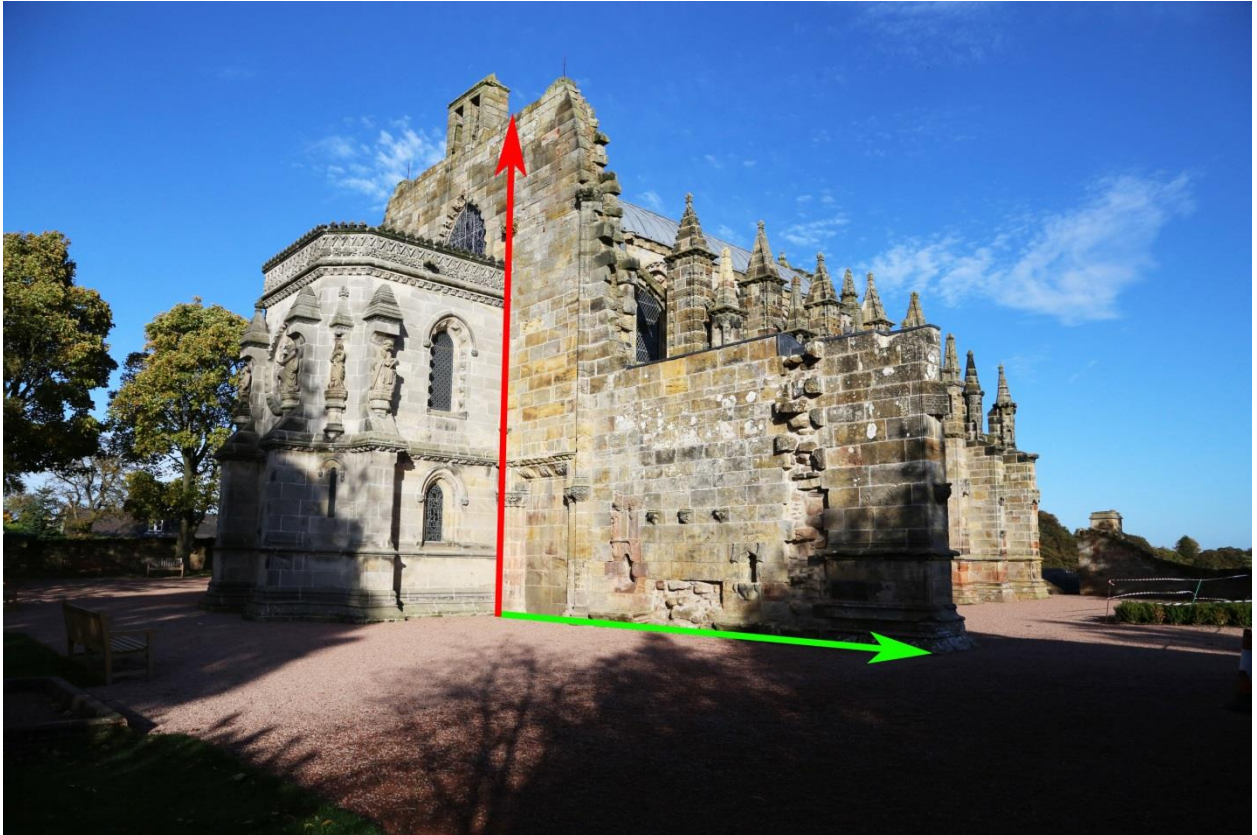


Master's Apprentice



Measuring Rosslyn Chapel



A charity registered in Scotland SC024324

Student Name:

Activity 1: Background

In 1446, Sir William St Clair, 11th Baron of Roslin and 3rd Prince of Orkney, ordered the construction of Rosslyn Chapel. The chapel took over forty years to build, and was not completed until after the death of Sir William in 1484. While located in the quiet Scottish village of Roslin, Midlothian (7 miles south of Edinburgh), the chapel boasts great historical significance.



Drawing of the west face of Rosslyn Chapel, courtesy of Rosslyn Chapel and University of Strathclyde. 'West Front of Rosslyn Chapel' in Billings, *The Baronial and Ecclesiastical Antiquities of Scotland*, Volume 4, Edinburgh, 1852.

Dedicated in 1450 as the Collegiate Chapel of St Mathew for the St Clair family, Rosslyn Chapel and its Gothic features attracted the attention of many important figures, near and far. Famous writers and artists visited the chapel over the centuries, including Robert Burns, Dorothy and William Wordsworth, and Alexander Naysmyth. Queen Victoria herself visited the chapel in 1842 and stated that the chapel ought to be “preserved for the country.”

The chapel is often considered to have been intended as part of a much larger church. It is built almost entirely of stone, with no structure timber except within the Victorian baptistery, which was added much later. The carvings throughout the chapel are noted for their skilled designs as well as Christian and other symbolism.

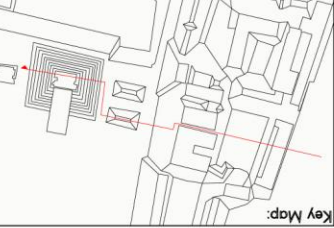
Almost every surface in the chapel is covered with different kinds of carvings. Various carvings of people, angels, mythical creatures, animals, plants, and many other things can be seen throughout the chapel. The stonemasons were very skilled, and constructed the chapel with unique arches and flying buttresses.

As you watch the accompanying video, think about the amount of time it took to build a chapel of this kind.

In this lesson, you will learn how to document and record specific features of Rosslyn Chapel. This process of documentation is very important in historic sites because we need accurate information for preservation and conservation efforts in the future. Accurate drawings are used by architects, engineers, conservators, and many others professionals. It is important to understand why these drawings are useful and how they are created.

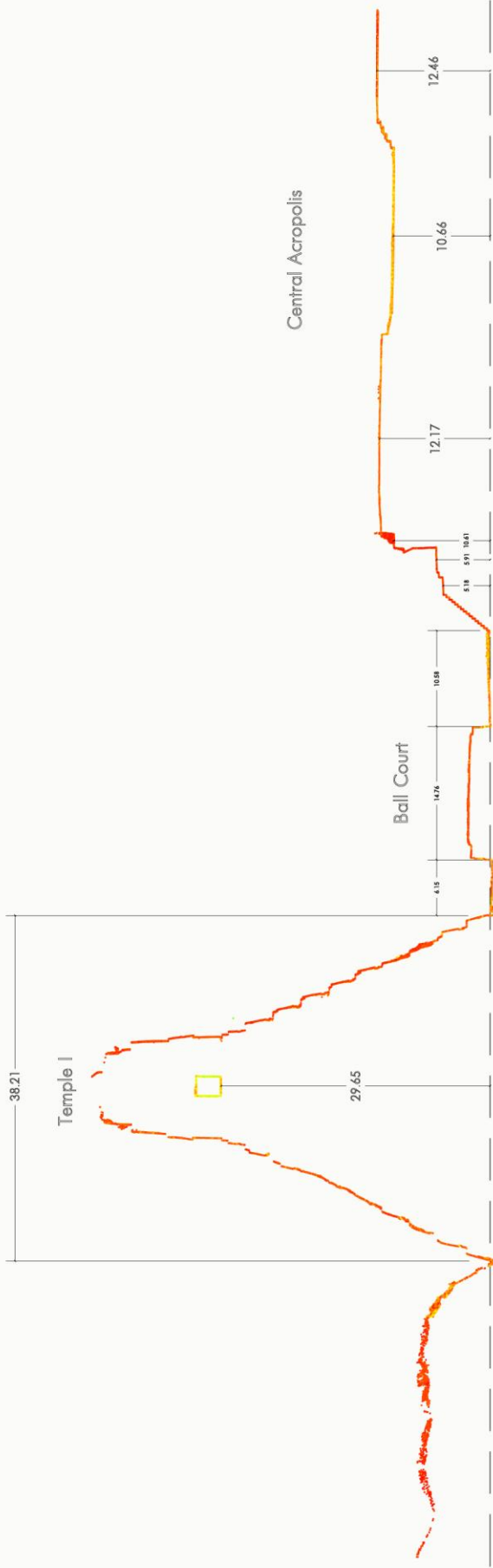
On pages 4 and 5, you will see two examples of scaled drawings. The first is a section drawing of the temple complex at Tikal, a Mayan site in Guatemala; the second is of an aqueduct at the San Antonio Missions National Historical Park in Texas, USA. As you study these drawings, make note of the following:

1. What dimensions are measured?
2. How are measurements marked on the paper?
3. What is the unit of measurement?



Site:		Hierarchy Location: Grand Plaza	
Institution:		Method:	HDS
Drafter:		Coordinate System:	UTM
Date:		2006/02/12	
Fassero, Anthony			

Datum		_____
Dimension Macro		_____
Dimension Micro		_____
Trace		_____



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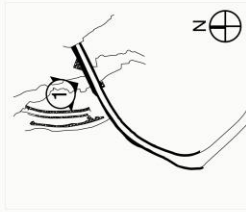
HIGH DEFINITION SURVEY:
CRITIGEN

PROJECT:
SAN ANTONIO MISSIONS
NATIONAL HISTORICAL PARK

SITE:
MISSION SAN FRANCISCO -
DE LA ESPADA AQUEDUCT
SAN ANTONIO, TEXAS

SHEET CONTENTS:
ELEVATION

KEY PLAN:



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DATE:

2010.05.10

DRAWN BY:

S.D.L., J.S., M.N.

SHEET #:

SAT - AQ2.1



1 NORTH ELEVATION

SCALE: 1/4" = 1'-0"



DRAWING NOTE: THIS FILE INCLUDES MULTIPLE LAYERS CONTAINING DIFFERENT VERSIONS OF THE ELEVATION SHOWN. TO ACCESS THE MULTIPLE LAYERS CONTAINED WITHIN THIS ENHANCED PDF, PLEASE OPEN THE FILE IN ADOBE ACROBAT READER.

SHOWN ON THIS LAYER IS THE PRESENTATION VERSION OF THE ELEVATION CREATED FROM PHOTO-TEXTURED LASER SCAN DATA, OR THE TERRESTRIAL LIDAR DATA WITH REAL COLORS FROM A PANORAMIC PHOTOGRAPH MAPPED ONTO THE DATA POINTS. THE PRESENTATION VERSION HAS BEEN AMENDED FOR EASE OF INTERPRETATION.

Activity 2: Exploring the Chapel

The drawings you studied of Tikal and the San Antonio Missions aqueduct are very informative. They reveal distances, measurements, and a scale. As is the case in the aqueduct drawing, the viewer learns a bit about the coloration and texture of the object.

As you explore Rosslyn Chapel, consider the following:

1. What features or aspects of the chapel do you like most?
2. Where are these features located?

When your tour of the chapel is over, **see you teacher for a list of approved features**. Then, pick one from the list and begin the activity! You will need:

- 1 (pair) Latex gloves
- 1 Ruler
- 1 Pencil

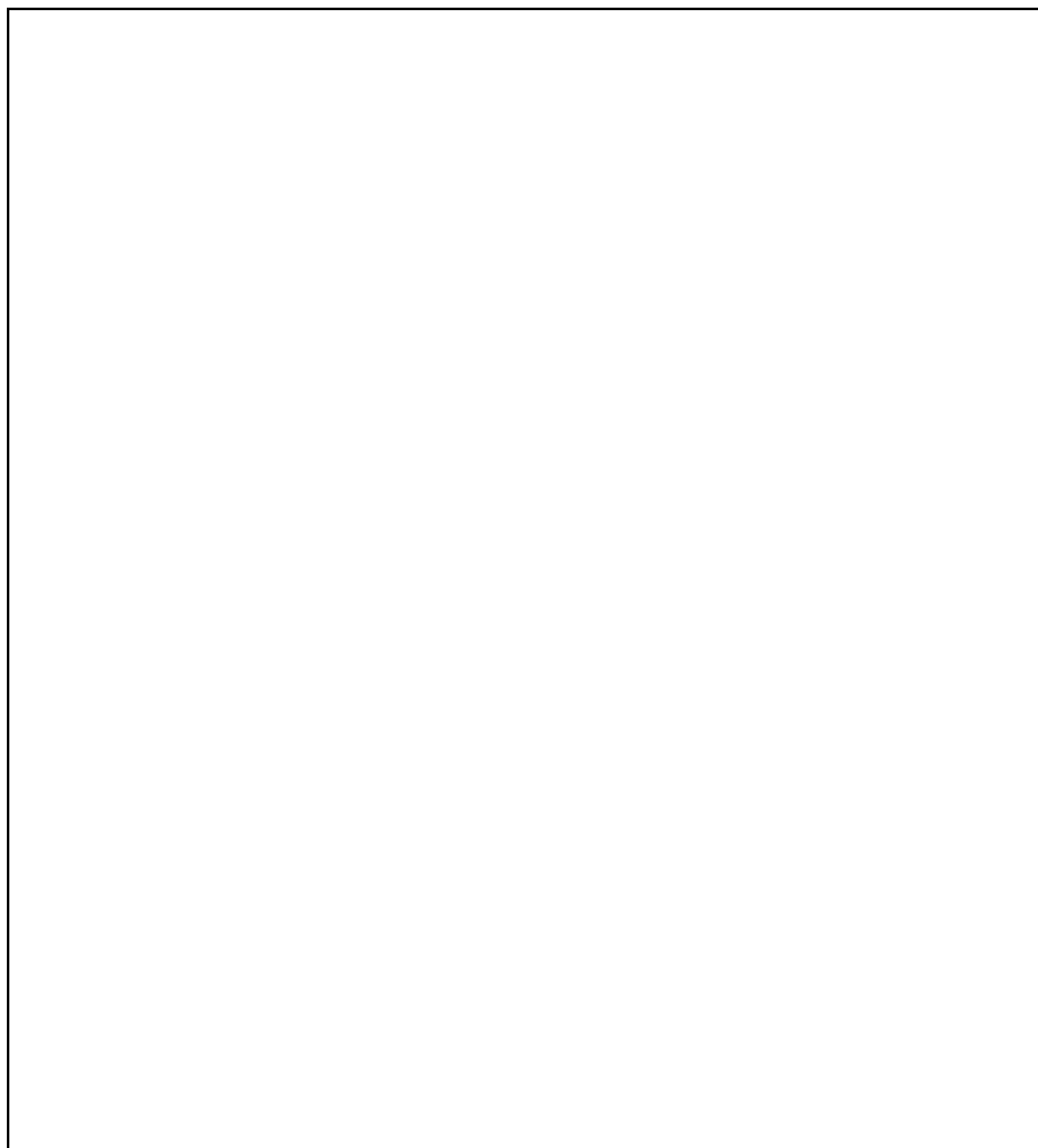
Collect the items above, and begin to measure the feature you picked. Take all notes on the following page. As you draw, record measurements like the measurements you studied in the drawings on pages 4-5. Remember that you want this drawing to be easy to read and understand!

Keep in mind:

- Measure distances carefully and accurately
- Make notes about what the feature looks like (texture, color, etc.)
- Make note of where your feature is located in the Chapel

Documentation Worksheet

In the space provided below, draw a sketch of your feature and include all measurements and notes about texture and location. Look back at pages 4 and 5 for guidance. Ask your teacher if you have questions, and remember to wear your gloves!

A large, empty rectangular box with a thin black border, intended for a student to draw a sketch of a feature. The box occupies the lower half of the page.

Documentation Notes

What is your unit of measurement?

Write a brief description about your selected feature.

Make note of color, texture, and the material it is made of.

Where is your feature located?

Why is it important to wear gloves?

Activity 3: Compare with the Digital Record

Task 1: Compare and Contrast

Congratulations on completing your drawing! Now it is time to compare your drawing to the 3D digital record! In a computer lab, visit this website: <http://archive.cyark.org/rosslyn-chapel-intro>

This is CyArk's website for Rosslyn Chapel, a digital archive of 3D scan data and other multimedia of Rosslyn Chapel. On this website, you will find many different kinds of multimedia:

1. **Photographs** – these photographs were taken during field capture or a later site visit. They capture unique aspects of the chapel. Do you recognize precisely where some of these photographs were taken?
2. **Panoramas** – panoramas are unbroken views of the region surrounding the observer, or the person taking the picture. This means that photographs from all directions are stitched together to create one continuous view.
3. **Perspectives** – perspectives are images derived from laser scan data. They represent three-dimensional images on a two-dimensional plane.
4. **3D Point Clouds** – these point clouds are the product of highly accurate scan data and innovative technology. The 3D viewer allows us to view and navigate the site or aspect of the site in 3D, so we can understand first-hand the appearance of real objects.
5. **Animations** – animations allow the viewer to fly through and visualize an entire site or a portion of a site digitally. They are created from the laser scan data, and allow for unique vantage points optimized observation.

Take a few minutes to explore CyArk's website for Rosslyn Chapel. Take out your Documentation Worksheet, and try to find all multimedia that shows the feature you drew in your Documentation Worksheet. Using only visual comparison, does your drawing look proportionately accurate to the digital record? If not, what looks incorrect?

Task 2: Drawing Recreation

In this next section, you will recreate your hand drawing using a computer software program. Using programs like this allows you to draw to precise measurements, like the measurement you recorded at Rosslyn Chapel.

You will probably use a program called Google SketchUp or AutoCAD. If these programs are new to you, your teacher will provide a tutorial.

Take your time as you learn the program and recreate your drawing. Include ALL measurements you took at Rosslyn Chapel, and have fun!

Activity 4: Documentation Report

By this time, you have correctly documented a specific feature at Rosslyn Chapel, briefly described the feature, and used your measurements to create a CAD (Computer-aided Drawing) drawing of your feature.

In this activity, you will combine the above with a thoughtful essay about the history of your feature. Together, these parts will make a complete **documentation report**.

First, you need to utilize the Internet and your school library. It's time to research your feature to place it in its complete context – this means that you need to study the history of your feature, and how it came to be part of Rosslyn Chapel's architecture.

See the next page for an example outline.

For example, review this simplified outline:

Thesis: In this documentation report, I will explain the significance of baptismal fonts from the past through the present. I will also explain what kind of font is seen at Rosslyn Chapel, and what makes this font unique.

History: Baptismal fonts are fixtures that are used solely for baptism. Most fonts are intended for small children, but several can also accommodate older children, teenagers, and adults. Fonts are typically placed near the entrance to a church, or in some churches, in a separate room called the *baptistery*. Fonts differ in size, material, and style dependent upon the architectural style in which it was made.

Significance at Rosslyn Chapel: Rosslyn Chapel has a unique Victorian baptismal font, characteristic of the mid to late nineteenth century. The font is located in the baptistery, separated from the main body of the church but still located near the entrance.

Evidence: Include your drawings in this section, and provide any and all explanations necessary. Describe how your drawing proves the significance of the feature at Rosslyn Chapel.

Write approximately 2 pages and include many examples from your research. Also include your field notes (your documentation worksheet & notes) and your CAD drawing. Good luck!

Activity 5: You are the architect!

You have now visited the famous Rosslyn Chapel and studied a specific feature included in the architecture of the chapel. Now, it is YOUR turn to design your ideal Gothic or medieval building! If you could design your own medieval building, what would it look like? What would its function be (church, residential, etc.)?

In the space below, list the features you want to include in your building. For example, if you wanted to design your own Gothic library, your list of desired features could be: several decorative gargoyles, 1 tower, and 2 pointed arch doorways.

What are your desired features?

Draw a sketch of the exterior of your building, and ask your teacher to approve it. You can complete this activity in groups, if preferred.

Once your teacher has approved your sketch, begin to create your building in Google SketchUp, AutoCAD, or another 3D graphics program you learned in class. Experiment with the program individually or in your groups. As needed, refer to Google SketchUp's tutorials (<http://www.sketchup.com/learn/videos>) and/or CyArk Lesson Plan 16 (<http://archive.cyark.org/education-lesson-plans>) which provides an overview of AutoCad.

Once your drawings are complete, you will compare with the rest of the class!