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Geometry of Courtyard Buildings as a Variable for Indoor Thermal Environment

A Dissertation presented to
the Department of Architecture
University of Moratuwa
for the
Final Examination in M.Sc. (Architecture)

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Declaration

I declare that this dissertation represents my own work, except where due acknowledgement is made, and that it has not been previously included in a thesis, dissertation or submitted to this University or to any other institution for a degree, diploma or other qualification.

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.....

Dr. Upendra Rajapaksha

(Principle Supervisor)

Senior Lecture

Department of Architecture,

Faculty of Town & Country Planning,

University of Moratuwa,

Sri Lanka.

Acknowledgements



My sincere gratitude to persons for their involvement in make this study a success,
Professor Samitha Manawadu, Head of Department of Architecture, University of Moratuwa.

Proffessor Rohinton Emmanuel, senior lecturer, Department of Architecture for the invaluable comments and guidance given.

Dr, Upendra Rajapaksha, my tutor, senior lecturer, Department of Architecture, for guidance, comments and criticism, which encouraged me to do this study.

Dr. Harsha Munasinghe, Archt. Jayanath Silva, senior lecturer and Archt. Arosha, lecture, Deparment of Architecture who offered valuable guidance specially in the beginning and on the way.

My batch mates, who helped me in numerous ways

My mother and brother for providing me the support and encouragement to carry out the study

Finally those whose names have gone unmentioned who helped me in many ways to make this successful.



Abstract
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This study analyses the effect of geometry of courtyard dwellings for indoor thermal environment in Colombo Metro Region. Three Basic urban house forms exist in the CMR were selected for the study. Using parametric building energy simulation software called DEROB, the indoor Operative Temperature levels is analyzed. Four design options are analyzed to determine their potential to improve the indoor comfort levels. Further using two sets of climatic records (2000-2005 & 1920-1960) final conclusion was taken by considering the upper limit of standard thermal comfort level is 27.5 °C.

Contents

| | |
|--|-----|
| Acknowledgement | i |
| Abstract | ii |
| Contents | iii |
| List of illustrations | v |
| Introduction | vii |
| | |
| Chapter One | |
| Historical Background and the Geometries of Courtyard dwellings | 1 |
| 1.1 Historical Development of Courtyard | 1 |
| 1.1.1 Evolution and meaning of courtyard | 1 |
| 1.2 climatic meaning of courtyard | 2 |
| 1.3 traditional Sinhalese house | 5 |
| 1.3.1 House of Kandyan Period | 6 |
| 1.3.2 Colonial period - Dutch house | 8 |
| 1.3.3 Immediate after colonial left | 10 |
| 1.3.4 Experimental era | 10 |
| 1.4 Examination of the modern courtyard houses in Colombo and suburb | 11 |
| 1.5 Basic Courtyard House Forms in Urban Area | 12 |
| | |
| Chapter Two | |
| Urban Climate and Thermal Comfort | 13 |
| 2.1 Urban Climate of the CMR | 13 |
| 2.2 Effect of Natural Forces on Indoor Climate of Buildings | 15 |
| 2.2.1 Air temperature | 15 |
| 2.2.2 Humidity | 15 |
| 2.2.3 Solar Radiation | 16 |
| 2.2.4 Wind | 16 |
| 2.2.5 Ventilation | 17 |
| 2.2.5.1 Cross Ventilation | 18 |
| 2.3 Thermal Comfort | 19 |
| 2.3.1 Introduction to Thermal Comfort | 19 |
| 2.3.2 Definition | 19 |
| 2.3.3 First Conditions for Thermal Comfort | 20 |
| 2.3.4 The Comfort Equation | 21 |
| 2.3.5 Parameters Require for the Comfort Equation | 22 |
| 2.4 Contemporary Models of the Thermal Comfort | 23 |
| 2.5.1 Predicted Mean Vote (PMV) Scale | 23 |
| 2.5.2 Operative Temperature (OT) | 24 |
| | |
| Chapter Three | |
| Design Variables of geometry for indoor thermal comfort | 26 |
| 3.1 Plan Form | 27 |
| 3.1.1 Fully Enclosed | 27 |
| 3.1.2 Semi-Enclosed | 27 |
| 3.1.3 Semi-Open | 27 |
| 3.2 Sectional Form | 27 |
| 3.2.1 Shallow Courtyards | 28 |
| 3.2.2 Deep Courtyards | 28 |
| 3.3 Orientation | 29 |
| 3.3.1 to the wind | 29 |

| | |
|---|----|
| 3.3.2 to the Solar Access | 30 |
| 3.4 Materials on Courtyard Floor | 31 |
| 3.4.1 Light Weight | 31 |
| 3.4.2 Thermal Mass | 31 |
| | |
| Chapter Four | 32 |
| Research and Analysis | 32 |
| 4.1 Analytical Framework | |
| 4.1.1 Analysis for Thermal Comfort Variation between the Basic House Forms | 32 |
| 4.1.2 Analysis for Design Options | 32 |
| 4.1.3 Analysis for Influence of the Urban Climate of CMR on Indoor Thermal Comfort | 33 |
| 4.2 Selection of house types | 34 |
| 4.3 Assumption of base cases | 35 |
| 4.4 Parameters of study | 35 |
| 4.5 Research data | 35 |
| 4.6 Method of data measurements | 37 |
| 4.6.1 DEROB – LTH 27 | 37 |
| 4.6.2 Operative Temperature (OT) | 38 |
| 4.6.3 Predicted Mean Vote (PMV) | 38 |
| 4.7 Results | 39 |
| 4.7.1 House Type One | 39 |
| 4.7.2 House Type Two | 41 |
| 4.7.3 House Type Three | 43 |
| 4.7.4 Results for Base Cases | 45 |
| 4.7.5 Design Options | 46 |
| 4.8 Analysis | 53 |
| Conclusion | 77 |
| | |
| Bibliography | 79 |
| | |
| Appendix | 81 |



List of figures

- Fig. 1.1 Plan and section of an Egyptian house
Fig. 1.2 Arial view of compactly planned traditional courtyard houses in central area Baghdad
Fig. 1.3 Ground floor, upper floor and section of oriental courtyard house in Iraq
Fig. 1.4 Air flow from shaded court to sunny court
Fig. 1.5 Plan and section of courtyard houses in hot dry areas
Fig. 1.6 Traditional Moorish architecture, Al Hambra Spain, courtyard with deeply shaded walkways and fountains creates moderate microclimate
Fig. 1.7 Open space of a traditional village
Fig. 1.8 Yeoman house of a Kandyan period
Fig. 1.9 Plan and section of a Kandyan Yeoman house
Fig. 1.10 Plan and section of a walawwa type building with two courtyards
Fig. 1.11 Small courtyard to provide lighting in a walawwa type house
Fig. 1.12 Courtyard provide light and ventilation to the house
Fig. 1.13 Plan of a longer narrow Dutch street house
Fig. 2.1 Thirty year diurnal variations in temperature during the hottest month in CMR – Day time
Fig. 2.2 Thirty year diurnal variations in temperature during the hottest month in CMR – Night time
Fig. 2.3 Thermal Comfort Trends in the hottest month in CMR – Day & Night time
Fig. 2.4 Climatic data of Colombo
Fig. 2.5 Formation of temperature inversion
Fig. 2.6 Solar radiation on building surfaces at different latitudes
Fig. 2.7 The temperatures in and around buildings can be tempered or aggravated by the nature of surrounding surfaces.
Fig. 2.8 Wind velocity gradients
Fig. 2.9 Lack of cross ventilation
Fig. 2.10 Effect of opening positions
Fig. 2.11 Air flow in a two storey building
Fig. 2.12 The results of the experiments
Fig. 2.13 Predicted percentage of dissatisfied (PPD) as a function of predicted mean vote (PMV)
Fig. 2.14 Relationship of PMV and operative temperature
Fig. 3.1 courtyard building type 1
Fig. 3.2 courtyard building type 2
Fig. 3.3 courtyard building type 3
Fig. 3.4 the thermal system of a small courtyard house
Fig. 3.5 the thermal system of a larger courtyard house
Fig. 3.6 Orientation
Fig. 3.7 changing the orientation of the courtyard form from 0° to 90° in 10° steps
Fig. 4.1 Selected basic house types
Fig. 4.2 Optimal operative temperature as a function of clothing and activity
Fig. 4.3 Ground floor plan – House type 1
Fig. 4.4 Upper floor plan – House type 1
Fig. 4.5 Section – House type 1
Fig. 4.6 Ground floor – simulated model - House type 1
Fig. 4.7 Upper floor – simulated model - House type 1
Fig. 4.8 3 D view – simulated model - House type 1
Fig. 4.9 Ground floor plan – House type 2
Fig. 4.10 Upper floor plan – House type 2
Fig. 4.11 Section – House type 2
Fig. 4.12 Ground floor – simulated model - House type 2
Fig. 4.13 Upper floor – simulated model - House type 2
Fig. 4.14 3 D view – simulated model - House type 2
Fig. 4.15 Ground floor plan – House type 3
Fig. 4.16 Upper floor plan – House type 3
Fig. 4.17 Section – House type 3
Fig. 4.18 Ground floor – simulated model - House type 3
Fig. 4.19 Upper floor – simulated model - House type 3
Fig. 4.20 3 D view – simulated model - House type 3
Fig. 4.21 Interior view of a centre courtyard house
Fig. 4.22 House type 1

- Fig. 4.23 Cross section of type 1
 Fig. 4.24 Site layout
 Fig. 4.25 Variation of operative temperature of house type 1
 Fig. 4.26 Calculated PMV index for house type 1
 Fig. 4.27 Interior view of an “L” shaped house
 Fig. 4.28 House type 2
 Fig. 4.29 Cross section of type 2
 Fig. 4.30 Site layout
 Fig. 4.31 Variation of operative temperature of house type 2
 Fig. 4.32 Calculated PMV index for house type 2
 Fig. 4.33 Interior view of an “U” shaped house
 Fig. 4.34 House type 3
 Fig. 4.35 Cross section of type 3
 Fig. 4.36 Site layout
 Fig. 4.37 Variation of operative temperature of house type 3
 Fig. 4.38 Calculated PMV index for house type 3
 Fig. 4.39 Variation of Operative temperature between basic houses forms (Base Cases)
 Fig. 4.39' Effect of design options for house type 1
 Fig. 4.40 Operative temperature variation for ceiling height – house type 1
 Fig. 4.41 Operative temperature variation for RCC flat roof – house type 1
 Fig. 4.42 Operative temperature variation for orientation – house type 1
 Fig. 4.43 Operative temperature variation for roof angle 30 – house type 1
 Fig. 4.44 Effect of design options for house type 2
 Fig. 4.45 Operative temperature variation for ceiling height – house type 2
 Fig. 4.46 Operative temperature variation for RCC flat roof – house type 2
 Fig. 4.47 Operative temperature variation for orientation – house type 2
 Fig. 4.48 Operative temperature variation for roof angle 30 – house type 2
 Fig. 4.49 Effect of design options for house type 3
 Fig. 4.50 Operative temperature variation for ceiling height – house type 3
 Fig. 4.51 Operative temperature variation for RCC flat roof – house type 3
 Fig. 4.52 Operative temperature variation for orientation – house type 3
 Fig. 4.53 Operative temperature variation for roof angle 30 – house type 3