

l'architecture d'aujourd'hui

LE BOIS

WOOD

ED IN
ANCE

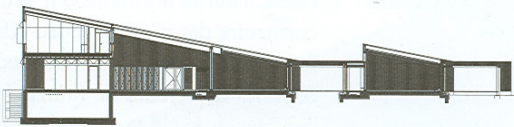
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jean michel p



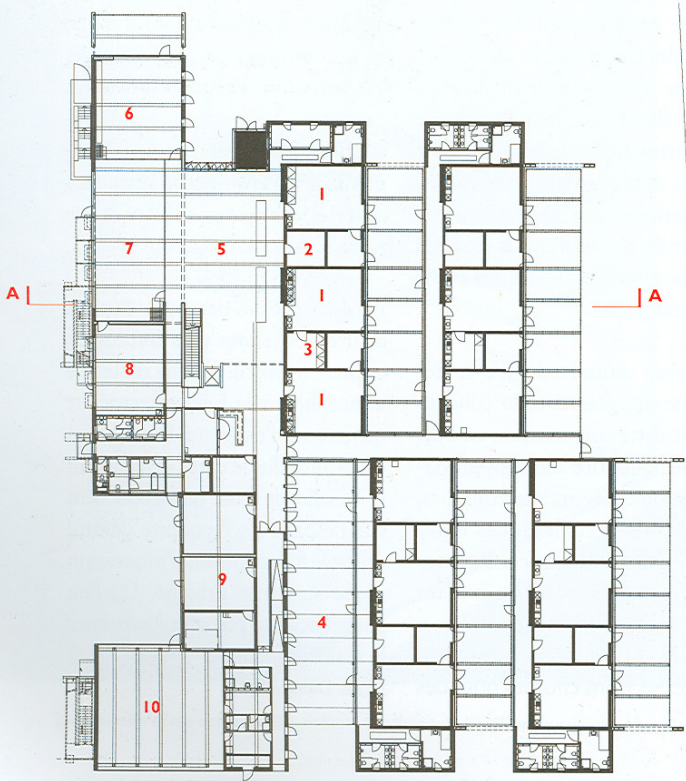
La façade ouest donne sur un parc urbain



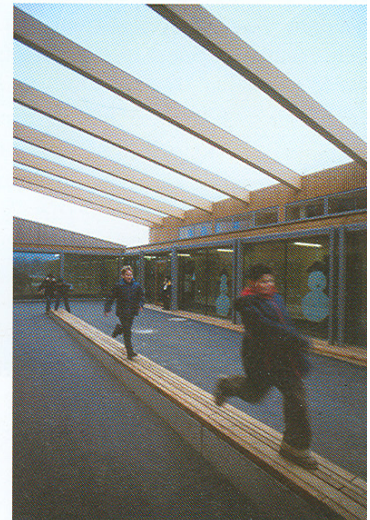
Coupe transversale AA



L'angle nord-est avec l'entrée de la cour



Plan du rez-de-chaussée. 1. Classes 2. Rangements 3. Salle de groupe 4. Cour de récréation couverte 5. Hall polyvalent 6. Salle de musique 7. Forum de l'école 8. Salle de thérapie 9. Salle de kinésithérapie 10. Salle de gymnastique



Cour de récréation couverte joignant deux ailes réservées aux salles d'étude



Variation des textures bois sur les façades intérieures du hall



Vue du hall central. Le plafond est composé de coussins en membrane synthétique qui réduisent les risques de chutes et d'éclats en cas d'incendie

Maître d'ouvrage : Land de Hanovre
Maître d'œuvre : Despang Architekten, équipe :
 Günter+Martin Despang (chefs de projet),
 Arud Biernath, Jörg Steveker, Jan Gerrit Schäfer.
Ingénieur structure : Büro Lieberum + Steckstor
Producteur composants bois :
 Stellac Wood Mikkeli Oy, Finlande
Entreprise gros œuvre bois : Krogmann
Livraison : octobre 2002
Photographies : Olaf Baumann

PAUL-MOOR SCHOOL, GARBSEN, NEAR HANOVER, GERMANY

At first glance, the school built in 2002 on the outskirts of Hanover by Despang Architekten is not what might be described as an aesthetic revolution. Nothing indicates that its walls and ceilings (excepting that of the administrative wing), masses and surfaces, with their ideal form and monolithic aspect, are in fact made of assembled timber planks, to the tune of 1 400 m³. A closer look, however, reveals that wood is used in a logic that is the founding idea behind the entire project. During Expo 2000 in Hanover, a project was launched to build classrooms for eighty mentally handicapped children. In this context, the decision was taken to build a new school that would be exemplary not only for the quality of teaching dispensed there but also for the architectonic and ecological qualities of its buildings. Anticipating current decrees on energy-saving, one of the main objectives was to cut costs by some 25% on the threshold defined by the new norms.

The architects opted for a wooden construction using grooved elements 60 mm thick. The façade has a conventional aeration system, without a moisture barrier. Load-bearing panels in solid wood show a profiled surface that called for careful handling of joints, projecting parts and corners, the idea being to achieve the same characteristic profile inside and out. Everything in this ecological construction hinges as it were on careful prefabrication, on the way the wood material used stands up to winter weather conditions, and on the swiftness of assemblage. Wood was chosen in the hope that it would give particularly sensitive children and their teachers an expressive and stimulating environment for daily living. The architects' control over the work-site was by no means negligible, since few construction workers consider the rough appearance of the planks to correspond to finishing work.

Swift assemblage

Wood construction using nailed planks construction had definite advantages in this context. Light weight meant that there was no need for foundation piers, in spite of the absence of solid bedrock. Elsewhere, since structure and finish are one, the duration of works was reduced to the minimum. The building's mass is

sufficient to ensure thermal inertia, and costs are comparable to those of a construction using more conventional materials. Thanks to the wooden gratings placed in front of the classrooms facing south-east and the printed film that covers the multi-purpose room, interiors have adequate protection against strong sunlight. A solar heating unit provides hot water for the establishment.

The ecological dimension of this project is of course also present in its long-term spin-off, since the use of wood in construction helps cover the costs of forestry exploitation – forests being our only effective 'reducers' of carbon dioxide emissions. If the percentage of wooden buildings in Germany were to rise from the present-day 9%, to 35%, some 8,5 million cubic tonnes of carbon di-oxide might be neutralised every year, representing 5% of Germany's emissions.

Protecting

Considered in detail, the design approach of this school is spectacular in its entirety, since its architectonic, technical and ecological objectives are closely interwoven. Witness the way the 'burning question' in all wood construction – fire-risk and prevention measures – has been dealt with. Sections chosen ostensibly for their static and acoustic qualities nonetheless guarantee a good resistance to fire that corresponds to an F30 rating. Given the dimensions of the building, 77m long lying east-west, normally fire-breaks would have had to be built, which would have meant difficulties and added expense. But the use of smoke detectors and the judicious system of an articulated pavilion layout plan, with a roof formed of air-filled cushions made of synthetic material over the main part, meant that difficulties were overcome to the profit of architectural quality. In normal functioning mode, the smoke evacuation system acts as aeration, just as the emergency intercom system is used by the teaching staff for ordinary announcements.

With its distinctive materials – light spruce and darker-toned oak – the atmosphere of this school is both protective and inviting, and by no means excludes the exterior. Its light-filled corridors, terraces and classrooms group around the central focal point of the main part, like an urban structure. A perfect place for preparing children to face the harsh reality of the outside world.