



Institiúid Teicneolaíochta Chorcaí  
Cork Institute of Technology

## **ARCHITECTURAL TECHNOLOGY**

**Conservation**

**Building conservation**

**Year 4**

**Semester 1**

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# Introduction:

**'In delaminating the requisite *'skills of the conservator'*, COTAC defines an historical appreciation as fundamental'**

The purpose of this project is to write a report in relation to the Quad building in UCC. I will only be looking at the east and north wing of the Quad. The Report will be base around the topic of conservation. We have each been given a new use for our buildings. In my case the new use for the Quad building will be offices. In carrying out this report I must evaluate the significance of the Quad building methodology in the context of the proposed office strategy. I must also evaluate the adaptability of the Quad building for its proposed office strategy.

In doing so I will be looking at conservation records. This will involve the investigation of manuscripts, collections, printed source materials and trace details. These will allow me to obtain information in relation to the original construction, historical modifications and the ownership.

The next step will be to perform a photographic survey of the Quad building. These photos will allow me to ascertain the current condition of the building. They will also allow me to identify any elements of the building that have been treated or altered. Finally they will assist me in evaluating the buildings suitability for the incorporation of the proposed office strategy.

In order to carry out this project I will be breaking the report up into a number of sections. These sections are as follows:

1. The history of the Quad.
2. The historical structure of the building( including a photographic survey).
3. Conservation issues in relation to the new use.

This information will allow me to produce a detailed and informative report that will obtain all the necessary information as requested by the brief.

The Quad

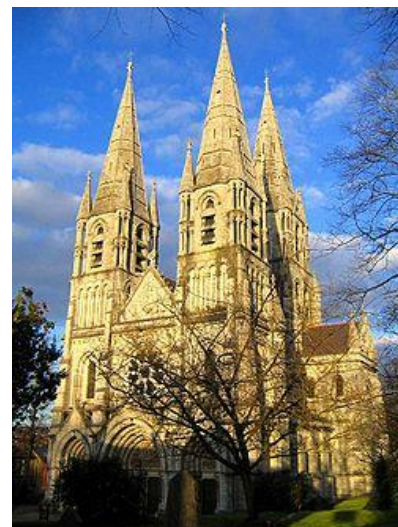


# 1.The History of the Quad



I will start by first taking a look at the history of the University of Cork and then the University College Cork in general before focusing in on the Quad.

The first university of Cork was founded by Saint Finbarr around the year 622. He was born in Templemartin, near Bandon. He studied in Kilkenny and completion of his education he returned home. He is known for having built various small churches. he spent the last seventeen years of his life in the are now known as Cork City. it was here where he gathered monks and students to form The first University of Cork. This became a key centre for learning and it was from here the motto ' Where Finbarr taught let Munster learn'. This is a famous phrase and to this day it remains the chosen motto for the current University College Cork. Finbarr died at Cell na Cluaine around 630, while returning from a visit to Gougane Barra. He was buried in the cemetery attached to his church in Cork. Below is an image of Saint Finbarrs cathedral where he was laid to rest.

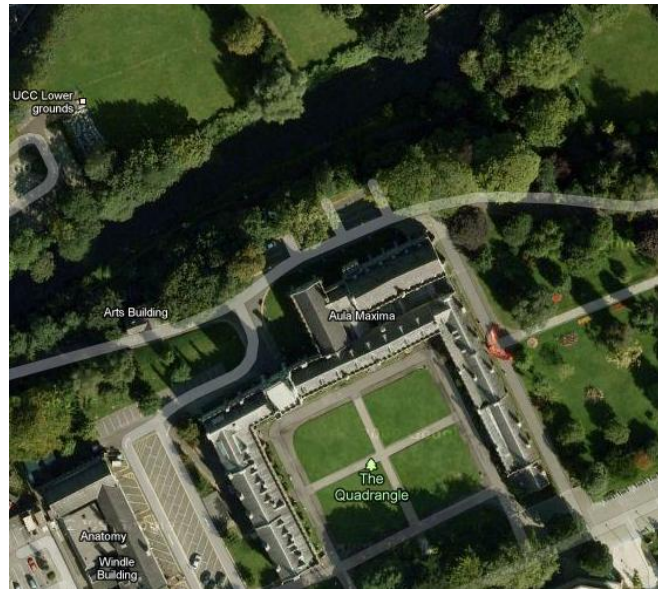


The university thrived for over a hundred years. However the year 800 marks the close of the golden age for the University. In 820 the danes arrived in Ireland. They descended on Cork and from here they destroyed the village and abbey, and burned down part of the University. Four times between 820 and 846 they repeated there invasion and destroyed Cork. It was not until 1134, with the aid of the king of Munster, Cormac MacCarthy , that the University was restored. In 1140 a priest from Lough Conn, Giolla Aedha O'Muidhin, was chosen Bishop of Cork. He became known to the people as one of the wisest , holiest and most able prelates in Ireland. He was in charge of the Abbey and University until he died in 1172 .

UCC was first established in 1845. It was one of three Queens colleges that were setup in Ireland at the time. The colleges were located in Cork, Galway and Belfast. It did not officially open until the 7th November 1849. It was Thursday the 8th of November 1849, the day after the formal opening, the faculty the college accepted its first students. There were 150 privileged students registered in the opening year.

The main Quad building was designed by the architectural partnership of Thomas Deane and Benjamin Woodward, of the Deane and Woodward practice. The site for the Quad building was chosen because of its Ideal location and the price of the land. It was also a very appropriate site for the college given its connection with the patron saint of Cork St. Finbarr, who was the original founder of the University of Cork. The Quad is seen as a Tudor Gothic design and it consists of vaulted windows, pointed arches, aluminium windows , stone mullions between windows, solid oak doors, slated roof with lead strapping and oak cable windows up on the roof.

These are some of the features that make the building Tudor Gothic. I will look into this in more detail in the next section, which will be the photographic survey. The Building was built on an escarpment, outcrop of Rock, which was located on a hill. This hill and the Quad building is located parallel to a section of the river Lee. This can be clearly seen from the aerial photograph below.



The building is constructed of limestone and this is the main structural material. This limestone was quarried on site and was taken from the area where the Boole Library is currently situated. Another building material which is used quite regularly is oak which was sourced from the south. Originally the building was used to house and teach medical students. It has been transformed over the years. The East wing was originally the house of the president of the University at that time. Now days however the east wing facilitates the president's office along with administrative offices.



Above is an image of the internal hall of the East wing.

The North wing of the quad was used to house students and perform lectures. It now houses UCC's unique collection of Ogham stones. There are 28 stones, which is the largest collection on

display in the Republic Of Ireland. They date back as far as mid fifth and late seventh centuries. They are the earliest written sources of the Irish language. The North wing also hosts the Visitors centre, shop and various administrative offices.



Above is an image of some of the Ogham stones located in the North wing of the Quad.

The final part of the Quad I am looking at is The Aula Maxima. It was originally used as the venue for many formal events such as, honorary conferring, recitals, concerts and banquets. To this day it still serves the same purpose. However the amount of events taking place have been reduced due to the historic nature of The Aula Maxima and the fear that it might be damaged. An example of this is the fact that most of the graduation ceremonies have been moved from the Aula Maxima to the student centre in recent years.



The stained window on the East wall commemorates George Boole. He was the first professor of mathematics at UCC and his findings in Algebra became the foundation of modern computer science. The Boole library was also named after him.

The window on the North wall is known as the professors window and is in memory of Robert Harkness, who was the professor of Geology in 1853.

## 2. The Historical structure of the Quad

The purpose of this survey is to investigate the historical structure of the building. This will be done using a photographic survey. I will start by looking at the foundations and working my way up to the roof, looking at the doors and windows on the way up. I will then move inside the building and begin to look at the structure and the materials used. The main construction material of the Quad is limestone. the walls are roughly 750mm thick and are made up of limestone rock and lime mortar. The reason for the walls being so thick is down to the fact that when the Quad was built there was no insulation and the solution to that was thick walls. The next major building material is oak. I will now look at these materials and various others in the following photos.

### External Images:



This image shows how the solid Limestone wall is meeting the concrete ground. As you can see from the photo the wall is very well kept as is the limestone mortar holding it together. Other things to note from this photo are the more modern plastic PVC gutters which have replaced some of the old cast iron gutters.

This image again shows how the solid Limestone wall is meeting the concrete ground. However there is some form of vent incorporated in this case. This vent is constructed of oak timber and is most likely used to ventilate the basement. As you can see from the photo it has not been properly maintained or conserved.



The image adjacent shows an external image of the wall with a window included. Directly beneath the window is a solid limestone cill and beneath that again in the centre of the wall is a gap which is used to ventilate the area around the window. There is also a limestone plinth located in the image which slopes out from the wall. Beneath this plinth there is a cast iron vent. This vent would be used to ventilate the floor area internally.



This image shows a ground floor entrance to the Aula Maxima. This image again displays the limestone plinth. We can also see the limestone frame wrapping around the solid oak door which has been varnished. It also has a design piece running along the head of the door. The ironmongery on the door consists of cast iron that is painted black. There are solid limestone steps leading up to the door. From the picture we can see little bits of staining around the place but other than that all other materials in this image are well maintained.



Here we can see an external image of the east wing. In this image we can see a number of buttresses running up along the building vertically. These buttresses are constructed of solid limestone and their purpose was to solidify the building and make it more rigid. This image also shows ivy growth that has accumulated over the years. This has however become a feature of the building and at this time is not causing any risk to the structural integrity of the building.

This image shows an external shot of the East wall of the Aula Maxima. There is a large stained glass window covering most of the elevation. The window has been divided up using stone mullions. The stone mullions form smaller vaulted windows. Nearly all of the windows throughout the Quad are vaulted in some way.





Here again we see a good example of the vaulted windows. They are again divided up using stone mullions. If we look closely we can see the glass has been divided up using an aluminium strip. However more recently there has been an incorporation of opening sashes in the bottom left and bottom right windows. They were installed to ventilate the building and consist of an aluminium frame

This image shows the back of the east wing. From this image we can see the building is constructed using a hipped roof. The roof is constructed using slate and lead strapping. This image also shows us the various chimneys running up along the East wing. As you can see they are quite long and run above the roof top. They are again like the walls constructed of limestone and as can be seen from the photo, they have withstood the test of time.



Here again we have an example of the hipped roof of the Quad, this time looking in from the front of the north wing. It is again constructed of slate and lead strapping. In this image we can also see cable windows coming out of the roof. these cable windows are constructed of oak as is the frame for the glass. There is also a parapet rising up above the bottom of the roof which can be seen better in the pictures.

### Internal images:

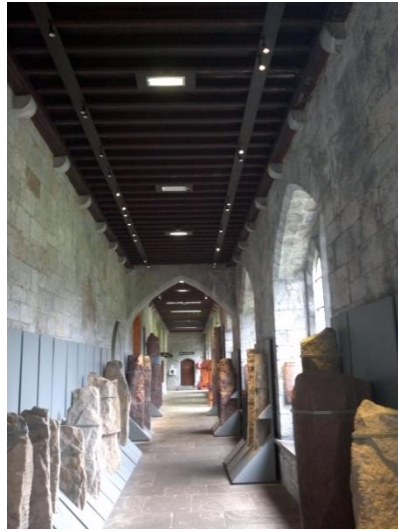
Moving to the interior of the building the first thing I am going to look at is the internal plaster. most of the plaster throughout the Quad is very well maintained. However there are certain areas where damage is clearly visible. An example of this is shown in the image adjacent. This is not causing any structural damage but is a building defect and must be remedied properly paying close attention to detail and keeping conservation in mind at all times.



This image shows an internal shot of a small flight of stairs. The stairs are constructed of stone and are the original stairs that were installed in the building. As can be seen from the image the stairs are quite worn in the middle, where they are being used the most. These are protected stairs and cannot simply be replaced. Careful consideration must be given to the conservation of them.

In this image we again see the stairs. It starts off as an original stone stairs and then changes to a timber frame stairs covered in carpet on the landing. They conserved as much of the stairs as possible before they had to modernise it and make the building function properly in relation to its requirements. It may not look aesthetically pleasing but this form of modernization allows us to identify what's new and what's original in a protected building





This is an image of the north wing corridor. As you can see the Oghman stones are lined up either side of the corridor. The floor surface is constructed of stone paving slabs which are there since the original build. The ceiling consists of solid oak beams running in both directions. These beams are supported by the walls and by the stone pieces coming out of the wall just below the roof. Again we see the idea of vaulted arches which give way to the concept of Tudor Gothic design.

Here we see an image of the internal finishes of the east wing. The pine floorboards have been very well maintained as have the oak window boards. The stairs banister is also original and has been very well kept. The stairs itself has been modified and fitted with carpet. The conservation of the stairs is again a touchy subject but sometimes you have no choice and you must change certain parts of the building in order to make it fit for its use.



This image shows an old style radiator. this type of radiator is called a Macintosh heater. They were used quite often in older buildings to heat large spaces. It may have been installed a few years after the original construction but it is still around a long time. In my opinion any alterations or changes to this radiator must be given careful consideration in relation to conservation issues.

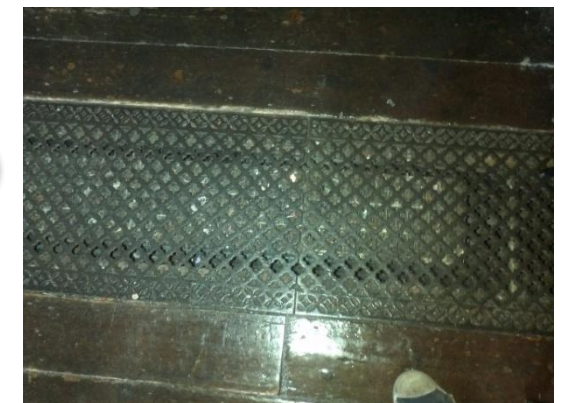
Here we have an image of the Aula Maxima. It is taken from the back of the wall looking towards the front. In it we can see the original oak flooring from 1849 and the timber book shelves running alongside either wall of the Hall. One of the most impressive parts of this area in my opinion is the roof. It is again constructed of oak. All of the pieces come together to form various vaults and arches and they give you a feeling of extravagance and openness.



This image shows one of the various internal fire places. This fire lace is located in the Aula maxima and is surrounded by a solid stone frame. Either side of the fireplace are the oak book shelves which i mentioned in the previous photo. Both these items are very well kept and maintained. This room is probably the most historic and important room in the Quad so it is to be expected that is extremely well maintained.



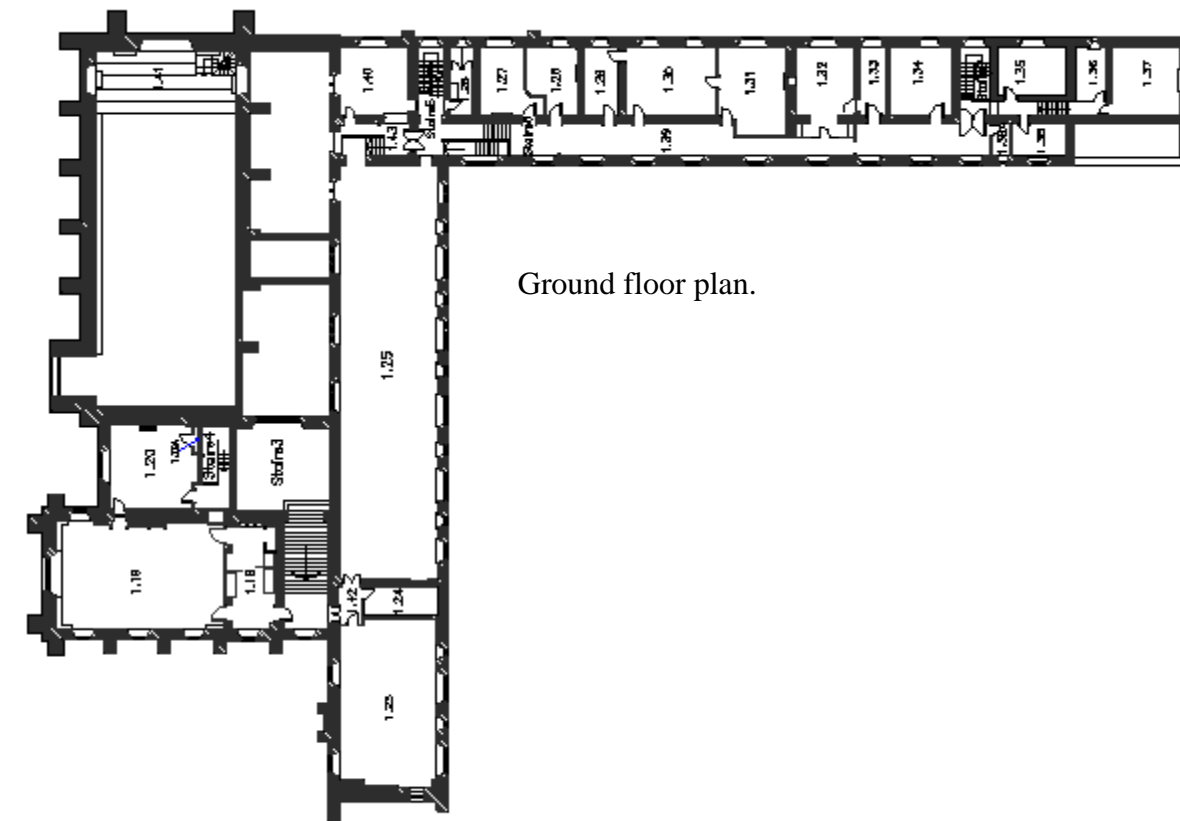
This image is again of the Aula Maxima. This time I am showing the heating system that has been installed. It is an old form of under floor heating where the radiators have been installed beneath the floor and they run up the length of the hall either side. The heat enters the room through the iron grate which can be seen in the photo. This photo also gives us a close up image of the floor boards which we can again see are very well maintained.



## Drawings:

On this page I am going to look at some of the drawings of the quad. I have included a drawing of the ground and first floor plans. I have also included an drawing of the south elevation of the north wing which includes a section through the east wing. The first thing I noticed when looking at the drawings was the overall thickness of the walls and the use of buttresses throughout the exterior of the building. The wall thickness is down to the fact that you insulated a building by building thicker walls. This also allowed the building to be structurally sound and is probably the reason it has stayed standing and maintained its appearance for all these years. Another thing I noticed were the long corridors that seem to run the length of both wings of the Quad. This is a typical feature of the design of the time. Most of the rooms are quite large and a lot of them contain fireplaces. There were no proper forms of heating systems when the Quad was built and that is the reason for all the fire places and chimneys throughout the building

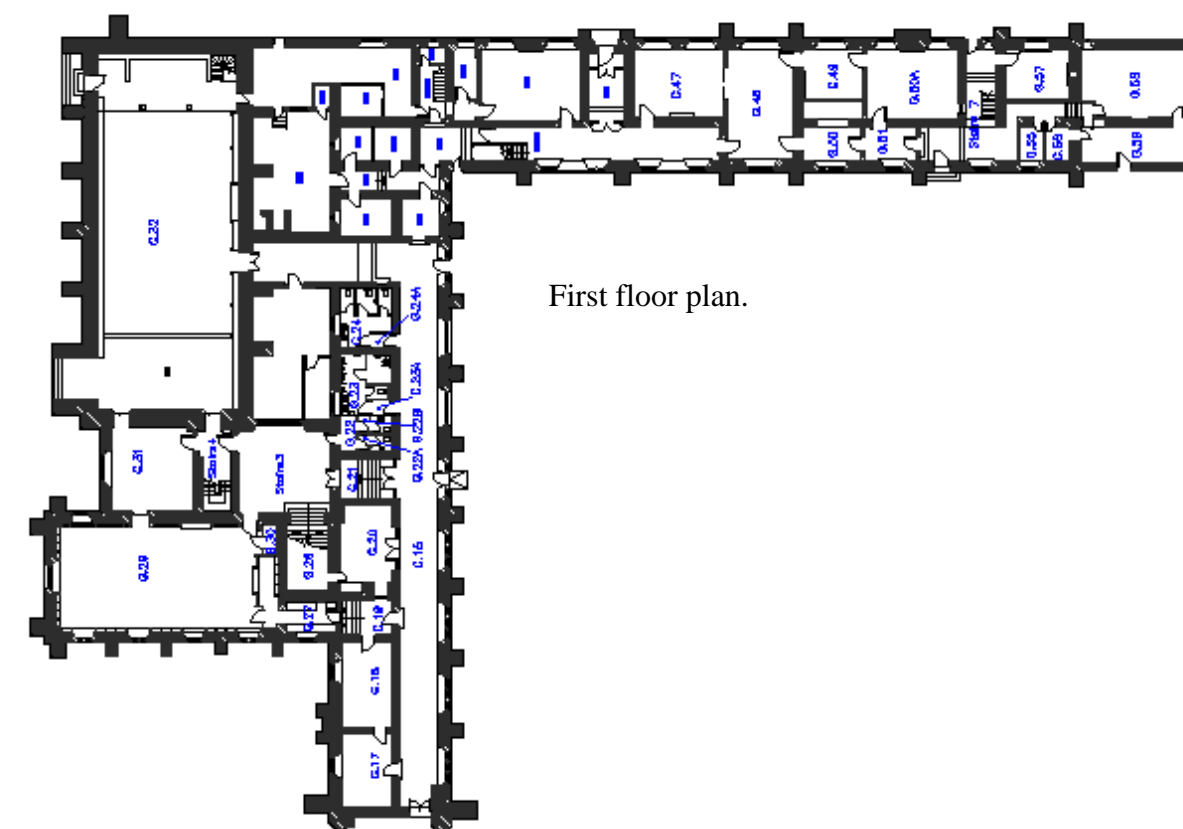
In the elevation below we can get a real feel for the Tudor Gothic design of the Quad. The First thing that stands out are all of the vaulted windows that seem to cover nearly half of the elevation. Another thing that stands out in this elevation is the tower to the left of the drawing. The huge arched entrance again gives the feel of a Tudor Gothic design.



Ground floor plan.



South Elevation and section through east building.



First floor plan.



### 3. Conservation issues with new use.

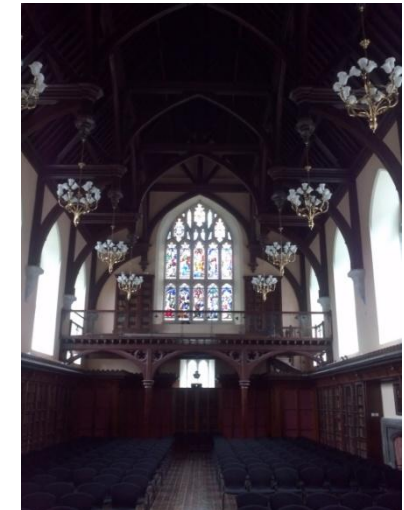
The new use I have been given for the Quad building is offices. The building already consists of a lot of office space. However changes have to be made in order to bring it up to modern office building standards. this will involve certain conservation issues which I am now going to look at in the following section.

The first thing I am going to look at is the fenestration of the windows. I believe that in order for this building to become a modern and sustainable office building the windows will have to change.



A lot of the current windows in the Quad are below the standard that would be required. The photo on the left shows cracking that has been fixed using some form of adhesive sheets. In my opinion this pane of glass must be fully replaced with careful consideration given to the conservation issues. I also believe that the aluminium framing throughout the building must be replaced and windows with opening sashets should be used. I would leave the stone mullions in place and untouched and keep as much of the original glazing as possible. The new frames would be skinny and try to resemble the old frame as much as possible without completely copying it. The replacing of these windows will provide a serious conservation issue and therefore proper research must be conducted as to the type of materials being selected. It is crucial that the overall appearance and historic feel of the building. The windows are an issue that must be dealt with but at the same time we must obey the rules of conservation and follow them vigorously.

Another conservation issue I have run into with the new use is the changing of certain rooms in order to turn the building into a modern office building. The main area where this is going to be a problem is the Aula Maxima.



This room is currently being used for, presentations and formal events. However for my new use of offices, I plan on turning it into a canteen area which will cater for the hole building. In my opinion this is the most well maintained part of the Quad building and when incorporating the canteen I must ensure I don't jeopardise or change the overall appearance of the area too much. The current flooring in the Aula Maxima is the original from 1849 and careful consideration must be given when choosing furnishings for the canteen. The furnishings must not harm the floor. I will be leaving in the book shelves and original lighting for both conservation and aesthetic purposes.

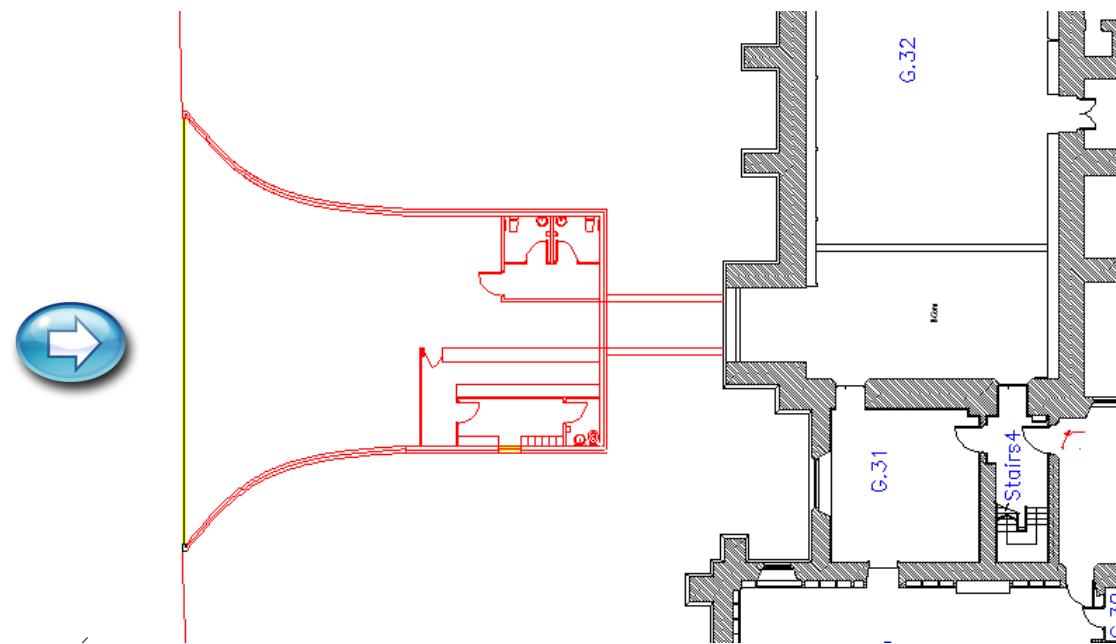
All other rooms that I will be altering the use of will not really affect the overall appearance of the building and therefore it will not cause any conservation issues and anywhere where it does the appropriate steps will be taken in relation to conservation.

The building also had a fire cert done as recently as 2006 and is in appliance with most of the current standards. this in turn means that when the building requires a new fire cert for its new use it should not cause any problems with conservation.

### Extension concepts:

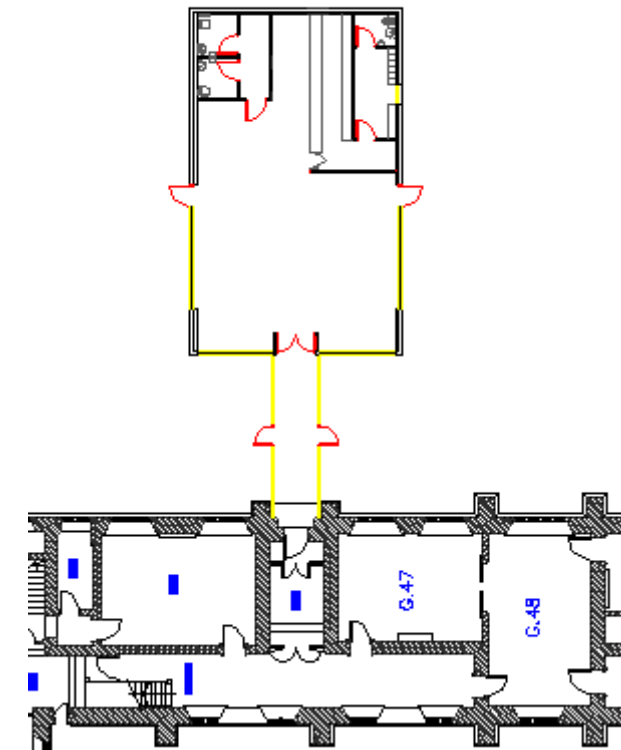
In this section I am going to look at two possible extension ideas that could be incorporated into this building and the conservation issues surrounding them.

#### Concept 1:



The first concept I am going to look at is an incorporation of a cafe into the building. This extension will be located at the back of the building and will be attached to the Aula Maxima. It will be constructed underground and will extend out as far as the edge of the hill on the site. A curtain wall system would then be incorporated into the edge of the hill. This extension will have no visual effect on the overall appearance of the Quad and therefore it will be no conservation issues surrounding it. It will also provide a very aesthetically pleasing view out onto the river, for people using the cafe. I was also thinking of incorporating a balcony ( location locate by the blue arrow above) to go out over the edge of the river. This balcony would also contain a stairs which would lead back up to the ground floor. It would provide a secondary means of escape in the case of a fire.

#### Concept 2:



The second concept I am looking at is again the extension of a cafe onto the building. This Extension will be attached onto the back of the east wing as can be seen in the drawing above. It will be located at ground level and will contain a lot of glass. This unlike the other extension will cause a number of conservation issues. It must blend in with the original building but at the same time you must be able to tell them apart, so as to not take for the original and historic appearance of the building.

#### Conclusion:

In my opinion the first concept is the best one. my reasons for thinking this are as follows:

- It will cause little if any conservation issues as the extension is locate underground.
- It will provide a beautiful view out over the river for all users of the cafe.
- It will serve its purpose as an extension and will only have minimal interference with the original building.

# **Bibliography.**

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