REPORTS OF RESEARCH COMMITTEES OF THE COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

BUILDING RESEARCH

Research work integrated by the above Committee has been continued during the year along the lines set out in the branch reports as indicated below. A building research chemist has been appointed, and steps are being taken to secure the services of a director.

Auckland Panel

Light-weight Concrete Investigations.—The scope of this investigation has so far been limited to studying the properties of concrete in which pumice has been used as a light-weight aggregate and compiling data on sawdust concretes.

Pumice Concrete.—Work along these lines has been greatly handicapped by the lack of essential equipment—viz., a temperature- and humidity-controlled mixing and curing room. However, experimental work has been carried out on the physical properties of light-weight pumice concrete—viz., moisture movement, drying shrinkage, &c. Further study has been made of the physical properties of pumice samples taken from the Rotorua district and records compiled showing sieve analyses, crushing strengths, &c.

Our main objective is to reduce the excessive moisture movement, which constitutes the chief drawback to the more general use of pumice concrete as a permanent building-material. It is very doubtful if it will be possible to make recommendations as to the exact possibilities and limitations of pumice concrete as a permanent building-material until such time as a temperature- and humidity-controlled mixing and curing room is provided, as without this equipment tests of identical mixes vary to such an extent as to make correlation of results impossible.

Testing Properties of New Building Materials.—In collaboration with the School of Engineering, a number of commercial products such as pre-cast building-blocks, slabs, &c., were tested. The results of these tests were required ultimately for the information of the Departments of Housing Construction and Public Works.

Information supplied to Industries manufacturing Building-materials.—Advice, technical literature, and references on manufacturing processes and techniques have been supplied to a number of manufacturers engaged on producing a variety of precast concrete blocks and other items for domestic building.

Investigation of Capping Methods used in testing Samples for Compression Strength.—An investigation has been conducted on methods of capping blocks for making compression-strength tests. Various capping materials and techniques have been investigated, and results have furnished interesting and useful information.

Acoustic Testing of State Houses and Flats.—Tests were made on the sound-insulation properties of various methods of construction used by the Housing Construction Department. A reverberation meter was also designed and an experimental model constructed. Mr. Lyttleton, who was in charge of acoustic-testing, has recently resigned and departed for England to undertake post-graduate study.

Acoustic Tests on Aircraft.—A test has been recently undertaken of the sound insulation of certain commercial aircraft.

Dominion Laboratory

Building-materials.—Inquiries dealing with a wide variety of subjects related to the manufacture and use of building-materials were dealt with. New locally produced materials were examined for suitability for use in building.

A variety of building-materials was examined, especially for the Housing Construction Department. Suggestions were made for improvements in the manufacture of concrete tiles.