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# SELECTION & JUSTIFICATION OF MATERIALS, COMPONENTS, PROCESSES & RESOURCES

*"If the path be beautiful, let us not ask where it leads."*  
Anatole France

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## TIMBER SELECTION

### 1. JARRAH

#### Description & Where Would it be Used

Has a great colour to it. Can be finished quite nicely. Can get both the red tones as well as some dark brown colours. Generally reasonably good to work with. Would be used as the main body of my table. Good for steam bending but there are better timbers for that use.

#### Reasoning

Could be potentially one of the better timbers that I could use. However, the colour of the wood is not what I like, being a red/brown colour. The colour of timber that I prefer is a greyer-brown, which makes Jarrah unsuitable for the table that I am making.

### 2. SPOTTED GUM

#### Description & Where Would it be Used

Great colour in the darker variants. Great steam bending ability for almost any purpose. Colour can range a lot however therefore meaning the chances of getting consistently coloured pieces is low. Would be used in the main body of the table.

#### Reasoning

Darker variants of spotted gum have the right colour I am looking for, however there is a very wide range in possible colours that you can buy. Lighter variants are not good for the colour I want to achieve for my table and hence why I won't be using it.

### 3. AMERICAN WALNUT

#### Description & Where Would it be Used

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Great colour, being the dark brown which most other timbers do not have. Finish is excellent. Steam bend-ability is down to the wood and method, can be very successful and work well.

#### Reasoning

Has the perfect colour for what I am trying to achieve with the main body of the table. Walnut is also able to be steam bent, allowing me to use more skills in the process of making my table. It also finishes very well which will make the look of my tabletop much better. This is why I will be using it for my project.

### 4. TASMANIAN BLACKWOOD

#### Description & Where Would it be Used

Colour is more brown/ orange. Can be a dark brown colour. Can be hard to work with at times depending on the piece of wood. Steam bending ability is not great.

#### Reasoning

Similar to spotted gum, the timber has a wide variation of colour that you can get. The lighter colours of the timber are unsuitable for my purposes and it is also not able to be steam bent and can be hard to work with, limiting parts of my project.

### 5. ROCK MAPLE

#### Description & Where Would it be Used

Colour is a pale yellow brown with a fine grain. Hard maple works nicely with both power and hand tools, and resists wear.

#### Reasoning

The clear colouring of maple would work well with a dark timber like American Walnut. It's strength and ability to work with tools would make it a good choice with the honeycomb elements of my design.

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## FINISHES SELECTION

**EUCALYPTUS OIL - Where Would it be Used**

A deep penetrating, traditional oil based coating which gives rich colour and preserves the natural look of timber. Usually used on external timbers. Main Body of the table

**EUCALYPTUS OIL - Reasoning**

Will provide a slightly darker tone to the colour of the whole table, but won't be used as it will not give a proper protective layer to the whole of the table.

**NITRO CELLULOSE LACQUER - Where Would it be Used**

Nitrocellulose lacquer is synonymous with well-crafted, vintage and modern instruments. It's relatively easy to apply and buff to a beautiful, high gloss finish. If used it would have to be the whole table.

**NITRO CELLULOSE LACQUER - Reasoning**

Sprayed onto the whole table as it will give a better protective coating than most other types of finishes. However it is too shiny and does not have the right look for the table that I am making.

**SHELLAC - Where Would it be Used**

Shellac is often used for antique furniture and French Polished surfaces. It gives a warm amber glow and can achieve a high gloss finish. It could be good for the table top.

**SHELLAC - Reasoning**

Won't give a very good protective layer to the finished product of the table and won't give the right colour to the timber, making more red/yellow in colour whereas I prefer a darker colour towards a dark brown.

**STAINS - Description & Where Would it be Used**

Can enhance the colouring of timbers or change the look completely. Can still allow the grain to show through the stain. Dark body of the table

**STAINS - Reasoning**

May change the colouring of the timbers and similar to most of the other finishes above will not give it a complete protective layer and is hard to apply evenly throughout the whole of the project so that there are no blotches.

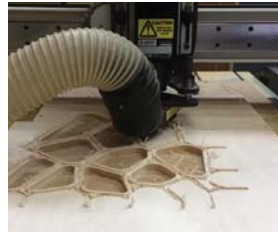
**WIPE ON POLY - Description & Where Would it be Used**

A durable, clear finish that combines polyurethane protection with classic, hand-rubbed beauty. Good for table top use.

**WIPE ON POLY - Reasoning**

Brings out the natural colouring of the timber which is a benefit as I want to emphasise the contrast in the Walnut and Maple timbers. The wipe on approach will prevent brush marks in the table top.

## SKILLS, TECHNOLOGIES & PROCESSES



### CNC Routing - Where Would it be Used

This would be the preferred way of creating the honeycomb element. No other method, such as steam bending, will allow me to create the honeycomb in one piece.



### VENEERING - Where Would it be Used

Will be used inside of my drawer because the base of the drawer will be made out of radiata pine.



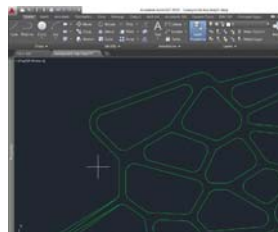
### LAMINATING - Where Would it be Used

Laminating will be used on the top of my table as I am unable to purchase wide pieces of timber for my use.



### MARQUETRY/PARQUETRY INLAY - Where Would it be Used

Could be used on a piece that will fit into the drawer after completing the table as a feature in the drawer that will hold other items such as pens etc.



### AUTOCAD - Where Would it be Used

For designing the honeycomb feature of my table so that I am then able to export it to other programs which can allow for CNC routing, or Laser cutting and Plasma cutting.

### CNC Routing - Justification

I think that cnc routing will be the far quicker and more effective method for creating the shape, it will also be another skill that I have used to be able to show as there is a significant set up required for the machine.

### VENEERING - Justification

The colour difference will make the bottom of the drawer stand out, therefore I will put a veneer over the top so that it is not visible and it blends in with the rest of the table.

### LAMINATING - Justification

The wide pieces for my tabletop would also cup over time if they were too wide, as the pieces are very thin. By laminating smaller boards of wood together this prevents this problem from happening.

### MARQUETRY/PARQUETRY INLAY - Justification

Marquetry/Parquetry will be a good feature to show in the drawer as it will have impact but will not take an extreme amount of time compared to making an additional item to demonstrate more technique.

### AUTOCAD - Justification

All of these programs which I am then using to run all of the machines that I require for my work all use AutoCAD which makes much more efficient use of time.

## MACHINES

**BANDSAW - Where Would it be Used**

To cut materials when the length is not critical and quick and easy cuts need to be made.

**ROUTER - Where Would it be Used**

To be able to get a different edge on the legs of my table, all the same. It can also be used for drawer grips and creating shadowlines

**CNC ROUTER - Where Would it be Used**

The CNC router should be used for making my feature in the front right corner of my table. The feature has many continuous edges throughout the whole shape. These edges have to be perfect or there will be a gap.

**PLASMA CUTTER - Where Would it be Used**

On the underside of my wooden feature I need to provide support, therefore needing a metal frame to be inserted into the back of the feature. This is due to short-grain and when significant pressure is applied it could break, causing a safety risk.

**LASER CUTTER - Where Would it be Used**

The laser cutter was used in my project to raster 1:1 scale sized images of my project so that I was able to get a perfect representation of the size of each member in the feature.

**3D PRINTER - Where Would it be Used**

I will need to make a physical 3D model of my project so that I am able to get an idea for the proportions of my table to make sure that any measurement is not incorrect which could hamper the aesthetics of my table.

**BANDSAW - Reasoning**

I'm unable to use a tablesaw or a dropsaw (without supervision) which means that using a bandsaw is much quicker and easier and doesn't require a teacher to cut the materials.

**ROUTER - Reasoning**

I don't have the skills to be accurate enough to get 16 edges all the same across the legs once they're complete. Shadowlines can help hide slight imperfections in jointing.

**CNC ROUTER - Reasoning**

By using the CNC router it will not only cut a significant amount of time from hand carving out the feature, but it will also be more precise than what I will be able to achieve by hand.

**PLASMA CUTTER - Reasoning**

I am not able to cut out an intricate shape in metal to such specifications by hand, which is why a machine will be required to cut out a sheet of aluminum. The knowledge of using metal and the programs is exciting.

**LASER CUTTER - Reasoning**

Without the laser cutter I would not be able to make the shape within certain time restrictions and make multiple iterations to get the correct proportions for my feature.

**3D PRINTER - Reasoning**

I'm unable to create a perfect small-scale model of my project within the time that I have during class. The skills that I will learn of using the program associated with the printer will be significantly beneficial as well.