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REGIONAL NETWORK IN ASIA ON
LOW-COST BUILDING MATERIALS TECHNOLOGIES
AND CONSTRUCTION SYSTEMS

DP/RAS/81/012

Technical Report*

Regional Network
Information System

Prepared for the Regional Secretariat of the Network
by
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United Nations Industrial Development Organization

Vienna

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REGIONAL NETWORK INFORMATION SYSTEM

INTRODUCTION

The Regional Network in Asia on Low-Cost Building Materials Technologies and Construction Systems is a UNDP funded project being executed by the UNIDO. It seeks to promote technical cooperation and mutual assistance among the developing countries of Asia and Pacific Region toward the development of low-cost building materials and construction technologies through a regional network capable of a) gathering and disseminating technical information on appropriate building materials technologies and construction systems; b) initiating and coordinating collaborative research programs relevant to individual country needs; c) facilitating the provision of consultancy and advisory services to member-countries; and d) organizing training programs, individual trips, seminar, study tour and workshops geared to upgrade professional expertise on construction techniques and building materials research.

The establishment of an information system for the project is therefore necessary to support its basic functions of collecting and disseminating information related to building materials technologies and construction systems among member-countries in the Asia-Pacific Region.

The information referred to cover the following:

- a. Building Materials
 - b. Construction Technologies
 - c. Professionals/Experts on building materials and construction technologies
 - d. Consulting firms on building materials and construction technologies
 - e. Related literature on building materials and construction technologies
-

Based on these project requirements, the Regional Adviser is expected to undertake the following:

- a. general classification of information on building materials and construction technologies
- b. formulation of catalogue and indexing system
- c. design of data sheets
- d. data banking of available construction materials and other identified data requirements gathered from the Philippines.

CONCEPTUAL
FRAMEWORK

Figure 1 shows the proposed conceptual framework on information networking. The framework provides an over-all structure for transforming raw data to the required output and shows the general flow of information from sources to end-user. The system requires member-countries to provide the Regional Secretariat with specific information on housing technologies, building materials, experts/professionals, consulting firms, and housing literature. Based on the data banking system that shall be maintained and operationalized by the Regional Secretariat, these sets of information shall be sorted, organized and printed for dissemination to member-countries in the form of catalogues for their use in their respective shelter development programs. The framework shall specifically operate according to the systems and procedures outlined in Table 1 and illustrated in Figure 2.

FIGURE 1. CONCEPTUAL FRAMEWORK ON INFORMATION NETWORKING

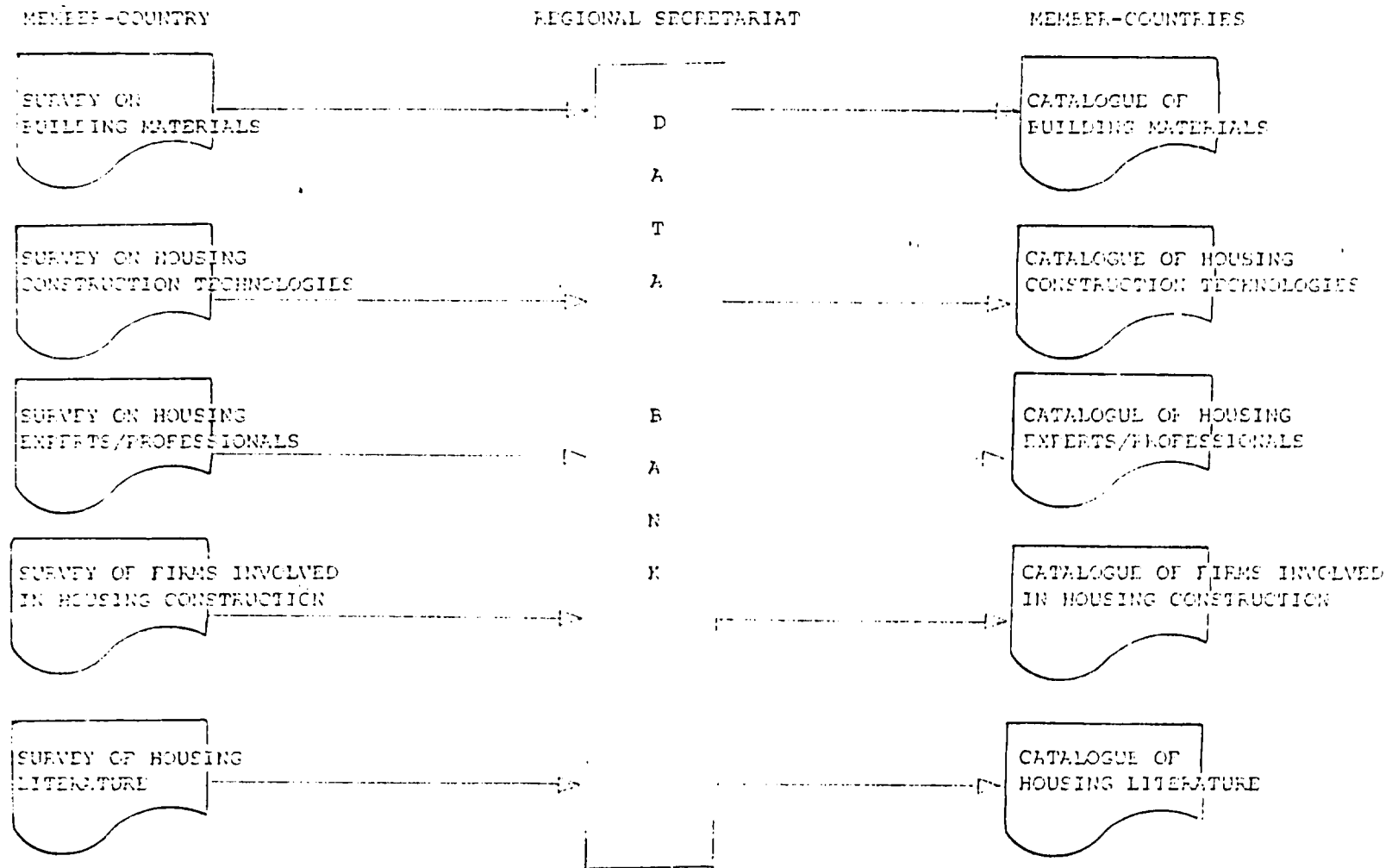
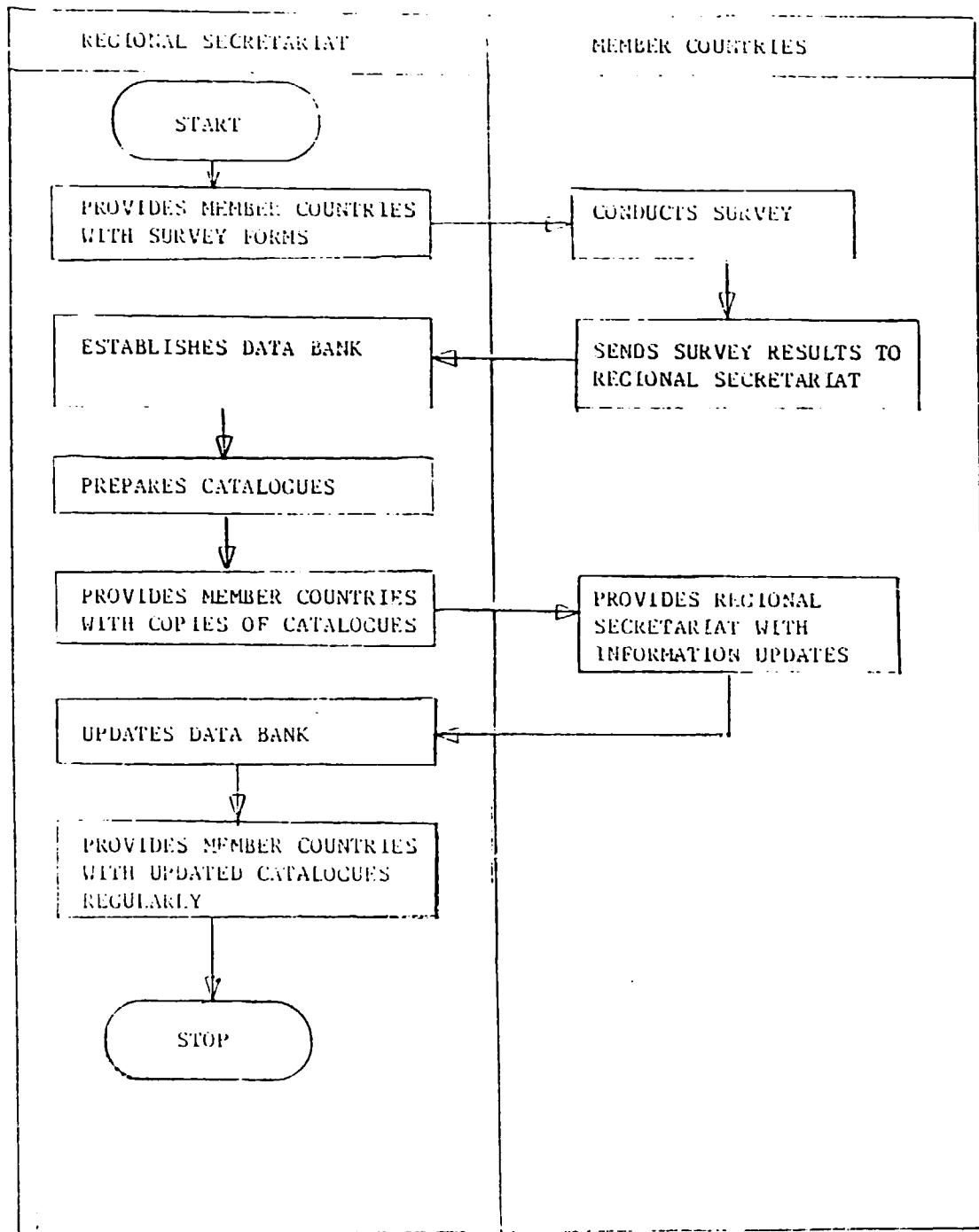


TABLE 1. SYSTEMS AND PROCEDURES: INFORMATION NETWORKING

ACTIVITY NO.	ACTIVITY DESCRIPTION	FORMS REQUIREMENTS
1	Regional Secretariat provides member countries with the designed survey questionnaires	Survey forms
2	Member-countries conduct survey on housing technology, materials, experts, firms and relevant literature	
3	Member-countries submit results (accomplished survey forms) to Regional Secretariat	
4	Regional Secretariat establishes data bank of housing construction technologies, materials, experts, firms and relevant literature	Data bank formats
5	Regional Secretariat prepares catalogues of housing construction technologies, materials, experts, firms and relevant literature	Catalogue formats
6	Regional Secretariat provides member countries with the various catalogues	
7	Member countries continually send information updates to the Regional Secretariat	
8	Regional Secretariat updates its data bank as additional information are received from member countries	
9	Regional Secretariat provides member countries with updated catalogues on a regular basis (either quarterly, semi-annually or annually)	Catalogue formats

FIGURE 2. FLOWCHART - INFORMATION NETWORKING



DATA SOURCES

Identification of Local Data Sources in the Philippines

Since substantial information earlier identified are readily available in the Philippines, initial data gathering can be undertaken in the host country. The output from this initial undertaking shall likewise serve as sample output to test the viability of the system itself.

Different government offices and organizations have been initially identified as potential sources of information. The identification of these sources was based on the nature of the work of the particular agency.

For instance, the Association of Structural Engineers of the Philippines (ASEP) and the Philippine Institute of Civil Engineers (PICE) have a complete roster of all the registered civil engineers in the Philippines. The Securities and Exchange Commission registers all the private companies in the Philippines while the Human Settlements Regulatory Commission (HSRC) registers local subdivision developers. The Technology Resource Center (TRC) and Philippine Patents Office compile all the local inventions and innovations. Table 2 summarizes the initial data sources identified in the Philippines.

Table 2. Potential Local Sources of Information

Type of Information	Potential Sources
1. Commercial/Indigenous Construction Materials	Local Construction Hardware, TRC, Phil. Patent Office, NSTA, FPRDI
2. Construction Technologies	Phil. Patents Office, BOI, NHA, DED, DHS, PCA, Silliman University, NSTA, FPRDI
3. Experts/professionals involved	ASEP, PICE, Engineering Schools, Board of Registrants, Engineering Offices, etc.

Type of Information	Potential Sources
4. Companies Involved in Housing	PCAB, NHC, BDC, HSRC
5. Literature on Construction and Housing	Different Libraries, newspapers, Journals, etc.

- NHC - National Housing Corporation
- PCA - Philippine Coconut Authority
- NHA - National Housing Authority
- PCAB - Philippine Contractors Accreditation Board
- PRC - Professional Regulation Commission
- MHS - Ministry of Human Settlements
- BDC - BLISS Development Corporation
- NSTA - National Science Technology Authority
- FPRDI - Forest Products Research and Development Institute

Identification of Data Sources from Member-Countries

The identification of potential foreign sources of information on low cost housing and construction technologies is one of the important aspects of the data gathering stage considering the number of countries the project is expected to service. It is expected that this work will be able to generate more information on construction technology and research on indigenous materials. It is also expected that the Network's participating countries can provide a wealth of information that can be processed and entered into the data bank for dissemination. Sources outside of the Network's participating countries shall be likewise tapped as a strategy for strengthening the network's data base.

It is assumed that low cost housing and construction technology do not have so much place in the developed countries; hence, for the initial stage, only the developing countries were identified as potential sources. Survey forms are being sent to the Network's member-countries and to other

countries in Africa and Latin America. The following member-countries have been identified as possible sources:

1. Afghanistan
2. Bangladesh
3. China
4. Indonesia
5. Malaysia
6. Nepal
7. Pakistan
8. Philippines
9. Sri Lanka
10. Thailand
11. Tonga
12. Tuvalu

SURVEY DESIGN

Data gathering shall largely depend on the information to be provided by existing government and private institutions operating in member-countries. The survey forms shown in Appendix I shall be utilized as survey instruments in actual data gathering. Five (5) sets of survey forms have been designed corresponding to each of the identified sets of information to be gathered; that is:

- RNIS Form No. 1 - Data Sheet on Building Materials
- RNIS Form No. 2 - Data Sheet on Construction Technology
- RNIS Form No. 3 - Data Sheet on Experts/Professionals in Housing
- RNIS Form No. 4 - Company Profile Sheet
- RNIS Form No. 5 - Data Sheet on Housing Literature

These forms shall be sent to relevant institutions identified by member countries.

The possible sources of information where each country can distribute the survey forms are given in Table 3.

Table 3
Possible Sources of Information

RHS Form No.	Type of Information	Possible Sources
1	Building Materials	<ul style="list-style-type: none"> a) manufacturers and/or suppliers of building materials b) patents office c) agencies involved in technology research
2	Construction technology	<ul style="list-style-type: none"> a) agencies involved in building research b) construction/architecture firms c) patents office d) engineering schools
3	Experts/professionals in housing	<ul style="list-style-type: none"> a) professional regulation agencies b) engineering associations c) engineering offices d) engineering schools
4	Consulting firms involved in housing	<ul style="list-style-type: none"> a) companies involved in manufacturing/dealing of construction materials, housing design & architecture, and housing construction b) agencies involved in housing regulation
5	Housing literature	<ul style="list-style-type: none"> a) agencies involved in housing research and/or regulation b) libraries

SYSTEMS DESIGN
FOR DATA
BANKING

A system of transforming expected input data (survey forms) into the required output (directory/catalogue) has also been devised. It consists of three (3) subsystems, namely: a) the File Creation Subsystem; b) the Catalogue/Directory Preparation Subsystem; and c) the File Updating Module.

Figure 3 presents the File Creation Subsystem wherein a file each shall be created for building materials (F01), housing technologies (F02), professionals/experts (F03), consulting firms (F04), and relevant literature (F05) from the respective survey forms. Data on the survey forms shall be inputted to the computer using the dBase II software based on formats which have been designed for the purpose. When all information from the forms have been entered into the computer, a disk file is created and a prooflist is printed. This prooflist is then subjected to a manual validation routine to come up with corrections on the prooflist. If there are no errors found then the file becomes the valid one. If errors are detected, the prooflist with corrections is used to edit the files using again the dBase II software. The corrected files are now sorted in the following manner:

- a) Building Materials - sorted alphabetically by country, by type;
- b) Housing Technology - sorted alphabetically by country
- c) Professionals/experts and Consulting Firms - sorted alphabetically by country, by field of expertise and in descending order by length of experience
- d) Relevant Literature - sorted by country, by subject.

Figure 4 describes how the catalogues are prepared from the sorted files. It also includes the preparation of summary tables/statistics for planning purposes.

Figure 5 presents the creation of update files and their subsequent merger with the initially-created ones.

FIGURE 3. FILE CREATION SUBSYSTEM

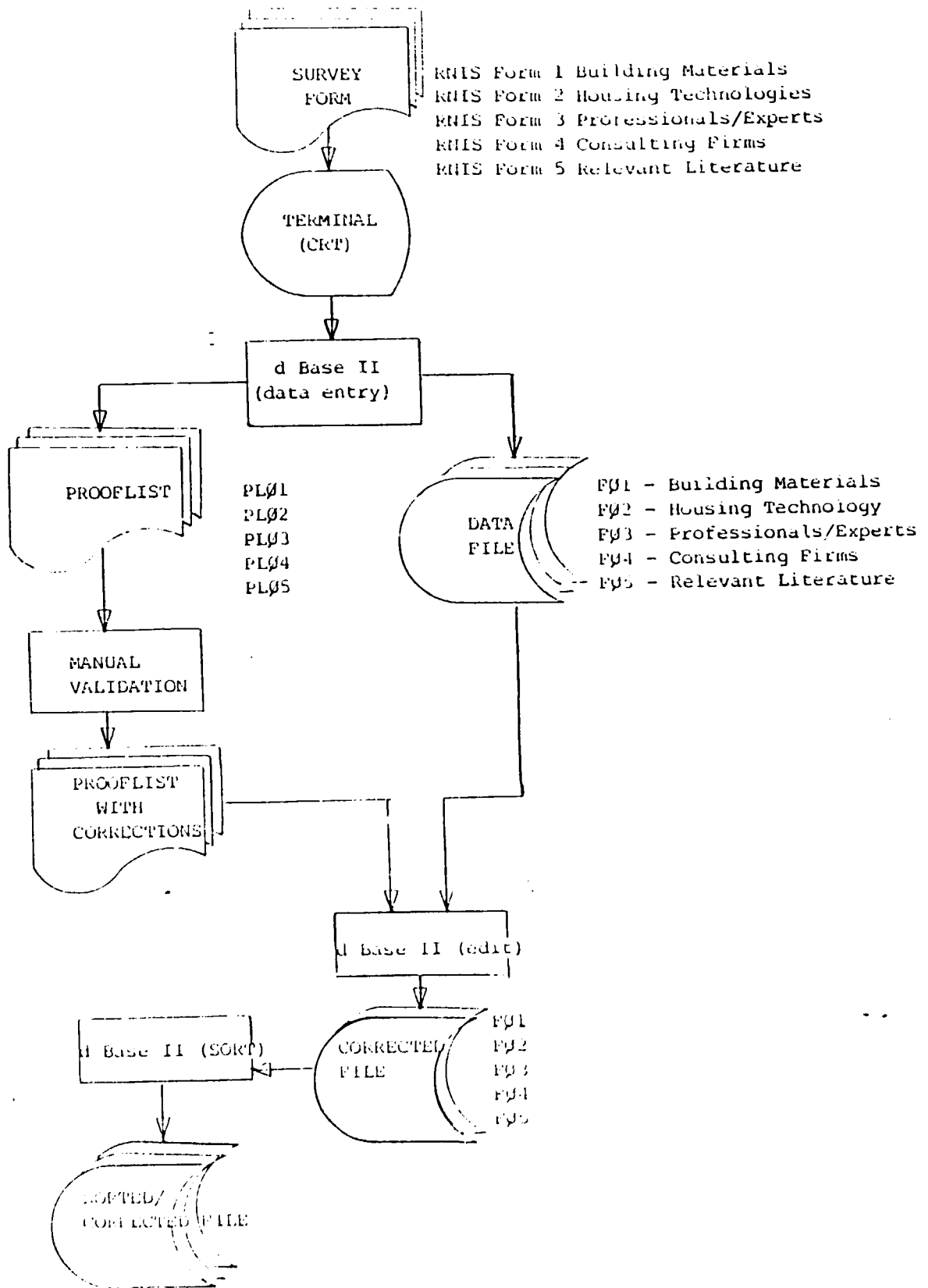


FIGURE 4. CATALOGUE/DIRECTORY SUBSYSTEM

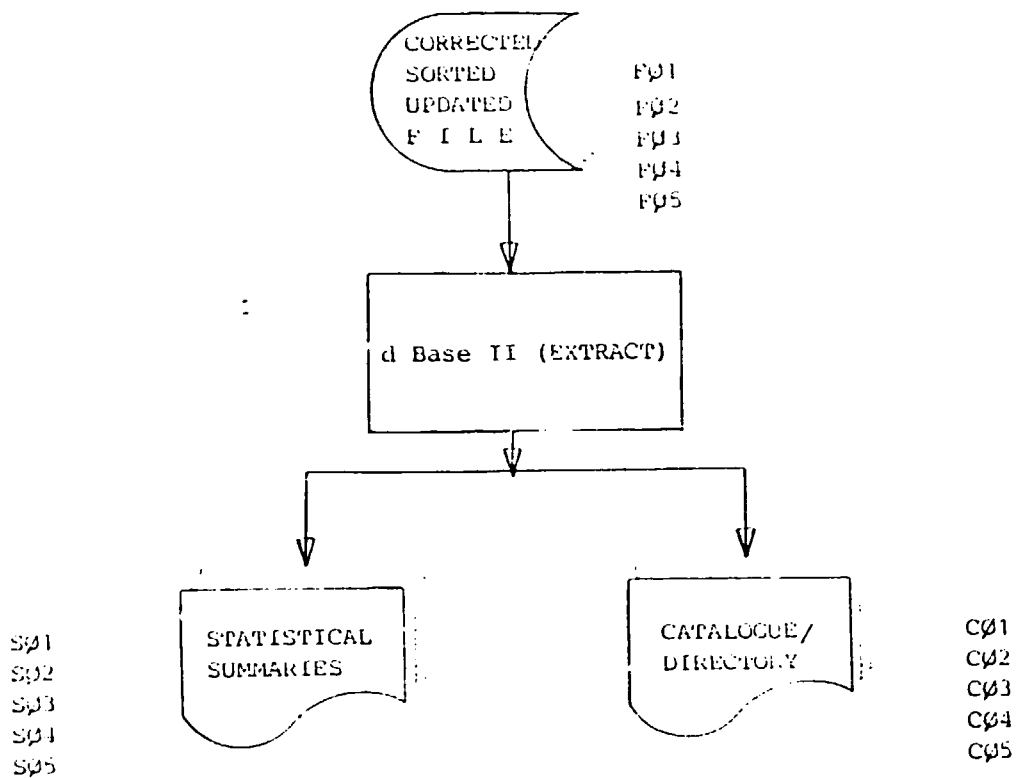
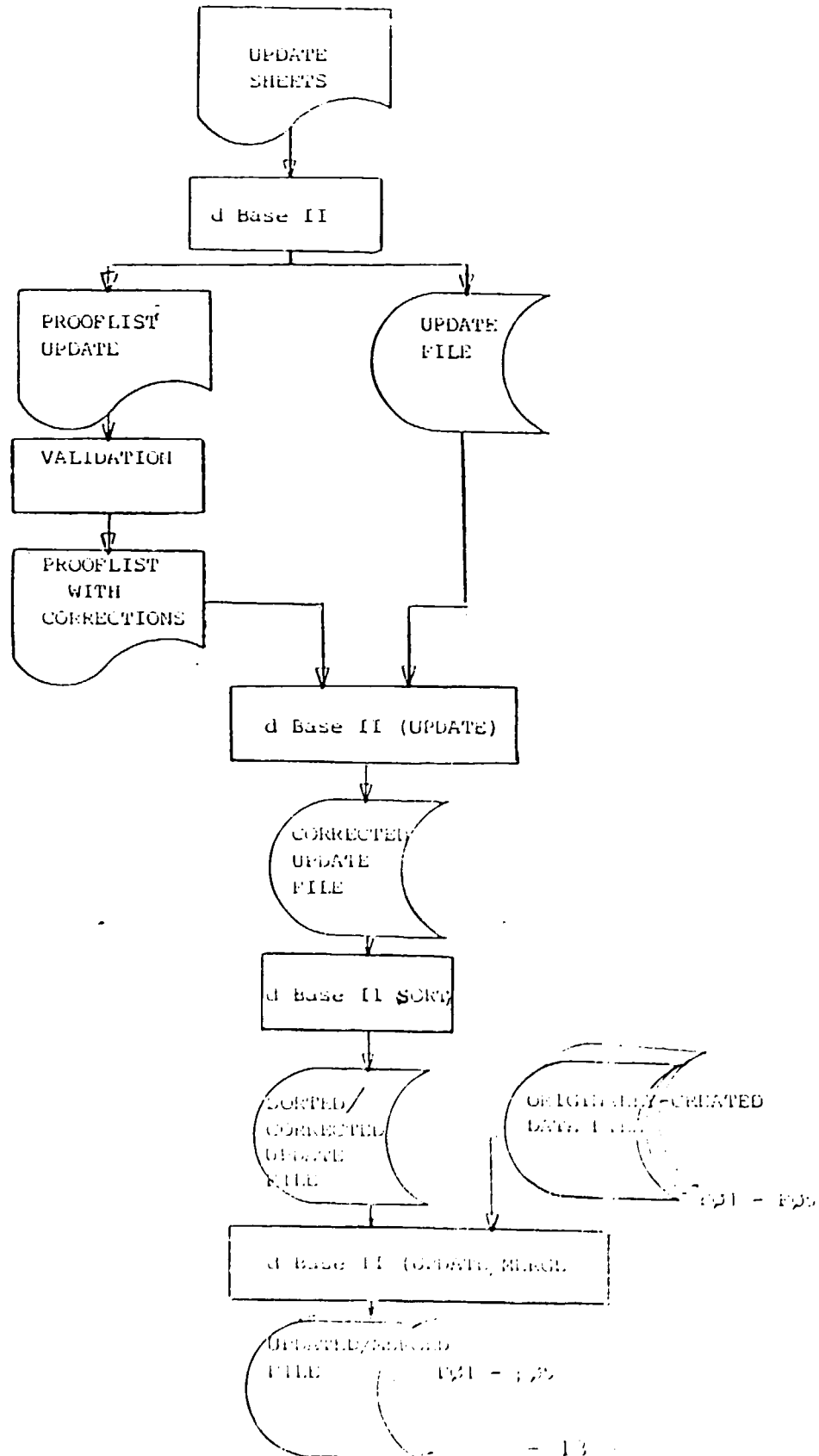


FIGURE 5. FILE UPDATE SUBSYSTEM



CODING
SCHEMES

Coding schemes have been developed to provide a standard classification and coding system of textual information for easy storage and retrieval of information in the computer, and for comparability of data.

The following types of information are provided with coding schemes:

Item	File Number
1. Country of origin	All files
2. Type of building material	F01, F02, F04
3. Applicability (of building material) to housing construction	F01
4. Subject matter of literature	F05
5. Document type of literature	F05
6. Year of publication of literature	F05

Country of Origin

The coding scheme for "country of origin" is used in all files. It is a four-digit code consisting of two levels. The first level refers to whether a country is a member-country (code M) or a non-participating country (code N). The second level refers to the serial number assigned to the countries arranged in alphabetical order. The codes are as follows:

Coding Scheme for "Country of Origin"

Code	Description	Code	Description
<u>Member Countries:</u>			
F001	Afghanistan	F002	China
F003	Bangladesh	F004	Indonesia

Code	Description	Code	Description
N005	Malaysia	N009	Sri Lanka
N006	Nepal	N010	Thailand
N007	Pakistan	N011	Tonga
N008	Philippines	N012	Tuvalu

Non-Participating Countries:

N001	Albania	N038	El Salvador
N002	Algeria	N039	Equatorial Guinea
N003	Angola	N040	Ethiopia
N004	Argentina	N041	Fiji
N005	Australia	N042	Finland
N006	Austria	N043	France
N007	Bahamas	N044	Gabon
N008	Bahrain	N045	Gambia
N009	Barbados	N046	German Democratic Republic (East Germany)
N010	Belgium	N047	German Federal Republic (West Germany)
N011	Belize	N048	Ghana
N012	Benin	N049	Greece
N013	Bhutan	N050	Grenada
N014	Bolivia	N051	Guatemala
N015	Botswana	N052	Guinea (People's Revolutionary Republic)
N016	Brazil	N053	Guyana
N017	Brunei	N054	Haiti
N018	Bulgaria	N055	Honduras
N019	Burma	N056	Hongkong
N020	Burundi	N057	Hungary
N021	Cameroon	N058	Iceland
N022	Canada	N059	India
N023	Cape Verde	N060	Iran
N024	Central African Republic	N061	Iraq
N025	Chad	N062	Ireland
N026	Chile	N063	Israel
N027	Colombia	N064	Italy
N028	Congo	N065	Ivory Coast
N029	Costa Rica	N066	Jamaica
N030	Cuba	N067	Japan
N031	Cyprus	N068	Jordan
N032	Czechoslovakia	N069	Kampuchea (Cambodia)
N033	Democratic Yemen	N070	Kenya
N034	Denmark	N071	Korea, Republic of
N035	Dominican Republic	N072	Kuwait
N036	Ecuador		
N037	Egypt		

Code	Description	Code	Description
N073	Laos	N118	Singapore
N074	Lebanon	N119	Solomon Islands
N075	Lesotho	N120	Somalia
N076	Liberia	N121	South Africa (Republic)
N077	Luxembourg	N122	South Korea
N078	Macau	N123	Spain
N079	Madagascar	N124	St. Lucia
N080	Malawi	N125	Sudan
N081	Maldivé Islands	N126	Suriname
N082	Mali	N127	Swaziland
N083	Malta	N128	Sweden
N084	Mauritania	N129	Switzerland
N085	Mauritius	N130	Syria
N086	Mexico	N131	Tanzania (United Republic of)
N087	Monaco		
N088	Mongolia	N132	Togo
N089	Morocco	N133	Trinidad & Tobago
N090	Mozambique	N134	Tunisia
N091	Nauru Island	N135	Turkey
N092	Namibia	N136	Uganda
N093	Nederlãndse Antillen	N137	Union of Soviet Socialist Republics
N094	Netherlands		
N095	New Zealand	N138	United Arab Emirates
N096	Nicaragua	N139	United Kingdom
N097	Niger	N140	United Republic of Cameroon
N098	Nigeria		
N099	Norway	N141	United States of America
N100	Oman		
N101	Panama	N142	Upper Volta
N102	Papua New Guinea	N143	Uruguay
N103	Paraguay	N144	Vatican City
N104	Peru	N145	Venezuela
N105	Poland	N146	Vietnam (People's Republic)
N106	Portugal		
N107	Puerto Rico	N147	Western Samoa
N108	Qatar	N148	Yemen Arab Republic
N109	Reunion	N149	Yemen (People's Democratic Republic)
N110	Romania		
N111	Rwanda	N150	Yugoslavia
N112	Samoa	N151	Zaire
N113	San Marino	N152	Zambia
N114	Saudi Arabia	N153	Zimbabwe
N115	Senegal		
N116	Seychelles		
N117	Sierra Leone		

Type of Building Material

The coding scheme for "type of building material" is used in the following files:

Building Materials File (F01)

Construction Technology File (F02)

Company Profile File (F04)

It consists of a three-digit code which gives a unique number to each type of building material. The codes are:

Coding Scheme for Types of Building Materials

<u>Code</u>	<u>Description</u>	<u>Code</u>	<u>Description</u>
001	Aluminum	029	Insulation Material
002	Asbestos Cement	030	Lime
003	Adhesive	031	Light Weight Concrete
004	Aggregate	032	Metals
005	Additive	033	Mass Concrete
006	Binders (other)	034	Mortar
007	Bitumen	035	Natural Stone
008	Bituminous Material	036	Normal Concrete
009	Coating	037	Plastic
010	Construction Material	038	Pumped Concrete
011	Concrete (other)	039	Prestressing Steel
012	Coarse Ceramics	040	Repellent Concrete
013	Cement	041	Resin
014	Dry Concrete	042	Ready Mixed Concrete
015	Exposed Concrete	043	Reinforcing Steel
016	Epoxy Cement	044	Steel
017	Field Concrete	045	Silicate Concrete
018	Fibrated Concrete	046	Sealing Mass
019	Flowing Concrete	047	Screed
020	Fresh Concrete	048	Steel Fibre
021	Glass	049	Timber
022	General	050	Timber Material
023	Gas Concrete	051	Tiling
024	Gypsum	052	Textile
025	Glass Fiber	053	Underwater Concrete
026	Granite	054	Vacuum Concrete
027	Green Concrete	055	Wood Concrete
028	heavy-weight Concrete	056	Wound Concrete

Applicability to Housing Construction

The coding scheme for "applicability to housing construction" is used in the building Materials File (F01). It consists of two-digit codes as follows:

Coding Scheme for Applicability to Housing Construction

Code	Description	Code	Description
01	Accessories	11	General
02	Beam	12	Lining/covering
03	Balcony/Terrace	13	Protective Device
04	Chimney	14	Partition Wall
05	Column	15	Roof
06	Door/Gate	16	Shaft
07	Floor	17	Stairs
08	Facade	18	Window
09	Foundation	19	Wall
10	Flooring		

Subject Matter

The coding scheme for "subject matter" used in the Housing Literature File (F05) consists of three-digit codes. The first digit is alphabetic and refers to the general subject classification, while the next two digits are numeric and refers to sub-categories under the general classification.

Coding Scheme for Subject Matter

Code	Description	Code	Description
600	<u>General</u>	F00	<u>Production</u>
601	Construction Plans	F01	Construction Materials
602	Construction Planning	F02	Construction Sites
603	Construction Planning	F03	Construction Techniques
604	Housing Design and Architecture	F04	Construction Techniques

Code	Description	Code	Description
G05	Low Cost Housing	P05	Material Stockpiling System
G06	Mass Housing	P06	On-Site Fabrication
G07	Professionals	P07	Private Construction
G08	Subdivision Planning	P08	Relocation
G09	Supplies and Dealers	P09	Resettlement
G10	Urban Renewal	P10	Sites and Services
		P11	Site Clearing and Land Development
		P12	Upgrading

Document Type

The coding scheme for "document type" which is used in the Housing Literature File (F05) consists of alphabetic two-digit codes as follows:

Coding Scheme for Document Type

Code	Description
BB	Book
JJ	Journal
DB	Document published in a book
DJ	Document published in a journal
DN	Newspaper article
DR	Unpublished research paper

Year of Publication

The coding scheme for "year of publication" consists of the last two digits of the year referred to as follows:

- 82 - for year 1982
- 83 - for year 1983
- 84 - for year 1984

and so on

NUMBERING/
INDEXING
SCHEME

A numbering/indexing scheme has been designed for the files in the information system as a means of identifying each individual record in the file. That is, a unique number is assigned to each record corresponding to each accomplished survey form (RNIS Forms 1 to 5).

Numbering/Indexing Scheme for the Building Materials File (F01)

The indexing scheme for the Building Materials File consists of the string of codes for country of origin, type of material and applicability to housing construction. Thus, the index number shall have the following format:

ANNN - NNN - NN

where A is an alphabetic character
N is a numeric character
The first four digits refers to the country of origin
The next three digits refers to the type of building material
The last two digits refers to the applicability to housing construction

Numbering/Indexing Scheme for the Construction Technologies File (F02)

The indexing scheme for the construction Technologies File consists of the code for country of origin and a serial number. It shall have the following format:

ANNN - NNN

where the first four digits refers to the country of origin, and
the last three digits refers to the serial number assigned sequentially to each type of technology reported by a country as the survey forms are received.

Numbering/Indexing Scheme for the Housing
Literature File (F05)

The indexing scheme for the Housing Literature File consists of the code for country of origin and a serial number. The index number shall have the following format:

ANNN - NNNN

where the first four digits refers to the country of origin, and
the last four digits refers to the serial number assigned sequentially to each title of literature reported by a country as the survey forms are received.

CATALOGUE
DESIGNS

Appendix II shows the sample catalogue/directory designs and statistical summaries where the available information shall be outputted for dissemination to users. Ten (10) output formats have been designed as follows:

From the Building Materials File (F01):

1. Catalogue of Building Materials by Country of origin
2. Catalogue of Building Materials by Type of Material
3. Summary of Building Materials Availability by Type, by Country

From the Construction Technologies File (F02)

4. Catalogue of Construction Technologies by Country

From the Professionals/Experts File (F03)

5. Directory of Professionals, Experts by Country
6. Summary of Professionals/Experts by Country, by Expertise

From the Consulting Firms File (F04)

7. Directory of Consulting Firms by Country,
by Expertise
8. Summary of Consulting Firms by Country,
by Expertise
9. Summary of Consulting Firms by Expertise,
by Country

From the Housing Literature File (F05)

10. Bibliography of Literature by Country,
by Subject Matter

APPENIX I
SURVEY FORMS

Regional Network in Asia on
Low-Cost Building Materials Technologies
and Construction Systems

DATA SHEET ON BUILDING MATERIALS

1. TYPE OF BUILDING MATERIAL : _____
(See reverse side for types)
2. MANUFACTURER/SUPPLIER : _____
- 2.1 NAME OF COMPANY/INDIVIDUAL: _____
- 2.2 ADDRESS : _____
- 2.3 TELEPHONE NO. : _____

3. DESCRIPTION : Describe the material briefly in terms of physical and other properties such as shape, weight, texture, size, density, etc.

4. APPLICABILITY TO HOUSING CONSTRUCTION:
Please check as many as applicable.

- | | | |
|---|---|------------------------------------|
| <input type="checkbox"/> 01 Accessories | <input type="checkbox"/> 08 Facade | <input type="checkbox"/> 15 Roof |
| <input type="checkbox"/> 02 Beam | <input type="checkbox"/> 09 Foundation | <input type="checkbox"/> 16 Shaft |
| <input type="checkbox"/> 03 Balcony/Terrace | <input type="checkbox"/> 10 Flooring | <input type="checkbox"/> 17 Stairs |
| <input type="checkbox"/> 04 Chimney | <input type="checkbox"/> 11 General | <input type="checkbox"/> 18 Window |
| <input type="checkbox"/> 05 Column | <input type="checkbox"/> 12 Lining/Covering | <input type="checkbox"/> 19 Wall |
| <input type="checkbox"/> 06 Door/Gate | <input type="checkbox"/> 13 Protective Device | Others (Specify): |
| <input type="checkbox"/> 07 Floor | <input type="checkbox"/> 14 Partition Wall | <input type="checkbox"/> _____ |
| | | <input type="checkbox"/> _____ |

5. RAW MATERIALS REQUIRED:

TYPE	SUPPLY SOURCE (Location)
_____	_____
_____	_____
_____	_____
_____	_____

6. PRODUCTION PROCESS: Describe briefly.

7. VOLUME ORDER AVAILABILITY:

QUANTITY	UNIT	UNIT COST
_____	_____	_____
_____	_____	_____
_____	_____	_____

8. AVAILABILITY OF MATERIAL

- available (please attach)
- not available

Approved by:

NAME: _____

DATE: _____

POSITION: _____

ORGANIZATION: _____

Regional Network in Asia on
Low-Cost Building Materials Technology
and Construction Systems

DATA SHEET ON CONSTRUCTION TECHNOLOGY

1. CONSTRUCTION TECHNOLOGY (Name or Term): _____

2. BRIEF DESCRIPTION OF THE TECHNOLOGY PROCESS OR TECHNIQUE:
(Please attach brochures/ literature whenever possible)

3. DESCRIPTION OF OUTPUT (Dimensions, units of measure): _____

4. MATERIALS USED (Per unit of output):

TYPE OF MATERIALS	QUANTITY	UNIT
_____	_____	_____
_____	_____	_____
_____	_____	_____

(Use other sheets when necessary)

5. LABOR REQUIREMENTS (Per unit of output or per day/week/month of production whichever is applicable)

SKILLED LABOR		UNSKILLED LABOR	
TYPE OF SKILL	MAN-HOURS	TYPE OF LABORER	MAN-HOURS
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

6. EQUIPMENT UTILIZATION (Per unit of output or per day/week/month of production whichever is applicable)

	TYPE/S	MACHINE-HOURS/ MACHINE-DAYS
6.1 PLANTS :	_____	_____
	_____	_____
6.2 HEAVY EQUIPMENT:	_____	_____
	_____	_____
6.3 LIGHT EQUIPMENT:	_____	_____
	_____	_____
6.4 TRUCKS :	_____	_____
	_____	_____

7. DURATION OF FABRICATION (Total time required per unit of output): _____

8. COST OF MATERIALS (Per unit of output): _____

9. MINIMUM INVESTMENT COST (Per unit of output): _____

10. COMMENTS ON THE TECHNOLOGY:

TYPES OF BUILDING MATERIALS

001	Aluminum	029	Insulation Material
002	Asbestos Cement	030	Lime
003	Adhesive	031	Light Weight Concrete
004	Aggregate	032	Metals
005	Additive	033	Mass Concrete
006	Binders (other)	034	Mortar
007	Bitumen	035	Natural Stone
008	Bituminous Material	036	Normal Concrete
009	Coating	037	Plastic
010	Construction Material	038	Pumped Concrete
011	Concrete (other)	039	Prestressing Steel
012	Coarse Ceramics	040	Repellent Concrete
013	Cement	041	Resin
014	Dry Concrete	042	Ready Mixed Concrete
015	Exposed Concrete	043	Reinforcing Steel
016	Epoxy Cement	044	Steel
017	Field Concrete	045	Silicate Concrete
018	Fibrated Concrete	046	Sealing Mass
019	Flowing Concrete	047	Screed
020	Fresh Concrete	048	Steel Fibre
021	Glass	049	Timber
022	General	050	Timber Material
023	Gas Concrete	051	Tiling
024	Gypsum	052	Textile
025	Glass Fiber	053	Underwater Concrete
026	Granite	054	Vacuum Concrete
027	Green Concrete	055	Wood Concrete
028	Heavy-Weight Concrete	056	Washed Concrete

Regional Network in Asia on
Low-Cost Building Materials Technologies
and Construction Systems

DATA SHEET ON HOUSING EXPERTS/PROFESSIONALS

1. FULL NAME : _____

2. HOME ADDRESS : _____

TELEPHONE NO. : _____

3. DATE OF BIRTH : _____

4. EDUCATION : DEGREE SCHOOL

4.1 COLLEGE _____

4.2 GRADUATE SCHOOL _____

5. PRESENT PROFESSION: _____

6. OFFICE PRESENTLY CONNECTED WITH:

6.1 NAME OF OFFICE : _____

6.2 ADDRESS : _____

TELEPHONE NO. : _____

6.3 POSITION : _____

7. NUMBER OF YEARS INVOLVEMENT IN HOUSING:

7.1 MANUFACTURE OF MATERIALS: _____

7.2 DESIGN/ARCHITECTURE : _____

7.3 CONSTRUCTION : _____

8. AFFILIATION WITH CLUBS, SOCIETIES AND ORGANIZATIONS INVOLVED IN HOUSING:

NAME POSITION ADDRESS

9. OTHERS/REMARKS (Indicate such other information supportive of expert's involvement in housing; indicate published works, award-winning designs, etc.) :

10. Signature of expert

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COMPANY PROFILE SHEET

1. NAME OF FIRM : _____
2. ADDRESS : _____
TELEPHONE NO. : _____

3. NUMBER OF YEARS OF INVOLVEMENT IN HOUSING:

3.1 AS MANUFACTURER/DEALER OF
CONSTRUCTION MATERIALS : _____
3.2 AS DESIGNER/ARCHITECTURAL FIRM : _____
3.3 AS CONSTRUCTOR/DEVELOPER : _____

4. PERSONNEL

4.1 NO. OF TECHNICAL STAFF : _____
4.2 NO. OF NON-TECHNICAL STAFF : _____

5. EQUIPMENT

	TYPE	NUMBER
5.1 HEAVY EQUIPMENT	_____	_____
	_____	_____
	_____	_____
5.2 LIGHT EQUIPMENT	_____	_____
	_____	_____
	_____	_____
5.3 TRUCKS	_____	_____
	_____	_____
	_____	_____

(Use additional sheet if necessary)

6. PLANTS (For manufacturers only)

6.1 NUMBER : _____
6.2 PRODUCTION CAPACITY: _____

7. TYPES OF BUILDING MATERIALS MANUFACTURED
(For manufacturers only; enclose literature if available):

8. AVERAGE SIZE OF HOUSING PROJECTS UNDERTAKEN:

	NO. OF UNITS	FLOORS
60-100 UNITS	_____	_____
101-200 UNITS	_____	_____

9. COMMENTS (Provide any other relevant information):

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DATA SHEET ON HOUSING LITERATURE

1. TITLE OF LITERATURE : _____
 (Title of book or journal; or title
 of article published in a book,
 journal or newspaper; or title
 of research paper) _____

2. AUTHOR/S : _____

3. SUBJECT COVERED BY LITERATURE :
 3.1 GENERAL (See reverse side for classification): _____
 3.2 SPECIFIC : _____

4. TYPE OF PUBLICATION (Please Check) :
 BB - Book DN - Newspaper article
 JJ - Journal devoted purely for DR - Unpublished research paper
 the housing construction industry
 DB - Document published in a Others (Specify):
 book _____
 DJ - Document/article published _____
 in a journal

5. PUBLICATION DATA (For books or journals only):
 5.1 NAME OF PUBLISHER : _____
 5.2 PLACE OF PUBLICATION : _____
 5.3 YEAR OF PUBLICATION : _____
 5.4 LIBRARY OF CONGRESS NO. : _____

6. (For books, journal or newspapers where article appeared):
 6.1 NAME OF PUBLICATION : _____
 6.2 DATE/YEAR OF PUBLICATION : _____

7. (For research papers)
 7.1 NAME OF ORGANIZATION (for which
 author wrote the paper) : _____
 7.2 DATE WRITTEN : _____

APPROVED BY: _____
 DATE: _____
 APPROVED BY: _____
 DATE: _____

GENERAL SUBJECT CLASSIFICATION FOR
CONSTRUCTION DOCUMENTS

G77 General

G71 Construction Firms
G72 Condominium Planning
G73 Construction Planning
G74 Housing Designs and Architecture
G75 Low Cost Housing
G76 Mass Housing
G77 Professionals
G78 Subdivision Planning
G79 Supplies and Dealers
G10 Urban Renewal

P99 Production

P91 Construction Materials
P92 Construction Sites
P93 Construction Techniques
P94 Construction Technologies
P95 Materials Stockpiling System
P96 On-Site Fabrication
P97 Private Construction
P98 Relocation
P99 Resettlement
P10 Sites and Services
P11 Site Clearing and Land Development
P12 Upgrading

APPENDIX II
CATALOGUE DESIGNS

FIGURE 1 CATALOGUE OF BUILDING MATERIALS
BY COUNTRY OF ORIGIN

COUNTRY

TITLE NAME BRIEF DESCRIPTION	MANUFACTURERS/SUPPLIERS VOLUME AVAILABILITY COST/UNIT	APPLICABILITY TO HOUSING CONSTRUCTION	AVAILABILITY OF LITERATURE	REMARKS

FIGURE 2. BUILDING MATERIALS OF CATALOGUE
BY TYPE OF MATERIAL

TYPE _____

NAME FIELD DESCRIPTION	COUNTRY/IES WHERE AVAILAABLE	MANUFACTURERS/SUPPLIERS VOLUME AVAILABILITY COST/UNIT	APPLICAEILITY TO HOUSING CONSTRUC- TION	AVAILABILITY OF LITERATURE	REMARKS

FIGURE 2

SUMMARY OF BUILDING MATERIALS AVAILABILITY
BY TYPE, BY COUNTRY

TYPE _____

COUNTRY WHERE LOCALLY AVAILABLE	NUMBER OF MANUFACTURERS/ SUPPLIERS	TOTAL VOLUME CAPACITY/ AVERAGE UNIT COST	REMARKS

FIGURE 4. CATALOGUE OF CONSTRUCTION TECHNOLOGIES
BY COUNTRY

COUNTRY _____

NAME DESCRIPTION	MATERIALS USED		LABOR REQUIRE- MENT a) SKILLED b) UNSKILLED	EQUIPMENT REQUIREMENT a) PLANT b) HEAVY EQUIP- MENT c) LIGHT EQUIP- MENT d) TRUCKS	DURATION OF FABRICATION ESTIMATED DAILY OUTPUT APPROXIMATE PRODUCTION COST	REMARKS
	TYPE	QUANTITY				

FIGURE 5. DIRECTORY OF PROFESSIONALS/EXPERTS
BY COUNTRY

COUNTRY _____

NAME	HOME ADDRESS TEL. NO. DATE OF BIRTH	HIGHEST EDUCATIONAL ATTAINMENT	OFFICE	NO. OF YEARS INVOLVEMENT IN	REMARKS
		SCHOOL PROFESSION	ADDRESS POSITION TEL. NO.	a) MATERIALS MANUFACTURING b) DESIGN/ARCHITECTURAL c) CONSTRUCTION	

FIGURE 3. LIBRARY OF PROFESSIONALS/EXPERTS
BY COUNTRY, BY EXPERTISE

COUNTRY	EXPERTISE	NUMBER OF PROFESSIONALS EXPERTS
	TOTAL	

FIGURE 7. DIRECTORY OF CONSULTING FIRMS
BY COUNTRY, BY EXPERTISE

Country _____

Line of Expertise _____

FIRM ADDRESS TEL. NO. COUNTRY OF ORIGIN TYPE OF FIRM CONSULTANTS	NO. OF YEARS OF INVOLVEMENT IN HOUSING a) Manufacturer/ Dealer b) Dealer c) Construction d) Constructor	AVAILABLE EQUIPMENT a. No. of Plants b) No. of Trucks c) List of heavy equipment d) List of light equipment	TYPES OF MANUFACTURED BUILDING MATERIALS	AVERAGE SIZE OF HOUSING PROJECTS UNDERTAKEN a) Constructor b) Contractor	MEMBERS

FIGURE 8. SUMMARY OF CONSULTING FIRMS
BY COUNTRY, BY EXPERTISE

COUNTRY	EXPERTISE	NO. OF FIRMS
TOTAL		

FIGURE 9. SUMMARY OF CONCRETING FIRMS
BY EXPERTISE, BY COUNTRY

EXPERTISE	COUNTRY	NUMBER OF FIRMS
	TOTAL	

FIGURE 10. BIBLIOGRAPHY OF LITERATURE
BY COUNTRY, BY SUBJECT MATTER

_____ SUBJECT MATTER _____

AUTHOR	PUBLICATION NAME THE DATE PUBLISHED LIBRARY OF CONGRESS #	ABSTRACT	REMARKS