

Site plan
總平面

Location: Graz, Austria.
 Basement: 2 stories partially sunken.
 Building area: 1 487 m²
 Total floor area (gross): 3 400 m²
 Total floor area (net): 2 884 m²
 Volume (gross): 12 150 m³
 Stories: 3-4
 Cost (net): 4 500 000 Euro
 Cost (gross): 6 500 000 Euro

項目地址：奧地利 格拉茲
 地下室：從第一層下陷
 建築面積：1 487平方米
 建築面積（毛）：3 400平方米
 建築面積（淨）：2 884平方米
 體量（毛）：12 150立方米
 樓層：3-4
 費用（淨）：450萬歐元
 費用（毛）：650萬歐元

The Painters' State Vocational School Laboratory Building

格拉茨的油漆工職業學校—實踐工作室

Design company: Bernhard Hafner Architekt

設計單位：Bernhard Hafner Architekt

State Vocational School 6 is part of a collective of vocational schools in Graz, Austria. It lacked adequate shop facilities for practical work. Initially only three workshops were to be located in a new one-story building, the others were to remain at different locations nearby. After researching the needs the architect suggested that a two-story building be built at the suggested location next to the school with an on grade floor level with the classrooms of theoretical work, a half-sunken story with additional workshop and a gallery story as the guilders workshop. The building is entered both from the man hall of the school and from the outside.

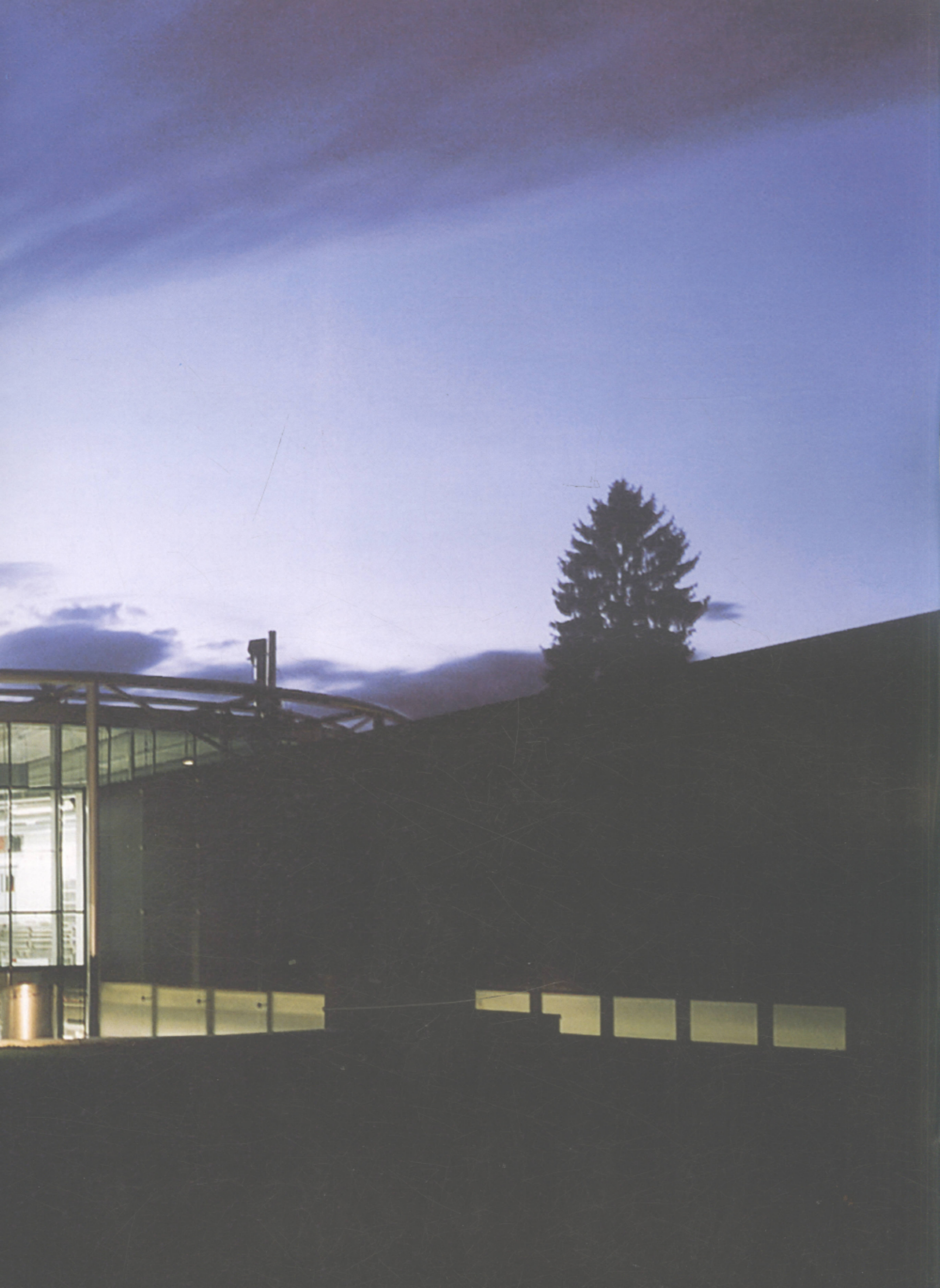
Site-limitations and functional reasons made the architect choose a circular building form with workshops at the periphery and ancillary services, including storage of such materials as car hoods and panels used for repainting, air-circulation equipment and locker rooms for teachers and students at the center. Since these rooms have lower floor to ceiling height there are four stories at the center to two stories at the periphery.

The architectural form of the building is determined by a complex interplay of the circular building at the center and box-type spaces docked unto it at the periphery. The smaller of these contain airducts housed in glass panelling painted red. There are intermediate boxes for storage of paints, propane gas and cleaning materials, and there is a very large box which contains ste of the art equipment for painting and drying objects up to the size of a car. The lower floor extends beyond ground floor where a sloping roof with red water-proofing covered by a protecting grid of profile-steel rises to grade. Out of this interface between terrain and building the steel structure, the installation shafts and the intermediate boxes rise. Together they form a four-layered facade.











The main construction spanning about 42 meters is of steel tubes of sizes up to 0.25 meters in diameter. Such small dimensions are possible because of the exploitation of the height differences of the building which increases at the center. Compression and tension forces supplant bending moments which exist locally only. The cylinder at the center is of reinforced concrete. It has brilliant blue paint. A competition winning artist added streaks of different intensity. Entry to lower level lockers rooms is a T-shaped opening with red walls set back from the circumference.

Facades are of insulated glass panels held in place by a support structure consisting of tension and compression rods suspended from the roof. Panel width is about a meter, heights range from one to three meters. Point supports are at meter intervals. Opaque facades involve reinforced concrete walls, thermal insulation painted in anthracite color, and point supported panelling of raw glass. All visible steel has metallised silver coats.

In this project a very innovative solution is realized with respect to architectural form, construction, functional organization and use of materials. Of particular challenge was solving the transition of the partially sunk lower part of the building to natural terrain and the connection to the existing school, where point-supported glass panels had to be arranged in three directions without profile-steel.

The response of the school and of its leading personnel to the building was gratifying.

州立第六職業學校是格拉茨職業學校集體的一部分。它缺乏實踐作業的設施。最初，只是一個有三個工作室的一層建築。其他的則分布在周邊的不同地方。根據需要，建築師們建議在學校的旁邊建一座兩層的建築。底層與理論課教室相連。半下沉的一層作為附加的工作室。從學校的主廳和學校的外部都可以進入這座建築。

場地限制和功能原因促使建築師將工作室和周圍的輔助設施建成圓形。用來貯存車的引擎罩、重新油漆用的嵌板、空氣循環設備等的倉庫，以及為師生們造的櫥櫃。因為這些房間層高較低，中間為四層，周邊為兩層。建築的形態由中央的圓形建築和周邊的盒形建築之間的相互影響決定。較小的包含通風管道的建築位於玻璃板構成的結構內。這個結構被塗成紅色。中等大小的盒子形結構用來貯存、丙烷氣和清潔材料。還有一個大的盒形結構。裏面是一套塗漆和干燥設備。較低的一層延伸出底層。到達一處傾斜的紅色防水屋頂。屋頂由防護格柵覆蓋。鋼結構、安裝軸和中等盒子結構延伸出來形成建築

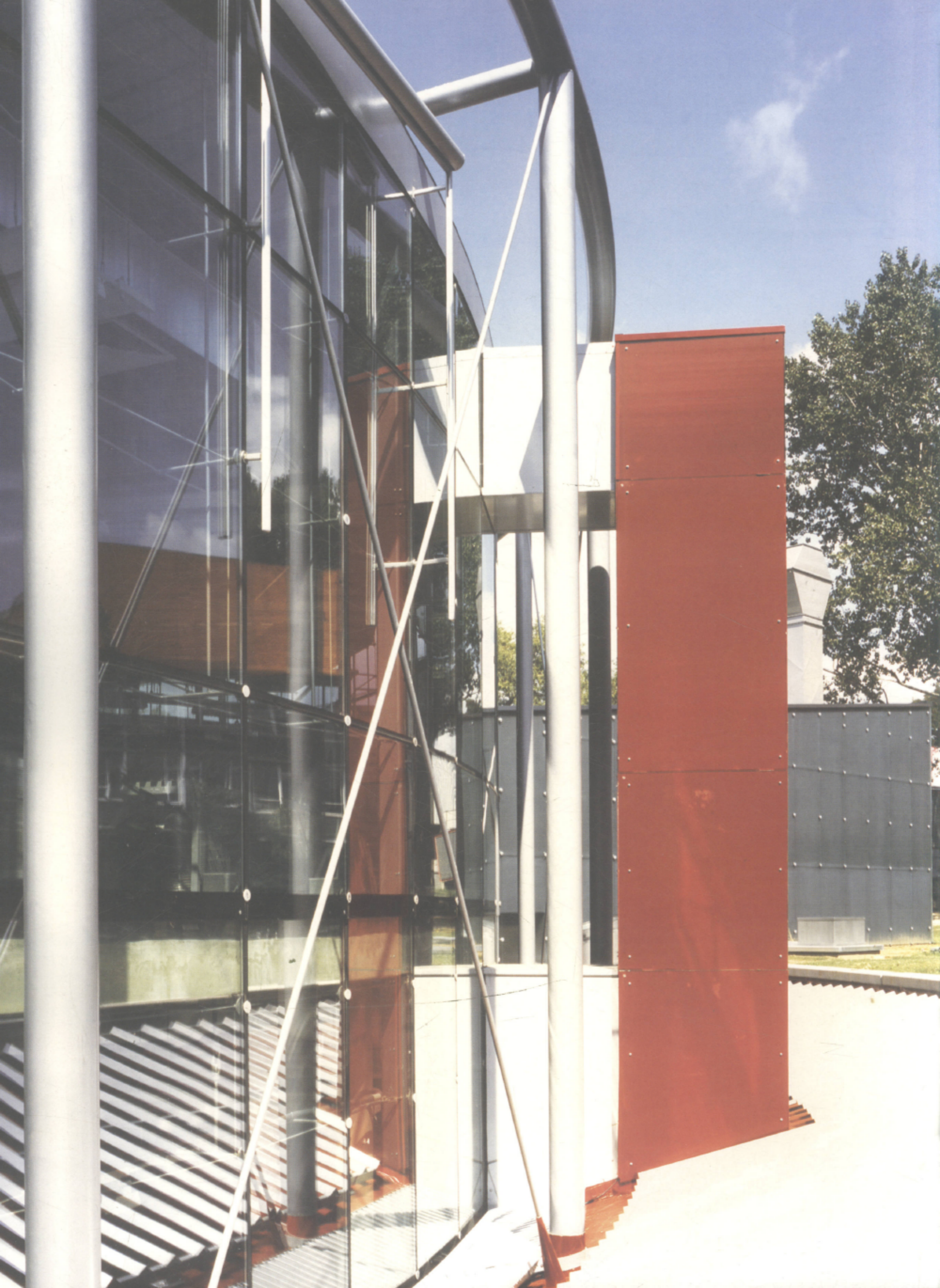
和地形的界面。它們組合成一個四層的立面。

主結構跨度42米。由直徑為0.25米的鋼管構成。這種小尺度成為可能。是由于建築的層高差異。中央的圓柱由鋼筋混凝土構成。并被塗成鮮艷的藍色。設計競賽中獲勝的一位藝術家為其加上了不同亮度的條紋。較低一層的櫥櫃間的入口是T形的。紅色的牆向裏面縮進。

外立面由絕緣玻璃板構成。并由懸掛在屋頂的抗拉、抗壓的鋼杆構成的結構支撐。玻璃板的寬度為1米。高度從1米到3米不等。每隔一米有一個支撐點。不透明的立面由鋼筋混凝土牆。塗成無烟煤顏色的隔熱材料和各個點支撐的毛玻璃板構成。所有可見的鋼杆都塗上了銀色的塗層。

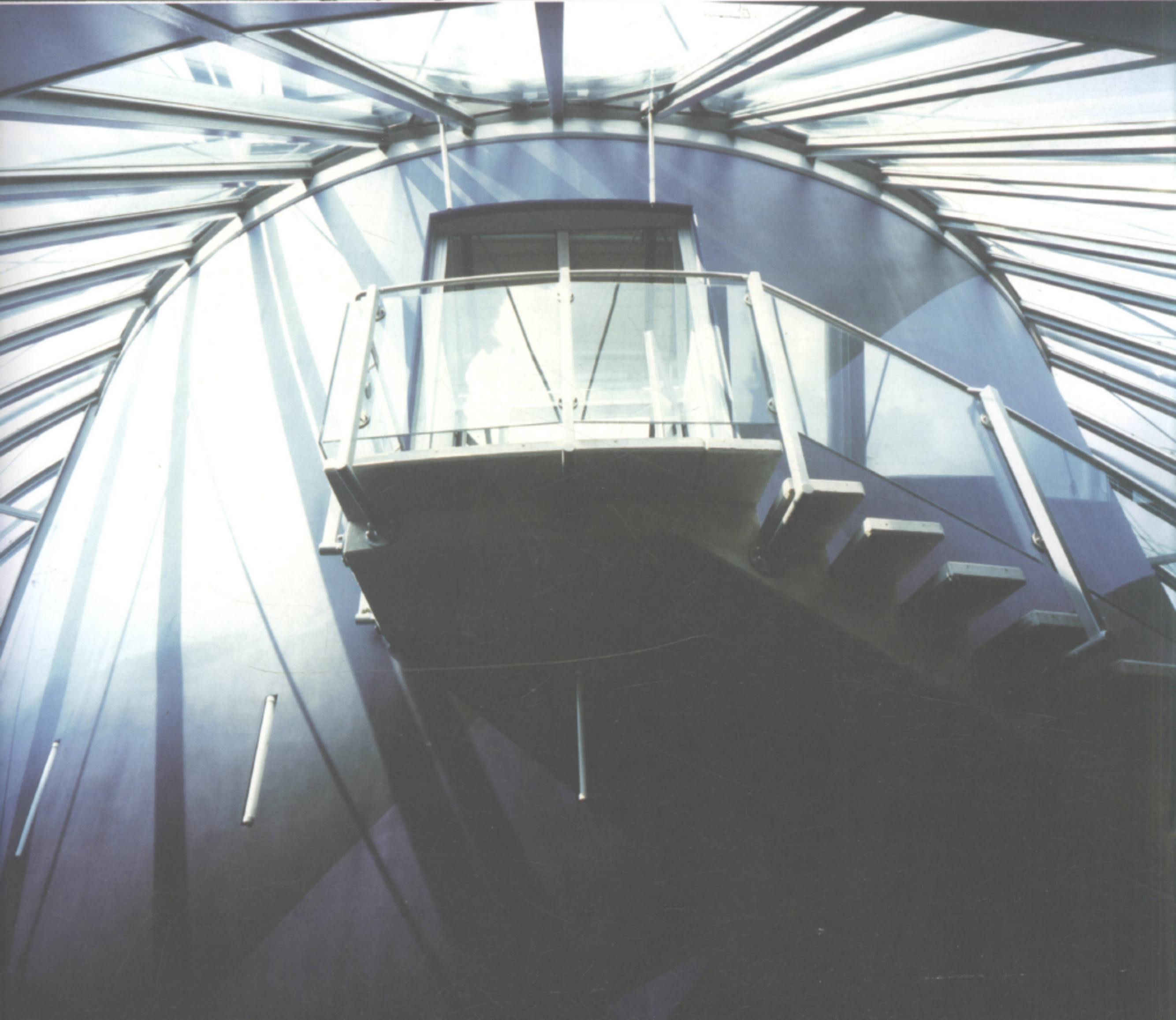
在這個項目中。無論是建築形態。結構。功能組織還是材料的應用都進行了創新。解決建築的下沉部分和自然地形之間的過渡和與建築的连接都是極具挑戰性的。由一個點支撐着的玻璃板不得不在三個方向上排列。學校及其主要員工對建築都很滿意。

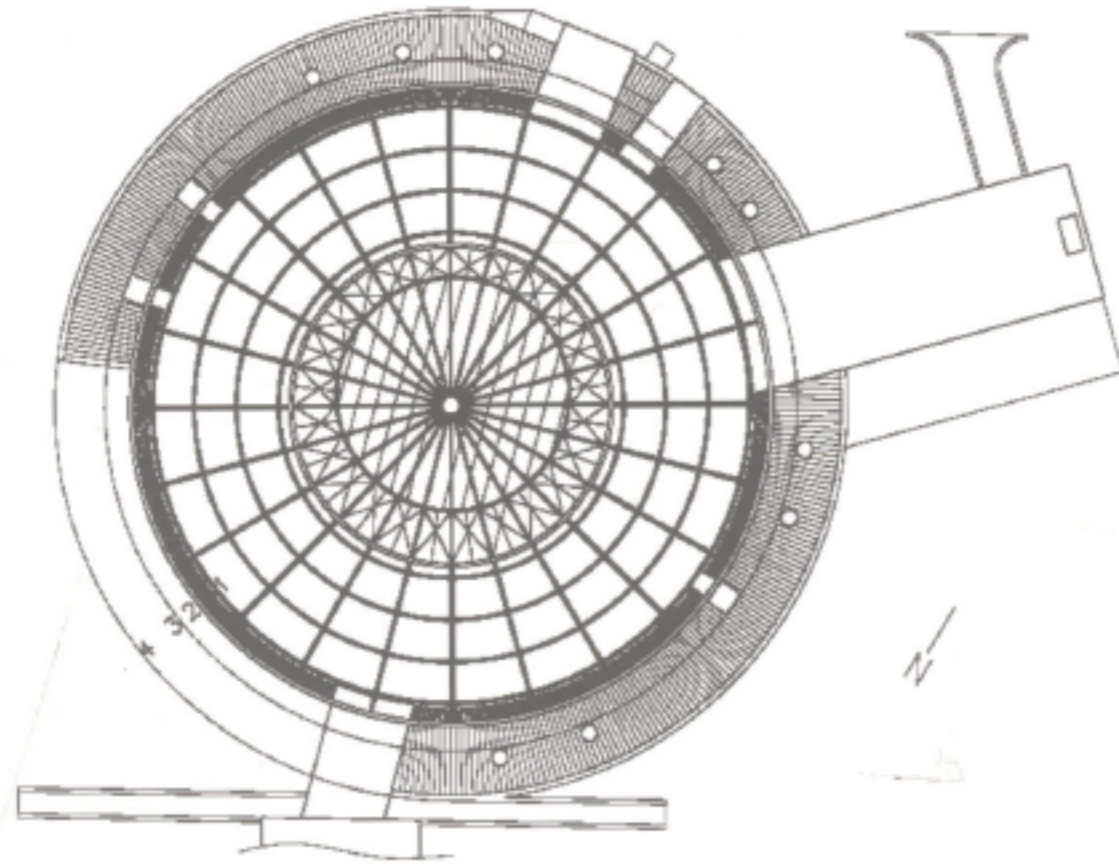




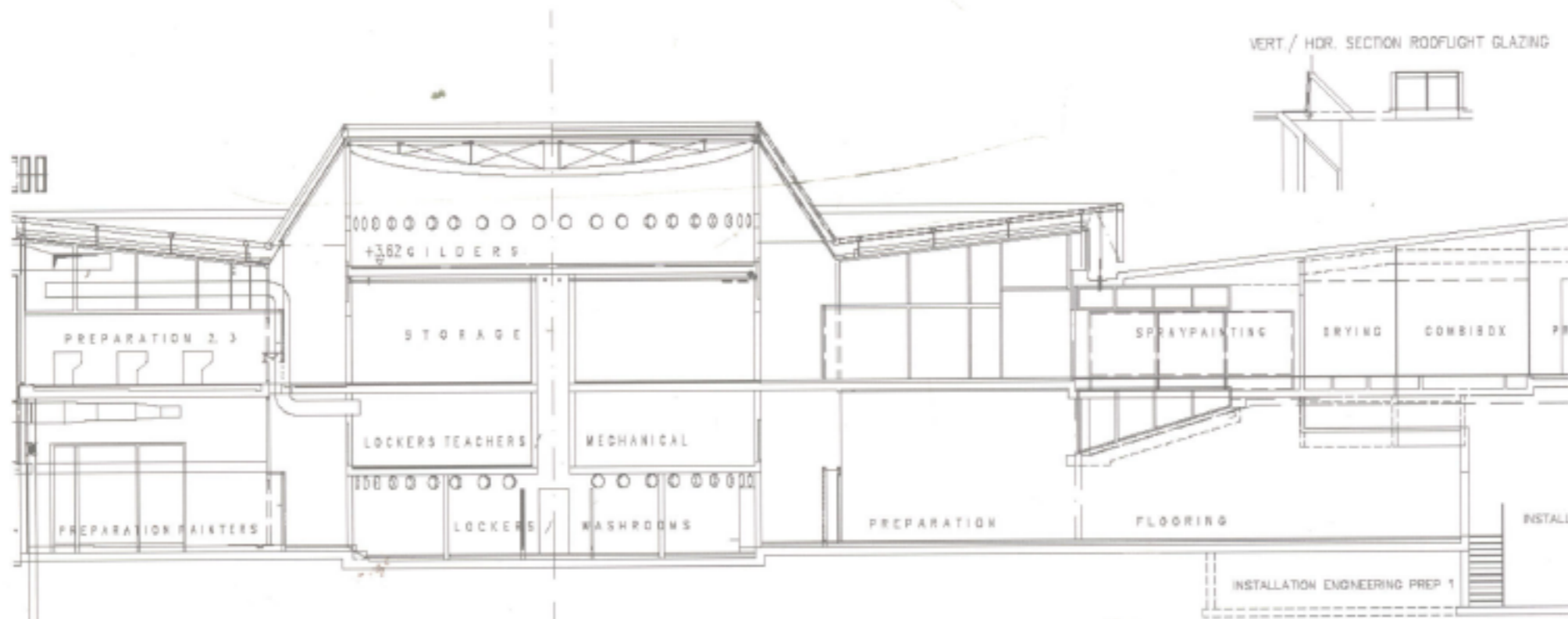




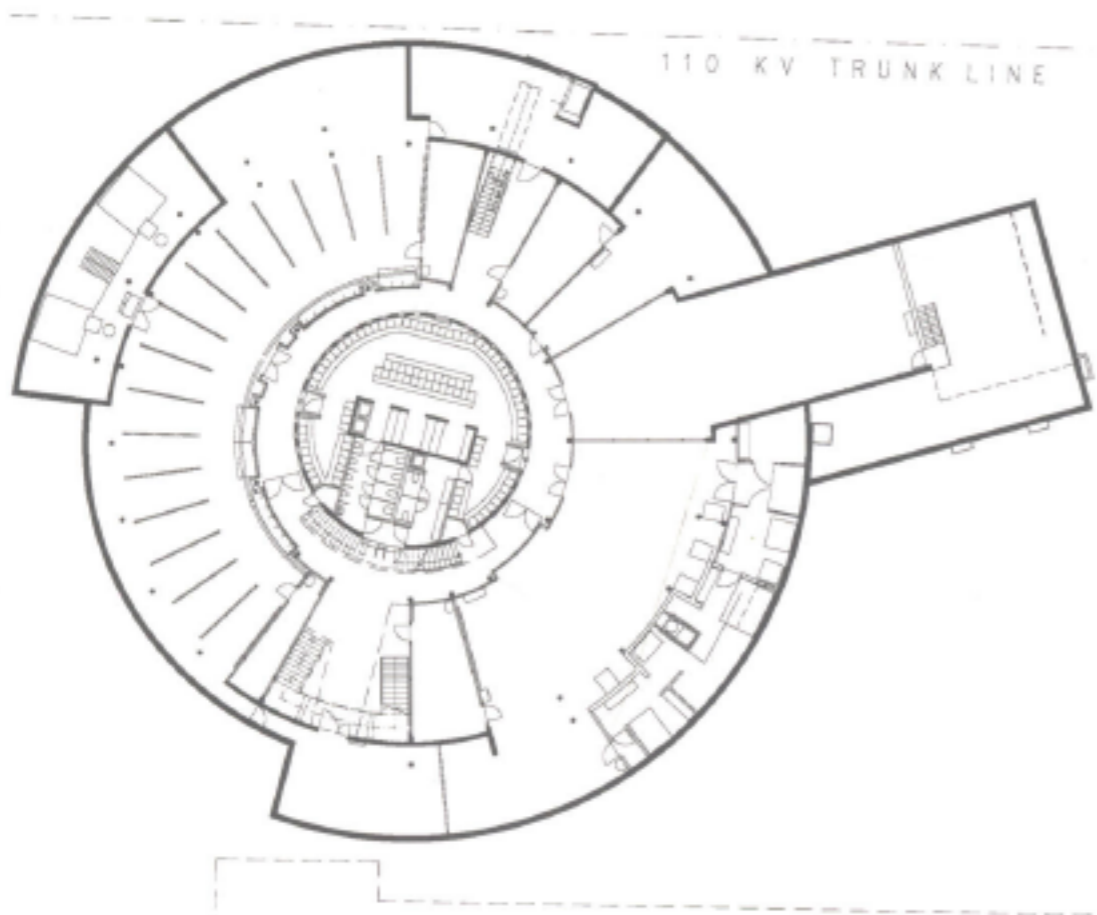




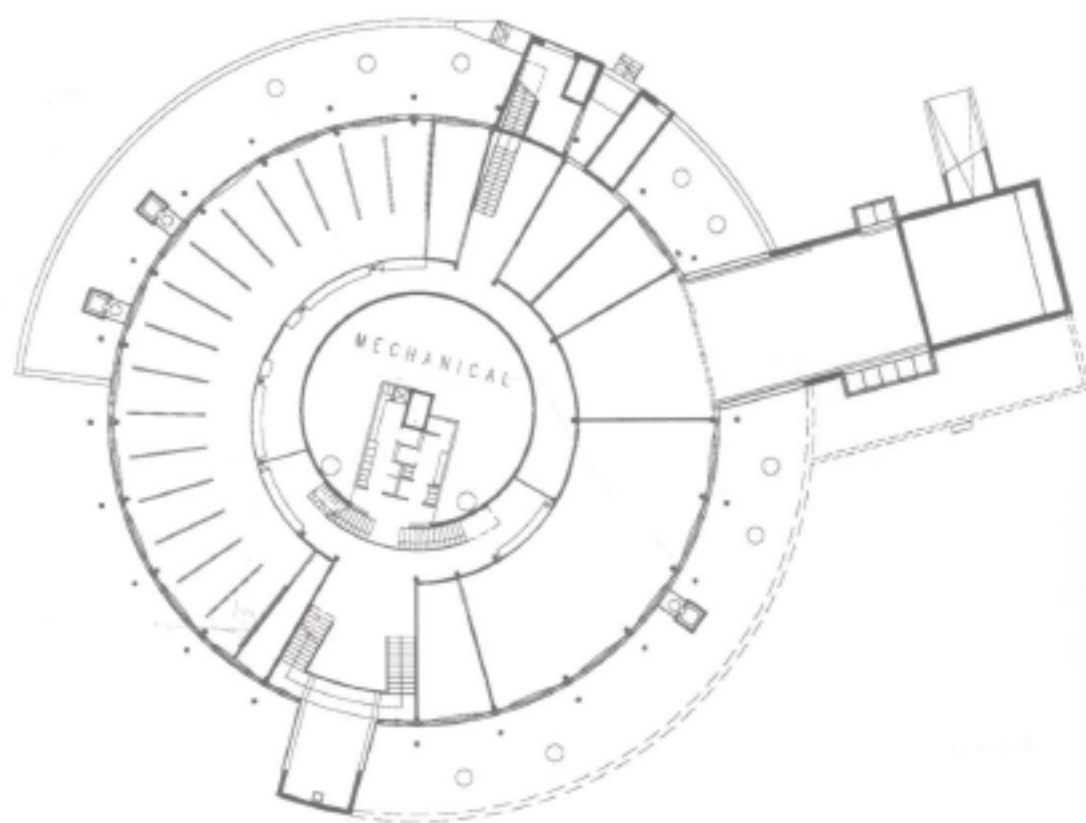
Roof plan
屋頂平面圖



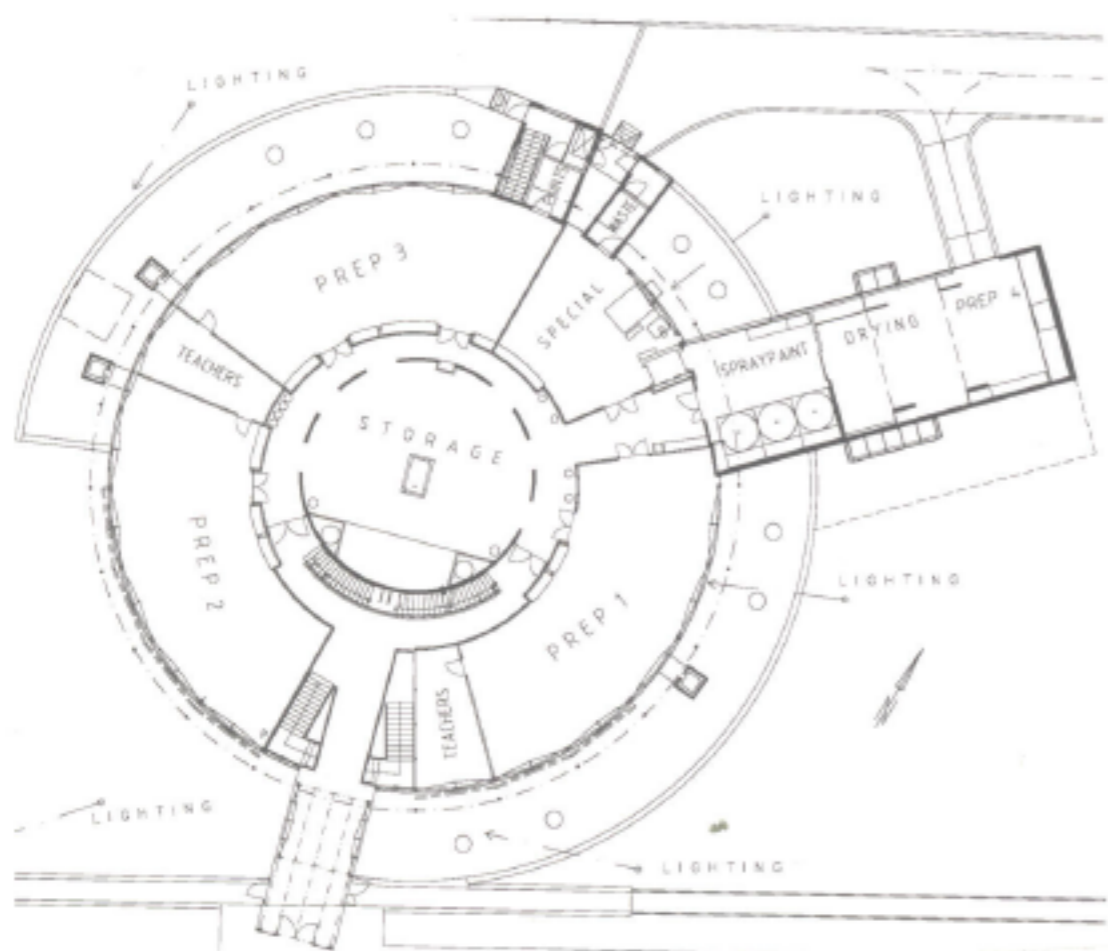
Sections
剖面圖



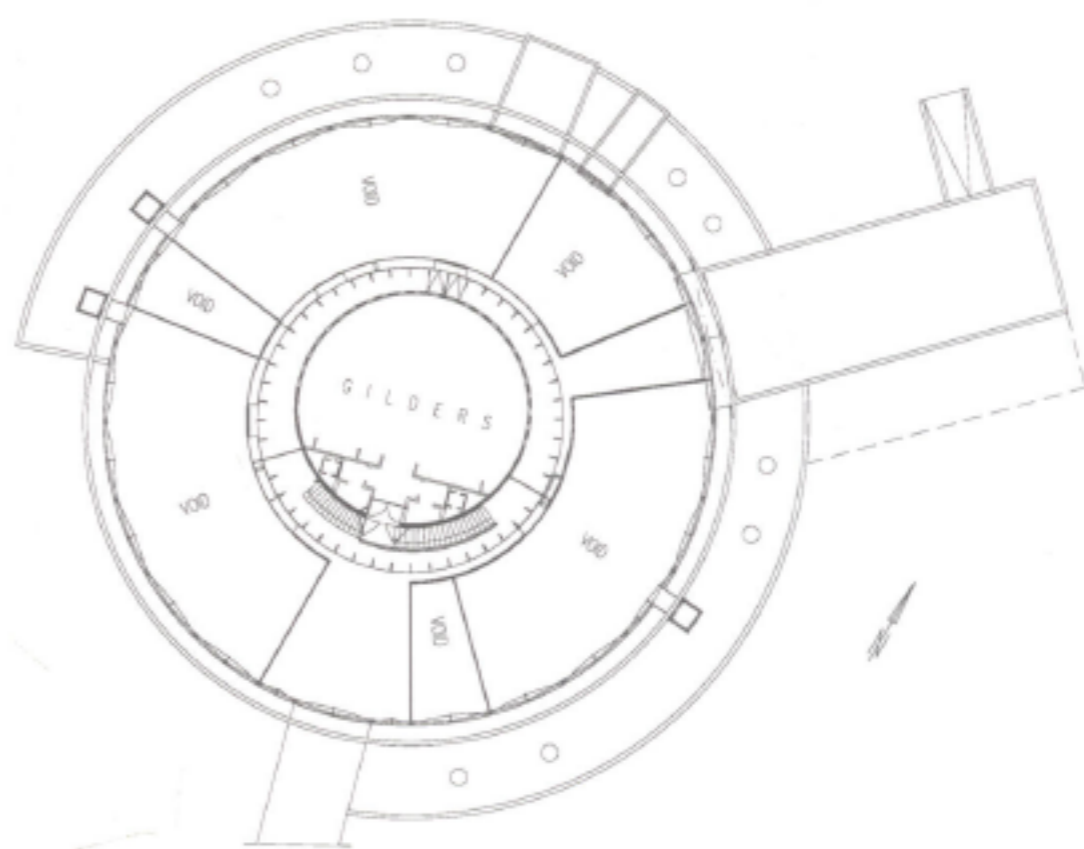
Lower level 2
地下二層平面圖



Lower level 1
地下一層平面圖



1st floor plan
二層平面圖



Ground floor plan
一層平面圖