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BUILDING RESEARCH DEPARTMENT
Applied Scientific Research Corporation of Thailand

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Building Research Department

Applied Scientific Research Corporation of Thailand

1. Establishment

Building Research Department (previously known as National Building Research and Development Centre) affiliated to Applied Scientific Research Corporation of Thailand was formally established under Applied Scientific Research Corporation of Thailand Act B.E. 2506, Chapter 1, Sections 5, 7 on October 24, 1969.

2. Aims and Objectives

Aims and objectives of the Building Research Department are as follows:-

2.1 To act as a centre for research and development for buildings.

It will cooperate with building construction agencies in the private and public sector for application of results of research and will play an effective in the promotion of economic development in a long run.

2.2 To act as a centre for providing information services on buildings with a view to improvement of building standard and other related professions.

2.3 To act as a centre to solve the problems on building techniques.

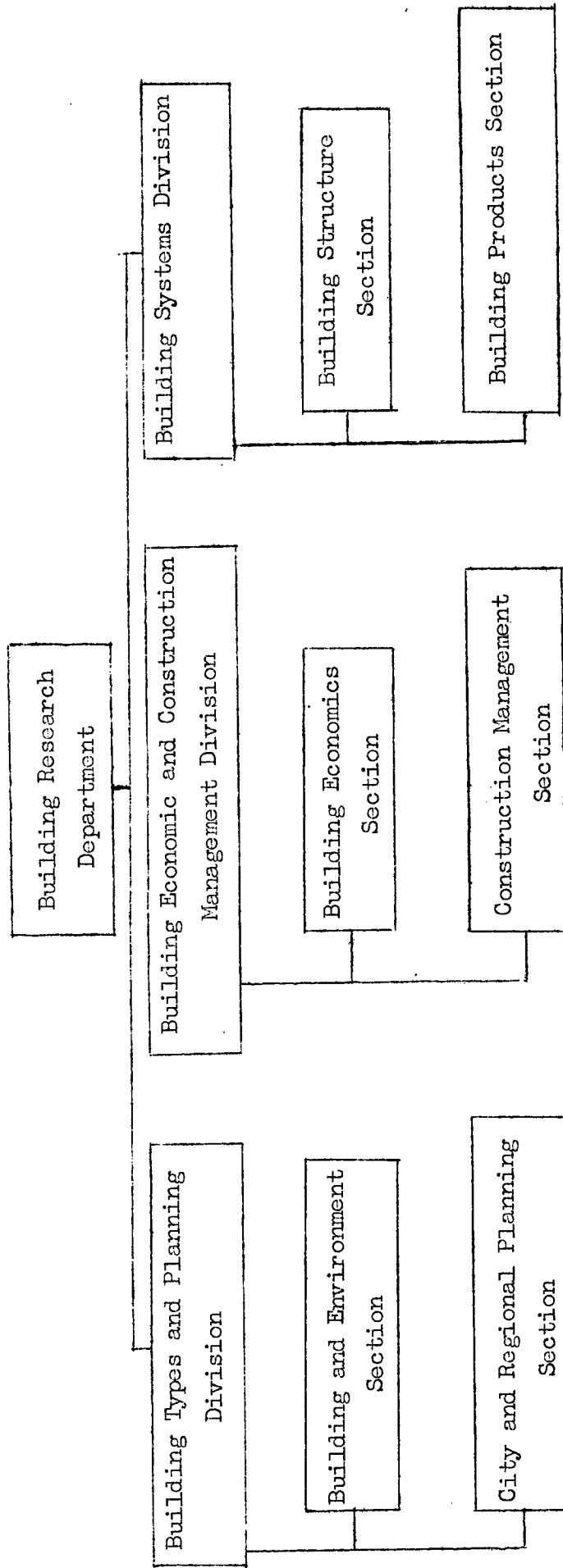
2.4 To act as a centre for considering provisions and laws in relation to building and construction practice in order to improve standard.

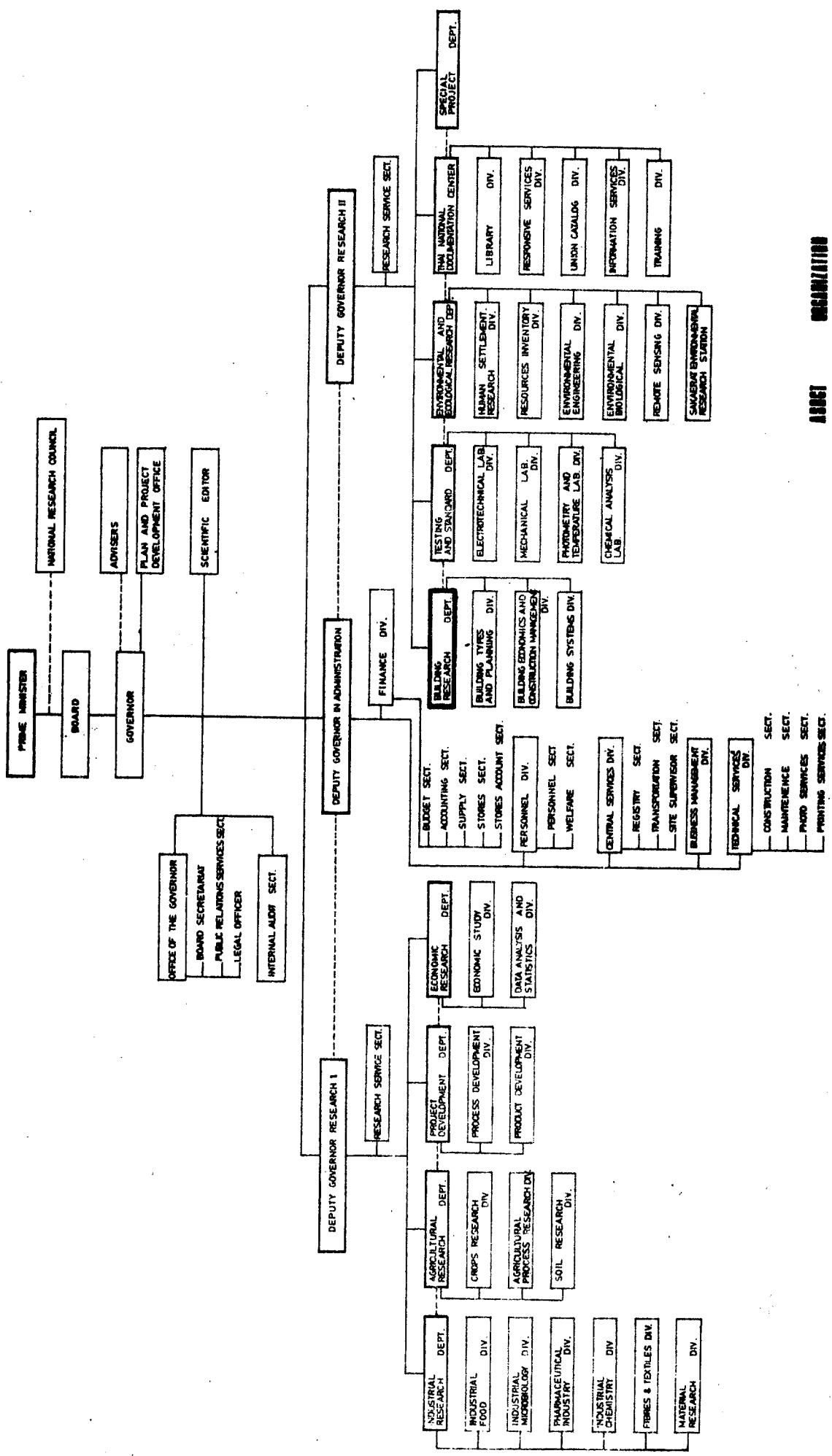
2.5 To act as liaison organization for the International Centre of Buildings Research and documentation (CIB)

3. Organization

Building Research Department is responsible to the Deputy Governor 2 of ASRCT with the Director of Building Research Department having powers to organize and run the Department as for wish programme. The organization chart of Building Research Department is given in Fig. 1.

Fig. 1 Organization Chart





CSIR ORGANIZATION
AS OF JANUARY 4, 1977



Mr. Fongpun Verasuntharoeth
DIRECTOR



Mr. Noi Plyphue
Head, Building Economic and
Construction Management Division



Mr. Direk Rodswadi
Head, Building Types and
Planning Division



Mr. Sutthisak Samretprasong
Head, Building Systems Division

The names of the Director of Building Research Department from its inception to the present are listed below :-

24 October 1969 - 2 March 1973 - Mr. Wadanyu Na Thalang

2 March 1973 - 9 July 1976 - Dr. Smith Kampermpool

9 July 1976 to the present - Mr. Pongrun Vorasuntharosoth

Professional staff in Building Research Department at present (1978) are :-

Architects	M. Arch.	2
Architects	B. Arch.	7
Engineers	M. Eng.	2
Engineer	B. Eng.	1
Under-graduates		5

The budget for carrying out research projects (excluding salaries) is given below:

1974	71,828	baht	(\$ 3591.4)
1975	144,510	baht	(\$ 7225.5)
1976	197,980	baht	(\$ 9899)
1977	389,450	baht	(\$ 19922.5)
1978	640,240	baht	(\$ 32012)
1979	612,900	baht	(\$ 30645)

4. Network of Various Units and their Duties

4.1 Building Research Department :-

4.1.1 To organize and development for the Building industry in keeping with the National Economic and Social Development objective, with an ultimate areas to economize ~~time~~, labour, and materials.

4.1.2 To provide dissemination of information and organize seminars, training programmes concerning buildings.

4.2 Building types and Planning Division :-

4.2.1 To organize research on requirement of utility and other values of building types to be applied in designing building and furnitures, to organize research on physical planning of cities and rural areas in keeping with a National Economic and Social Development Project.

4.2.2 To organize surveys for feed back data on building already built in order to improve them for the next project.

4.2.3 To organize training and disseminate of data on the above.

4.3 Building Economics and Construction Management Division

4.3.1 To organize research on building economics and management.

4.3.2 To prepare construction cost price index for building for government and private sectors.

4.3.3 To collect samples of building materials and update the schedule of prices as the data service for government and private agencies.

4.4 Building Systems Division

4.4.1 To organize research on building systems and structures.

4.4.2 To organize research on building materials and the production processes.

4.4.3 To develop new building materials which will be useful for construction.

4.4.4 To test and certify building materials and components for interested parties.

5. Results of Operation

Important projects already undertaken by Building Research Department are given below :-

- 5.1 Planning and constructing residences for Royal Thai Navy's officials at Chulachonklao Fort, Samut Prakan Province in 1970. This project involved planning, design and controlling construction of residences and shops by construction systems approach which were improved to receive complete advantages and to economize.
- 5.2 A research project on public school of Local Administration Department. The project involved provision of data, designing and experimental construction of prototype at Teachers' Day School 2502, Tambol Khlong Luang, Rangsit.
- 5.3 A research project on housing and environments in rural areas. It involved a survey in provinces and is now in the design stage.
- 5.4 Active participation in the committee for improvement and amendment of Municipal Law on construction.
- 5.5 A research report on housing and environments. It was submitted to the National Development Council, and the National Revolutionary Executive Council. It resulted in the establishment of the National Housing Bureau.
- 5.6 Collection of samples of local building materials to make the Department a reference centre on type, size, quality and price of building materials.
- 5.7 Publication of documents concerning the prices of building materials every 3 months and sending them to various government units and state owned enterprises. These can be used as standardized data for estimate of the price of government buildings.
- 5.8 Publication of "Architectural Catalog File". This book will be furnished with particularities of various types of building materials produced both locally and abroad.

5.9 Technical seminars were occasionally arranged such as the seminar on utilization of wood for construction (April 16, 1976). It is proposed to arrange technical trainings on modular coordination systems for buildings, for 6 groups in 1977, 5 groups in 1978

5.10 Anthropometric studies have been made. These will provide important data for designing of spaces and for general household furnitures.

6. Concluding remarks

The results of important research projects undertaken by Building Research Department can be briefly summarized as follows:-

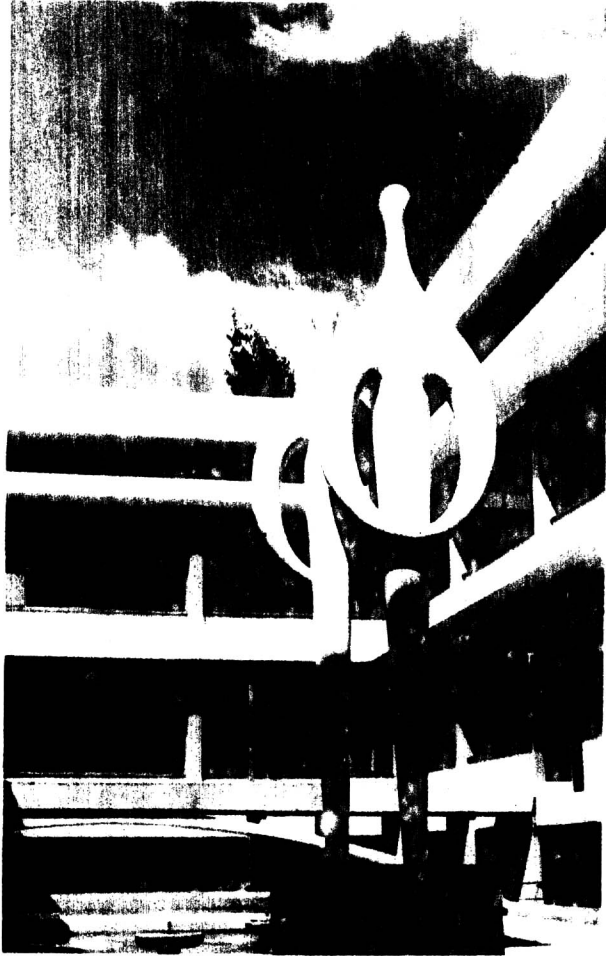
The projects were suitably defined according to the National Economic and Social Development Plan. The results of research work were beneficial and could be effectively and immediately applied. The main objectives of the Building Research Department are to economize capital cost on construction industry and it is expected to save 5% which is about hundred million baht.

In order to encounter the present situation in which the prices of building materials and labour have gone up very high, the Building Research Department has to define measures for economy and at the same time keep in view the efficiency and safety of the structure.

Building Research Department has therefore expanded its scope and objective and redefined View as follows:

6.1 To help building industry in solving problems in planning, foundations, materials, designing and construction so that the construction works could be carried out economically, speedily and more efficiently.

6.2 To study fire disaster in buildings with a view to reduce loss of life and damage of property.



Inside the building of ASRCT where Building Research Department
is located at Room No. 230, 2nd Storey.

- 6.3 To encourage users to take interest in the research results and to define measures so that they can be utilized speedily and effectively.

Priority will be given to research work that can be applied, besides the work that saves materials and labour, keeping in view safety for life and property.

7. A 5-year Project (1977-1981)

The key projects of this department as embodied in the National Economic and Social Development Project No. 4 are given below:

- 7.1 To develop building materials from agricultural and industrial residues or wastes to replace wood from the natural resources available in the country.
- 7.1.1 To develop prefabricated building components with ferrocement.
- 7.1.2 To develop antipercolated substance in concrete.
- 7.1.3 To study the use of flyash as a building material.
- 7.1.4 To survey raw materials in order to develop building materials.
- 7.1.5 To develop standard on building materials.
- 7.2 Technological development in construction and the application of building materials suitable for environmental, social, and technological conditions is comprised of 4 major projects:
- 7.2.1 To study on anthropometry.
- 7.2.2 To disseminate modular coordinating systems.
- 7.2.3 To collect display and catalogue building materials, in normal use size.
- 7.2.4 To compile and up date from time to time standardized price of the building.

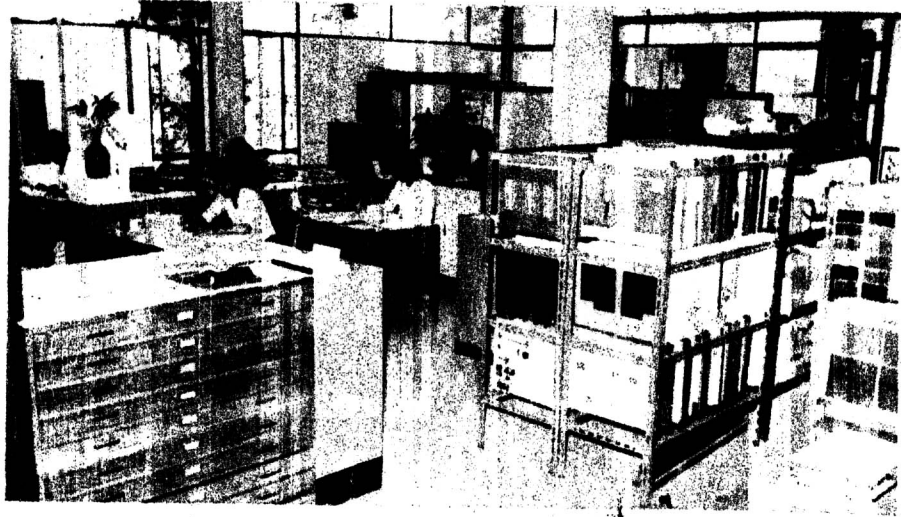
7.3 The development of building and dwellings suitable for environmental, social and economic conditions of the country is comprised of 4 projects:

7.3.1 Development of dwellings in the rural areas.

7.3.2 Development of dwellings and environments.

7.3.3 Research on school buildings.

7.3.4 Study on health buildings.



Office of Building Types and Planning Division and Office of Building Economic and Construction Management Division. On the right is a show case-containing samples of building materials including details from where they can be obtained.



Services for interested persons on request, on the price of building materials.

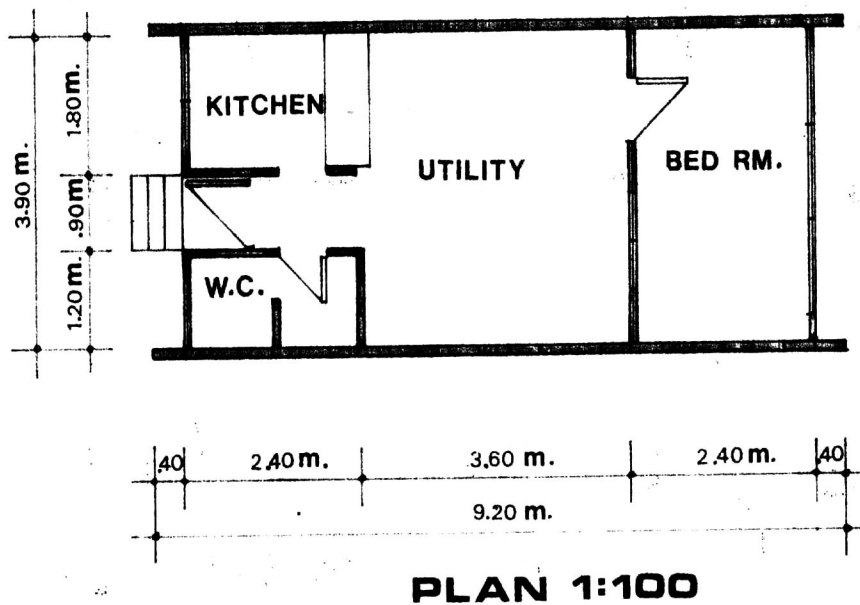


An official of Building Research Department provides services on housing and environment standards.

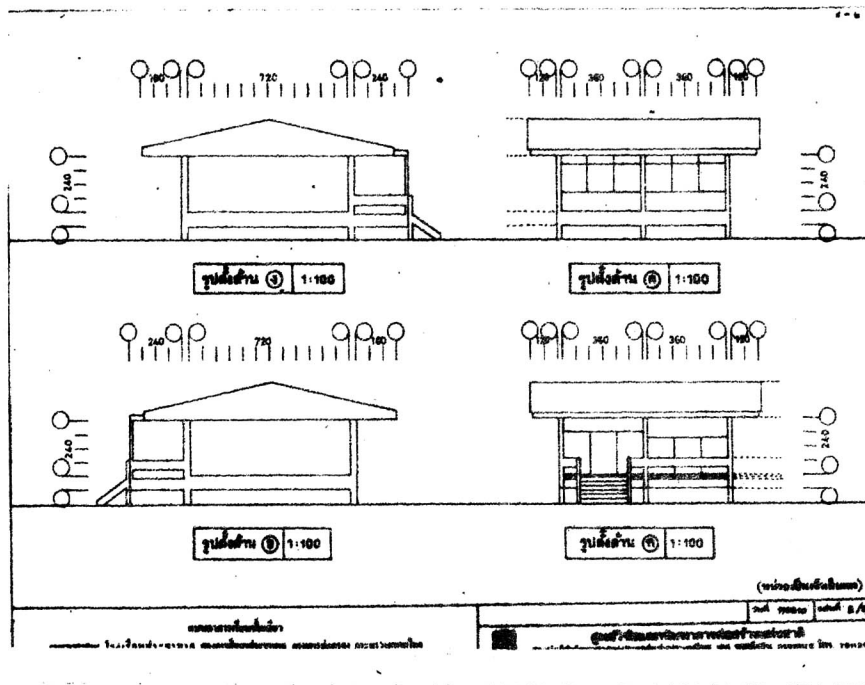


The minimum standardized housing prototype for a 5-member-family.

The room area is 29.62 sq.m., built in 1975.

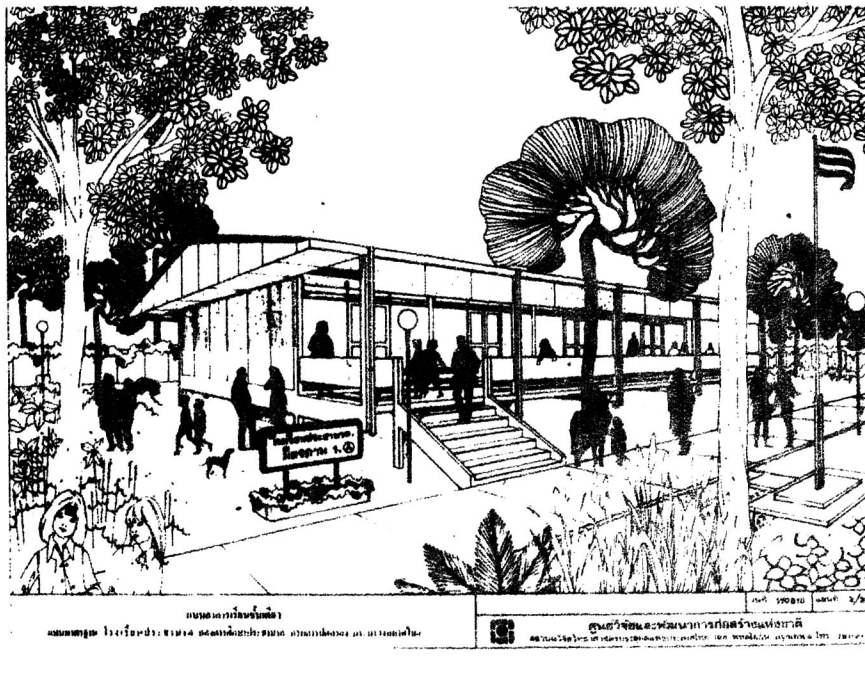


Plan of "The minimum standardized housing"



A single storeyed school building. Each class-room is 7.50 m. x 7.50 m.

A prototype of the building (only single class-room) was built at Teachers' Day School 2502, Tambol Kluang Nung, Amphoe Kluang Luang, Phahonyothin Road, Changwat Pathum Thani on 1976. At present study is being made to improve its efficiency.

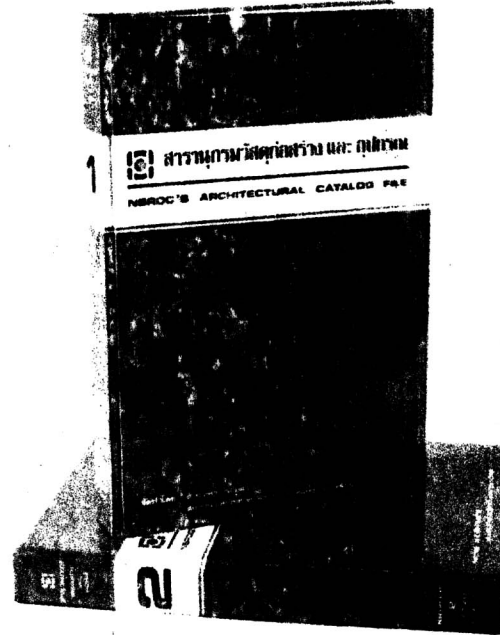
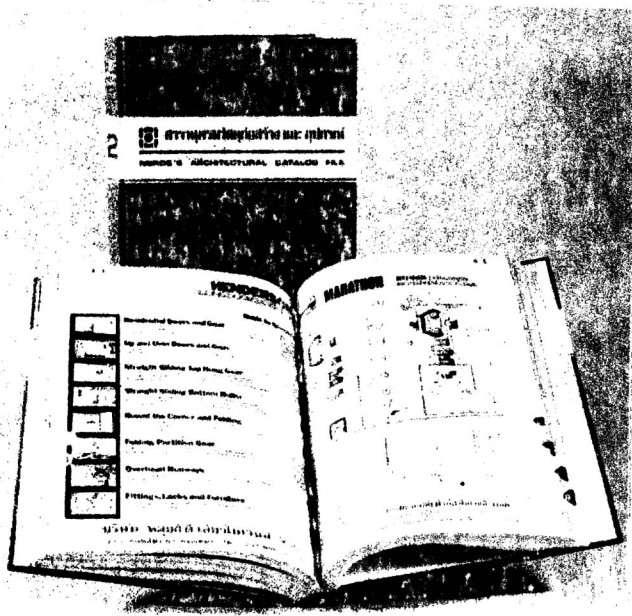


Perspective view indicating characteristics of a single-storeyed school which Building Types and Planning Division is currently working on.

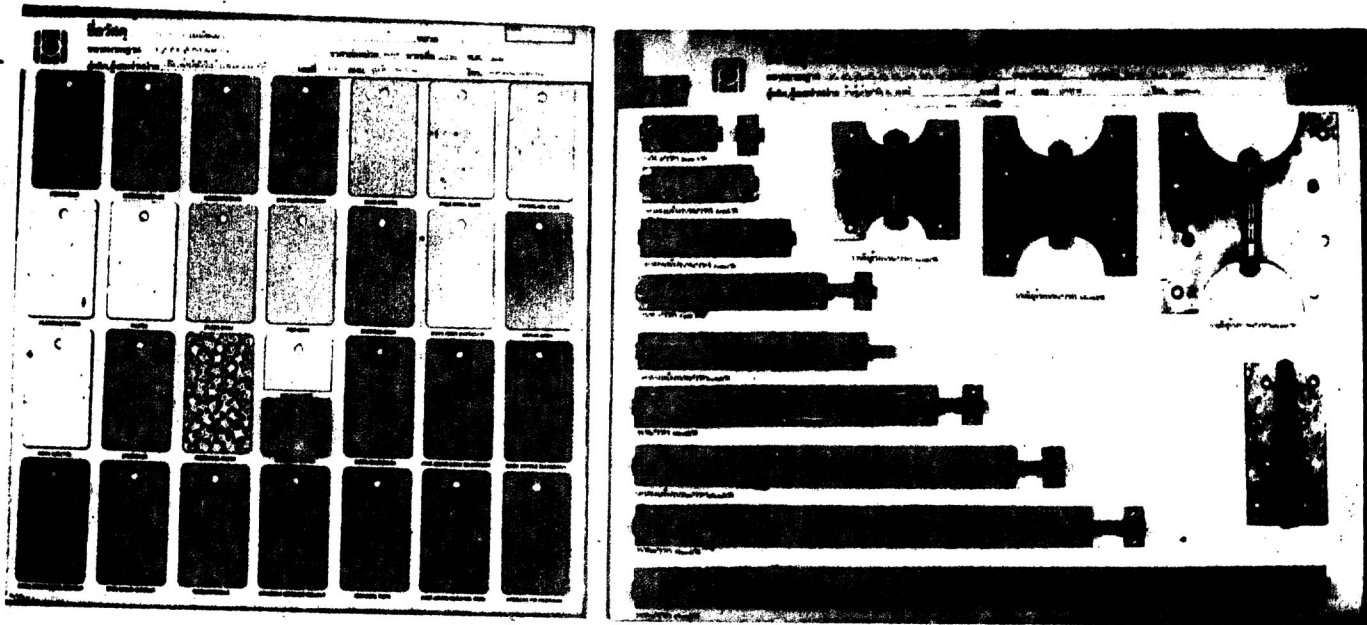
The results of works launched by
Building Economic and Construction
Management Division



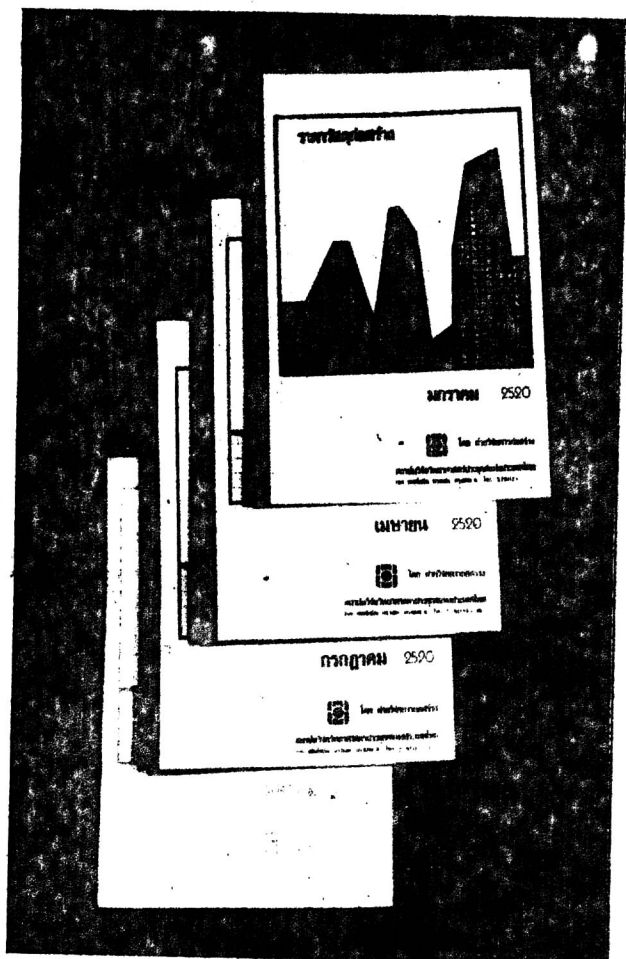
Providing services for these who want to know the data concerning prices of building materials and labour cost in various localities.



NEROC'S Architectural Catalog File was published by Building Economic and Construction Management Division, Building Research Department. This file holds collections of building materials and tools, including technical articles categorically arranged, and is available for sale at Thai National Documentation Centre, ASRCT.



A board showing samples of building materials, hardware including prices, sizes etc.



A project for collection of the prices of building materials of Building Economic and Construction Management Division. A pamphlet containing the prices of building materials is issued quarterly (January, April, July and October) with the prices of more than 400 items. The document is usually distributed to government units and state-owned enterprises to which a design unit and a construction agent is attached.

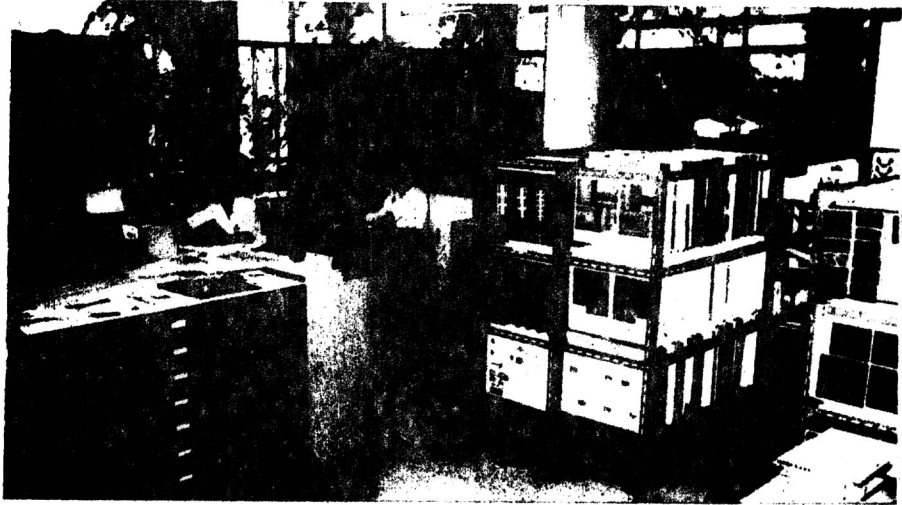
The results of works undertaken by
Building Systems Division



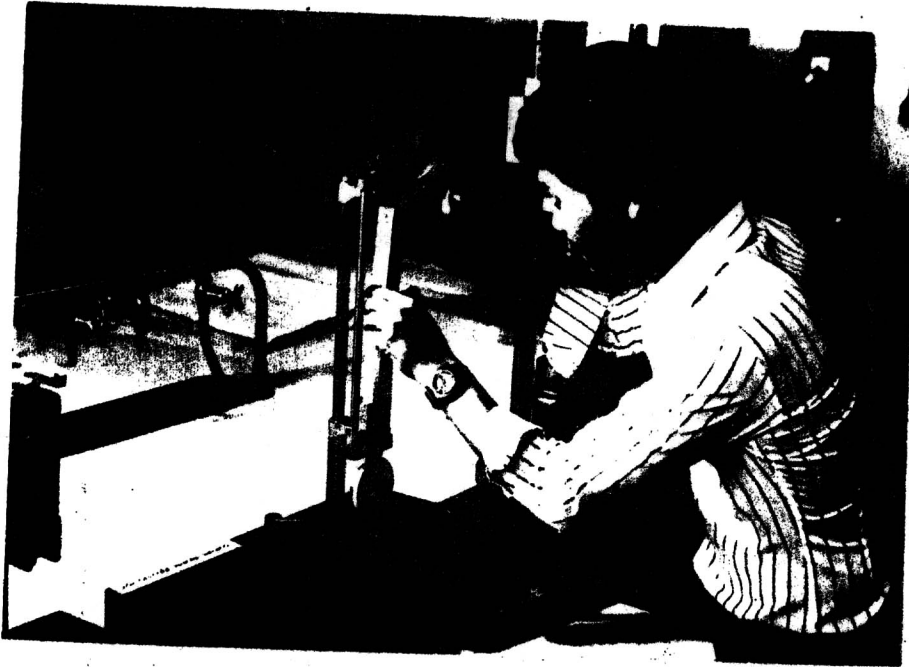
A Laboratory of Building Systems Division.



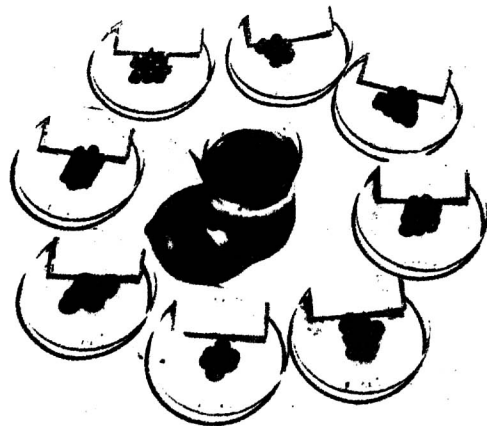
Compressive test of Mortar Block with Versa-Tester



The Office of Building Types and Planning Division, and Building Economic and Construction Management Division. On the right side is a shelf displaying examples of building materials produced and sold in Thailand, as well as the prices, qualities and agents.

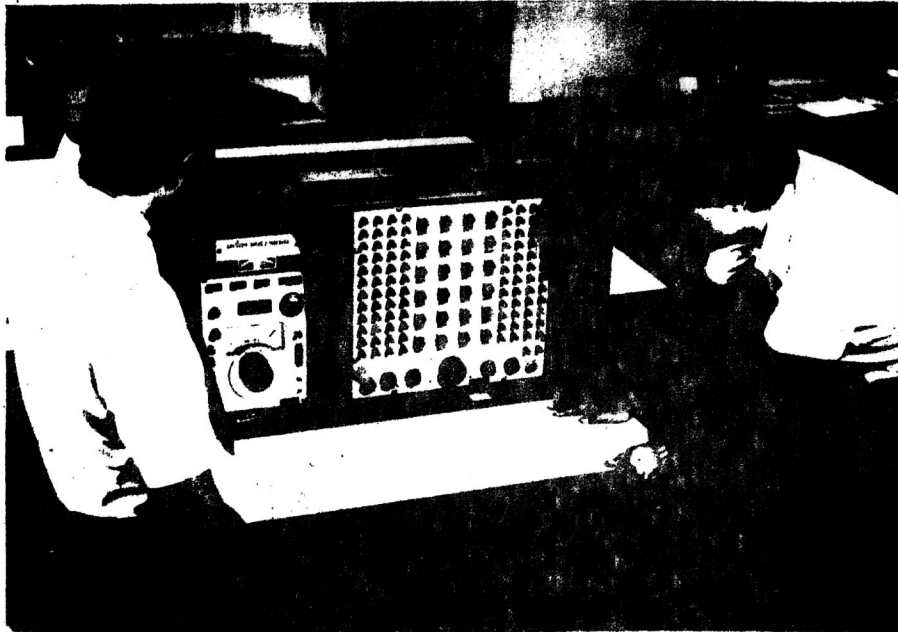


Test for soundness of cement.



Lightweight Clay Aggregate

Lightweight clay aggregate. When burned at appropriate temperature and time, it is so light that it can float in water.



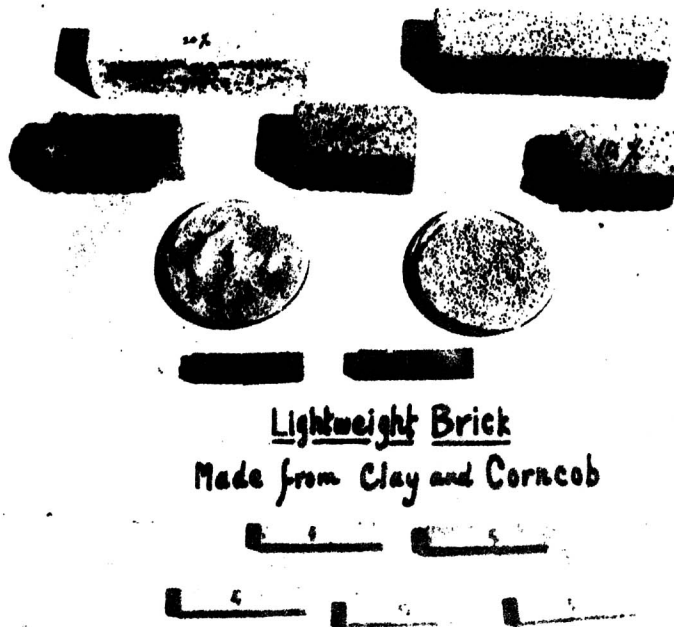
Test for stress of building materials.



Test for fineness of cement (by air permeability test).



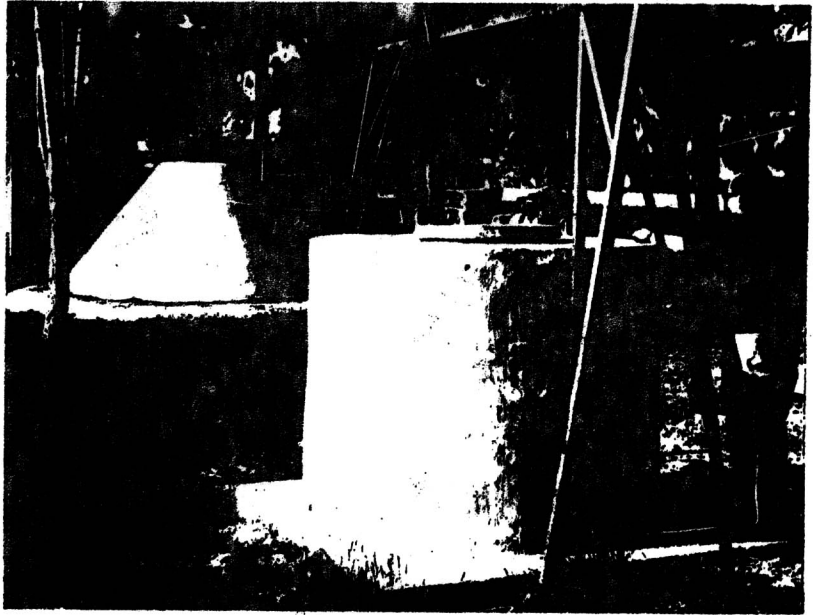
Concrete block made from lightweight clay with $\frac{1}{2}$ weight of general concrete blocks.



Examples of lightweight bricks made from clay and corncob.

THAI NATIONAL
DOCUMENTATION CENTRE

A Research Project on "Ferrocement"



Above pictures

Left : A ferrocement bin with capacity storage of 5 tons of crop seeds.

Right: A ferrocement water tank with 2700 litre holding capacity.

These two items are the project for rural development.

Left picture: A ferrocement made fabricated material is for house partition. It is 60 cm. x 240 cm. with approximately 3 cm. thick.



A ferrocement fabricated material with "I" profile of 30 cm. wide and 3.60 m. long.



A ferrocement fabricated material with "U" profile of 30 cm. wide and 3.60 m. long.

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