Stanford Univ. Lorry I. Lokey Stem Cell Research Building | Palo Alto, California

SPECIAL CONDITIONS: SPECIAL DESIGN

CASE STUDY

DIVISION 9 ENGINEERED-TO-ORDER WOOD CEILINGS

Special Conditions: Special Design

Stanford Univ. Lorry I. Lokey Stem Cell Research Building

Why is building a ceiling out of bamboo a challenge to overcome? Working with unusual materials always presents a challenge for manufacturers – especially when the product is a wood ceiling with complex geometry. But bamboo brings its own unique challenges.

The Stanford Univ. Lorry I. Lokey Stem Cell Research Building incorporates a bamboo veneer and a highly custom fabric wrap in a complex 9,400-square-foot wall and ceiling system. To further add to the challenge of the project, a design change after the ceiling had already shipped required about half the project to be shipped back to the factory and remade, all on a tight schedule. The end result is a striking linear wall and ceiling created by using sustainable materials.

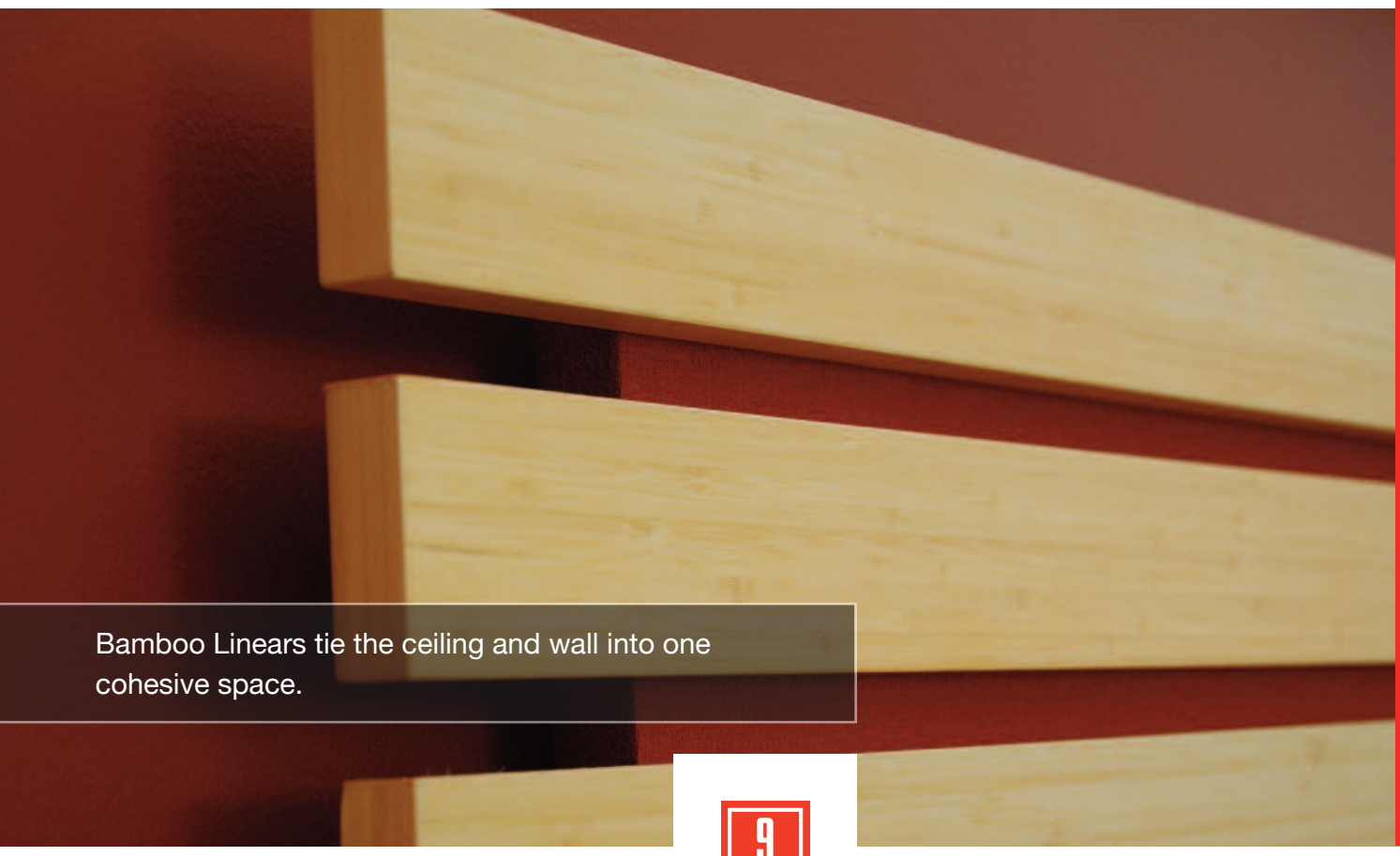
Bamboo is the fastest-growing woody plant in the world and thus provides an attractive option as an ecological building material. But unlike traditional wood products, bamboo is technically classified as a grass and can react quite differently to changes in relative humidity in the environment. If the panels aren't properly fabricated, they can warp or crack due to changes in the moisture content of the air. While this is a problem for all wood products, it is especially significant for bamboo. Raising the stakes was the proximity of the wall system to one of the main stairwells in the building: Anyone taking the stairs would have an opportunity to pick out even minute defects in the wall panels.

...a striking linear wall and ceiling created by using sustainable materials.

9Wood took this into account when fabricating the linear panels. All panels had a matching bamboo "backing" veneer and were mechanically stiffened to minimize the impact of wood movement.

Another challenge was the unique acoustic fabric wrap behind the linear panels. The custom "Stanford" red fabric, chosen to match the school colors, was stretched and attached to each panel by hand. Fabric wrapping can be extremely unforgiving: Any creases or wrinkles become obvious through the reveals in the wood members – especially on walls at eye level.

Critical lighting at eye level makes for tight finish tolerances.



Bamboo Linears tie the ceiling and wall into one cohesive space.

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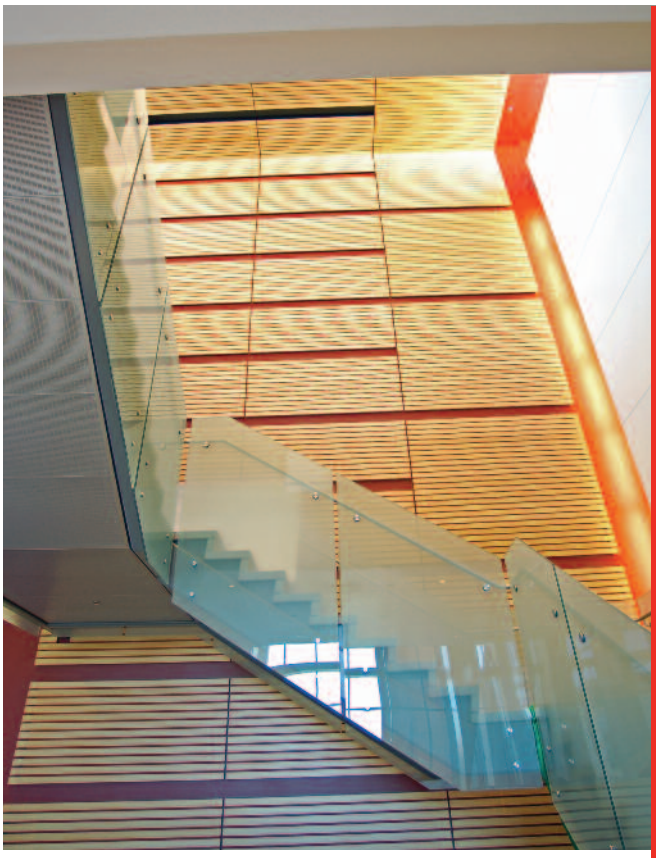
Furthermore, the fabric must be attached after finishing, raising the possibility of scuffing or dinging the delicate finish. 9Wood devised a special assembly routing to ensure that every panel met the stringent quality standards required.

Still another complicating factor was the complex geometry of the ceiling. The architect's design called for several triangular sections, starting with 14-foot-long panels. This presented a challenge from two perspectives. First, the diagonal cut required a large number of custom panels, each factory-cut to perfectly fit with the other panels. Second, bamboo veneer is typically unavailable in lengths longer than eight feet. In order to create 14-foot panels, 9Wood had to design a unique system to join two seven-foot panels into one long panel.

Despite the complicated design, the biggest challenge of the project came after the entire ceiling and wall system had already shipped. The design originally called for half of the ceiling to consist of wood grille panels. After the ceiling was already installed, the design was changed to include only linear wood panels. Thus, all the grille panels had to be changed into linear panels. This not only presented a huge logistical challenge but the last-minute nature of the change also meant an extremely short schedule. 9Wood was able to develop a process for remaking each grille panel into a linear panel without damaging the delicate finish of the wood while still meeting the aggressive schedule requirements.

The end result is striking: The custom red fabric shines through the bamboo linear members to create a truly unique look that matches the atmosphere of the campus. The articulation of the ceiling and wall panels beautifully combines the wall and ceiling into one cohesive element. The bamboo on FSC™ core reflects the environmentally sustainable nature of the ceiling and contributes to the building's LEED certification. All this was made possible by an expert design team and a high level of flexibility on the part of the production team.



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Project Details

Stanford Univ. Lorry I. Lokey Stem Cell Research Building
Palo Alto, CA

Total Scope: **9,400 SF**

Products: **2100 Linears Ceilings and Walls**

Architect: **ZGF**

Contractor: **L&W Supply**

9WOOD
DIVISION 9 ENGINEERED-TO-ORDER WOOD CEILINGS

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