

LB/DON/24/00

**Formulation of a System for  
Documentation of User Requirements;  
A Design Tool  
for  
Walk-up Apartments in Urban  
Sri Lanka**

The Dissertation presented to the



Faculty of Architecture  
Electronic Theses & Dissertations  
www.lib.mrt.ac.lk  
University of Moratuwa

for the final examination of M.Sc. (Architecture)

June 1997

ප්‍රකාශනය  
මොරටුව විශ්ව විද්‍යාලය, ශ්‍රී ලංකාව  
(ස)රටුව.

71591

72 "97"

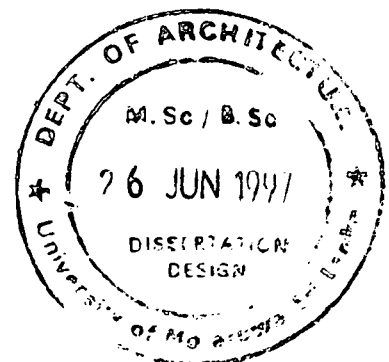
728.2

Nishan Dhammika Nawaratne

Department of Architecture

University of Moratuwa

Sri Lanka.



71591


TH



University of Moratuwa, Sri Lanka.  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)



## Contents

	Page
Acknowledgements	v
Abstract	vii
List of Figures	ix
<b>Introduction</b>	<b>01 - 06</b>
1.1 The Study	
1.2 Significance of the Study	
1.3 Objectives of the Study	
1.4 Scope and Limitations	
1.5 Methodology	
<b>Chapter 02</b>	
 University of Moratuwa, Sri Lanka. Electronic Theses & Dissertations	
WANTS, NEEDS AND USER REQUIREMENTS IN AN ARCHITECTURAL DESIGN.	07 - 23
2.0 Introduction	
2.1 Architecture and brief making.	
2.2 Wants and needs.	
2.3 The Design imperatives.	
2.3.1 Climatic	
2.3.2 Functional	
2.3.3 Economical	
2.3.4 Technological	
2.3.5 Sociological	

- 2.4 User requirements
- 2.5 Conclusions

### **Chapter 03**

#### **USER REQUIREMENTS IN HOUSING 24 - 39**

##### **3.0 Introduction**

##### **3.1 Housing in general**

###### **3.1.1 History**

###### **3.1.2 Problems**

##### **3.2 Housing in Sri Lanka**

###### **3.2.1 History**

###### **3.2.2 Problems**

##### **3.3 Urban walk-up apartment housing in Sri Lanka.**

###### **3.3.1 History**



University of Sri Lanka,  
Electronic Theses & Dissertations

###### **3.3.2 Problems**

##### **3.4 User requirements in housing in general**

##### **3.5 Conclusions**

### **Chapter 04**

#### **DOCUMENTATION OF THE USER REQUIREMENTS IN URBAN WALK-UP APARTMENTS. 40 - 98**

##### **4.0 Introduction**

##### **4.1 A survey of the existing status**

##### **4.2 Analysis of the problem**

- 4.3 The solution - A Documentation system to update user requirements.
  - 4.3.1 The rationale
  - 4.3.2 The proposed system
- 4.4 A pilot study of a selected existing Walk-up Apartment complex
  - 4.4.1 The selected apartment complex.
  - 4.4.2 Application of the proposed system of documentation.
    - 4.4.2.1 The rationale
    - 4.4.2.2 The survey
  - 4.4.3 Comparison of the existing facilities and the new brief.

4.5 Conclusions  
 University of Kelaniya, Sri Lanka  
 Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

## **Chapter 05**

**Conclusions and Suggestions** 99 - 103

**Appendix** 104 - 184

**Bibliography** 185 - 193

## Acknowledgments

I do sincerely thank the academic staff of the Department of Architecture, University of Moratuwa, Sri Lanka for their encouragement and support given to me throughout the research study. Special mention should be made of Archt Vidura Sri Nammuni, Senior Lecturer, Archt and (Dr) Ranjith Kapila Dharmasena, Lecturer from the Faculty of Architecture. If not for their constant support and encouragement this Dissertation would never have materialized.

I am very much grateful to Archt N.M.P. Nawaratne Practicing Architect, Archt Jayatha Domingo and Archt Sirisena Herath who are from the National Housing Development Authority, for their comments and advice. I should also thank my friends Zeena, Kirthie, Thanuja, Shrinika, Anjana and all my other colleagues who supported me throughout the study.

I am also grateful to Ms. Chandrika Gunawardhana for typing this dissertation and Mr. Tudor for the binding work done by him.

I also wish to thank my parents, two brothers and Sugath for the encouragement and support given to make my task a success.

N.D. Nawaratne

B.Sc. (B/E)



University of Moratuwa, Sri Lanka  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

## **Abstract**

Mass housing is very popular and is practiced all around the world. The most significant feature in mass-housing is the un-availability of an identified user or a set of user requirements. It has found that the biggest mismatch evident is in between the provided housing and the wants and the needs of the occupants. As specialists like Hamdi (1991) points out, this happens due to the lack of data and updated information on the wants and the needs of the occupants.

The housing designers get these updated data and information by studying the existing housing stock. In Sri Lankan context at present, it is found that no such studies have been done to fulfill this need. Therefore developing a system to record the data and necessary information is a felt need.

Two basic avenues are found in developing a system in documenting data on housing. One is the study of the categories of users in terms of Social Classes and developing a system. The other is the study of the user requirements and the documentation of them. Out of these two options the second option (i.e. the study of user requirements) was selected. This provides the housing designers the



opportunity to derive conclusions for their designs. For the purpose of easy collection of data and gathering information as well as for the quick references a questionnaire has been developed. This questionnaire covers the aspects of house hold composition of the occupants and the components of the given house in isolation; the house composition and the spatial arrangement; finally the house finishes. The developed systems has been tried out in real situations.

Through the exercise, several unseen and unattended aspects were identified. When the collected data and information were analyzed it was possible to arrive at design conclusions. The unchanging nature of the design brief which is quite necessary to change with time is an example of a such conclusion. The minimum requirements for present day apartment housing is another factor which was revealed through this study. It can be concluded that the occupants demand housing which satisfy their wants primarily and further more deep needs in their family life.

Due to the time constraints this study was limited to walk-up apartment housing in Urban Sri Lanka.

## **List of Figures**

- (1) Use of clay as a building material. A house in hot arid climate.
- (2) Response to the physical and architectural function. Gugunhim Museum.
- (3) Expressing the technology, 20th century architecture. Hong-Kong and Shanghai Bank.
- (4) Socially unaccepted buildings. Blasting a multi-storey housing scheme.
- (5) Housing schemes constructed at suburbs in Colombo 1970's and 1980's.
- (6) Location map - Soyzapura Housing Scheme.
- (7) Housing at the beginning. Four storey walk-up apartments - exterior view.
- (8) Two storied detached housing - exterior view.
- (9) The first layout plan of Soyzapura in 1970's.
- (10) The existing layout plan of Soyzapura in 1990's.
- (11) The proposed layout plan of Soyzapura in 1997.
- (12) Sketch layout plan of the Apartment Type A.
- (13) Sketch plan - Apartment Type A.
- (14) Exterior view - Apartment Type A.
- (15) Internal courtyard and the walk way - Apartment A.
- (16) Sketch layout plan - Apartment Type B.
- (17) Sketch plan - Apartment Type B.

- (18) Exterior view, Blocks on either side of the road -  
Apartment Type B.
- (19) View to the adjacent road - Apartment Type B.
- (20) Sketch layout plan - Apartment Type C.
- (21) Sketch plan - Apartment Type C.
- (22) View from a distance - Apartment Type C.
- (23) Road and the adjacent block - Apartment Type C.
- (24) Sketch layout plan - Apartment Type D.
- (25) Sketch plan - Apartment Type D.
- (26) Exterior view Road and the Apartment Block Type D.
- (27) Changes by the occupants - Close-up view  
Apartment Type D.
- (28) View of the living room - Apartment Type A.
- (29) View of the dinning room dual usage - Apartment  
Type A.
- (30) Fixing of a drying grill to the dinning room window -  
Apartment Type A.
- (31) Changes of the honey comb brick wall view from  
outside - Apartment Type A.
- (32) Changes of the honey comb brick wall - view from  
outside Apartment Type A.
- (33) Bathroom and the toilet - Apartment Type A.
- (34) Sketch plan - Apartment Type A.
- (35) Bubble diagram - Apartment Type A.
- (36) View of the internal coutyard - Apartment Type A.

- (37) Parking vehicles along the walk-way at ground level  
- Apartment Type A.
- (38) Drying cloths along the side wall of the coutyard -  
Apartment Type A.
- (39) Construction of more spaces towards the no-mans  
land - Apartment Type A.
- (40) Poor effort made to collect the garbage.
- (41) Drying cloths and other house hold goods -  
Apartment Type A.
- (42) Children playing in the walk-way -  
Apartment Type A.
- (43) Fixing of the T.V. antenna.
- (44) Sketch plan of the - Apartment Type B.
- (45) Bubble diagram - Apartment Type B.
- (46) View of the living and dining area -  
Apartment Type B.
- (47) View of the bed-room - Apartment Type B.
- (48) Encroached garden spaces - Apartment Type B.
- (49) Need of parking space - Apartment Type B.
- (50) Extension to the space Apartment Type B.
- (51) Front view - Apartment Type B.
- (52) Attic over the dining area - Apartment Type B.
- (53) Extension view - Apartment Type C.
- (54) Living and dining area - Apartment Type C.
- (55) Exterior view - Apartment Type D.