

Arch 464
ECS
Spring 2014

Name _____

Quiz #1

"Daylighting Re-Mastered?"



Aalto's library's louvered south façade clerestory windows loom behind JKMM's southwest façade.

For this problem you are the daylighting critic for the *Argonaut*. Our student-operated newspaper is taking the leap into architectural criticism, inspired by Randy Teal's sabbatical in Finland. JKMM Architects won a design competition for an addition to Alvar Aalto's wonderfully daylighted library in Seinäjoki, Finland. Your duty is to analyze and critique the daylighting design of the now-completed JKMM addition. *Architectural Record* praised the project in their October 2013 issue, but had little commentary on the lighting design, a meek stance in light of the seminal daylighting design presented by Aalto's library. *AR's* commentary and project graphics are provided on the following pages.

Context. Seinäjoki, a town of 60,000 people, is 225 miles north of Helsinki at 63° NL.

READ THE ENTIRE QUIZ BEFORE YOU BEGIN!



Aalto's library is mostly opaque, with just clerestory windows in its reading room (at right), the addition offers big views into its main book hall and entry hall (photo pg 5).

Architectural Record's October 2013 commentary

Designing an addition to an Alvar Aalto building is hard enough—try doing it with five other Aalto structures hovering nearby, in a Finnish town whose identity has been indelibly linked to the master since the 1960s. A separation of nearly 50 years does help with the task, providing a buffer between the original architect and the young guns hired to muscle their way into the existing cluster of local landmarks. “The shadow of the big guy was something we struggled with,” says Asmo Jaaksi, the partner at JKMM Architects in charge of adding to Aalto's 1965 City Library in Seinäjoki. “But the generation before us had more trouble with Aalto,” says Jaaksi. “They were paralyzed by him.” Like most of Aalto's work, his library in Seinäjoki is about creating a place, not whipping up forms. You enter a simple, almost nondescript box, then discover a fan-shaped reading room that embraces you with curving bookshelves, light floating in from above, and a sunken reading area that's as intimate as a public space can be. JKMM avoided direct quotations from the big guy's vocabulary but followed his lead in developing a Scandinavian strain of Modernism that focuses on social interaction and welcoming spaces, rather than heroic forms.

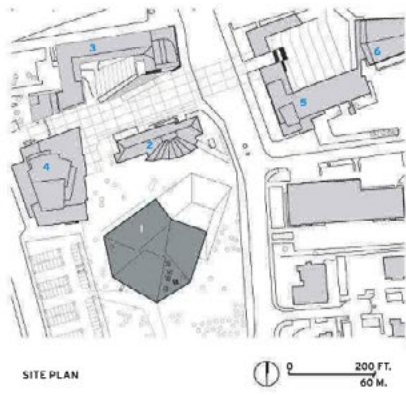
Since its start in 1998, JKMM has established itself as a rising star—recognized in *AR*'s 2002 Design Vanguard issue and given the honor of designing the Finnish Pavilion at the 2010 World Expo in Shanghai. In 2008, it won the Seinäjoki competition with a gutsy scheme that pushed its building closer to the Aalto library than any other entry, but broke down the bulk of its design into a trio of simple forms. (The competition required that the addition connect to the original building only underground.) “We wanted the buildings to be close enough to carry on a conversation,” says Jaaksi.

Aalto left his mark on Seinäjoki, 225 miles north of Helsinki, with a church (1960), a town hall (1962), a parish center attached to the church (1966), a state office building (1968), and a theater (completed in 1987, 11 years after his death), in addition to the library. Grouped together in a three-block area, the buildings constitute the town's cultural and administrative center, a veritable holy district for locals and tourists. “Getting the scale right for the new building was critical,” explains Aaro Martikainen, a project architect at JKMM. Because the addition is much larger than the original library—48,000 square feet versus 17,250—JKMM treated it as three interlocking forms. From the outside, you never read it as one mass but see it episodically, as a series of folded sheds. Aalto clad his buildings predominantly in white tile, topping them with copper roofs. JKMM reversed the palette, wrapping its addition in copper shingles (darker and less green than Aalto's) and using white as an accent. Wary of daylight damaging books, Aalto employed glass sparingly in his library—mostly as clerestories above the bookshelves. JKMM, though, opened up its building on the north and northeast with great walls of glass that direct views to Aalto's library and church. The architectural pas de deux continues as you enter the new building. While the original library faces a paved plaza across from the town hall, its addition sits in a parklike setting. You enter the combined library today from the addition, through a glass wall facing the old building's reading room. (The Aalto building is closed for renovations but will reopen at the end of 2014, when it will house the arts and history collections.) On the inside, JKMM's work becomes more exuberant—its rugged poured-concrete structure visible on upper walls and in the folded roof above the main book hall, which echoes in section the plan of Aalto's reading room. To create large column-free spaces, the architects employed long-span concrete beams like those found in bridges. Uneven planks in the formwork give the concrete a textured surface that complements the white-painted wood battens on the walls of the main level.

The three sheds that seem separate on the outside come together on the inside in a series of spaces that flow, one into another: across a narrow bridge past the information desk, down to the book hall and the children's area, then down the amphitheaterlike “reading steps.” With all the daylight tumbling onto those stairs, it's hard to believe that, at the bottom, you're in the basement and on your way to the tunnel (not yet completed) to the Aalto building. Yet, within this great open interior, JKMM imbued each area with its own personality, lowering the ceiling in the periodicals room near the entrance, for example, and carving out five 8-foot-deep, angled skylights from the ceiling in the children's section. The firm punctuated the library with splashes of color and whimsical elements, like the curvilinear reading nooks inserted in a wall in the teen area and a playroom padded all around with green carpeting.

The architects designed the building to accommodate the changing function of libraries. “In a digital age, libraries are no longer about searching for information,” says Jaaksi. “They're about bringing people together.” So he created large open interiors to encourage interaction among visitors and, over time, offer flexibility in the way the facility is used. What hasn't changed is the library's function as an important civic player. “It's the only noncommercial place that's for everybody,” says Jaaksi. While dancing with Aalto's legacy, JKMM has reasserted the role of Finnish Modernism as a progressive force knitting a community together.

—Clifford A. Pearson



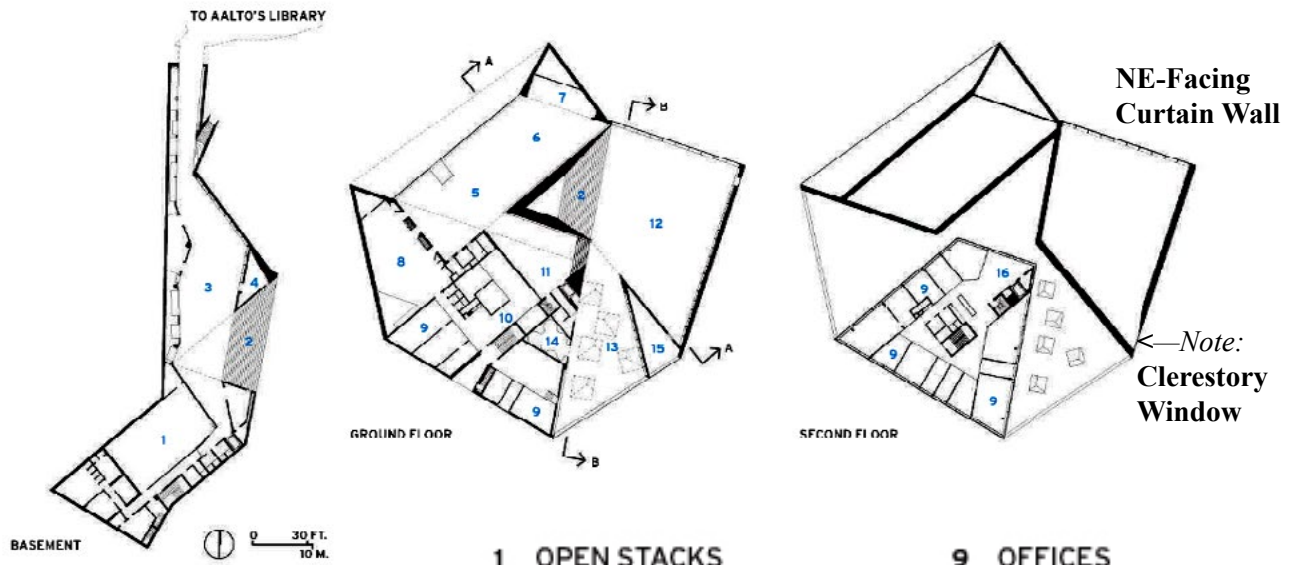
SITE PLAN

- 1 LIBRARY ADDITION
- 2 AALTO LIBRARY
- 3 TOWN HALL
- 4 THEATER
- 5 PARISH CENTER
- 6 CHURCH

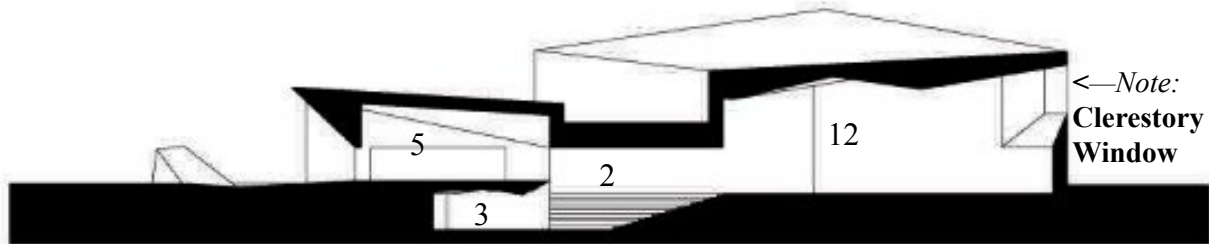
PHOTOGRAPHY: © TUOMAS UUSHEIMO (TOP); MANNU VALLAS (BOTTOM)



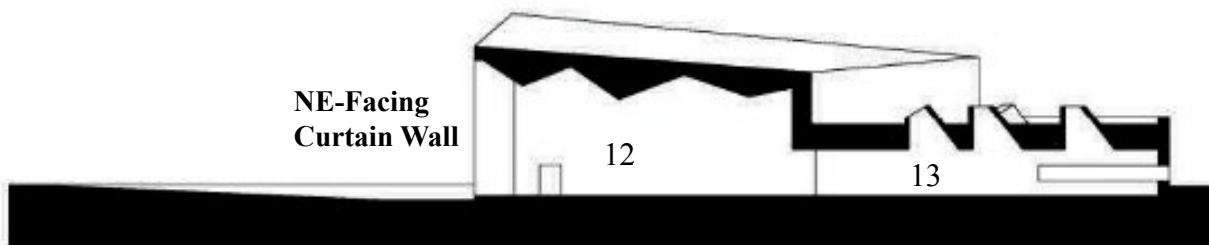
JKMM's main book hall, looking south toward the childrens' room and east-facing clerestory.



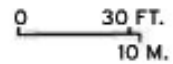
- | | |
|---------------------|-------------------|
| 1 OPEN STACKS | 9 OFFICES |
| 2 READING STEPS | 10 DISTRIBUTION |
| 3 TEENS | 11 INFORMATION |
| 4 MUSIC LISTENING | 12 BOOK HALL |
| 5 ENTRY HALL | 13 CHILDREN |
| 6 PERIODICALS | 14 PLAY |
| 7 CAFÉ | 15 SILENT READING |
| 8 MULTIPURPOSE HALL | 16 STAFF CAFÉ |



SECTION A - A



SECTION B - B



3 pts. 1. **Analyze** the existing daylighting quality in JKMM's book hall (its NE-facing curtain wall pictured below). Describe two problems and one advantage of the space based on age old adages and rules-of-thumb.



JKMM's north facade, the book hall on the left and the entry hall on the right.

4 pts. 2. Aalto did a masterful job of protecting the book stacks from direct solar radiation. The JKMM book hall has two apertures, an east-facing clerestory and a northeast-facing curtain wall. **Explain** why they are ineffective and **demonstrate** how they could be improved. Use words and diagrams to illustrate your ideas.

1. East-facing clerestory



NE corner of book hall.

2. Northeast-facing curtainwall

3 pts. 3. Propose three improvements to the book hall's daylighting scheme that will enhance daylight distribution, reduce glare, and increase energy efficiency.

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