



Enlightenment

Paul Stallan

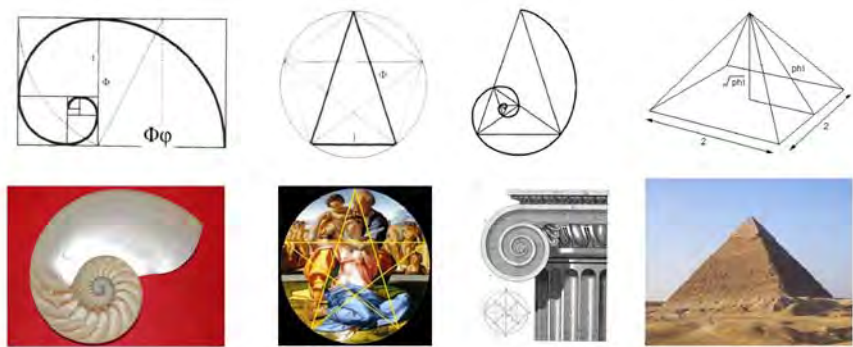
Enlightenment

I firmly believe that a new appreciation of historic art and architecture would do much to inspire new thinking in contemporary design. Being an expert in historic architecture is for me not simply about a material and technical appreciation of traditional construction.

It is my view that the building conservation community fixates on the science of conservation and fails to celebrate imaginatively the philosophical and artistic fundamentals of our historic cities whilst many contemporary architects fail to both appreciate the complex narratives and richness of our legacy environments compounding this with new architecture that is vacuous. Architecture different from building has conceptual content that embraces cultural, philosophical and artistic interpretation.

A schism exists between architectural practices that are interested in ‘modern’ architecture and those specialising in conservation. Historic architecture is the preserve of old whilst modern architecture would appear to belong to the young. In fact I would go as far as saying that the ‘young’ design community sees historic building conservation practice as boring and uninspired whilst the ‘old’ conservation community see contemporary architecture as inferior. A totally absurd schism which I might be overstating but one that I have experienced. In short both views are valid if our old and the new worlds are not imbued with art, significance and a celebration of life.

I am confident that on a number of important historic projects I have discovered fundamental qualities that I am sure were the original projects genesis but have remained unexplained or unnoticed since. To illustrate this point I can demonstrate that through my own keen interest in geometry and formal composition borne out of drawing that I have found meaning in historic architecture that transcends a simple material and subjective appreciation.



$$\text{phi} = \frac{a + b}{a} = \frac{a}{b}$$



(Town of Johnstone)

I have discovered that the historic town plan of Johnstone has been set out precisely using the golden mean proportional system. Whilst looking a project in Johnstone I was tracing over the towns urban grid and it simply occurred to me that the ratio of the blocks width to depth where not arbitrary.

The towns street frontages compared to their depths correlate exactly with the qualities of the phi ratio or the golden section as it is more commonly known. (i.e. The golden section is a line segment divided according to the golden ratio where the total length a + b is to the longer segment a as a is to the shorter segment b).

Having stumbled across this through the act of drawing I searched extensively for documentary or academic writings to confirm that Johnstones historic plan was in fact more than just a perpendicular grid. Thus far I have found no reference to Johnstone evidencing this quality.

There are writings that confirm that Johnston is a planned settlement but no descriptions detailing that this humble working towns urban figure ground is divine. I believe this omission is significant and if better understood would provide for a greater appreciation of Johnstone.

The poetry of Johnstones urban geometry does not however end with its harmoniously proportioned grid. There are further urban axes framed by the towns architecture that resonate with the heavens (see if you can find them). To be very clear what I have been studying in the plan of Johnstone is the architecture of classicism. More particularly the profound architecture of the Scottish Enlightenment.

Johnstones urban form is inspired by classical timeless truths, truths that have shaped art and architecture for millennia which for the most part are now are largely unrecognised or of little interest to people in the 21st century.

It is unfortunate in my view that an understanding of proportion is not more understood certainly in architectural and design practice.

Beyond being a student of architecture and experiencing a rudimentary module in classicism my interest in the classical art has come more through my continued study of art than initially architecture.

As someone who is continuously drawing it is natural for me to deconstruct and reconstruct shapes and forms in search of a beautiful composition. This preoccupation has naturally lead me to appreciate classical art not just on an aesthetic level but more fundamental.

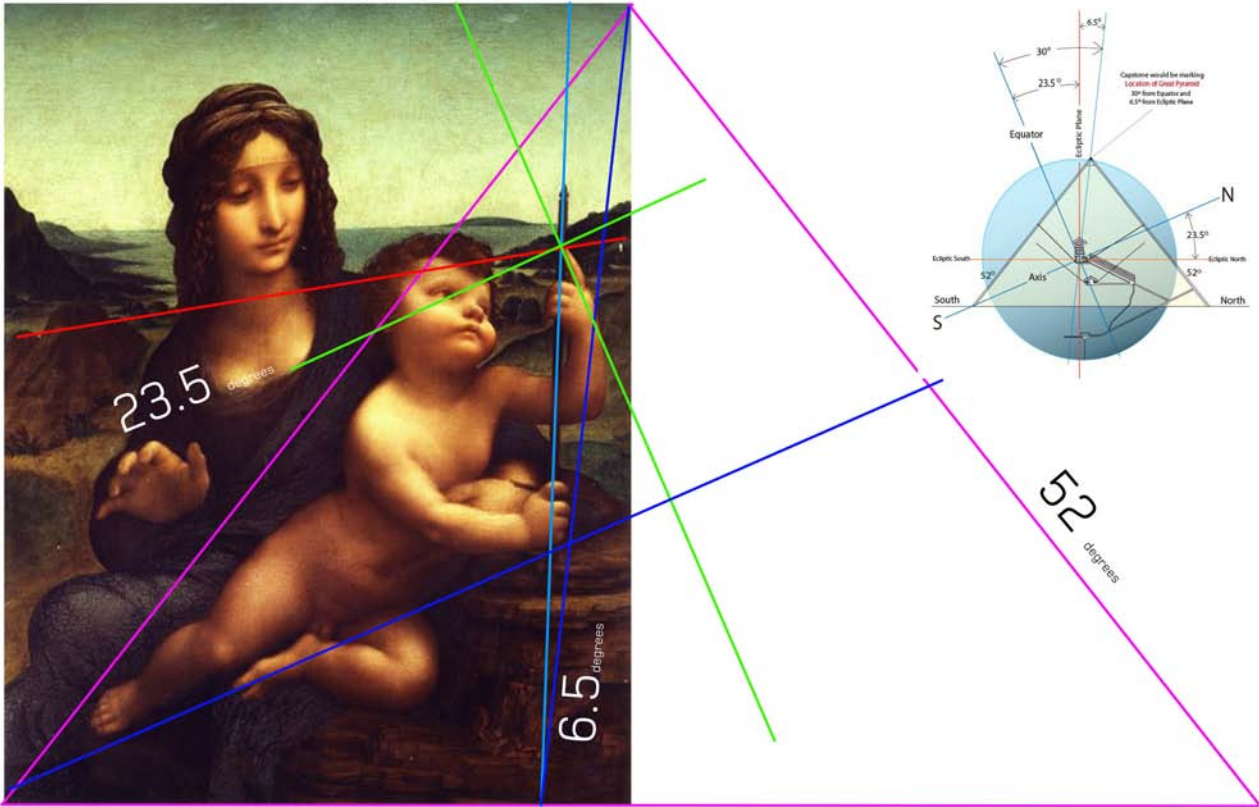
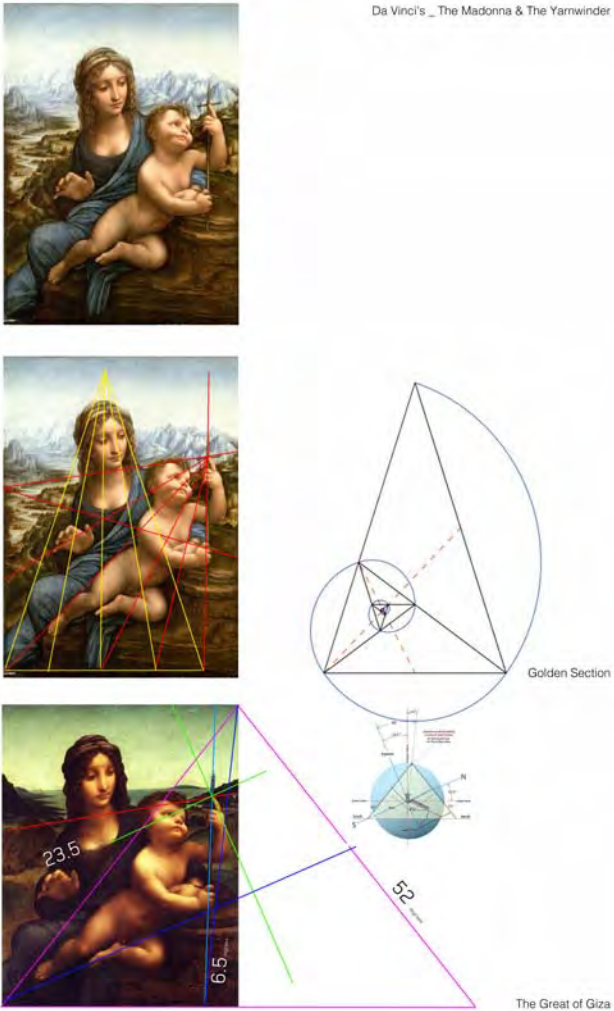


(Dalkeith Palace and Gardens)

I like to think my interest in classical art played a key role in unlocking a major estate strategy for Dalkeith Palace and Gardens for the Duke of Buccleuch. Tasked with trying to consolidate an approach to the project that would capture the Duke and Duchesses interest I set out as I typically do at the start of a commission by adopting a completely splatter gun approach to my research. After a week my desk was covered in an assortment of collected maps, photographs, images and plans.

An image that stared back at me through that week was the Dukes Da Vinci painting called the Madonna and the Yarnwinder (some may recall that this was the painting was famously stolen from the Dukes Drumlanrig Estate in Dumfries where six years later two Glasgow lawyers where arrested for trying to repatriate it). At a loss to how we might approach the Palace estate commission I randomly started to draw over the photocopy of the Da Vinci painting. The more I sketched over the painting the more I began to see that the painting had an underlying structure.

Obviously many historic and modern paintings have construction grids that have helped the artist structure a composition. Given Da Vinci is a master and an artist whose paintings have been widely studied for their different narratives I didn't expect to find and wasn't looking for anything new that hadn't already been thoroughly researched. I was just obsessively sketching as I always do. I found the paintings secret and not for the first time I had a divine epiphany.



(Leonardo Da Vinci’s Madonna & The Yarnwinder)

The paintings underlying diagram starts with the baby Jesus looking at the cross on the yarnstick as if understanding His fate. Secondly the yarnstick has two diagonals which set up a dynamic perspective across the painting focusing on a far a way hill again significant relative to His future. Additionally Jesus is also set at a dynamic 45 degrees to assert status. Mary is set within the composition in a very different manner with her bodily form outlining a visually ‘perfect’ golden section isosceles triangle.

It is clear that underlying the painting are lines of union that structure the image. Two beautiful overlapping grids, the dynamic and the static reinforcing the paintings internal dialogue.

There is however a third grid which completes the work as a work of classicism, for classicisms primary aim whether in art or architecture is to embody the greatness of earth but also the heavens. In short classical art celebrates earth through its use of the Golden Section the mathematical ratio that structures absolutely everything found in nature. Additionally classical art also makes very direct reference to astronomical geometry.

In the Madonna and the Yarnwinder these heavenly geometries can be seen in the use of the angle 23.5 degrees which is the earths tilt. For example simply refer to your standard world globe drinks cabinet and you will see it is angled at 23.5 degrees the dynamic axis that the earth rotates around.

(The Great Pyramids of Giza)

Further if you mirror the composition the paintings diagonal is 52 degrees on both sides and describes the cross section of the Great Pyramid of Giza a recurrent reference in classical art. There are further cosmic angles like 6 degrees included which refers to the angle of the ecliptic plan between the sun and the moon. These angles are not accidental but rather a fundamental component in language of classical art.

My colleagues whilst I studied the above where beginning to worry about my mental health. They were also concerned that this research was entirely irrelevant to our pending presentation to the Duke with regards to his Dalkieth Palace and Gardens. My thinking therefore moved more specifically to the study of his estate rather than his art collection, an estate that clearly blossomed fully during the time of the Scottish Enlightenment as my research confirmed.



Het Loo Palace _ William of Orange



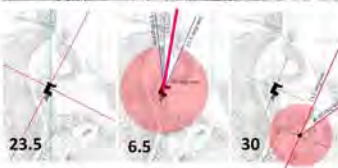
Dalkeith Palace _ Duke of Buccleu



Versaille Palace _ King Louis XV



Geometry of Dalkeith



Geometry of Versaille



The Louvre, Paris



(The Scottish Enlightenment)

Edinburgh and Glasgow in the early 18th Century had concentration of great minds who writings and achievements changed the world. The Scottish Enlightenment describes this period understood as an intellectual movement that ranged across the fields of philosophy, chemistry, geology, architecture, poetry, engineering, technology, economics, sociology, medicine and history.

Commonly referred to as Scotland’s ‘Golden Age’ the thinkers of the Scottish Enlightenment asserted the fundamental importance of human reason combined with a rejection of any authority which could not be justified by reason. They held to an optimistic belief in the ability of humanity to effect changes for the better in society and nature, guided only by reason.

The central tenants of classicism being the study of earths natural order and the heavens was the for the architects of the enlightenment period a language that they made there own. The Scottish artists and architects of this time continued to invest in a classical language that built on a lineage that directly connected back beyond even the great Italian renaissance.

(William of Oranges Palace of Het Loo)

That said Dalkeith Palace was a direct copy of William of Oranges Palace at Het Loo in the Netherlands established a context where architects like John and Robert Adam, James Playfair, William Burn and David Bryce where to be commissioned. Despite some of Scotlands finest architects having contributed it has been recognised that the landscape structure of the Estate has been lost in more recent times. Like my sketch study of the Dukes Da Vinci I typically started to draw over an ordnance survey plan of the Palace Grounds in an attempt to make sense of how the estates structures might be better connected.

(The Palace of Versaille)

Dalkeith Palace being a facsimile of Het Loo lacks however its majestic formal gardens. As Dalkeith was a copy of Het Loo, Het loo was a copied the gardens of Versaille. Het Loos gardens like Versaille are existential in their ambition. It struck me that the grounds of Dakeith Palace were potentially incomplete or that a more rural romantic approach to the natural setting was envisaged. Given that the architecture and the art of Dalkeith Palace involved some of Scotlands finest artists and architects of the day I thought it odd that estate plans ambitions had not been documented by historians. Could it be that the placement of the architecture within the landscape was arbitrary? I didn’t think so.

By sketching repeatedly over the Dalkeith O.S. I was trying to find a strategy that could be presented to the Duke that would encourage him to invest in the Palace environment. Trying to find a historic narrative that we might extend, a future in the past you might say. With my marked up photocopy of the Madonna and the Yarnwinder at one side, a plan of Versaille on the other I started to deconstruct the geometry of Dalkeith Palace and Grounds by sketching over the O.S. only to discover that Dalkeith Palace was orientated at 23.5 degrees.

(23.5 Degrees_ The Earth’s Tilt)

From this point I began to understand not only the Palace grounds and to discover connections between structures in the Park but had found the basis upon which to advise the Duke on his Palace renovation plans. With classical structures like Montagu Bride by Robert Adam a student of Piranesi no less, to the exquisite orangerie structure by William Burns we felt confident that we had an intellectual framework that would enable us to reconnect this landscape. Unfortunately the collapse of the financial markets effected not only our commercial clients but also impacted on Buccleuch affairs at this time. The Palace and its landscape remains an opportunity for Scotland.



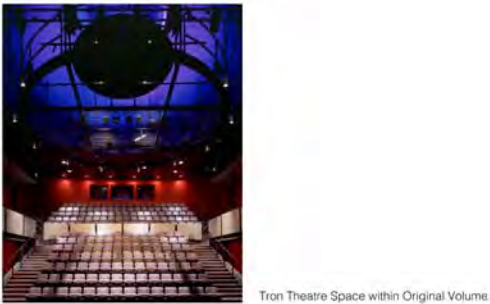
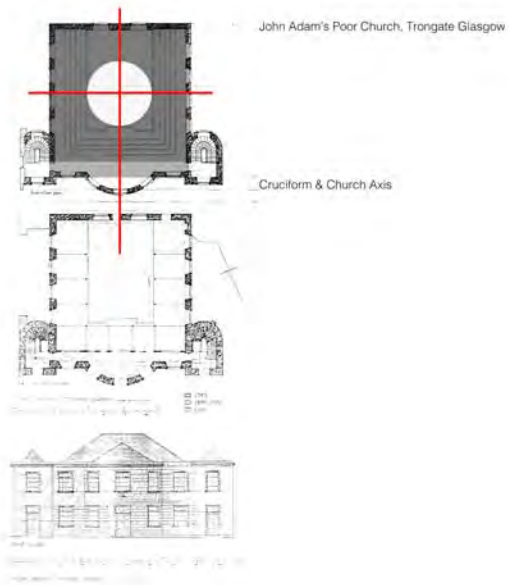
(The Tron ‘Poor Church’ by John Adam 1795)

Similarly on a much smaller project the Tron Theatre in Glasgow I discovered again by sketching over old plans that the Tron Church designed by John Adam in 1795 was not simply a square in plan with a dome centred over it as we initially thought. Again there was no historical text on the building that described its architectural form adequately.

Although a simple building and known as the ‘Poor Church’ in its day the space can be found to have a tension created by the dome being offset.

The dome is placed above the floor plan so as to describe a cruciform thus introducing a primary axis into the space. This is significant as there was a time when we contemplated removing the Tron church interior completely. We drew alternate theatre layouts within what we thought was a symmetrical square in both directions.

Thankfully our sketching revealed the church space dynamic. The prospect of having the building orientated one way and the theatre the other would have been unfortunate.



(Steve Jobs & Apple Design)

But what of contemporary architecture and design? Are the tenants of classical art relevant to our modern life? Is not the golden section and its divine proportions a geometric system and phenomenon of the past? Steve Jobs didn't think so. Take everything Apple for example. From Apples logo to their computer screen dimensions to your ipod you will find all Apple products and their primary graphics are strictly proportioned and designed to conform with phi grids. Studies have proved that phi proportioned shapes appeal more than arbitrary forms.

Given that your own body proportions to the rhythm of your heart beat are determined by phi I can imagine Steve Jobs team thought it was obvious that their products were an extension of ourself. Note next time you watch Casualty on television lookout for the heart monitor as the mathematical heart beat graphic that appears to tell you that you are alive is a phi wave ratio. Your heart give a double beat their rhythm being 1 to 1.618033988749895..... divine.

(Benson & Hedges)

I also learned from Will Alsop that Benson and Hedges cigarette packets are not only gold in colour but golden in their dimensions. Tobacco companies like Apple have understood that a pleasing shape has commercial potential. Will described how his fag packet as his inspiration for the spectacularly suspended building for the Ontario College of Art. Its a scaled up version of a B&H box supported by a few cigarettes. Will is completely serious.



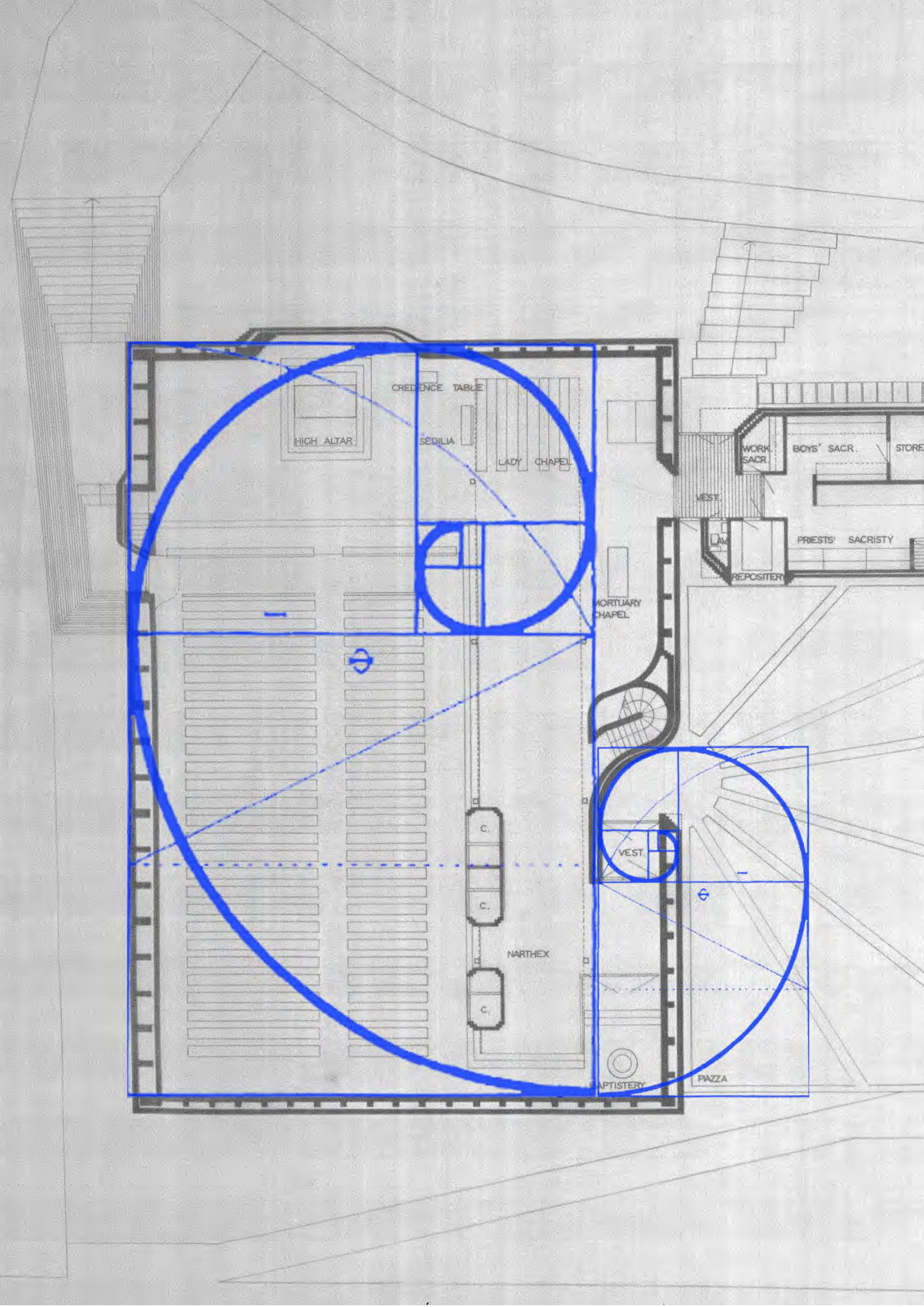
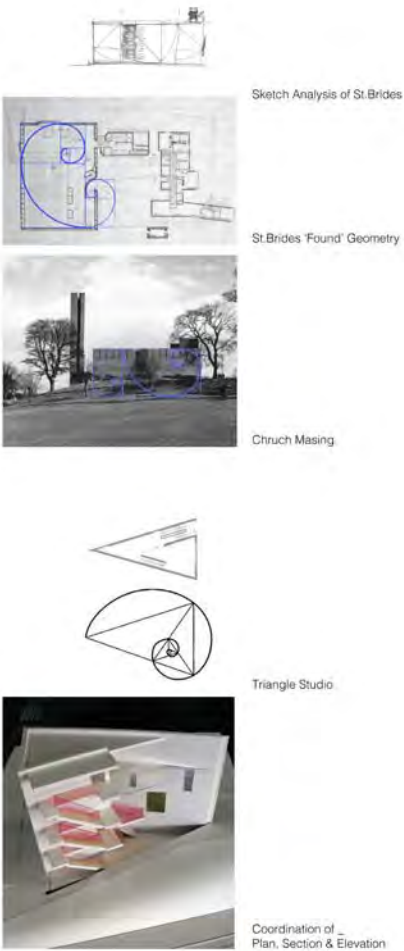
(St.Brides Church, Gillispie Kidd & Coia)

An ongoing project that I am currently involved with is Gillispie Kidd and Coias St.Brides Church in East Kilbride. Tracing repeatedly over the floor plans and elevations I discovered that the length, breadth and height of the building are based on the section. I was actually gob smacked by this discovery. Again I thought this quality must be documented or written about somewhere, but no I have found no comment on the proportions of the churches and buildings designed by both Andy MacMillan or Izi Metzstein designed. I was due to meet Andy to discuss our work on the church and presented him with my diagrammatic studies. Andy was stunned.

Andy acknowledged that he had finely developed visual intelligence but he did not recall drawing the church so exactly that it conformed to a section grid. For him it was more intuitive and well it looked right. He confirmed however that within his drawing office there were older draughtsmen who had been classically or rather traditionally trained who would take their sketches and by default he guessed naturally ensure the building as it was being drawn had a proportional integrity. Alternatively Andy confirmed that he always suspected he was a genius. Regardless Andy was so pleased it was a wonderful moment.

(My Triangle Studio)

I have designed my own studio on a triangular plot which I bought. The dimensions of the site its length to breadth have determined the plan form of the building. The dimensions were so close to a 'harmonious' triangle that it seemed perverse to deviate from it. I certainly do not consciously set out with designs to force them into a straight jacket of mathematical correctness but grids can be liberating.



(13 Degrees)

Another geometric occurrence I believe I have discovered further to stumbling through a design project relates to Glasgow’s Victorian girdrion. On the numerous urban projects I have worked on within the Glasgow urban grid I often asked myself why is the city’s grid rotated at 13 degrees to ordnance. Why did our city forefathers set a grid out a 13 degrees and not make it exactly perpendicular to north south east and west?

It wasn’t until sitting in our wee flat in the Kyles of Bute staring at a beautiful detailed sailing map of the West Coast of Scotland that I noticed the map had a set of different compass rose diagrams up one side all with different north points. Sailors I understand can use when they navigate around our shores. These diagrams don’t show polar north but rather magnetic north. Magnetic North changes depending on where you take a reading.

The thought occurred to me that perhaps the Victorian surveyors of Glasgow thinking that were setting out a strict North South grid were not referring to the stars but were using a magnetic compass. I laughed to myself thinking that surely not; the Egyptian pharaohs could exactly map out the heavens on earth with mathematical precision yet a bunch of city surveyors plan Glasgow on a wonky grid. Subsequently I have looked a series of city plans to understand if this might have happened elsewhere. I have found that this occurrence happens in the Soviet grid plan of Almaty and in the grid plan of Melbourne where the city grid is rotated at 8 degrees whilst magnetic north is offset by exactly the same extent.

In our design for North Glasgow College I exploited a ‘happy coincidence’ of true north and Glasgow’s skewed north to create a new public space. Flemington Street in Springburn that the College fronts is parallel to Sauchiehall Street. Surprisingly the influence of the City grid extends this far North. We thought that the building responding like a compass offering direction to its learners was an appropriate metaphor. The building is therefore cut to form an exact North South East West Axis from the skewed Glasgow grid. Like a giant sundail you can even learn to tell the time precisely from the movement of the buildings shadows. The new space is importantly however is orientated exactly in a south westerly direction to derive maximum benefit from mid-day and afternoon sun.

(Drawing as a Research Tool)

Through direct project working and especially drawing rather than detached academic research or study I have learned a great deal about art and philosophy and its importance in historic architecture and consequently for me its place in contemporary architecture. With each and every new project I am involved in I try very hard to understand the factors that have shaped that architecture or urban context I find myself working in.



Glasgow's Rotated Grid



Ordanace & Magnetic Celebration



South West facing Square



Robert Adam's Montagu Bridge

Dalkeith Palace

