AWAKENING BEAUTY:

MEANING IN CONTEMPORARY CATHOLIC ARCHITECTURE

by
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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis including any required final revisions as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

A Catholic church is unique among other places of worship because the space of a church forms the central place for the sacramental life of the Church, as Body of Christ, while also being an expression of it. With the exception of the Orthodox tradition, this is unique even among other Christian denominations. Catholic sacramental life is the path to holiness for any believer, providing the means by which one journeys from earthly to eternal life. Life as a Catholic means living within this tension between temporality and eternity, so the way architectural design negotiates past, present and future is a key consideration for any church.

This thesis investigates several questions: What is a Catholic church, in essence, and how can its form be shaped by cultural and temporal context? How is meaning - manifest as beauty - instilled and communicated through architecture? How can a church be both contemporary, and an icon of eternity?

In recent decades, the Catholic Church has struggled to develop a meaningful architectural language within our contemporary world. This failure to utilize architecture's communicative power in such significant cultural and religious spaces presents problems not only in an evangelistic sense but leads to a ripple effect in the way society values and experiences our built environment, as a whole. In that sense, this topic extends far beyond Catholicism. An examination of Catholic architecture can lead to questions about the role and the value of architecture in the world and how its beauty (or lack thereof) influences who we are as human beings.

Within the context of Catholic sacramental life, the thesis is composed of seven reflections around time, ritual, and culture, exploring the ways meaning can be communicated through architecture, resulting in expressions of beauty.

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Dedication

To anyone who has ever struggled to find beauty in the Catholic Church, yet persists in their search.

&

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Cathédrale Saint-Pierre de Lisieux, France. *Photograph by author, 2019.*

"Beauty is the word that shall be our first. Beauty is the last thing which the thinking intellect dares to approach, since only it dances as an uncontained splendour around the double constellation of the true and the good and their inseparable relation to one another. Beauty is the disinterested one, without which the ancient world refused to understand itself, a word which both imperceptibly and yet unmistakably has bid farewell to our new world, a world of interests, leaving it to its own avarice and sadness. [...] We no longer dare to believe in beauty and we make of it a mere appearance in order the more easily to dispose of it. Our situation today shows that beauty demands for itself at least as much courage and decision as do truth and goodness, and she will not allow herself to be separated and banned from her two sisters without taking them along with herself in an act of mysterious vengeance. We can be sure that whoever sneers at her name as if she were the ornament of a bourgeois past - whether he admits it or not - can no longer pray and soon will no longer be able to love. [...] In a world without beauty - even if people cannot dispense with the word and constantly have it on the tip of their tongues in order to abuse it - in a world which is perhaps not wholly without beauty, but which can no longer see it or reckon with it: in such a world the good also loses its attractiveness, the self-evidence of why it must be carried out. [...] In a world that no longer has enough confidence in itself to affirm the beautiful, the proofs of the truth have lost their cogency."

Hans Urs von Balthasar
(Seeing the Form, 18-19)

Preface

During my travels to Europe midway through this thesis work, the contrast between darkness and light became a major theme for contemplation. Though well explored, this theme is difficult to exhaust. It arose for me at the beginning of my trip, during a visit to Dachau concentration camp in Germany. It may seem odd that a research trip on beauty and church architecture would begin at a concentration camp. That was not my original intention, but for personal and practical reasons, it happened to work best that I begin there. This was followed by a visit to Auschwitz-Birkenau during my time in Poland one week later. The symbolism of light and darkness, and how they coexist, persisted throughout my travels, and is, of course, also very fitting given its significance in Christian theology.

Darkness enables even the faintest lights to be perceived more brightly, while at the same time, light vividly reveals areas of darkness. They are inextricably linked. Throughout my life as an artist, I have known the importance of contrast, especially in drawings. The brighter the whites and the darker the blacks, the more life-like the work becomes. Consider also the resultant shadows when sunlight hits a heavily textured surface. The Passion Facade at the Basilica of the Sagrada Familia in Barcelona was designed and carved with this in mind. Sculpted in a modern style with sharp edges, there is great depth to each biblical scene in order to accentuate the shadows when sunlight hits the facade, symbolic of the mingled joy/light and sorrow/darkness in the events of Christ's Passion.

Long before my visits to Dachau and Auschwitz, I had become familiar with the design of each camp. I had studied architectural drawings, read various books and essays, listened to lectures, and stood next to 1:1 scale models of three key elements from the Birkenau gas chambers. Sickening as they may be, there is an undeniable elegance to their design - a harmony, proportionality and attention to detail that has always disturbed me. That fact struck me again as I stood beneath the lush, towering trees along the main boulevard at the camp in Dachau this spring. There was a striking contrast between the elegance of physical appearance and the reality of what occurred in places like this that makes them that much more horrifying. They were certainly not beautiful, but how could I reconcile that fact with all the research I had done on beauty?

Beauty is something I have been wrestling with for a long time, but especially since beginning my graduate studies. Throughout history, humans have often tried to define beauty based on attributes of physical appearance, particularly regarding architecture. At a certain point, this

always proves problematic. The beauty of a person, place or thing goes far beyond physical appearance, and while I believe we all intuitively know this to be true, it has been a major stumbling block when it comes to attempted definitions. Pondering this subject intensely for over a year, it became apparent that the missing factor must have something to do with intention - whether the intentions of the creator or of the user - but articulating this is difficult.

There are many philosophers and artists throughout history who have been dissatisfied with definitions of beauty based primarily on attributes like harmony or proportion. Antoni Gaudí, Dalibor Vesely, Alberto Pérez-Gómez, Daniel Libeskind and John Hejduk are among those in the field of architecture who would claim that love and desire, play an important role in architectural beauty.[1] There are others throughout history who have testified to a connection between beauty and morality (a connection I would agree with), in the sense that beauty encourages a more ethical society.[2]

My conclusion, which is more of a starting point, is that the hinge-point of beauty lies in embodied meaning. This is certainly not a new theory. What I am calling 'meaning' is closely related to what Thomas Aquinas was alluding to in his *Summa Theologiae* when discussing 'claritas' as an attribute of beauty.[3] There are other thinkers who have attested to something similar. A building embodies meaning infused into it by both those who play a role in its design and creation, but also those who use and experience it. When those meanings are anything less than good and true, it compromises beauty, since these three attributes are fundamentally linked as transcendental properties of being.[4]

The obscene violations of human dignity that occurred within the walls and streets of Dachau and Auschwitz-Birkenau prevent them from every

1 "To do things right, first you need love, then technique." Antoni Gaudí, printed on the wall of one of the galleries at Sagrada Familia Museum in Barcelona, Spain. See also Alberto Pérez-Gómez, *Built Upon Love: Architectural Longing After Ethics and Aesthetics*, (Cambridge, MA: MIT Press, 2006).

2 Some of these people include Socrates, Plato, Thomas Aquinas, T.J. Gorringe, Josef Pieper, Immanuel Kant, Edith Stein, Karsten Harries and Hans Urs von Balthasar, among others.

3 Thomas Aquinas, *Summa Theologiae,* trans. Fathers of the English Dominican Province (1920; New Advent, 2017), I, q. 39, a. 8, http://www.newadvent.org/summa/1039.htm#article8.

4 Michael R. Spicher, "Medieval Theories of Aesthetics," in *Internet Encyclopedia of Philosophy*, https://www.iep.utm.edu/m-aesthe/.

being considered beautiful, no matter how proportionate, harmonious and meticulously detailed they may have been. I am not saying that a reasonable person would ever consider places like these beautiful, but in my own thinking, if I were to follow some of the historical classifications for beautiful works of architecture through to their logical conclusions, they could technically have been considered as such. This reason alone proved there was a serious flaw in those classifications. Dachau and Auschwitz were made into instruments of torture and murder, and that meaning will always come through. It is felt in the eeriness that still permeates the sites.

By contrast, just a week after standing next to the ruins of the crematoria in Birkenau, I experienced one of the most sublime moments ever brought on in me by a work of architecture. I had flown from Rome to Barcelona for only 36 hours, specifically to visit the Basilica of the Sagrada Familia. Walking around the outside of the building early that morning, I had been delighted to finally see this church in person, but was unprepared for my initial experience of the interior. Stepping through the Portal of Charity (the central doors in the Nativity Facade) and into the east transept, I was taken aback by my own reaction. Tears began rolling down my cheeks as I gazed up at the tree-like stone columns and into a space awash in rainbows of soft sunlight, shining through the many stained glass windows even on a cloudy day. The beauty of it left me breathless. This was a place designed to celebrate life, from the smallest insects to the movements of the cosmos, every inch containing deep meaning and made to communicate truth and goodness.

These experiences only served to reinforce my certainty of the power of the built environment. Through its communicative function, architecture is always speaking. Whether or how much we listen are different questions, but the influence of this communication should never be overlooked. The power of the architectural language shapes us - influencing how we live and who we become. There will always be meaning contained within architecture that goes far beyond physical appearance, and it seems that this, more than anything else, either creates or prevents a manifestation of the beautiful.



0.1
Auschwitz I (April 30, 2019)



0.2
Basilica of the Sagrada Familia (May 8, 2019)

Introduction

If one were to map out a history of the architecture of the Catholic Church,[1] including its Jewish roots, it would, at the same time, encompass much of the history of architecture itself. Particularly in the West, churches make up a major percentage of public architecture and therefore, have a significant impact on our built environment. One might ask, in our modern, multi-cultural world, what is the role of a church as sacred space? Does it still have value? Since more than 84% of the world's population profess some kind of religious belief, and over 30% are Christian,[2] it would seem that churches and other places of worship still have immense architectural and societal value. There is much to be said about the value of sacred space in architecture as a whole,[3] but this thesis will focus on just one type: the churches of the Catholic faith tradition.

It could be stated, and has been pointed out by prominent scholars,[4] that in recent decades, the Catholic Church has struggled to find an architectural language suitable for our time. With the drastic transformation in the expression of liturgy after the Second Vatican Council,[5] the last sixty years have been a period of significant growth within

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1 The word "church" will be used in two different ways throughout the remainder of this work. When it appears capitalized, as Church, I am referring to the Church as institution or as the body of Christian believers; when it appears lowercase, as church, I am referring to a physical church building.

2 *The Future of World Religions: Population Growth Projections, 2010-2050*, Pew Research Centre, April 2, 2015, http://www.pewforum.org/2015/04/02/religious-projections-2010-2050/.

3 Some recent works that address this are Julio Bermudez, ed., *Transcending Architecture: Contemporary Views on Sacred Space*, (Washington, D.C.: The Catholic University of America Press, 2015); Renata Hejduk, and Jim Williamson, ed., *The Religious Imagination in Modern and Contemporary Architecture: A Reader* (New York: Routledge, 2011); Thomas Barrie, Julio Bermudez, and Phillip James Tabb, ed., *Architecture, Culture, and Spirituality* (Burlington, VT: Ashgate Publishing Company, 2015); Yale School of Architecture, *Constructing the Ineffable: Contemporary Sacred Architecture*, ed. Karla Cavarra Britton (New Haven, CT: Yale University Press, 2011).

4 One such scholar is Bishop Robert Barron, who writes: "In the years following the Second Vatican Council, I'm afraid that most Catholics lost [the ability to 'read' a church and decipher the embedded meaning within]. This was due not to the texts of the Council themselves, but to certain trends within contemporary architecture and spirituality that influenced the construction of churches during the last fifty years. Modernist architectural theory dictates that buildings should be reduced to their essential characteristics [...]. This led to churches that were sleek, streamlined, functional. And many theologians and spiritual writers of the last half-century so emphasized the fact that church means the people of God that they undressed the symbolic and spiritual power of ecclesial buildings themselves. [...] The result [...] was 'beige' churches, largely empty 'gathering spaces,' devoid of color, symbolism, and artistic texture." Robert Barron, preface to *The Church: Unlocking the Secrets to the Places Catholics Call Home,* by Donald Wuerl and Mike Aquilina (New York: Random House, 2013), 7-8.

5 These changes were not a result of the Council alone, but were influenced by

the Church, as it continually seeks to interpret the reforms of the Council. This search for meaning and its appropriate expression has been reflected not only liturgically, in the vast variations of worship across different regions, but also architecturally, in the diversity of church forms. Since the past several decades have also brought about drastic changes in the wider world - culturally, socially, politically and economically - the Church has found new methods of dialogue and interaction in an effort to address this reality.[6] To this end, many Catholic churches built or renovated in the later half of the 20th century until today, have utilized prominent principles of modernist architectural design or have come to reflect prominent societal values in the absence of a strong architectural style. Unfortunately, because modernist architecture was intended to be international (in other words, more generic) and because dominant Western values include consumption and consumerism, this has resulted in many ineffective and/or poor quality churches whose designs show little to no consideration for the rich architectural heritage of their faith tradition or for the proper celebration of the rituals carried out within it (though there are notable exceptions, some of which will be pointed out in the subsequent chapters). There have also been attempts to simply transplant historical styles with little to no regard for how unsuitable they are in a contemporary context, for both practical and cultural reasons. As a Catholic myself, ongoing and frequent experiences of these disappointing spaces all over Canada, and many other countries, motivated me to choose this as a topic for my graduate research.

This research began with an attempt to come to a deeper understanding of beauty - an extremely complex topic, multi-faceted and impossible to fully understand, but for those reasons, all the more worthy of exploration. Beauty is powerful. It can lift the human spirit, heal, make us feel loved, draw us out of ourselves and unite people of diverse backgrounds through common experience. Beauty honours those who encounter and receive it. Naturally, these abilities give it a powerful role in the built environment - especially in sacred architecture, which is created for the betterment of human experience. But what is beauty and why is it important? How can it be created? I knew the importance of beauty in the Catholic tradition, and

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other events in the years previous, including the work of the Liturgical Movement.

6 Evidence of the Church's effort to address issues of the modern world can be found in several documents from (and leading up to) the Council as well as subsequent Church documents, such as *Gaudium et Spes* (on the modern world), *Pacem in Terris* (on world peace), *Centesimus Annus* (on social justice), *Evangelium Vitae* (on bioethics), *Spe Salvi* (on the modern world), and *Laudato Si'* (on care for the environment).

how critical it is in a church as a reflection of Divine Beauty, but I needed a method of understanding and articulating what it means for something to be beautiful, in an objective sense.

An understanding of one's own time can never be achieved apart from study of the past. This is why I began my work with historical research to understand what principles have been used by people of other periods to identify the beautiful, and how those principles may still apply today.[7] After months of research into theories of aesthetics from ancient Greece through to modernity, in addition to reflecting on my own experiences of beauty, I came to agree with the theory that, in addition to certain features of appearance, beauty in architecture comes from meaning communicated through form. When there is a failure or lack of meaningful communication, the resultant creation lacks beauty.

Given the complexity of the term 'meaning,' it is necessary to explore the concept more deeply before I go any further. The writings of Canadian theologian Bernard Lonergan are my primary source for my own understanding of meaning as presented in this work.[8] In his *Method in Theology*, Lonergan first outlines the different carriers[9] of meaning, and then identifies several of its realms[10] and functions[11]. Architecture

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7 This method was largely influenced by nineteenth century British architect Charles Robert Cockerell and the way he approached the practice of architecture, looking for architectural principles which have reoccurred throughout time in order to learn from history and translate those lessons into the present, as documented in Anne Bordeleau, *Charles Robert Cockerell, Architect in Time: Reflections Around Anachronistic Drawing*, (Surrey: Ashgate Publishing Limited, 2014).

8 The concepts laid out in the following sentences are taken from Bernard F.J. Lonergan, *Method in Theology* (Toronto: University of Toronto Press, 1971), 57-99, as well as Neil Ormerod and Christiaan Jacobs-Vandegeer, *Foundational Theology, (*Minneapolis: Fortress Press, 2015), 102-114. *Foundational Theology* is a book on fundamental theology using the works of Lonergan. Written by two Lonergan scholars, it is a clear and helpful companion to the complex theories outlined in Lonergan's *Method*.

9 Carriers include, (1) **intersubjective meaning**, carried through spontaneous gestures which convey direct and immediate meaning, (2) **artistic meaning**, carried through the artistic expression of an artist, (3) **symbolic meaning**, carried through certain objects or images that convey particular meanings on an individual, communal or archetypal level, (4) **linguistic meaning**, carried through either commonsense or technical language, and (5) **incarnate meaning**, carried through the life of a person, and combining the other carriers of meaning. Lonergan, *Method*, 59-73; and Ormerod and Vandergeer, *Foundational Theology*, 103-108.

10 This is not an exhaustive list, but some of the realms of meaning include (1) **commonsense**, which deals with the relations of things to us, (2) **theoretical**, which is explanatory and technical, dealing with the relations of things to each other, and (3) **scholarship**, which serves to translate meaning from commonsense realms of the past to ones of the present. *Foundational Theology*, 108-111, and *Method*, 81-85.

11 There are four functions of meaning as outlined by Lonergan: (1) **cognitive,**

operates as a carrier of artistic, symbolic, and linguistic meaning, while impacting incarnate meaning through its direct influence on people's lives. It moves between several realms of meaning, while performing a communicative function. These meanings are determined in the lives of individuals through Lonergan's concept of *authentic subjectivity*, which allows each of us to recognize objective value in the world - one of these being the value of beauty, as splendour of truth. Authentic subjectivity is the result of being attentive, intelligent, reasonable, and responsible human beings.[12] This thesis explores the various carriers of meaning in church architecture, striving to understand their relationship to Catholic ritual, and how their integration can be successfully achieved through architecture's communicative function, in order to manifest beauty.

While aspects of a building's meaning may alter through time, others remain unchanged. This is where ritual becomes critical. Architectural historian and professor Alberto Pérez-Gómez makes a point along these lines, speaking to the effect human ritual or action has on architectural meaning:

> In architecture, the rituals and events framed by a building are transient, just as speech is and the experience of architecture is qualified by these events. In other words, the meaning of architecture, like that of a poem, is reenacted by the participant. It is surely different to "visit" a building as a modern tourist than to experience it through ritual, or to live and work in it. The building may be relatively permanent, yet at least a portion of its meaning is impermanent. The Parthenon is certainly not the same architecture for an ancient Greek participating in a procession in honor of Athena as it is for a modern visitor admiring its rich

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which intends to convey what is factually true, (2) **constitutive**, which constitutes the identity of a particular community through shared meanings, values and experiences, (3) **effective**, which seeks to inspire action, and (4) **communicative**, which serves to "communicate to others our cognitive, constitutive, and effective meanings". *Foundational Theology*, 111-114, and *Method*, 76-81.

12 Lonergan refers to the process of developing authentic subjectivity as "transcendental method," which consists of four key actions, (1) being attentive to the data perceived through experience, (2) being intelligent by inquiring and understanding the meaning we encounter in the world through experience, (3) being reasonable by reflecting and judging our understanding to reach some kind of conclusion, asking whether a thing is so, and (4) being responsible by deciding to take action to do what is good, based on our judgments. In other words, transcendental method requires us to experience, understand, judge and act through conscious attending. *Method*, 13-20.

This is the method by which we, as imperfect human beings, can come to know and recognize objective value (beauty, truth, and goodness) in the world.

marble and fine detailing.[13]

Yet, the reason the rich marble and fine detailing are a part of the building in the first place is a result of its original purpose, and what meanings those materials and details were intended to communicate. The meaning of a piece of architecture is impossible to measure in its entirety, but experiencing it at a particular time or through a certain ritual reveals different facets.

Architecture has the power to communicate in a way no other art form can, as a unique carrier of artistic meaning.[14] We may be able to avoid paintings or sculptures that we dislike or find unattractive, but we cannot avoid architecture in the same way. We have to engage with it. It surrounds us on a daily basis. One of the greatest privileges of the architectural profession is the opportunity to reveal "the extraordinary in the ordinary"[15] through design, and in this sense, through our lived engagement with it, architecture can teach us to see, both literally and figuratively, helping us develop an increased attentiveness in the world.

When true beauty pierces us, it is a simultaneous experience of both joy and sorrow - joy at having had a taste of infinite bliss, yet sorrow at knowing that in our temporal realm, this experience must always come to an end.[16] In creating such visceral experiences, the beauty of architecture has the power to awaken us on a deep level. This relates to Lonergan's concept of authentic subjectivity. When we are more deeply aware of how the transcendent experience of architecture affects us, as an encounter with

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13 Pérez-Gómez, *Built Upon Love*, 67.

14 "The work of architecture is no mere bearer of meaning, as if the meaning could be transferred to another bearer. [...] In a profound sense, [artistic meaning] belongs to the world. Its experience overwhelms us. Rather than simply meaning 'something,' art and architecture enable meaning to present itself. [...] The work of architecture preserves its meaning within itself. It is not an allegory in the sense that it says one thing and gives us to understand something else. What the work has to say can be found only within itself, grounded in language and yet beyond it [...]." Ibid., 116.

15 James Hillman, "The Practice of Beauty," in *Uncontrollable Beauty: Toward a New Aesthetics* (New York: Allworth Press, 1998), 261-274.

16 Architect Peter Zumthor articulates this reality when he writes: "Beauty [...] is at its most intense when it is born of absence. I find something missing, a compelling expression, an empathy, which instantly affects me when I experience beauty. Before the experience, I did not realize or perhaps no longer knew that I missed it, but now I am persuaded by knowledge renewed that I will always miss it. Longing. The experience of beauty makes me aware of absence. What I experience, what touches me, entails both joy and pain. Painful is the experience of absence and pure bliss the experience of a beautiful form that has been ignited by the feeling of absence." Peter Zumthor, *Thinking Architecture* (Basel: Birkhauser, 2010), 80-81.

beauty, we develop a greater capacity for recognizing objective beauty, truth and goodness in the world. This is a process of psychic conversion,[17] of learning to 'see'.

It is through the manipulation of physical elements, that over time, the built world also shapes lives, cultures, and societies. Therein lies the greatest dignity and responsibility of architectural work. Architects are translators, deciphering meaning in lived experience and creating places where time, culture and memory are embodied and made manifest. Meaning is brought forward in a method of communication which can reach all people through lived interaction. This is what truly great architecture has done through time.

When we enter the realm of sacred architecture, this reality becomes even more significant, given the meanings and values it is meant to communicate. In a Catholic church, every element is meant to be meaningful and to lead people into deeper relationship with God. It cannot achieve this if it communicates an incorrect theology through its very form, particularly as it effects the proper celebration of the Liturgy of the Mass. The architecture of a church is a primary communicator of the depth of meaning in Catholic theology (even if that theological depth may not be immediately perceivable to all people). As with everything in Catholicism, this does not just apply at a surface level. This effort of communication should influence every aspect of the creative process, resulting in beauty that evokes an aching longing for something intangible, beyond this world.

A church cannot be reduced to a single element, or its design to a simple list of considerations. In an attempt to understand what a Catholic church actually is, in essence, and how that relates to the many deep and nuanced meanings the language of architecture is able to communicate, I have set up this thesis as seven different reflections, each touching on an aspect of architectural communication.

Relating these methods of translation to the seven sacraments of the Catholic Church helped me to form a structure. In the end, this structure was selected because of the centrality of the sacraments to the Catholic faith. They are the very heart of Catholicism, and together,

17 Theologian Robert Doran developed the concept of psychic conversion from the work of Bernard Lonergan, as it relates to the other types of conversion Lonergan identifies (religious, moral, and intellectual), which, together, lead to authentic subjectivity. Robert M. Doran, *Psychic Conversion and Theological Foundations: Toward a Reorientation of the Human Sciences* (Atlanta, GA: American Academy of Religion, 1981). See especially section 4.6, "The Notion of the Beautiful".

constitute the entire life of a Christian and their life-long journey towards holiness.[18] An exploration of architecture's relationship to sacramental theology, even in a basic sense, can shed light on the many varied facets of these places of worship.

The structure is as follows:

Chapter 1, *Eucharist: Temporal Reckoning*, explores what it means to live in time while being oriented towards eternity, discussing cartographic methods of understanding time throughout history, and how these aid in our existential orientation. It also outlines how church architecture can become a kind of temporal map and why this is significant in relation to the Catholic Eucharistic ritual.

Chapter 2, *Baptism: Structure and Symbol in Caplutta Sogn Benedetg*, studies Peter Zumthor's Caplutta Sogn Benedetg and the means by which structure can and has been used symbolically, to communicate both intended and unintended meaning.

Chapter 3, *Confirmation: Material Significance*, tells a story of clay from harvesting to its use in an architectural creation, as an extended metaphor of the human journey towards sacredness. It looks at the significance of physical materials in the Catholic tradition, the way ritual elevates simple elements like bread, wine and oil, and how this can translate to the material of a church. Eladio Dieste's Iglesia de Cristo Obrero is used as a case study.

Chapter 4, *Reconciliation: Place of Memory*, is a meditation on the importance of memory in humanity's relationship with God, with a specific look at its significance in the Sacrament of Reconciliation. While Chapter 1 focused more on the epistemological aspects of time, this chapter looks at personal experience of time in architecture, and how a building is a form of frozen memory, exemplified in the cathedral of Notre-Dame de Paris.

Chapter 5, *Anointing: Journey of Light*, reflects on the relationship between light and darkness in both Catholic theology and the physical world, and on the use of light in architecture as a powerful communicative tool.

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18 Catechism of the Catholic Church (Ottawa: Canadian Conference of Catholic Bishops, 1994), §1131-1134. All subsequent citations throughout this thesis from the Catechism of the Catholic Church will be marked CCC followed by the paragraph number.

Chapter 6, *Ordination: Geometry and Ekklesia*, investigates the use of geometry in architecture as a method of communication, focusing on the Basilica of the Sagrada Familia by Antoni Gaudí as a case study. Building on this discussion, the relationship between the basilica's form and the Church as *ekklesia* is explored.

Chapter 7, *Marriage: Poetic Narrative*, acknowledges the poetic capacity of architecture as narrative, especially through its use of metaphor, and why this is especially significant in a Christian context. Drawing primarily on concepts outlined by philosopher Paul Ricœur, the chapter examines the relevance of beauty as experience in the process of narrative emplotment (the term Ricœur uses to refer to creative acts).

My mission for this work, while also being investigative, is primarily revelatory. This is not a manual or rule book, but more of an invitation or a challenge to create better, more meaningful architecture by learning from our past (whether recent or distant). If the churches of Catholicism are to influence and enrich the architectural fabric of contemporary society as much as they once did, they must be effective communicators of deep meaning - only then will they truly reflect the beauty of the One they are made for.

I

Eucharist



1.1
Priest elevating the consecrated host during Mass

TEMPORAL RECKONING

Orientation

In Catholicism, the Eucharistic celebration of every Mass takes place within the spatial form of the church. In the words of Joseph Ratzinger (later Pope Benedict XVI), not only is it the foremost prayer and sacrament of the Church, considered "the mystical heart of Christianity, in which God mysteriously comes forth, time and again, from within himself and draws us into his embrace,"[1] but time plays a huge role in this sacrament. Catholics believe that the Eucharistic liturgy is actually the very summit of life on earth.[2] During the liturgy, at the moment a priest speaks the words of consecration and elevates the bread, Christ is not being re-sacrificed (which is a common misconception), but in a supernatural way, those present are brought to the foot of the cross at Calvary - the very moment of the crucifixion over two thousand years ago.[3] It is a convergence of time beyond our understanding and one of the greatest mysteries of the faith. The entire church can become an expression of this reality. As Anglican priest and lecturer Peter Hammond emphasized in his book *Liturgy and Architecture*, a church is not simply a space of gathering for the people of God to offer worship, but is also "the house of God, the tabernacle of the risen and ascended *Kyrios*, the sign of the City, the place where heaven and earth meet in the eternal now of the mysteries".[4]

Throughout history, the architecture of churches has been a means of representation for this reality of temporal and atemporal convergence. The same is true of the various material elements used within these rituals, which is a testament to the enduring human desire to reckon with time using diverse methods of representation. Catholic hosts, the small unleavened wafers of bread consecrated during Mass, are the central element of the entire liturgical celebration. Their circular shape is symbolic of infinity and the presence of Christ, the infinite God, in the consecrated species.[5] By

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1 Joseph Ratzinger, *Collected Works: Theology of the Liturgy*, trans. John Saward, Kenneth Baker SJ, Henry Taylor, et al., vol. 11 (San Francisco: Ignatius Press 2014), 353.

2 Laurence Paul Hemming, *Worship as a Revelation: The Past, Present and Future of Catholic Liturgy*, (New York: Burns & Oates, 2008), 51.

3 CCC 1367.

4 Peter Hammond, *Liturgy and Architecture* (London: Barrie and Rockliff, 1960), 154-155.

5 Augustin Joseph Schulte, "Host (Canonical and Liturgical)," in *The Catholic Encyclopedia* (New York: Robert Appleton Company, 1913), 16 July, 2019, https://www.



1.2
Eucharist displayed in a monstrance

consuming this small circle of bread-become-Body, the faithful participate in the prayer of the Trinity, which is infinite and eternal.[6]

There is a tension in the life of a Christian as one who is called to constantly straddle earth and heaven, temporal life and eternal life. Christians are called to be aiming constantly for eternal life while also living fully present in each moment on earth.[7] In the words of 15th century philosopher Giovanni Pico della Mirandola, "man is [...] set midway between the timeless unchanging and the flux of time".[8] Christians live in this tension on a daily basis, constantly moving closer to a 'place' where time does not exist - at least not in any way that can be understood. As a bridge between time and eternity, the Church provides orientation through ritual, architecture and teaching.

Orientation comes from *orient*, meaning in Latin, 'rising or east,' and from *oriri* which translates 'to rise'. Light rises from the east, and in the Christian tradition, has long been associated with the rising of the Son. Light and orientation are intrinsically linked, especially in their relationship to time. To understand this more fully, it is useful to look at the account of the fourth day of creation in Genesis:

> And God said, 'Let there be lights in the dome of the sky to separate the day from the night; and let them be for signs and for seasons and for days and years, and let them be lights in the dome of the sky to give light upon the earth.' And it was so. God made the two great lights - the greater light to rule the day and the lesser light to rule the night - and the stars. God set them in the dome of the sky to give light upon the earth, to rule over the day and over the night, and to separate the light from the darkness. And God saw that it was good. And there was evening and there was morning, the fourth day.[9]

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catholic.com/encyclopedia/host-canonical-and-liturgical.

6 CCC 2655. See also David B. Perrin, "The Trinity Who Prays and Engages Others to do the Same," *Vinayasadhana: Dharmaram Journal of Psycho-Spiritual Formation* VIII, no. 2 (July 2017): 28-41.

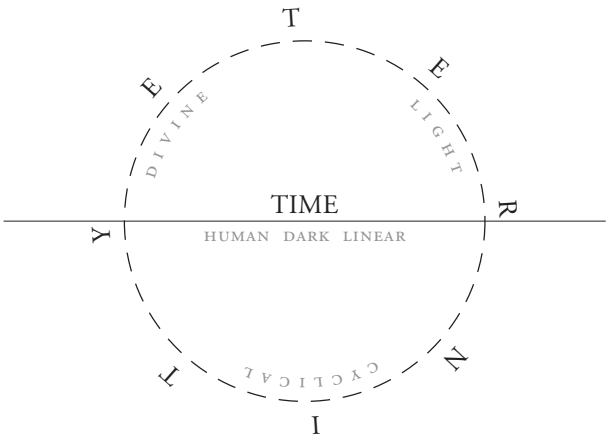
7 Matthew 6:19-21. All biblical quotations in this thesis are taken from the New Revised Standard Version Catholic Edition (NRSVCE), unless otherwise noted.

8 Giovanni Pico della Mirandola, *Oration on the Dignity of Man*, trans. A. Robert Caponigri (Chicago, IL: Regnery Gateway, 1956), 3-4.

9 Genesis 1:14-19.

Though it can be argued whether or not time was actually *created* on the fourth day, if it existed prior, time certainly could not be measured until the division between darkness and light was established. Through the creation of light, God gave humanity a gift - a method of measurement. Time both distinguishes humanity from God,[10] and in a Christian sense, provides a connection by guiding each person along the path towards eternal union.

While we measure time in a linear fashion - chronologically adding up the days, weeks and years - human life and history is filled with cycles recurring endlessly, and it is these cycles which actually allow for finite measurement. Time is measured against eternity, and in this way, the Divine becomes the reference for the human.[11] Since the beginning, light has been the means by which we orient ourselves temporally, and often appears symbolically in various 'maps', especially through the use of circular forms.



1.3

Cartographies of Time

Due to the complexity of time, there are numerous means of representing and documenting it. Some of the earliest examples include the ancient Celtic standing stone circles, symbolic of the *axis mundi* or link between heaven and earth, and the later development of symbols like the Celtic cross - again an attempt to reconcile this merging of eternal and finite time, or

10 "But do not ignore this one fact, beloved, that with the Lord one day is like a thousand years, and a thousand years are like one day." 2 Peter 3:8.

11 Relatedly, a Christian knows that knowledge of God leads to deeper knowledge of self and others. The keenest sense of orientation comes from knowing Him.

sacred and earthly time. In a Celtic cross, pre-dating their association with the cross of Christ, the two lines represented the intersection of heaven (vertical) with earth (horizontal), and the circle represented eternity, as it has in countless other cultures. In tools like the sundial or astronomical charts, the circle - typically associated with eternity - is an ever-present element of time measurement throughout history. The many versions of the Medieval *mappa mundi* also made use of the circle in their efforts to represent all of time and the known world.



1.4
Beltany stone circle, Ireland, 2100-700 BC



1.5
Celtic cross



1.6
Hereford Mappa Mundi, 14th c.



1.7
Ebstorf Mappa Mundi, 13th c.

These methods of temporal mapping help in understanding what it means to be human, and a part of the rest of creation. They are methods of orientation in the way that they help us to *re-member,* or in other words, to connect. From a secular perspective, they are methods of existential orientation.[12] These physical manifestations of our searching and questioning, of our efforts to understand time and eternity, remind us of who and where we are, where we have been, and where we are going. They help us to recognize our place in the world.

Given the importance of orientation within Christianity, the Catholic Church has played a significant role in developing methods of temporal measurement, from early Christian maps of the Metonic cycle, used to determine the dates of important feasts like Easter, to the modern day liturgical calendar. Though the Church is responsible for our worldwide use of the chronological Gregorian calendar today, it has always measured liturgical time and liturgical seasons cyclically, based upon the natural cycles of the moon and sun. From the days of the early Church Fathers until now, the liturgical cycles for each day in the Liturgy of the Hours[13] and for each liturgical year, have always been tracked according to earthly and cosmic cycles - the seasons, hours of sunlight, and lunar orbit. Tracking of light has been particularly important in Christianity, as the sun has long been interpreted as a symbol of the resurrected Christ, and speaks to the notion of the Cosmic Christ, present in all of creation from the beginning of time.

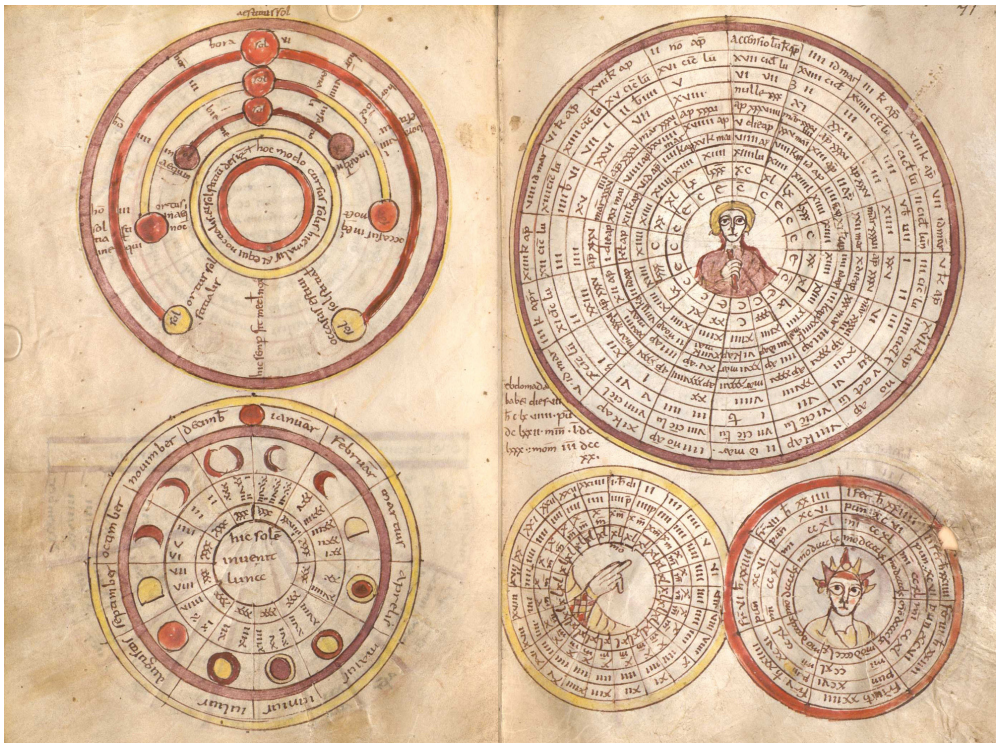
Today, an annual liturgical calendar for the Church is always represented as a coloured circle, marking liturgical seasons and feasts in the corresponding colours used during liturgies. Though early ecclesiastical calendars were used as a method of control to assert the Church's power,[14] so much of the purpose of measuring time has also been to achieve unity

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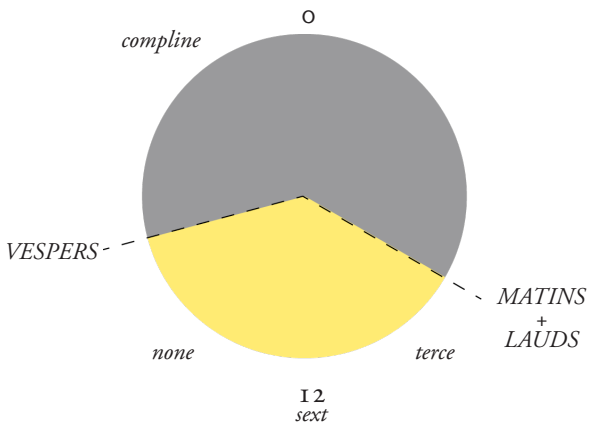
12 Katharine Harmon, *The Map as Art: Contemporary Artists Explore Cartography* (New York, NY: Princeton Architectural Press, 2009), is a fascinating collection of contemporary examples of unconventional maps which engage many diverse realities of the present. Several of the featured cartographic artworks provide perspectives on our contemporary society in comparison with the past, and/or reveal methods of visually representing intangible temporal realities.

13 Though the practice of the Divine Office (or Liturgy of the Hours) has changed slightly over the centuries, particularly since the Second Vatican Council, much has remained the same. Therefore, *The Rule of Saint Benedict* still serves as a useful resource in its description of these practices of prayer, specifically chapters 8 through 18.

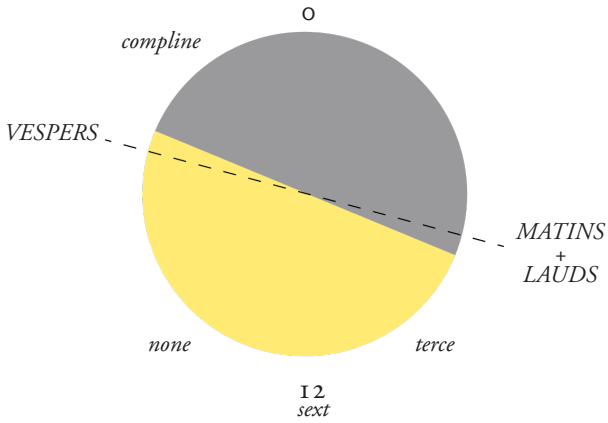
14 Sarah E Bond, "Blog: Anno Domini: Computational Analysis, Antisemitism, and the Early Christian Debate Over Easter," *Society for Classical Studies*, March 30, 2018, https://classicalstudies.org/scs-blog/sarah-bond/blog-anno-domini-computational-analysis-antisemitism-and-early-christian-debate.



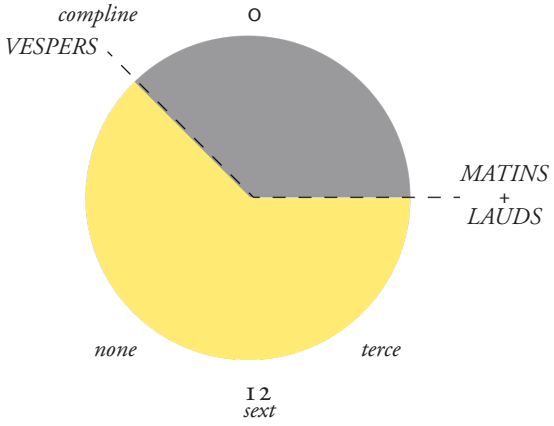
1.8
9th century maps from St. Emmeram's Abbey of the 19-year Metonic cyle,
used to calculate the date of Easter



Winter Solstice

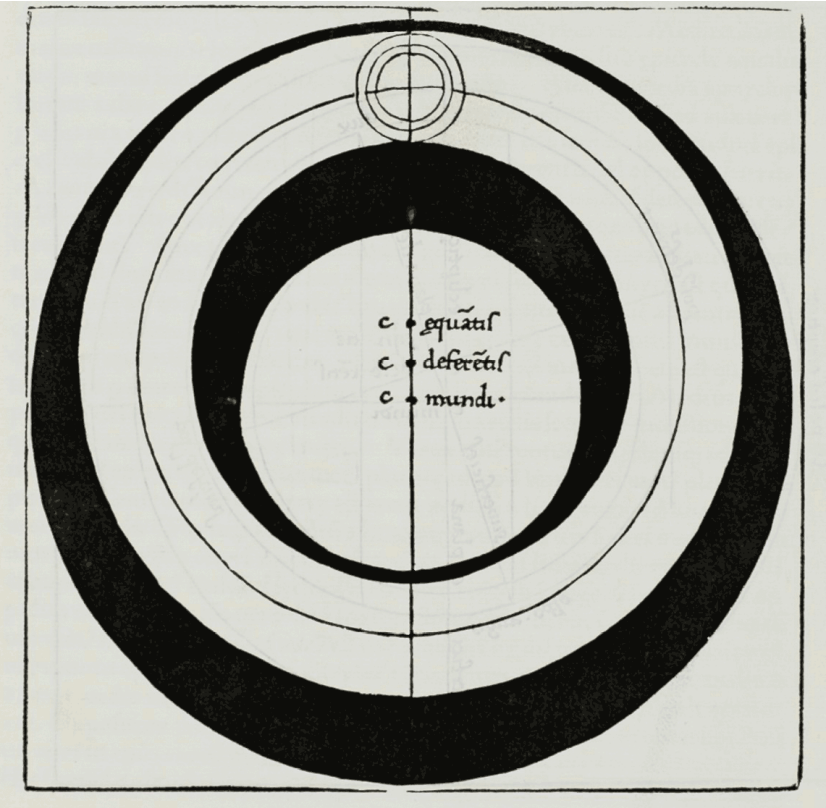


Equinox



Summer Solstice

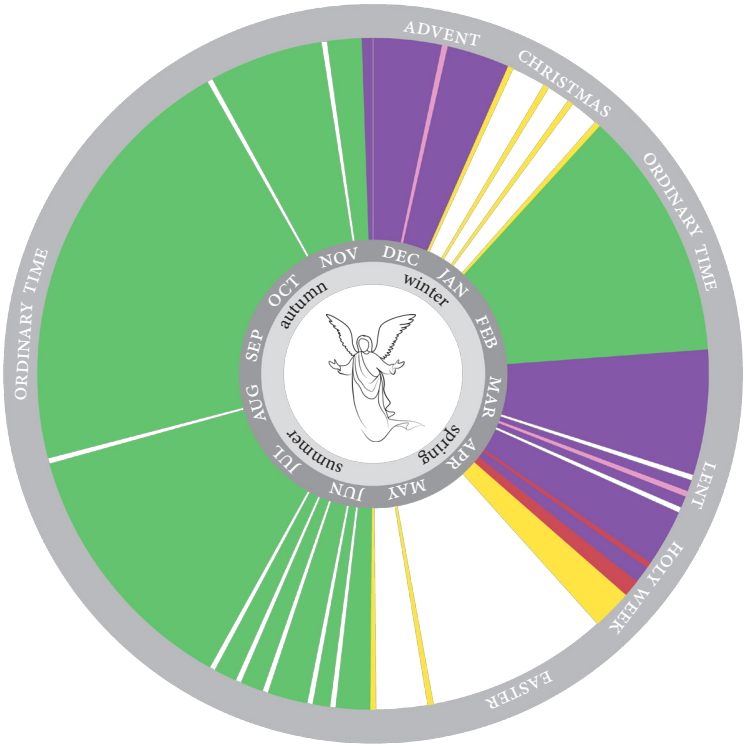
1.9
Prayer times for the Liturgy of the Hours



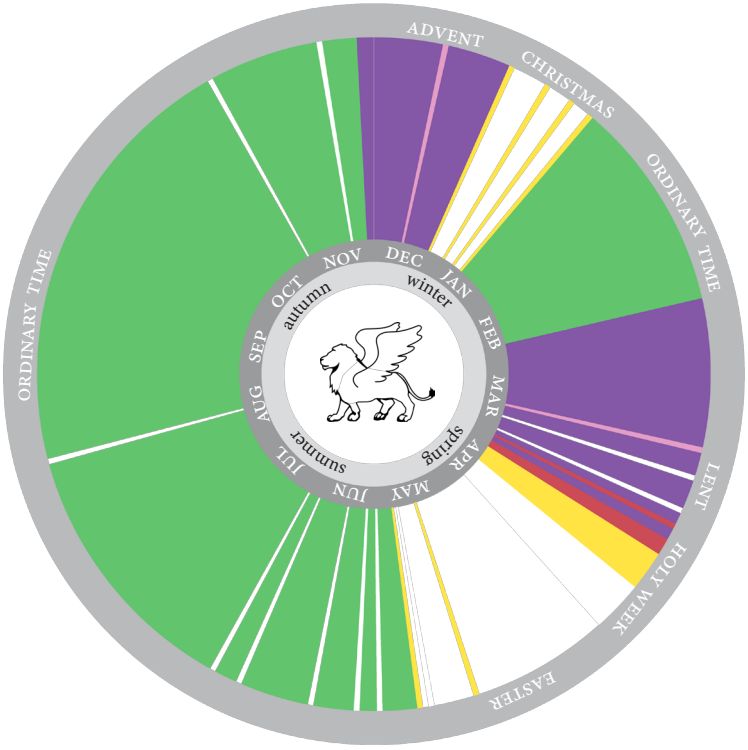
1.10
Ptolemaic drawing of the universe, 15th c., Georg von Peuerbach

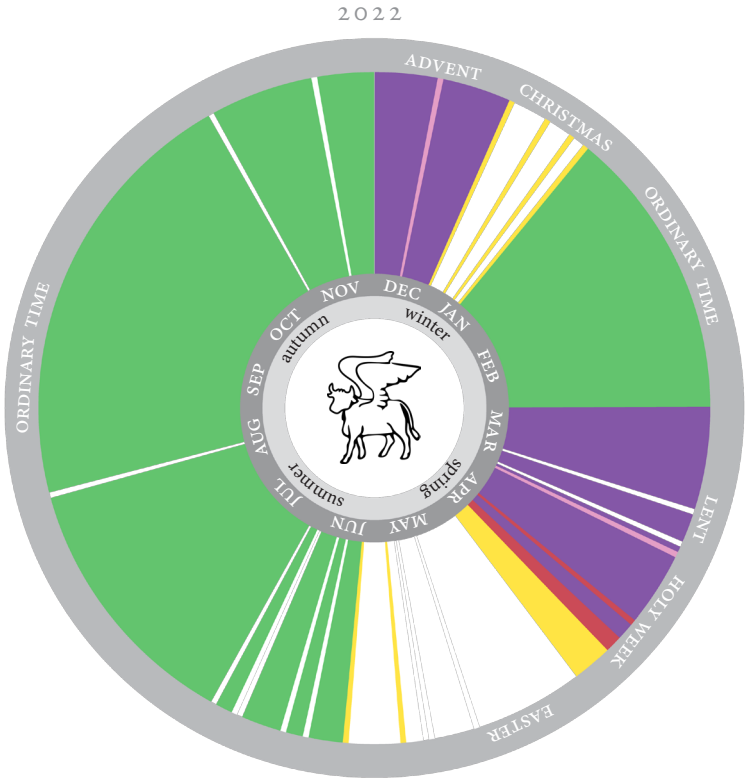
Shows planets revolving around the centre of the world; similar to depictions of the Wheel of Fortune in the way it shows concentric rings, but in this case, earth is the immovable centre.

2020


ADVENT
CHRISTMAS
ORDINARY TIME
LENT
HOLY WEEK
EASTER
ORDINARY TIME
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
winter
spring
summer
autumn

2021


ADVENT
CHRISTMAS
ORDINARY TIME
LENT
HOLY WEEK
EASTER
ORDINARY TIME
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
winter
spring
summer
autumn





Liturgical Cycle A:
Gospel of Matthew



Liturgical Cycle B:
Gospel of Mark



Liturgical Cycle C:
Gospel of Luke

Ordinary

Penitential

Feast / Solemnity

Passion (Holy Week)

Joy (Gaudete & Laetare)

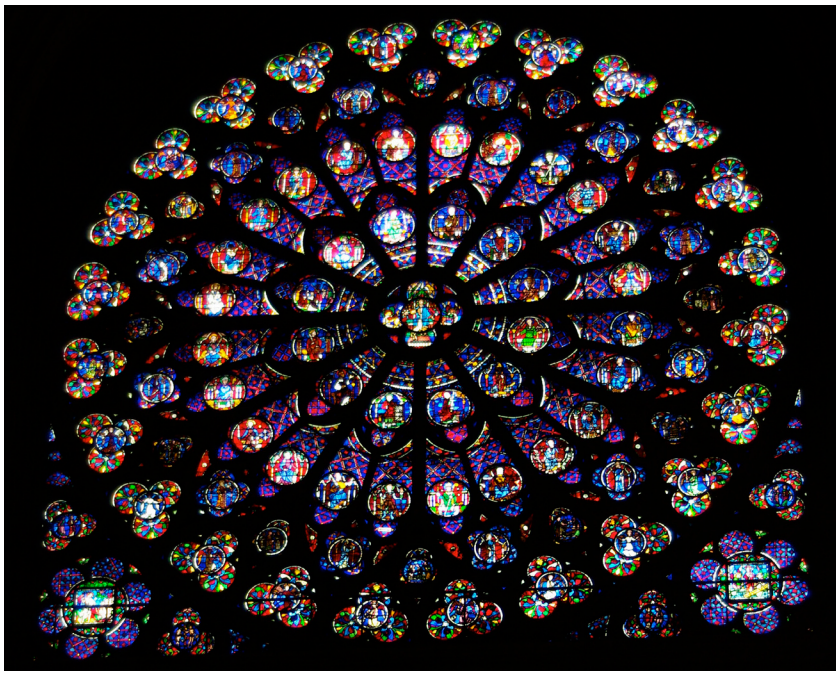
1.11
Variation of a modern liturgical calendars, representing the liturgical life of the Catholic Church for each day of the year

through orientation, joining the entire earthly and heavenly Church. These calendars are the means by which every Catholic community around the world tracks the progression of the liturgical year, which dictates everything from specific prayers and readings during the Mass and the Divine Office, to times of fasting or feasting, appropriate liturgical colours, and the alteration of private devotional/spiritual practices according to liturgical seasons. All of these aspects of Catholic life are lived out, at least to some extent, within the building of a church.

Architecture, as a form of cartography, can be a way to hold what knowledge humanity has discovered through our search for understanding and orientation - a record anchored in space and time, accessible to many generations. In the architecture of the Church, elements like rose windows were meant to function as aids in our temporal reckoning. By studying a rose window, like those in the Gothic cathedrals of Notre-Dame de Paris or Notre-Dame de Chartres, the viewer can actually be transported through time by the function of memory.[15] Not only are they devices used to connect us to human history, but their image and structure becomes a bridge between the temporal and the eternal. They act as icons in their ability to create a means of passage, drawing the viewer through them and into the Divine. Rose windows also speak to the Eucharistic ritual that occurs in the church below through their symbolic representation of the convergence of earth and heaven. In the past, they were compared to the eye of God, gazing on His people. When we allow ourselves to be taken up into them, captured by their beauty, rose windows allow us to feel seen and known.

The composition of these windows, and the meanings embedded within, are similar to another representation of time from the Middle Ages: the Wheel of Fortune. Brought into mainstream Western medieval thought through the writing of Roman philosopher Boethius in his *Consolation of Philosophy*, the wheel represents fortune on one side, as the wheel in constant movement, and wisdom on the other, as the wheel's guiding hand. It symbolizes the ever-changing and incomprehensible circumstances of life (temporal perspective), always guided by the intentionality of a divine will (eternal perspective). The wheel was constantly moving but there was always an immovable centre, again representing the eternal perspective and providence - though the world turns, the grounding centre of eternity

15 Rose windows had a similar function to that of the Medieval labyrinth. Moving through a labyrinth, like the one famously embedded in the floor of the nave at Chartres, was a pilgrimage through time. As a person walked along its path, they moved gradually closer to the centre, symbolic of the New Jerusalem - the heavenly Kingdom of eternity.

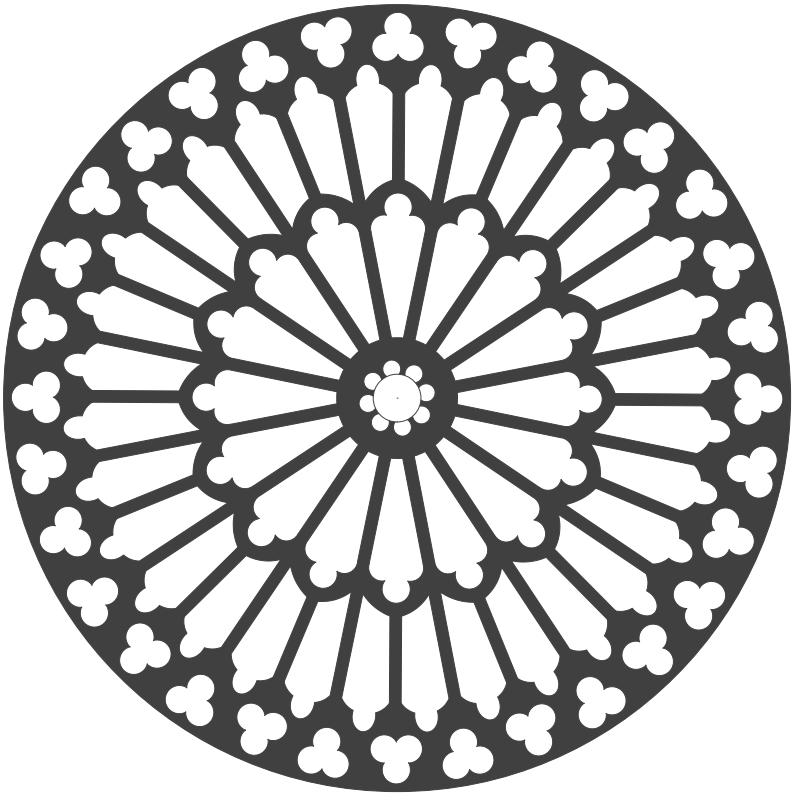


1.12
North rose window, Notre-Dame de Paris

remains. That is why traditionally, the figure of Christ is always at the centre of a rose window.[16] Even when dedicated to Our Lady, Mary appears in the centre holding the Christ Child. The closer one moves toward the centre, the closer one moves to God. The description[17] given by Boethius of a set of concentric circles can be applied just as effectively to a rose window as it can to depictions of the Wheel of Fortune. The relationship between the outer rings and the centre is the relationship between time and eternity - an expression of humanity's endless search to represent something that can

16 Robert Barron, *Heaven In Stone and Glass: Experiencing the Spirituality of the Great Cathedrals*, (New York: Crossroad Publishing, 2002), 30.

17 "Imagine a set of revolving concentric circles. The inmost one comes closest to the simplicity of the centre, while forming itself a kind of centre for those set outside it to revolve round. The circle furthest out rotates through a wider orbit and the greater its distance from the indivisible centre point, the greater the space it spreads through. Anything that joins itself to the middle circle is brought close to simplicity, and no longer spreads out widely. In the same way whatever moves any distance from the primary intelligence becomes enmeshed in ever stronger chains of Fate, and everything is the freer from Fate the closer it seeks the centre of things. And if it cleaves to the steadfast mind of God, it is free from movement and so escapes the necessity imposed by Fate. The relationship between the ever-changing course of Fate and the stable simplicity of Providence is like that between reasoning and understanding, between that which is coming into being and that which is, between time and eternity, or between the moving circle and the still point in the middle." Boethius, *The Consolation of Philosophy*, 105.



1.13

8 + 16 + 32 + 32 = 88 (ETERNITY/HEAVEN)

"Around the center of the rose is a circle of eight images. Then, in succeeding rows, we find multiples of eight - sixteen and thirty-two - and the total number of images is eighty-eight. Thus the entire rose is a sustained meditation on the number eight. Now eight, coming just beyond seven, which is the symbol for completed time, stands for that dimension of reality that lies beyond time, that is, eternity."

Robert Barron
(*Heaven in Stone and Glass*)

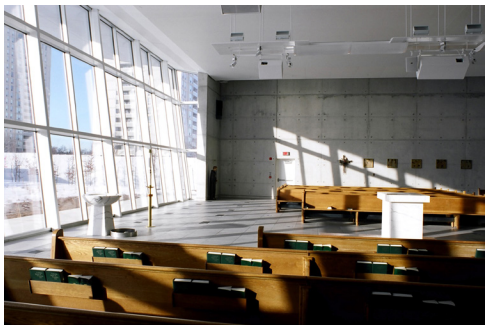


1.14
Philosophy Consoling Boethius and Fortune Turning the Wheel, 15th c.,
Maître de Coëtivy

never be accurately portrayed or fully understood, but serves as a guide through life.

One excellent example of a contemporary church which becomes a temporal map through its manipulation of sunlight, is St. Gabriel's Passionist Parish in Toronto, Ontario, built in 2006 and designed by Larkin Architect.[18] Through a thin ring of stained glass circling the ceiling of the sanctuary, coloured light transforms the concrete walls of the interior, changing according to the movement of the sun. Even when the sun sits too low in the sky to reach the upper windows, it shines through the wall of clear glazing on the south side of the sanctuary, creating a moving line of shadow cast by the large overhang outside. This use of light provides a kind of cosmic orientation for those within the church, deepening the experience of liturgical celebration.

18 Dean Dettloff, "How a 'green' church in Toronto teaches theology through design," *America: The Jesuit Review*, August 23, 2019, https://www.americamagazine.org/faith/2019/08/23/how-green-church-toronto-teaches-theology-through-design.



1.15

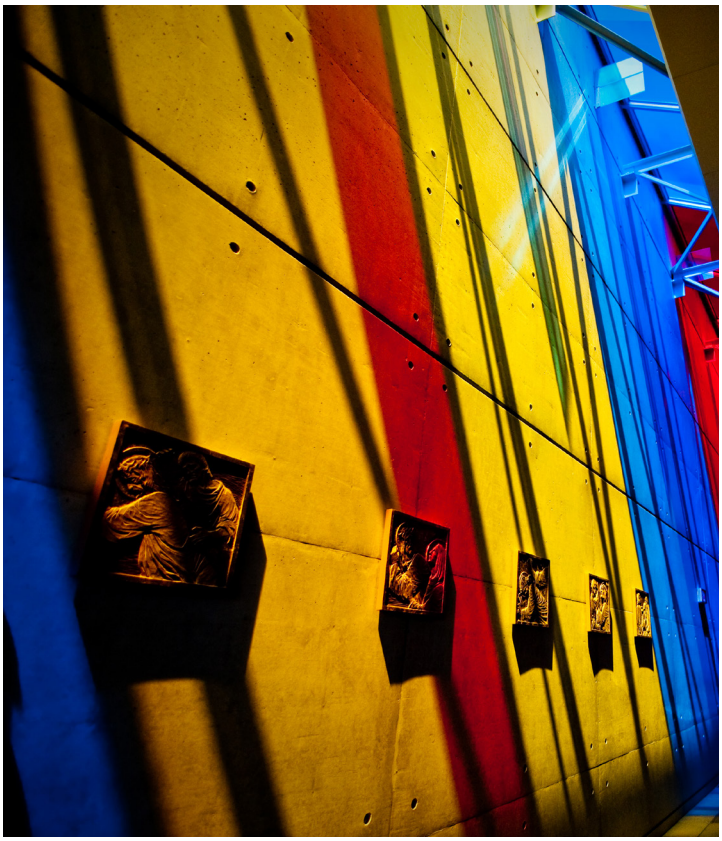


1.16



1.17

St. Gabriel's Passionist Parish, Toronto, Ontario



1.18
St. Gabriel's, coloured light

Maps, charts and architecture are thus a means for us to understand something which is impossible to fully represent. It is our participation in this search for understanding that becomes incredibly meaningful. Architecture, as a form of artistic creation, provides a unique way of translating this meaning because of its interaction with the lived reality of human action. As Alberto Pérez-Gómez addresses:

> What differentiates architecture from other forms of *ars* or *poiēsis* [i.e. making] concerns its intertwining with life itself in the form of significant action, ranging from the founding of cities and waging of war to religion and politics. Thus architecture offers societies a place for existential orientation. As representation of meaningful action, it contributes to an understanding of one's place in the world. Through its sense of decorum it opens up a clearing for the individual's experience of purpose through participation in cultural institutions.[19]

When architecture expresses attempts to reconcile the opposites of time/eternity, darkness/light, human/divine, circular/linear, and is shaped by human action, it aids us in our existential orientation. Ritual and spatial form have a reciprocal relationship, each informing the other.

This is especially true of a church. It is the rituals unfolding within a church that deepen the meaning of its form. Church designs through many centuries have become representations of meaningful human action in the way that they frame and trace the ritual of the liturgy (Mass) - when earth and heaven are brought together. This is visible in styles like the Classical and Gothic, commonly expressed in differing geometries (like the square and circle) being brought into a harmonious relationship through architectural form.

Discussing the sacraments of the Church, of which the Eucharist is primordial, Ratzinger points out that through their symbolic meaning, they point "to a content that remains inaccessible to chemical analysis and yet does not cease to be real - to the dimension of the eternal, which is perceptible and present in the midst of the temporal."[20] The church, as a sacramental object, serves this purpose as well. In its architectural form, molded by the liturgy, it makes eternity present through earthly signs,[21]

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19 Pérez-Gómez, *Built Upon Love*, 109.

20 Ratzinger, *Theology of the Liturgy*, 162.

21 "[W]e still need [sacred space, sacred time, mediating symbols], precisely so

always pointing to Christ, becoming sacramental as an earthly image of the heavenly Jerusalem.[22] Through liturgy, a church is the literal place where heaven and earth meet and are reconciled,[23] and therefore becomes the ultimate means of orientation within a Christian's temporal existence.

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that, through the 'image', through the sign, we learn to see the openness of heaven. We need them to give us the capacity to know the mystery of God in the pierced heart of the Crucified. Christian worship is no longer replacement worship but the coming of the representative Redeemer to us, and entry into his representation that is an entry into reality itself. We do indeed participate in the heavenly liturgy, but this participation is mediated to us through earthly signs, which the Redeemer has shown to us as a place where his reality is to be found." Ibid., 36.

22 "The church is not the heavenly Jerusalem: it is its sign, a sacramental means by which each of us can say 'I saw' the new Jerusalem descending from heaven to earth. The church as sanctified place makes possible this descending, and as such it makes possible [...] an encounter with the Bridegroom who at the same time as High Priest reconciles them to God and atones for their sins." Hemming, *Worship as a Revelation*, 4.

23 Ibid.

II

Baptism



2.1
Sacrament of Baptism

Nature, Ritual, Symbol

Symbol - something that stands for or suggests something else by reason of relationship, association, convention, or accidental resemblance;[1] an image of a real or imaginary object that evokes a feeling or is evoked by a feeling[2]

Water, as a natural element, is deeply symbolic in Christianity and is used in many of its sacraments, most notably Baptism. In its description of the sacrament of Baptism, the Catechism of the Catholic Church states:

> Holy Baptism is the basis of the whole Christian life, the gateway to life in the Spirit (vitae spiritualis ianua), and the door which gives access to the other sacraments. [...] "Baptism is the sacrament of regeneration through water in the word."[3]

The word baptize comes from the Greek *baptizein*, meaning to plunge or immerse.[4] It is a ritual of washing and renewal, and is the simplest of the sacraments, beginning the life of faith for all Christians.[5] "Baptism is the source of that new life in Christ from which the entire Christian life springs forth,"[6] and the sacrament by which a person becomes "an adoptive [child] of the Father, a member of Christ and a temple of the Holy Spirit."[7] It is a

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1 *Merriam-Webster, s.v.* "symbol," accessed September 12, 2019, https://www.merriam-webster.com/dictionary/symbol.

2 Lonergan, *Method in Theology*, 64. While symbols are considered conventional representations, they do acquire greater depth of meaning over time, when appropriated in specific cultural or temporal contexts. Here the line can become blurred between what meaning is considered universally understood and what meaning is learned. Lonergan addresses this through a discussion of the transvaluation and transformation of symbols, and further identifies the difference between elemental meaning (symbol) and linguistic meaning (explanation of the symbol), on pages 64-69.

3 CCC 1213.

4 CCC 1214.

5 Baptism is also the only one of the seven sacraments that can be performed by any person, including a non-Christian (if necessary and according to the essential rite). CCC 1256, 1278.

6 CCC 1254.

7 CCC 1279.

free gift from God,[8] and an expression of His desire to draw all people to Himself, unified as one Body in the Church.

The significance of water, as a symbol of new life, comes from nature, where water is the source of all life. Much of the symbolism present in the Church's sacraments comes from the natural world.[9] Creation is the elemental language of physical form, which inspires not only the physicality of ritual, but also the symbolic language of architecture, particularly in a church. Because of Christ, the created world does not stand in opposition to divinity, but instead points to it.[10] Christ, as the Logos of God, is actually the archetype of the entire cosmos,[11] which makes the world a stage for all of God to encounter all of man.

Nature communicates God's love because of His presence throughout the created world. This is a Christian belief more widely understood today than it has been in the past. The physicality of a church, like the physicality of Baptism, is a key means of using natural symbolism for this communicative purpose. As authors Donald Wuerl and Mike Aquilina clearly point out, a church's purpose is "to tell a love story," a story which "involves the whole of creation."[12] In Christianity, the built world is particularly important because of the Christian belief that God willed the world into being - it only exists because of Him. For Christians, the person of Jesus Christ as the Incarnate Word of God is especially significant, not only in His humanity, but also in His presence in the cosmos since the beginning of creation, as one of the three Divine Persons of the Trinity

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8 "Baptism is God's most beautiful and magnificent gift. . . .We call it gift, grace, anointing, enlightenment, garment of immortality, bath of rebirth, seal, and most precious gift. It is called *gift* because it is conferred on those who bring nothing of their own; *grace* since it is given even to the guilty; *Baptism* because sin is buried in the water; *anointing* for it is priestly and royal as are those who are anointed; *enlightenment* because it radiates light; *clothing* since it veils our shame; *bath* because it washes; and *seal* as it is our guard and the sign of God's Lordship." St. Gregory Of Nazianzus, Oratio 40, 3-4:PG 36, 361C (quoted in CCC 1216).

9 This relationship is similar to one Dutch architect and Benedictine monk Hans van der Laan articulated in his theories about the three form-worlds of nature, culture and liturgy; natural forms being "an external given with which man has to interact," cultural forms being "the things man makes for himself," and liturgical forms being those things that directly serve as aids in humanity's communication with God, "an abbreviation of the entire world of cultural forms." There is a progression from natural to cultural to liturgical. Michel Remery, *Mystery and Matter: On the relationship between liturgy ad architecture in the thought of Dom Hans van der Laan OSB, 1904-1991* (Leiden, The Netherlands: Koninklijke Brill NV, 2011), 141-145.

10 von Balthasar, *Seeing the Form*, 210.

11 Ibid., 215.

12 Wuerl and Aquilina, *The Church*, 19. See also John 1:1-14, 3:16.

and part of the creative force which shaped the world. As Ratzinger writes: "It is [Christ] of whom creation speaks, and it is by him that its mute message is deciphered. The cosmos finds its true meaning in the Firstborn of creation, who has now entered history."[13] Hans Urs von Balthasar points out that for the Christian, "even the slightest distinction between the sacral and the profane must cease to exist",[14] since all of humanity and creation was definitively claimed for God through Christ's Paschal Mystery (His passion, death and resurrection).

By allowing natural forms to inspire and influence the symbolic communication of a church, the architecture can speak to some of the deepest truths of the Christian faith, with many layers of meaning expressed in a simple form.

A Simple Vessel

Structural form has long been used as a means of symbolic communication through architecture, imbuing a building with a certain richness. This has certainly been true for the Church, and has deeply influenced the way its architecture is experienced. Some people are content simply to rest in the beauty of these sacred spaces, while others choose to search for deeper meanings present within the form. The important thing, whether sought out or not, is this presence of meaning, waiting to be read by those who are attentive to the language of symbol. When a church makes use of symbol in its structure - the skeleton of any building - it invites us to look more closely, welcoming deeper thought and awareness of our surroundings.

In the small Swiss town of Sumvitg, there exists an unassuming wooden chapel nestled amongst the mountains, designed by well-known architect Peter Zumthor. Built to serve the local Catholic community after the previous Baroque-style church was destroyed during an avalanche, Caplutta Sogn Benedetg[15] was completed in 1988.

Built of local materials with construction heavily influenced by vernacular methods of timber construction, the chapel consists of just one room, with a single entry point. Light enters through a ring of high glazing separating the walls and roof. The exterior is clad in larch shingles, and

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13 Ratzinger, *Theology of the Liturgy*, 67.

14 von Balthasar, *Seeing the Form*, 326.

15 This is a Rhaetian title, an ancient language of the indigenous Alpine people of Switzerland, Austria, Italy, Slovenia and Germany.

the timber structure on the interior is exposed, creating a form strongly reminiscent of a rib cage. The chapel's design incorporates many of nature's forms. The symbols and shapes inherent in the structural frame are part of an ancient history of human representation, which has long used nature as one if its primary inspirations.

Communication of symbolic meaning through architectural structure is not a new concept, having been used throughout history. Medieval architecture, especially, is an excellent example of thoughts and values translated into built form, and is a useful period to study in order to better understand how this can be, and has been, accomplished in our own time.[16] Gothic churches are absolutely full of symbol and meaning, and their highly visible structure was a key method of communication to a people reading and searching for it. Zumthor puts a contemporary spin on this approach through his chapel design. The emergent natural forms within the visible structure of Sogn Benedetg indicate the importance of the natural world both in Christianity and in our larger contemporary society. Viewed in its larger site context, the chapel is like a water droplet, running off of the surrounding mountains. The overall shape of the church is the result of an intentional effort to move away from any kind of "predominating geometric form" like a circle, square or rectangle because they were too reminiscent of the "authoritarian" and "indoctrinating" side of the Church that Zumthor found problematic.[17]

In approaching the design of a building, Zumthor always prefers to begin with the simple and practical, allowing their goodness and beauty

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16 To a great extent, it is possible to read the development of Scholastic thought in Medieval churches. As laid out in Erwin Panofsky's *Gothic Architecture and Scholasticism*, there were three primary requirements of Scholastic writing which also manifested architecturally: (1) totality, (2) "arrangements according to a system of homologous parts and parts of parts," and (3) "distinctness and deductive cogency". Regarding totality, the High Gothic cathedral aimed to embody the entire breadth of Christian knowledge in architecture, as Thomas Aquinas's *Summa Theologiae* aimed to do through writing. In its structural design, everything had its place, and any element which interfered with the balance of the whole was suppressed. The second requirement was expressed most clearly in the divisions throughout Medieval church structures, especially in the case of rib vaults, which unified the structures of the different spaces (apse, side chapels, nave, transept, etc.), similar to the "hierarchy of 'logical levels' in a well-organized Scholastic treatise." The third requirement speaks to the necessity of distinct parts yet a harmonious whole. The structure of Gothic cathedrals was very much about "reconciling the seemingly irreconcilable," just as Scholastic writing sought to do with theological and philosophical truths, of which the architecture became symbolic. See especially Panofsky, *Gothic Architecture and Scholasticism* (Cleveland, OH: The World Publishing Company, 1966), 45-50, 67.

17 Peter Zumthor, "Caplutta Sogn Benedetg," in *Peter Zumthor 1985-1989: Buildings and Projects*, ed. Thomas Durisch, trans. John Hargraves, vol. 1 (Zurich: Verlag Scheidegger & Spiess AG, 2014), 67.



2.2
Model of Caplutta Sogn Benedetg structure

to become the beginnings of each particular building form.[18] True to this approach, the design of Sogn Benedetg is very simple, but it is precisely because of its simplicity that the structure's symbolism achieves such depth. Zumthor writes:

> A leaf, an eye, a fish, a boat, a wedge to divert avalanches - it pleases me to hear these interpretations of the form of this little church, but the actual story of how it came to be is different. [...] The idea that its exterior form would be defined by a single interior space fascinated me. This is the notion of a simple vessel. I wanted to find a soft, maternal form for my vessel.[19]

This simple, maternal form intended in Sogn Benedetg also emerges in a myriad of ways through its structural form, especially when interpreted through the lens of Christianity and in relation to Mary, Mother of God, who is the icon for the Church as Bride of Christ. In relation to Christ, the Church is feminine - the Bride to Christ as Bridegroom.[20] The church, as a place of refuge and gathering, acts as a vessel by which the faithful are brought closer to God through the rituals which take place within it. Its maternal form points to the maternity of the Church as a whole. As mother, the Church nurtures, cleanses, heals and brings forth new life, and much of the emergent symbolism in Zumthor's chapel - water, leaf, ribs, boat, womb - speaks to these protective and/or life-giving qualities.

In their simplicity, symbols can often communicate meanings far more extensive than an author[21] intends. Through the use of symbol - especially universal symbols like those which can be read in Sogn Benedetg, whose core meanings have persisted through different times and cultures - an architect can dialogue with both history and contemporaneity. This is an incredibly valuable method of approach in contemporary church design, which is why I felt this small chapel was so important to study more

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18 Zumthor, *Thinking Architecture*, 47.

19 Zumthor, *Buildings and Projects*, 1:63.

20 "Husbands, love your wives, just as Christ loved the church and gave himself up for her, in order to make her holy by cleansing her with the washing of water by the word, so as to present the church to himself in splendor, without a spot or wrinkle or anything of the kind - yes, so that she may be holy and without blemish." Ephesians 5:25-27. See also 2 Corinthians 11:2, Revelation 21:2, 9.

21 Author, in this instance, refers to an author of any creative work, including architecture.

closely. Meaning read in the past intersects with meaning read in our contemporary context, transforming through time. In this way, beautiful and meaningful architecture ends up communicating something that is not necessarily new, but which is articulated in a new way.

In contemplating architectural designs that have reached an articulated form but are never constructed, Zumthor notes that they never just vanish, but instead, reappear in other projects. "Certain fundamental ideas keep coming back in new contexts and they seem to acquire ever more depth the more often they rise to the surface."[22] Something similar could be said of the symbols in cultural memory - the more often they surface in human creations, the deeper the meanings embodied within. The reality which an author makes visible at any one time, has been informed and shaped by countless other people who have gone before them. As a result, symbolic meaning can emerge in their designs in ways they never intended. This is equally true of the viewer who perceives the embodied meaning in a work of architecture at one particular moment. The first to read a symbolic form into the design of Sogn Benedetg was actually the project engineer, who felt its shape resembled half of a lemniscate.[23] Though unintended, that symbolic meaning is especially pertinent in a Christian context, speaking to the fact that a church is always pointing to the infinite and eternal reality of heaven, but is never infinite itself.

According to Zumthor, "the creative act in which a work of architecture comes into being goes beyond all historical and technical knowledge".[24] Everything communicated through the design is not necessarily conscious. However, it becomes deeply meaningful when it touches on a collective human consciousness, drawing on the elemental language of nature, and living in memory through symbol. The architecture is bound to the present while still speaking to the past, and to the reality of Christ's incarnational presence in all of creation. There is a coexistence of matter and spirit.[25] As a manifestation of this, through its pure and simple structure, Sogn Benedetg symbolically associates with some of the purest and simplest truths of the Christian faith, especially those revealed through the sacramental ritual of Baptism.

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22 Zumthor, *Buildings and Projects*, 1:11.

23 Ibid., 1:67. A lemniscate is the mathematical term for the infinity symbol (∞).

24 Zumthor, *Thinking Architecture*, 23.

25 Richard Rohr, "The Eternal Christ in the Cosmic Story," interview by Rich Heffern, *National Catholic Reporter*, December 11, 2009, https://www.ncronline.org/news/spirituality/eternal-christ-cosmic-story.



WATER

a transparent liquid, composed of hydrogen and oxygen (H_2O), without odour or colour, which forms the earth's rain, rivers, lakes and oceans; the base fluid in all living organisms; surrounds a baby in the womb as amniotic fluid; one of the four elements in ancient and medieval philosophy and astrology*

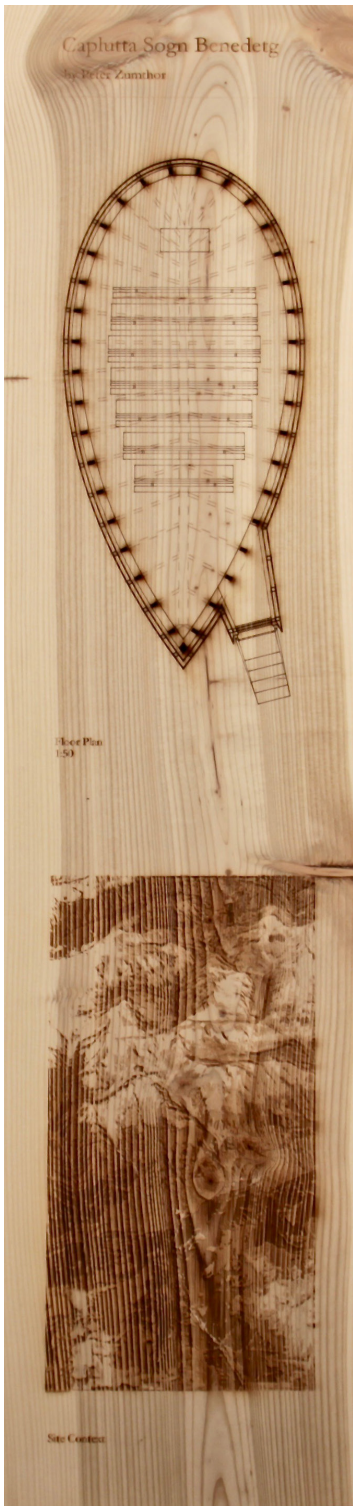
From the Latin *unda* (wave) and Greek *hudōr* (water)

* The definitions and etymological information included in the remainder of this chapter are an amalgamation of a variety of sources, including The Oxford English Dictionary, The Merriam-Webster Dictionary, Collins English Dictionary, and MedicineNet (Webster's New World Medical Dictionary), along with my own knowledge-base. The symbols accompanying the definitions are all drawn by the author.



2.3

View of Sogn Benedetg within its site context



2.4
Laser engraving on larch wood panel, includes a floor plan of Sogn Benedetg and the larger context of the site.



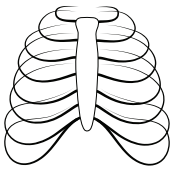
2.5
Detailed of engraved site



2.6
Holy water font



2.7
Tabernacle with icon inside



RIB

each of the long, curved and narrow bones articulated to the spine in pairs, protecting the vital organs within the thoracic cavity; there are twelve pairs of ribs in humans

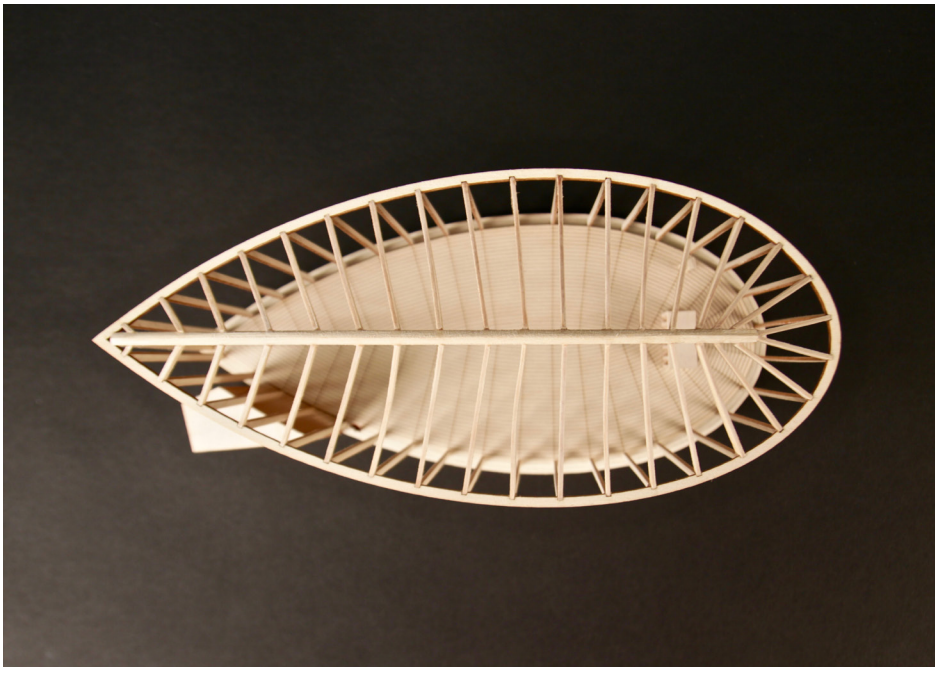
In Latin *costa* (rib, side)

2.8 >
Caplutta Sogn Benedetg, interior





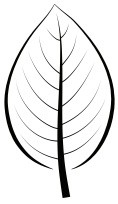
2.9



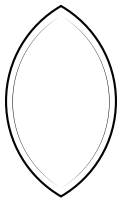
2.10



2.11
Sogn Benedetg, wall detail



LEAF a thin and flat structure in a plant, connected to the main stem or a smaller stock, usually green in colour and pointed in shape; these plant organs absorb sunlight and allow for photosynthesis and transpiration



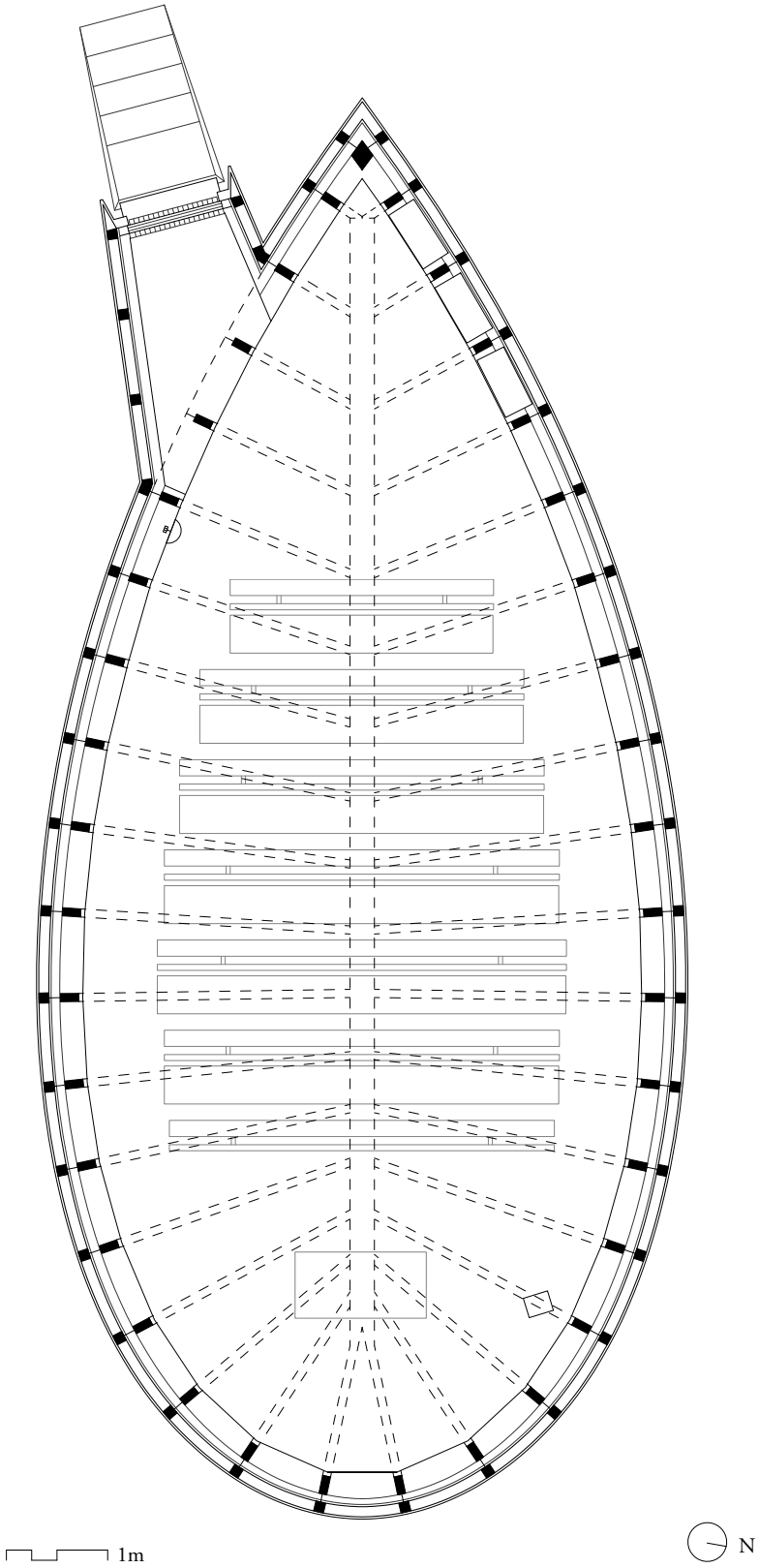
MANDORLA a pointed oval used as an architectural feature or a cloud (aureole) enclosing figures in Christian art and iconography such as Jesus Christ, the Virgin Mary or other saints to symbolize holiness
From the Italian *mandorla* (almond)



LEMNISCATE / INFINITY a closed plane curve intersecting at one point and forming two symmetrical loops; used to represent infinity



FISH / ICHTHYS a Christian symbol used for identification of faith and dating back to the earliest centuries of Christian persecution; common throughout the early catacombs around Rome
Derived from the Greek acronym ΙΧΘΥΣ (Ἰησοῦς Χριστὸς Θεοῦ Υἱὸς Σωτήρ), in Latin ICHTHYS (Iesous Christos Theou Yios Soter) which translates to 'Jesus Christ, Son of God, Saviour' in English



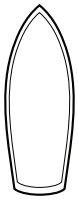
2.12
Floor Plan



2.13
Sogn Benedetg, ceiling structure

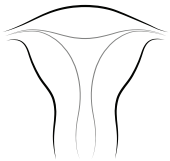


2.14
Sogn Benedetg, worn floor boards



BOAT a vessel for travelling over water, used to transport people or goods

Likely from Proto-Indo-European root *bheid* (to split), in Latin *navis* (ship), which is where we get the term *nave* (of a church)



WOMB the pear-shaped organ in the lower body (abdomen) of a woman where offspring are conceived and where they gestate before birth; the uterus - the narrow, lower portion is the cervix and the broader, upper part is the corpus



2.15
Interior view towards altar

"Perhaps the chapel is a little wooden boat after all, built for an uncertain journey by local people born into a heritage of building with wood."

Peter Zumthor
(*Buildings and Projects: Volume 1*)



2.16
Sogn Benedetg, foundation detail



2.17
Light shining through upper windows with altar visible on the far right



2.18
Interior of the simple, beautiful vessel

III

Confirmation



3.1
During the ritual of the Sacrament of Confirmation, the bishop or priest anoints the candidate with chrism oil, marking their forehead with a cross. He then lays his hands on the candidate's head, addressing them by name and saying: "Be sealed with the Gift of the Holy Spirit." (CCC 1320)

MATERIAL SIGNIFICANCE

Path to Sacredness

It is not uncommon within the Catholic Church for material objects to be elevated far beyond their perceivable worth. Take relics for example, whether tiny wood splinters from the True Cross,[1] fragments of material from the garments of the saints, or actual remnants of human flesh or bones, these physical materials have been reverenced as precious objects throughout the history of the Catholic tradition. This is equally true of the materials and substances used within the celebration of the sacraments. Water is blessed and called holy, to be used in baptisms and other ritual blessings, and the Eucharist, which visibly appears as simple bread and wine is reverenced above all else, as the Body and Blood of Jesus Christ. Every substance used in the Church is elevated to a higher purpose - infused with greater depth of meaning than initially evident.

The worth of these materials is not obvious merely by sight, but is made known through their treatment. The Church's relics, especially the most precious, are usually held in reliquaries made of precious metals and gem stones, housing objects that often appear so fragile as to disintegrate upon physical contact. Similarly, once they have been consecrated or blessed, substances used in the sacraments, like the bread and wine of the Eucharist, holy water, and holy oils, all have a particular place in the church and are held in special receptacles. The origin of these materials is significant as well. One cannot use just any bread, wine or oil. These substances must be of a particular type or mixture.[2]

There are three types of holy oil used in the Catholic sacraments: oil of the sick, oil of the catechumens, and oil of chrism. Chrism is a mixture of pure olive oil and fragrance (usually balsam) which is consecrated once a year at the Chrism Mass, just before the start of the Lenten season. It is the holy chrism oil which is used in Confirmation, the third sacrament of initiation. The root *confirm* comes from the Latin *confirmare*, meaning to 'make firm'.[3] Evidently, *confirm*ation serves to strengthen one's faith,

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1 The cross on which Jesus Christ was crucified, according to Catholic tradition.

2 *Code of Canon Law*, Can. 847 §1-2 and Can. 924-927 in *Code of Canon Law: Latin - English edition* (Washington: Libreria Editrice Vaticana, 1983), Vatican.va. Subsequent references will be abbreviated as CIC followed by canon and paragraph number.

3 *Merriam-Webster, s.v.* "confirm," accessed September 4, 2019, https://www.merriam-webster.com/dictionary/confirm#etymology.



3.2
Reliquary containing a blood relic of St. John Paul II



3.3
Medieval reliquary for relics of St. Geneviève of France

imparting a deeper relationship with the whole body of believers. To expand, according to the Code of Canon Law, its purpose in the life of the Christian is as follows:

> The sacrament of confirmation strengthens the baptized and obliges them more firmly to be witnesses of Christ by word and deed and to spread and defend the faith. It imprints a character, enriches by the gift of the Holy Spirit the baptized continuing on the path of Christian initiation, and binds them more perfectly to the Church.[4]

In other words, confirmation deepens a Christian's baptismal call and imparts them with the gifts needed to carry out their mission.[5] It is a significant ritual in the Christian journey, in cooperation with God on the path to holiness. As a sacrament which can only be received once, like baptism and ordination, it bestows graces on the receiver which last a lifetime.[6]

Both the substance used and the words and actions of the bishop or priest are meaningful for the validity of the sacrament.[7] During confirmation, when the fragrant olive oil is used to anoint the head of the confirmation candidate, its purpose is elevated as the physical and visible means by which the grace of God is conferred, while simultaneously 'elevating' the candidate, that they may "be more capable of assuming the apostolic responsibilities of Christian life".[8] Through the power of the Holy Spirit, the chrism oil becomes holy, marking what it touches with a sacred seal.

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4 CIC 879.

5 When a bishop or priest administers the sacrament, they say to the candidate, "Be sealed with the gifts of the Holy Spirit," while marking a cross on their forehead with holy oil. Paul VI, *Apostolic Constitution: Divinae consortium naturae* (The Holy See, August 15, 1971), 663 (quoted in CCC 1300).

6 "[T]he new life received at baptism achieves its fullness of power in the sacrament of confirmation ('confirmation' means 'strengthening'). For the Christian, confirmation is the sign that the Holy Spirit, promised to the disciples by Jesus, wishes to come over [them] and inspire [them], so that [their] desire to do good in the world will be strengthened. Above all, the holy Spirit wants to enable the Christian to give testimony to Christ in the Church and in public life, and also to give [them] courage to live entirely for God and for [their] neighbors." Congregation of the Sisters of Our Lady of Mercy, *God Who is Rich in Mercy* (Krakow, Poland: Misericordia Publications, 2008), 56.

7 These dual aspects of a sacrament are referred to as *form* and *matter* in Church documents.

8 CCC 1309.

In a similar way, architectural materials are elevated by their use in a church due to its sacred purpose, while at the same time, they can elevate the architecture.[9] Depending on materials selected for the building, they may enhance the space, increasing a sense of the sacred by the meaning they carry within them. Each material carries its own story into a project - where it came from, how it was formed and treated, etc. With this in mind, and given the recognition in the Catholic tradition of the importance of the physical senses in any human experience, the material quality of a church becomes very significant.

The Humanity of Earth

In the context of a church, materials like stone, wood and earth (whether it takes the form of brick or earthen walls) have more significant meaning than newer and more heavily processed or fabricated materials, by nature of their origin and history. These materials are strongly influenced by the passage of time and the cycles of the earth and are part of ancient building traditions within human civilization. They possess a dignity unique in materials of a more natural origin because they retain the greatest evidence of being touched by the hand of the Creator.

Wood, stone and earth are also metaphorically significant in the Christian tradition. There are many occasions in the scriptures when Christ is referred to as the cornerstone, along with mentions of the Church being founded on rock and Christians as its living stones.[10] Likewise, trees are used symbolically throughout scripture, from Genesis right through to Revelation. While often used as metaphors,[11] various types of wood also feature prominently in the numerous instances of building in the Old Testament, whether for the ark of Noah, the Tabernacle of Moses, or other altars and sanctuaries constructed by God's Covenant people.

Among these three materials, earth is unique in that, unlike stone or trees, it is never used to represent God, only humanity. It is uniquely human. The comparison of human beings to earth goes back to the very

9 This has been the case since the time of Jesus, who even brings it up in one of the Gospels: "For which is greater, the gold or the sanctuary that has made the gold sacred? [...] For which is greater, the gift or the altar that makes the gift sacred?" Matthew 23: 17, 19.

10 Isaiah 28:16, Zechariah 10:4, Psalm 118:22, Matthew 21:42, Matthew 16:18, Mark 12:10, Luke 20:17-18, Acts 4:11, Ephesians 2: 19-22, 1 Corinthians 3:11, 1 Peter 2:4-9

11 Psalm 1:1-3, Psalm 52:8, Isaiah 44:3-4, Judges 9:7-15, Daniel 4: 10-27, Romans 11:24, Matthew 7:17-19

beginnings of mythology and is present in narratives from almost every world religion, from antiquity to today. Though not unique to Christianity, the history of the human-earth relationship is very significant in this faith tradition. In Genesis, the name Adam is taken from the Hebrew word *adamah* (הָאֲדָמָה) meaning 'earth'. Formed from "the dust of the ground,"[12] yet infused with divine breath, human beings were elevated to a sacredness beyond any other earthly being. Though not literal, this symbolism is deeply meaningful, speaking to our deep connection to the earth - it is where we live, what we cultivate, and how we sustain ourselves. When we use it to form the architecture of a church, the richness of the meaning it carries contributes to the beauty of the space, and the space in turn elevates the simple material.

Clay (as earth) is the most ancient and primitive of building materials, and is still used in the vast majority of vernacular architecture around the world, from the mud huts of sub-Saharan Africa, to the thick adobe walls of the Middle East, to the brick masonry of Europe. It is especially valuable as it can be used by those with the most limited of means, and depending on its treatment, can be built to form anything from the humblest to the grandest of structures. The church of Cristo Obrero (Christ the Worker), located in Atlántida, Uruguay and designed by engineer and architect Eladio Dieste, is just one example of the potential of this simple material. Through its structural innovation and unique design, it uses local clay brick to create a place of transcendent beauty.

The work of this chapter was inspired by Dieste's Cristo Obrero. Surprisingly, given the complexity of its construction, the church was his first architectural work.[13] With a shell of undulating masonry and a meticulous use of light, it is a remarkable example of a beautiful, contemporary Catholic church. It was completed in 1960, and consists of a single, unified worship space focused towards the altar. Each of the small, colourful, rectangular windows along the eastern and western walls are oriented towards the sanctuary at the southern end of the church, and along with seven circular skylights clustered together overhead, illuminate the altar. The only separate element is the baptismal font. Accessible through its own door at the front of the site and connected to the main space by a single staircase, the font is located in an underground baptistery, symbolic of the dying and rising of the newly baptised Christian.

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12 "[T]hen the Lord God formed man from the dust of the ground, and breathed into his nostrils the breath of life; and the man became a living being." Genesis 2: 7.

13 Stanford Anderson, ed., *Eladio Dieste: Innovations in Structural Art* (New York: Princeton Architectural Press, 2004), 42.



3.4



3.5

Interior and exterior view of Cristo Obrero by engineer and architect Eladio Dieste



3.6
West facade and bell tower of Cristo Obrero

Not only was clay brick fitting as a material from an engineering perspective, but it is also one of the most humble and widely used materials in Uruguay. Given that Cristo Obrero translates in English to 'Christ the Worker,' the humility of the material is perfectly suited to the intended character of the church, while the beauty of its form honours the church's sacred purpose. It proves that beauty and quality do not need to be monetarily expensive. They are characteristics that can and should be present in everything from the smallest and simplest parish[14] chapels to the grandest cathedrals.[15]

Personally, I have not yet had the chance to visit Cristo Obrero, and I knew I could not gain my desired level of understanding simply by studying drawings and photos of it. If I wanted to understand the significance of its material, and the story it carries, I needed to explore it physically. Through physical modeling, I ended up recreating what I saw as a key aspect of the church - the undulating brick wall. Through the process of making, from material collection all the way to a finished product, my body would learn what my eyes alone could not. I wanted to come to a deeper knowledge of clay as a material, so I could better understand its significance.

While creating the artifacts, I couldn't help meditating on the Christian metaphor of God as potter and humans as clay, formed by His hands. Clay requires refinement for the best final outcome, and it always bears the marks of the maker's hands. Like each of us, clay is messy and can become very fragile, but at the same time, holds immense potential and is capable of great strength and beauty. Through craft, I came to see the ways a material can take on value and significance by how it is treated and what it is used for, but also, how that creation can in turn reveal the significance and the beauty already present within the material itself. This is equally true of a church.

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14 'Parish' is the title for an individual church community within a diocese of the Catholic Church, under the leadership of a priest (or more than one priest, depending on the size of the congregation). A diocese is a larger community of Catholic churches determined by geographic region, under the guidance of a bishop. A diocese will always have one cathedral church (which is the seat of the bishop), in addition to the rest of the parish churches, and any shrines, chapels, oratories or basilicas in the area.

15 Joseph Ratzinger makes this point in his writings on the theology of the liturgy: "The Church must not settle down with what is merely comfortable and serviceable at the parish level; she must arouse the voice of the cosmos and, by glorifying the Creator, elicit the glory of the cosmos itself, making it also glorious, beautiful, habitable, and beloved. [...] The Church must maintain high standards; she must be a place where beauty can be at home [...]. Thus to ask what is 'suitable' must always be the same as asking what is 'worthy'; it must constantly challenge us to seek what is 'worthy' of the Church's worship." Ratzinger, *Theology of the Liturgy*, 441.

The following pages tell a story of clay and the meaning a material carries into built form through the story of its past...

This story begins in central Nova Scotia, at the estuary where Little Bass River meets Minas Basin off the Bay of Fundy. I wanted to make sure that the clay I was using for the artifacts was as close as I could get to the rich colour of the bricks used for the church of Cristo Obrero. I wanted to harvest it naturally, since I knew the resultant models would not have the same effect if I used store bought clay in white or grey, and it was important that I knew where the clay came from. Thankfully, I had a trip to the Canadian Maritimes planned during the summer, which was the only place in Canada that would have soil of a suitable colour and consistency. While driving through rural Nova Scotia, my mom and I happened to come across a farm where a potter was able to direct us to the best place in the area for natural clay harvesting - Little Bass River.



3.7
Minas Basin, Nova Scotia at low tide



3.8
View of mud flats where the clay was harvested, and our feet (3.9) and hands (3.10) during harvesting



3.9



3.10



3.11
Bag of harvested clay

Upon returning home with a large bag of Nova Scotia clay, it was too wet to work with immediately, so I left it open outside for a few days so the hot July sun could evaporate some of the moisture. Once it was workable, I sifted through a portion of it, removing any shells and rocks I could find, and began working with it, getting a feel for the material and what it might and might not be capable of. Initially, I had the idea that I would create one of the undulating brick walls of Cristo Obrero at a small scale, so I created a series of bricks, one at a 1:1 scale, and the rest much smaller, which would be used for the wall model. I later abandoned this idea, but kept the bricks. The purpose of the 1:1 was simply to come to a better understanding of the proportions of the bricks used in the actual project, which were longer and thinner than average (roman style).



3.12



3.13



3.14

I moulded the bricks by hand. Since the clay was harvested from saltwater, white salt became visible as the water evaporated, but these marks later disappeared.



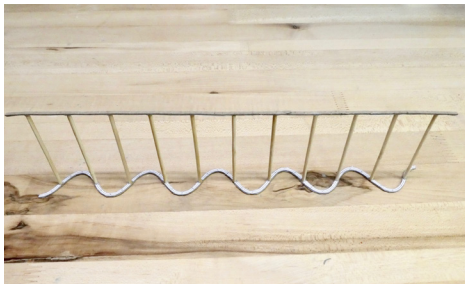
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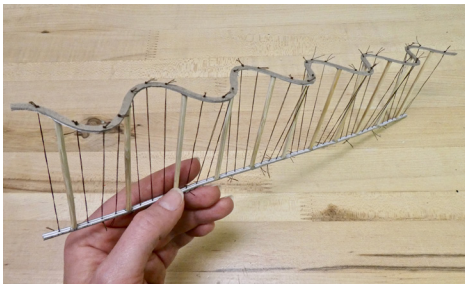
3.16

Once dry, I sanded the bricks to level out each face and create crisper edges. I liked that the clay still showed some of its imperfections - little rocks and shells embedded within.

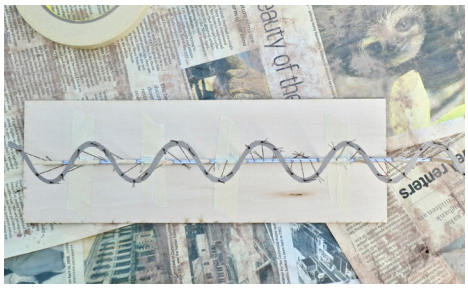
After abandoning the idea to build the wall model out of tiny bricks, I decided to shape it as one solid piece. I began by building a digital model of the church wall based off the architectural drawings, and used that as a guide for the physical models. The first attempt was only meant to be a test model to further test the clay's capabilities. Using my dowel and string 'formwork' as a guide, I built up the wall in layers, at 1:100 scale.



3.17



3.18



3.19



3.20



3.21



3.22



3.23



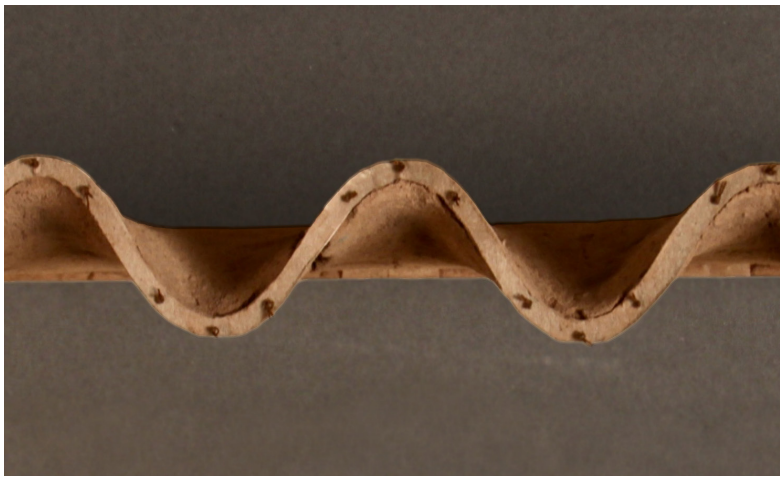
3.24



3.25



3.26



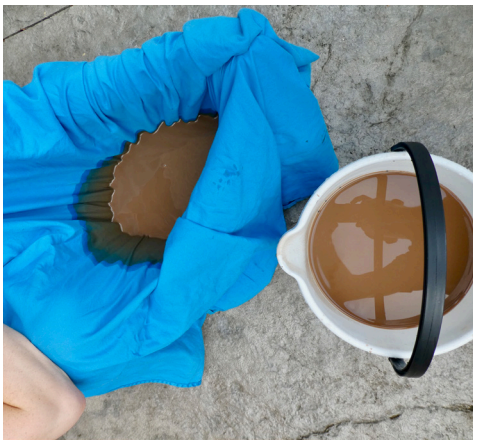
3.27

Initially, I was quite disappointed with the final result, but upon further consideration, I was made to see that the beauty of the artifact still came through in its form. Like a relic, as a humble material treated with great care, the meaning of the material deepened, even if the outward appearance lacked a high aesthetic quality.

To improve upon this result in my next model, I decided to put the clay through a process of refinement, in the hopes of achieving a smoother and stronger wall. I also realized that the scale was too small, and the walls too thin to achieve the desired result, so I increased the scale from 1:100 to 1:50 and instead of the entire wall length, decided to build only a portion.



3.28



3.29



3.30



3.31



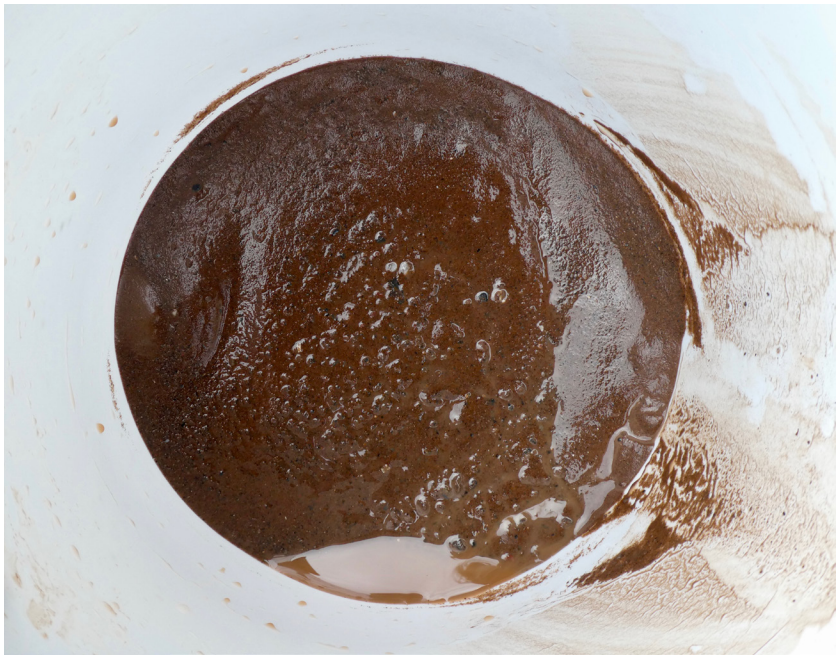
3.32



3.33

In pottery, this process of refinement is called slaking. It involves diluting the clay with water, so the finer particles of clay remain floating while the heavier sand, stones and other imperfections, sink to the bottom. Then the water mixture can be strained through cloth, resulting in a purer and finer clay mixture.

I hung the mixture in old sheets for several days to allow the water to drain. As is visible in the photos, it was very clear, leaving behind a higher quality clay.



3.34
Sand and other debris left behind after the clay was poured out

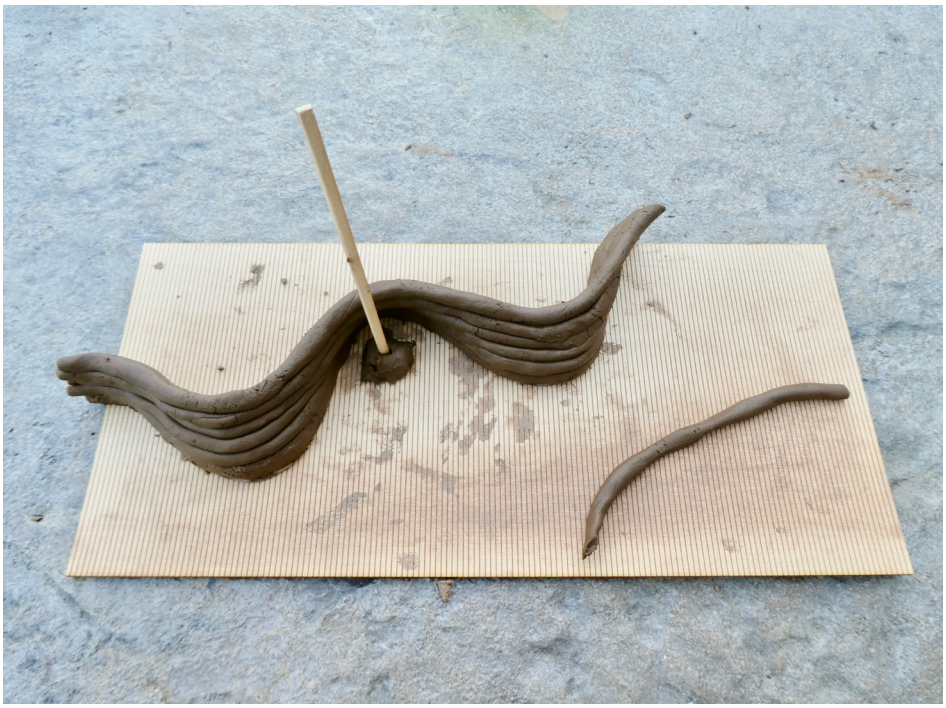


3.35
Bag of clay after slaking



3.36
Final result - a much purer material, but still a bit too wet to start modeling

With the new clay mixture I began constructing my second wall model. This time there was no formwork, as the dowels in the previous model were the cause of the vast majority of cracking. Coiling was used to increase the stability of the clay. It was still necessary to build it up in separate sections, which caused a few expected problems with cracking, given the varied drying times of each section, but was otherwise successful. Like slaking, this was another example of the building process changing according to a learned understanding of this specific material.



3.37
First of three layers, built on top of each other



3.38



3.39



3.40



3.41



3.42

Originally, I had planned to form the wall all together in one piece while the clay was wet, but quickly realized I would not be able to mold it with enough accuracy, nor was it stable enough. As result, I adapted my approach, intentionally making the wall thicker than needed, primarily for strength and stability, but also so I could later sand it down and have greater control over the form and finish. The images on the following pages show documentation of the sanding process.

This model produced a much more desirable result. I was not able to avoid cracking completely. Many cracks are visible in the final result, but I have come to appreciate them. I believe they add to the beauty of the model because they tell the story of its creation. Like the humble brick of Cristo Obrero, or the materials of any church, they add meaning to the built form and are in turn elevated by the vessel which frames them.



3.43



3.44



3.45



3.46



3.47



3.48



3.49
Completed wall model, 1:50



3.50



3.51



3.52



3.53

"Dieste's life and work offer three important lessons for designers and educators, the first being that understanding the construction process is crucial to creating exceptional works of structure. all structural artists are builders as well as designers. Secondly, Dieste's work demonstrates the possibility of constructing with a combination of traditional materials, such a brick, and high-strength industrial materials, such as steel. Structural experimentation, particularly with locally produced materials, should be encouraged. Finally, Dieste's success illustrates that good design must be adapted to local conditions."

John Ochsendorf
(*Eladio Dieste: Innovation in Structural Art,* 104-105)

3.54 >
Interior of Iglesia de Cristo Obrero by Eladio Dieste





IV

Reconciliation



4.1
Sacrament of Reconciliation or Confession

Returning Home

The Sacrament of Reconciliation, which can also be called Confession or Penance, is a sacrament of healing. Its purpose is to restore one's place in the community after it has been damaged by an offense, that is, a failure to love God, neighbour or self.[1] As the Catechism of the Catholic Church explains: "The confession (or disclosure) of sins, even from a simply human point of view, frees us and facilitates our reconciliation with others."[2] As one of the two sacraments of healing, it begins and ends with a blessing and is meant to be a tangible experience of God's love between the priest *in persona Christi*,[3] and the penitent. The sacrament is both a reminder of, and a return to, one's place in the home of the merciful Father.

Though a communal act, in the sense that it restores relationship within the community of faith, Reconciliation unfolds in private, either in a confessional within the church, or at an appropriate distance from others to prevent being overheard. Confessionals are usually small and intimate spaces, always featuring some kind of screen dividing the penitent and the confessor. These screens (though not required) are intended to create a sense of freedom and protection; protection, in the sense that one remains anonymous and nothing disclosed can be shared beyond the confessional walls,[4] and freedom, both because of this protection and because the screen veils the confessor from view, reinforcing the understanding that it is really Christ administering this sacrament of mercy through them, and He to whom one discloses offenses.

The memories of God's mercy, formed in one's life through this sacrament, help to deepen one's relationship with God through

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1 "'The whole power of the sacrament of Penance consists in restoring us to God's grace and joining us with him in an intimate friendship.' Reconciliation with God is thus the purpose and effect of this sacrament. [...] Indeed the sacrament of Reconciliation with God brings about a true 'spiritual resurrection,' restoration of the dignity and blessings of the life of the children of God, of which the most precious is friendship with God." CCC 1468.

2 CCC 1455.

3 This is a Latin phrase meaning "in the person of Christ". As the Catechism states: "In the ecclesial service of the ordained minister, it is Christ himself who is present to his Church as Head of his Body, Shepherd of his flock, high priest of the redemptive sacrifice, Teacher of Truth. This is what the Church means by saying that the priest, by virtue of the sacrament of Holy Orders, acts *in persona Christi Capitis*." CCC 1548.

4 This is referred to as the "sacramental seal" and requires absolute observance by the priest.

increased trust. Personally, while it is true that, when coming to God for reconciliation, I am remembering my own failures and weaknesses, even more than that, I am reminded of the infinite mercy available to me and all the countless ways God has revealed that mercy in the past, whether in my own life or someone else's. My knowledge of God is an accumulation of experiential memories over time, and it is this knowledge that reminds me in the present, of my place in the family and Kingdom of God. This Sacrament of Reconciliation restores a person's communion with the Body of Christ, allowing them to participate in the ultimate act of Christian remembrance, the Eucharistic liturgy.

Our sensory perception is significant in the experience of Reconciliation. This is true of all the sacraments. Like architecture, each of the Catholic sacraments appeal to the human senses as a way to make tangible an experience of the invisible God. As humans, our senses are the means by which we experience the reality of our surroundings, and aid in strengthening memory. This is why we so often find examples of physical acts of remembrance throughout the history of human civilization. These acts help to make visible what is invisible.

Through the Old Testament all the way up to the present day, memory has been an important part of humanity's relationship with God. On multiple occasions throughout the Bible, there are accounts of people building altars of remembrance in places where they had encountered God in a particularly powerful way. Abraham built several of these altars to remember where God appeared to him.[5] Other Old Testament figures did the same, giving their altars names like 'House of God,'[6] 'The Lord is my Banner,'[7] 'Witness,'[8] and 'The Lord is Peace'[9]. While some of these Old Testament altars were used for sacrifices, many were built purely for the sake of memory.

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5 Genesis 12:7-8, 13:4 & 18

6 In Genesis 35:7, Jacob builds an altar of remembrance in the place where God revealed Himself.

7 In Exodus 17:15, Moses builds an altar of remembrance after God helped the Isrealites defeat Amalek.

8 Joshua 22 gives an account of the altar built by the Reubenites, the Gadites, and the half-tribe of Manas'seh, which acted as a reminder between themselves and the nation of Israel that "the Lord is God". Earlier, in Joshua 4, there is another notable example when Joshua builds an altar to God so future generations of Israelites would remember the Lord's faithfulness in drying the waters of the Jordan so they could pass through and enter the Promised Land.

9 In Judges 6:24, Gideon builds an altar where an angel appeared to Him, and God assured him of His peace.

These instances are examples of time recounted through space to aid in memory. The architecture of Catholic churches has long served the same purpose. Catholics believe it is in and through God that time and eternity are reconciled. The church is a place that embodies this reality in built form.

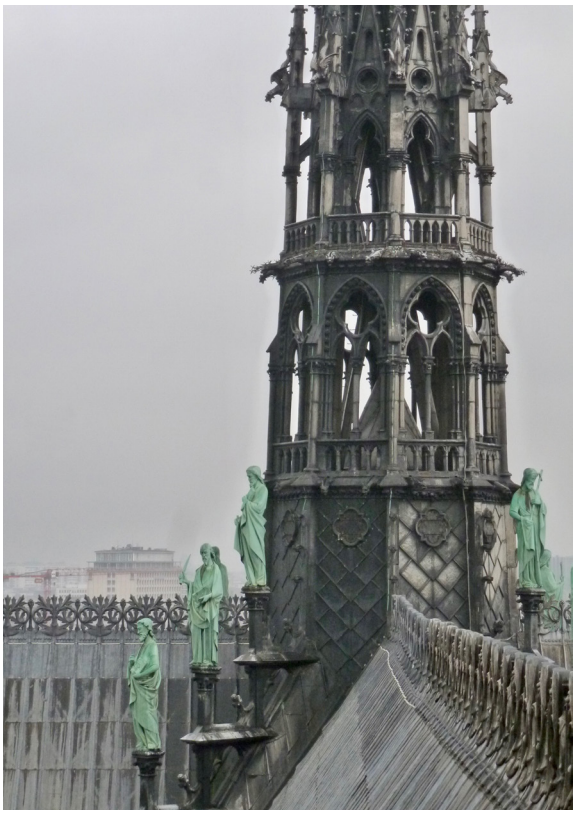
Notre-Dame de Paris

Notre-Dame de Paris is one of my favourite places in the world, not only for the reasons just mentioned, but also because the cathedral reflects my personal experience of time. Of the hundreds of churches I have visited, Notre-Dame is one of the few places where I truly experience a sense of unity with all of humanity, living and deceased - where the memory of them is alive in a unique way. This is brought about by the architecture itself, even apart from any participation in the sacraments of the Church. It lies in architecture's unique capacity to communicate the experiential aspects of time.[10]

For years, the reality of time's existence was a significant part of what kept me from believing that the God of Christianity could exist. I could not reconcile the concept of free will with a Divine Being who supposedly knew every action in time before it occurred.[11] How had we been given freedom to change our minds if God already knew everything that would happen in our lives? If we did have free will, how could God know the path of our lives, down to the minutest details; and if free will did not exist, then how could God be good, given the overwhelming evil

10 In the following passage, French philosopher Paul Ricœur, famous for his work on phenomenology and hermeneutics, speaks about this when he articulates architecture's ability, as a form of narrative, to unify both the experiential and chronological conceptions of time. "The time of the narrative comes into play at the point of rupture and suture between physical time and psychological time, the latter described by Augustine in the *Confessions* as "distended," a distention of the soul between what he called the present of the past – memory –, the present of the future – expectation –, and the present of the present – attention. The time of the narrative is therefore a mixture of this experienced time and of that of clocks, chronological time framed by calendar time, with all astronomy behind it. At the root of narrative time, there is this mixture of simple 'instant,' which is a break in universal time and of the living present where there is only one present: now." Paul Ricœur, "Architecture and Narrativity," *Ricœur Studies* 7, no. 2 (2016): 32.

11 The following is a definition of free will according to the Catechism of the Catholic Church: "God created man a rational being, conferring on him the dignity of a person who can initiate and control his own actions. [...] 'Man is rational and therefore like God; he is created with free will and is master over his acts.' Freedom is the power, rooted in reason and will, to act or not to act, to do this or that, and so to perform deliberate actions on one's own responsibility. By free will one shapes one's own life. Human freedom is a force for growth and maturity in truth and goodness; it attains its perfection when directed toward God, our beatitude." CCC 1730-1731.



4.2
Spire, Notre-Dame de Paris, November 2016

in the world? It was only through an understanding of the fundamental difference between temporality and eternity that I was able to draw close to Him.

Across history, architecture has been both a medium through which we try to reconcile time and eternity and an embodiment of meaning present in the ongoing human quest to remember. Historic works of architecture, like the Roman Pantheon or the Greek Acropolis, uniquely embody time, becoming a kind of frozen memory. The longer they have existed, the truer this is. Notre-Dame de Paris is another prime example. Not only is it the physical heart of France, in the centre of its capital and the point by which all distances are measured, but it could be considered the cultural and spiritual heart as well. It carries the stories of history within its walls - moments of time captured in stone. As a living presence of the past, it is a priceless treasure not only to Catholics or the French, but to countless others of all backgrounds throughout the world. The worldwide horror at its recent destruction is a testament to this. It tells not only the Christian story, but the human story. It is a record of our



4.3
Spire, Notre-Dame de Paris, April 2019

ongoing quest to remember, to orient ourselves in the context of human existence, and to achieve a sense of unity through time.

I experienced this in a powerful way back in 2016, during my first trip to France. Over the course of about five days, I spent several hours in and around the cathedral, visiting every day I was in the city. It drew me back again and again like a magnet.

This year, exactly one week before my scheduled flight to Paris, I sat at my architecture school during a break in class, watching as huge flames engulfed that same cathedral. As I watched them devour the beloved icon, I feared that by morning, it would be nothing but a pile of rubble. Even knowing that it was one of the most well-documented buildings in history, I could not help thinking about the very significant difference between looking at photos, drawings and models compared to actually being inside a space, experiencing the architecture as it was meant to be experienced.

Architecture embodies the stories and meanings of past times which are accessed through memory. This has the power to bring about a



4.4
Notre-Dame de Paris, November 2016



4.5
Notre-Dame de Paris, April 2019

sense of profound union with all time in a single moment of experience. Further, there is a significant difference between experiencing architecture from the outside versus the inside. The interior of a church is meant to be a place of safety and peace. Particularly in historic cathedrals like Notre-Dame, "the dark, all-enveloping space is evocative of the womb in which Christ himself was nurtured and in which all members of the [C]hurch come to birth".[12] In stark contrast to the exterior,[13] the interior depicts a unification of the earthly, celestial, and heavenly realms, where Christians find their home. It is a still-point in our chaotic world, the place of God's abiding presence. By walking through the doors of a church, I am able to escape the confines of temporality for a certain span of time, whether literally through participation in the Eucharistic liturgy, or figuratively through architectural experience. This is what I missed so much during my recent visit to Paris. With barricades blocking the streets a block out in every direction, I was unable to get anywhere near the cathedral, and could only look on from a distance.

Acts of Restoration

According to 19th century French architect, Eugène Emmanuel Viollet-le-Duc:

> Restoration: the word and the thing are modern. To restore a building is not to repair or reconstruct it; it is to reestablish it in a complete condition which may never have existed at any given moment. It is only from the second quarter of our century that attempts have been made to restore the edifices of another age, and we do not know if architectonic restoration has been clearly defined.[14]

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12 Barron, *Heaven In Stone*, 13.

13 The exterior of a Gothic church differs greatly from the interior, because it was designed to communicate a different message. It is not a depiction of unity, but of division - a warning of the risk of eternal separation from God and neighbour. In other words, It served as a reminder of the battle between the forces of good and evil, and the darkness of this world. As described by Bishop Robert Barron, the exterior facades depict the "fighting face of Christianity". Ibid., 54.

14 E.E. Viollet-le-Duc, "Restauration," in *Dictionnaire reaisonné de l'architecture française du XIe au XVIe siecle,* Reprint edition (Paris:De Nobele, 1967), 8:14 (quoted in Françoise Bercé and Bruno Foucart, *Viollet-le-Duc: Architect, Artist, Master of Historic Preservation* (Washington: The Trust for Museum Exhibitions, 1988), 11).

Until the 19th century, the common understanding of restoration was one of renewal (form the Latin *restaurare* meaning 'renew'), and often resulted in significant transformations of the architecture in question, as artists were given full liberty in their work.[15] These kinds of restorations have also been carried out unintentionally in buildings constructed over very long periods of time (i.e. centuries), as "the governing principle was not that of a concern for authenticity, but rather one of completing the project by drawing inspiration from the forms previously adopted."[16] Viollet-le-Duc was part of the shift in understanding that the existing work of a monument was more valuable and worthy of respect than its transformation.[17]

Even before the recent fire, Notre-Dame was in need of significant restoration work,[18] evidenced by the repairs going on at the time of the fire. If we look back two centuries previous, the cathedral had fallen into an even worse state of disrepair. Before Victor Hugo published his classic novel *Notre-Dame de Paris* in 1831, and the restorations of Viollet-le-Duc began a few years later in 1844, it had gone unused and unmaintained for an extended period, to the point where it was hardly recognizable.[19] Viollet-le-Duc and his partner J.B.A. Lassus's approach to restoration intended to respect both the material and form of the existing monument. The result, much of which was unfortunately destroyed in the recent fire, was a testament to their success, as historians Françoise Bercé and Bruno Foucart write:

> [T]he spire above the transept crossing had not been destroyed until 1792 and its stump was still visible. After the death of Lassus, Viollet-le-Duc reconstructed it, taking inspiration from that drawing [of Notre-Dame with two spires on the facade]. The spire of Notre-Dame is without doubt one of the architect's greatest successes, one essential to the monument.[20]

We are at the beginning of a new period of restoration in the life of Notre-Dame, similar to the circumstances two centuries ago, when Viollet-le-

15 Bercé and Foucart, *Viollet-le-Duc*, 11.

16 Ibid., 12.

17 Ibid.

18 "'It was bound to happen': Notre-Dame cathedral was beloved but long neglected," *The Local fr*, 16 April, 2019, https://www.thelocal.fr/20190416/notre-dame-the-beloved-heart-of-paris-that-had-been-neglected-too-long

19 Bercé and Foucart, *Viollet-le-Duc*, 37.

20 Ibid., 39.



4.6
Roof and Spire, Notre-Dame de Paris, November 2016



4.7
South rose window, Notre-Dame de Paris, November 2016

Duc began his work on the cathedral in the nineteenth century. We can continue to learn from him today, as we work to restore this monument to its former glory. Though a result of tragic circumstances, this time in Notre-Dame's life presents a unique opportunity to study what now exists, deepening our understanding of the structure as a whole and enabling us to restore what has been destroyed, all with a freshness that can be in dialogue with our contemporary world. There is no easy way of accomplishing this act of reconciliation between past and present. However, as work on the church begins, we could remember a statement by the French Historic Monuments Commission from the end of the nineteenth century, when they wrote: "Having no choice but to rebuild the roof of a building, the architect rejects iron construction because the masters of the Middle Ages used no iron in the framework. This is wrong, in our opinion, since it would avoid the terrible risk of fire."[21] In the words of Viollet-le-Duc, "absolute principles in these matters [of restoration] can lead to the absurd."[22] Further, "one must act according to particular circumstances".[23] We must determine how to reconcile historical practices

21 Ibid., 13.

22 Viollet-le-Duc, "Restauration," 8:24 (quoted in Bercé and Foucart, *Viollet-le-Duc*, 13).

23 Ibid., 8:23 (quoted in Bercé and Foucart, *Viollet-le-Duc: Architect*, 12).



4.8
South rose window, Notre-Dame de Paris, April 2019

with contemporary innovations, in a way that is balanced, and appropriate, in our specific temporal context, all while staying true to the meaning and value embodied within this iconic church.

Every church is a work of collective memory, which unites the worshiping community through common experience. Not only can a church encapsulate human experience in its creation over time, but, like the ritual act of Reconciliation, the Eucharist, or the altars of the Old Testament, also serves as an anchor of memory for the Christian community. It is a reminder to them of who God is, of His love, and of His promise of faithfulness for all time and into eternity.

Despite its recent losses, Notre-Dame de Paris was not destroyed. This is just another chapter in its long history. A new roof and spire will be added, with new meaning and traces of our own time. As with any great cathedral, it lives (and dies) by the human history unfolding within and around it. There will always be a certain kind of discomfort when cultural monuments adapt and change, reflecting the shifting circumstances and culture surrounding its place, but this is exactly where their value lies. Like the sacrament of Reconciliation in the life of a Christian, architectural restoration is a kind of reconciliation, in this case within the temporal realm, deepening a building's significance within human memory through its transcendence of a single time.

"Notre–Dame de Paris is a particularly curious specimen of this variety [a building of the transition]. Each face, each stone of this venerable monument is a page not only of our country's history, but also of the history of science and architecture.
[...]
[A]rchitecture's greatest products are less individual than social creations; the offspring of nations in labour rather than the outpouring of men of genius; the deposit left behind by a nation; the accumulation of the centuries; the residue from the successive evaporations of human society; in short, a kind of formation. Each wave of time lays down its alluvium, each race deposits its own stratum on the monument, each individual contributes his stone. Thus do the beavers, and the bees; and thus does man. The great symbol of architecture, Babel, is a beehive. Great buildings, like great mountains, are the work of centuries.
[...]
The man, the individual and the artist are erased from these great piles, which bear no author's name; they are the summary and summation of human intelligence. Time is the architect, the nation is the builder."

Victor Hugo
(*Notre-Dame of Paris*, 128-129)

4.9 >
Crossing and Apse, Notre-Dame de Paris, November 2016



V

Anointing



5.1
To administer this sacrament of healing, the priest anoints the hands and forehead of the sick person with holy oil and prays the following: "Through this holy anointing, may the Lord in his love and mercy help you with the grace of the Holy Spirit. May the Lord who frees you from sin save you and raise you up."

Amidst Darkness

"Again Jesus spoke to them, saying, 'I am the light of the world. Whoever follows me will never walk in darkness but will have the light of life.'"

John 8:12

In the Christian understanding, God is the source of all light in the world, both in a literal and figurative sense. Not only did He create the sun, stars, fire and anything else that provides us with physical light, but His infinite gifts of grace bring hope, joy, peace and love into a suffering world. Of all the Catholic sacraments, the Anointing of the Sick is the one consistently received at the darkest and most difficult moments of life. It takes place when a person is in danger of death.[1] Most often this applies physically, but it can also be mental, spiritual, or some combination of the three. Like all the sacraments, Anointing is a special gift of the Holy Spirit. As the Catechism elaborates:

> The first grace of this sacrament is one of strengthening, peace and courage to overcome the difficulties that go with the condition of serious illness or the frailty of old age. This grace is a gift of the Holy Spirit, who renews trust and faith in God and strengthens against the temptations of the evil one, the temptation to discouragement and anguish in the face of death.[2]

The sacrament is an encounter with the light of Christ, meant to lead a person through the darkness of their suffering, to healing. The power and poignancy of this light is made all the more pronounced because of the surrounding darkness.

It is well known that the themes of light and darkness are at the heart of the Christian mystery. If we consider the biblical precedents for this sacrament of healing, we can look to the countless miracles Jesus performed during his earthly ministry to see how His light is most radiant in moments when all seems lost. Whether in the case of healing the

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1 CCC 1514-1515.

2 CCC 1520.

woman who had been hemorrhaging for 12 years,[3] healing the paralytic at Capernaum,[4] raising people from the dead (Lazarus, Jairus's daughter, the son of the widow of Nain), or the death and resurrection of Jesus Himself, these occasions acted as the means by which the light of God - as love and mercy - were revealed. Though divine love motivates every one of Jesus's actions, the miracles He performed, like the sacraments of the Church, manifest this love in a particular way. Instead of being the means by which everything else is seen, light in these instances is focused - becoming the object of sight.

The Easter Vigil is the one liturgy during the year when this symbolic power of light is most evident. This particular liturgy always begins in the dark, just after sunset on Holy Saturday[5]. The first part of the liturgy is actually called 'The Service of Light'. The celebration begins with the lighting of the Paschal Candle,[6] and from that single flame, light spreads through the congregation, each person holding their own candle as they process into the dark church. Eventually, the church is alight with a sea of flickering flames, and the *Exultet* hymn is sung, which tells the Christian story, announcing the meaning of the Easter mystery and its significance for humanity. It praises the night for revealing the glory of the Lord because it is His light that gives meaning to our darkness.

The oldest known Christian hymn still in use today (besides those taken directly from the Bible), is called *O Gladsome Light*[7] (*Phos Hilaron* in Greek, *Lumen Hilare* in Latin) and is sung just before the sun sets during Vespers (evening prayer) in the Byzantine Catholic Church. Cast against the darkness of night, the spiritual light of prayer serves as a clear reminder that Christ is the true Light of the world.

Because of its rich symbolism, light has been one of the most important considerations in design since the beginning of church construction. It is not noticed as much in the Church today, with our

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3 Matthew 9:20-22, Mark 5:25-34, Luke 8:43-48.

4 Matthew 9:1–8, Mark 2:1–12, Luke 5:17–26.

5 The Vigil liturgy is the high point of the Easter Triduum, which begins on Holy Thursday night, continuing through Good Friday and Holy Saturday, and concluding on Easter Sunday.

6 Also called the Easter Candle, this is a very large candle (several feet high) with special significance. A new one is blessed with holy water during the Easter Vigil every year.

7 Also called *O Joyful Light,* the lyrics are as follows: O Gladsome Light of the holy glory of the Immortal Father, heavenly, holy, blessed Jesus Christ. Now we have come to the setting of the sun and behold the light of evening. We praise God: Father, Son, and Holy Spirit. For it is right at all times to worship Thee with voices of praise, O Son of God and Giver of Life, therefore all the world glorifies Thee.



5.2
Example of the power of light as a physical experience during the Mass

O truly necessary sin of Adam,
destroyed completely by the Death of Christ!

O happy fault
that earned so great, so glorious a Redeemer!

O truly blessed night,
worthy alone to know the time and hour
when Christ rose from the underworld!

This is the night
of which it is written:
The night shall be as bright as day,
dazzling is the night for me,
and full of gladness.

(Excerpt from the 'Exultet')



5.3
Paschal Candle lit at the Easter Vigil

artificial control of light, but the rising and setting of the sun - the shift between darkness and light - has always held spiritual significance. This manifests in a reciprocal relationship between prayer and the physical environment. Sunlight (or lack thereof) within the church provides a sense of orientation in time, and tracks time's passage. Throughout the history of Catholic architecture, this shifting of light and shadow indicated times for prayer. This is still the case in monastic communities. When Christians come together to pray the Liturgy of the Hours, throughout the day and night, these become spiritual moments of light in the individual's life. They are times of focused prayer amidst everyday chaos and distraction. However, as a whole, the Liturgy of the Hours prayed by the faithful across the world, makes every hour of the day and night holy by praise of God through constant prayer.[8] Theologically, these prayers are meant to sanctify the world, ushering in God's light amidst the world's darkness. Light within the church acts as a physical reminder of this reality.

As a common element of Catholic architecture, the penetration of natural light is also important to situate a church within creation. As has been established, the church is the place for the celebration of liturgy, and in a theological sense, the liturgy is what "allows God's light to stream down into"[9] the world, which sanctifies all of creation as the meeting place of God and humanity. To reinforce this point, in his theological writings on the liturgy, Joseph Ratzinger elaborates: "in church architecture [...] we should see to it that churches [...] stand in the cosmos, inviting the sun to be a sign of the praise of God and a sign of the mystery of Christ for the assembled community."[10] This is why, for so many centuries, churches faced east. The sun rising in the east is a symbol of the rising Son who is Christ resurrected. Praying east meant being faced to "meet the coming Christ,"[11] and acted as a visible sign that the natural rhythms of creation are an integral part of Christian prayer.[12]

In a Christian context, darkness itself is never beautiful, since it has no value except to stand in contrast to light. The light of Christ's resurrection becomes more evident in contrast with the darkness of the crucifixion,

8 CCC 1174-1177.

9 Ratzinger, *Theology of the Liturgy*, 332.

10 Ibid., 391.

11 Ibid., 41.

12 "[T]urning toward the east also signifies that cosmos and saving history belong together. The cosmos is praying with us. It, too, is waiting for redemption. It is precisely this cosmic dimension that is essential to Christian liturgy. It is never performed solely in the self-made world of man. It is always a cosmic liturgy. The theme of creation is embedded in Christian prayer." Ibid., 42.

and the gifts of grace bestowed through the sacrament of Anointing are felt more keenly because of the depth of the recipient's suffering. These meaningful realities of faith can be, and have been, depicted physically through the symbolic use of light in architecture, creating spaces of beauty.

Play of Light and Shadow

Many architects consider light to be a kind of physical material in design, like wood or stone, requiring careful consideration and craft. The way architecture shapes and frames light changes the entire experience of a space. Through various design techniques, architecture can become a stage for light, tracking its journey throughout a day or year and transforming with its movement. Materials aid in this process, capturing or framing light in a particular way and bringing it to our attention. Think of rays of sunlight caught dancing in a pool of water or in mist rising over a field at dawn. During a Catholic Mass, clouds of incense can hold light as they rise upwards, or stained glass capture and cast light into the sanctuary in kaleidoscopes of colour. Darkness too, is one of these materials. Cast against shadow, light appears more vivid. In the words of Peter Zumthor, "shadows praise light."[13] They give us a deeper awareness of its power.

Contrast between light and shadow is used to powerful effect in many of the historical styles of church architecture. The Romanesque style was influenced by the idea, coming largely from the Byzantine era, that spaces for worship should be dark and small to evoke an atmosphere of intimacy.[14] The fortress-like Romanesque churches used thick structural walls which did not allow for large openings. As a result, windows were small and placed high up in the nave, symbolizing the light of heaven and drawing the eye upward. Primarily, the placement of windows was meant to deepen the experience of liturgy. Small windows in the eastern wall allowed the soft light of the rising sun to backlight the altar, while windows in the western wall drew in beams of light from the setting sun, illuminating the altar while everything else all but disappeared in the comparative darkness.[15] Similarly, in Gothic architecture, the initial

13 Zumthor, *Thinking Architecture*, 92.

14 Concha Diez-Pastor, "Light as a Symbolic Definer of Spaces in Romanesque Architecture," in *Licht-Konzepte in der voormodernen Architektur*, eds. Peter I. Schneider and Ulrike Wulf-Rheidt (Regensburg: Schnell & Steiner, 2010), 304-321.

15 "[L]ight was God, and only He could illuminate the faithful along their path. Thus, by appearing inside the temple at dusk, from the back of the nave through a small opening, a reddish stream of light tracing all the way across the nave to the altar causing walls and vaults to disappear, He was illuminating the faithful and showing them they were

darkness upon entering a church was meant to be disorienting, as a reminder of humanity's need for God's guiding light. Through the use of large windows, possible after the invention of flying buttresses, the light gradually increased as one moved closer to the most sacred place of the altar and sanctuary. A person would also experience disorientation upon exiting the church, again a reminder of the need for Christ's light, to be found within the Church.[16]

Baroque architecture also made use of contrast by means of directional light, creating a spotlight effect to throw certain important elements into sharp relief. This was reflected in the artwork of the time as well, particularly in the work of Caravaggio, with his mastery of the *chiaroscuro* technique, and Bernini's manipulation of light in sculpture. Even candlelight (as the only alternative light source) was considered in design. Historically, architectural ornament as well as frescoes and mosaics, were made to capture the glow of flickering flames. Light and shadow worked in tandem. Use of gold on the interior could help illuminate the space through its reflectivity, while the dance of light and shadow across each surface brought the building to life through movement.

There are also many modern examples of architectural experimentation with light, and its relationship to darkness or shadow. Certain architects or architecture firms like Carlo Scarpa, Sou Fujimoto, Peter Zumthor, Tadao Ando, and Transsolar have demonstrated a particularly masterful use of light in their work. Though for the most part, these examples do not include churches or even religious architecture more broadly, these projects show the potential for light manipulation in our contemporary context, and reveal light's capacity to transform space, enabling encounters with beauty. Like water, smoke, or glass, darkness can accentuate the beauty of light. Manipulation of light through built form is one of the oldest tools in the practice of architecture and, as evidenced through these examples, remains extremely valuable and meaningful today.

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not alone in the dark for there was always ›some light‹ to guide them. And by letting in a little white bluish light at dawn through three small windows behind the altar, eternity would appear represented as the Holy Trinity, backlighting the liturgy." Diez-Pastor, "Light as a Symbolic Definer," 311.

16 "So the Gothic cathedral, full of the power of Christ, does not allow us to wallow in the illusion of our sinlessness. We may enter the door with confidence, sure of our direction and purpose, but the moment we step into the cathedral, we are disoriented, lost, desperately in need of a guide [...] As we move through the church - with hesitation at first - we come to ever greater illumination, the windows allowing more and more light into the space. The spiritual lesson is clear: as long as we sinners stay in the confines of the church, we will make our way to the Light; when we try to walk outside the church, our blindness only intensifies." Barron, *Heaven In Stone*, 21.

"The light shines in the darkness, and the darkness has not overcome it."

John 1:5



5.4
Chapel at the Carmelite convent just beyond the wall of Dachau Concentration Camp



5.5
Pantheon, Rome, Italy



5.6
Cathédrale Saint-Pierre de Lisieux, France



5.7
Side chapel, Saint-Germain-des-Prés, Paris, France



5.8
South transept, Saint-Germain-des-Prés, Paris, France



5.9
Notre-Dame de Chartres, France



5.10
Notre-Dame de Paris, France



5.11
Kollegienkirche, Salzburg, Austria



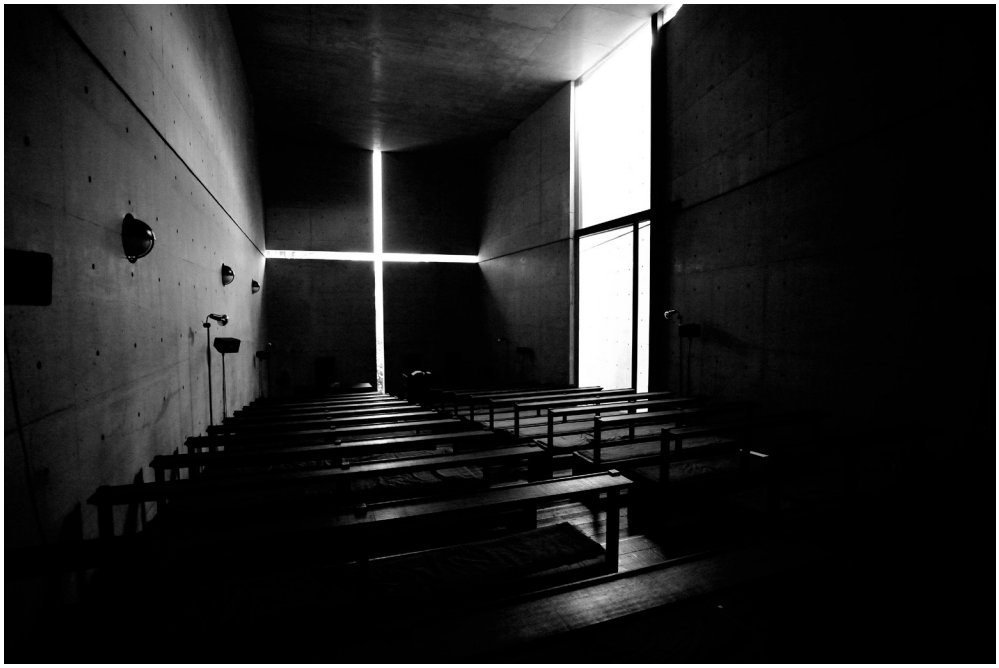
5.12
Kollegienkirche is known as the "Church of Light," features many domes, some multi-layered, to create the spotlight effect common in Baroque architecture

"Architecture is the masterly, correct, and magnificent play of masses brought together in light. Our eyes are made to see forms in light: light and shade reveal these forms."

Le Corbusier



5.13
Brion Cemetery by Carlo Scarpa, San Vito, Italy



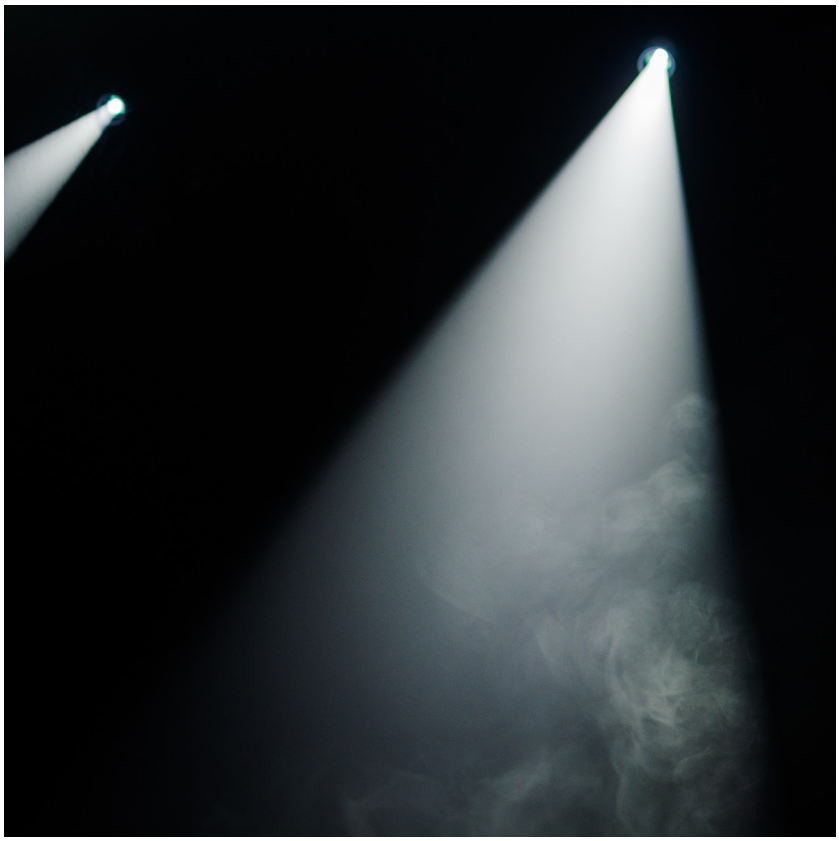
5.14
Church of the Light by Tadao Ando, Ibaraki, Japan



5.15
Chichu Art Museum by Tadao Ando, Naoshima, Japan



5.16
'Forest of Light' Installation by Sou Fujimoto



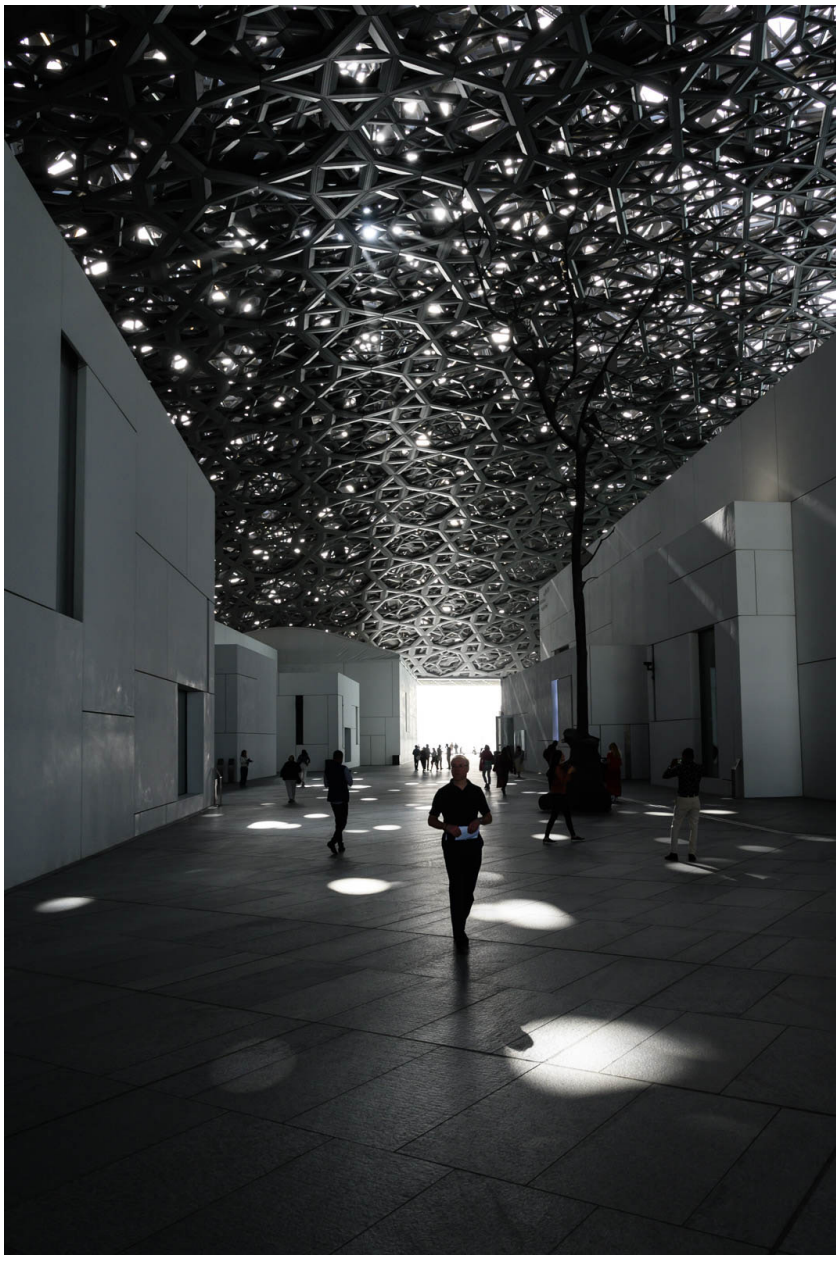
5.17
The installation was created for the COS Milan Design Week, 2016



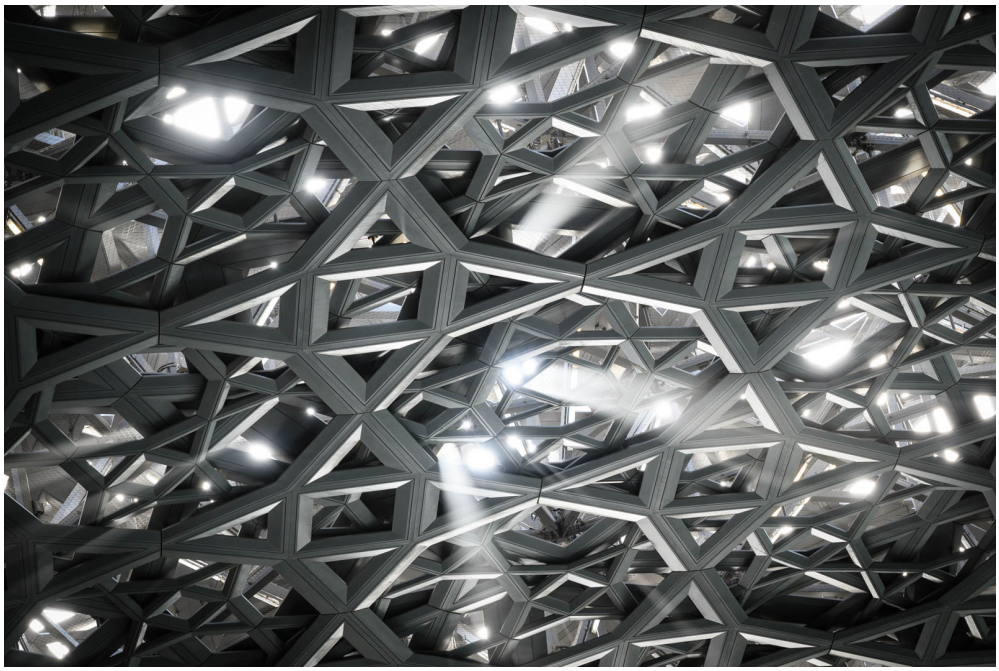
5.18
Bruder Klaus Field Chapel by Peter Zumthor, Mechernich, Germany



5.19



5.20
Louvre Abu Dhabi by Transsolar, Abu Dhabi, United Arab Emirates



5.21
Inspired by sunlight filtering through palm tree leaves, the design was meant to create a ‘rain of light’



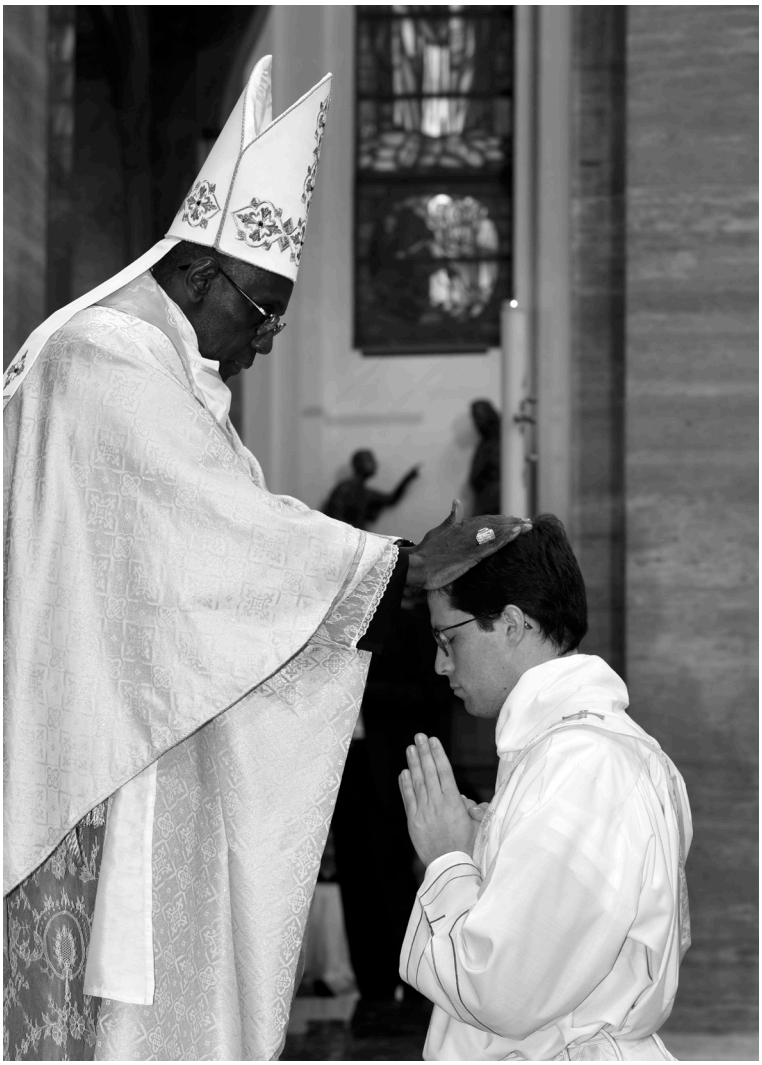
5.22
'Lightscapes' Installation by Transsolar and Anja Thierfelder



5.23
'Lightscapes' was featured in the Venice Architecture Biennale, 2016

VI

Ordination



6.1
The laying on of hands during Holy Orders (i.e. Ordination)

Many Parts, One Body

Ordinatio (Latin) - incorporation of a person into a particular, established group (*ordo* or *order*); historically within the Church, this involved a religious and liturgical act of consecration, blessing or sacrament[1]

Ekklesia (Greek) - *ecclesia* in Latin (coming from the Greek *ekkalein* literally meaning "to call out of"), is the word for *Church*, meaning a convocation or assembly (usually religious); used in the Old and New Testaments, it referred to the chosen people of God and today refers to the entire Christian community gathered by God throughout the world[2]

From the establishment of the tribe of Levi in ancient Jewish history, through to today, the priestly role has been one of primal importance in the community of God's covenant people. Christians believe the Levitical priesthood was ultimately fulfilled in Jesus Christ, and every Christian participates in this priesthood as members of the Church. The Church, or *ekklesia*, exists at both a local and universal level. Drawn together as a liturgical and Eucharistic community, She[3] is nourished by the Word of God and the Body of Christ and so, Herself, becomes Christ's living Body on earth.[4] The word ekklesia is used very rarely in the Gospels (only twice), which indicates the specificity of its meaning. It first appears in Matthew 16:18, when Jesus gives Peter his new name and declares him the rock upon which Christ's own ekklesia will be built,[5] assigning his specific role within the larger Body. It is this ekklesia which a built church is meant to represent.

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1 CCC 1537-1538.

2 CCC 751.

3 In Christian theology, the Church is always feminine, paired with the masculinity of Christ, as Bride and Bridegroom.

4 CCC 752.

5 "The GK word *ekklesia* occurs only here and 18.17 in the gospels. It translates the Hebr. *qahal*, used for the assembly called together by God on Sinai and sanctified by the divine presence. Other contemporary groups, such as the eschatological community at Qumran, also used the name, but this is Jesus' own *ekklesia*. As with the OT community of God, the alliance is sealed with blood, Mk 14.24e. Built on Peter, the community has a human structure, Mt 18." *The CTS New Catholic Bible* (London: The Incorporated Catholic Truth Society, 2007), Matthew 16:18, note c.

As individual and unique members of the Church, all of the faithful have their own role to play, called by God to accomplish a specific component of His mission. But together, they form a larger whole. The apostle Paul clearly articulates this in his first letter to the Corinthians when he writes about the Church as many parts, yet one body.

> For just as the body is one and has many members, and all the members of the body, though many, are one body, so it is with Christ. For in the one Spirit we were all baptized into one body—Jews or Greeks, slaves or free—and we were all made to drink of one Spirit.
>
> Indeed, the body does not consist of one member but of many. If the foot would say, "Because I am not a hand, I do not belong to the body," that would not make it any less a part of the body. And if the ear would say, "Because I am not an eye, I do not belong to the body," that would not make it any less a part of the body. If the whole body were an eye, where would the hearing be? If the whole body were hearing, where would the sense of smell be? But as it is, God arranged the members in the body, each one of them, as he chose. [...] The eye cannot say to the hand, "I have no need of you," nor again the head to the feet, "I have no need of you." [...] If one member suffers, all suffer together with it; if one member is honored, all rejoice together with it.
>
> Now you are the body of Christ and individually members of it.[6]

By nature of their baptism, every member of the Church shares in the "priestly, prophetic, and royal office of Christ" through their incorporation into Christ's Mystical Body.[7] As a whole, the purpose (i.e. apostolate) of the Church is to glorify God by "spreading the kingdom of Christ" to the whole world in order for all people to enter into relationship with Christ and share in His redemption.[8] By nature of its "organic union" and compact structure, every member of the Church must be actively engaged in the one shared mission.[9] The offices of priest, prophet and king are

6 1 Corinthians 12:12-18, 21, 26-27.

7 Second Vatican Council, *Decree on the Apostolate of the Laity: Apostolicam actuositatem* (The Holy See, November 18, 1965), http://www.vatican.va/archive/hist_councils/ii_vatican_council/documents/vat-ii_decree_19651118_apostolicam-actuositatem_en.html, sec. 2-3. See also CCC 1279.

8 *Apostolicam actuositatem,* 2.

9 Ibid.

like the underlying structures that organize this mission of the Christian life, but how it manifests within the life of every individual is diverse. For example, some vocations are a more direct manifestation of the priestly office of Christ, through their role as ministerial priests. In coming to a deeper understanding of the unique mission of these members of the Body, a deeper understanding of the Church as a whole can be gained.

As Jesus was sent by the Father to fulfill a particular apostolic mission, and as He assigned His Twelve Apostles the responsibility of continuing that particular mission, ministerial priests are established as ministers among the faithful "to unite them together," publicly offering sacrifice and forgiving sins in the name of Christ.[10] They are successors of the Apostles, and act *in the person of Christ* (*in persona Christi*).[11] These priests are not in themselves holy, but are made so by God, through their free cooperation.[12] The special grace needed to carry out this mission is bestowed through the Sacrament of Holy Orders (i.e. Ordination).[13]

Ordination is a type of consecration, an act of being set apart by Christ for a particular sacred purpose. There are three degrees of the Sacrament of Holy Orders: episcopate (bishops), presbyterate (priests), and diaconate (deacons), with the episcopate being the highest.[14] Only the episcopate and the presbyterate bestow the fullness of the sacrament

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10 Second Vatican Council, *Decree on the Ministry and Life of Priests: Presbyterorum ordinis* (The Holy See, December 7, 1965), http://www.vatican.va/archive/hist_councils/ii_vatican_council/documents/vat-ii_decree_19651207_presbyterorum-ordinis_en.html, sec. 2.

11 "'It is the same priest, Christ Jesus, whose sacred person his minister truly represents. [...] Christ is the source of all priesthood: the priest of the old law was a figure of Christ, and the priest of the new law acts in the person of Christ.' Through the ordained ministry, especially that of bishops and priests, the presence of Christ as head of the Church is made visible in the midst of the community of believers. In the beautiful expression of St. Ignatius of Antioch, the bishop is *typos tou Patros*: he is like the living image of God the Father." CCC 1548-1549. Though there have been horrific abuses committed by those who have held the priestly office, when a person actually lives out the vocation of ministerial priesthood faithfully, the loving image of God the Father is truly made manifest in the world.

12 "God, who alone is holy and who alone bestows holiness, willed to take as his companions and helpers men who would humbly dedicate themselves to the work of sanctification. Hence, through the ministry of the bishop, God consecrates priests, that being made sharers by special title in the priesthood of Christ, they might act as his ministers in performing sacred functions." *Presbyterorum ordinis*, 5. See also, CCC 1551.

13 "The office of priests [...] shares the authority by which Christ builds up, sanctifies and rules his Body. Wherefore the priesthood [...] is conferred by that special sacrament; through it priests, by the anointing of the Holy Spirit, are signed with a special character and are conformed to Christ the Priest in such a way that they can act in the person of Christ the Head." *Presbyterorum ordinis*, 2.

14 CCC 1536.

as participants in the ministerial priesthood. As representatives of Christ within the Christian community, priests are called to be servants of all, just as Christ was.[15] The Catechism explains:

> The ministerial or hierarchical priesthood of bishops and priests, and the common priesthood of all the faithful participate, "each in its own proper way, in the one priesthood of Christ." While being "ordered one to another," they differ essentially. [...] While the common priesthood of the faithful is exercised by the unfolding of baptismal grace - a life of faith, hope, and charity, a life according to the Spirit - the ministerial priesthood is at the service of the common priesthood. It is directed at the unfolding of the baptismal grace of all Christians. The ministerial priesthood is a means by which Christ unceasingly builds up and leads his Church. For this reason it is transmitted by its own sacrament, the sacrament of Holy Orders.[16]

The power of a priest's ministry comes from Christ's sacrifice on the cross. "Its aim is that 'the entire commonwealth of the redeemed and the society of the saints be offered to God through the High Priest who offered himself also for us in his passion that we might be the body of so great a Head.'"[17] The priest cannot function alone. His role would have no purpose without the rest of the Church, just as the Church would not be the Church without its priests. While they exercise a special office, they are, "together with all Christ's faithful, disciples of the Lord, made sharers in his Kingdom by the grace of God's call."[18] They are part of the family of all the baptised, members of "the same Body of Christ, the building up of which is required by everyone."[19] Only unified as one Body, with all parts coming together, can the Church most fully image God.

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15 Matthew 20:26-28, Mark 10:45, John 13:12-16.

16 CCC 1547.

17 *Presbyterorum ordinis,* 2.

18 Ibid., 9.

19 Ibid.



6.2

There is a particular moment during an Ordination Mass when the candidates lie prostrate in front of the altar as the whole congregation sings the Litany of Saints over them, praying and asking all the souls in heaven to join in prayer for the new priests. It is one of the most beautiful moments of the celebration, when the Church, as unified Body, is made manifest in a powerful way.

Just as the Body of Christ is a living image of God on earth, and the ministerial priesthood acts as an integral part of that Body, so too, the natural world appears as an image of God, and the geometric laws which underlay its structure, an integral part of it. While churches were always meant to be an architectural embodiment of the human ekklesia, they also become an image of God through imitation of His revelation in the natural world. In such circumstances, a study of the specific can in turn lead to greater understanding of the whole. As a devout Catholic, Spanish architect Antoni Gaudí knew this, and used geometry to stunning effect as a means of communicating these meaningful realities through architecture. He believed God was the Creator of the natural world, and accordingly, all his inspiration for architectural forms were taken from nature,[20] as the ultimate temple proclaiming the glory of God. This is very evident in his most notable work of architecture, the Basilica of the Sagrada Familia.

In his work, Gaudí took lessons from nature's "essence," incorporating "plant structure, animal movement and the geometry of mineral crystallizations into architecture" in imitation of the divine work.[21] This claim is made by Albert Fargas in his book on Gaudí's temple. He continues:

> Gaudí never made a literal imitation of nature, but rather approached that which he considered the essence of natural forms, since it was not about copying nature, but harmoniously building, following its laws. This is because the temple should not aim to be a "realistic" image of the world, but rather a "structural" one; in other words, it must produce the intimate and mathematical structure of the world. It must seek out and imitate the harmony of this world.[22]

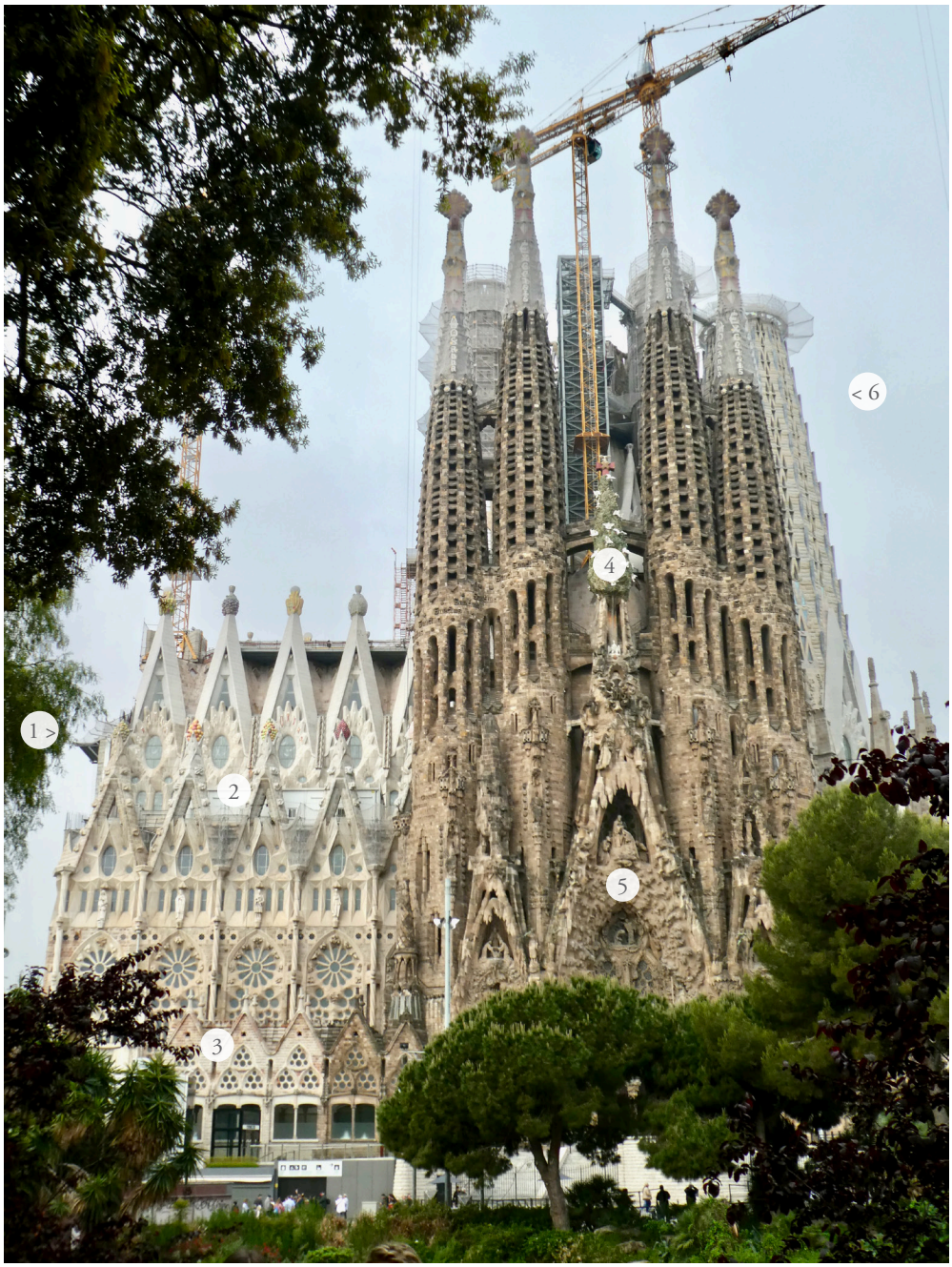
Through its geometry, the temple of the Sagrada Familia, as "structural" image of the world, reveals the structure or form of God - the reality of who He is.[23] Gaudí believed that it was only by returning to these origins that

20 In reference to Gaudi's work, historian Albert Fargas writes: "[E]verything comes from the great book of nature; all the styles (architectural) are organisms related to nature." Albert Fargas, *Symbology of the Temple of the Sagrada Familia*, trans. Steve Cedar (Menorca, Spain: Triangle Postals SL, 2009), 10.

21 Fargas, *Symbology of the Temple*, 12.

22 Ibid., 10.

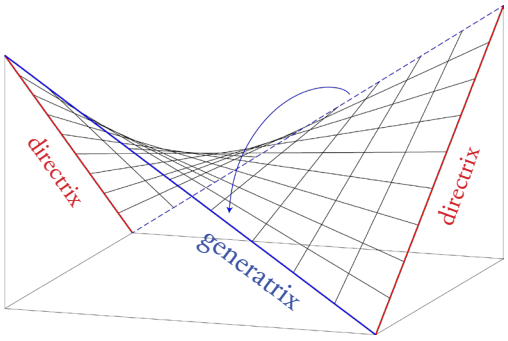
23 "'God,' said Gaudí, 'did not make any sterile law; they all have their application;



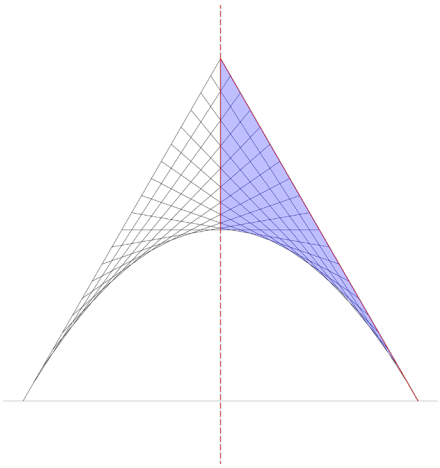
6.3
Nativity Facade and Nave, Basilica of the Sagrada Familia, May 2019

1. Glory Facade under construction
2. Walls and roof of nave
3. Cloister
4. Tree of Life
5. Nativity Facade
6. Towers of the Virgin Mary and the four Evangelists under construction

something truly original could be produced.[24] In his work, Gaudí brought back the idea, achieved so successfully in the Gothic style, of the temple as the "Bible of the poor,"[25] but adapted it to a contemporary context. This intention underlays every part of the basilica's geometry, as a means of communicating who God is. For example, the hyperbolic paraboloid is a key geometric form used throughout Sagrada Familia, present in its arches and vaulting. As Fargas articulates, Gaudí saw the hyperbolic paraboloid as a representation of the Holy Trinity. Composed of "two straight, infinite generating lines, and a third, also straight and infinite, which is supported over the other two," which, in Gaudí's thinking, were symbolic of "the Father and the Son, related by the Holy Spirit; the Father and the Son are the directrixes and the Holy Spirit, the generatrix."[26]



6.4
Three-dimensional diagram of a hyperbolic paraboloid, symbolic of the Trinity; directrixes = Father & Son, generatrix = Holy Spirit



6.5
Elevation of hyperbolic paraboloid, showing section cut line through the centre

observation of these laws and their application is the physical revelation of Divinity.'" Carles Buxadé i Ribot, Josep Gómez Serrano, and Ramon Ferrando Rios, *The Basilica of the Sagrada Familia* (Spain: Editorial Fisa Escudo de Oro, S.A., 2016), 38.

24 "The true originality consists of returning to the origin." Antoni Gaudí quoted in Ribot, Serrano, and Ferrando, *The Basilica*, 38.

25 Fargas, *Symbology of the Temple*, 19-20.

26 Ibid., 32.

The basilica differs in the way it communicates on the exterior compared to the interior. The exterior uses more literal and overt symbolism in its depiction of various biblical scenes, which make up the main faces of the building - the Nativity facade, the Passion facade and the Glory facade (currently under construction). The level of detail in these scenes is truly remarkable, with every person, insect, plant and animal carved by hand, and all incorporating deep Christian symbolism. The style of each facade also corresponds with the scenes being depicted. The Nativity facade - which depicts the birth of Jesus and his early life with Mary and Joseph - is ornate, full of intricately detailed plants and animals and human statues in a realist style, celebrating life, while in comparison, the Passion facade - which depicts the torture and crucifixion of Jesus - is done in an austere, modernist style, with sharp edges and deep recesses, creating high contrast shadows on a sunny day.



6.6
Nativity Facade detail, Tree of Life

Similar to the way an understanding of the priesthood can facilitate a deeper understanding of the entire Christian Church, examination of the details of Gaudí's basilica can provide a deeper understanding of the meaning of the whole



6.7
Nativity Facade
Foundations laid in 1892, completed in 1958.
Mainly sculpted by Jaume Busquets.



6.8
Passion Facade
Designed by Antoni Gaudi in 1911, foundations laid in 1954, most work completed by 2005.
Sculpted by Josep Maria Subirachs and Etsuro Sotoo.



6.9
Betrothal of Mary and Joseph



6.10
Holy Family's flight to Egypt



6.11
Presentation of Jesus in the Temple

6.12 >
The nativity of Jesus





6.13
Judas's betrayal



6.14
Peter's denial



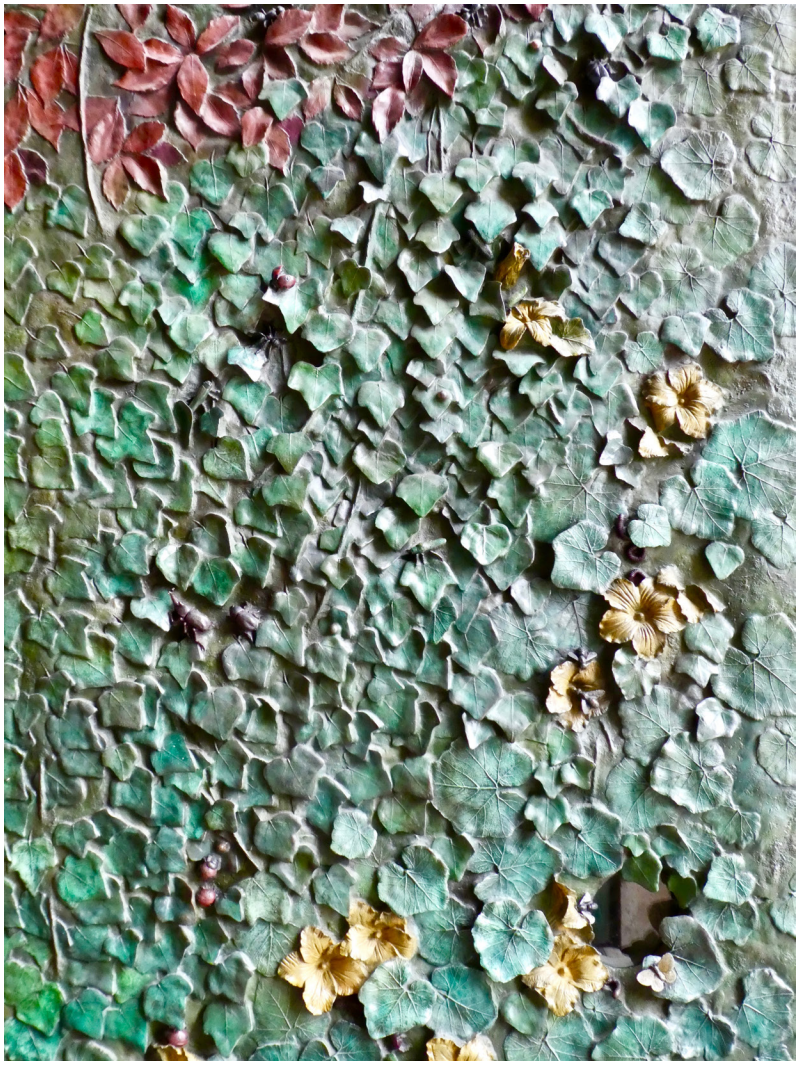
6.15
Jesus is condemned to death



6.16
Jesus is scourged

6.17 >
The Crucifixion and Veil of Veronica





6.18
Detail of the Portal of Charity

The three pairs of doors in the Nativity Facade are sculpted in bronze by Japanese artist Etsuro Sotoo. In this portal dedicated to the Christ Child, the doors depict many types of plants and insects like ivy leaves, pumpkin flowers, lilies, beetles, flies, wasps, bees, grasshoppers, ladybirds, ants, spiders and dragonflies, together symbolizing the life-giving love (i.e. charity) of Jesus.



6.19
Detail of the Portal of Faith



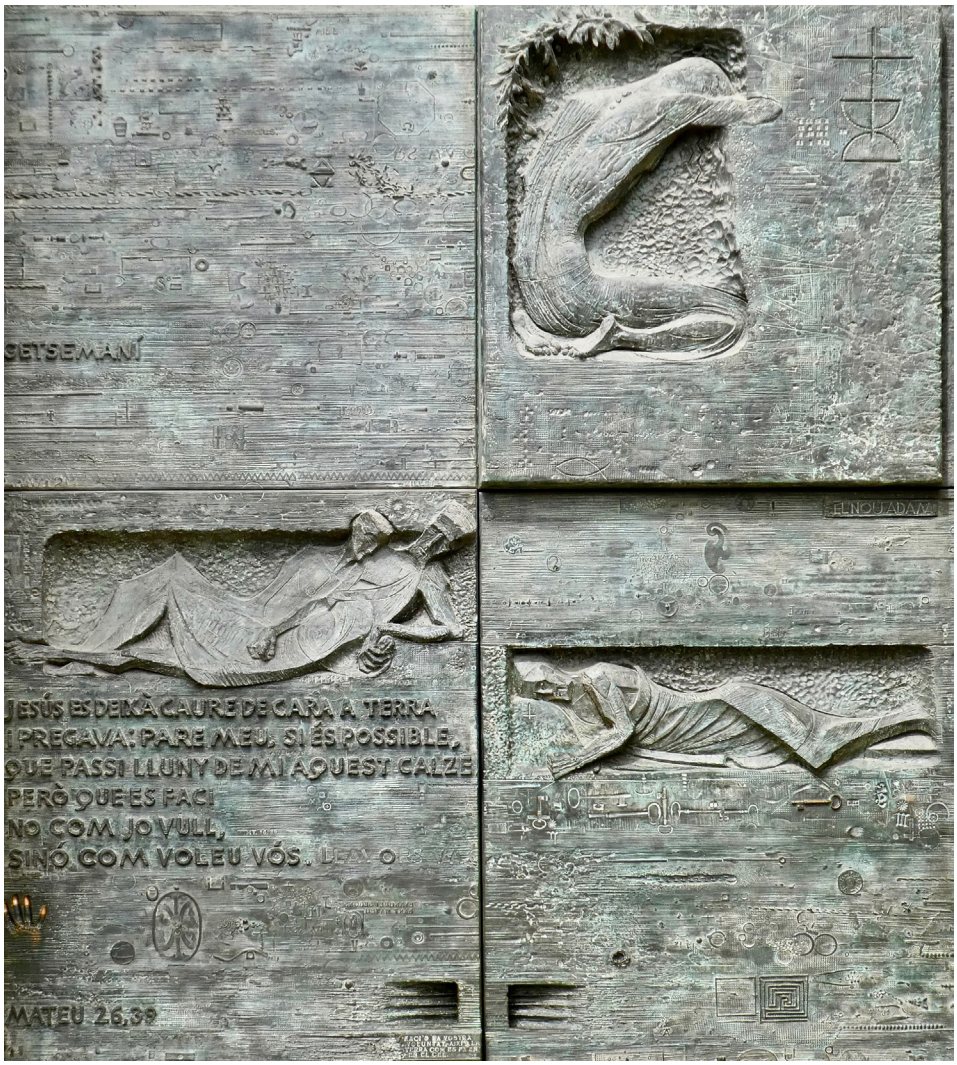
6.20
Detail of the Portal of Hope

The Portal of Hope, located on the left-hand side of the central portal, is dedicated to St. Joseph, and features lilies, frequently associated with St, Joseph as symbols of purity. The Portal of Faith is on the opposite side, dedicated to the Virgin Mary, and covered in intricately detailed roses and birds.



6.21
Door details in bronze

The doors communicate their story not only visually, but also through touch as visitors run their hands over the many engravings and protrusions within the sculpted bronze.



6.22
Door details in bronze

As the viewer moves closer, an overwhelming amount of detail is revealed on each door.



6.23
A tortoise and turtle sit beneath the two columns flanking the central Portal of Charity on the Nativity Facade



6.24
Exterior detail, one of many reptile 'gargoyles'



6.25
Pinnacles on top of the central nave windows covered in brightly coloured mosaic tiles, symbolic of the Eucharistic elements (wheat, communion wafers, grapes, wine)



6.26
Resurrected Christ atop the Passion Facade; Pinnacles atop the twelve bell towers feature stylized symbols of a bishop (mitre, staff, ring)



6.27
Holy water font



6.28
Tower staircase

In contrast to the basilica's outward face, the interior features less literal Christian symbolism and iconography. Instead, it primarily seeks to imitate the natural world, which, like the Scriptures, is a revelation of God, but through His physical creation. Accordingly, the interior reaches a deeper level of symbolic reference through its reappropriation of some of nature's most fundamental structures, which is most noticeable in the basilica's "forest of columns"[27].

27 Ribot, Serrano, and Ferrando, *The Basilica*, 50.

Similar to the fundamentality of the priesthood in the Church, trees are one of nature's most fundamental structures. It seems Gaudí recognized this metaphorical relationship, intending many columns to represent bishops, from the apostles to today. The current project architects describe this in the following passage:

> The twelve columns surrounding this transept, outlining a circle, will be dedicated to the twelve apostles. [...] The arrangement in circumference of the twelve columns of the twelve apostles tells us of the cosmological models; in other words, the explanation of the world. It is the organisation of reality in the form of circumference, the symbol of the totality divided into 12 parts: the hours of a clock, the 12 astrological signs, and others.
> The remaining columns will be dedicated to the bishops, the continuers of the apostolic work. Those of Catalonia [...] will be the columns of the transept. Those of Spain [...] the columns of the central nave. On the side columns and interior pillars of the facades we will find the remaining bishops of the world, thus signifying the ecumenical nature of the Catholic Church.[28]

For Gaudí, trees were his greatest teachers,[29] which is very evident in both the columns and roof structure of Sagrada Familia. Depending on their location within the temple, the columns represent different types of trees. Their materials also vary depending on required structural loads. Nothing in the Temple is without meaning; each number used in the geometry points to a deeper message, and each tree-like column is placed with symbolic intention. A deeper understanding of the geometry underlying Gaudí's columns, reveals much about the basilica as a whole.

There are four main column sizes, and while the geometric laws governing each size are unique, the rules for development form a pattern shared amongst them.[30] Gaudí's system is an inversion of the Gothic, with its upward branching columns, but shares many similarities to the Gothic in its use of fixed proportions and series of rotating shapes determining three-dimensional geometry.[31] Just as the geometric rules governing the construction of a Gothic pinnacle made it easier for the master masons

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28 Ibid., 30.

29 Fargas, *Symbology of the Temple*, 12.

30 Ribot, Serrano, and Ferrando, *The Basilica*, 51.

31 Ibid., 44.



to construct throughout Europe, this method makes it easier for those continuing the work on Sagrada Familia after Gaudí's death by eliminating the need for invention when it comes to main elements of the church's form.[32]

The proportions of Sagrada Familia's geometry are all multiples of twelve; so are the measurement of the columns.[33] All the columns in Gaudí's work "can be summarised in the search for a geometry inspired by nature, for an honest structural criterion and for scientific rigour."[34] He desired to create a column that more clearly reflected nature, in its growth and movement. Building on the knowledge he gained from studying and creating other column forms, he was eventually successful in creating his own unique version, which reflects the movement that generates it and is now referred to as the "double-twisted" column.[35] These are the columns featured throughout Gaudí's basilica. Though they are each different sizes (6, 8, 10 and 12 sided), the rules generating the columns in the central nave are identical, and all their measurements are multiples of twelve. They each begin with a star-shaped polygon at the base, which multiplies and rotates as height increases, eventually morphing into a circle before the column branches out.[36] The project architects explain:

> In this way, the 6-sided column has as its base two triangles twisted 60°, the 8-sided columns two squares twisted 45°, that with 10 sides two pentagons twisted 36° and that with 12 sides three squares twisted 30°. Each of these columns has a height and a minimum diameter corresponding to the final circle.[37]

"[I]n Gaudí's architecture, everything becomes one thing."[38] The whole building is unified in its attempt to communicate who God is through imitation of His creation. It works together, each element a microcosm of the whole, allowing the viewer to intuit some of the deepest meanings embedded in the work, even without a full understanding. This is especially true of the interior. The architecture evokes a visceral experience of beauty

32 Ibid.

33 Ibid., 45, 49.

34 Ibid., 49.

35 Ibid., 50.

36 Ibid.

37 Ibid.

38 Ibid., 60.



6.30
Forest of columns

because everyone can identify with the beauty of the natural world, as manifest in the basilica. In this way, the building can be 'read' without any need for prior knowledge of Christianity, while at the same time, the deeper a person's knowledge, the more meaning is revealed. Through design, viewers are challenged to look more closely. As Gaudí himself stated:

> Everyone finds their own things in the temple. Peasants see the hens and cocks; scientists the signs of the zodiac; theologians the genealogy of Jesus; but the explanation, the reasoning, is only known by the competent and should not be popularised.[39]

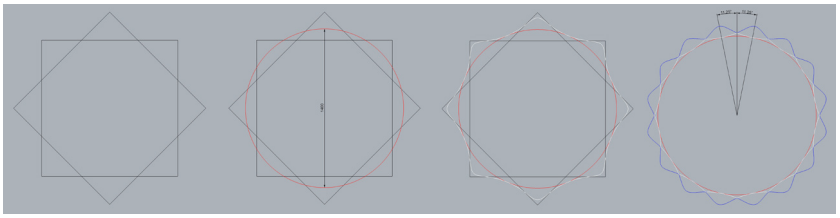
Sagrada Familia is a prime example of the power of geometry, by nature of its abstraction, to communicate deep and complex meanings - like the nature of God or the universe - through architectural form. Gaudí's architectural geometry is a reflection of the geometry of God, both in its imitation of the laws underlying the natural world, and its symbolic references to the Mystical Body of Christ; both creation and the Church are revelations of God. Just as the Church cannot function without the ministerial priesthood or the earth's ecosystems without its trees, the geometry at the heart of the architecture gives the basilica a greater depth of meaning. In studying its parts, we can come to understand the whole.

39 Fargas, *Symbology of the Temple*, 18.

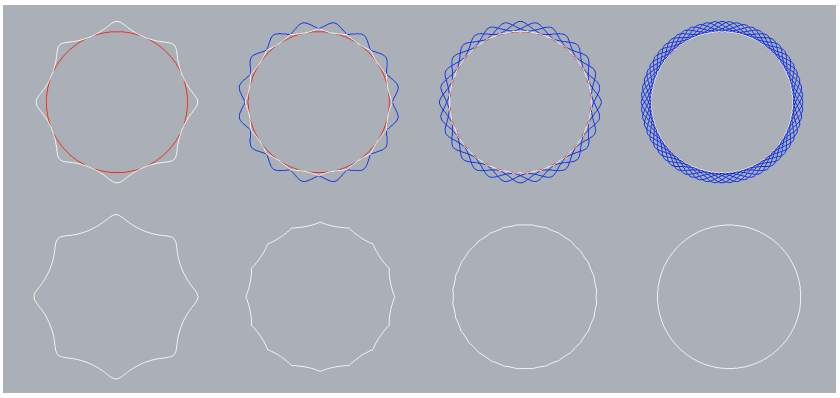
"[T]he base of the 8-sided column is two overlapping squares twisted to 45°. The 8 sides of the resulting octagon are joined between them by parabolas tangent to the sides of the squares, generating a contour of 8 convex parabolas and 8 concave parabolas without solution of continuity. This template forms the base for the inverse double-twisted helicoidal which, as its height increases causes the gradual disappearance of the convex parabolas, reaching a height of 8 metres with a rotation of 11.25° (one-eighth of a right angle) in both directions, at which point only 16 concave parabolas remain. Now the column, which initially had 8 sides, has 16, coinciding with the centres of the parabolas in the initial template. This process is repeated successively as the height of the column increases."

(The Basilica of the Sagrada Familia, 51-52)

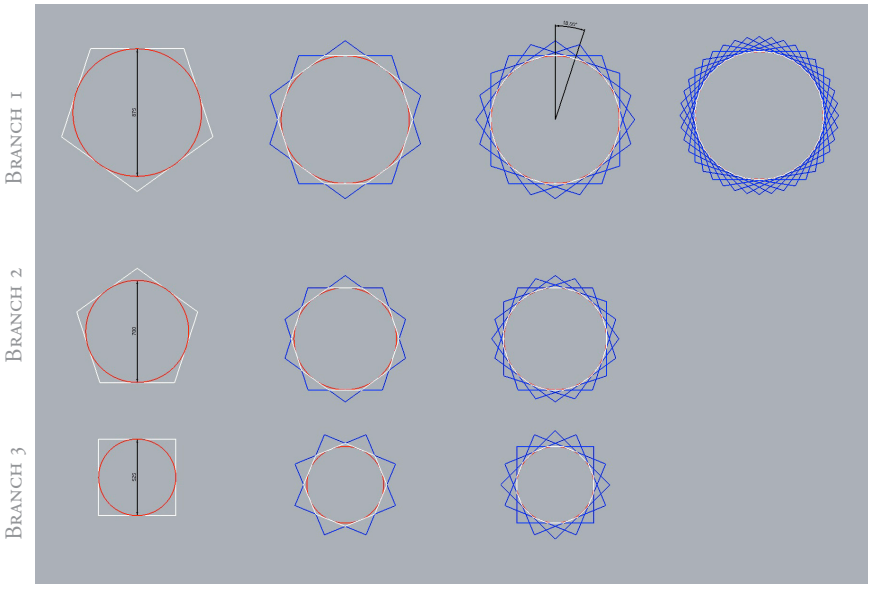
The following pages document my own process of constructing one of the 8-sided columns from the Sagrada Familia, first digitally, then physically, through 3D printed, scale models.



6.31
Base circle circumference = 1400 mm



6.32
Rotating geometry with corresponding parabolas and resultant profiles of the 8-sided column trunk at each key height marker (base, 8m, 12m, 14m)

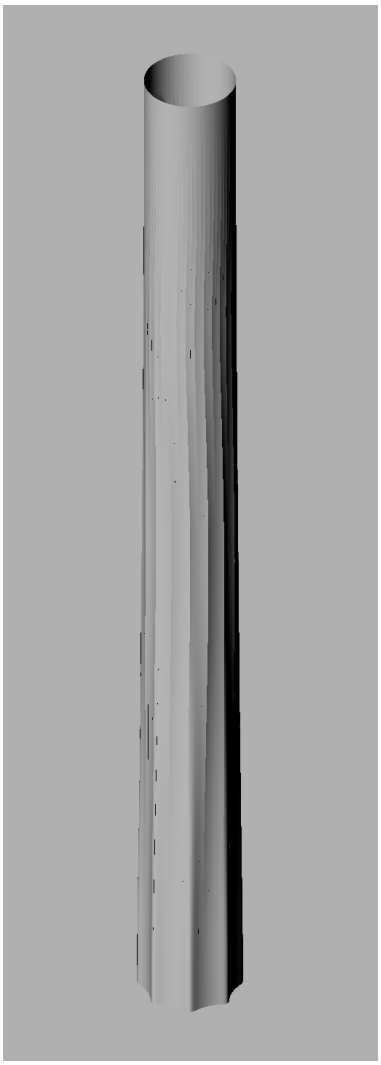


6.33
Geometry generating profiles for column branches

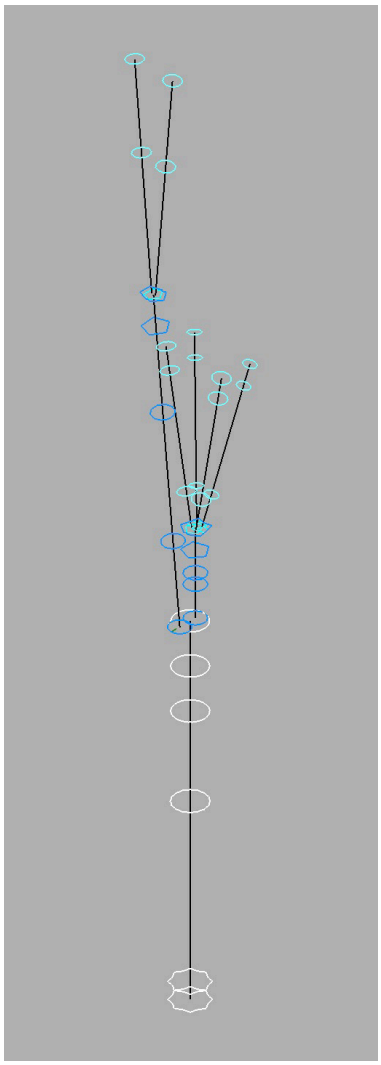
Height

base = 8 parabolas
8 m = 16 parabolas
12 m = 32 parabolas
14 m = 64 parabolas

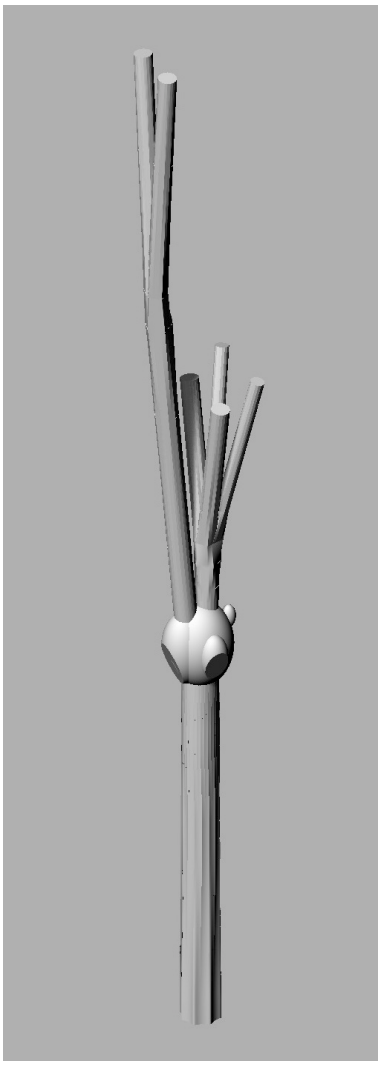
Final trunk height
= 14 m + 0.8 m base



6.34
8-sided column trunk



6.35
Skeletal geometry guiding the digital column form



6.36
Final result of digital column model



6.37
Final 3D printed 8-sided column



6.38

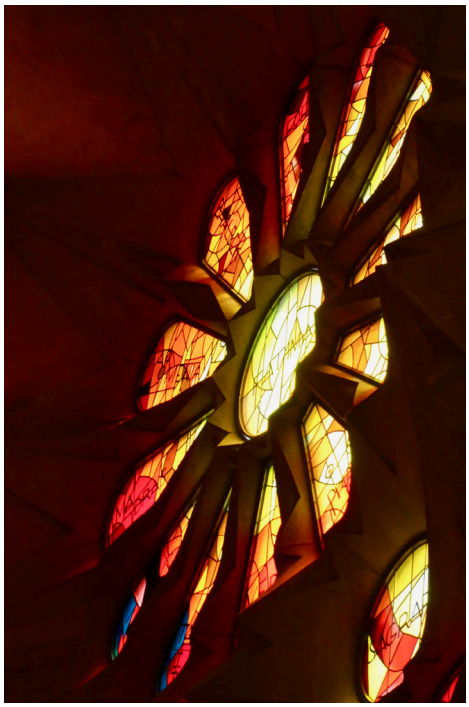


"So then you are no longer strangers and aliens, but you are citizens with the saints and also members of the household of God, built upon the foundation of the apostles and prophets, with Christ Jesus himself as the cornerstone. In him the whole structure is joined together and grows into a holy temple in the Lord; in whom you also are built together spiritually into a dwelling place for God."

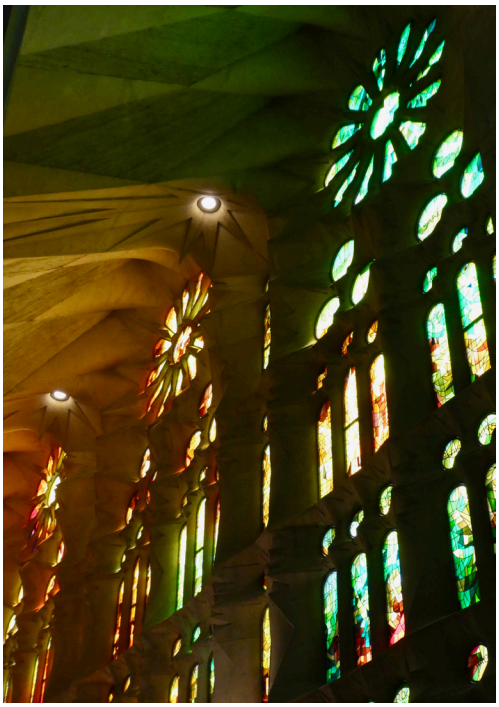
Ephesians 2:19-22

< 6.39

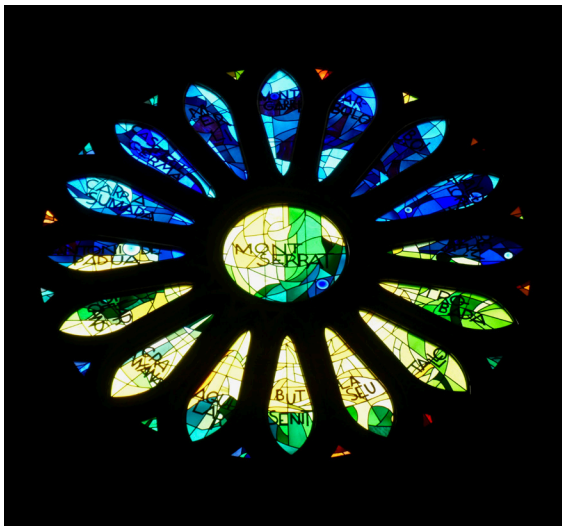
The manipulation of light within the basilica contributes to the feeling of being inside a forest, mimicking natural hues of light from sunset to sunrise.



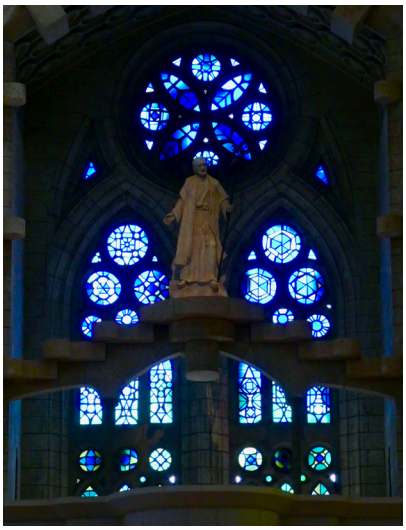
6.40
Stained glass on the western wall of the church, designed using warmer colours to capture the rich evening light



6.41
Warm light through stained glass along the western facade



6.42
Each of these small rose windows features one of the titles of the Virgin Mary, in this case the 'Virgin of Montserrat'



6.43
Cooler tones of stained glass are used along the eastern facade to capture the soft light of morning

6.44 >
Ceiling of main nave

VII

Marriage



7.1
Married couple

Meaning Through Metaphor

Metaphor - something regarded as representative or suggestive of something else, esp. as a material emblem of an abstract quality, condition, notion, etc;[1] can be either *implicit* (when the concepts/things being compared are not expressly stated) or *explicit* (when they are)

Operating at the periphery of linguistic communication, poetry is a form of narrative that can communicate a great depth of meaning, especially through its use of metaphor. Poetic expression also has a close association with beauty, as well as a unique capacity for it. This makes it particularly meaningful for the design of churches, which aspire to communicate the depth and vastness of the love of God.

Metaphor has long been an important tool for communication within the Christian tradition. In his classic work *The Great Code,* which presents the Bible as a key to understanding the Western tradition, the Canadian literary critic Northrop Frye outlines the idea that "metaphor is, not an incidental ornament of Biblical language, but one of its controlling modes of thought."[2] Given that Christianity is grounded in faith which does not contradict reason, but instead surpasses it, he expands by stating that, linguistically, many of Christianity's central doctrines can only be expressed through the use of metaphor,[3] making it a necessary communicative tool.

Though present throughout scripture, one of the most powerful examples of poetic metaphor is found in the central book of the Bible, the Song of Songs. As a book of erotic[4] love poetry, the Song of Songs is one of the most poignant examples of the love of God communicated through language. Pope Benedict XVI speaks about the metaphor of marriage as "ultimately describe[ing] God's relation to man and man's relation to

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1 *Oxford English Dictionary, s.v.* "Metaphor," accessed October 10, 2019, https://www.oed.com/view/Entry/117328?redirectedFrom=metaphor#eid.

2 Northrop Frye, *The Great Code* (Orlando, FL: Harcourt Brace Jovanovich, 1983), 54.

3 Frye, *The Great Code*, 55.

4 The use of the word *erotic* here refers to its full meaning, not only as sexual desire, but also as it relates to *eros* as an aspect of God's love. This will come up again later in the chapter.

"Behold, you are beautiful, my love,
behold, you are beautiful!
Your eyes are doves behind your veil.
[...]
You have ravished my heart, my sister, my bride,
you have ravished my heart with a glance of your eyes,
with one jewel of your necklace.
How sweet is your love, my sister, my bride!
how much better is your love than wine,
and the fragrance of your oils than any spice!
Your lips distil nectar, my bride;
honey and milk are under your tongue;
the scent of your garments is like the scent of Lebanon.
A garden locked is my sister, my bride,
a garden locked, a fountain sealed.
[...]
I come to my garden, my sister, my bride,
I gather my myrrh with my spice,
I eat my honeycomb with my honey,
I drink my wine with my milk.
Eat, O friends, and drink: drink deeply, O lovers!
I slept, but my heart was awake.
Hark! my beloved is knocking.
"Open to me, my sister, my love,
my dove, my perfect one;"
[...]
I am my beloved's, and his desire is for me.
Come, my beloved,
let us go forth into the fields,
and lodge in the villages;
let us go out early to the vineyards,
and see whether the vines have budded,
whether the grape blossoms have opened
and the pomegranates are in bloom.
There I will give you my love.
The mandrakes give forth fragrance,
and over our doors are all choice fruits,
new as well as old,
which I have laid up for you, O my beloved."

(Song of Songs 4:1, 9-12, 5:1-2, 7:10-13)

God"; in both Jewish and Christian literature, it became "a source of mystical knowledge and experience, an expression of the essence of biblical faith: that man can indeed enter into union with God—his primordial aspiration."[5]

The Sacrament of Marriage (or Matrimony) is probably the most familiar sacrament of the Church, and when faithfully lived out, is also the most powerful metaphor in Christianity, as it images God's relationship to humanity in a way that is relatable. Through their sacramental bond, married couples are living witnesses to the love of Christ the Bridegroom for His Bride the Church.

Marriage is at the heart of Christian sacramental life. The Church even uses marital language in reference to the core sacraments of Baptism and Eucharist. The Eucharistic meal is also known as the Wedding Feast of the Lamb (or Marriage Supper of the Lamb), our earthly taste of eternal life in celebration of Christ the Bridegroom, wedding His Church, the Bride. In other words, the Eucharistic feast is a participation in the heavenly celebration of God's marriage to humanity.[6] While the life of every Christian "bears the mark of the spousal love of Christ and the Church" through the "nuptial mystery" of Baptism preceding the "wedding feast" of the Eucharist, marriage is a particular sign as "the sacrament of the covenant of Christ and the Church."[7]

From the beginning, God made man and woman to be united in relationship.[8] Jesus Himself speaks about this is the Gospels:

> [H]e answered, "Have you not read that he who made them from the beginning made them male and female, and said, 'For this reason a man shall leave his father and mother and be joined to his wife, and the two shall become one?' So they are no longer two but one."[9]

Marriage is the deepest manifestation of this union, as the only human

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5 Pope Benedict XVI, *Deus caritas est,* encyclical letter, Vatican website, December 25, 2005, http://w2.vatican.va/content/benedict-xvi/en/encyclicals/documents/hf_ben-xvi_enc_20051225_deus-caritas-est.html, sec. 10.

6 Revelation 19:7, CCC 1329 & 1335.

7 CCC 1617.

8 Pope John Paul II explored this extensively in his series of General Audiences from 1979 until 1984, which has since been compiled into the book *Man and Woman He Created Them: A Theology of the Body*.

9 Matthew 19:4-6.

relationship where two truly become one. The union formed within a Christian marriage is indissoluble, meaning it cannot be broken by anything but death, and demands total fidelity. The reason for this is "found in the fidelity of God to his covenant, in that of Christ to his Church. Through the sacrament of Matrimony, the spouses are enabled to represent this fidelity and witness to it,"[10] despite the many difficulties and trials they are sure to encounter.

Compared with the other sacraments, matrimony is not about what we receive through the actions of others, but instead, about what we become through our own human action. The freely exchanged vows between bride and groom are the sacrament,[11] and it is through these vows that the couple becomes a representation of Christ's love for His Church, by the power of the Holy Spirit.[12] Marriage is the human relationship which most closely resembles that of the Father, Son and Spirit, as Trinity. Just as the Holy Spirit "proceeds from the Father and the Son"[13] as the life-giving fruit of Trinitarian love, so too the new life of a child is the fruit born from marital union. In this way, marriage becomes a unique revelation of the relationship and inner life of the Trinity and points towards the depth of union available to all people in heaven, increasing, even further, the depth of meaning in this Christian metaphor.

Similar to poetic metaphor as a narrative type, the ritual of the Sacrament of Marriage is a particular expression of meaningful experience, which is, in turn, experienced by a community, impacting the way they live. For this very reason, public witness is extremely important in Christian marriage. The sacrament is an ecclesial reality, impacting the whole community, as a meaningful communication of the love of God.[14]

Architecture as Narrative: Translating Experience

As a form of narrative, architecture can make use of metaphor to express meaningful experience. This communication of meaning occurs in the

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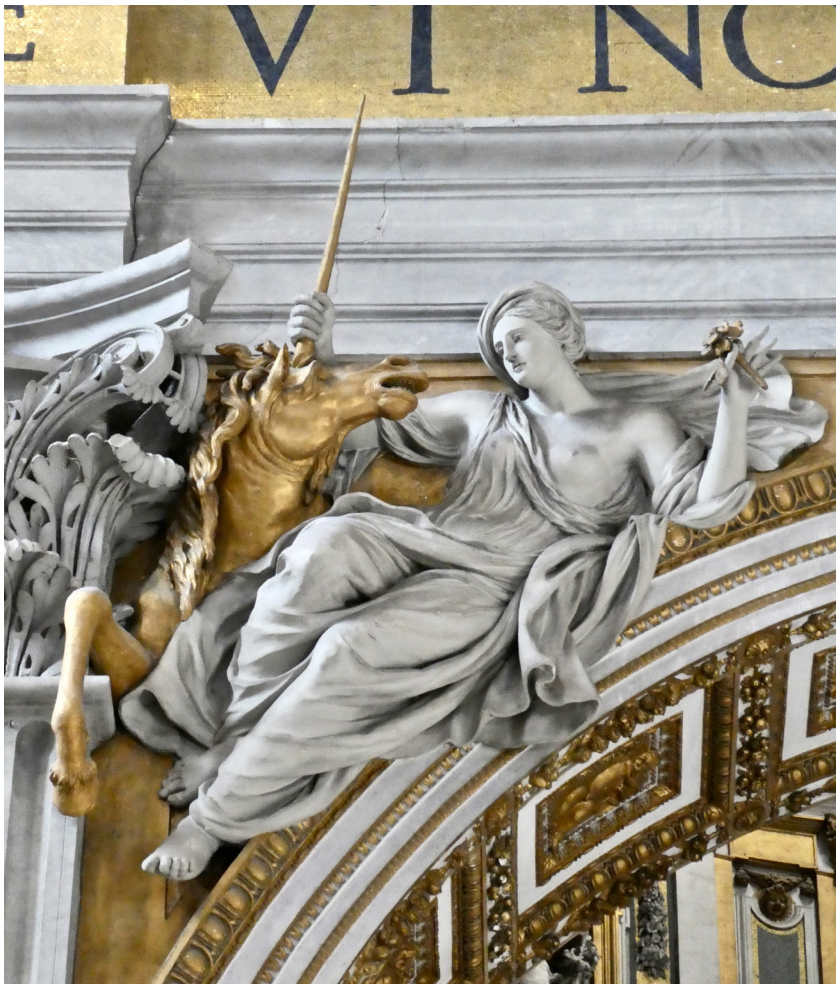
10 CCC 1647.

11 "According to Latin tradition, the spouses as ministers of Christ's grace mutually confer upon each other the sacrament of Matrimony by expressing their consent before the Church." CCC 1623.

12 "The Holy Spirit is the seal of their covenant, the ever available source of their love and the strength to renew their fidelity." CCC 1624.

13 Nicene Creed

14 CCC 1630-1631.



7.2
Symbolic of Christian eros, this is the statue representing the virtue of 'chastity' at St. Peter's Basilica, Rome

configurative phase of narrative, as outlined by Paul Ricœur,[15] when the

15 In his essay *Architecture and Narrativity*, and even more extensively in his book *Time and Narrative*, Paul Ricœur outlines three stages of narrative: **prefiguration, configuration, and refiguration**. **Prefiguration** is the practice or living of the narrative before it takes any kind of linguistic form, and involves both temporal and cultural context; more simply, it is the experience which precedes creative action. **Configuration** is the phase when experience is translated into linguistic communication, and involves three parts: *emplotment* (production which unifies diversity), *intelligibility* (clarification of the inextricable) and *intertextuality* (confrontation between tradition and innovation or history and contemporaneity). Configuration is also referred to as *mimesis*, and is the phase of architectural creation. Finally, **refiguration** is the reading of the narrative 'text'; in the case of architecture, this is the human interaction with, or experience of, a building once it exists physically - what Ricœur calls inhabitation. Refiguration is when the effect of architecture, through experience, is taken up into the life of a person and impacts the way they live, allowing that experience to become a transformative event in a new moment of

experience of one person or group is translated through built form in order to communicate and evoke a similar experience in others.[16] In effect, an encounter with the living God is the most important experience a church is meant to embody and communicate to others. Christianity declares that encounters with God are the greatest possible experiences for any person. In the Christian understanding, God *is* love and God *is* beauty, meaning that He is these things in their fullness; He doesn't simply possess them as attributes of being. This implies that any experience of God will also be an experience of love and beauty, and reciprocally, any experience of love or beauty is actually an experience of God. Additionally, love and beauty are united in Him in such a way that any experience of one is an experience of both.

Ekstasis is a Greek word meaning displacement or to be outside of oneself (in Latin *ecstasis*), and is the origin of the English *ecstasy*. Ecstasy is an experience surpassing normal human limits, a union with something beyond ourselves. Whether or not we believe in God or divine beings, these moments of self-transcendence, as ekstasis or ecstasy, are experiences each of us have in our own lives whenever we are profoundly struck by the beauty, truth and goodness around us.[17] These moments can almost be painful in their strength, piercing us deeply. One of the most famous ecstatic experiences is that of St. Teresa of Avila:

> I saw in his hand a long spear of gold, and at the iron's point there seemed to be a little fire. He appeared to me to be thrusting it at times into my heart, and to pierce my very entrails; when he drew

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history and time. At the risk of oversimplifying, the basic progression of these stages of narrative is experience, to creation, to experience. See specifically Ricœur, "Architecture and Narrativity," 33-38, and Perrin, "Mimesis," 110-113.

16 In a paper exploring Ricœur's concept of narrative emplotment, professor and theologian David Perrin speaks to this translation of meaning: "Meaning is virtual when structured in a text, and through the text [i.e. creative work] there exists the potentiality of this meaning to become event in the life of another person or community. Through mimesis - in whatever form of text - the meaning of discourse, that is, the meaningful relationship that has been experienced with an other (Divine or otherwise), takes on a certain materiality that can be recalled later. The event of meaning in one person's life or community can potentially be made accessible to another." David Perrin, "Mimesis: The Substructure of Hermeneutical Methodology in Christian Spirituality," *Studies in Spirituality* 28 (2018): 98.

17 In Book VIII of Aristotle's *Nicomachean Ethics*, he writes about the different kinds of friendship (as the key human relationship), and states that a friendship will only last when two people love not only each other, but together, share love of a transcendent third. This third is a good beyond them which draws them into deeper unity, like a love for truth, country, beauty or God. It is this element of being drawn out of themselves, instead of being self-focused, that actually enables a lasting, loving relationship.



7.3
Ecstasy of Saint Teresa by Bernini, Santa Maria della Vittoria, Rome

it out, he seemed to draw them out also, and to leave me all on fire with a great love of God. The pain was so great, that it made me moan; and yet so surpassing was the sweetness of this excessive pain, that I could not wish to be rid of it. The soul is satisfied now with nothing less than God. The pain is not bodily, but spiritual; though the body has its share in it. It is a caressing of love so sweet which now takes place between the soul and God, that I pray God of His goodness to make him experience it who may think that I am lying.[18]

18 Teresa of Avila, "Chapter XXIX," in *The Autobiography of St. Teresa of Avila*, trans. Kieran Kavanaugh, O.C.D. and Otilio Rodriguez, O.C.D. (New York: One Spirit, 1995).

The experience of ekstasis is a decentering of self, and it is this decentering that, over time, opens us more and more to the other, both the transcendent Other and the human other. When the Church creates moments of ekstasis through beauty, it draws people out of themselves, fostering community and serving as a means for deeper unification, no matter how different their background, culture, or state in life might be.

Ekstasis is intimately related to *eros* - one of the Greek words for love, as ekstasis is eros experienced in its fullness. In ancient Greece, eros was understood to be a kind of madness or intoxication, usually associated with sexual pleasure. In Plato's *Symposium*, he describes eros as desire, specifically for beauty and goodness. The Greek understanding of eros gained even deeper meaning through the Jewish faith of the Old Testament. Pope Benedict XVI explains this in his encyclical *Deus Caritas Est* (*God Is Love*), relating eros to the self-sacrificing, *agape* love of God, and pointing out that both eros and agape are simply different dimensions of the same love. This relationship is not only a reality of faith, but of all human life. Even from a secular perspective, in the beautiful, we are able to recognize a presence of something other.[19] For Christians, this "otherness" is God, who is the ultimate fulfillment of the desire of eros.

From a Christian perspective, if experiences of ekstasis are encounters with the love of God, it follows that churches, whose primary purpose is to facilitate encounters with God, should both *result from* and be a *vehicle for* ekstasis. The beauty manifested in a church results from an experience of love (whether this is recognized as the love of God is not necessarily essential), which is then translated into physical form through architecture's linguistic capacity (especially as a form of narrative). An encounter with this beauty is always meaningful, and contributes to refiguration,[20] aiding the faithful in prayer and worship, and facilitating entry into God through transcendent experience.

According to Peter Zumthor, "[w]orks or objects of art that move us are multifaceted; they have numerous and perhaps endless layers of meaning that overlap and interweave, and that change as we change our angle of observation."[21] Through its use of metaphor, architecture becomes a

19 "The experience of beauty is a vehicle for the soul to ascend toward truth. [...] When we enter a now, the thick present of love, we remember what it means to be really alive. In the presence of beauty, made evident through art, poetry, and architecture, we experience (without fully understanding) the transformation of Eros [...]." Pérez-Gómez, *Built Upon Love:*, 113.

20 The third and final stage of narrative, according to Ricœur.

21 Zumthor, *Thinking Architecture*, 30.



7.4
Baroque dome of the Salzburg Cathedral, Austria

poetic image. As a result, it can communicate a depth of meaning not otherwise possible, uniting seemingly contradictory realities, and making abstract realities more tangible. Just as the love of God, manifest in the many contradictory realities of Catholic faith,[22] cannot be paraphrased or explained but must be experienced to be truly understood, so too, poetry is only able to communicate its intended meaning through a first-hand encounter.[23]

Many examples of successful translation of experience into poetic architecture can be found in Baroque churches. There is a strong link

22 Some of the deepest meanings and mysteries of the Catholic faith lie in contradictory realities - one God in three Persons (Trinity), bread and Body (Eucharist), virgin and mother (Mary, Mother of God), fully human and fully divine (Jesus).

23 Alberto Pérez-Gómez also makes this point in Pérez-Gómez, *Built Upon Love,* 108.



between eros and Baroque architecture generally, especially as present in the work of artists like Gian Lorenzo Bernini. Bernini intentionally drew on his own ecstatic experiences, as well as those of others (Teresa of Avila most notably), for the creation of his art.[24] The influence of eros is visible in the vibrancy of life in Baroque art as a whole, and in the strong presence of the natural world, particularly in architectural detailing and the increased use of curvature in structural forms. As a reaction to the iconoclasm of the Reformation, Baroque churches were meant to translate the experience of God's love through artistic expression, so others could experience that love in the resultant beauty. They were mimetic works, re-presenting reality in ways that framed understanding through experience.[25]

So much of the Christian art and architecture of history is a result of an artist or creator being moved by an experience of love and beauty, which then overflows into their creations. This is a natural progression. As von Balthasar points out, beauty demands the reaction of our entire selves, engaging all our senses when it captivates us.[26] Through such a reaction, beauty inspires more beauty.

To make use of poetic metaphor in architecture, architects must actively engage with past encounters of beauty (whether their own or another's) in a way that allows these experiences to become a living part of the present and future through physical manifestation. Similar to the way the sacrament of marriage communicates the nature of God in the Trinitarian relationship, enabling a deeper relationship with Him, through the meaningful communication made possible by the beauty of poetic architecture, there is a deepening of architectural experience in a church, allowing for encounters with the love of God, through beauty.

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24 One paper which addresses this connection is Frank Fehrenbach, "Bernini's Light," *Art History* 28, no. 1 (February 2005): 1-42.

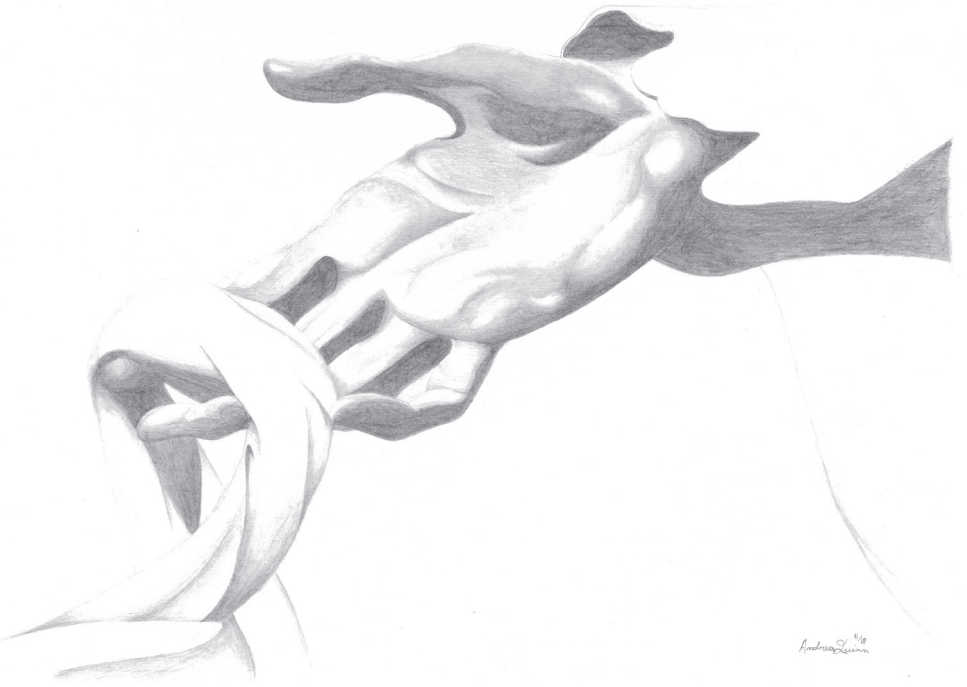
25 For more on this understanding of mimesis, see Perrin, "Mimesis," 86-87.

26 "[T]he whole person then enters into a state of vibration and becomes responsive space, the 'sounding box' of the event of beauty occurring within him." von Balthasar, *Seeing the Form*, 214.

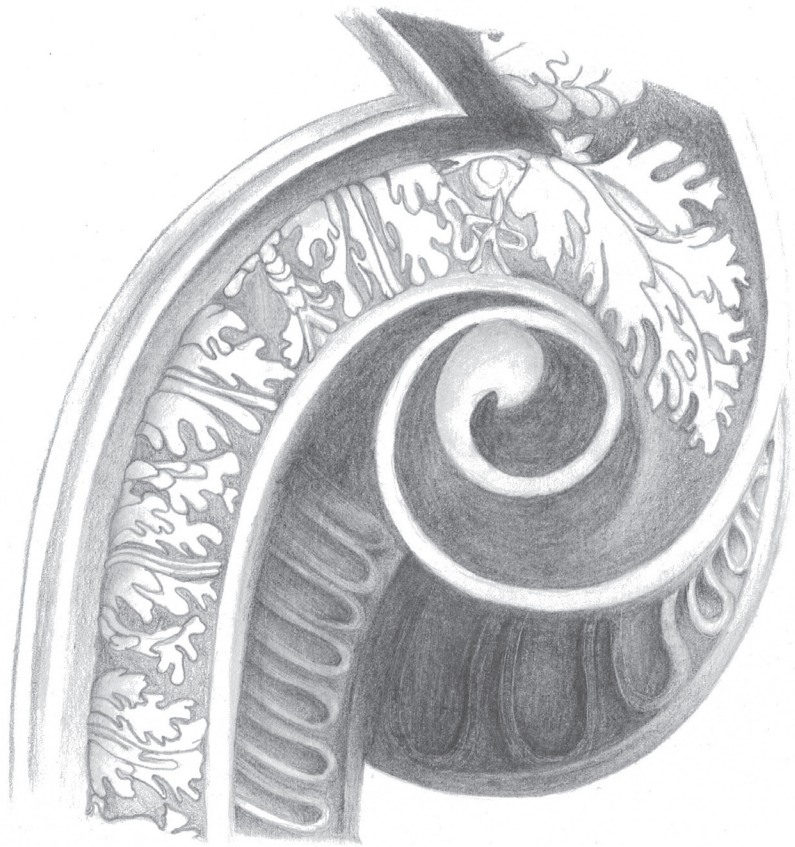
< 7.5
Baroque Church of the Gesu, Rome



7.6
Hand-drawn detail of Bernini's bust of King Louis XIV



7.7
Hand-drawn detail of Bernini's 'Chair of St. Peter' at St. Peter's Basilica, Rome



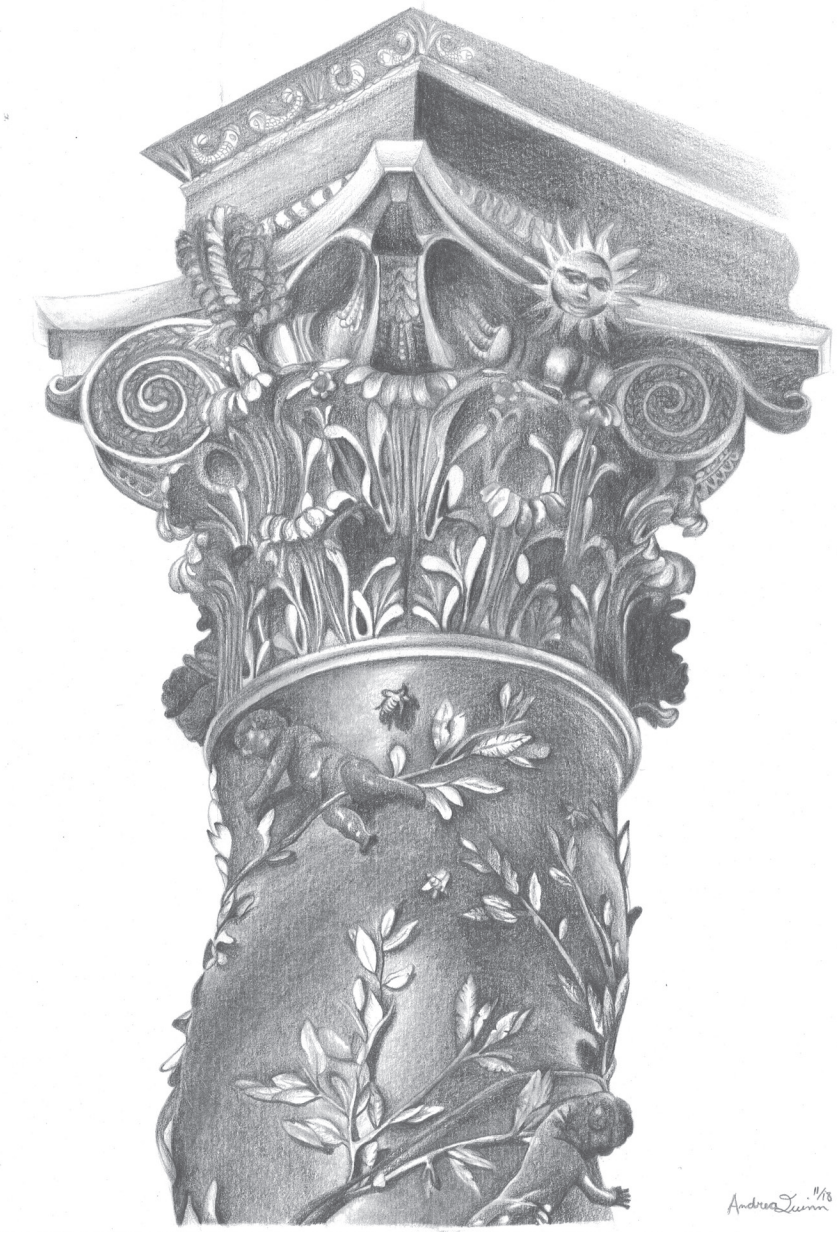
7.8
Hand-drawn detail of Bernini's work in St. Peter's Basilica, Rome

"That [Bernini] was inflamed (*infiammato*), to an uncommon degree, with an impassioned ferocity that was the vital basis of his artistic drive, is a point that the sculptor himself emphasizes in a quote in Domenico's biography. Driven to surpass himself, he strove to instil in each new work, through the transmission of his innate *spiriti,* an increasingly vibrant living presence. That the process by which Gianlorenzo enlivened his works was through the active transmission of his *spiriti* is illustrated by Filippo Baldinucci, who writes that it was from the eyes of the ecstatic sculptor that his brilliant *spiriti* first broke forth into the visible world."

Frank Fehrenbach
(*Bernini's Light*, 1)

7.9 >
Baldacchino by Bernini, St. Peter's Basilica, Rome


NC SACERDO
TAS EXORIT



7.10
Hand-drawn detail of a column capital from Bernini's baldacchino in St. Peter's Basilica



7.11
Baroque high altar, Corpus Christi Basilica, Kraków, Poland

As from those dream-spawned monsters
that climb out of torment and confusion
the next day rises: so the vaulting's
ribs depart from the tangled capital

and leave behind there crowded and mysteriously
interwoven, fluttering creatures:
their hesitance and the suddenness of their heads
and those powerful leaves, whose sap

mounts like a fit of temper, finally spilling
over in a quick gesture that clenches
and thrusts out - : chasing everything upward

that always with darkness falls coldly
back again, like rain providing
sustenance for this ancient growth.

Rainer Maria Rilke,
The Capital



7.12
Capital details, Cathédrale Saint-Pierre de Lisieux, France

Conclusion

And nothing would again be casual and small,
But everything with light invested, overspilled

Rev. John Duffy, C.S.s.R.
(I Sing of a Maiden, excerpt*)*

As an in-depth examination of the architecture of a Catholic church, this thesis has been an effort to invite deeper reflection on our built environment, by revealing some of the ways beauty can be manifested through embodied meaning, and how, in turn we can learn to see beauty through a recognition of this meaning. I hope it has become clear that deep thought and consideration is needed when designing our built environment, but especially when it comes to the architecture of the Church. Nothing should ever be casual or insignificant.

For exactly this reason, the most difficult part of this whole process has been determining what to leave out of this final document. Dealing with such a vast topic, I knew I would hardly be able to scratch the surface, especially given the limited time. Acknowledging that, the aim became pulling together enough threads to form a cohesive whole. While I do believe this was achieved with some level of success, there were some important topics that did not make it into the body of the work, one of which I would like to address, briefly, here, regarding the importance of environmental and ecological considerations in church architecture.

Given its relevance in the world today, an entire thesis could easily have been written on this topic alone, so it could not go without mention. It is addressed in several prominent theological works, one being Joseph Ratzinger's writings on the theology of the liturgy. Pope Francis emphasized the importance of ecological sensitivity even more in his 2015 papal encyclical *Laudato Si*, speaking to the care of the earth, our common home. The document outlines many important considerations for architects. As we are living in a period when environmental impact and integration are a fundamental consideration in any architectural project, this ecological sensitivity should also translate to the design of places of worship. According to Ratzinger:

> Today we literally hear the groaning of creation [...] The church building - wherever possible - should be located in the expanse of creation, show contact with it, and thus at the same time set in

motion a hopeful journey toward the Lord who is to come.[1]

He explains that "the liturgy lives on the gifts of creation."[2] To have creation integrated deeply into the design of a church, through passive design strategies (orientation, natural daylighting, etc.), material selection, and views of a living landscape will help to increase this awareness for not only the faithful worshiping within it, but all people who experience the architecture. Peter Zumthor, who has been a recurrent voice throughout this thesis, applies these concepts directly to acts of design, by explaining the importance of care for the landscape in any architectural project.[3] Ultimately, this care and attentiveness to the earth rests on love, since, as Zumthor attests, "we don't hurt what we love". When the right result is achieved, there should be "a consonance of nature and artificially created work that is different from the pure beauty of nature - and different from the pure beauty of an object."[4] These considerations are critical as the Church further develops its contemporary architectural language, and are necessary for the manifestation of beauty, in its fundamental link with goodness and truth.

I firmly believe that people have a right to beauty, particularly in their built environment. This has been a significant part of the value of churches through history, because they have traditionally been places of immense beauty which are available to anyone at no cost. Originally, when beginning this research, I set out to determine common features which are necessary for a church to manifest beauty, intending to form some kind of list for necessary considerations when beginning the design of a Catholic church today. However, I hope the result has reached a deeper level of inquiry, through its study of method in the communication of meaning, and its

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1 Ratzinger, *Theology of the Liturgy*, 581.

2 Ibid.

3 "If I as a designer want to do justice to the landscape I am working in, I have to take three things into account. First I have to look hard at the landscape, at the woods and trees, the leaves, the grasses, the animated surface of the earth, and then develop a feeling of love for what I see - because we don't hurt what we love. We treat what we love as well as we possibly can. Secondly, I have to take care. This is something I have learned from traditional agriculture, which uses the soil but is, at the same time, sustainable. It takes care of the things that nourish us. Thirdly, I must try to find the right measure, the right quantity, the right size and the right shape for the desired object in its beloved surroundings. The outcome is attunement, harmony or possibly even tension. I think loving the landscape, looking at it with one's heart, is requisite to finding the right measure." Zumthor, *Thinking Architecture*, 98.

4 Ibid., 75.

exploration of what I believe to be a fundamental link between beauty and embodied meaning.

The work of Bernard Lonergan, particularly in his concept of authentic subjectivity, has been deeply influential for me, and has transformed and clarified the way I view the question of objectivity and subjectivity in general, but especially when it comes to beauty. I am extremely grateful to have been introduced to his ideas and given the opportunity to study his writings just as I was beginning my thesis work. I have come to agree wholeheartedly with Lonergan, that "genuine objectivity is the fruit of authentic subjectivity."[5] Our ability to recognize beauty (as well as truth and goodness) in the world, and in turn manifest it in our creative work, rests on our own continuous efforts to self-transcend, by being attentive, intelligent, reasonable and responsible human beings, as we experience, understand, judge and act in the world. As a result of this ever-increasing attentiveness, the concept of psychic conversion, and its relationship to beauty, is something I hope to explore much further in future research, as a key to understanding how we interpret and communicate meaning.

Architecture is a powerful communicator of meaning in the world, through its artistic, symbolic and linguistic qualities. An awareness and understanding of this is fundamental if a church is to fulfill its purpose, reflecting the beauty of God and His revelation through sacred liturgy and sacramental ritual. Ultimately, a church is meant to serve as a vehicle for an encounter with the living God. Its true sacredness lies in what happens within it, in those who use it, and in the God it points to. To achieve a language of meaning in contemporary Catholic architecture, our churches should be shaped by time, influenced by the society and culture of the day, while still communicating timeless truths. Whether through its interaction with things like time, symbol, material, memory, light, geometry, or metaphor, Catholic architecture must be deeply meaningful, only then can its necessary beauty be achieved.

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5 Lonergan, *Method in Theology*, 292.

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Appendix

Symbolically the body of Christ is manifested in the structure of a church building, and in the liturgy through the altar itself, through the crucifix upon it, and of course through the presence in the tabernacle.

Laurence Paul Hemming
(Worship as a Revelation, 154)

The following paragraphs outline some of the theology behind the distinctive components of a Catholic church, as it relates to their function in the liturgy. Much more extensive specifications can be found in the *General Instruction of the Roman Missal*, *Built of Living Stones,* the *Code of Canon Law* and the *Catechism of the Catholic Church*, which are all key references when designing or renovating a Catholic church. This text simply intends to provide a short summary of some of the information found in those documents, and a brief overview of the meaning behind each church component as it relates to the liturgy.

Altar

The altar is the single most important element of a Catholic church, the central point around which the entire building, the entire congregation and the entire liturgical celebration are oriented.[1] The altar is the place "where heaven is opened up,"[2] where the earthly assembly is united with the angels and communion of saints who never cease their worship, and it is in the liturgy that "the curtain between heaven and earth is torn open, and we are taken up into a liturgy that spans the whole cosmos."[3] It is the place where the faithful experience a "foretaste of heavenly glories".[4] The full name for a Catholic Mass is 'the Holy Sacrifice of the Mass', so the

1 " The church is the holy ground where the divine Word is "made flesh" in the act that is most central to Catholic life: the sacrifice of the altar, the Holy Mass. A church is built for the sake of the altar inside. The altar is built for the sake of the Mass. And the Mass is offered for the glory of God and for the salvation of his people." Wuerl and Aquilina, *The Church*, 29.

2 Ratzinger, *Theology of the Liturgy*, 43.

3 Ibid., 77.

4 CCC 1182.

altar is both a table for a meal and a rock for sacrifice.

The transition from a regular table to a stone table occurred in the fourth century,[5] but the origin goes back to the stone altars of Jewish sacrifice. The use of an altar in a Catholic church must be solely liturgical; it cannot be used for anything outside of the liturgy.[6] It is what "authorizes and makes possible every sacred action of the liturgy, which means shows who the author and subject is of every sacred action, and the embodied means by which those sacred actions are made available to us."[7] Every liturgical action comes from and returns to the altar.

The concept of time in relationship to eternity is an important one in regards to what happens at the altar, along with the idea of place making. For God, there is no time. People often talk about God being "outside of time" as if time was a physical thing, but God exists in an eternal now. It is into this that Catholics enter during the moment of consecration at the altar during Mass. This is what it means for heaven and earth to unite, not just that Jesus Christ comes to us as living God, but also the we are brought up into heaven through Him, as the community worships together, participating in the timeless and eternal prayer of the Trinity.[8] Hemming uses architectural language relating to the heavenly city as *polis*, to describe in the following passage, the actual place the altar creates:

> The altar makes available a site or place, but a place with three specificities, not one. It allows several places to become visible and be seen all at once: it is itself not a place in that it is what makes places. [...] As such the altar is the centre of the Civitas Dei, the New Jerusalem [...]. It is [...] the *polos*, the pole of the heavenly *polis*, the people that God has redeemed through his divine Son. The altar established these relations and lets them be known, so that the liturgy can be undertaken, both now and for eternity. The altar therefore encompasses what is before us, what is to come, and the present.[9]

It is the altar which makes the sanctuary, the sanctuary. The altar is what

5 Wuerl and Aquilina, *The Church*, 96.

6 CIC 1239.1.

7 Hemming, *Worship as a Revelation*, 53.

8 CCC 2655. See also Perrin, "The Trinity Who Prays," 28-41.

9 Hemming, *Worship as a Revelation*, 54-55. Emphasis added.

established relationships within the church, which can be interpreted spatially as well as theologically, and therefore should be a primary consideration for the spatial organization in the architecture.

Ambo

> In order to reveal himself to men, in the condescension of his goodness God speaks to them in human words: 'Indeed the words of God, expressed in the words of men, are in every way like human language, just as the Word of the eternal Father, when he took on himself the flesh of human weakness, became like men.' [10]

Where the altar corresponds with the second part of the Mass known as the Liturgy of the Eucharist, the ambo corresponds with the first part, the Liturgy of the Word. This tradition of reading aloud of sacred texts before the worshiping community comes from Jewish traditions in the synagogue. However, it should be noted here that Catholicism differs in that it is not a 'religion of the book' like Judaism, but a religion of the Word,[11] made manifest in Jesus Christ, which means the reading of scripture is not the primary purpose of liturgy, but leads ultimately to the Eucharist. Christ is not only present in the scriptures, but even more so, physically, in the Blessed Sacrament (the name for the hosts consecrated during Mass).

Both altar and ambo should be located within the sanctuary - given their liturgical purpose - which is the most sacred part of the church, symbolically representing the heavenly realm. Due to the close liturgical connection between the altar and ambo, this closeness should manifest physically in the church so their relationship is clearly perceivable. Part of the Mass involves procession to (and often around) the ambo from the altar with the book of the Gospels, during the liturgy of the Word. This requires adequate space around the ambo, allowing for a full procession, including presiding priest (and potentially additional clergy) as well as altar servers with candles and sometimes incense. It must also be accessible so that anyone who serves as a lector (a person who reads the first and second scripture reading during the Mass) can reach it, despite physical disabilities.[12]

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10 CCC 101.

11 CCC 108.

12 United States Conference of Catholic Bishops, "The Church Building and the

The ambo is sacred because of its role in the liturgy and is, therefore, meant to be used solely for its designated liturgical use, which includes reading scripture, preaching the homily, and announcing the prayers of the faithful.[13] In many churches, a regular lectern is included in the design to be used for other kinds of announcements.

Tabernacle

> Eucharistic worship, which cannot be reduced to participation in Holy Mass and to receiving Communion with the proper dispositions, but also includes frequent adoration - personal and communal - of the Blessed Sacrament, and the loving concern that the tabernacle - in which the Eucharist is kept - be placed on an altar or in a part of the church that is clearly visible, truly noble and duly adorned, so that it is a center of attraction for every heart in love with Christ.[14]

The opening lines of the Gospel of John speak of the Word which dwelt among us. The word in Greek for this 'dwelling' is *eskenosen*, which, literally translated, means that God 'pitched his tent among us,' or 'tabernacled among us.' The word tabernacle, from the Latin *tabernaculum,* is used in the Bible to refer to the portable sanctuary of the people of Israel in the Old Testament, and similarly, in churches today, the tabernacle is the name for the place of repose for the Word made flesh - the box where the consecrated hosts are kept. The significance of the presence of the Blessed Sacrament in the tabernacle of a Catholic church does not lie in the false understanding that it is the sole presence of God in general, "but rather the presence of the man Jesus Christ,"[15] through whose earthly presence the invisible of God is made visible.

Someone who goes to church and receives the sacraments does

Sacred Rites Celebrated There: The Ambo" in *Built of Living Stones* (Washington: United States Catholic Conference, Inc., 2000).

13 *The General Instruction of the Roman Missal*, Canadian edition (Ottawa: Canadian Conference of Catholic Bishops , 2011), §309.

14 Fathers of the Pontifical Council for the Interpretation of Legislative Texts, "Contempt for the Eucharist: Safeguarding the Bread of Life Come Down from Heaven," L'Osservatore Romano, July 14, 1999. Accessed March 25, 2019. https://www.ewtn.com/library/CURIA/CILTEUCH.HTM.

15 Ratzinger, *Theology of the Liturgy*, 167.

> this, if he understands the whole situation correctly, not because he thinks the spiritual God needs material means in order to touch man's spirit. He does this, on the contrary, because he knows that he, being a man, an encounter God only in a human way [...] he knows that he, as a man, cannot personally control when and how and where God has to manifest himself to him, that he is, on the contrary, the one receiving, the one dependent on the power that is simply given and not to be produced on his own authority.[16]

For Catholics, this is part of what makes the church itself so sacred. The constant presence of the Blessed Sacrament in the physical place of the church is a sign of the reality of Jesus Christ dwelling with us always. It is the human way God has chosen to encounter us still. Wherever the Eucharistic Lord is present in the tabernacle, a Catholic will be at home. This is one of the major reasons why it is so important for the tabernacle to be visibly prominent in a church. No matter where in the world a person might be, if they walk into a Catholic church, the red glow of the sanctuary lamp is the visual indicator that Jesus is present, and should be prominent because of its importance. Pushing the tabernacle off into a corner or private room communicates a lack of reverence for what it contains, namely Christ in the Blessed Sacrament. Its constant presence is the life of the church:

> The Eucharistic presence in the tabernacle does not set another view of the Eucharist alongside or against the Eucharistic celebration; it simply signifies its complete fulfillment. For this Presence has the effect [...] of keeping the Eucharist forever in church. The church never becomes a lifeless space but is always filled with the presence of the Lord, which comes out of the celebration, leads us into it, and always makes us participants in the cosmic Eucharist. [...] a church in which the eternal light is burning before the tabernacle is always alive, is always something more than a building made of stones. In this place the Lord is always waiting for me, calling me, wanting to make me 'eucharistic'.[17]

16 Ibid., 167.

17 Ibid., 55.

The roots of the tabernacle go back to Old Testament Judaism and the Ark of the Covenant, which housed the abiding presence of God in the tablets of the covenant (Ten Commandments), Aaron's rod and the manna which fed the Israelites in the desert.[18] There is also rich Marian symbolism in the Catholic faith relating to the tabernacle, since Mary was the living tabernacle who carried Jesus within her womb.

Baptismal Font

Next to the altar and tabernacle, this is one of the oldest elements of Christian churches and one that is distinctively Christian, without roots in any Jewish traditions. The font houses the blessed (holy) water used to baptize new Christians into the Body of Christ. Writings from the first century actually record specifications for the rite of baptism in the early Church.[19] During that period, and for several centuries following, the baptismal font was often located in a space separate from the main church (called a baptistery), this was due to the fact that in the early church it was mostly adults being baptised, which required the size of the font itself to be quite large, but also involved space for changing of garments.[20] Later, when infant baptism was more common, a separate building was no longer required and the font moved into the church itself.

Through the sacrament of Baptism, Christians are "sacramentally assimilated to Jesus, who in his own baptism anticipates his death and resurrection," and must "enter into this mystery of humble self-abasement and repentance, [going] down into the water with Jesus in order to rise with him."[21] This symbolism of descent and ascent has often been successfully interpreted in the architectural form of the church and the placement of the font. The sacrament of Baptism is also very closely linked to that of the Eucharist, which means that a church's design should in some way

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18 Hebrews 9:4.

19 "And concerning baptism, baptize this way: Having first said all these things, baptize into the name of the Father, and of the Son, and of the Holy Spirit, in living water. But if you have no living water, baptize into other water; and if you cannot do so in cold water, do so in warm. But if you have neither, pour out water three times upon the head into the name of Father and Son and Holy Spirit. But before the baptism let the baptizer fast, and the baptized, and whoever else can; but you shall order the baptized to fast one or two days before." "Chapter 7," *The Didache*, ed. Alexander Roberts, James Donaldson, and A. Cleveland Coxe, trans. M.B. Riddle (Buffalo, NY: Christian Literature Publishing Co., 1886; New Advent, 2017), bk. 7, http://www.newadvent.org/fathers/0714.htm.

20 Wuerl and Aquilina, *The Church*, 201.

21 CCC 537.

reflect the journey from Christian initiation in Baptism (at the font), to full communion in the Eucharist (at the altar).[22]

22 "Baptism is the gateway to the Eucharist, and many churches are designed to reflect this 'integral relationship between the baptismal font and the altar'. Sometimes church designers manifest this relationship by lining up the two areas along the same architectural axis. Sometimes the association is established by [...] similar materials [...]. The important thing is that 'the baptismal font and its location reflect the Christian's journey through the waters of baptism to the altar'." Wuerl and Aquilina, *The Church*, 199.

THE HOLY SACRIFICE OF THE MASS

"The Mass is what Catholics do. It's the heart of the Catholic life, for individuals and for the community... even if we do many other things in our church, **the Mass is what the building was made for**."

- Wuerl and Aqualina, *The Mass*

As the medieval monk Hugh of Saint Victor put it: "The material church, in which the people come together to praise God, signifies the Holy Catholic Church, which is built in the heavens of living stones."... In every church, invisible realities shine through the visible ornaments... **A church well built is a feast for the senses, a festival of praise for the God who fashioned the human body**.
Grace builds on nature, heals it, and elevates it... A church is filled with natural pleasures; but in their context, in church, they conspire to lead Christians to a worship that is supernatural.

- Wuerl and Aquilina, *The Church*

For it was from the side of Christ as He slept the sleep of death upon the cross that there came forth "the wondrous sacrament of the whole Church".

- *Sacrosanctum Concilium*, 5

Christ indeed always associates the Church with Himself in this great work [of the Mass] wherein God is perfectly glorified and men are sanctified. **The Church is His beloved Bride** who calls to her Lord, and through Him offers worship to the Eternal Father.

- *Sacrosanctum Concilium*, 7

A Catholic church is, by definition, "holy ground."... The church is the holy ground where the divine Word is **"made flesh"** in the act that is most central to Catholic life: the sacrifice of the altar, the **Holy Mass**. A church is built for the sake of the altar inside. The altar is built for the sake of the Mass. And the Mass is offered for the glory of God and for the salvation of his people.

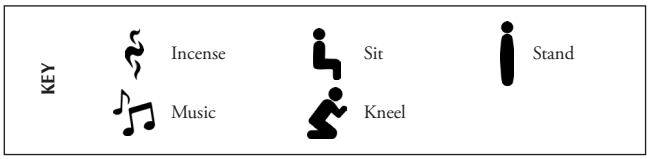
- Wuerl and Aquilina, *The Church*

The Church is not just something invisible that God will sort out at the end of time. It is something sacramental, already here, but **not yet consummated**.

- Wuerl and Aquilina, *The Church*



Raphael, *La disputa del sacramento*, 1509-1510, fresco, 500 cm × 770 cm, Apostolic Palace, Vatican City, https://commons.wikimedia.org/wiki/File:Raphael_-_Disputation_of_the_Holy_Sacrament.jpg.



LITURGY OF THE WORD



INTRODUCTORY RITE

1. Entrance Procession &
Antiphon or Song

Priest & Deacon kiss the altar

2. Sign of the Cross...

In the name of the Father, and of the Son, and of the Holy Spirit. Amen.

3. Greeting...

Priest: The Lord be with you.
Congregation: And with your spirit.

PENITENTIAL RITE



1. "I Confess" or "Lord Have Mercy"
2. Kyrie Eleison...

P: Kyrie, eleison.
C: Kyrie, eleison.
P: Christe, eleison.
C: Christe, eleison.
P: Kyrie, eleison.
C: Kyrie, eleison.



GLORIA

Glory to God in the highest, and on earth peace to people of good will. We praise you, we bless you, we adore you, we glorify you, we give you thanks for your great glory, Lord God, heavenly King, O God, almighty Father. Lord Jesus Christ, Only Begotten Son, Lord God, Lamb of God, Son of the Father, you take away the sins of the world, have mercy on us;you take away the sins of the world, receive our prayer; you are seated at the right hand of the Father, have mercy on us. For you alone are the Holy One, you alone are the Lord, you alone are the Most High, Jesus Christ, with the Holy Spirit, in the glory of God the Father. Amen.

OPENING PRAYER



FIRST READING

Old Testament (usually)

RESPONSORIAL PSALM

SECOND READING

New Testament Letters (usually)



ALLELUIA

GOSPEL READING

P/Deacon: A reading from the Holy Gospel according to ...
C: Glory to You, O Lord.
...
P/D: The Gospel of the Lord.
C: Praise to You, Lord Jesus Christ.
Priest/Deacon kisses book of the Gospels



HOMILY



CREED

I believe in one God, the Father almighty, maker of heaven and earth, of all things visible and invisible. I believe in one Lord Jesus Christ, the Only Begotten Son of God, born of the Father before all ages. God from God, Light from Light, true God from true God, begotten, not made, consubstantial with the Father; through him all things were made. For us men and for our salvation he came down from heaven, and by the Holy Spirit was incarnate of the Virgin Mary, and became man. For our sake he was crucified under Pontius Pilate, he suffered death and was buried, and rose again on the third day in accordance with the Scriptures. He ascended into heaven and is seated at the right hand of the Father. He will come again in glory to judge the living and the dead and his kingdom will have no end. I believe in the Holy Spirit, the Lord, the giver of life, who proceeds from the Father and the Son, who with the Father and the Son is adored and glorified, who has spoken through the prophets. I believe in one, holy, catholic and apostolic Church. I confess one Baptism for the forgiveness of sins and I look forward to the resurrection of the dead and the life of the world to come. Amen.

GENERAL INTERCESSION/
PRAYERS OF THE FAITHFUL

LITURGY OF THE EUCHARIST

PREPARATION OF ALTAR AND GIFTS

COLLECTION

PRESENTATION OF BREAD AND WINE

PRAYER AND GIFTS

P: Blessed are you, Lord God of all creation, for through your goodness we have received the bread we offer you: fruit of the earth and work of human hands, it will become for us the bread of life.
C: Blessed be God for ever.
P: (By the mystery of this water and wine may we come to share in the divinity of Christ who humbled himself to share in our humanity.)
Blessed are you, Lord God of all creation, for through your goodness we have received the wine we offer you: fruit of the vine and work of human hands, it will become our spiritual drink.
C: Blessed be God for ever.
P: With humble spirit and contrite heart may we be accepted by you, O Lord, and may our sacrifice in your sight this day be pleasing to you, Lord God.

P: Pray, brothers and sisters, that my sacrifice and yours may be acceptable to God, the almighty Father.
C: May the Lord accept the sacrifice at your hands for the praise and glory of his name, for our good and the good of all his holy Church. Amen.

PREFACE

(Multiple options)
P: The Lord be with you.
C: And with your spirit.
P: Lift up your hearts.
C: We lift them up to the Lord.
P: Let us give thanks to the Lord our God.
C: It is right and just.
P: It is truly right and just, our duty and our salvation, always and everywhere to give you thanks
....
as with one voice we acclaim:

HOLY, HOLY, HOLY

Holy, Holy, Holy Lord God of hosts. Heaven and earth are full of your glory. Hosanna in the highest. Blessed is he who comes in the name of the Lord. Hosanna in the highest.

EUCHARISTIC PRAYER

(Multiple options)
...
P: You are indeed Holy, O Lord, the fount of all holiness. Make holy, therefore, these gifts, we pray, by sending down your Spirit upon them like the dewfall, so that they may become for us the Body and Blood of our Lord, Jesus Christ. At the time he was betrayed and entered willingly into his Passion, he took bread and, giving thanks, broke it, and gave it to his disciples, saying:
TAKE THIS, ALL OF YOU, AND EAT OF IT, FOR THIS IS MY BODY, WHICH WILL BE GIVEN UP FOR YOU.
In a similar way, when supper was ended, he took the chalice and, once more giving thanks, he gave it to his disciples, saying:
TAKE THIS, ALL OF YOU, AND DRINK FROM IT, FOR THIS IS THE CHALICE OF MY BLOOD, THE BLOOD OF THE NEW AND EVERLASTING COVENANT, WHICH WILL BE POURED OUT FOR YOU AND FOR MANY, FOR THE FORGIVENESS OF SINS. DO THIS IS MEMORY OF ME.
...
Through him, and with him, and in him, O God, almighty Father, in the unity of the Holy Spirit, all glory and honour is yours, for ever and ever.
C: Amen.



COMMUNION RITE

The Lord's Prayer:

Our Father, who art in heaven, hallowed be thy name; thy kingdom come, thy will be done on earth as it is in heaven. Give us this day our daily bread, and forgive us our trespasses, as we forgive those who trespass against us; and lead us not into temptation, but deliver us from evil.

Sign of Peace

Lamb of God & Breaking of the Bread:

Lamb of God, you take away the sins of the world, have mercy on us. Lamb of God, you take away the sins of the world, have mercy on us. Lamb of God, you take away the sins of the world, grant us peace.

...

P: Behold the Lamb of God, behold him who takes away the sins of the world. Blessed are those called to the supper of the Lamb.

C: Lord, I am not worthy that you should enter under my roof, but only say the word and my soul shall be healed.

Communion

CLEANING OF VESSELS

CLOSING PRAYER

BLESSING AND DISMISSAL

P: The Lord be with you.

C: And with your spirit.

P: May almighty God bless you, the Father, and the Son, and the Holy Spirit.

(Multiple options)

P: Go in peace, glorifying the Lord by your life.

C: Thanks be to God.

THESIS DEFENCE
University of Waterloo School of Architecture
January 6, 2020
10 AM, loft

Before I begin speaking about the content of my thesis, I want to start with a thank you. At some point during my thesis work, for different reasons, and to varying degrees, I have had the opportunity to work with each of my evaluators one-on-one. That time has truly been both a privilege and a gift. My work would be far poorer if it had not been for your knowledge, insights, critiques, and encouragement. Thank you. I am genuinely delighted to have each of you here. And to my family, friends, and colleagues here, thank you for your presence here today, but also in my life.

Now, to the topic. Please feel free to get up and look more closely at the photos and models on display while I'm talking - especially as I discuss different theories of beauty. I would love if you considered them while looking at the visual artifacts here. I'm going to begin with a quote by Swiss theologian Hans Urs von Balthasar, whose work has been integral to my thesis research.

> Beauty is the word that shall be our first. Beauty is the last thing which the thinking intellect dares to approach, since only it dances as an uncontained splendour around the double constellation of the true and the good and their inseparable relation to one another. Beauty is the disinterested one, without which the ancient world refused to understand itself, a word which both imperceptibly and yet unmistakably has bid farewell to our new world, a world of interests, leaving it to its own avarice and sadness. [...] We no longer dare to believe in beauty and we make of it a mere appearance in order the more easily to dispose of it. Our situation today shows that beauty demands for itself at least as much courage and decision as do truth and goodness, and she will not allow herself to be separated and banned from her two sisters without taking them along with herself in an act of mysterious vengeance. We can be sure that whoever sneers at her name as if she were the ornament of a bourgeois past - whether he admits it or not - can no longer pray and soon will no longer be able to love. [...] In a world without beauty - even if people

> cannot dispense with the word and constantly have it on the tip of their tongues in order to abuse it - in a world which is perhaps not wholly without beauty, but which can no longer see it or reckon with it: in such a world the good also loses its attractiveness, the self-evidence of why it must be carried out. [...] In a world that no longer has enough confidence in itself to affirm the beautiful, the proofs of the truth have lost their cogency.
>
> Hans Urs von Balthasar *(Seeing the Form,* 18-19)

Because beauty had been so integral in this work, I wanted to open with this attestation, and give a brief background on my research of understandings of beauty through history, which laid the foundation for the chapters of my thesis. Then I will go over the structure of the work, with a focus on three of the seven chapters.

The initial reason I chose this topic of beauty in Catholic architecture was a result of my own experience, shared with many others, of the apparent lack of beauty in contemporary Catholic churches. I have been in many disappointing spaces of worship throughout my life, which not only lacked aesthetic qualities, but also lacked intentionality and quality in design, with spatial organization that inhibited proper celebration of the Catholic liturgy. In beginning this work, I was tempted to blame a lot of these problems on the Modernist Movement in architecture and the Church's Second Vatican Council. However, I came to realize that while these were both significantly influential in the problems I was recognizing, I knew they had shaped contemporary culture in very good ways as well. In desiring to explore this more deeply, I was led to the three main questions guiding this work:

1. What is a Catholic church, in essence, and how can its form be shaped by cultural and temporal context?
2. How is meaning - manifest as beauty - instilled and communicated through architecture?
3. How can a church be both contemporary and an icon of eternity?

I knew if I wanted to understand the role of beauty in architecture, particularly in the Church, I needed to research theories of beauty and aesthetics through history to recognize how we arrived at our current situation.

Pythagoras

Beginning with ancient Greece, I looked at Pythagoras in the 6th century BCE, and his theories of beauty based on harmony and proportion in mathematics, specifically in the Golden Ratio which was seen as the standard for beauty at the time.

Plato

From there I looked at the 5th century BCE and Plato's Theory of Forms. He saw these Forms as the underlying essence of all things (in a non-physical sense), of which all created matter is a kind of imitation (what he called *mimesis*). The form is the exemplar, for ex. the Form of Beauty is perfect beauty, so something is beautiful through its participation in or imitation of this form. Plato also drew an important connection between beauty and love, stating that love (specifically as eros) ultimately ascends to Beauty (as Form), and that beauty was the ultimate fulfillment of love, which is achieved most completely through knowledge.

Augustine

Augustine of Hippo, in the 4th century CE, was strongly influenced by Plato, but for him, the perfection of any form was found in God, meaning that everything beautiful on earth was a shadow or reflection of who He is - resulting in a hierarchy of beauty, based on degree of resemblance. Augustine recognized key elements of beauty like unity, order, equality, number, and proportion - believing beauty was something humans could discover and participate in, but not create.

Thomas Aquinas

In Medieval philosophy (13th c.), Thomas Aquinas further defined beauty as possessing three characteristics: *Integritas* (perfection/wholeness), *consonantia* (harmony/proportionality), and *claritas* (clarity/radiance). Integritas refers to the fact that a thing must not be deficient in anything it needs to be itself. Consonantia requires a things to correspond well to its surroundings and function well within itself. Claritas is the most ambiguous, having to do with the essence of a thing shining forth from within, to be communicated to the perceiver.

Hans Urs von Balthasar

Eventually I came to the 20th century and the work of Swiss theologian Hans Urs von Balthasar. I primarily studied his book *Seeing the Form*, which deals with the theology of aesthetics. Like Augustine, he too was influenced by Plato. Instead of form, he uses the German term *gestalt*, referring not only to the intelligible shape of a thing, but also to its "life-form", the splendour and "glory of Being", as a "revelation of the depths" of truth, goodness, and value.[1] He writes of Christ as the gestalt of the Father, the "image of the invisible God," and the perfection of form. According to von Balthasar, form is a communicator of the depths of meaning and value, which is where I connect it with architecture. The architecture of a church is not arbitrary, and a Catholic church should not easily be converted into another type of building. It must, through its very structure, communicate the form of Jesus Christ - who He is and why He took on flesh. This is the most fundamental distinction between a church and any other kind of sacred building. Its form comes from Christ, more specifically for Catholic churches, from the form of Christ revealed in the liturgy of the Mass. Von Balthasar writes of experiences of the beautiful as interiorly transformative, impacting us from the inside out. The beautiful affects us on such a deep level, even those who profess no belief in God experience it as something bordering on religious because of its absolute power - making it extremely valuable both in the world and the Church. Even those who actively deny the existence of God cannot help but be moved by beauty. It's a human experience which fosters unity. One final key point in his work is about the acquired skill of **learning to see** form - a concept which moves well into the final thinkers I want to mention - Bernard Lonergan and Robert Doran.

Bernard Lonergan

In speaking about a kind of objective sight related to beauty, or even objectivity more generally, I think a more accurate understanding can come through the concept of *authentic subjectivity*, developed by 20th c. Canadian theologian and scholar Bernard Lonergan. This authentic subjectivity is an ongoing process brought about by each of us individually being attentive, responsible, reasonable, and intelligent human beings. Lonergan termed this process *transcendental method*, which is the

1 von Balthasat, *Seeing the Form*

result of an authentic pursuit of knowledge through heightening of an individual's self-consciousness. He attested that it is only through being attentive, intelligent, reasonable and responsible that we can learn and live authentically. These four actions allow for self-transcendence, in the way they draw us out of ourselves in a "eros of the human spirit".[2] This heightening of consciousness is what allows us to recognize meaning and value in the world and is important for every person in any field.

It's through this learned authenticity that we can come to see and experience beauty most fully, learning to recognize the meaning, truth and value embodied within it. We may think of it as undergoing a kind of conversion, not as one would typically refer to conversion in a religious sense (although that can be part of it), but as a reorientation of self, an increased awareness. In the context of architecture, it allows an artist or architect to be attentive and intentional in every stage of design and creation. Lonergan believed this authentic subjectivity could result in several kinds of personal conversion.

Robert Doran

From these theories, Canadian theologian and Lonergan scholar Robert Doran explored one particular type of conversion - psychic - which I looked into more closely, as it is fundamentally related to aesthetics. Psychic conversion, in the Lonerganian sense, is an "attentiveness to our attentiveness,"[3] in other words, it results in a keen awareness of the self and the inner movements of our psyche. In his book on psychic conversion, Robert Doran emphasizes the importance of psychic development in relation to our ability to perceive beauty and allow it to affect us, because experiences of beauty have the ability to restore (or further develop) the integration between our physical limits and our capacity for transcendence.

While researching these various theories, I also explored several key concepts, and their relationships to one another - transcendence, ecstasy, and objectivity and subjectivity. Transcendence means to go beyond the limits of our own experience or knowledge. Another term for this is the Greek *ekstasis* (to be outside of oneself), and is the origin of the English *ecstasy*. Ecstasy is an experience beyond normal human limits, a union with something beyond ourselves, and occurs in moments when some kind

2 Lonergan, *Method.*

3 Ibid.

of beauty pierces us so deeply it is almost painful. In Christianity, these experiences are understood to be a taste of heavenly bliss, when there will be complete union with God, who is the ultimate fulfillment of all desire. The beauty of a church is meant to evoke these kinds of transcendent experiences.

While these experiences are, in some ways, very subjective, the acknowledgment of universal transcendentals has been around since ancient Greek philosophy, and defined more definitively in the Middle Ages as referring to *truth, goodness* and *beauty*. In Catholicism, these are considered the ultimate desires of humanity, all contained within God, and are objective because they transcend space, time and experience. Our ability to recognize anything objectively, whether it be goodness, truth, beauty, or something else, is a learned skill, as we always bring our own personal experiences, biases and worldview into anything we do. Lonergan helped me put words to this belief through his concept of *authentic subjectivity*, the closest we can come to objectivity regarding meaning, value or knowledge.

All of this research and thinking laid the foundations for my thesis structure and content, where I looked first at what a church is and what beauty is in architecture, and second, at how it can be created. I came to recognize a fundamental link between beauty and embodied meaning, going beyond physical and sensual experience. If meaning was integral to beauty, what were the ways architecture communicated meaning? Investigation into this question resulted in my seven chapters, each exploring a different method of communication. When speaking about meaning in a church, I'm referring most importantly to the meaning of the Christian story, which is revealed through beauty, among other things.

My work looks at the meaning of the seven Catholic sacraments, as the path to holiness for every Christian, in tandem with architecture, and how these are mutually influential. Each chapter begins by looking at the sacrament, and progresses into how it may translate to architecture through a particular communicative method.

Chapter 1, *Eucharist: Temporal Reckoning*, explores what it means to live in time while being oriented towards eternity, discussing cartographic methods of understanding time throughout history, and how these aid in our existential orientation. It also outlines how church architecture can become a kind of temporal map and why this is significant in relation to the Catholic Eucharistic ritual.

Chapter 2, *Baptism: Structure and Symbol in Caplutta Sogn Benedetg*, studies Peter Zumthor's Sumvitg chapel and the means by which structure can and has been used symbolically, to communicate both intended and unintended meaning.

Chapter 3, *Confirmation: Material Significance*, tells a story of clay from harvesting to its use in an architectural creation, as an extended metaphor of the human journey towards sacredness. It looks at the significance of physical materials in the Catholic tradition, the way ritual elevates simple elements like bread, wine and oil, and how this can translate to the material of a church. Eladio Dieste's Iglesia de Cristo Obrero is used as a case study.

Chapter 4, *Reconciliation: Place of Memory*, is a meditation on the importance of memory in humanity's relationship with God, with a specific look at its significance in the Sacrament of Reconciliation. While Chapter 1 focused more on the epistemological aspects of time, this chapter looks at personal experience of time in architecture, and how a building is a form of frozen memory, exemplified in the cathedral of Notre-Dame de Paris.

Chapter 5, *Anointing: Journey of Light*, reflects on the relationship between light and darkness in both Catholic theology and the physical world, and on the use of light in architecture as a powerful communicative tool.

Chapter 6, *Ordination: Geometry and Ekklesia*, investigates the use of geometry in architecture as a method of communication, focusing on the Basilica of the Sagrada Familia by Antoni Gaudí as a case study. Building on this discussion, the relationship between the basilica's form and the Church as *ekklesia* is explored.

Chapter 7, *Marriage: Poetic Narrative*, acknowledges the poetic capacity of architecture as narrative, especially through its use of metaphor, and why this is especially significant in a Christian context. Drawing primarily on concepts outlined by philosopher Paul Ricœur, the chapter examines the relevance of beauty as experience in the process of narrative emplotment (the term Ricœur uses to refer to creative acts).

Before concluding, I just want to dive a little deeper into three of the chapters, which deal with the least tangible methods of architectural communication, yet together, communicate the deepest realities of the Catholic faith and who God is - a profoundly humble, infinitely merciful,

and passionate Lover, who desires nothing more than to be united with His people. These would be chapters one on Eucharist and temporal cartography, four on reconciliation and memory, and seven on marriage and poetic narrative. This sample of three also includes one of each of the three types of sacraments - initiation, healing and service, and along with baptism, are probably the most well-known. I used these chapters like a cord to tie the thesis together.

Eucharist & Time

First, Eucharist and time. As a Catholic, I know that the Eucharist is the most beautiful thing on earth - the Word made flesh, God incarnate dwelling among us, the unity of time and eternity - so how can a church also image this?

Chapter 1 explores human understandings of time throughout history, and the methods we have used to record and measure it. The chapter also looks at the importance of cartography (mapping) to achieve unity, especially in the Church, through prayer and liturgy. It begins by addressing the significance of orientation (a word coming from the Latin root *orient*, meaning 'east', or 'rising', and *oriri* meaning 'to rise'), and the various ways the Church provides orientation for Christians, through ritual, architecture and teaching. Similarly, mapping or cartography through time, has helped us understand what it means to be human. They help us to *re-member,* to connect.

I look at a few specific forms of cartography through the remainder of the chapter, like standing stone circles, mappa mundi, the metonic cycle, liturgical calendars, rose windows, the wheel of fortune and light. By studying a rose window, for example, the viewer can actually be transported through time by the function of memory. Not only are they devices used to connect us to human history, but their image and structure becomes a bridge between the temporal and the eternal. They act as icons in their ability to create a means of passage, drawing the viewer through them and into the Divine. Rose windows also speak to the Eucharistic ritual that occurs in a church through their symbolic representation of the convergence of earth and heaven. In the past, rose windows were compared to the eye of God, gazing on His people. When we allow ourselves to be taken up into their beauty, something about them that can make us feel seen and known. Both literally and figuratively, the closer one moves toward the centre, the closer one comes to God, as a depiction of Christ is always found in the centre.

While Chapter 1 focused more on how time is known or understood on a large scale, Chapter 4 on Reconciliation and memory, looks at personal experience of time in architecture. Beginning with a look at the significance of memory in an individual's relationship with God, and the presence of physical embodiments of memory through biblical history, specifically in the form of altars of remembrance, the chapter looks at the sacrament of Reconciliation or Confession as a very tangible method of remembering the mercy of God. Since knowledge of God is an accumulation of experiential memories over time, it is this knowledge that reminds a person in the present, of their place in the family and Kingdom of God. The Sacrament of Reconciliation restores a person's communion with the Body of Christ, allowing them to participate in the ultimate act of Christian remembrance, the Eucharistic liturgy.

In the second part of the chapter, I reflect on my own experiences of Notre-Dame de Paris, in light of the recent fire, and how architecture embodies the stories and meanings of past times which are accessed through memory. I use Notre-Dame as an example of a building which carries the stories of history within its walls - moments of time captured in stone. As a living presence of the past, it is a priceless treasure not only to Catholics or the French, but to countless others of all backgrounds throughout the world. The worldwide horror at its recent destruction is a testament to this. It tells not only the Christian story, but the human story, and is a record of our ongoing quest to remember, to orient ourselves in the context of human existence, and to achieve a sense of unity through time.

Thee final part addresses memory in the way we deal with restoration work, influenced by the theories of Viollet-le-Duc, who caused a "shift in understanding that the existing work of a monument was more valuable and worthy of respect than its transformation".[4] From Viollet-le-Duc's theories, I propose that by acting according to particular circumstances, through understanding the existing structure, we can respect both the material and form in the work of restoration - in other words respecting the memory embedded within, even through renewal and a certain amount of transformation

4 Françoise and Foucart, *Viollet-le-Duc.*

My final chapter, on marriage and metaphor, begins by looking at the sacrament of marriage, which is not only the most familiar or identifiable sacrament for people, but is also the most powerful metaphor for the Trinitarian love of God, and a visible image of God's relationship to humanity, as one of spousal love. Theologically, Catholics know that Christ came to wed His bride, the Church, which is the Marriage Supper of the Lamb in Eternal Life. You'll notice the amount of marital metaphor in this language. From this discussion of marriage and poetic metaphor, the chapter looks at architecture as narrative, and at Paul Ricœur's theories about narrative emplotment, which involves a movement from experience, to artistic representation of experience, so the experience of the creator may then be shared with others.

To give an example, let me read a passage from one of most vivid pieces of biblical poetry:

You have ravished my heart, my sister, my bride,
you have ravished my heart with a glance of your eyes,
with one jewel of your necklace.
How sweet is your love, my sister, my bride!
how much better is your love than wine,
and the fragrance of your oils than any spice!
Your lips distil nectar, my bride;
honey and milk are under your tongue;
the scent of your garments is like the scent of Lebanon.
A garden locked is my sister, my bride,
a garden locked, a fountain sealed.
[...]
I am my beloved's, and his desire is for me.
Come, my beloved,
let us go forth into the fields,
and lodge in the villages;
let us go out early to the vineyards,
and see whether the vines have budded,
whether the grape blossoms have opened
and the pomegranates are in bloom.
There I will give you my love.
The mandrakes give forth fragrance,
and over our doors are all choice fruits,

new as well as old,
which I have laid up for you, O my beloved."

(Song of Songs 4:9-12, 7:10-13)

This chapter explores how experiences like this one, of the love of God from the Song of Songs, can translate to this, the Church of the Gesu in Rome, and other similar Baroque examples. It explores poetry as a unique and extremely effective means of expressing human experience in physical form, and investigates churches as embodied experiences of the love of God.

As an in-depth examination of the architecture of a Catholic church, this thesis has been an effort to invite deeper reflection on our built environment, by revealing some of the ways beauty can be manifested through embodied meaning, and how, in turn we can learn to see beauty through a recognition of this meaning. Ultimately, a church is meant to serve as a vehicle for an encounter with the living God. Its true sacredness lies in what happens within it, in those who use it, and in the God it points to. To achieve a language of meaning in contemporary Catholic architecture, our churches should be shaped by time, influenced by the society and culture of the day, while still communicating timeless truths. Whether through its interaction with things like time, symbol, material, memory, light, geometry, or metaphor, Catholic architecture must be deeply meaningful, only then can its necessary beauty be achieved.

To conclude, I'll leave you with this short excerpt from a poem by Redemptorist priest Fr. John Duffy, which applies to this discussion of architecture but has also been deeply meaningful in my own life:

And nothing would again be casual and small,
But everything with light invested, overspilled

Rev. John Duffy, C.S.s.R.
(I Sing of a Maiden, excerpt*)*

Thank you.



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