CINTRAFOR

FACT SHEET

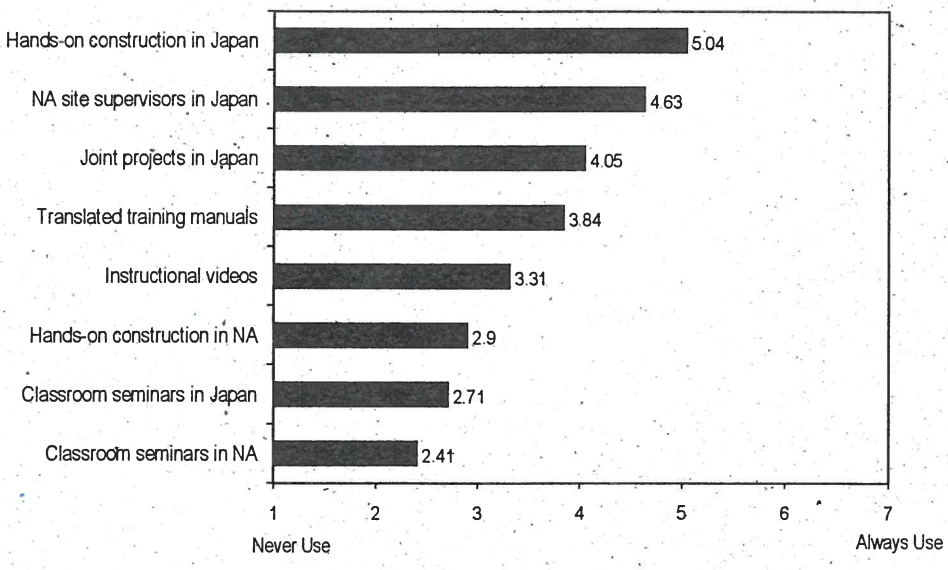
NORTH AMERICAN-STYLE 2X4 TECHNOLOGY TRANSFER IN JAPAN

Japan, a major market for North American forest products exporters, is the primary export destination for US wood products and the second largest export market for Canada (following the US). The Japanese residential construction industry is the main driver of forest products exports to Japan. In 1997 there were 1.4 million residential housing units built in Japan compared to 1.5 million units in the US. Within the residential construction industry, the North American-style 2x4 house has been rapidly growing at double-digit rates over the past 10 years and 2x4 housing starts now represent 13 percent of wooden housing starts 5.7 percent of total housing starts. In the future, the 2x4 segment of the residential housing market is expected to experience positive growth.

Despite the strong performance of North American-style 2x4 homes in Japan, there is a growing consensus that Japanese construction professionals often do not have a strong understanding of North American-style 2x4 construction technology. For example, previous research by CINTRAFOR found that differences in construction technology in the areas of foundation, structural framing, drywall finishing, finish carpentry, labor specialization, and project management resulted in increased construction costs and increased time of construction, and detracted from the overall quality and long-term performance of the house.

Recognizing the important link between housing quality, long-term performance, and home owner satisfaction, a growing number of North American manufacturers and exporters have begun to employ a variety of strategies to provide technical assistance in 2x4 construction technology to Japanese construction professionals (contractors and architects). This technical assistance represents an opportunity to teach Japanese construction professionals appropriate construction techniques and subsequently increase the quality of North American-style 2x4 homes in Japan.

Strategies Used by North American Firms to Promote 2x4 Technology Transfer in Japan



This project was undertaken to identify the types of technology transfer strategies that North American companies use, assess which strategies are perceived to be most effective, and determine how 2x4 technology transfer programs can most effectively be targeted and delivered to Japanese construction professionals. Identifying the most effective 2x4 technology transfer strategies should assist North American building materials manufacturers and exporters to develop and implement technology transfer programs that positively impact the quality and long-term performance of North American-style 2x4 homes built in Japan.

In order to achieve the project objectives, a census of US and Canadian companies involved with North American-style 2x4 construction projects in Japan was conducted. A total of 191 and 79 companies based in the US and Canada, respectively, were mailed a four page survey regarding technology transfer to Japan. The adjusted

response rate for US and Canadian companies was 47.5 percent and 58.2 percent, respectively, providing an overall response rate of 51.5 percent.

The majority of the respondents (64 percent) were primary managers of their companies. Most of the respondents were building products consolidators and the majority of respondents had less than $5 million in sales in 1997. Finally, the majority of respondents derived over half of their sales from Japan and the most common source of contracts were obtained through subcontracting from another company.

Overall quality of 2x4 housing built by Japanese construction professionals

Respondents indicated that the overall quality of 2x4 homes built by Japanese construction professionals was average when compared to 2x4 homes built in North America. Respondents also indicated that the structural quality of 2x4 homes built in Japan was slightly higher than average but that the quality of the design of Japanese 2x4 homes was significantly lower than in North America.

When asked to assess the level of understanding that Japanese construction professionals possess with respect to fourteen individual components of the North American-style 2x4 construction technology, respondents indicated that Japanese construction professionals have the weakest understanding of drywall, ventilation and architectural design. In contrast, survey respondents felt that Japanese construction professionals have a good understanding of interior carpentry, roofing, flooring, doors, windows, exterior finishing, and weatherproofing. However, one-fifth of respondents noted that Japanese construction professionals had the weakest understanding in the area of structural design.

Respondents were asked to identify the topics that they emphasize when providing technical assistance to Japanese construction professionals. The results indicate that with the exception of the foundation and roof construction, North American companies emphasize all construction components in their technical assistance programs.

The overwhelming majority of respondents indicated that continued efforts to promote 2x4 construction technology are important, with approximately two-thirds stating that it was very important. When asked to identify what types of strategies they employ to train Japanese construction professionals, respondents indicated that North American companies most commonly conduct hands-on training in Japan and employ North American site supervisors in Japan. In contrast, the least used strategies were instructional videos, hands-on training in North America, and classroom seminars. Approximately one-fifth of the respondents indicated that they favored hands-on training on the construction site over all other approaches.

Finally, respondents indicated that North American construction companies, North American building products exporters and Japanese construction companies were perceived to be most effective in providing technology training to Japanese construction professionals, with just over 25 percent of respondents favoring North American construction companies. In contrast, the least effective organizations in conducting technology transfer programs were Japanese building products suppliers and both North American and Japanese colleges.

The results of this survey indicate that technology transfer programs are considered by North American manufacturers and exporters of wooden building materials to be very important to the continued success of 2x4 housing in Japan. Thus, it is critical that the structural integrity of North American-style 2x4 homes in Japan is not compromised by incorrect use of North American-style 2x4 construction technology. From a long-term strategic market development perspective, it is imperative that Japanese builders and carpenters are properly trained in 2x4 construction technology so that the growth of this important segment of the Japanese housing market is not jeopardized by substandard product performance.

Given the Japanese expectation of high quality, the long-term growth potential of the 2x4 market is dependent on maintaining the quality of North American-style 2x4 houses in Japan. From a marketing perspective, quality is more important than low price in Japan and every effort should be made to ensure that North American-style 2x4 construction technology is implemented correctly by Japanese contractors. Failure to ensure correct transfer of North American-style 2x4 construction technology will contribute to a perception by Japanese home buyers that 2x4 housing is poor quality and would undermine efforts by North American companies and industry associations to further develop this growing segment of the Japanese housing market.