Novartis Head Office

Building Type / Use
Office Building

Location
Stockholm, Sweden

Client
AP Fastigheter

Architect
G Anjou, Lund & Valentin ark. AB

Occupation
1999

Gross Area
6330 m²

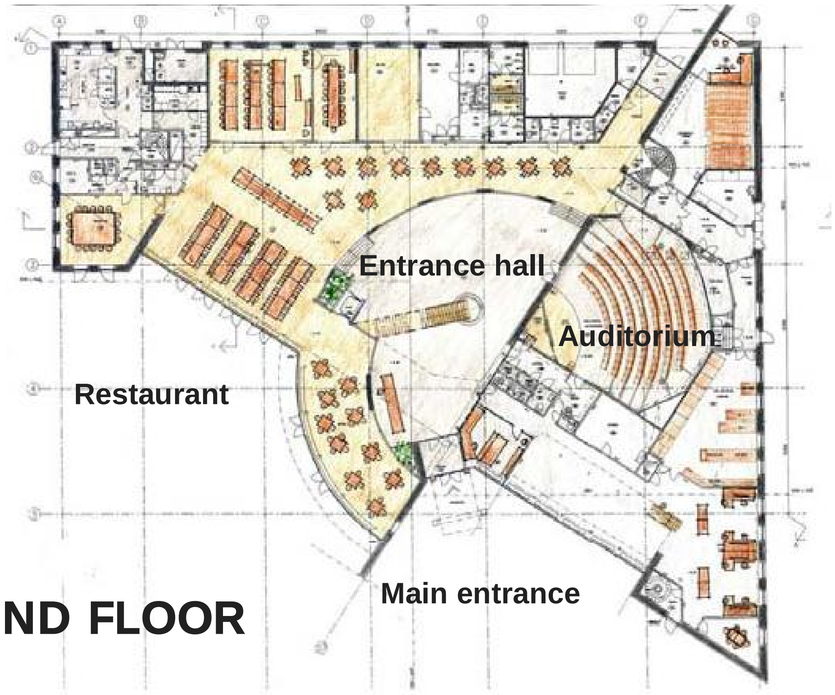
Building Concept

Aims

- Sound and healthy for people
- Long life & resource conservation
- Simple heating and ventilation
- Clean air & silent exchange
- Low emissions from materials & heating
- Low operation cost

Solutions

- Open plan – closed to north open to south
- Heavy materials – mostly local & national
- Earth duct ventilation for heating & cooling
- Noiseless low speed ventilation
- No ventilation ducts in the ceilings
- Stone, concrete, ceramics, wood, linoleum..
- Large ceiling height



GROUND FLOOR

1st & 2nd FLOOR

Building description & performance

Building data

Gross Floor Area:6330 m2
Work places: 150
Restaurant & auditorium for 150 pers

Heating, cooling & ventilation

Air intake through 400m large earth ducts
One large fan supply 3m³/s (win.)-10m³/s (sum.)
Inlet: ducts in external wall, outlet: atrium top
Preheating batteries in end of earth ducts
Ducts cool and heat ventilation air appr. 5-20°C

Energy use

District heating	65 kWh/m²,yr
Building electricity	35 kWh/m²,yr (est.)
Total	100 kWh/m²,yr

Water

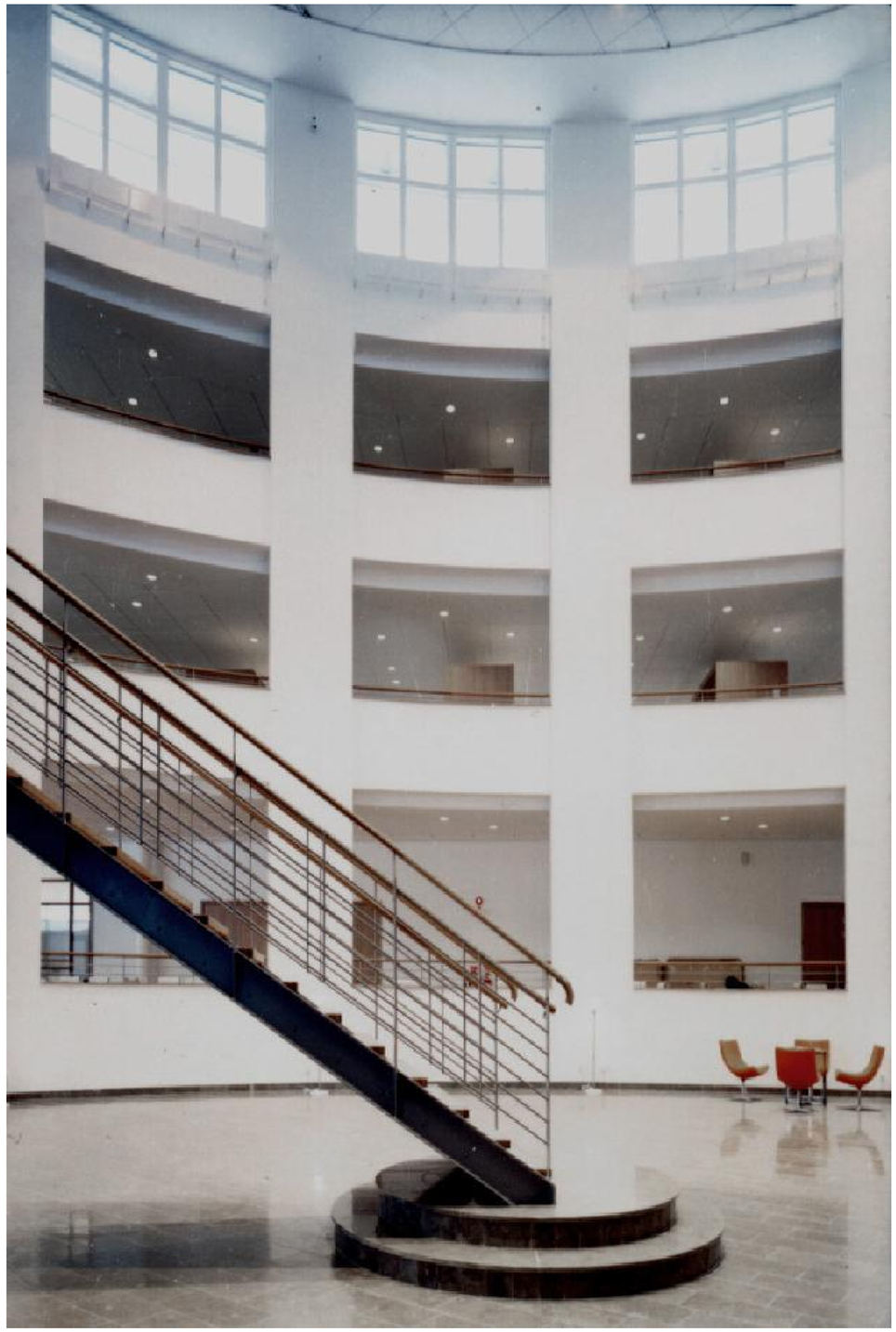
Potable water	270 l/m²,yr

Emissions from energy use

Climate change	8,3 kg equiv CO_2/m²,yr
Acidification	18 g equiv SO_2/m²,yr
Eutrification	145 g equiv NO_3/m²,yr
Nuclear electricity	9 kWh/m²,yr

User satisfaction

Indoor conditions	>85% satisfied or very satisf.



Result from three methods

ByggaBo (S) A-D

Energy	B
Indoor	B
Chemicals	B

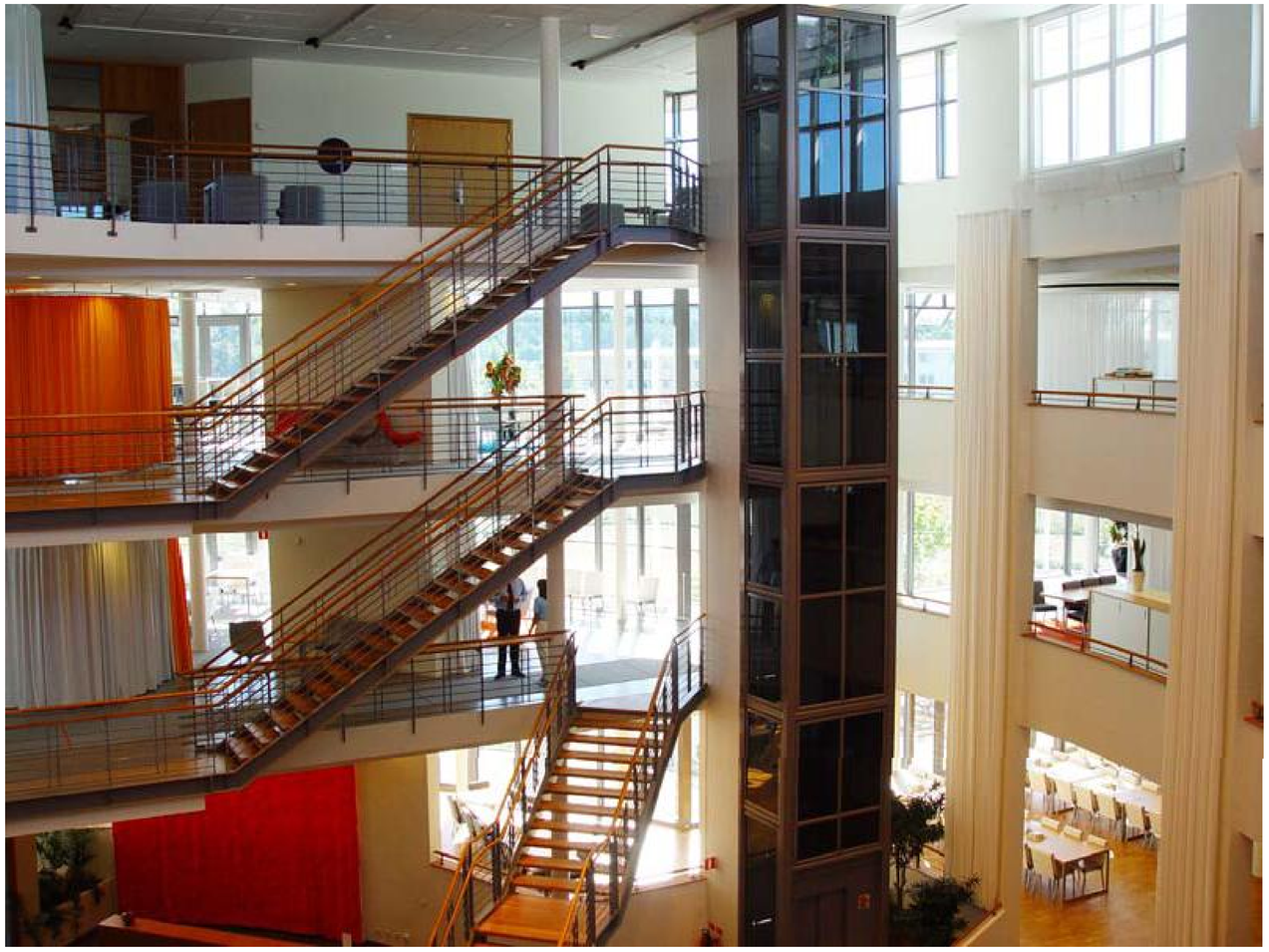
EcoEffect (S) 1-6 stars

Energy	★★★★
Indoor	★★★★

LEED (US) – 92 credits

Site	4 -6 (of 12)
Water	6 (of 10)
Energy	15 (of 30)
Materials	4-6 (of 14)
Indoor	10-18 (of 19)
Innovation	1-3 (of 7)

Certified - Gold



Summary of Key Performance Indicators (KPI)

A	Primary Energy of Non Renewable Energy Sources		[kWh/m²GFA]	44
B	Final Energy / Primary Energy of Renewable Energy Sources		[kWh/m²GFA]	77
C	Total Energy, (A+B) annual data	[ ] *predicted* [X] *monitored*	[kWh/m²GFA]	121
D	CO_2 Emissions (CO_2 equivalent)		[kg/m²GFA]	8
E	Potable Water Demand/Consumption, annual data	l/pers [ ]	[l/m²GFA]	270
F	Construction Cost, price level 2007		[EUR/m²GFA]	1100
G	Operating Costs, annual, price level 2007		[EUR/m²GFA]	14