A Combination of Materials (Wood and Steel) in producing Smart Seater

By

SITI IRDAWATY BINTI AHMAD

Final Year Project Report Submitted in
Partial Fullfilment of the Requirements for the
Degree of Bachelor of Science (Hons.) Furniture Technology
In the Faculty of Applied Sciences
University Teknologi MARA

OKTOBER 2003

ACKNOWLEDGEMENT

In the Name of Allah and peace be upon our Master and Prophet Muhammad S.A.W.

First of all, I would like to thank ALLAH SWT for giving me some effort to my completion of my Thesis name as "A Combination Materials (Wood and Steel) in producing Smart Seater". Another thanks to "HIM" for giving me the spirit, courage, strength and finally my Thesis complete on the time given.

Here, I would like to express my deepest gratitude thanks and appreciation to Prof. Madya Said Bin Ahmad as my advisor and supervisor, for his advise and encouragement during the preparation of making this Thesis.

Hence, I would like to extend my appreciated and thanks to Encik Khairul Anuar Bin Selamat on his willingness to give a support and guidance to me during the producing the Smart Seater.

Grateful acknowledgement and appreciate to all Furniture Technology lecturers on their borderless contributions of valueable knowledge, aid reviewing, critics, advices and co-operation during my whole semester in preparing and completing of this paper.

Finally, to my family especially my parents," Thank You For Everything". Also to all my friends for being patient, give ideas and support to me during the past two years in completing of this paper and thus it will be useful for our future career. Thank You.

Wassalam.

My Spirit, My Strength.....My All.

i

TABLE OF CONTENTS

				Page
ACI	· i			
TAI	BLE OF	CONT	ENT	ii - iii
LIS	iv			
LIS	iv			
LIS	т оғ п	LUSTR	AATION	iv
ABS	. v			
ABS	vi			
CH	APTER			
1	INTI	RODUC	TION	1
2	LITERATURE RIVIEW			3
	2.1	Introd	uction	10
		2.1.1	Defination of Design	11
		2.1.2	The Importance of Good Design	13
		2.1.3	Project Design Brief	16
		2.1.4	Project Design Objectives	16
		2.1.5	Project Design Work Plan	17
	2.2		and Analysis of Design Concept	18
		2.2.1	3 0	20
		2.2.2	Sitting Angle and Dimension of Chair	21
		2.2.3	Seat and Arm Dimension	23
	2.3		cess of Designing 'Smart Seater'	25
		2.3.1	Design Process	27
		2.3.2	Research and Conceptualization	35
		2.3.3	Design Development	38
		2.3.4	Some kind of design problem	41

3.	MATERIALS AND METHODS					
	3.1	Materials				
		3.1.1	About Sentang – Properties and Characteristics	44		
		3.1.2	About Metal – Properties and Characteristics	46		
		3.1.3	Advantages and Disadvantages	49		
		3.1.4	Conclusion	53		
	3.2	Metho	ods and Process	54		
		3.2.1	Working Drawing / Detail Drawing	58		
		3.2.2	Bill of Material	61		
		3.2.3	Route Sheet	63		
		3.2.4	Machine Involved During the Manufacturing Process	66		
		3.2.5	Bending Process	72		
		3.2.6	Assembling Process	80		
		3.2.7	Finishing and Coating	82		
		3.2.8	Prototyping	87		
4. RESULTS AND DISCUSSION						
5. CONCLUSION AND RECOMMENDATION REFERENCES						
	RIOGRA	DHV				

ABSTRACT

A Combination of Materials (Wood and Steel) in producing Smart Seater

It is without doubt, in recent years Malaysia has quickly risen to the fore as a market leader for furniture product made from high quality timber. One of our best timber (besides rubberwood) is Sentang. Sentang which is known as "Azadirachta Excellsa" is the alternative species actually initiated in our country after it was commercially successful in Thailand. The reason why it is important because of their good physical and anatomical characteristics and enhances with their fast grow timber. The costs of Sentang are low, easily crafted, easy to find the resource and with a resistance to wear lives up to its reputation. Sentang is a widely accepted material for a myriad of industry, namely as a joinery, furniture, interior finishing, paneling, partitioning, moulding, sliced veneer, flooring, decorative engraving turneries and matches. That's why in our wood based furniture industries, Sentang is one of the good solutions. This paper describes the design of Smart Seater with beginning from the idea and design concept, selecting material, manufacturing process, hardware and jointing system, costing and pricing to achieve comfortable, satisfied and perfect. Smart Seater was construct from two different material- Sentang timber and Stainless Steel. Those materials above have a good characteristics, properties and potential in Furniture Design and Technology Industry. Namely materials which are comfortable, friendly, technologically outstanding, ergonomic, ecological, economical and aesthetically attractive. In short, this paper has been planned for achieve the target and successful of designing process through the conceptual idea, sketches, working drawing and detail drawing, manufacturing process and prototyping product to achieved the best design, quality and satisfied.