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DETAIL

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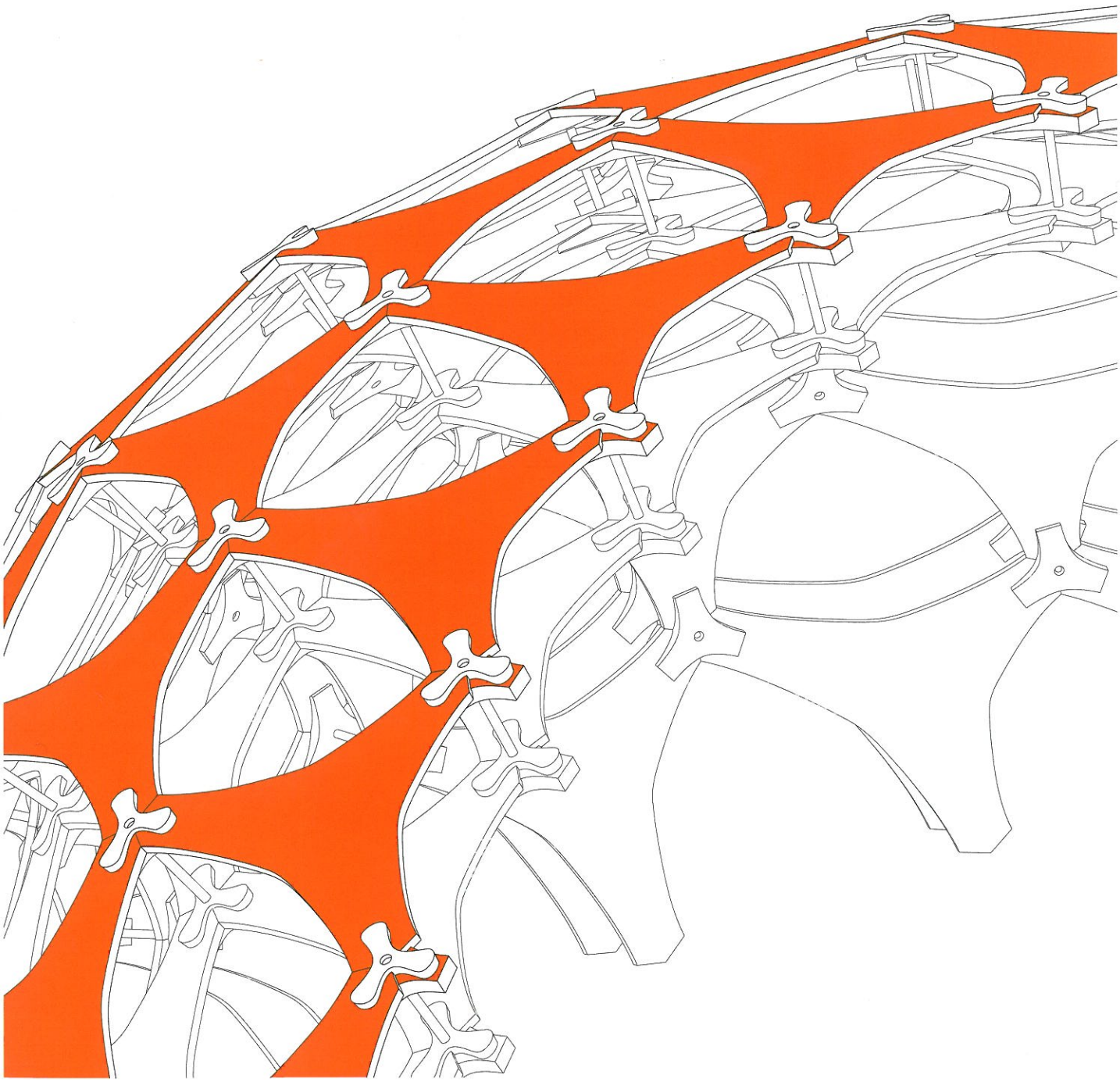
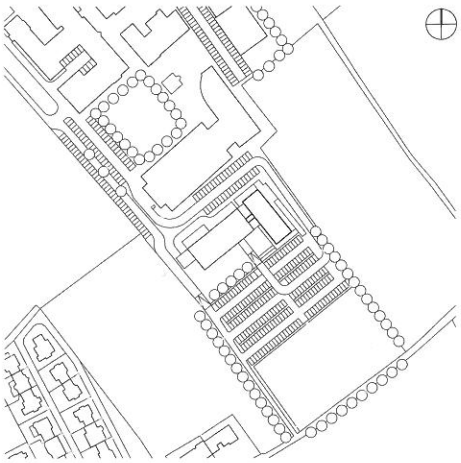


Extension to the University of Applied Sciences in Kuchl

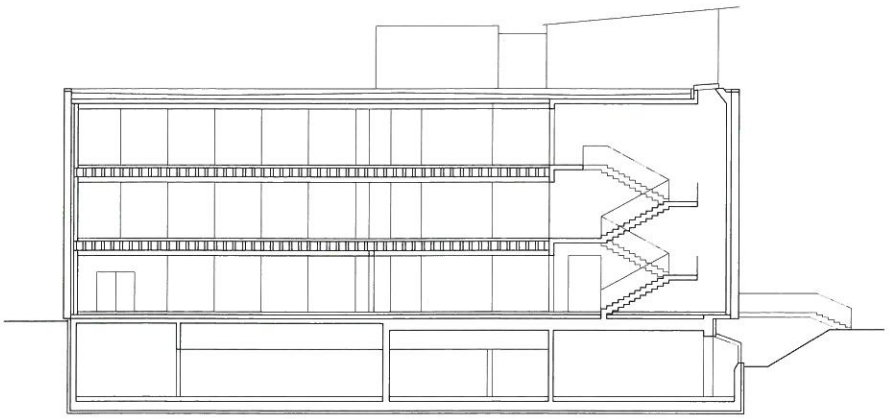
Architects:
Dietrich Untertrifaller, Bregenz
Helmut Dietrich, Much Untertrifaller
Team:
Bernhard Breuer, Peter Nußbaumer
(project architects)
Björn Diehl, Svenja Hohenreuther,
Felix Kruck, Sven Meller
Structural engineers:
Kurt Pock, Lienz (timber construction)
Others involved in the project: see page 221

Site plan
scale 1:5000



The extension at the Kuchl Campus of the Salzburg University of Applied Sciences gives students state-of-the art examples – both architectural and technological – of timber applications. The circulation within the orthogonal building massing takes the form of a glazed corridor facing the adjacent existing building, creating an L-shaped figure. The foyer and art room on the ground floor take up the entire depth of the building. In the upper storeys one reaches the seminar rooms and a library via a single-loaded corridor. Because it was not possible to position the partition walls directly above one another, cross-wall construction was ruled out; a frame system was employed instead.

The two walls of the reinforced-concrete stairway and the windowless end wall facing southwest provide bracing. This cross-laminated timber facade consists of four layers of prefabricated strips extending the height of the building; they were connected on site to form a panel (16 cm thick). Timber-box elements (11 m long) span the width of the room and cantilever above the hallway. To reduce their effective length, the columns in the facade were connected by rails situated at table level. At the inner row of columns, this occurs at the height of the door lintel. The ceiling thickness was optimised by threading building services through cut outs in steel beams. The six slender, solid-steel columns on the ground floor play an important role its lofty impression. Strips of untreated silver fir clad the windowless facades. Because the longitudinal glazed facades must withstand strong winds, the exterior solar protection was mounted in a fixed position. Its composition in the facade is not solely a function of solar orientation: the louvers are a design element, and the solar-protection concept also includes interior solar blinds. The combination of a highly insulated building envelope with the exploitation of solar and internal heat gains, and a heat-recovery system make this building Austria's first institution of higher education to implement passive house technology.



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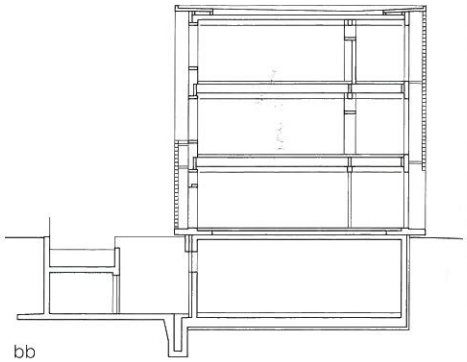

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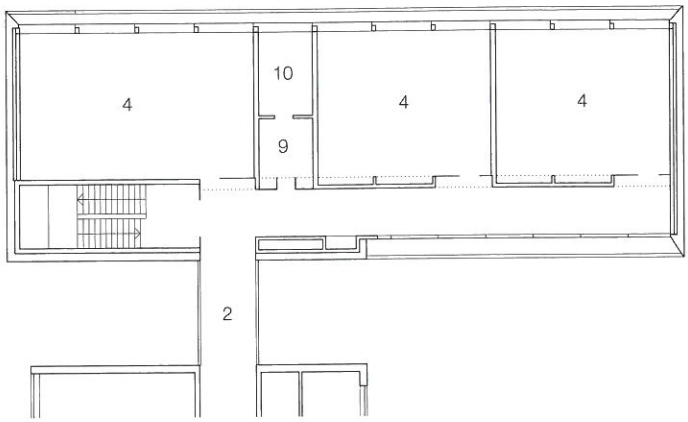

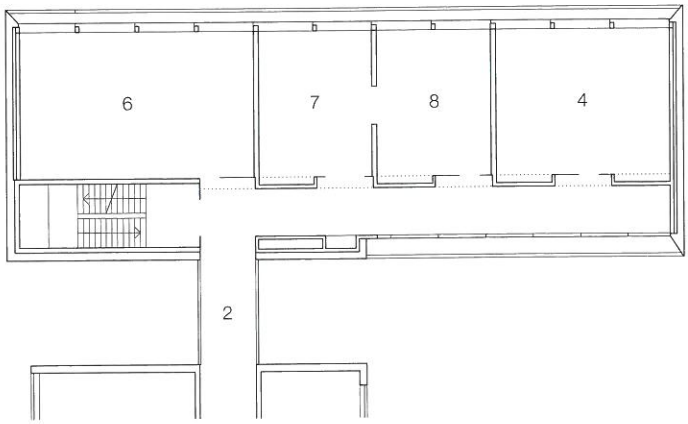

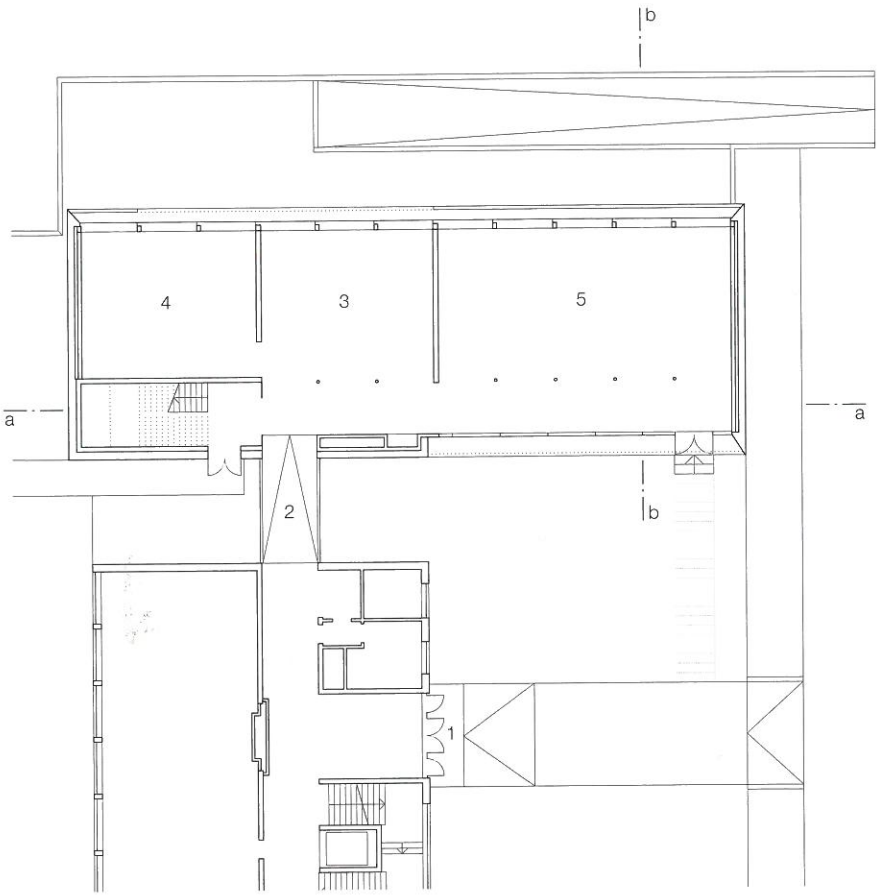

Sections
Floor plans
scale 1:400

1 Entrance (existing)
2 Connecting corridor
3 Lobby
4 Seminar room
5 Drawing studio
6 Library
7 Photo studio
8 Project space
9 Printers
10 Instructional material

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Vertical section
Horizontal section
corner/end wall
scale 1:20

1 50 mm gravel; protective layer
two-layer bituminous seal
72 mm cross-laminated timber, 3-ply
60–50 mm timber supporting structure
60/24 white fir boarding, untreated

2 50 mm gravel; protective layer
two-layer bituminous seal
330–200 mm mineral-wool thermal insulation, 1° inclination
bituminous vapour barrier
ceiling deck:
240 mm board pile elements
250 mm supporting structure
50 mm mineral wool; acoustic mat
15 mm birch veneer plywood, oiled

3 12/275–280 mm glue-laminated timber beam

4 300/260 mm glue-laminated timber beam

5 240 HEB steel section

6 triple glazing:
6 mm toughened glass + 18 mm cavity +
6 mm toughened glass + 18 mm cavity +
6 mm toughened glass in 100/100 mm post-and-rail facade,
aluminium/untreated silver fir

7 200/300 mm glue-laminated timber column

8 300/100 mm glue-laminated timber rail as bracing against buckling, milled, with 70/70/3 mm steel T-section inside, bolted to rail

9 glazing element:
8 mm toughened glass,
enamel glazed finish on rear
14 mm ventilation cavity
breather membrane
350 mm mineral-wool thermal insulation
vapour barrier; 2× 12.5 mm plasterboard
connecting clips
24 mm veneer plywood, birch surface, oiled

10 24 mm industrial parquet, ash, oiled
60 mm cement estrich
polythene separating layer
30 mm mineral-wool impact-sound insulation
24 mm sand fill
10 mm separating layer
40 mm laminated veneer lumber
100 mm mineral wool between
100/400 mm glue-laminated timber beam
40 mm laminated-veneer lumber
280 mm supporting structure
30 mm mineral-wool acoustic mat
15 mm birch-veneer plywood,
oiled and some segments perforated

11 170/60/3130 mm silver fir solar Venetian blinds with weather drip and M15 threaded rod (glued in) at 1575 mm intervals

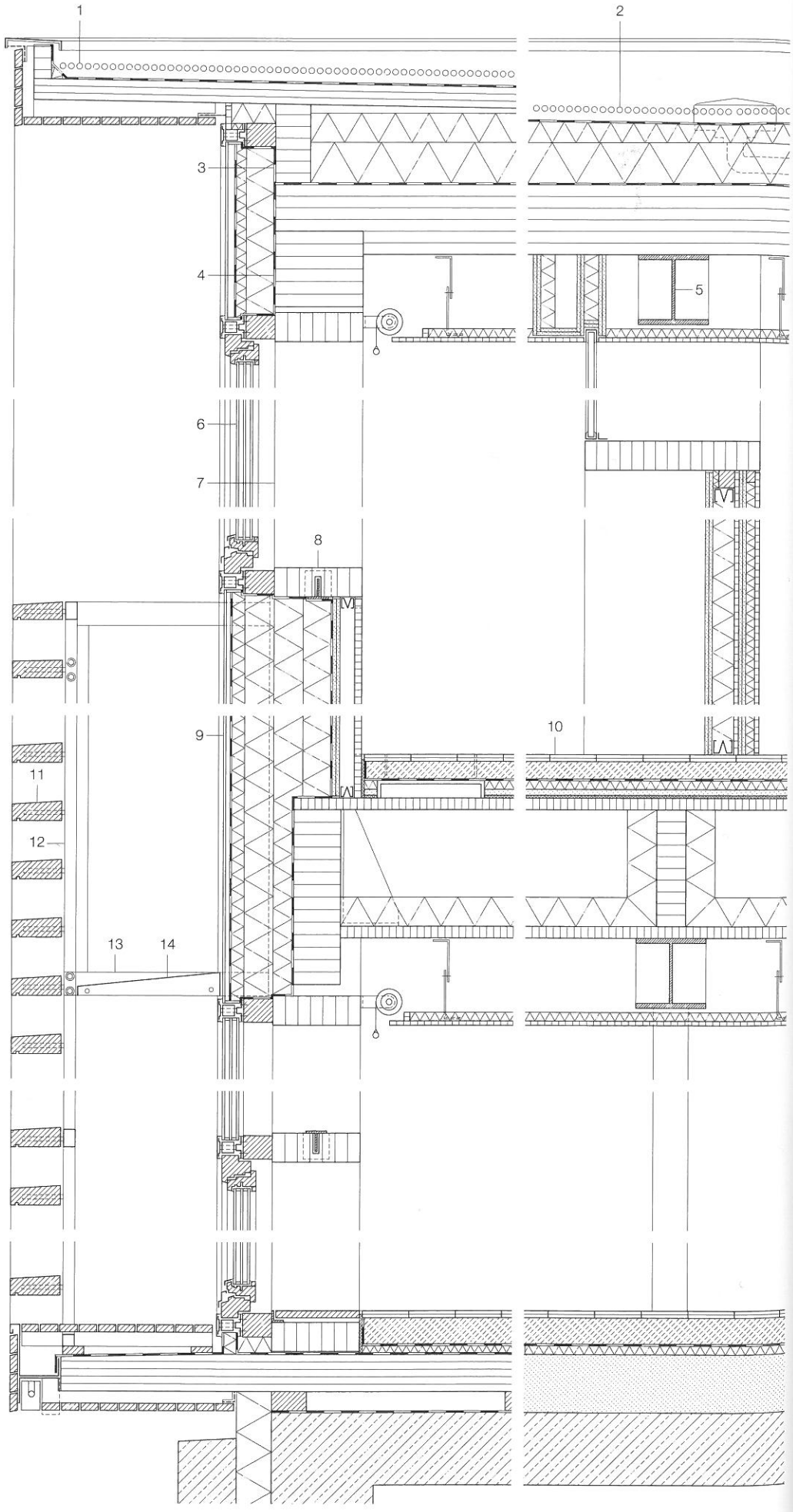
12 80/40/4 mm stainless-steel RHS,
micaceous iron oxide powder-coating

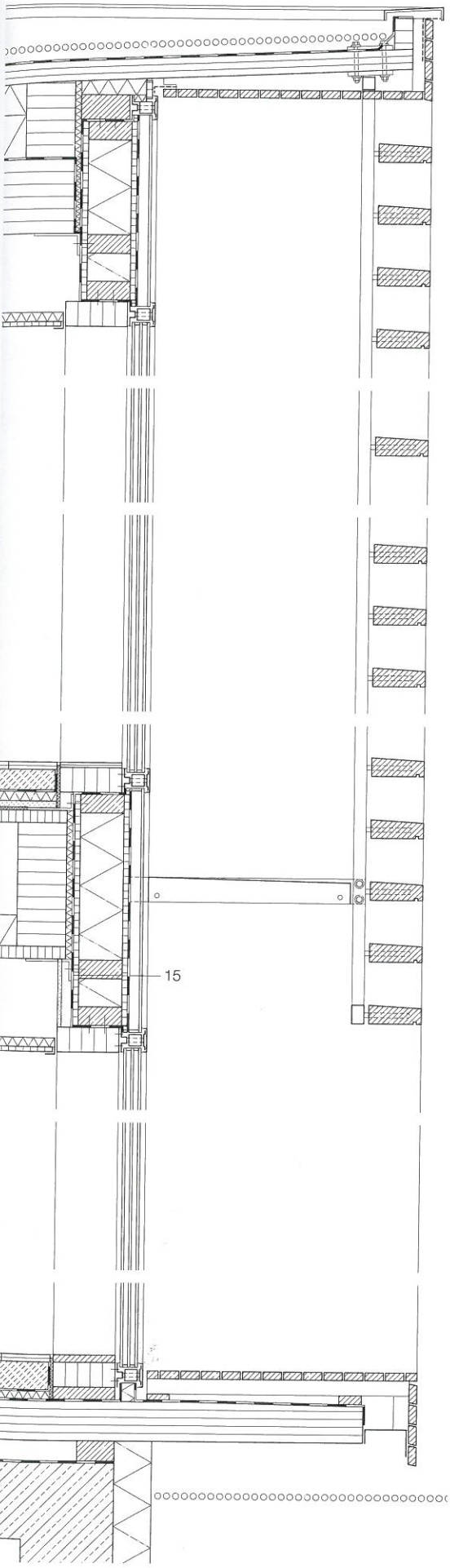
13 80/12 mm steel flat

14 4 mm steel sheet to prevent vertical spread of fire,
micaceous iron-oxide powder-coating

15 150/70 mm steel angle at intervals

16 25/60 mm silver fir boarding
50/40 mm ventilated cavity/battens
16 mm wood-fibre board,
moisture-diffusing,
water-repellent, coated black
mineral-wool thermal insulation between
100/100 squared timber,
running horizontally
mineral-wool thermal insulation between
100/180 squared timber,
running vertically
vapour retarder
11400/2800/162 mm cross-laminated timber board,
prefabricated in four vertical strips
40 mm mineral wool between
connecting clips
25 mm gypsum fibreboard, 2 layers
50/120 mm building services zone/battens
16 mm veneer plywood,
birch surface, oiled

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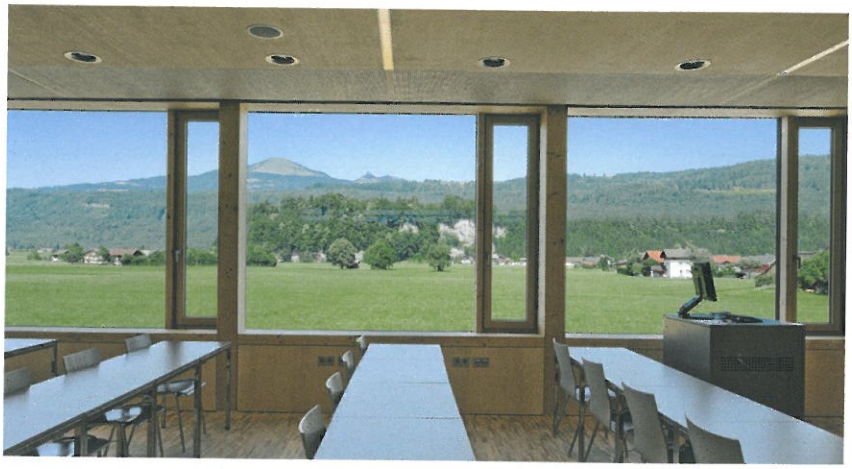

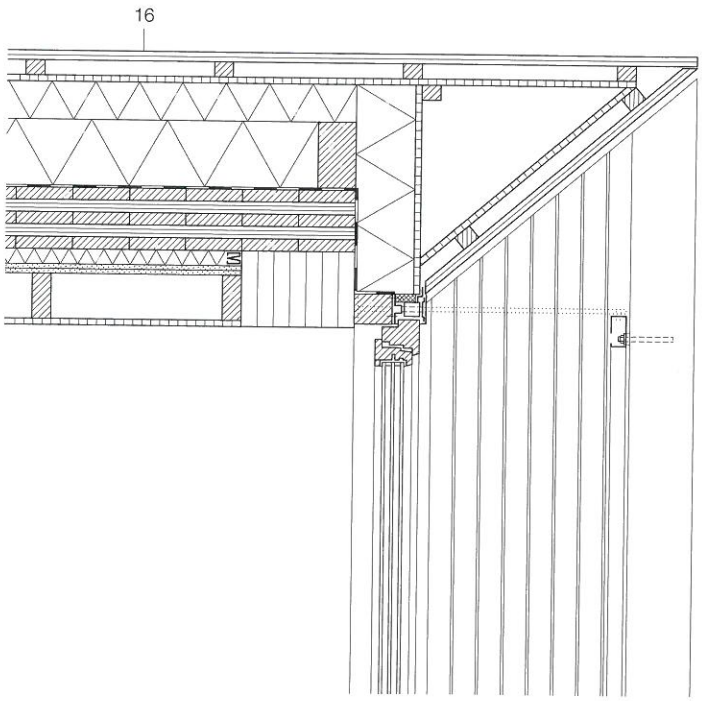
16