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Designing and Constructing a Fireplace

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Designing and Constructing a Fireplace
by

Sarah B. Zimmer

An Abstract of a Project
in
Creative Studies

Submitted in Partial Fulfillment
of the Requirements
For the Degree of

Master of Science

May 2009

Buffalo State College
State University of New York
International Center for Studies in Creativity

Abstract

The purpose of this project was to develop my design and construction skills by using them to create a fireplace in my home. This project depicts the process of building a fireplace cabinet and mantle and contains a written description and photos of the process and outcomes. The steps of the process are explained from purchasing the tools to the final coat of paint.

Sarah B. Zimmer

Date

Buffalo State College
State University of New York
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A Project in
Creative Studies

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Dates of Approval:

Dr. Mary C. Murdock

Sarah B. Zimmer

Acknowledgments

Dad; As a child I always looked up to you and you never made me feel as though I couldn't do something because I was a girl.

Mom; Thank you for not letting me take that year off from college. That was a major fork in the road and you helped me to choose the right path. I soon realized it was in my best interest. Of course, without your help with the boys, I could not have done this.

To my husband, Jeff, my sons, Jack and Drew- I hope this fireplace adds many special memories in our lives, not only during the holidays, but anytime it promotes life's simple pleasures

To my sisters, family, and everyone who supported me through this journey- Thank You. *We did it!*

Table of Contents

Section One: Background of the Project

Purpose.....	1
Description.....	1
Rationale for Selection.....	2

Section Two: Pertinent Literature

Overview of Literature.....	3
Selected Bibliography.....	4

Section Three: Process Plan

Introduction.....	5
Project Timeline.....	5
Conclusion.....	10

Section Four: Outcomes

Description of Final Product.....	12
Additional Outcomes.....	12

Section Five: Key Learnings

Introduction.....	14
Insights.....	14

Section Six: Conclusion

Introduction.....	16
Final Thoughts.....	16
References.....	17

Appendices

Appendix A: Concept Paper.....	18
Appendix B: Process Photo-Documentation.....	24
Appendix C: Cost Analysis.....	38
Appendix D: Tools and Workspace.....	41

Section One: Background of the Project

Purpose

The purpose of this project was to challenge and develop my construction skills and artistic abilities by producing a beautiful focal point in my home. I did this by building a fireplace in the living room.

I chose this project because I felt that it would fulfill two needs at once. I gained knowledge and woodworking skills that I had always wanted to learn, and I produced a fireplace for my family and friends and to enjoy.

This project added warmth and comfort to my home literally and figuratively. In the literal sense, the fireplace will produce gas powered flames to heat the room. It is expected to cut down on energy cost by providing an effect alternative to raising the thermostat. Figuratively, I believe that a fireplace symbolizes family togetherness by promoting gathering around the light and ambiance it produces. A fireplace is an icon of the holiday seasons and a place to relax on cold winter nights.

Description

I began with very little background of power tools and building materials. I did not own any power tools prior to the project; therefore, I needed to do much research and comparative shopping before purchasing anything. I needed to ask many questions of experienced carpenters as to what types of wood to use, what types of screws work best and so on. I needed to experiment making cuts and began this in inconspicuous places, in case something did not go as planned.

This was a steady process with precise and conscious decisions made throughout. Power tools can be very dangerous and the product would be a fixture in my home so there was no room for error.

I built a complete fireplace cabinet and mantle. It is positioned in the corner of our living room and it will eventually house a gas insert. The insert will be installed professionally at a later date.

Rationale for Selection

Part of my rationale came from my subconscious. I felt an overwhelming need to build something. I saw a great opportunity for this within Master's project. I have built things my entire life, but I have never acquired the proper tools and attempted major projects to reach my full potential. I knew that I had untapped creative abilities and ideas that had been trapped due to the lack of my resources. The most difficult part for me was deciding what to build. I knew that my choice would have to benefit my family in some way. I thought about constructing walls and finishing our basement. This seemed too large to take on for my first construction experience. I thought about building a captain's bed for my three year-old son, but I decided he was still too young for that type of bed. I finally decided on a fireplace because it seemed like an attainable goal that my whole family could enjoy. It would add value to our home and possibly save us money on heating bills. It would add ambiance to the room and complete the décor that I work very diligently on for the holiday season. Because of these specific benefits, I to take on the mantle creation over the other ideas I considered.

Section 2: Pertinent Literature

Overview of Literature

This section contains an annotated description of two books and one web site that were very useful to me in creating my fireplace. A bibliography of additional sources is also contained in this section for interested readers who may want to look further.

My initial search began in State Air: Heating, Cooling & Fireplaces on Transit Road in Williamsville, NY. I was able to examine some floor model fireplaces; however, there was only one example of a corner unit. The associate gave me three brochures filled with fireplace designs, but the literature was not very helpful as how to construct a unit. I knew I would need to dig deeper, and I continued my search on the internet. The following website was an important resource during my process:

Walton, L. (2004). Building a fireplace mantle. *Extreme How-To*, Retrieved 2/2/2009, from http://www.extremehowto.com/xh/article.asp?article_id=60392

This was an extremely helpful website that I referred to often throughout my project. I am a very visual learner, and this site provided more than enough photographs to help me better understand the procedure. An entire building process is documented, from the initial sketch to the final product.

The author gives very detailed instructions, as well as recommendations to the tools and materials the reader may want to use. The content is easy to understand because of the plain language used by the author.

The fireplace in the article was flush with the wall and only the leg, frieze and mantle protruding from the wall's surface. I made major modifications since my project was being constructed in the corner of a room. The article, however, was still extremely helpful because the basic construction techniques still were applicable.

Next, I went to my local library in search of more literature and resources. I came across a book in the 'Home Improvement' section of texts, and it also served as a great reference:

Bix, C. (2004). *Ideas for great fireplaces*. Menlo Park, CA: Sunset Publishing Corporation.

This book contains dozens of well-photographed examples of fireplaces and mantles from around the world. Many styles are represented such as contemporary, classic, rustic, neo-classical, art deco, traditional and abstract.

The book focuses on wood-burning fireplaces and only in the conclusion is the installation of a gas insert presented. The process of building a wood-burning fireplace, maintenance, precautions and advice on placement is explained throughout the text.

However, I consider this book useful because I used it as a source of idea generation. The detailed and high-quality photographs depict the fireplaces in context by showing either full or partial views of the spaces they occupy.

Selected Bibliography

In addition to the key sources described above, this bibliography contains helpful resources that I recommend to anyone interested in this type of project.

Lewman, John (2004). *Fireplace and mantle ideas: Design, build and install your dream fireplace mantle*. East Petersburg, PA: Fox Chapel Publishing Co..

Vila, B (2001). Selecting a gas fireplace. *Fireplaces; A BobVila.com Channel*, Retrieved 2/11/2009, from <http://fireplaces.bobvila.com/Article?210.html>

Section Three: Process Plan

Introduction

This section contains information and details about how I developed and implemented my idea for building a fireplace. All of my steps are outlined in a detailed description of my entire process.

Project Timeline

I planned to achieve my goals by putting a greater concentrated effort into my Clarifying skills. According to Dr. Puccio (2001), there are four approaches to solving a problem: Clarifying, Ideating, Developing and Implementing. Each approach is valid and they exist in all of us; however, we all have natural preferences. A Clarifier likes to move forward cautiously, looks at the details and enjoys the process of searching for data. A Developer enjoys analyzing potential solutions, examining the strengths and weaknesses, yet might get stuck developing the perfect solution. An Ideator tends to generate broad concepts and ideas and constantly toying with ideas. An Ideator also may enjoy stretching his or her imagination and may be able to visualize many solutions to one situation. I am an example of an Implementer. I have traits described by Puccio such as: enjoys seeing ideas come to fruition, focuses on the ideas that he or she feels are workable and might leap into action too quickly. My approach to this project was to focus on my less dominate preference, Clarifying.

Both preferences were important in completing this project. Clarifying helped me to prepare and take the necessary precautions before jumping into my work. My Implementing preferences helped me to complete my work in a timely fashion. It resulted in a successful combination of these two styles.

The exact steps are as follows:

FEBRUARY

Friday 2/6

I had decided that I wanted to build something for my master's project; however, what to build was an issue. I had many ideas of things that would be useful and practical for me to construct, but I needed to weigh out all of my options and make the best choice for my project.

I had many conversations with my husband, family and friends. We discussed ideas such as finishing off part of the basement, building a captain's bed or a desk for my son, and building benches for our patio.

I talked to two friends that are carpenter by trade to gain their perspective on the situation and seek their advice.

After considering everyone's input, and allowing time for incubation, I decided to design and build a fireplace. **8 hrs.**

Tuesday 2/17

I began researching fireboxes to answer the following questions:

- What are the dimensions of some different models?
- What types of gas inserts exist?
- Where can this be placed in my home?
- How much empty space do I need to leave around the firebox?
- What might be the cost of this project?
- Should I have the gas line run first?

I sketched my ideas for a fireplace design.

5 hrs.

Thursday 2/19

I began researching tools by visiting a local Lowes retailer to find out:

- What would be the 3 most helpful tools I would need for this job?
- What are the major differences between the least expensive tools and the most expensive tools?
- Is there a particular brand of tool that seems to have more/fewer problems?
- What kind of warranty does the store offer?
- What types of wood do the Lowes associates recommend for painting?
- What types of screws and nails do they recommend?

4 hrs.

Friday 2/20

I purchased the following tools:

- Kobalt 10 ½ inch sliding compound miter saw
- CH compressor and air gun
- DeWalt drill/screwdriver

I read ALL owner manuals carefully and thoroughly.

I purchased the following lumber:

- Two- 4'x4' pieces of 1" plywood
- Five- 2'x4's
- Two- 8'x8"x1" poplar boards
- Three- pieces of 4' trim (of choice)

I purchased the following supplies:

- One pkg. 1,000 1 ½" brad nails

- One small box 3” drywall screws **5 hrs.**

Saturday 2/21

I purchased the following tools:

- DeWalt 7 ¼ inch circular saw

I purchased the following supplies:

- 1small box 2” drywall screws
- Multi-grit pack of sandpaper
- Three- 2” paintbrushes

1 hr.

Tuesday 2/24

I set up a workspace in our basement and began testing out the power tools.

I took off the baseboard in the corner of the living room where the fireplace would be built.

3 hrs.

Wednesday 2/25

I purchased from Lowe’s:

- Two- 6’ pieces of casing
- 2’x4’x2’ piece of poplar
- Variety pack of sandpaper.

I consulted with a Lowe’s associate

2 hr.

Friday 2/27

I located all of the studs in the wall and marked them off using small pieces of blue painter’s tape.

I measured and cut the 2’x4’s that I would need to create a pentagon on the floor that would later become the main structure and support for my hearth. I measured the 2 longest boards (41”) the two shortest boards (8”) and the front board (45”) and made the cuts using the miter saw. I used the screwdriver and 3” drywall screws to attach the boards to the wall and to attach the pieces together.

I purchased pine casing and poplar board.

4 hrs.

Saturday 2/28

I added two extra 2x4s for extra support in the middle of the pentagon. They were about 25” long and I attached them to the frame with 3” screws.

I measured the perimeter of my base and drew the pentagon on 1” plywood. Using the circular saw, I cut the plywood to fit and attached it to the 2x4s. This completed the basic structure for the hearth.

2 hrs.

MARCH

Monday 3/2

I began attaching 2x4s to the wall, vertically, that would be the main support for the mantle, or top of the fireplace. I used drywall screws and the drill to attach the piece to the studs in the wall. Each piece measured 44". There were four of them.

I attached 2x4s horizontally to serve as support ledges for the back edges of the mantle.

I added two extra support "beams" connecting one side of the structure to the other. This will provide extra stability when the plywood is placed on top. This will also prevent sagging of the structure in the future (Lluch, 2007).

I used two pieces of 8'x8"x1" poplar to the sides. Since the wood was already the proper width, I only needed to cut the pieces to the correct length, which was 46". I made the cuts using the miter saw and attached the wood to the 2x4 supports using 3" drywall screws.

I cut a second piece of 1" plywood to the same dimensions as the piece I used for the hearth using the circular saw. I did not attach the top piece at this point.

I attached molding around the edge of the hearth. I used the miter saw to make a series of 22.5 degree cuts and attached the pieces using the air gun and 1 1/2" brad nails. I filled in any small gaps with joint compound and sanded these after they dried.

6 hrs.

Tuesday 3/3

I purchased the following lumber from Lowes:

- Four- 4'x1 1/2" casing
- Two- 4' decorative trim
- One- 4'x4'x1" plywood

I cut the piece of 1" plywood that would serve as the front panel of the fireplace. It measured 46"x46" with a 26"x26" opening to later house the gas insert. I chose to cut the opening this size because it is smaller than any of the dimensions of the actual inserts. Therefore, when we purchase an insert in the future, the opening can be cut larger.

I cut small pieces of left over 2'x4's to serve as corner brackets and attach the front piece to the sides. (Appendix B Fig. 15) One side of the bracket is a straight cut; the other side is a 45 degree angle. I attached these to the 8" side boards using 2" drywall screws. Then I was able to fasten the front panel to the brackets for a secure fit.

4 hrs.

Friday 3/6

I attached the top panel to the side supports using 2" drywall screws. I measured the front edge of the fireplace to determine what length to cut the crown molding for the mantle. From my measurement marks, I cut the crown molding outward at a 22.5 degree angle at both ends using the compound miter saw. The smallest edge is the bottom of the mantle and that is the edge to be attached to the front panel.

Using a generous amount of contractor's adhesive and 1 1/2 brad nails from the air gun, I attached the crown molding to the face of the fireplace. I attached thin strips of

scrap plywood to anchor the piece while it dried (Appendix B Fig. 17). I realized that the reinforcements were not necessary and the piece was holding well without them. I cut the two end pieces of crown molding and attached them to the side panels using the same process. I put generous amounts of contractor's adhesive on the inside of every joint, where it would not be visible later.

Approximately an hour later, the adhesive had dried and I was able to sand down any protruding corners or visible adhesive. **5 hrs.**

Saturday 3/7

I purchased the following lumber from Lowe's:

- One- 4'x4' sheet of birch plywood (no defects)
- Two- 6' pieces of fluted pine decorative casing

I measured the exact top perimeter of the fireplace and transferred those measurements onto the piece of birch plywood. Using a circular saw (with a trim/finish blade) I cut the piece that will overlay the entire surface of the structure. I cut the piece slightly (1/8") larger than my dimensions so I could sand off any excess. It is always better to have a cut too large than too small (you can always do away with the excess). Once I had the top piece in place, I secured it with some contractor's adhesive and brad nails.

I then began to add pieces of decorative molding to the front and sides of the fireplace. At this point, I was really able to visualize what the finished product was going to look like. I arranged the pieces similar to an example I had seen in a brochure and similar to my sketch. **9 hrs.**

Sunday 3/8

There was a lot of sanding that still needed to be done. Although the plywood was a paintable grade and semi smooth, there were a lot of imperfections on the surface that needed to be sanded down. In some areas I skim coated with joint compound, allowed that to dry and sanded once more. The sandpaper I used varied in grit; rough for large imperfections, fine for the finishing work.

Once the entire mantle was sanded and the dust was vacuumed off completely, it was ready to be primed. I used Valspar's Multi-Purpose Primer (Appendix D Fig. 6). The primer helped to bring out the areas of imperfections that I had missed. I sanded those areas down and applied a second coat. **7 hrs.**

Tuesday 3/12

I purchased the following supplies at Lowe's:

- 1 quart of Valspar 'Mystique' Interior Satin paint
- 2" general purpose paint brush

Once I was satisfied with how the fireplace looked with the primer coat applied, I knew I was ready to paint the final coats. I used the 2" brush for most of the structure and the small artist's brush for edges, nooks and crannies. I allowed approximately 2 hours for the first coat to dry. Then I applied the second coat.

4 hrs.

Wednesday 3/13

I needed to scrub the floor since I did not use a drop cloth (but do recommend using one). I then removed all of the furniture in the room and needed to shift the area rug so it did not touch the fireplace. I needed to find the paint can in the basement with the living room wall color and touch up the spots where I had gotten white on the walls. I placed some decorations on the mantle and it was complete!

4 hrs.

APRIL

Saturday 4/4

I received very positive feedback from 'Joe' today. He is a contractor and personal friend who volunteered to come over and inspect my work. Joe said that the structure was very sturdy, looked professional and that he would have no concerns having a gas insert installed in the structure. Joe also commented that it was actually built better than most pre-fabricated fireplaces that are sold in stores.

1 hrs.

Total time for mantle construction: 73 hrs.

Conclusion

Once the fireplace was complete, I spent some time over the following few days reflecting on my work and appreciating my efforts. On two occasions, after I had put my sons to bed, I sat in the living room with a glass of wine, no television or interruptions and simply thought about all I had done. I truly took the time to appreciate what I had accomplished. I was surprised how quickly time had passed while I was just sitting and staring at an object, but my thoughts made the time go by quickly. I replayed all of the steps in my head, thought about the few people who had

suggested I choose a different project and imagined how the fireplace will look once the insert is installed, a television above it and my family gathered around it. I pictured how the fireplace will look with two little stockings hanging on it this Christmas and how I will decorate it for the changing seasons. I felt a tremendous sense of pride.

I began writing Sections One, Two and Three for my project in the days following. My writing process was slow and sometimes frustrating. I had documented all of my steps with a digital camera and also took pictures of my tools, my workspace and had pictures taken of me using the tools. I enjoyed reflecting on my project by viewing the images I had taken of my work. I also spent many hours looking over other examples and comparing and contrasting them to my own. Although the writing portion of my project seemed difficult, I am glad that my reflection process is now documented.

Final write-up of Project: 26 hrs.

Photo-Documentation: 11 hrs.

Completion of Project: 111

Section Four: Outcomes

Description of Final Product

The fireplace was my tangible final product. It is a bit larger than I had pictured it in my mind; however, I would not change one thing about it. I actually exceeded my expectations for the quality of work that I was capable of. It is a structurally sound and beautiful addition to our room. It is currently serving as a ‘fort’ for our three-year old son. The gas insert we would like to install is a seasonal item; therefore we will have to wait until August or September to purchase that piece.

In the mean time, the fireplace is a success in everyway I had hoped for and I am sure we will enjoy it for years to come.

Additional Outcomes

An additional outcome that was produced due to my master’s project was a woodworking area in my basement (see Appendix D Fig. 7). This was a necessity in crating my fireplace. With two small children, a dog and nieces and nephews over to visit often, I could not have these hazardous tools in our living space. I was able to move all of our personal items to a different section of the basement and reserve almost half of the remaining space for my workspace.

Now that my project is complete, I do not envision my workspace relocating any time soon. The location is very convenient and it has evolved into an efficient space for me. There is plenty of room for my workspace to grow and evolve. I plan to continually add to my collection of tools, materials and knowledge.

Perhaps the most important outcome has been an increase in my confidence for building and in my motivation for creating new things. I have always wanted to build things that are both beautiful and useful for my home. Up until now, I had not had the tools or background knowledge to bring any of these ideas into fruition. Completing this project has not only shown me that I can do it, but also that I’m pretty good at it. This has inspired me to go onto my next project (undetermined at

this time) and create even more, in the future. My mind races with ideas and I am truly excited to see what I will construct next.

Section Five: Key Learnings

Introduction

This project has taught me a lot about my natural tendencies for problem solving and my strengths and weaknesses as a creative person. Throughout the process, I was very aware when I was acting as an Implementer, Ideator, Clarifier or Developer (Puccio, 2001). Previously, when I tried to resist my impulsive tendencies as an Implementer, and take a more systematic approach, I found the transition not only difficult, but at times, nearly impossible. In this project, however, I consciously tried to use each preference when I saw it appropriate. I believe this was key in the success of my project.

Insights

When I approach a project, I usually do not put much time into planning, and I like to execute my idea as soon as possible. I usually have a 'do now and ask questions later' approach. I also have tried many things that have not been successful at first. I tend to go back and continually modify until I am successful. I prefer a trial and error approach to problem solving. This approach to problem solving has caused wasted time, money and effort in the past.

I had two major goals for my Master's project. One was to create a beautiful and functional focal point in my home. The second was to be consciously aware of my problem-solving tendencies and change them as needed.

There were many initial steps I needed to take when beginning my project that I would normally never do. Before I purchased anything, I had to spend a significant amount of time researching gas fireplaces in general. I had to devote much time to fully understand the different types of gas inserts, the ways they operate, the different sizes of fireplaces, what they were made out of and where they could be placed in the home. I had to move ahead cautiously while making these major

decisions. I would have been very disappointed if I had gone through this entire process, only to be told that an insert could never be installed.

Learning how to use power tools for the first time also required careful reading beforehand. Having to include this step went against my natural problem-solving tendencies. The owner's manuals needed to be fully understood before I experimented with any of the machines. This was fairly difficult for me. Once I felt as though I had a 'pretty good idea' of how a tool operated, I was anxious to go down to the workspace and try it out. I had to fight this urge and continue reading the complete manual. This conscious form of self-discipline also worked well for me. I was strengthening my Clarifying skill by forcing myself to read the entire manual before operating any tools or equipment. Something I may have overlooked had the potential to do great harm to myself or to the integrity of my project.

Once construction began, I needed to carefully evaluate my next step and double check everything before I proceeded, thus avoiding wasting time and resources. I was working with a deadline and did not have time to correct many mistakes. I also did not want to waste money on purchases that I would have to return later. I did not want to spend extra money because I made an error on a cut or measurement.

It was difficult for me to concentrate on other coursework while my fireplace was in progress. I was more drawn to building my fireplace than I was to the research papers and other assignments. I would literally 'reward' myself with working on the fireplace once all of my other course work was complete. This worked well for me. I was able to clear my mind and concentrate on my other assignments.

Building is very compelling for me. I have discovered that new passion and talent in my life.

Section Six: Conclusion

Introduction

This section reflects upon the work I completed and discoveries I have made through the journey now known as, 'My Mater's Project'. It was a journey filled with discoveries about construction, tools, people, places and myself. My findings are described in the paragraphs below.

Final Thoughts

Through this project, I have learned that creativity, like most things in life, yields greater benefits when time and effort are exerted. I dedicated both of these things to my project and a creative process and product were the results.

Building my fireplace was a process that began long before my Master's Project did. My husband and I have wanted a fireplace in our home since we moved in last summer. At the time, I was not entertaining the idea of building one myself. As this semester grew closer, I began hypothesizing over what I may decide to choose as a topic for my project. I was not sure if building something would be approved by a professor.

Once I was aware that I would be allowed to construct something to fulfill my degree requirements, the process of choosing what structure to build, came next. That was followed by time researching, planning and executing. Time reflecting, asking questions and seeking approval was also included. This all happened over the course of a month.

My fireplace could have been constructed in less time; however, the results would have been different. I honestly believe that the choices I made were a result of the time I allowed for incubation and planning. Allowing for reflection and careful consideration is what I believe made my process a creative one.

A fireplace may not be seen as a creative product. One could argue that it is not a novel creation because these structures have existed for thousands of years. I see my fireplace as a creative product because it is a one-of-a-kind piece that I built using a creative process. There is no other fireplace in the world that is exactly like mine. It is a unique piece that is also useful. The fireplace will eventually house a gas insert and serve as a source of heat for our home. It will soon support a flat screen television on the mantle and be a focal point for seasonal decorations. It is currently a fort for my three-year-old son.

The process and product for my Master's project have taught me that creativity can occur with conscience effort. A novel and useful idea does not have to come as an 'aha' moment. I am now questioning where our creative ideas may come from. Do creative ideas exist unknowingly in our minds and simply need the appropriate catalyst to become exposed? Does a specific need or desire need to exist prior to a creative product being developed? These are questions that I see myself reflecting on as I continue my lifelong journey of strengthening my creative abilities.

References

- Lluch, A.A. (2007). *The very best home improvement guide* . San Diego, CA: Wedding Solutions Publishing, Inc..
- Puccio, G. J. (2001). *Buffalo creative process inventory: Understanding your personal approach to the creative process*. Evanstown, IL: THinc Communications.

Appendix A: Concept Paper

Constructing a Fireplace Mantle

Sarah B. Zimmer

2/5/09

Develop a Skill or Talent

What Is This Project About?

This project is about applying and developing my construction skills to build a mantle that will surround a gas fireplace. The piece I will be building will not only serve as a mantle to surround a gas fireplace, but it will also serve as a television stand and house a cable box and DVD unit as well. I have experience in home improvement and construction projects on a small scale. The purpose for this project is to challenge myself to take on a bigger project and approach it with sufficient research and planning, and also to explore new tools and materials.

I am a natural implementer and often skip the research and planning stages of a project. I must be aware of this and force myself to take a very methodological approach to this task. There are many potential hazards that I will be facing if I do not take the time to fully understand all of the specifications and safety issues surrounding the construction of this unit.

Rationale for Choice:

When choosing a topic for this project, I felt an overwhelming need to build something. I had many construction projects in mind and needed to ask myself why each project seemed important to me. When I questioned myself about the mantle, my answer seemed obvious. It was for my family.

I believe that a fireplace adds welcoming feeling to a home. I believe that it is a symbol of family and togetherness and not only adds physical warmth to a room, but emotional warmth, as well.

I put a lot of time and energy into creating a comfortable environment. I know that this project will be an intrinsically motivating experience for me and provide years of enjoyment for all who enter.

A second part of my rationale for this choice is my desire to develop and refine my construction skills. I look forward to improving on my ability to create something that is aesthetically pleasing and structurally sound. I am also looking forward to acquiring tools and knowledge that I will be able to apply in future projects.

What Will be the Tangible Product(s) or Outcomes?

The final product will be a corner mantle that will house a gas fireplace. The fireplace unit, also called a firebox, will be professionally installed. I will be constructing the frieze, legs and mantle shelf for the fireplace. I will also include a small stand on the top of the mantle shelf which will support a flat screen television and house electronic equipment.

What Criteria Will You Use To Measure The Effectiveness Of Your Achievement?

I will know that I am successful if my product is aesthetically pleasing and structurally sound. My project will be complete when it represents my plans and sketches as closely as possible.

I will also gauge my success by the comfort level I gain with power tools. When I feel confident making precise cuts, I will know I have reached a 'benchmark' in my project.

The overall effectiveness will be evident if the finished product serves its purpose as a firebox encasement and television and equipment stand.

Who Will Be Involved or Influenced; What Will Your Role Be?

The people involved:

American Eagle Fireplace- I will seek the professional advice of the associates and rely on examples in the showroom to help me visualize my final product

Lowe's & Home Depot Associates- I will seek the advice of the employees to make decisions on tool purchases and construction materials

Husband- I will rely on Jeff for his opinions and assistance if I need help at home during the process

George (has done previous construction on our house) - I will ask George to come by and evaluate my work during and at the end of the process.

My Role- I will be gathering the information, tools and materials needed for this project. I will also be responsible for the construction and labor intensive aspects of creating the mantle.

When Will This Project Take Place?

The construction of the mantle is set to take place during the month of March and possibly extend into the beginning of April. I will be acquiring information, tools and materials during the last two weeks of February.

Where Will This Project Occur?

This project will occur in my home. I have created a space in my basement to use as a workspace. I will be assembling and anchoring the mantle into a corner in my living room.

Why Is It Important to Do This?

Building things has always been a passion in my life. I have worked on a number of projects for myself and others in many different places. One thing has always remained consistent. I have never felt that my projects reached their full potential because the proper tools and resources have always been lacking. I have worked with simple, hand-held tools and basic materials, and I have felt very limited because of that. I am sure that I have the capability to create many wonderful things if I could only gain more background, experience and efficiency with these tools.

This project will force me to draw on my strengths and refine areas that need development. I need to research my project, in depth, before beginning construction. This is something that I am not accustomed to doing. This is not only a more cost effective way of incorporating a fireplace into our décor, but it will hopefully provide a feeling of pride whenever I look at it.

I am also looking forward to helping others after completing this project. I will have better tools and a greater amount of expertise with the process of woodworking. I look forward to spending time helping family and friends build or repair things in their homes.

Personal Learning Goals:

- I hope to strengthen my Clarifying skills
- I hope to realize the importance of my inner Adaptor (that is often ignored)
- I hope to learn a lot about power tools, different types of wood, paint/stain, tiles, nails, and building in general

How Do You Plan to Achieve Your Goals and Outcomes?

I will be examining existing fireplace structures and seeking advice from professionals. I will be taking notes and gathering examples from fireplace stores and outlets in the form of photos and pamphlets. I will then begin sketching ideas and go over them with my husband. He will be an important part of this decision. When we agree on a design, I will begin drawing final drafts with more exact measurements. Making many thumbnail sketches and exploring my options before jumping into a design will be difficult for me. I will need to designate a day to sketching my design before I allow myself to begin any construction. I will also be figuring out the basic costs of this project before I begin. I will then try to stay within a budget.

For the duration of the project, it is my goal to stay very organized. I have a tendency to create a disorderly atmosphere when I work. I will be interested to see how keeping organized affects my desired outcome.

Asking for people to assess my work at different stages will also help me to be successful. If I try to work too quickly, and go ahead with work that I am unsure of, I face the risk of wasting time and resources if it has to be redone. It is not my nature to work slow and methodically and this project requires me to do that.

Evaluation:

I will get feedback from those family members and friends who are not shy about expressing their thoughts and feelings. My husband's opinion is very important to me and approval from him will mean a great deal.

I will also get outside approval from a professional contractor who has previously done work our home. He is a very skilled individual and pays great attention to detail. I will be flattered if I receive a positive review from this man. I also need him to check the entire unit to make sure that my project poses no operating concerns.

I will take photos into the sales and installation team at American Eagle Fireplace. A positive reaction will give me a feeling of accomplishment.

My own opinion will also be a strong indicator and measure my project's effectiveness. If I am happy with my results, that will be a true measure of success.

Prepare Project Timeline:

February:

(8-14) Visit American Eagle Fireplace and State Air Heating, Cooling and Fireplaces to Look at examples and gather information the associates through questions and literature

Begin researching tools on-line

(15-21) Purchase tools and some supplies

Read instruction manuals thoroughly and begin experimenting with tools

Begin sketching ideas and approximate measurements

(22-28) Decide on a firebox insert and finalize measurements

Choose a design and finalize sketch

Visit Lowes to inquire about building materials and purchase some lumber

March:

(1-7) Begin construction on the hearth

Purchase additional tools or materials that are required

(8-14) Begin construction on the main body, or cabinet, of the fireplace

Have Joe or George come over to inspect my work

(15-21) Finish the mantle and shelf

Apply decorative molding

Purchase primers and paints that will be required

(22-31) Sand, prime and paint the finished piece

Have Joe or George approve final product
Invite family and friends over to view final product

April:

(1-4) Review and reflect on my journal entries
Calculate how closely I followed my budget
(5-12) Work on and refine sections 4, 5 & 6
Research and schedule binding
(20-30) Make required changes
Work on presentation

May:

(1-9) Have project bound (possibly earlier)
Complete presentation

Identify Pertinent Literature or Resources:

Lewman, John (2004). *Fireplace and mantle ideas: Design, build and install your dream fireplace mantle*. East Petersburg, PA: Fox Chapel Publishing Co..

Vila, B (2001). Selecting a gas fireplace. *Fireplaces; A BobVila.com Channel*, Retrieved 2/11/2009, from <http://fireplaces.bobvila.com/Article?210.html>

Walton, L (2004). Building a fireplace mantle. *Extreme How-To*, Retrieved 2/2/2009, from http://www.extremehowto.com/xh/article.asp?article_id=60392

American Eagle Fireplace
8455 Main Street
Williamsville, NY 14221
(716) 632-5400

State Air Heating, Cooling and Fireplaces
7138 Transit Road
Williamsville, NY 14221
(716) 626-6326

Lowes Store # 1881
8150 Transit Road
Williamsville, NY 14221
(716) 639-2500

Appendix B: Process Photo-Documentation



Figure B 1. The “Before”- This is how the space appeared before any construction began.



Figure B 2. The baseboard and shoe molding was removed.



Figure B 3. This is the framework for the hearth, constructed from 2x4s.



Figure B 4. The platform for the hearth is made of 1" plywood and 2x4 support beams were attached to studs in the wall.



Figure B 5. Two additional support beams were attached to the studs within the walls. I checked to see that everything remained level.



Figure B 6. This is a close up view of hearth's edge before the molding is added.



Figure B 7. This is a close up view of hearth after the molding is attached.



Figure B 8. This is Reggie, checking out my work. I was constantly checking that the structure was level.



Figure B 9. I added horizontal beams to support the mantle's back edges.



Figure B 10. Two diagonal support beams were added to reinforce plywood top. I did this so that the structure could withstand the weight of a television.



Figure B 11. This is the complete skeleton of structure. The outer panels are ready to be attached.



Figure B 12. This is the poplar side panel attached to the 2x4 support beam.



Figure B 13. The second side panel was attached.



Figure B 14. I cut the top piece of 1" plywood. I waited to permanently attach it until after the front panel was secure.



Figure B 15. These are 'brackets' I cut from scrap 2x4s and used to help attach the front piece of plywood to the side panels.



Figure B 16. When these brackets were screwed into the side panels, their 45 degree angle provided a flat surface to attach the front panel.



Figure B 17. Once the front piece was secure, I began to add the crown molding that will serve as the mantle.



Figure B 18. The mantle is hollow and that is visible from this angle.



Figure B 19. I began attaching dentil molding and decorative pieces to give my project visual interest.



Figure B 20. The molding and casing gave the fireplace a more finished look.



Figure B 21. This is another view of the hollow mantle before the thin birch plywood was attached on the surface.



Figure B 22. The wood needed to be primed before painted.



Figure B 23. I used joint compound to fill in any gaps.



Figure B 24. Two coats of Valspar “Mystique” Interior Satin were applied as the finishing coats.



Figure B 25. This is the final product.

Appendix C: Cost Analysis

I was hoping to complete my entire project for under \$700. With this projected budget, I needed to purchase all major power tools, lumber, hardware supplies and paint. The following information is taken directly from original receipts. The total shows how successful I was at staying within my budget. Each one of these totals include New York State sales tax. All materials were purchased from Lowe's Home Centers, Inc.:

Date Purchased	Receipt Total
February 20, 2009	\$ 354.76
February 21, 2009	\$ 142.98
February 25, 2009	\$ 9.04
February 25, 2009	\$ 110.08
February 27, 2009	\$ 113.23
March 3, 2009	\$ 45.59
March 7, 2009	\$ 28.79
March 12, 2009	\$ 16.80
	Total \$ 775.68

\$75.68 over budget

I did not stay within my projected budget; however, I cannot honestly say that I made a concentrated effort to do so. I could have researched prices, watched for sales and comparison shopped, but I did not. As a matter of convenience, I did all of my shopping at the Lowe's Home Improvement store that is in close proximity to my home. I could have purchased lower grade materials, but I did not want to sacrifice the integrity of my piece. Although I did not stay within my budget, I am happy with how close I came.

Breakdown of Materials

Tools.....	Approximately \$445
Lumber.....	Approximately \$205
Hardware and Other supplies.....	Approximately \$125

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Appendix D: Tools and Workspace



Figure D 1. DeWalt 7 1/4 inch circular saw with two blades; one for rough cuts, one for finishing work



Figure D 2. Campbell Hausfeld air compressor with nail/staple gun

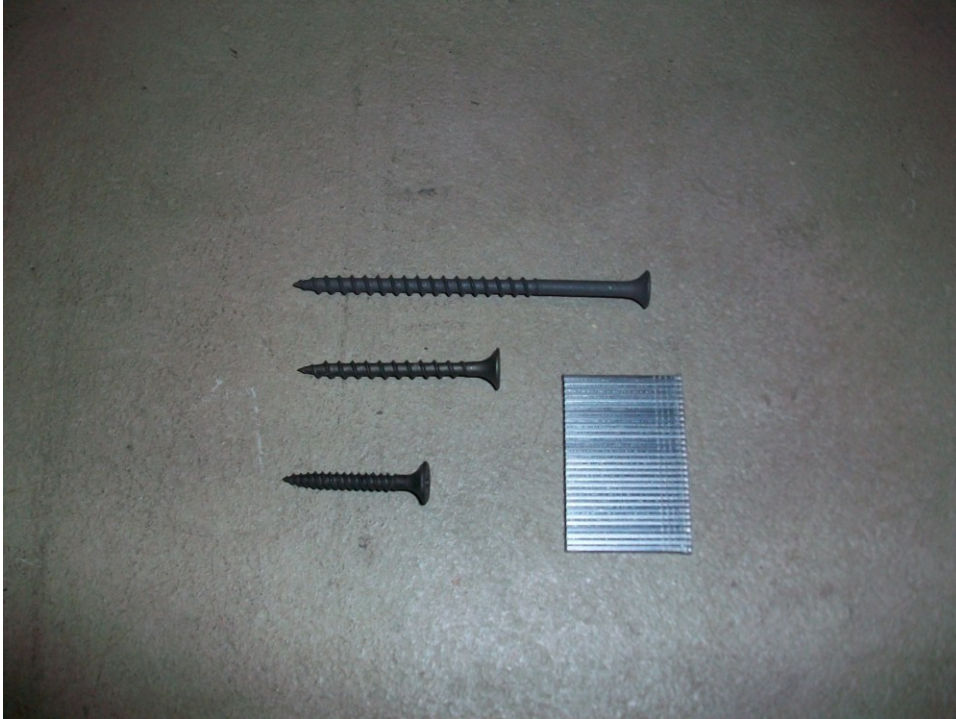


Figure D 3. Drywall screws: 3 inch, 1 5/8 inch, 1 inch and 1 ¼ inch brad nails for gun



Figure D 4. 24" level, tape measure, crowbar, safety goggles and clamp. Right angle/level, contractors adhesive and dispensing gun, hammer, fine grade sanding block and 3M sandpaper holder



Figure D 5. DeWalt corded screw gun/driver with sets of screw and drill bits



Figure D 6. Valspar 'Mystique' Interior Satin paint and primer; 2" paintbrushes and small artist brush



Figure D 7. Basement workspace- approximately 12' x12' area



Figure D 8. Two work tables and back table for storage



Figure D 9. Having the miter saw on a high table helped to have greater leverage for cuts.



Figure D 10. A lower table for using the circular saw provided good leverage also.