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### Record of meeting with Central Mortgage and Housing Corporation, Forest Products Laboratories and DBR to discuss proposed roof truss testing program

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NATIONAL RESEARCH COUNCIL OF CANADA

DIVISION OF BUILDING RESEARCH

No.

331

TECHNICAL NOTE

NOT FOR PUBLICATION

FOR INTERNAL USE

PREPARED BY H. B. Dickens

CHECKED BY

APPROVED BY NBH

DATE May 1961

PREPARED FOR Record Purposes.

SUBJECT

RECORD OF MEETING WITH CENTRAL MORTGAGE AND  
HOUSING CORPORATION, FOREST PRODUCTS LABORATORIES  
AND DBR TO DISCUSS PROPOSED ROOF TRUSS TESTING  
PROGRAM.

A meeting was held at Forest Products Laboratories on Tuesday, 31 January 1961, to discuss jointly with Central Mortgage and Housing Corporation and Forest Products Laboratories the further work on roof trusses proposed by the Housing Section of the Division of Building Research. The following were present:

Mr. D. E. Kennedy - FPL

Mr. D. F. Marsland }  
Mr. A. D. Scribner } CMHC

Mr. W. R. Schriever }  
Mr. H. J. Thorburn }  
Mr. R. E. Platts } DBR  
Mr. H. B. Dickens }

Mr. H. B. Dickens outlined the proposed truss work by stating that it was primarily an extension of the former work carried out jointly by Forest Products Laboratories and the Division of Building Research. It is the intention of the Division to attempt to develop economical trusses suitable for 3/12 roof slopes to meet what appears to be a demand on the part of some builders for trusses for low slope roofs. These trusses would be developed for spans of 24, 26, 28, 30

and 32 ft. In addition, it is planned to extend the 4/12 and 5/12 roof slope designs previously developed to include spans of 30 and 32 ft. The third and final phase of this project is to investigate further the present nailing requirements for roof trusses described in Central Mortgage and Housing Corporation's Builders' Bulletin No. 109 to determine to what extent, if any, the nailing may be reduced. It is hoped, of course, that the truss designs developed by this additional program can receive acceptance by CMHC and be published in their Builders' Bulletin in the same way as the earlier truss work.

Mr. Kennedy expressed doubt that the nailing requirements of the earlier designs could be reduced, suggesting that deflection was the limiting criteria in these trusses. It was agreed, however, that this aspect could be explored.

Mr. Marsland stated that in CMHC's experience an increasing number of trusses used in housing were being fabricated with metal gusset plates and similar patented connectors such as the Sandford plate, the Gismoe gusset and the Gangnail plate. These do require the use of pinch rolls or presses, however, and it was agreed that there would still be some requirement for nailed trusses to meet the needs of the small builder who wishes to fabricate his own.

There was some discussion of the possible advantages of developing glue nailed trusses for these low slopes since the number of nails required may become so large that gluing becomes economically attractive. Mr. Marsland expressed some concern over the problems faced by CMHC in establishing adequate acceptance procedure for glue nailed trusses. He pointed out that such acceptance is granted now only on the basis of plant operation and of periodic inspection of the fabrication conditions. He thought that any extension of the use of glue nailed trusses at this time would not be a desirable thing in view of the difficulty of determining the quality of such trusses. It was agreed therefore that glue nailing would not be given priority in this work.

It was agreed that the following acceptance criteria, established during the earlier work on trusses, would continue to be used:

- (a) the maximum deflection after one hour of loading with a 50 psf roof load and 10 psf ceiling load shall be limited to  $1/360$  of the span,



- (b) the trusses shall withstand at least 100 psf roof load for 24 hours without structural failure.

It was noted that these criteria were established for areas having a design snow load of 50 psf. Mr. Marsland indicated that in areas where the snow loads are 30 or 40 psf, as in the Prairie Provinces, CMHC adjust the criteria accordingly so that the live load test requirements become in paragraph (a), the design load (30 or 40 psf) and in paragraph (b) twice the design load (60 or 80 psf).

It was also pointed out that these criteria were established on the basis of the snow loads contained in the 1953 edition of the National Building Code of Canada and that the criteria should be reviewed if these design snow loads are reduced in the future.

Mr. Kennedy indicated that FPL were still interested in assuming some responsibility for further work on roof trusses and would continue to cooperate with DBR on this project as their other commitments permit. Mr. Dickens in turn agreed to keep FPL and CMHC advised of DBR's progress in the project. When results are available they will be considered by representatives of DBR, FPL and CMHC to determine their acceptability prior to preparation of final drawings.