the father of modern wood ceilings

DIVISION 9 ENGINEERED-TO-ORDER WOOD CEILINGS

Alvar Aalto: The Father of Modern Wood Ceilings

Alvar Aalto was not only one of the defining architects of the twentieth century. He was also the father of modern suspended wood ceilings as used in contemporary architecture. His groundbreaking use of wood and organic form continues to speak to post-modernism in the twenty-first century.

Alvar Aalto

Aalto's national and familial background, humanist philosophy and views on nature all drew him toward the use of wood in an architectural age better defined by glass, steel and concrete. Born in 1898 in Kuortane, Finland, Hugo Alvar Henrik Aalto grew up in the lake-filled forests of central Finland and spent much of his time outdoors. The influence of Finland's topography combined with the surveying, forestry and engineering backgrounds in Aalto's family had a formative effect on the young architect.

Aalto consistently returned to the organic use of wood in his architecture, mirroring Finland's interdependence on forests. Two examples are the Villa Mairea and the Viipuro city library.

The Villa Mairea and Viipuro City Library

The Villa Mairea in Noormakku was built from 1937 to 1939. Aalto made extensive use of wood to embrace and highlight the rural forest setting. The exterior of the building employs plants growing on the roof and vine supports in the walls. On the interior, wood and rattan-wrapped steel columns allude to a forest space. A wood ceiling finishes the interior, emulating a forest canopy.

The city library in Viipuro is another fine example of Aalto's use of wood ceilings. Here, Aalto employed a wave ceiling in the lecture and conference hall. Aalto designed the room to be an "acoustically perfect" space. He used seven undulating waves of red-hearted pine from Karelia, the region in which Viipuri is located. The ceiling design is a natural extension of Aalto's wood furniture – also used in the room – and is inspired by his "humanist-modernist philosophy of the time."

Villa Mairea

Viipuri Library

The ceiling of the Viipuro city library is considered one of the peaks of Aalto's use of wood. It has been called "[a] design novelty, which was later articulated in countless variations as an Aalto signature." This ceiling and the Villa Mairea in Noormakku are just two examples of Aalto's innovative use of wood, especially in a ceiling. Aalto had a visionary concept of wood ceilings, one that has influenced many current architectural expressions.

The Mount Angel Abbey Library

The library at the Mount Angel Benedictine Abbey in Mount Angel, Oregon is one of only two Aalto projects in the United States. The abbey was founded in 1882 by Benedictine monks who were continuing the tradition of the Swiss Engelberg Abbey.

The library at the abbey was the brainchild of Father Barnabas, the head librarian at the abbey during the early 1960s. Father Augustine, assistant librarian at the time, recalls:

> Before [1970] we had our library scattered in two or three places. Older, under-catalogued books were upstairs in the attic. A few of the un-catalogued big sets of early church writers were in one of the recreation rooms. We had a real dire need for a library because it was split and it was small and it was cramped.

Father Barnabas had been audacious enough to contact several of the top architects of the day, including Frank Lloyd Wright, who told the abbey staff that he had a fifteen-year wait list. Aalto, however, responded favorably despite the numerous requests coming into his office. Aalto had initially been wary of designing buildings in the United States after witnessing the decay of his Baker House at the Massachusetts Institute of Technology, but as Father Augustine remembers:

> When [the] letter came, he said he was glad we asked. He said he spoke about it with some friends. One friend was a Benedictine monk who was a professor at Munich. He was a close

Mount Angel Abbey Library

> friend of [Aalto's] and he had spoken about the architecture and buildings in the United States quite often. His friend told him the Benedictine monks were the only gentlemen left in the United States. And so he thought he should go ahead and accept our offer.

The abbey staff wrote to Aalto that "at the center of the hilltop is our church. We'd like to preserve that as the central point. And yet we want your building there to be the statement you wish to make it to be architecturally."

Circulation Desk at Mt Angel

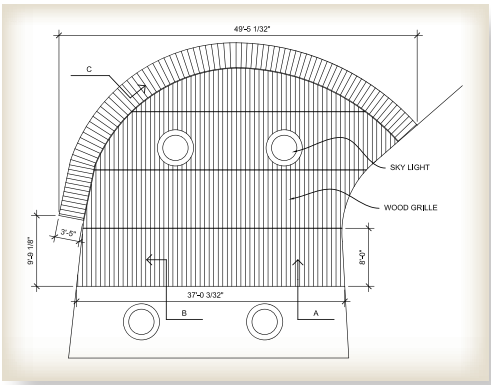
Aalto's statement is built around the circulation desk in the library. From there the wood ceiling radiates outward in a distinctive fan shape. The library shelves are arranged like spokes on a wheel and use wood grilles to bookend the metal shelving. The library has several dramatically curving levels, including a mezzanine, two lower floors, and an upper floor. The space is illuminated mostly by natural light from tall, cone-shaped skylights (first articulated by Aalto at the Viipuri library). Natural light also comes from windows arranged in a half-circle around the white concrete ceiling. Above the circulation desk is the architectural centerpiece: the wood grille ceiling, roughly in the shape of an arch meeting a crescent.

For the library interior, Aalto selected an American Northwest species called Hem-Fir, a Western softwood noted for its "perfect combination of strength and extraordinary beauty, being quite literally one of the most handsome, elegant and versatile softwood species on the market today." Aalto chose to finish the members with a subtle "white wash" finish — presumably to add further consistency to the color tones.

Circulation Desk Grilles

The ceiling is constructed of Cross Piece Grilles whose members measure 3/4" X 1 3/8". There are seven members per linear foot. The most common type of ceiling grille then specified employed rounded wood members (eased edges). Aalto left the members for the Abbey ceiling with sharp, square edges. He specified they be attached to backers from

behind. Aalto also used a black scrim to conceal the plenum. Above the grilles is black rigid fiberglass for sound attenuation. Individual grille panels are 14” wide and have varying lengths. Panel reveals vary in width from 1” to as narrow as 3/8”.



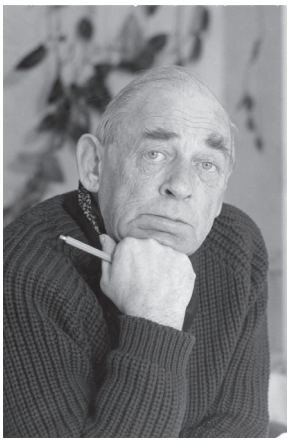
RCP of the Library Ceiling

Aalto’s detail is deft and subtle. Perimeter conditions and cutouts are often overlooked when specifying wood ceilings. Aalto’s design considers both and successfully incorporates them into the design intent. For example, at the entrance to the circulation desk Aalto specified that the member ends be cut on a 30° degree bevel. The fanning grille members are allowed to cantilever 6” beyond the full plywood plate holding up the cove lighting with the same nuanced end-cuts repeated. Additonally, Aalto caps the curved vertical trim (used to diffuse the cove lighting) with a subtle – and from most views invisible – half-round trim.

It is not just Aalto’s famous attention to detail that distinguishes the ceiling. The ceiling lay-out also draws appreciation. Rectilinear grille members are laid out in repeating bays of 8 feet. They are then end-cut in a wide arc and abutted with a 3’-5” fanning border. The design complements the radiused scheme of the entire building.

The Father of Modern Wood Ceilings

“In every case one must achieve a simultaneous solution of opposites. Nearly every design task involves thousands of different contradictory elements, which are forced into functional harmony only by man’s will. This harmony cannot be achieved by any other means than those of art.”


Alvar Aalto

Wood was a solution to Aalto’s quest for functional harmony. In his wood ceiling design he married the warmth of an organic material with rational, rectilinear grilles, often set within a curved ceiling plan. Since the mid 1960s, wood ceilings have become more main stream in postmodern and contemporary architecture, but it is in Aalto that we find the genesis of this distinctive style.

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