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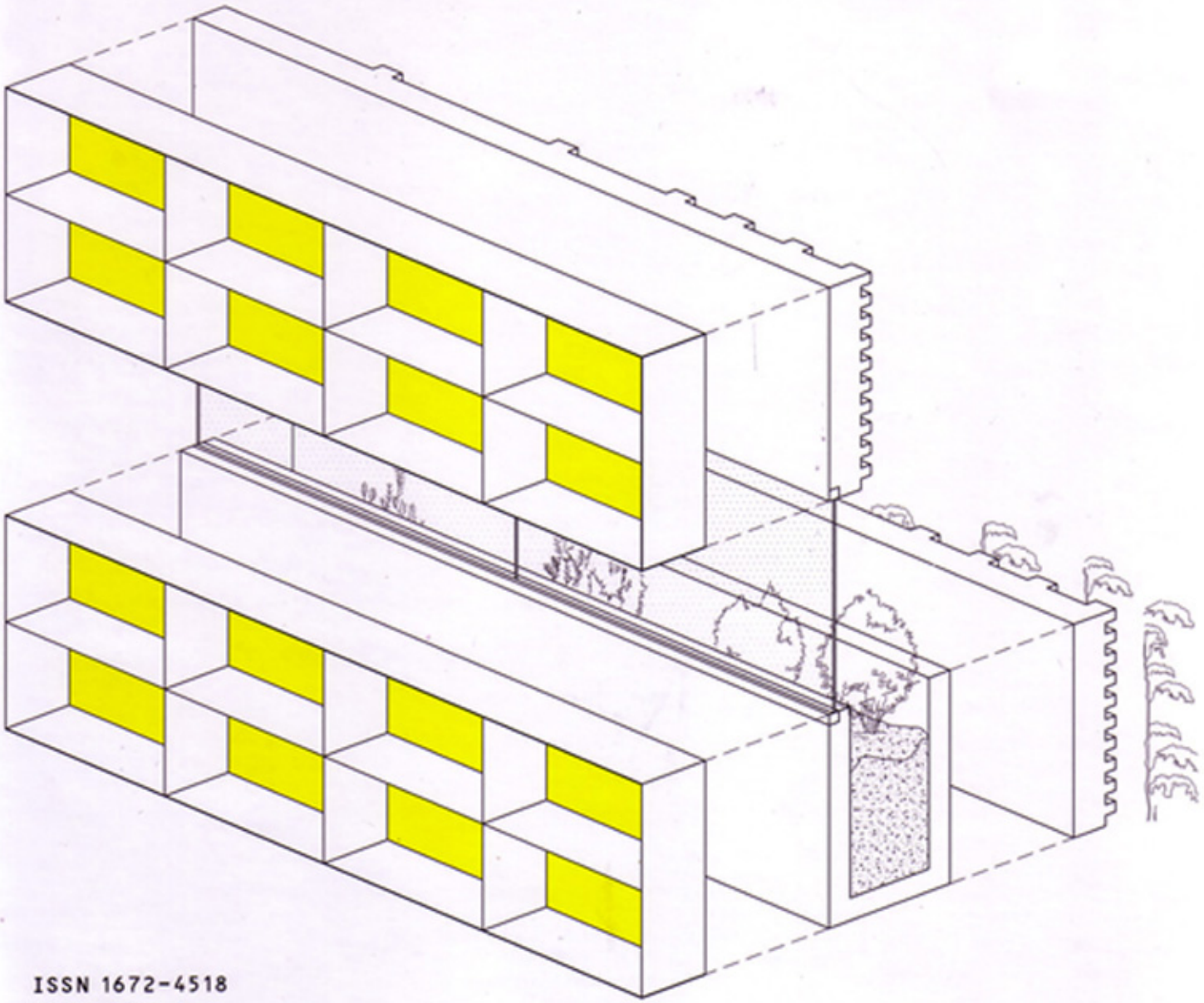
建筑细部

ARCHITECTURE & DETAIL

生态住宅 • ECO-HOUSING



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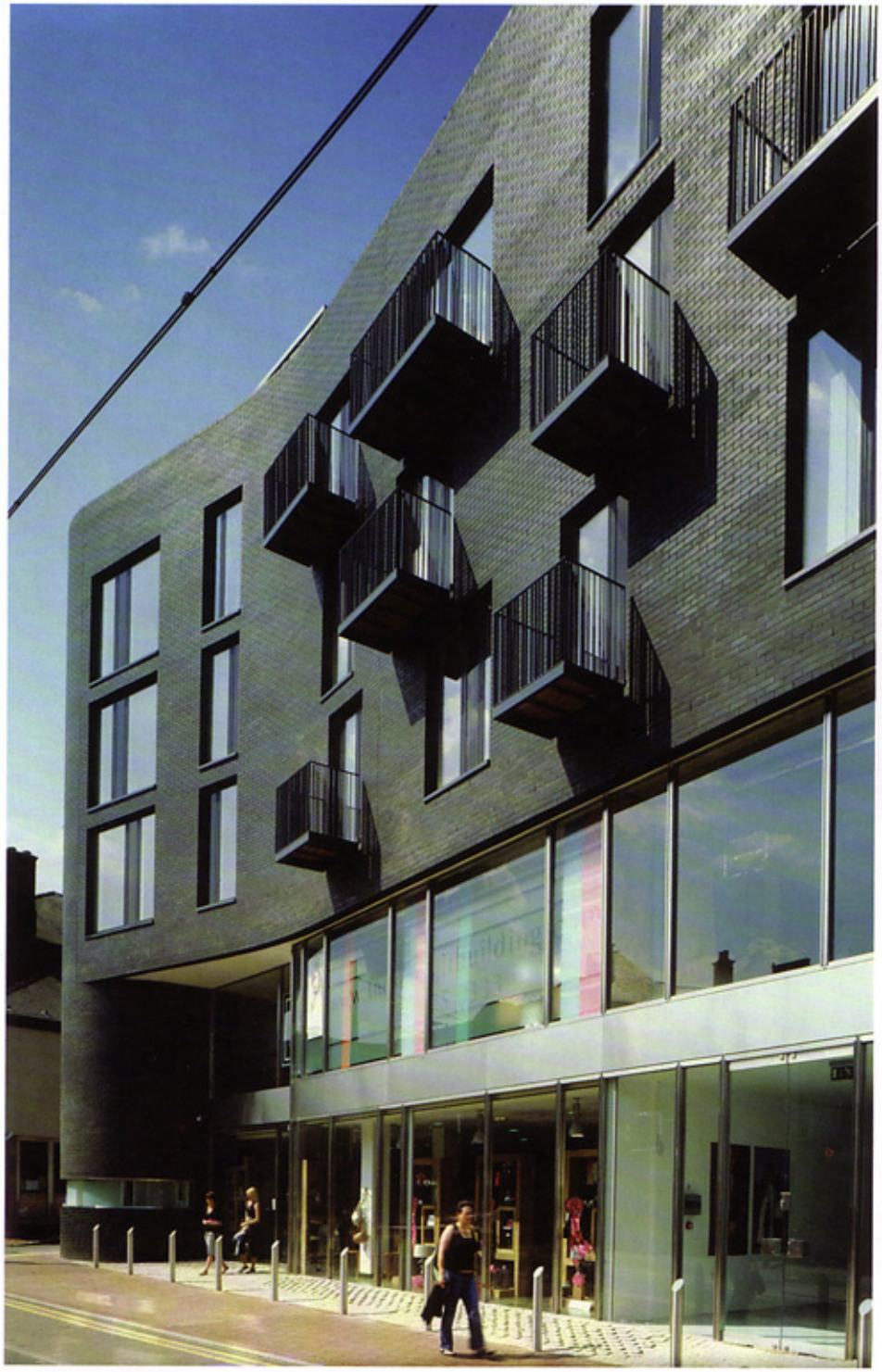
谢菲尔德的格洛索路266号

266 Glossop Road, Sheffield

建筑师: Project Orange Architects
Christopher Ash, Denitza Moreau,
Delphine Ammann
结构工程师: Project Design Associates



该建筑外部的曲线形立面与内部方正的核心筒相结合，其造型可被视为两种几何体的碰撞。建筑的三个临街立面由黑色砖块砌成，对当地传统的红色街市建筑提出了挑战。公寓的窗户高度都是通高的，它们深深嵌入砖墙中，排列并不规则，使立面显得比较灵活多变。建筑符合所有的现行建筑规范。其中一项特别的挑战就是满足了公寓房间自由通风和隔绝街道噪音这一矛盾的需求。

每间公寓都安装了一种管道抽风系统，将湿气经由设备橱中的中央换气扇装置抽出。该系统可持续以低速运转，其发动机由浴室的开关和湿度调节器来激活。这种系统一般都靠微流通风器和开放的窗户通风，但在本案例中无法采用，因此有必要安装另外一套机械通风系统来提供新风。于是在每间公寓的设备橱中安装了另一个中央换气扇装置，可经由门上方的小格栅源源不断地提供经过过滤的新鲜空气。这些空气都是从庭院得来的，由此可避免街道上的噪音传入室内。这一系统的优势在于，它通过安装一整套可隔绝噪音的通风换气系统而提高了居住条件。另外，尽管抽风装置一直在运转，但实际的电耗却低于应付极端气候环境时的情况。 刘慧 译／方柘 审

总平面图
比例 1：1800

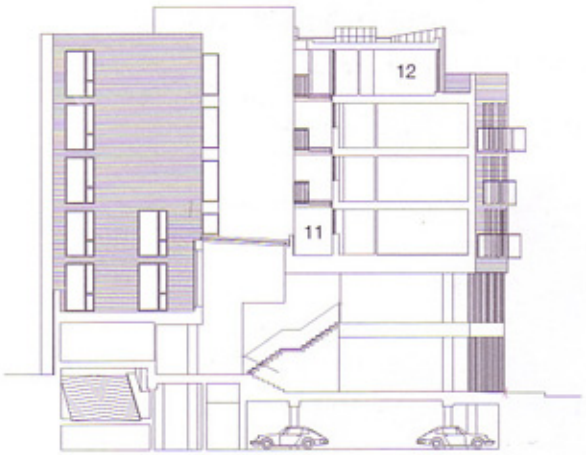
Site plan
Scale 1：1800

楼层平面图
剖面图
比例 1：400

Floor plans
Section
Scale 1：400

1 主要零售空间
2 夹层
3 装卸／储藏室
4 二级零售空间
5 通往公寓的门厅
6 零售店办公室
7 独立办公区域
8 下空
9 单人间
10 双人间
11 入口通道
12 阁楼公寓

1 principle retail unit
2 mezzanine unit
3 loading/storage
4 secondary retail unit
5 lobby to flats
6 retail offices
7 self-contained office unit
8 open to below
9 studio flat
10 2 bed flat
11 access courtyard
12 penthouse apartment



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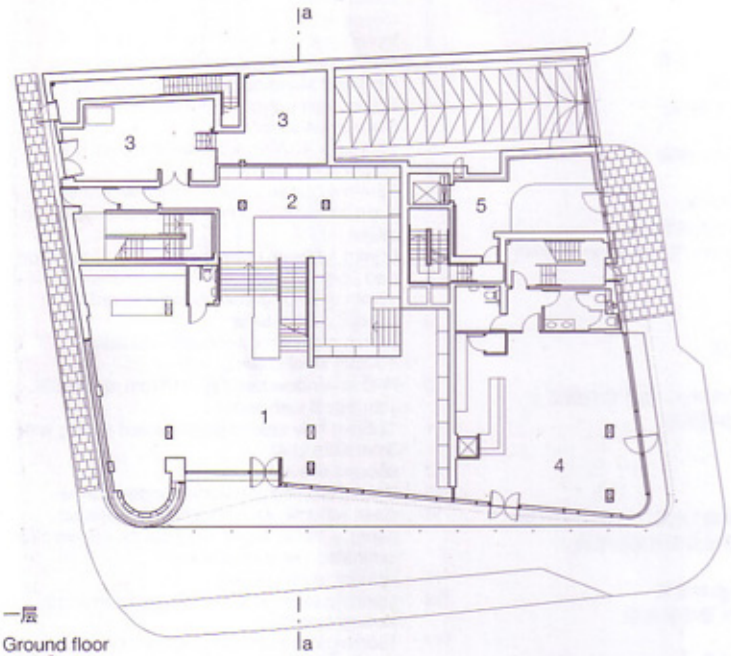
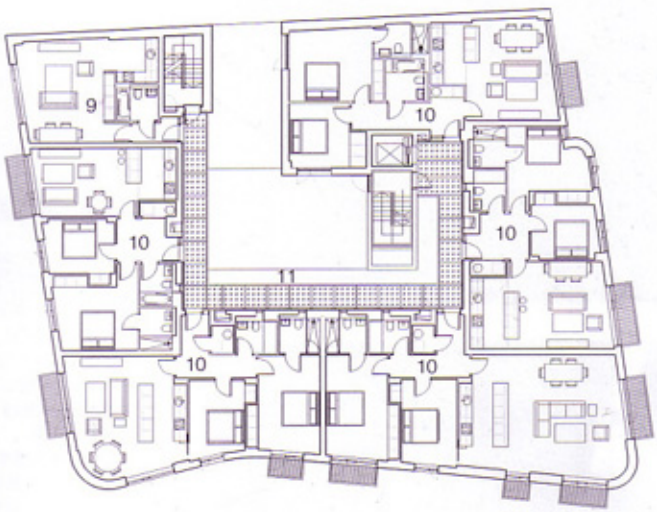
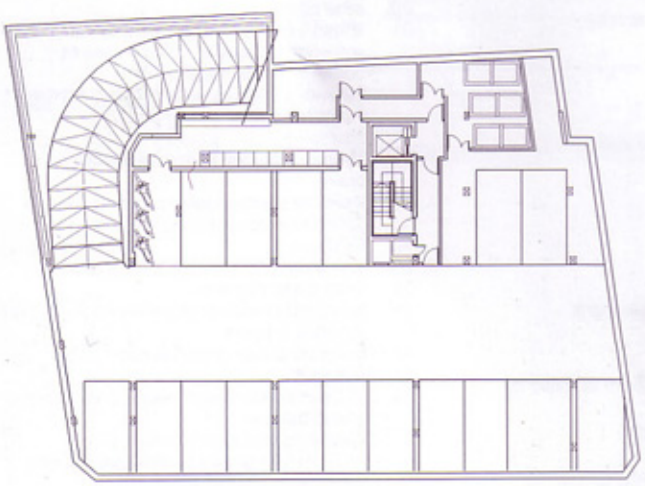


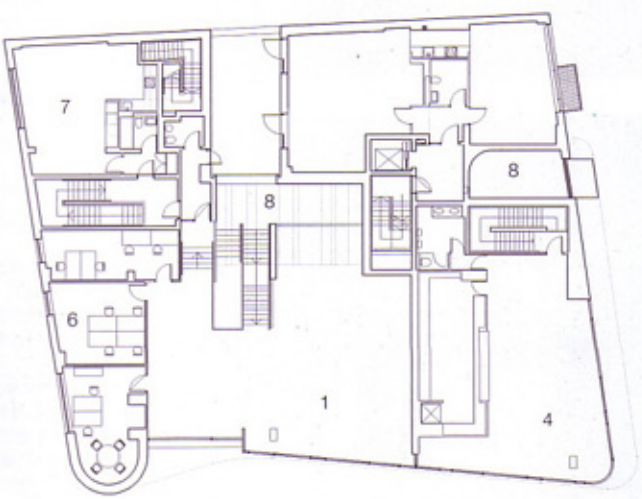
一层
Ground floor



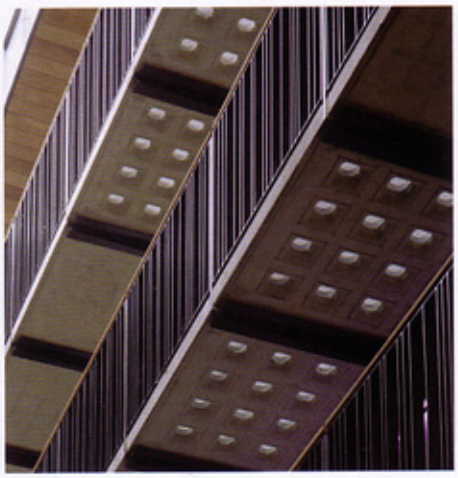
标准层
Typical floor



地下一层
B1 floor



二层
First floor

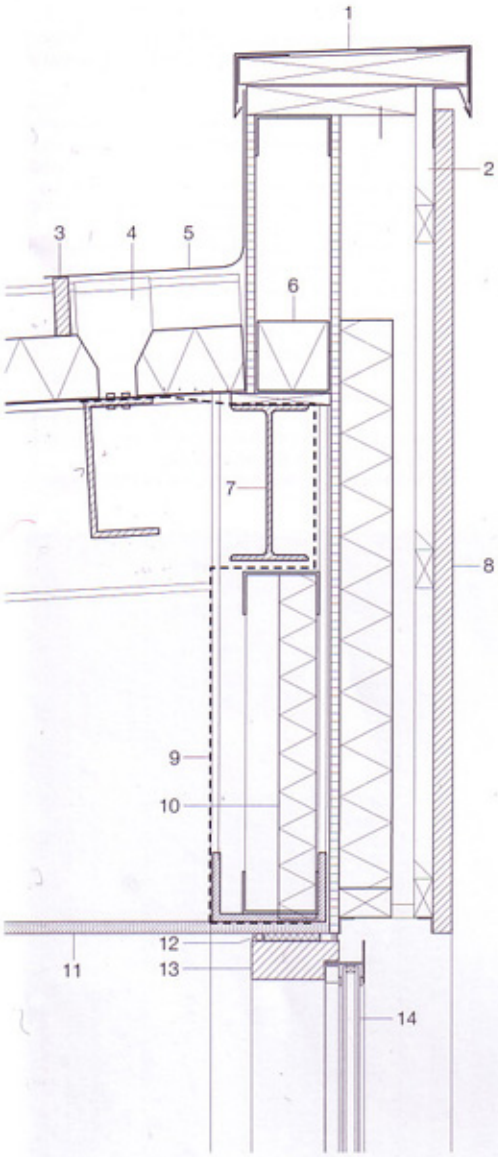


硬木覆层和平屋顶节点的垂直剖面
标准女儿墙剖面
比例 1：10

1 软木填充上方的 2mm 锌盖板
连续的镀锌角撑机械固于木填充块上，
作为上方锌板的内衬
软木填充
2 防虫网
3 闭合木条
4 固定夹板
5 固定于屋顶覆层的连续防水板
立边咬合保温屋顶铝板，
90mm 刚性聚苯乙烯保温核心
6 保温层
7 203mm×102mm×23mm 钢梁
8 25mm 绿柄桑覆板
25mm×50mm 软木顺水条，
用于支撑厚木板，顶部切成斜角
带 70mm 保温层和 25mm 空腔的 50mm×95mm 板条
12mm 室外胶合板
9 隔汽层
50mm 玻璃纤维隔声层
100mm 槽钢系统
10 窗框上槛的 PFC@ 2495mm，位于结构板之上
11 12.5mm 完全密封石膏板吊顶，
带 3mm 腻子面层
12 硅树脂密封剂
13 工厂喷涂软木窗框
14 玻璃窗，4mm 钢化玻璃（外层）+14mm 氩气填充空腔 +6mm 透明层压低辐射内层玻璃
15 喷涂踢脚板
16 软木垫板上的立边咬合锌盖板
17 排水垫上方的 100mm 硬质保温层
液态防水膜
330mm 钢筋混凝土楼板
18 软木垫块
19 空腔保温闭合块
20 防风柱
21 25mm 绿柄桑硬木盖板，
每隔 400mm 用螺栓固定在软木条上
50mm×50mm 板条
200mm×200mm 软木垫块，
固定在下方的保温层上
纤维过滤层
100mm 挤出泡沫聚苯乙烯保温层
排水层
2mm 热涂防潮防水薄膜
330mm 钢筋混凝土楼板
22 排水构件
23 间隔规律的末端出水孔
24 泡沫玻璃保温层
25 用于支撑砌砖的隐蔽式槽钢和角撑架
26 托梁角撑上的枪形砖
27 软接缝
28 50mm×25mm 板条上的 12.5mm 石膏板吊顶
隔汽层（仅五层有）
12.5mm 完全密封石膏板吊顶
25mm×25mm 板条
29 100mm 砌块墙外的 13mm 石膏装饰层
70mm 保温层
70mm 空腔

Vertical section at junction of hardwood cladding and flat roof
Typical parapet section through wall
Scale 1 : 10

1 2mm zinc capping over softwood packer
continuous galvanized support angle mechanically fixed to packer to dress zinc capping over
softwood blocking piece
2 insect mesh
3 closer strip
4 fixing cleat
5 continuous flashing stitched to shroud insulated standing seam aluminium roof panel, 90mm rigid polystyrene insulated core
6 thermal insulation
7 203mm × 102mm × 23mm universal beam
8 25mm Iroko cladding
25mm × 50mm softwood counter battens to support hardwood boarding, top to be cut to angle
50mm × 95mm battens with 70mm insulation and 25mm air void
12mm exterior grade plywood board
9 vapour control layer
50mm glass fibre accoustic insulation
100mm steel channel system
10 PFC at window head @ 2495mm above SSL (structural slab level)
11 12.5mm fully sealed plasterboard ceiling with 3mm skim coat
12 silicone sealant
13 factory painted soft wood window frame
14 glass window, 4mm toughed glass(outer pane) + 14mm argon filled cavity + 6mm clear laminated low-e inner pane
15 painted skirting board
16 standing seam zinc cladding on softwood sarking board
17 100mm rigid thermal insulation over drainage mat
liquid applied waterproofing membrane
330mm reinforced concrete slab
18 softwood fillet
19 insulated cavity closer
20 wind posts
21 25mm Iroko hardwood deck, screw fixed to softwood battens at 400mm centres
50mm × 50mm battens
200mm × 200mm softwood pad adhered to insulation below
filter fabric
100mm extruded styrofoam insulation
drain
2mm hot applied damp proof membrane
330mm reinforced concrete slab
22 DPC
23 end weep holes at regular intervals
24 foam glass insulation
25 recessed structural channel and angle bracket for brick support
26 pistol brick over ancon support angle
27 soft joint
28 12.5mm plasterboard ceiling over 50mm × 25mm battens
vapour control layer(4th floor only)
12.5mm fully sealed plasterboard ceiling
25mm × 25mm battens
29 13mm plaster finish over 100mm blockwork
70mm insulation
70mm cavity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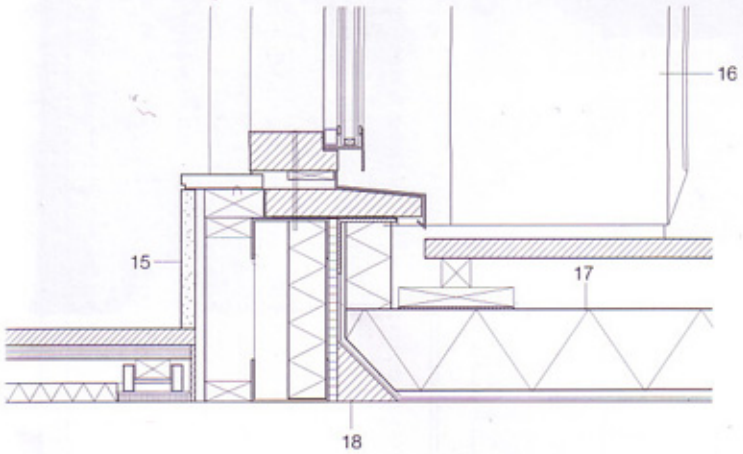
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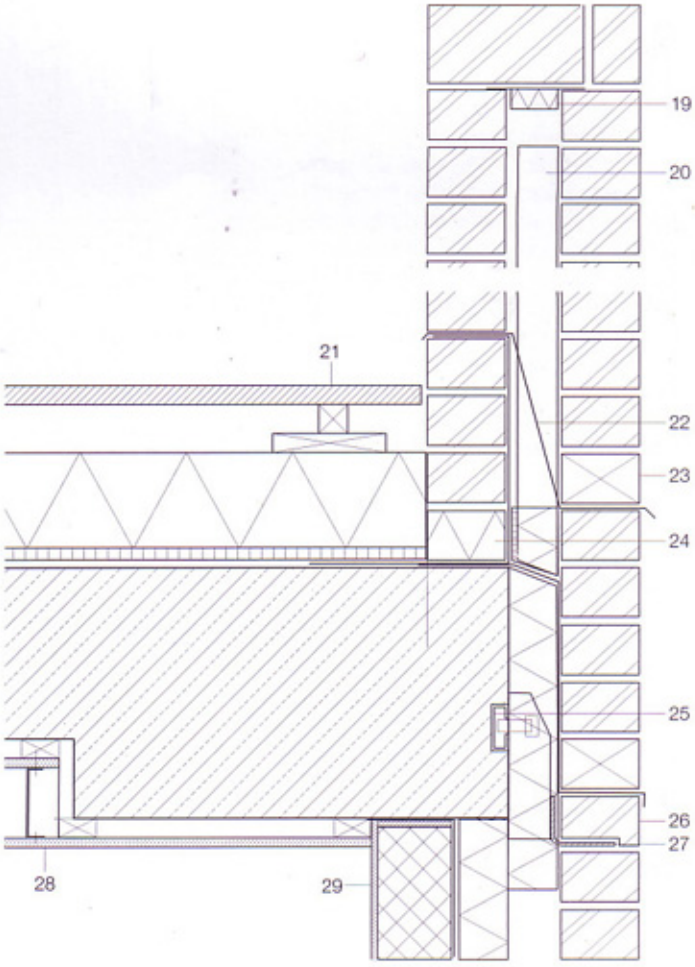
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1 玻璃窗，4mm 钢化玻璃（外层）+14mm 氩气填充空腔 +6mm 透明层压低辐射内层玻璃
2 由粉末涂层铝板包裹的软木窗台
3 保温断热木铝窗构件
4 楼板构造：
12mm 地板饰面（硬木楼板 / 石灰华瓷砖 / 地毯）
22mm 底层地板
带电热装置的空隙
25mm 箔面保温层
225mm 混凝土板，带 330mm 高的圈梁
5 隔声系统中的支撑木条
6 35mm×10mm 粉末涂层条钢
7 35mm×8mm 粉末涂层条钢
8 25mm 木板
下方为焊接的 T 形托架，以支撑木板
9 55mm×10mm 粉末涂层条钢，支撑栏杆基座
10 35mm×10mm 扁钢，焊接在 PFC 上翼缘
11 阳台下方的粉末涂层钢支架，125mm×65mm 槽钢
12 125mm 镀锌阳台支撑结构

1 glass window, 4mm toughed glass(outer pane) + 14mm argon filled cavity + 6mm clear laminated low-e inner pane
2 powder-coated aluminum clad softwood sill
3 thermally broken wood/aluminum window section
4 floor construction: 12mm floor finish (hardwood flooring / travertine tile / carpet); 22mm sub-floor board; air gap with electic underfloor heating; 25mm foil faced insulation; 225mm concrete slab with 330mm deep perimeter beam
5 timber battens supported in an acoustic system
6 35mm × 10mm powder-coated steel flat bar
7 35mm × 8mm powder-coated steel flat bar to steel balustrade
8 25mm timber deck
welded T brackets to support decking
9 55mm × 10mm powder-coated steel flat bar balustrade base
10 35mm × 10mm flat welded to top flange of PFC
11 powder-coated structural steel frame to balconies to be 125mm × 65mm channel
12 125mm galvanized balcony support structure

The form of the building can be seen as a collision between two geometries; a flowing curvilinear facade meeting a rectilinear core. Bounded by roads on three sides, early studies showed that the most logical footprint was a three-sided square spiral around a central well, providing light to a double-height atrium to the rear of the shop and sheltering access decks for the residents above. The three public facades of the building are wrapped in jet-black brick challenging the orthodoxy of the municipal red brick vernacular. The windows to the apartments, all from floor to ceiling, are deeply recessed within the brick skin and occur at random intervals, shuffled across the facade. The building meets all current building regulations. One particular challenge was to meet the conflicting requirements of free ventilation to the apartments and the attenuation of sound from the busy street.

A ducted extract system is installed to each apartment, extracting from wet areas via a centralised fan unit located in the utility cupboard. This system runs constantly at a low velocity with a boost activated by a bathroom switch and a humidistat. Such extract systems generally rely on trickle vents and open windows for the supply air, which could not be assumed in this case. It was therefore necessary to install a second mechanical and ducted system to provide the supply air. Again a central fan unit was integrated into the cupboard to each flat, running continuously and supplying filtered fresh air to each room via a small grille above the head of each door. The supply air is drawn from the courtyard to the development, therefore shielded from direct street noise. The advantage of this system is that it enhances the living environment of the apartments by providing a full system of fresh air ventilation without exposing residents to the unacceptable noise. In addition, although the extract is working all the time, the actual power consumption is lower than that if the environment has to react to peaks and troughs.

阳台剖面详图
比例 1：10
Balcony sectional detail
Scale 1 : 10