Student's Name:

Gary Weir

Student Number:

_____

Dublin Institute of Technology

Faculty of the Engineering and Built Environment

School of Architecture

Dept. of Construction Skills

Bachelor of Technology in Timber Product Technology

Course Code: DT169

Academic Year: 2013/2014

Semester: 1

Module: Principles of Furniture & Joinery Design

Lecturer: Jennifer Byrne

Year: 2

I declare that the work contained in this submission is my own work and has not been taken from the work of others save to the extent that such work has been cited within the text of this submission.

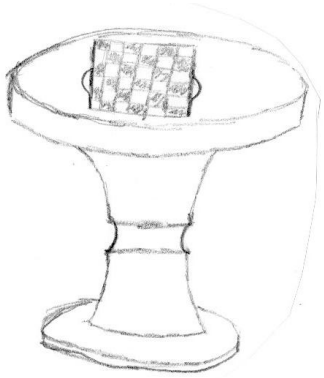
Signed:_____ Date:_____

Contents:

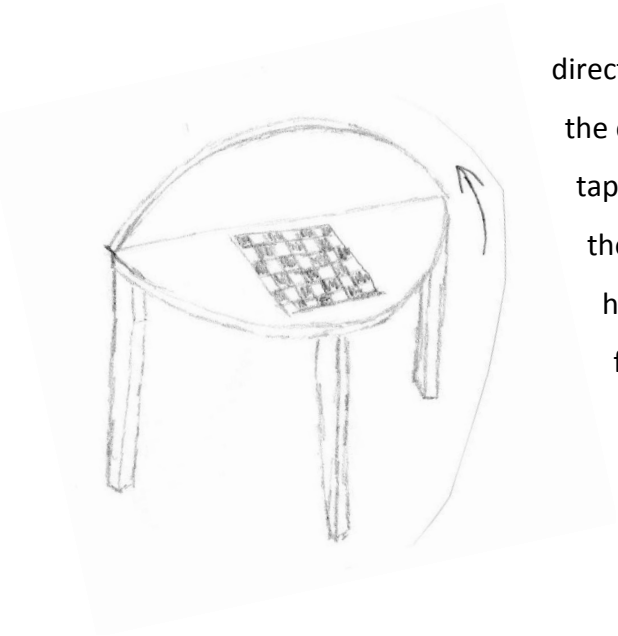
Introduction:

The aim of this project is to design and create a games table that is capable of housing a previously built chess box. The chess box is made from walnut and beech and is approximately 370mm x 370mm x 76mm. The box is perfectly square with no protruding features. There are several ways of designing a games table with the capability of holding this chess box. I am going to look into different designs and pick one that I think is both aesthetically pleasing and also functional at the same time.

At first, I found it very difficult tying to incorporate the chess box into any design that I could think of. However when I discovered one, a lot more started popping up. There are so many variations I could have. Folding table tops, collapsible legs and drop down compartments are just some of the features that I could include.



My first design was not up to much. It was very basic and I included it because it got my thought process underway. It consists of a round table top and base and a centre column turned on the lathe. The chess box is held in a cut out in the table top and the lid is opened via access points routed into the table top. I felt it was quite boring and dull and was lacking a more contemporary look that I was hoping to achieve.



My second table was heading more in the direction of a contemporary look. It flips open to reveal the chess board underneath. I liked the idea of tapered legs and decided here that I wanted them in the final design. I also wanted the chess box to be hidden when not being used. After both of these first two tables I had gone off the idea of having circles in my project.

I was very happy with my final design. It has a contemporary look with tapered legs, sharp edges, a hidden chess board and a green felt area for playing cards. The table top splits in two and slides out of the way down the side of the table. The chess board is then revealed and available to play along with the area for cards.

This table should be relatively straightforward to manufacture. The biggest hurdle that I am facing is finding a good means of connecting the table top. It needs to look elegant, but must also be functional so as it can be moved out of the way when needs be.

It will be around 300mm in height as I am treating this project as an occasional table rather than a coffee table. This means people will easily be able to use it when sitting on dining chairs etc. The users will sit around it and it will be the centre focus during their interaction.

Design Objectives:

Function:

In my opinion the primary function of this table is similar to that of a "telephone table" that would be located in the hall or on the landing. Hopefully it will be nice to look at and could possibly store or display some decorative items that the owner might have. The contemporary design means that it will be a decorative, easy on the eye piece, rather than just a place to store things.

The secondary function of this piece of furniture is of course the hidden game features located beneath the table top. There will be a chess box in the centre of the

table and an area for playing card games of to either side of it. I wanted the games part of the table to remain hidden when unused because this adds to the overall versatility of the piece.

Location & Proportion:

In my head, I have this piece of furniture situated behind a couch that is in the middle of a sitting room. This means that it is easily accessible when there is a game in order but it is also functional when everything is stowed away. It will be level with, if not below the highest point of the back of a couch. I have designed it so that it is long and narrow so as not to intrude on any walkways when in place. The legs will also be narrow which will hopefully add to the small footprint that I hope to achieve.

Style:

I am hoping to give it a modern, contemporary look which means that it should fit in with most households. After searching on the internet, I found a table with a style similar to mine. I am thinking a lot along the same lines as the designer of this piece, Klimmek & Henderson. My goal is to have more functionality than this piece appears to have however. My intention is that the pull out and hidden features will add to the overall uniqueness of the item. The included chess box will give the user plenty of storage space for chess pieces and the felt-lined compartments can also act as storage space when the games section is not in use.

Figure 1: http://www.klimmek-henderson.com/mwestbourne.html

Visual Impact:

I want my piece to look light and minimalistic. When people look at it, I want them to think that there isn't much to it. I hope that users will be surprised by it when they realise that there is in fact more to it than meets the eye. I anticipate that when this is finished, the boring, closed up, mediocre side of this table will contrast well with the open and exciting games side.

Methodology:

I have decided to use a few joints in this project. There are several variations on the joints that I picked and there are also many other options available. The reason I chose the joints that I chose is because I believe that they are the best option in each case. I tried to keep the joints as simple as possible as I don't want to overcomplicate an already difficult design.

The first joint that I took into consideration is the joint to connect each leg to the frame. Firstly, I must cross half the frame parts where they intersect with one another. This creates a relatively sturdy and square frame. I then need connect the frame parts to the leg. To do this I will remove material from the top of the leg, so as the corner of the frame can be housed. The cross halving joint that connects the frame together will join and that entire unit will sit in the available space in the leg.

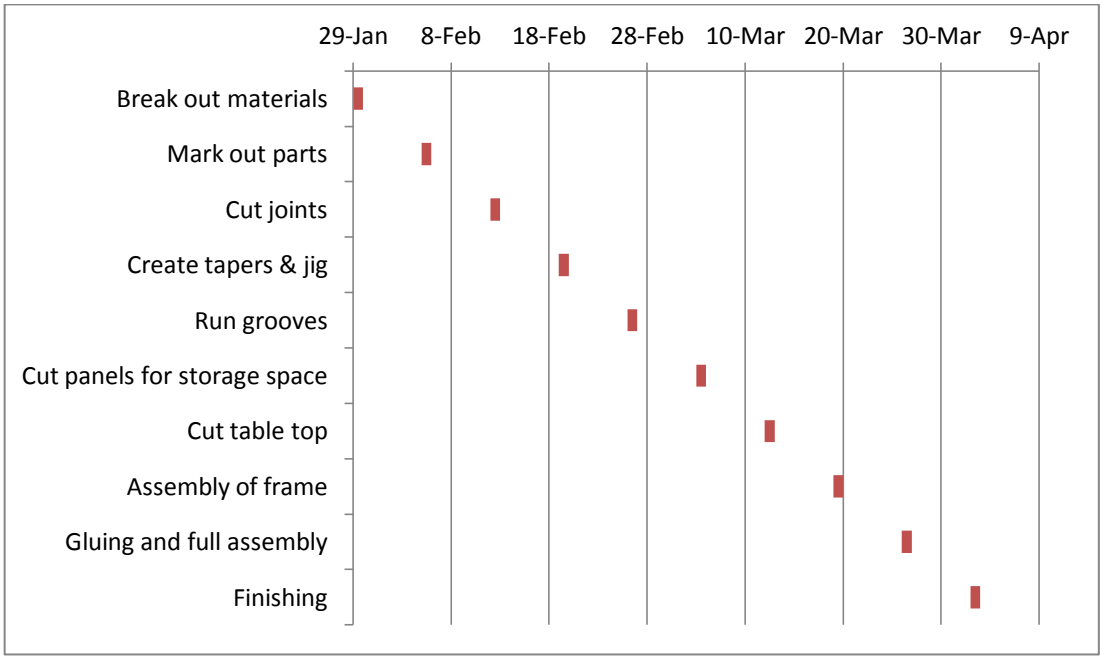
I also considered how my bottom panels for the storage space will sit in the piece. I plan on creating a groove along the rails. This groove needs to be wide enough for both the panel and the green decorative felt that I am using. The panel can then sit in place and move freely with enough space available for expansion and contraction.

Perhaps the most complicated joinery method in this project is in regards to the table top. I want the table top to be able to slide open to allow for the reveal of the chess board and the games area, but I also want it to bend and take a final resting place at either side of the table. It is difficult to achieve this without adding unwanted eye-soars to the overall shape of the table. I have considered many different methods and as of yet I am unable to decide which one best suits my needs. Things like hinges, sliding carriages and ball bearings have all been taken into account. A good idea could be to have the table top run along a rebate or groove and have an attached dowel run along a lower groove with a stop. When the table top reaches the end it will fall down and the dowel will catch, leaving the table top hanging out of the way.

It is my preference to have tapered legs. I think they look elegant and will add to the appearance a vast amount. To create them, I will need to make a tapering jig

out of MDF. When this is made, I can sit the leg blanks in place and run them on the table saw or spindle with a straight cutting head.

Estimated Time Scale:

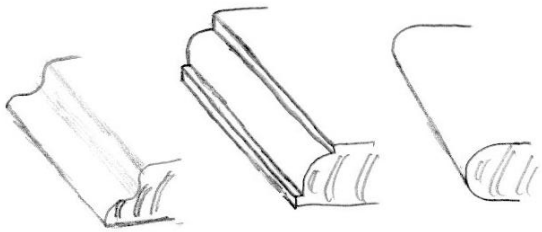


Cutting List:

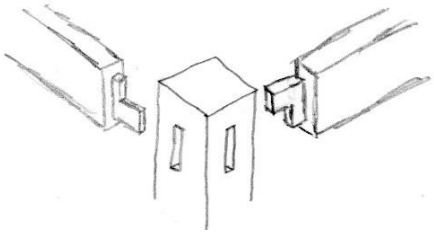
Item	*Length*	*Width*	*Thickness*	*Quantity*
Legs	720mm	70mm	70mm	4
Side Rails	1140mm	100mm	20mm	2
End Rails	500mm	100mm	20mm	2
Table Top	570mm	500mm	20mm	2
Bottom Panels	1050mm	410mm	6mm	1

Sketches:

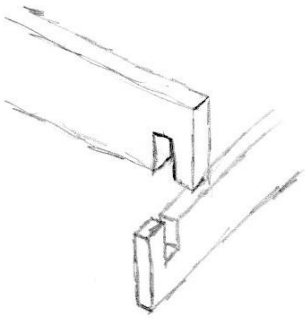
This is my final design. Overall, I am happy with how it turned out. I wanted to keep it simple and unique.



These are three possible profiles that I am considering for the edge of the top of my games table.



This is a joint type that I considered. I decided against this one because I wanted to be able to display the joint and it's difficult to do with this one.



This is the joint type that I eventually decided on. It is a cross halving housed in a removed section from the top of the leg.

This is a possible idea for a turned leg. It would be difficult to replicate however.

I eventually decided to go with a tapered leg. I believe that tapered legs look very elegant. They are also relatively quick and easy items to produce.

Appendices: