

Assessment Type 3: Folio and Evaluation

Design & Technology

Assessment Type 3: Folio and Evaluation

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Total Word Count: 2645

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INVESTIGATION (1602 words)

Identifying the Need

(32 words)

I need a furniture item that will provide suitable storage for books and other ornaments in my bedroom. This furniture item will replace the other, less efficient and space consuming, furniture items.



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Investigating Based on the Need

(108 words)

In order to fulfil the need statement, it was necessary to investigate a variety of furniture items. From this investigation I was able to understand the advantages and disadvantages involved in employing each item and reach a final solution:



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Researching and Analysing (450 words)

Having come to a decision that a Buffet and Hutch would fulfil my need statement, I analysed characteristics and existing products of this furniture item. This included researching the effects that different time periods and cultures have had on Buffets and Hutches and how the appropriate timber stain would influence the project.



Classic: The classic style of furniture tends to be more of an elaborate, extravagant style that can be defined as Georgian, Louis XV, Tutor and Victorian styles. The Classic has a decorative and attractive appeal to it¹.

Colonial (1700-1780): During the American Colonial era, furniture was made from local wood² with borrowed designs from the Renaissance period³. At first the Colonial design was simple but later emerged into large, impressive cabinets with decorative mouldings. The Colonial style features a more horizontal, long, proportional look which is distinctive⁴. Overall, however, it was less ornate and more conservative compared to European furniture of that time⁵.

Contemporary: Contemporary furniture is still very popular today and is a style with a variety of designs to cater for all tastes. Contemporary is quite a simple design with different materials such metal and glass included. The wood in this style is either extremely light or dark ⁶.

Traditional: The Traditional style is popular because it conveys a "home-like" feel. The wood is usually cherry or mahogany and although this style of furniture can have decorative features, it tends to be more predictable and straightforward⁷.

Modern: Modern furniture is classified as furniture that was designed and created after the second World War in America and in Europe. This style has a plain appearance without any extra decorative features⁸.

 http://www.mymove.com. (2016). Furniture Styles: Modern, Contemporary, Traditional and Classic | My Move. [online] Available at: http://www.mymove.com/resources/decorating/furniture/furniture-styles-modern-contemporary-traditional-and-classic.html [Accessed 17 Mar. 2016].
 ²The Met's Heilbrunn Timeline of Art History. (2016). American Furniture, 1620–1730: The Seventeenth-Century and William and Mary Styles | Essay | Heilbrunn Timeline of Art History | The

Metropolitan Museum of Art. [online] Available at: https://www.metmuseum.org/toah/hd/will/hd_will.htm [Accessed 17 Mar. 2016]. ³Sofasandsectionals.com. (2016). The History of Colonial American Furniture [online] Available at: http://www.sofasandsectionals.com/history-of-colonial-american-furniture [Accessed 17 Mar. 2016]

⁴Homeguides.sfgate.com. (2016). Colonial Furniture Styles. [online] Available at: http://homeguides.sfgate.com/colonial-furniture-styles-99954.html [Accessed 17 Mar. 2016]

³ Connectedlines.com. (2016). Gui	de to Furni	ture Styles fror	n Connecte	d Lines. [onlii	ne] Available at: http	://www.connect	edlines.c	om/stylegui	de/ [A	ccessed	17 Mar. 20	16].		
6 http://www.mymove.com.	(2016).	Furniture	Styles:	Modern,	Contemporary,	Traditional	and	Classic	1	My	Move.	[online]	Available	at
http://www.mymove.com/resour	ces/decorati	ing/furniture/fi	ırniture-sty	les-modern-c	ontemporary-traditi	onal-and-classic	.html [A	ccessed 17 N	far. 20	016].				
7 http://www.mymove.com.	(2016).	Furniture	Styles:	Modern,	Contemporary,	Traditional	and	Classic	1	My	Move.	[online]	Available	at
http://www.mymove.com/resour	ces/decorati	ing/furniture/fi	ırniture-sty	les-modern-c	ontemporary-traditi	onal-and-classic	.html [A	ccessed 17 N	far. 20	016].				
8 http://www.mymove.com.	(2016).	Furniture	Styles:	Modern,	Contemporary,	Traditional	and	Classic	1	My	Move.	[online]	Available	at
http://www.mymove.com/resour	ces/decorati	ing/furniture/fr	irniture-stv	les-modern-c	ontemporary-traditi	onal-and-classic	html [A	ccessed 17 M	far 20	0161				

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Commented [PM1]: This could be deleted as the previous statement and what follows is sufficient to advise the reader of your investigation. Minus 27 words I make the word count 289 not 450

•••

Lighting



- Highlights whole shelf.Imperceptible but enhances the
- theme.Modern, stylish effect.
- Infrequently used.

•

•

- Focuses on specific area.
- Various options for lamp style.

After researching possible lighting options, I have come to the conclusion that downlights provide the crucial lighting that my buffet and hutch needs to attract attention as the foremost furniture item. Unfortunately, white light is not able to provide the warm ambience that highlights the timber. Instead, I will use yellow/brown downlights.

> **Commented [PM2]:** This section can be deleted as Lighting was not part of the project and will be a possibility outside of the scope of the minor/major Minus 65

The Woodsmith Magazine



The *Woodsmith* magazine was a valuable resource as it provided a wealth of information directed towards an inexperienced audience.

Research included:

- Rebate jointing.
- Cabinet assembly suggestions.
- Cope and stick joinery.
- Dovetailed drawers.
- Shaping drawer fronts.
- Routing outer edges.
- Installing door and shelves.
- Bead moulding for door frames.
- Drilling shelf support holes.
- Adding glass and hardware.
- Finishing touches.
- Suggested materials.
- Cutting diagrams.

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Hardware

For more in-depth detail, see Product Record.



Commented [PM3]: These catalogue pictures with text should have a reference.

Jointing Methods

As detailed in Product Record.

Jointing methods will include rebating (carcass structure) and scribing (door and drawer fronts).

A rebate joint consists of cutting a groove, the width of the timber, into the other piece of timber.
 A rebate joint consists of cutting a groove, the width of the timber, into the other piece of timber.
 The timber fits into a trench which is usually ½ thickness of the material in depth and is cut the width of the material which joins it, providing a positive, stable and neat joint. The jointing method is typically used for putting the carcase structure together.



Scribing is a jointing method used to join two mouldings together. A section of the mould is cut
away to the width of the other piece of timber, creating a ledge that the other piece fits into. Using
hand tools, the shape of the moulding is carved into the cut ledge. This means the one section of the
moulding has a convex mould while the other piece has a concave imitation of the mouldings, thus
fitting tightly together and this is then joined by a dowel joint (a wooden pin glued into drilled holes
to join two pieces of timber securely together).

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Investigating Timber Properties

As detailed in Product Record and Materials Application Task.

Pinus Radiata

In using this material, I will be taking advantage of a relatively inexpensive plantation softwood that can be finished in a wide variety of ways. This will be used for the door and drawer fronts as well as the solid edges around the face of the buffet.

- Particleboard

Particleboard will be used for interior panels of the project. This will not be seen from the outside but provides a material that will be used in the whole interior of the cabinet. This will provide a floor for any storage items placed behind the doors.

Veneered Particleboard

- I was considering using pinus radiata sheets for the side of the buffet but in order to cut costs, radiata pine veneered particleboard can be employed.
 - Plywood

This will be utilized for the back of the buffet as well as the hutch bookcase. I am using this product because it is a cheap material that will form the backing of my project. The plywood has a radiata pine veneered face which will closely match the face timber finish. However, the face of the plywood will be visible in the completed project, so it must have an acceptable finish.



Mouldings

For more in-depth detail, see Product Record.

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Commented [PM4]: Reference even though the connection is obvious eg "Bunnings Catalogue July 2016"

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Testing

For more in-depth detail, see Materials Application Task and Product Record.



Material testing showing water damage and screws.

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Design Brief

(235 words)

The solution to the problem outlined in the need statement, is to design and create a single, larger furniture item. This furniture piece must fit the same overall dimensions of the original furniture items, thus replacing them totally. However, I want to design a furniture item that is over and above the average and standard design.

To design and construct a storage solution for my bedroom that will meet the following design specifications:

Constraints

- 1. Low cost.
- 2. Available materials.
- 3. Fulfil need statement.
- 4. Use sustainable materials.
- 5. Space efficient storage item.
- 6. Strong and solid piece of furniture without looking bulky.

Specifications:

- 7. Visually pleasing.
- 8. The dimensions must allow it to fit in my bedroom.
- 9. Capable of storing the dimensions of the largest and smallest item.
- 10. The colour and style must relate harmoniously with the theme of the room.

The colonial period was at its peak when rainforests were severely harvested and sent across to America. This meant that most of colonial styled buffet and hutches are made of rare timbers that are no longer available due to severe deforestation. To create the same effect but in a sustainable way, I will need to carefully choose materials and finishing options that will result a similar effect.

By designing and creating a furniture item that includes the above criteria, I will successfully solve the space consuming problem and fulfil my need for satisfactory storage.

Commented [PM8]: Delete not really relevant to your project and word count is restricting your ability to add such detail. Minus 67

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Methods and Materials

(58 words)

After sketching different styles and designs, I have produced a final design of a colonial styled buffet and hutch which I will construct:

Based on the materials and application task, where I researched and tested the qualities of a number of timber options, I have decided to utilize the following sustainable timber choices: pinus radiata, particleboard, veneered particleboard, and plywood.



Commented [PM9]: I have changed the formatting here to neaten the layout of this section

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Computer Aided Design – CAD Drawings



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Impacts and Effects

(741 words)

Humans over the centuries continue to be highly dependent on forests more than we are willing to admit⁹. In fact, approximately 1.6 billion people depend on forests every day to make a living, while a third of the total population of the world use products provided by the forest¹⁰. Yet instead of realising the importance of preserving forests, we continue to consume them greedily for short-term benefits rather than the continuing long-term benefits. Ed Begley

- - something created by man we call it
 - vandalism, but when we destroy

something by nature we call it progress."

"I don't understand why when we destroy said, "I don't understand why when we destroy something created by man we call it vandalism, but when we destroy something by nature we call it progress11." In other words, this is deforestation -"the permanent destruction of forests in order to make the land available for other uses12." According to the WWF, "the amount of

deforestation occurring per minute equates to 36 football fields¹³." Or to put it into perspective; in the period from 1990 to 2015 the amount of deforestation was equivalent to the area of South Africa¹⁴. What makes deforestation such a serious issue for scientists is the current and future consequences that are occurring as a result of this practice¹⁵.

To understand why deforestation matters, it is necessary to comprehend the cause and effect balance:

129 million ha of forest

Between 1990 and 2015, the world lost



Causes:

- 1. Agriculture is the primary cause of deforestation to provide land for crops and cattle for the food market.
- 2. Logging is used to sustain the growing industrial demand for paper, furniture and fuel.
- 3 Urbanisation requires land to be cleared and roads to be created due to the overpopulation of cities.
- Fires caused by man in an effort to clear land can destroy vast areas of forest causing the release of carbon dioxide and 4 damage to habitats16

Effects:

- 1. Climate change directly affects the health of ecosystems around the world as a result of the lack of trees which bring down rain and the shade which keeps the soil moist for other plants or animals.
- 2. Global warming is caused by the lack of trees to balance the amount of greenhouse gases in the atmosphere.
- 3 Erosion of soil effects contaminates water quality when the soil dries out due to the lack of shade provided by trees.
- Deserts occur when rainforests lose the outer canopy, resulting in drying out the understory. Deserts then occur meaning 4 that trees and other plants cannot survive.
- 5. Flooding as a result of soil erosion takes place when the root systems of trees and the soil cannot hold the water, and it carries plants, soil and chemicals into large bodies of water¹⁷
- Wildlife are forced to leave areas where deforestation disrupts their habitats. 70% of plants and animals live in forest 6. environments so deforestation results in loss of habitat and extinction of key species and disruption of the biodiversity that ecosystems require18.

- 13 Live Science. (2016). Deforestation: Facts, Causes & Effects. [online] Available at: http://www.livescience.com/27692-deforestation.html [Accessed 20 Aug. 2016].
- 14 Wwf.panda.org. (2016). WWF Help fight against deforestation. [online] Available at: http://wwf.panda.org/about_our_earth/deforestation/ [Accessed 20 Aug. 2016].
- 15 Conserve-Energy-Future. (2013). Deforestation Causes, Effects and Solutions Conserve Energy Future. [online] Available at: http://www.conserve-energyfuture.com/causes-effects-solutions-of-deforestation.php [Accessed 20 Aug. 2016].

Commented [PM10]: "have been reliant"

⁹ Wwf.panda.org. (2016). WWF - Help fight against deforestation. [online] Available at: http://wwf.panda.org/about_our_earth/deforestation/[Accessed 20 Aug. 2016]. 10 Forestrystandard.org.au. (2016). Sustainable Forestry. [online] Available at: http://www.forestrystandard.org.au/sustainable-forestry/sustainable-forestry. Aug. 2016]

¹¹ goodreads. (2016). Ed Begley Jr. Quotes. [online] Available at: https://www.goodreads.com/author/quotes/334478.Ed_Begley_Jr_ [Accessed 21 Aug. 2016].
¹² Live Science. (2016). Deforestation: Facts, Causes & Effects. [online] Available at: http://www.livescience.com/27692-deforestation.html [Accessed 20 Aug. 2016].

¹⁶ Conserve-Energy-Future. (2013). Deforestation - Causes, Effects and Solutions - Conserve Energy Future. [online] Available at: http://www.conserve-energyfuture.com/causes-effects-solutions-of-deforestation.php [Accessed 20 Aug. 2016]. 17 Conserve-Energy-Future. (2013). Deforestation - Causes, Effects and Solutions - Conserve Energy Future. [online] Available at: http://www.conserve-energy-

future.com/causes-effects-solutions-of-deforestation.php [Accessed 20 Aug, 2016]. ¹⁸ Live Science. (2016). Deforestation: Facts, Causes & Effects. [online] Available at: http://www.livescience.com/27692-deforestation.html [Accessed 20 Aug, 2016].

Although the amount of deforestation is slowing, the damage inflicted on the environment cannot be changed overnight¹⁹. Ecologists realize just planting trees is not enough. Reforestation must include the following:

- Controlling the rate of deforestation by setting specific guidelines and laws.
- **Creating** new habitats for endangered wildlife.
- Decreasing the rise of C0² polluting the atmosphere.
 Repairing the damage inflicted upon individual ecosystems²⁰.

To respond to the deforestation crisis, and improve how forests around the world are managed, the Forest Stewardship Council (more commonly referred to as the FSC) was founded in the 1990's²¹. Sustainable forests are forests that are carefully managed to provide the timber products that industries need but include replacing the mature trees with younger trees to maintain the forest and its wildlife²². Wherever the FSC logo is found (see picture, right), it guarantees that it has come from sustainable forests and meets the high standards that the FSC demands, allowing industries to choose to use timber taken from sustainable forests²³. Groups like the FSC, promote sustainable timbers so that consumers are certified that these timbers come from sustainable sources.

For my project, I will work with my teacher to ensure that it comes from sustainable plantations. Other materials used include veneered particleboard and chipboard as they are made from recycled timber and are a good sustainable option. I will do my best to avoid adding to the growing problem of deforestation by being conservative with timber used in my project. This will mean I will recycle any off-cuts or spare timber.



¹⁹ Environment.nationalgeographic.com.au. (2016). Deforestation. [online] Available at: http://environment.nationalgeographic.com.au/environment/globalwarming/deforestation-overview/ [Accessed 20 Aug, 2016].

²⁰ Live Science. (2016). Deforestation: Facts, Causes & Effects. [online] Available at: http://www.livescience.com/27692-deforestation.html [Accessed 20 Aug. 2016].
²¹ HaltonRecycles. (2011). What does FSC stand for?. [online] Available at: https://haltonrecycles.wordpress.com/2011/11/03/what-does-fsc-stand-for/ [Accessed 21 Aug. 2016].

²² Technologystudent.com. (2016). What is a Sustainable Forest?. [online] Available at: http://www.technologystudent.com/prddes1/susenv1.html [Accessed 21 Aug. 2016].

PLANNING (87 words)

Due to the specialized skill application tasks 1 and 2, I was exposed to a large variety of woodworking tools and machinery and gained experience and understanding of timber finishes, thus saving time in the long run. Needless to say, the materials application task allowed me to test and investigate the properties of timber finishes that I will use for my project

Planning was vital due to the large project I was trying to accomplish within a time frame. A segment of my planning is inserted below:



Nº. of weeks Task Materials Result Equipment Week 1 Identification of problem \rightarrow considering possible solutions. Week 2 Exploring main furniture items \rightarrow design brief. Weeks 3-4 Researching and analyzing Buffet and Hutch styles. Week 5 Concept drawings. Week 6 Investigating properties of timber products + testing. Week 7 CAD buffet, model 1. Week 7 de Weeks 8-1 DARIUSEA Eater 3 ROM (141 KODD PUL) FUE MERC IN P DEFOUR THEM LARGE WANNER PRAMER FR

Commented [PM11]: Minus 62 Commented [PM12]: Delete not required

Commented [PM13]: Delete as this information will appear in the product record. Minus 50 Make the sketch picture larger as it shows planning in a visual way.

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Reaction to Investigation/Design Brief My reaction to the investigation and design brief is as follows: (56 words)

Throughout this year I will design and construct a colonial style buffet and hutch that will meet the design specifications. Through the impact statement, I am aware of sustainable forestry and will respond by using plantation timbers and sustainable timber products. I will also attempt to work as sustainably as possible.



Refinement of Ideas

(108 words)

- 1. Mid-way through term two I evaluated my progress and as I had only completed the structure of the buffet, I had to regretfully re-consider my design. I came to the decision that I would only be able to complete the buffet component and would thereby desist including the hutch bookcase.
- 2. Due to the above decision I added a colonial-styled moulding to the top of the buffet instead of the top of the hutch as originally designed.
- Lack of time resulted in an empty space between the two doors in the centre section. However, it will not 3. dramatically affect the overall outcome of the design.



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Commented [PM15]: ???

EVALUATION (862 words)

Product Success against Design Brief (148 words)

Constraints:

Low cost.	~
Available materials.	~
Fulfil need statement.	-
Use sustainable materials.	~
Space efficient storage item.	~
Strong and solid piece of furniture without looking	~
bulky.	

The buffet itself only partially fulfilled the need statement in that it is unable to provide storage from books. It does, however, replace the smaller chest of drawers and as a result of a thoughtful design, is able to adequately store the items required from the chest of drawers as well as some items from the bookcases.

Specifications:

Visually pleasing.	✓
The dimensions must allow it to fit in my bedroom.	✓
Capable of storing the dimensions of the largest and	✓
smallest item.	
The colour and style must relate harmoniously with	✓
the theme of the room.	

Excluding book storage, yes.

Although initially disappointed with the colour options available, I now feel the mahogany, heirloom effect will highlight my room, thus achieving my purpose.

(241 words)

Effectiveness of Making Product

In order to produce a quality product within the specified timeframe, it was imperative to have an effective plan (this is outlined in the planning stage). However, the methods of procedure I employed, had both strengths and weaknesses.

Weaknesses:

time.

Strengths:

- Putting into practice what was targeted in the investigating stage - this allowed me to work quickly and efficiently.
- Keeping to a definite design found in all the product components by this I mean the door and drawer front are identical except for sizing.
- The joints and scribing method appear in both the doors and drawers – "practice makes perfect". Scribing the last drawer took half the time compared to the first door.
- Purchasing mouldings saved time and gave a more desirable effect.

Mistakes:

- Sizing of timber cut to incorrect sizing cut further to fit another component, thus working sustainably.
- Smaller jointing mistakes were filled with filler or sanded back.
- Warping (not really a mistake but misfortune) tried excessive clamping for a set period of time.

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Attempting to create too large a project that would

- require too much time and cost. Expecting to create a project of a quality that is beyond my skill and experience – I had to learn from my mistakes
- due to inexperience. Spending too much time on the initial researching stage rather than in the workshop – caused loss of valuable

Commented [PM17]: These dot points could be shortened I believe to drop word count.

Commented [PM18]: Time spent on investigation impacted workshop hours available.

Commented [PM16]: Total here should be around 400 words!!

These headings do not have to be addressed as separate parts but there should be evidence of each within the section.

Incorrect dove-tail joints – particular joint "concealed" at the back of the drawer and limited due to runners.

Reflection on Modification of Design, Materials, Ideas, Procedures, with Recommendations(274words)

Constructing a large buffet in a structured procedure was highly beneficial to my learning. It provided challenges and creative opportunities in order for the project to be completed within the time frame allowed. Most challenges occurred as a result of the materials I was using. The timber was susceptible to warping and splitting and so I had to find a solution to this challenge. Trying to get the drawer runners to slide smoothly was also very challenging. Through the necessary investigating of different jointing or stain methods and procedures, I have increased my knowledge of woodworking skills in this course. An illustration of a procedure I became familiar with, but had no previous understanding of, was scribing. I quickly came to enjoy this new method of wood working and using my hands to carve a unique and typical colonial effect as if I was in that time period. Upon reflection, I would consider using higher quality timber, for any future projects and this, together with the experience I have gained as an introduction, would allow me to create a furniture item of a higher standard. In conclusion, I believe I have extended my skills, knowledge and



experience and created a quality product that I am happy with, under challenging circumstances. I was disappointed that I was unable to produce the hutch component, as I regarded this as the highlight of the whole project and the buffet as an addition to its unique and attractive design (as per scaled drawing). Despite this, I am totally happy with my effort and what I have achieved considering my skill and experience.

Commented [PM19]: This section long and wordy try to make more concise of include in evaluation single piece of text

Analysis of Product Impact (213 words)

After researching the impacts and effects of creating a large project such as a buffet, I was able to appreciate the drastic effects of not working in a sustainable way. On the other hand, by looking for the FSC logo and thereby knowing that I am using sustainable planation timber, I was thus minimizing my ecological footprint. Wherever possible, I recycled unwanted timber, as in the case of the door backings and other minor components which, through sanding and finishing, were able to give a sense of high quality. By this procedure, I was thereby supporting reforestation. Built to be supportive and strong, through the design and nature of the jointing methods, my product will have a lengthy life cycle before it degenerates in quality. This is mainly due to type and quantity of finishes used to protect the surface of the timbers and thereby I must insure that if for any reason the life the of the product is cut short, it is disposed of without affecting the

environment. In conclusion, as well as fulfilling the need statement, it generates in the viewers a sympathy for natural products. It creates a lasting impression that recycled timber can be used in such a way to create a quality product while preserving the natural environment.



Commented [PM20]: This section can be deleted as you have addressed this impact with your statement earlier in the document. Minus 213

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Final Product Photography – still to be finalized



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Total Word Count: 2645

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