

## Loss Control

# Bulletin

## Architects and Engineers

### Professional Liability Insurance

#### The Consultant's Liability for the Use of Pre-fabricated Products

A visit to the office of any consultant provides a graphic illustration of the consultant's exposure to making use of products recommended by various suppliers which allegedly confer savings on the owner and facilitate construction for the contractor. Magnificent brochures are supplied extolling the merits of the proposed product with frequent references to the product having received the benediction of various testing laboratories. One is reminded of the kind of literature received by doctors from various pharmaceutical houses anxious to penetrate to the consumer through the product being prescribed by the treating physician.

The failure of these products brings into close scrutiny the accuracy of the descriptive literature and the references to the product being sanctioned by various quasi official bodies, and it is remarkable how misleading in many instances the descriptive literature can be. Recent litigation involving pre-fabricated roof trusses illustrates the caution that the consultant ought to exercise in recommending through specifications a particular product.

Architects were called upon by a school commission to provide an extension to an existing building which would have a useful expectancy of five years. Because of the severe budgetary limitations, it was

agreed to use pre-fabricated products where possible and, to this end, pre-fabricated roof trusses from a supplier were written into the architect's specifications. It had been noted by the supplier that the cost of the product would include "engineering services."

Shortly before the completion of the extension, the roof trusses failed following a modest snow fall which exerted minimal live loads on the roof.

Subsequent investigation showed that the trusses were underdesigned and could not possibly have met the specifications of the live loads required on the roof. The specifications required that the wood members be stamped to indicate their category, also that provision be made for gang nail plates and lateral bracing. The architect had also specified production of copies of the calculations and working drawings to be approved before fabrication.

The roof trusses were installed without verification, presumably because of the contractor's notation that their cost included engineering services. In the analysis done subsequent to the collapse, it was discovered that the calculations done by the supplier were based on a roof live load of 22 lbs. p.s.f. It was determined that considering the locality of the extension and anticipated snow loads, this load should have been 86 lbs. p.s.f.

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Obviously, the product supplied was woefully insufficient for this type of building. The roof trusses, including chords, struts and bracing, contained, in the opinion of the expert investigator, excessive knots which contributed towards reducing the strength of these members. In the opinion of this expert, the collapse of the structure was due to the cumulative effect of underdesign of the trusses, retention of snow at the low parapet and defective material used in the trusses.

When the owner exercised his recourse against the architect, the latter had a right of warranty and recourse against the supplier of the trusses. The latter's bankruptcy resulted in the architect having to pay some \$75,000 to dispose of the litigation instituted against him by the owners.

There are some practical conclusions to be drawn from the foregoing.

1. If the manufacturer's specifications are to be incorporated in the consultant's, the latter should make absolutely certain that the observations are accurately drawn.
2. When the specifications contain references to engineering calculations, the architect should require the manufacturer to identify the engineer and the specifications should bear the engineer's seal.
3. If the manufacturer is unwilling to provide the engineering data, then the architect owes a duty towards his client to have this data confirmed by an independent consultant.
4. The consultant should always deal with reputable and financially responsible suppliers.
5. If the architect requires the production of shop drawings, they should receive the attention they merit, particularly when the shop drawings attach to a critical phase of the structure.



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