

CASE STUDY

Clark Center Stanford University, CA

A PROJECT TEAM, INCLUDING FOSTER & PARTNERS, EXPLORES VARIOUS SPECIES AND ATTRIBUTES OF WOOD TO CRAFT A MILE OF FSC CERTIFIED HANDRAILS.

Stanford University's Bio-X program envisions that future advances in biotechnology will emerge from multi-disciplinary collaboration between experts in physics, chemistry, psychology, genetics, engineering, or computer science. Ross Palmer, of the internationally renowned architecture firm Foster & Partners in London, England, formed the building to cultivate this interaction among a diverse group of researchers, students, and visitors. Mindful of the mild climate in Northern California, Palmer designed the circulation corridors that surround the central courtyard to be outdoor socially interactive spaces as well. The handrails of the corridors are important because they provide a comfortable social *place* for leaning and talking. For this reason, Palmer chose wood for the handrails for its warm tactile quality and visual beauty. They are a generous six-inches wide with sweeping curves and smooth edges. Beyond the handrails immediate sensual beauty is the fact that the wood comes from a well-managed forest that protects wildlife, clean water and air community well being, and timber production for generations to come. The entire project team worked to deliver a building that reflects Stanford University's environmental commitment. Therefore, the architects and contractor chose wood that originated in a forest that was certified under the Forest Stewardship Council (FSC) with a chain of custody that tracks the wood from forest to jobsite. "We went with what we think is the American standard," Palmer said.

Design Process

Palmer strove for a "rich palette of materials (that) echoes both the red-tiled roofs and limestone façades typical of the Stanford vocabulary of other central campus buildings..." For this reason, the design team specified a red colored hardwood for the handrail. Since the project was on a "fast track" the final species selection, finish, and construction details would have to be worked out as the project's construction was underway. Also, Foster & Partners prefers to work closely with the selected fabricators to develop well-crafted details that are suited to a specific climate and place. In order to obtain accurate bids from subcontractors, Jane Otsea, the project manager from Hathaway Dinwiddie Construction Company, added bid instructions to the specifications that included a list of possible wood species that met the color, durability and workability appropriate for the application.

Species Selection

Since dozens of domestic and tropical species can be found with FSC certification through various distributors like EcoTimber in San Rafael or General Woods & Veneers in Los Angeles, the certification requirement did not interfere with selection based on performance and aesthetic qualities. Once the distributor had been contacted, Otsea reported availability and lead times of FSC certified wood products to be comparable with those of obtaining non-certified products. The market for FSC certified wood products has been expanding and availability has increased substantially in the past few years. Once subcontractor Design Workshops was selected to build the handrails, an allowance for the wood material was set, and the team went to work evaluating various species. Jatoba's (Brazilian Cherry) beautiful deep red color, price, workability, and excellent durability

in high exposure applications satisfied the material design goals. Consideration was also given to the materials' thermal expansion properties since the handrails would be attached to steel framework. Design Workshops tested samples of Jatoba with different finishes for colorfastness and thermal durability by exposing them to months of ultra-violet sunlight on their roof. At the same time, they submerged the samples in water to test for moisture resistance. Once the wood was installed and finished with Messmers oil, the design team compiled a care and maintenance document for Stanford facilities personnel to ensure the color and quality of the wood endures.

Lessons Learned

The Clark Center was Otsea's first experience with obtaining FSC certified wood, and she believes that Hathaway Dinwiddie will see more requests for FSC certified wood products for future projects. In fact, Stanford University now has language in their Guidelines for Sustainable Buildings that states a preference for FSC certified wood in future projects. Clients including many higher education institutions are increasingly be looking for project teams to *deliver* green design within their budget. It is important to identify certified wood as an early project goal to allow time for identification of proper species, grade, and availability in order to ensure this green feature is a permanent part of the finished project. Implementation of green design requires skills in specification writing and knowledge of the physical properties and relative costs of various species of wood. Architects need to keep the goal of pursuing certified wood clearly out in the open throughout the project process in order to allow distributors time to deliver the product. If the project team avoids last minute surprises the contractor will have an easier time meeting the specification. The Certified Wood and Paper Association

(CWPA) is a free resource to help find designers and contractors find sources and establish relationships with FSC certified wood suppliers. The CWPA tracks the current trends and the latest product availability in the FSC certified wood market. Clients may value wood from certified well-managed forests, but it is up to the architects and contractors to make sure it is realistic, affordable.

Architect: *Foster and Partners*

Architect of Record: *MBT Architecture*

General Contractor: *Hathaway Dinwiddie Construction Company*

Sources

FSC Certified Wood: General Wood and Veneers

Wood Handrails: *Design Workshops*