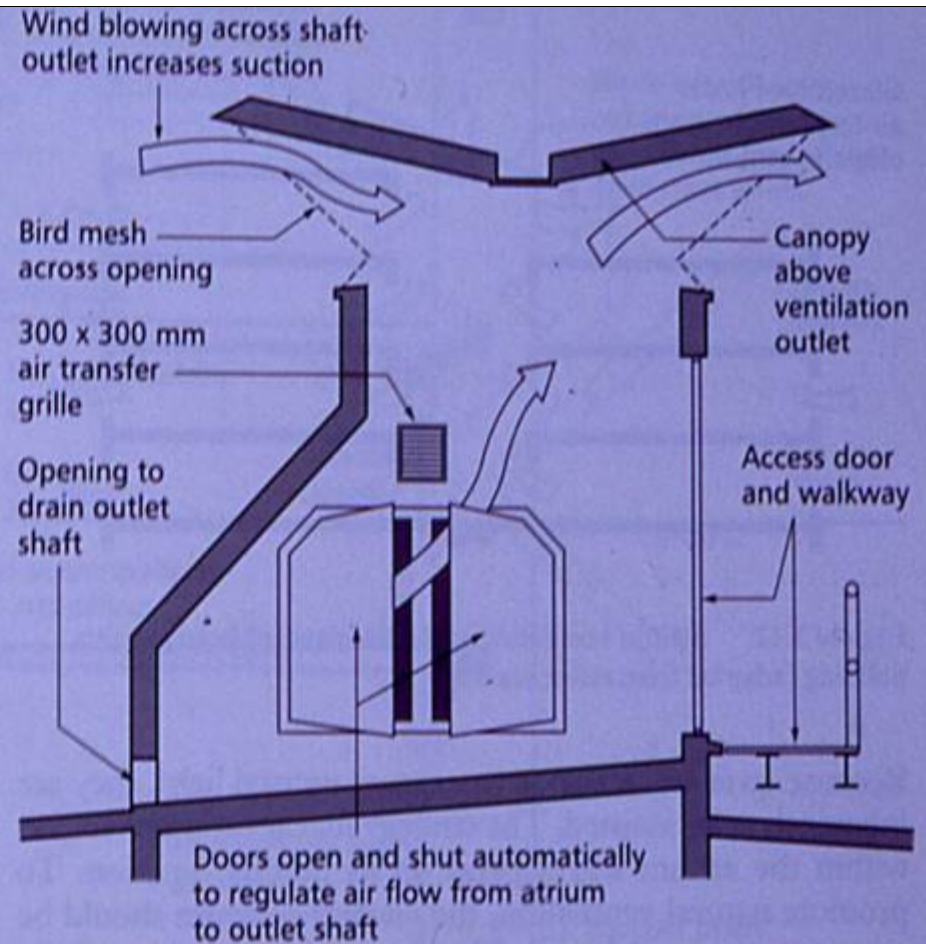


Figure 3.11 Detail from the Ionica extract shaft (see 6.7)

To provide adequate ventilation on very hot and still days, an extract fan can be installed in the shaft to pull air through the building. This should be designed so that the fan does not provide a significant resistance to air flow when the chimney is operating in its natural draught mode.



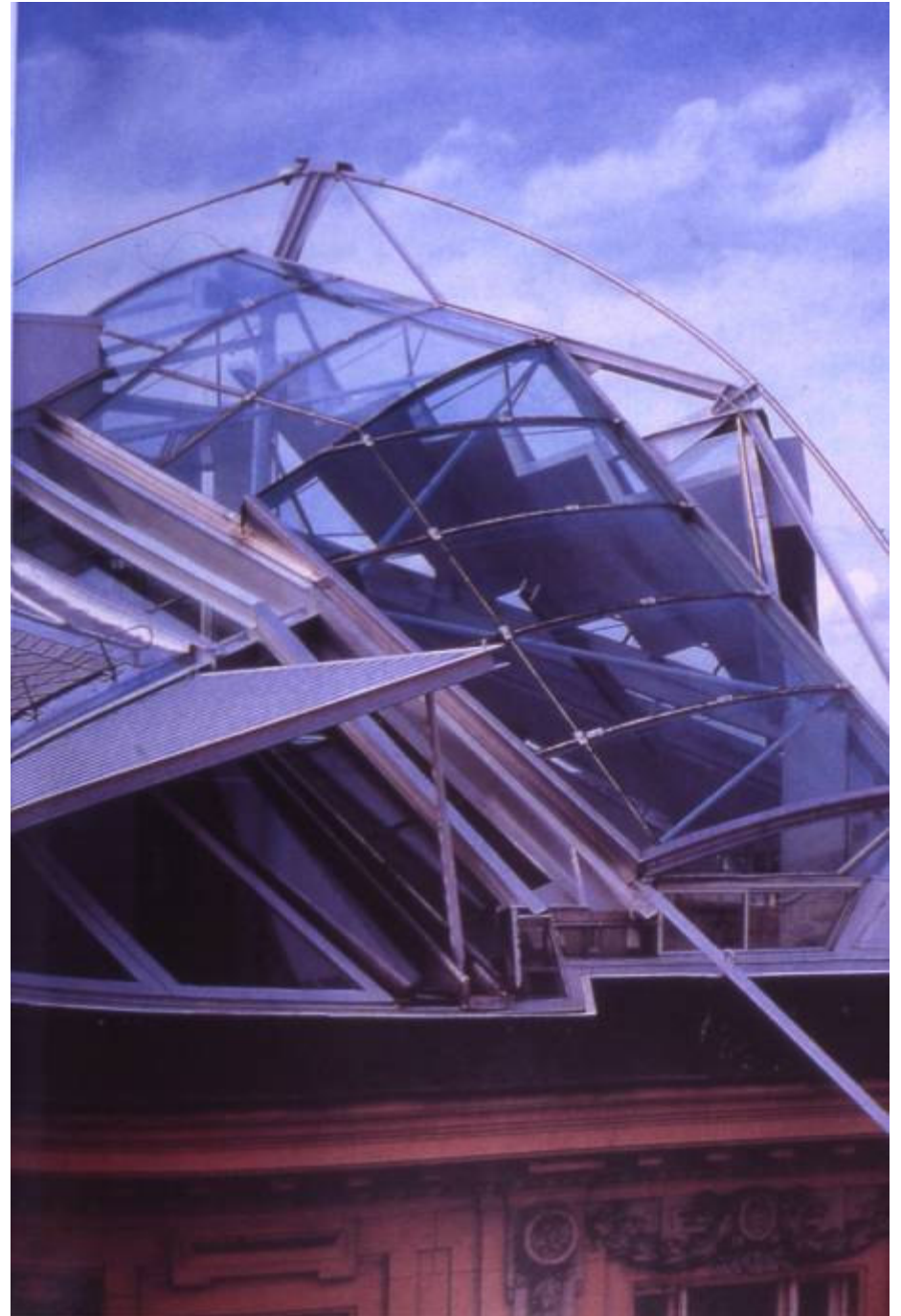
sombreadores, Nova Dheli, India

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Coop. Himmelblau, Viena, 1990





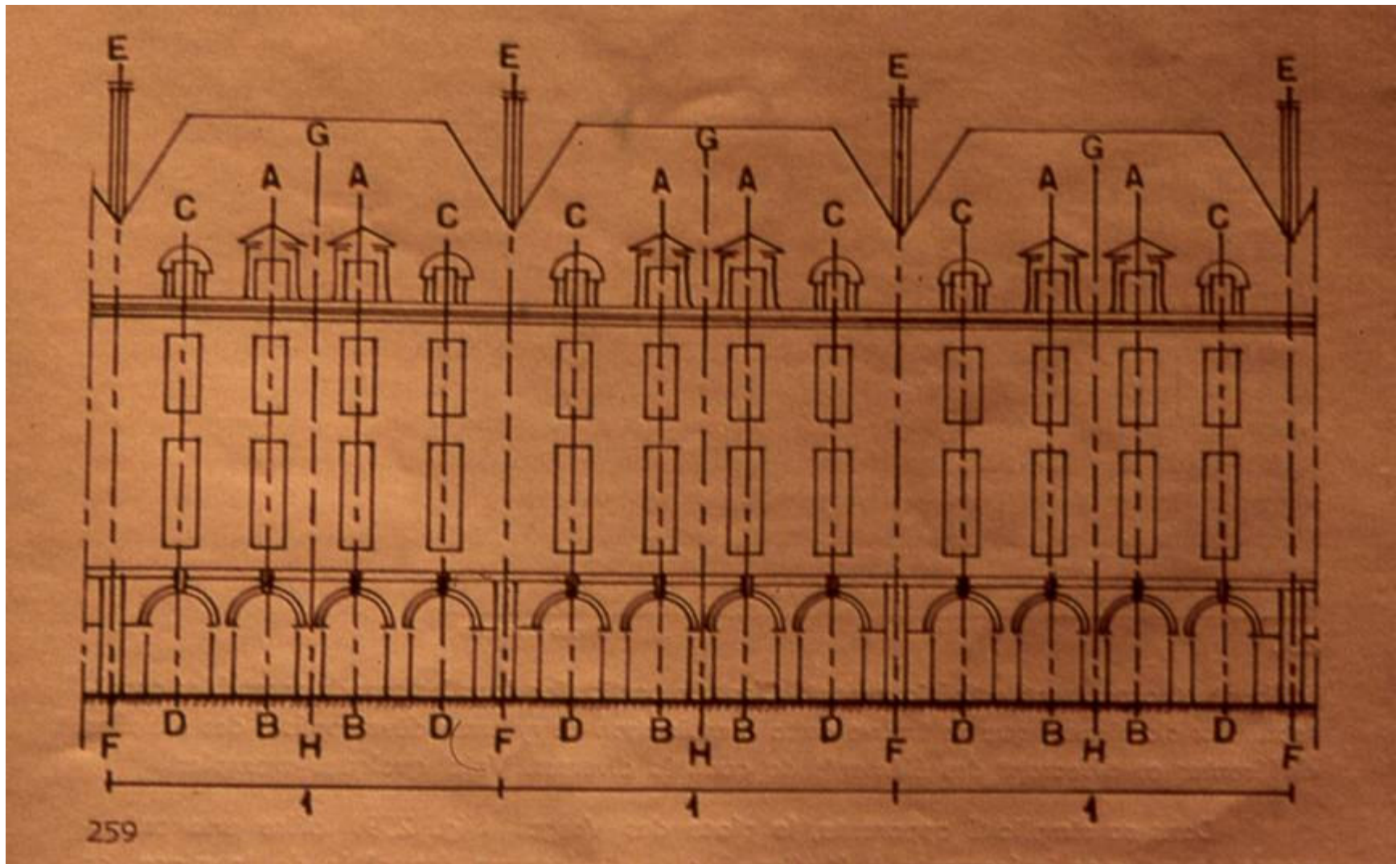


Nottingham, UK

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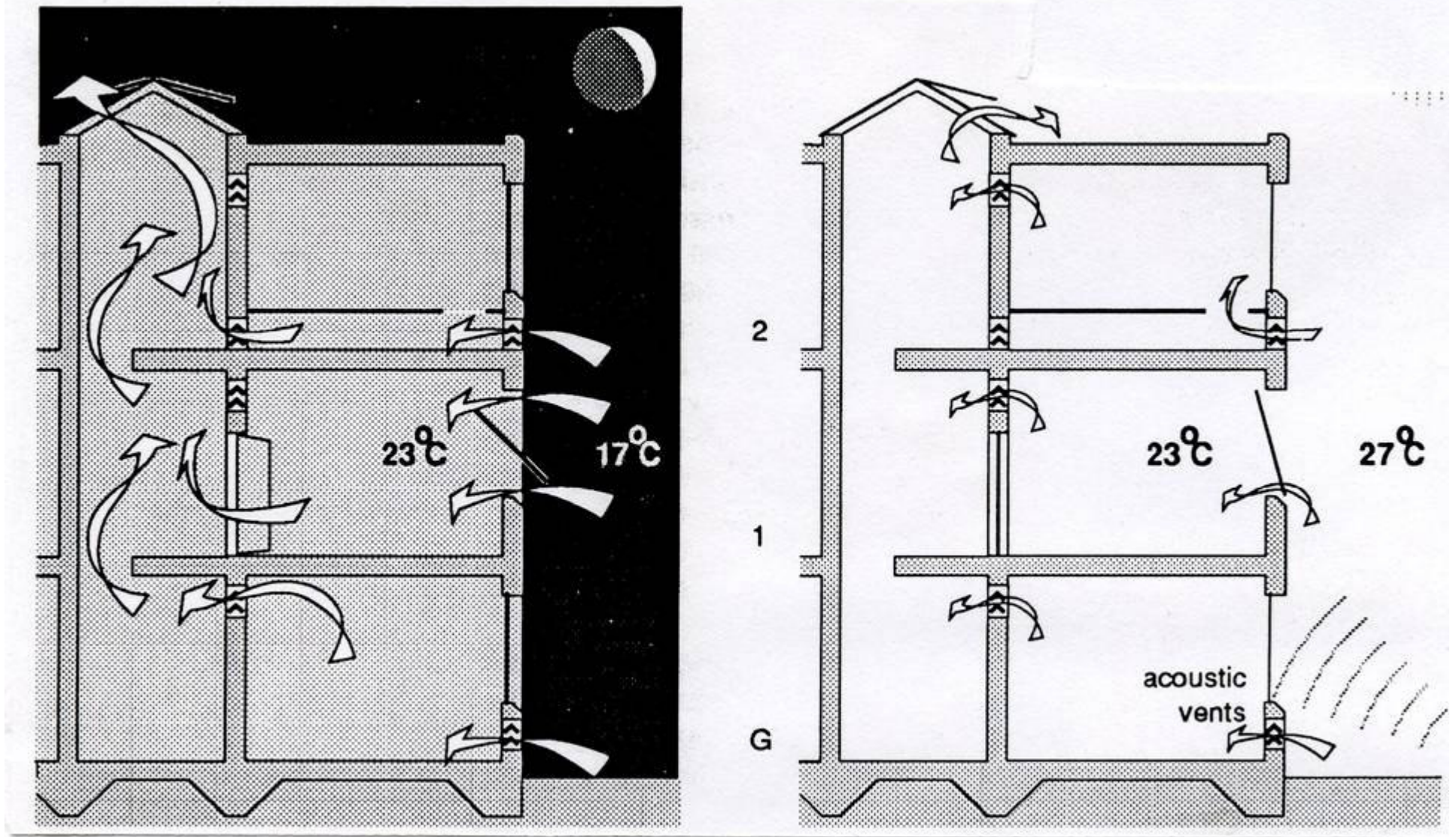


Fig. 62: Options for air-flow paths for night and daytime ventilation (from Baker, 1994)



Cinemateca Portuguesa

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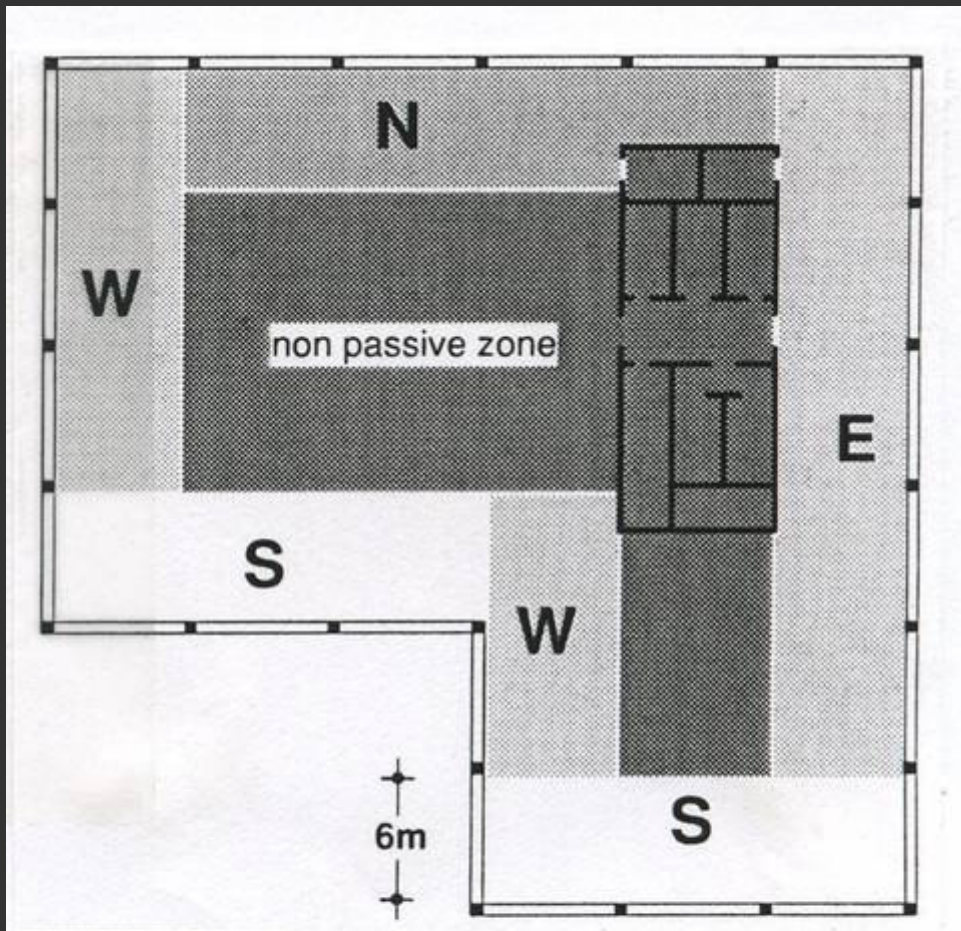
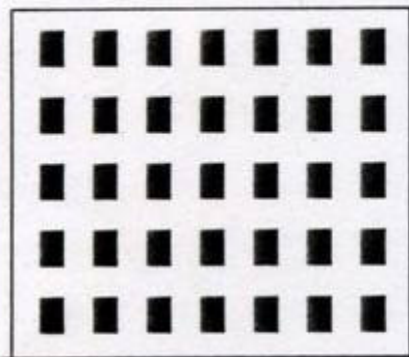
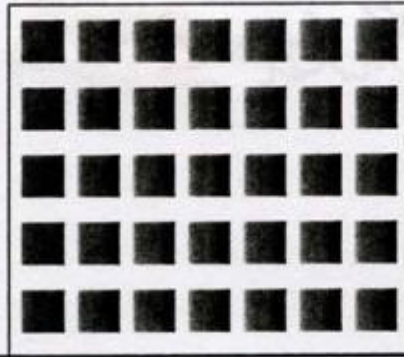


Fig. 43: Definition of passive and non-passive zones in an L-shaped office plan, for 3m of floor to ceiling height (from Baker, 1995b)

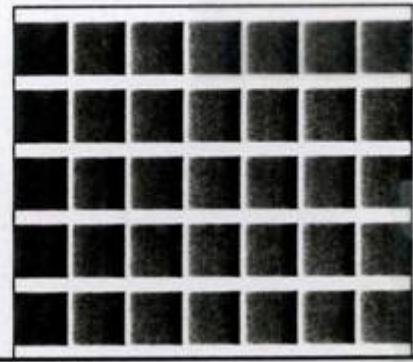




GR 25% low



GR 50% medium



GR 75% high

glazing ratio = $\frac{\text{unobstructed glass area}}{\text{total façade area}}$

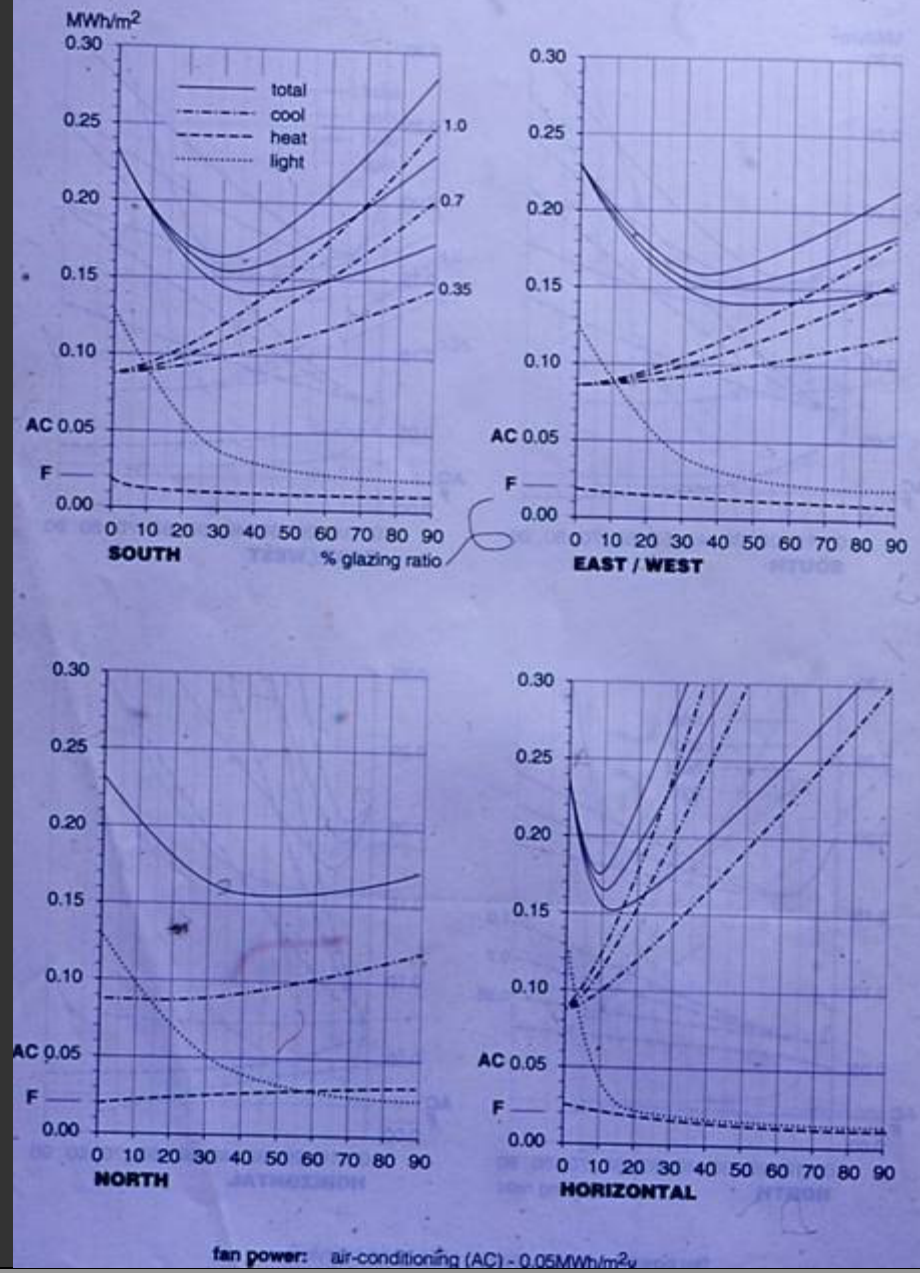
$$\text{GR} = \frac{\blacksquare}{\square + \blacksquare}$$

Fig. 53: Definition of glazing ratio, from the LT method

LT

LT CURVES

Office, 300 lux, 15 W/m², zone 2



LT



Fig. 2: *The London County Fire Office (1819), on the left, and the London Sun Fire Assurance Office (1842), on the right (as presented in Pevsner, 1976)*

Londres, sec. XIX



Fig. 3: A London office setting of 1871 (as presented in Aronoff, 1995).

Londres, sec. XIX

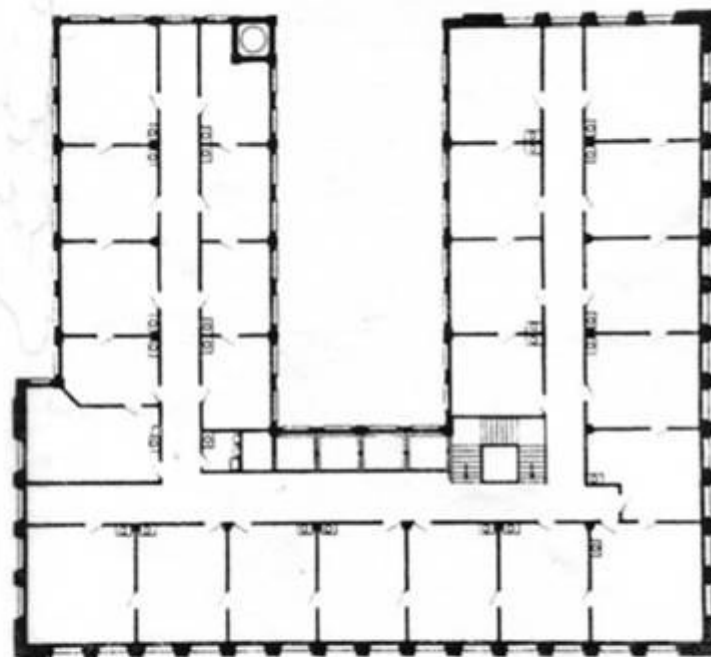


Fig. 5: *Louis Sullivan's Wainwright building in Chicago, 1890 (as presented in Upton, 1998)*

Chicago, sec. XIX

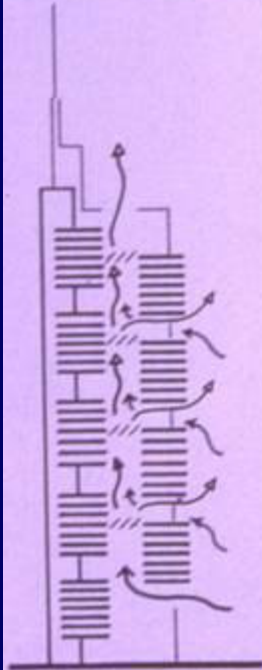


Fig. 4: Examples of office buildings in Chicago and New York, in the 1880's and 1890's: Left: The Home insurance building, 1884, designed by William le Baron Jenney; Centre: the Guarantee Building, Buffalo (New York), 1894, by Louis H. Sullivan; Right: the Marquette building, 1894, by Holabird and Roche (as presented in Pevsner, 1976).

Commerzbank

Norman Foster and Partners

Localización: Frankfurt, Alemania. **Fecha del proyecto:** 1992. **Fecha de realización:** 1997. **Ciudad:** Commerzbank. **Arquitecto:** Sir Norman Foster and Partners. **Programa:** Edificio de oficinas ecológico.



Este proyecto es el más importante abordado por la ciudad en estas últimas décadas y constituye el primer ejemplo de rascacielos proyectado con criterios ecológicos. Cada oficina está diseñada para tener ventilación natural a través de ventanas practicables y para poder disfrutar de vistas sobre la ciudad y sobre los grandes patios ajardinados, a modo de claustros, que recorren toda la altura del edificio. La relación con los edificios de los alrededores es de gran importancia. Se ha reconstruido el perímetro de la manzana mediante un bloque bajo que alberga

plazas de aparcamiento de coches y apartamentos, igualando la altura de la calle y restaurando la escala del barrio. La torre, de planta triangular, se arroja tanto en los edificios existentes como en el bloque nuevo de apartamentos, para suavizar su entrega en el contexto urbano, de manera que sólo desde el acceso principal a norte, se nos aparece la torre en toda su altura desde la cota del suelo. Desde la Grosse Gallusstrasse, con su gran escala de movimiento de tráfico, sube una gran escalera que se abre hacia un nuevo espacio público para la ciudad.



Commerzbank, Frankfurt, 1992



How and why? *Vertically oriented gardens in the air penetrate the facade of Commerzbank in Frankfurt. These buffer spaces make possible a totally new level of environmental quality and amenity in this very tall office building.*

Architect: Foster and Partners

spaces that can have a social function as well as being planned and designed in such a way that they are an important means of modifying the internal climate.

bring natural light deep into the building, and to be a socially interactive place. The internal skin of the atrium can be sealed for safety and economy, or left open for social contact.

- Buffer spaces between the building skin and the interior to create



Foster, Commerzbank, 1992



Amoreiras, Lisbon







tagus park, oeiras





IST

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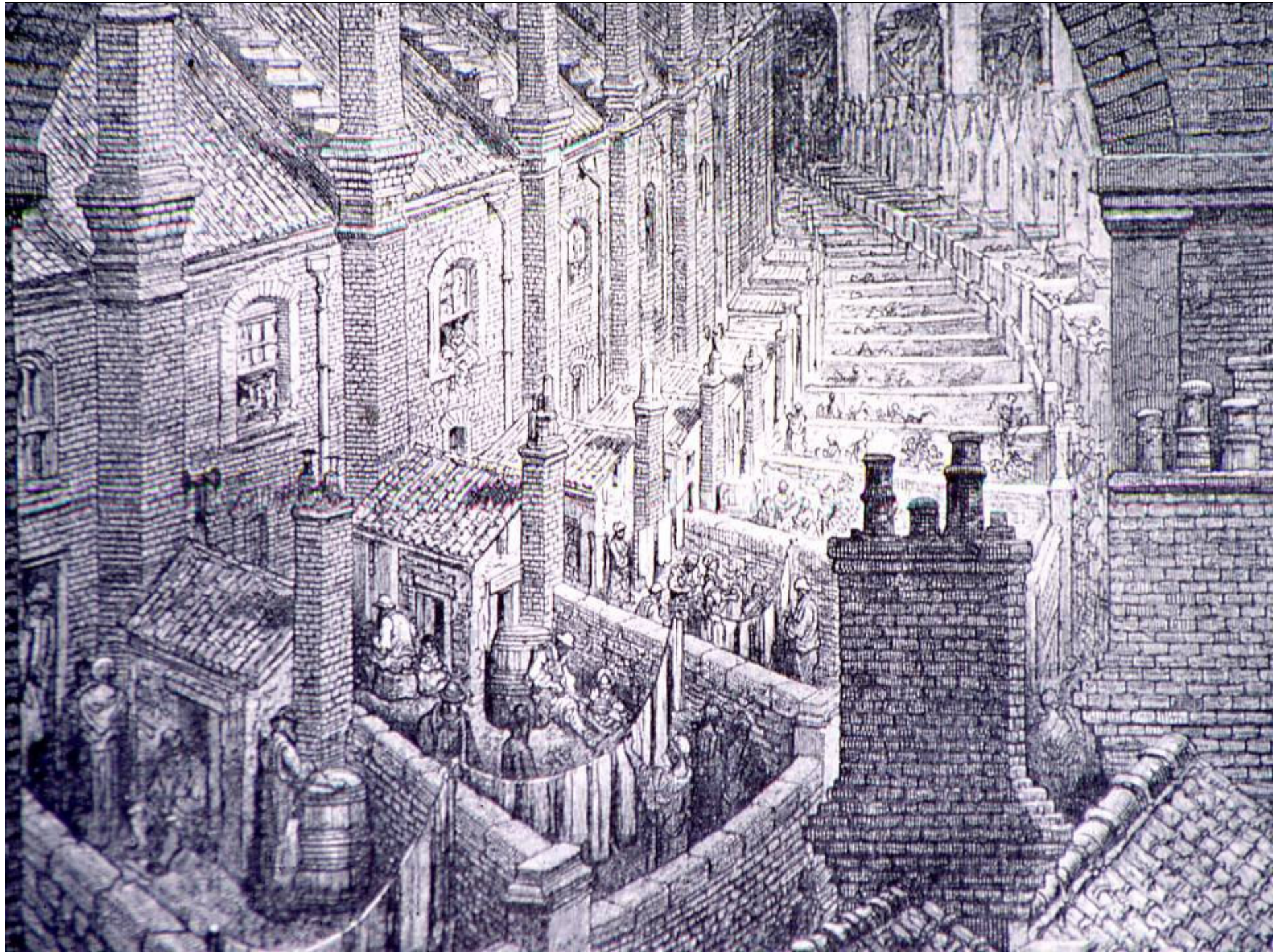


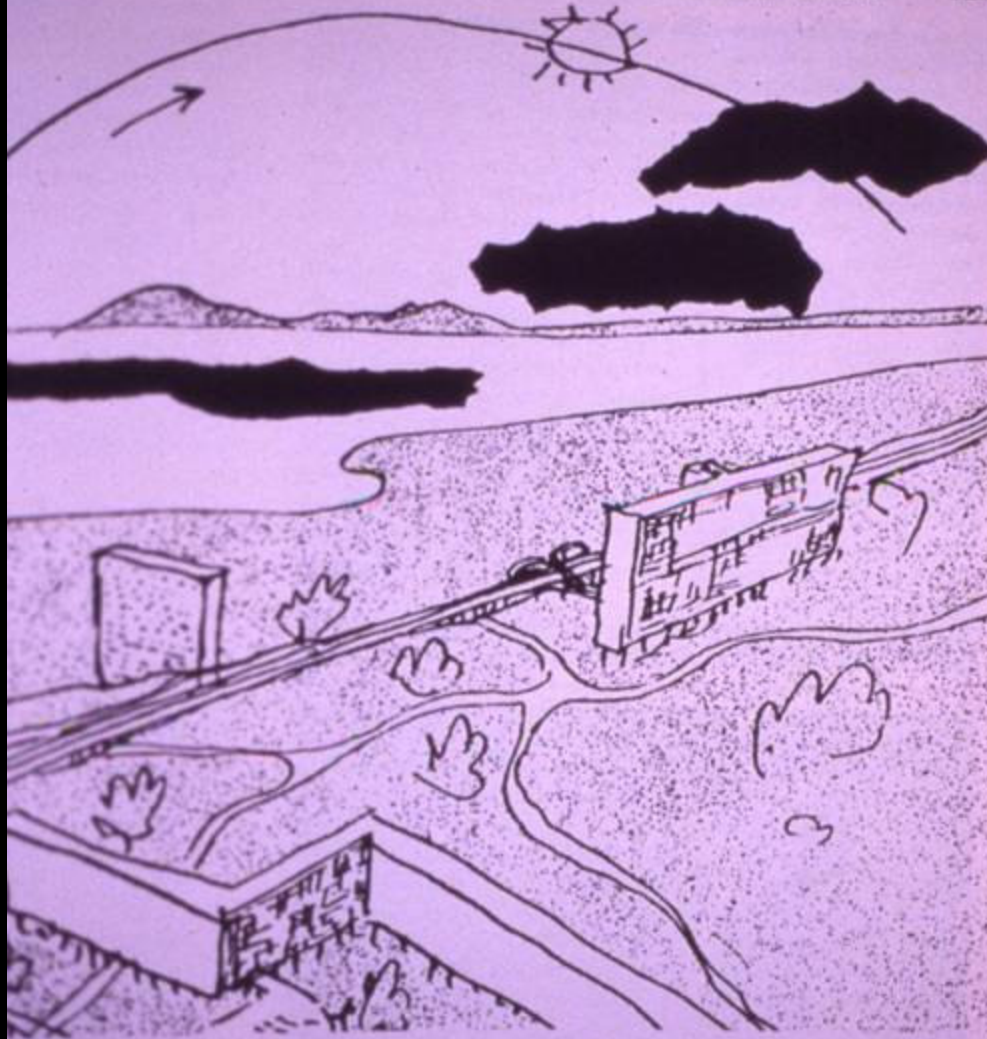
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Ghery, LA

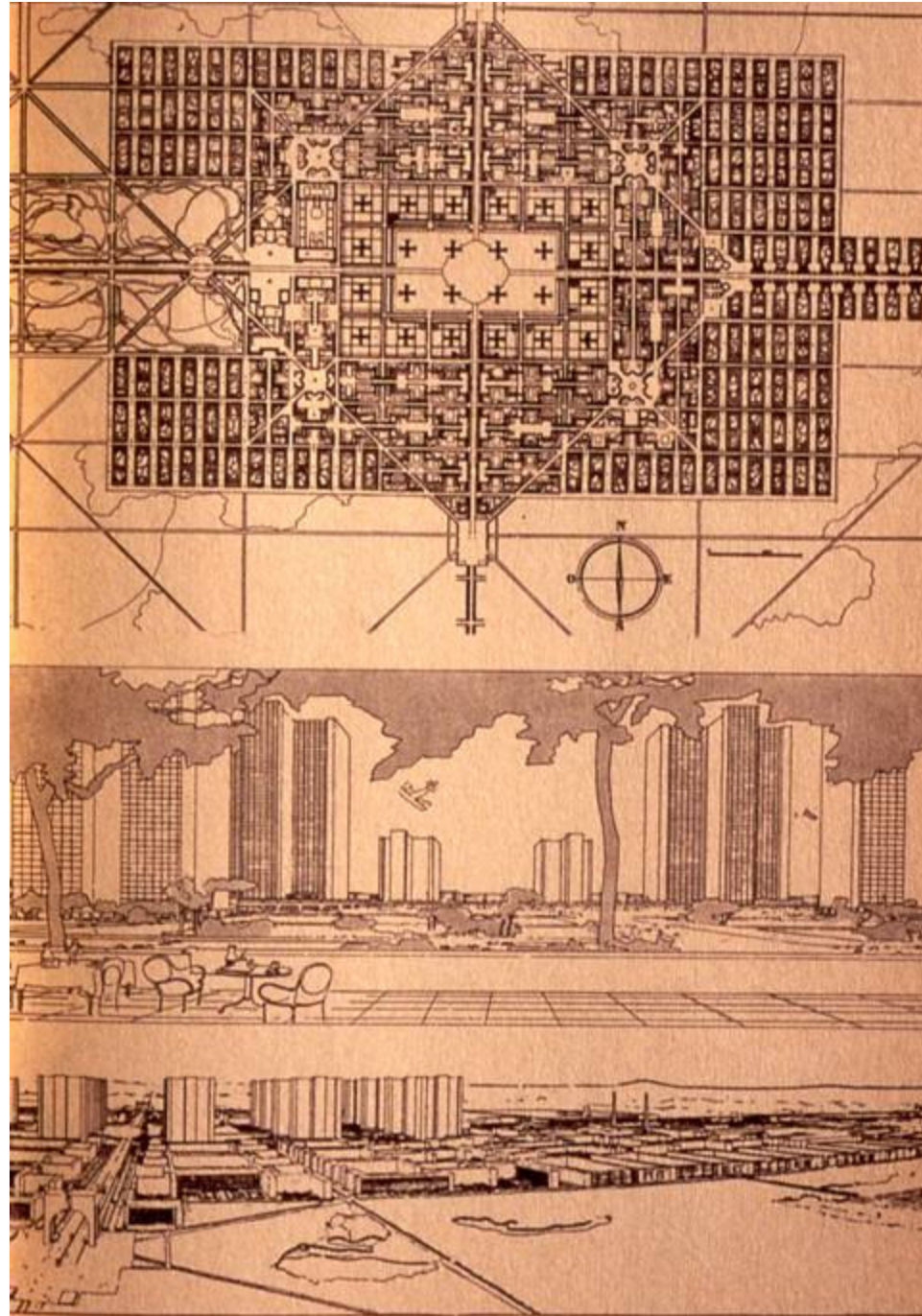
apresentação Lisboa E-nova, 2007 **ARQUITECTURA SUSTENTÁVEL**





Figg. 179-180. Altri due disegni di Le Corbusier: i vari tipi di edifici, spaziatati nel verde, che formano la città moderna; il paesaggio della nuova città, dominato dal corso del sole.

Le Corbusier



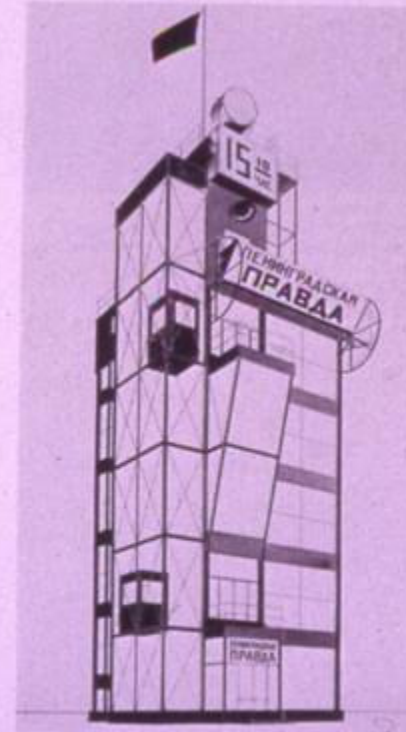
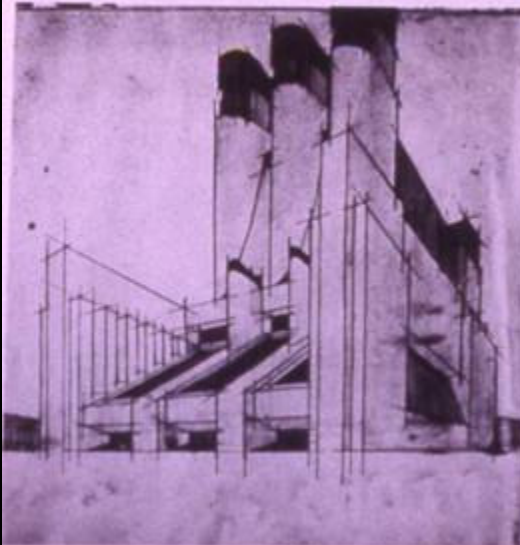
Le Corbusier, Ville Radieuse, 1922



28. Seagram Building, New York, by Mies van der Rohe, 1958. High Tech owes an obvious debt to Mies but has a more rigorous attitude to structural honesty.



30. One of Iakov Chemikhov's Constructivist fantasies of the 1930s. An alternative modernism kept alive in theoretical projects.



31. Alexander Vesnin's 1923 project for the Pravda building in Moscow. Proto-High Tech, complete with

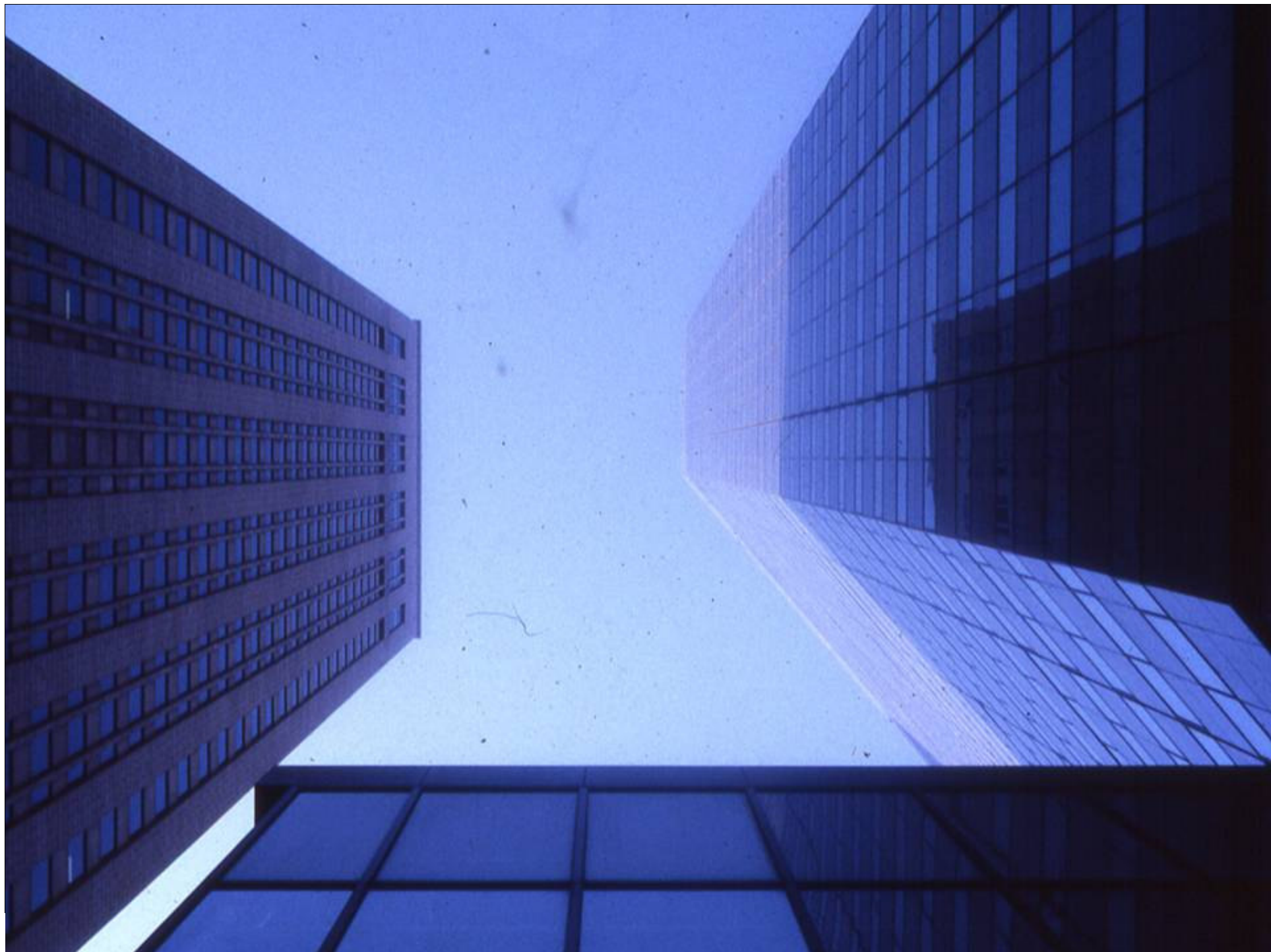


Figg. 150-151. Due fotomontaggi del grattacielo in acciaio e vetro progettato da Ludwig Mies van der Rohe nel 1921.

Mies van der Rohe, 1921



Seagram building, NY





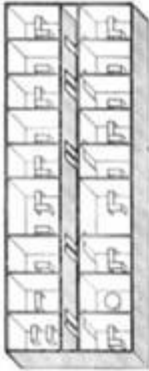
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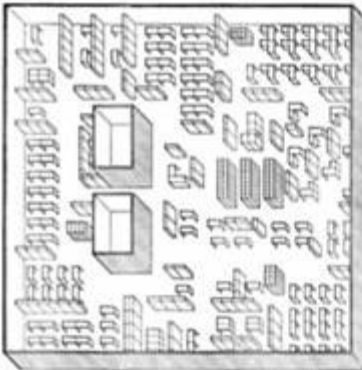
C. Pelli, Petronas Towers
Kuala Lumpur, Malasia, 1997



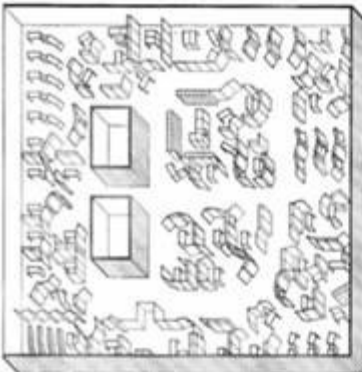
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Cellular office
 Nr. of storeys – 10
 Floor size – 1000sqm
 Building depth – 13.5m
 HVAC – Minimum use



Open Plan office
 Nr. of storeys – 80
 Floor size – 3000sqm
 Building depth – 18m
 HVAC – Centralised



"Bürolandschaft"
 Nr. of storeys – 5
 Floor size – 2000sqm
 Building depth – 40m
 HVAC – Centralised

Fig. 10: Typical post-world war II offices: Traditional British Cellular Office (top); North American speculative open plan office (middle); "Bürolandschaft" office - bottom (from Duffy, 1983; Laing, 1997).

layouts