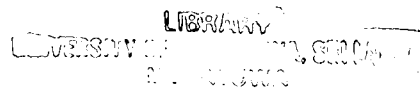


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A STUDY OF BUILT – UP TIMBER
STRUCTURAL ELEMENTS

**THIS THESIS IS SUBMITTED TO THE DEPARTMENT OF CIVIL
ENGINEERING IN PARTIAL FULFILMENT OF THE REQUIREMENT
FOR THE DEGREE OF MASTER OF ENGINEERING IN STRUCTURAL
ENGINEERING DESIGN**



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A STUDY OF BUILT-UP TIMBER **STRUCTURAL ELEMENTS**



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This thesis is submitted to the department of Civil Engineering of the University of Moratuwa in partial fulfillment of the requirements for the Degree of M.Eng. in Structural Engineering Design.

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April 2003.

DECLARATION

I hereby declare that the work included in the thesis, in part or whole, has not been submitted for any other academic qualification at any institution.

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ABSTRACT

Code on timber design (BS 5268 Part 2, 1991) gives no provisions for the design of layered braced and box timber columns except spaced timber columns. Very little information is available about these in the literature on timber structures.

This paper provides procedure for determining the axial load capacity of mechanically connected built-up columns, such as layered columns, spaced columns, braced columns and box columns. In addition to that, it gives information about nail connection details and arrangement.

Mainly concentrated on built-up timber columns made up with mechanical connection as it could be done locally. The theoretical development takes into account the effect of columns stability and effectiveness of the shear transfer.

The experimental results obtained by under graduate students are compared with theoretical predictions.

Conclusions are drawn with regards to the suitability of the design methods for built-up timber columns made by nailed connections.



ACKNOWLEDGEMENT

The author would like to acknowledge the financial support provided by the North East Provincial Council to follow the Master of Engineering course.

Assistance and encouragement from staff of the Department of Buildings, North East Province, Trincomalee and Department of Civil Engineering, University of Moratuwa, is greatly appreciated.



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Contents

Chapter 1

1.0	Introduction	1-5
1.1	Background	1
1.1.1	Types of Built up column	2
1.2	Objective	5
1.3	Scope	5
1.4	Methodology	5

Chapter 2

2.0	Literature Review	6-17
2.1	Comparison- Slenderness limit of compression member	16



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Chapter 3

3.0	Guide lines – Design of Built up timber columns	18-23
3.1	Layered columns	20
3.2	Spaced columns	21
3.3	Braced columns	22
3.4	Box Columns	22

Chapter 4

4.0	Comparison of Experimental result Theoretical result	24-32
4.1	Introduction	24
4.2	Theoretical calculation as per NDS method	27
4.3	Theoretical calculation as per BS 5268:Part 2, 1991	29

Chapter 5		
5.0 Conclusion and Recommendations		33
5.1 Conclusion		33
5.2 Recommendations		33
References		34
Appendix A: Notations		35
Appendix B: Images of Columns with actual failure situations		36



Figures

		Page
Fig 1	Layered timber column	2
Fig 2	Spaced timber column	3
Fig 3	Braced timber column	3
Fig 4(i)	Box timber column	4
Fig 4(ii)	Box timber column	4
Fig 5	Column cross sections	9
Fig 6	Column stress versus Length- Series A	10
Fig 7	Column stress versus Length- Series B	10
Fig 8	Column stress versus Length- Series C	11
Fig 9	Column cross sections	12
Fig 10	Column stress versus Length- Series A	12
Fig 11	Column stress versus Length- Series B	13
Fig 12	Column stress versus Length- Series C	13
Fig 13	Column stress versus Length- Series D	14
Fig 14	Efficiency Curve	14
Fig 15	Nail arrangement	20
Fig 16	Nail arrangement	20
Fig 17	Nail arrangement	21
Fig 18(i)	Bending about x-x axis	22
Fig 18(ii)	Bending about y-y axis	23
Fig 19	Typical –bracing system for the built-up timber column	24
Fig 20(i)	100mm x 100mm section	25

Fig 20(ii)	150mm x 150mm section	25
Fig 20(iii)	200mm x 200mm section	25
Fig 20(iv)	250mm x 250mm section	26
Fig 20(v)	300mm x 300mm section	26
Fig 21	Cross section dimension in related to I value	29



Tables

		Page
Table 1	Data for braced columns	9
Table 2	Comparison – slenderness limits of compression members	17
Table 3	Comparison of actual load with theoretical load (as per NDS method)	28
Table 4	Comparison of actual load with theoretical load (as per BS 5268:Part 2: 1991)	30

