



PILGRIMAGES

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Order of the Kings and Queens in the Holy Lands*

ISSUE TWO

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Governor's Starburst

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Greetings



Greetings, Friends,

I hope each of you are flourishing and savoring life. I am thrilled to present this publication to the Order. Dr. Lynne A. Kogel has benevolently agreed, to share her work, *Genealogy of Gothic Cathedral Architecture* with the Order's members. I have praised Lynne on many occasions and in many introductions in the past, so I will land light with the praise this round, in print. But...but...let me simply say that our community is truly privileged to enjoy Dr. Kogel as a peer, a resource, a subject expert and one of the most interesting individuals you will ever meet.

Enjoy!

Barry C. Howard
Governor

New Members

Tawny Elaine Godin Welch
Kathryn Elizabeth London Stirk Sklikas
Dustin Snow Whittenburg
Nancy Jayne Spears
Robert Van Blackwell
Susan Moore Edwards
Hon. Kim Sue Hoffman
Robert Lawrence Stoecklin
EuGene Charles Smith
Jeanne Marie Buntaine Bedard
James Troy Massey
Renee Marie Willingham
Alixandra Fitzwilliam-Tate Collins Baker

#

Gateway

190 Thomas Bradbury
191 Francis Epes
192 Diana Skipwith
193 Charles Barham
194 William Farrar
195 Thomas Wotton
196 Theophilus Hone
197 John Sanborn
198 Henry Filmer
199 Richard Palgrave
200 William Lewis
201 George Yate
202 Alexander Falconer

Royal Ancestor

Frederick I “Barbarossa”, Emperor of Germany
Louis I “The Pious”, Emperor of the Romans
Charles Martel, Duke of the Franks
Edward I, King of England
Fulk V, Count of Anjou, King of Jerusalem
Fulk V, Count of Anjou, King of Jerusalem The
Eleanor of Aquitaine, Queen of France and England
Alexius I Comnenus, Byzantine Emperor
Pepin, King of Italy, King of the Lombards
Edward I, King of England
Charlemagne, Emperor of the Romans
Eleanor of Aquitaine, Queen of France and England
Fulk V, Count of Anjou, King of Jerusalem

Meet Our New Governor



Governor, 2024-2026

David William Medeiros

David William Medeiros is the son of the late Manuel Medeiros Jr. and the late Beatrice Louise (Russell) Medeiros of Hamilton, Massachusetts. David is married to Lina Maria Ferreira Medeiros (née Lameiro) of Leiria, Portugal, with whom he has two children, Vasco Miguel Lameiro Medeiros and Amalia Maria Lameiro Medeiros.

David earned a Bachelor of Science degree in Nuclear Engineering from the Massachusetts Institute of Technology, where he was a member of Tau Epsilon Phi fraternity. David also holds a Master of Science degree in Mechanical Engineering from Stanford University, as well as a Master of Science degree in

Management from the Alfred P. Sloan School of Management at the Massachusetts Institute of Technology.

Now retired, David was employed for over 30 years in the field of corporate advisory services, having previously worked for multiple management consulting firms, including Charles River Associates Inc. and Deloitte USA.

David and his wife, both of whom are dual citizens of the United States of America and the Portuguese Republic, currently reside in London UK, where David is an active member of the UK branch of the Sons of the American Revolution, the Society of Mayflower Descendants in Europe and the UK, and the London branch (Ensign John Davis Camp no. 10) of the Sons of Union Veterans of the Civil War.

David is a life member of Mensa USA and holds life memberships in over 70 lineage and hereditary societies.

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Meet Dr. Kogel



A graduate of UCLA, The Reverend Dr. Lynne Alcott Kogel earned graduate degrees from Wayne State University, the University of Michigan, and McCormick Theological Seminary. She is an ordained minister in the Presbyterian Church (U.S.A.) and served as Associate Professor of Biblical Studies at the Ecumenical Theological Seminary in Detroit and as Adjunct Faculty in Humanities at Wayne State University and Macomb Community College. Recently, she completed three years as Visiting Scholar at the University of Michigan in the Department of Middle East Studies.

Lynne is the author/photographer of the book *Christianity in Stained Glass*. She edited *Beyond the Essene Hypothesis: The Parting of the Ways between Qumran and Enochic Judaism*, and is a contributor to *Eerdmans Dictionary of the Bible*, to *The Healing Power of Spirituality*, and to *Project India*. She reviewed the

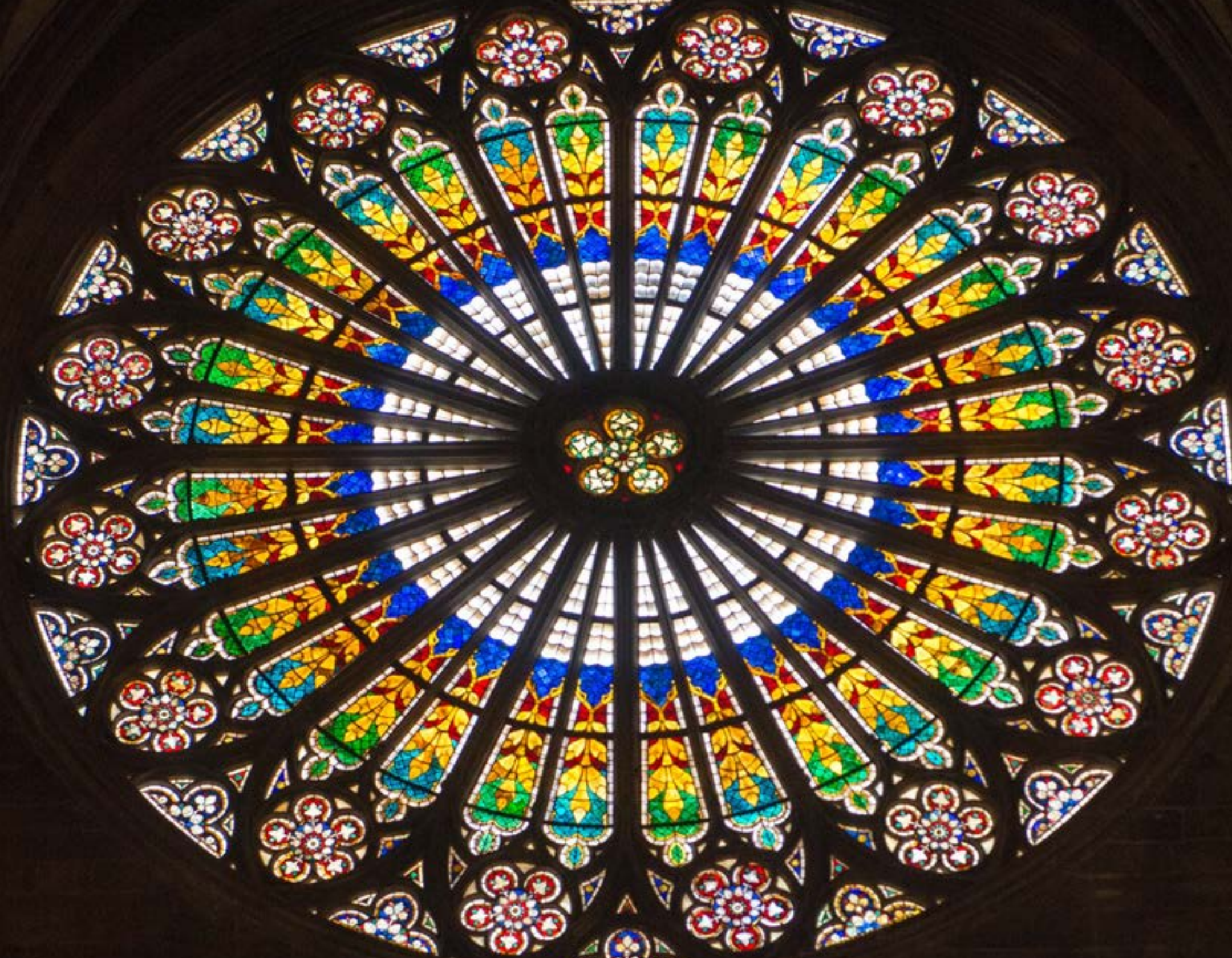
sixth edition of *Culture and Values: A Survey of the Humanities*, Alternate Volume, for Thomson Wadsworth Corporation, and was a member of the production team for the DVD edition of *The Cadet Chapel – United States Military Academy*. Over the years, she has written several articles for the Baronial Order of the Magna Charta's acclaimed magazine, *The Herald*. In January 2023, she published an article, "The Stained Glass Windows of Mariners' Church" for the International Ship Masters' Association, Detroit Lodge No. 7, for whom she serves as Chaplain.

Lynne's photo taken from the top of Mount Sinai is on the front cover of *Heaven, Hell, and the Afterlife: Eternity in Judaism, Christianity and Islam*. Her photo of the stained glass window, "Ruth," by Willet Studios, is on the front cover of *Feminism in Religion*, and her photo of a Giant Kingfisher is on the cover of the May 2012 Tanzanian magazine, *UJUMBE*. She is the recipient of several photography awards from the Center for Chinese Studies at the University of Michigan, including First Prize. In the spring and fall of 2017 (to take advantage of different light), and from the vantage points of scissors lifts, scaffolding and attic rafters, Lynne took thousands of photographs of Lincoln Cathedral's historic stained glass for the Cathedral's archival records and publications.

Lynne served on the Board of Trustees for the Ancient and Biblical Manuscript Center in Claremont, CA, and is a Founder and Board of Director *Emerita* of the Michigan Center for Early Christian Studies for whom she has given many illustrated lectures, including pre-concert presentations before University Music Society performances at the University of Michigan, such as "Handel's Messiah in 1,000 Years of Stained Glass," and "Benjamin Britten's *War Requiem*, Coventry Cathedral, and the Poetry of Wilfred Owen." At the University of Michigan's Art Museum, she presented an illustrated lecture, "Biblical and Classical Influences on the Bayeux Tapestry."

Lynne is a member of the Presbytery of Detroit, the Society of Biblical Literature, the American Academy of Religion, the American Schools of Oriental Research, the International Ship Masters' Association, the Professional Photographers of America, the American Glass Guild, and an Affiliate Member of the Stained Glass Association of America. And, of course, she is a member of many genealogical societies, including The Royal Seven!







*from Nineveh, Athens, Rome, and Jerusalem
to Paris, Sens, Canterbury, Chartres, Laon, Reims, and Lincoln*

Genealogy of Gothic Cathedral Architecture

a photographic essay

Text and Photography © 2024 Lynne Alcott Kogel

Layout and Design © 2024 Lynne Alcott Kogel

Edited by Kristin Gedeon

**Fan vaulting, Bell Harry Tower, Canterbury Cathedral, 1498
Principally an English design, the earliest example of fan vaulting
dates from 1351 in the cloisters of Gloucester Cathedral.**



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Credits, Notes, and Some Really Wonderful Books

**RIGHT: Genealogy of Christ
Window (The Jesse Window)
La Cathédrale de Notre-Dame
de Chartres, c. 1150**

**FACING PAGE: Rose Window,
North Transept
The foundation stone
of the North Transept
was laid in 1403.
Cathédrale de Saint-Julien
du Mans**

**PREVIOUS PAGES LEFT:
West Rose Window, Narthex
La Cathédrale Notre-Dame
de Strasbourg**



Introduction

Big sweeps of history produced the aesthetics of Gothic cathedral architecture.

- 1) Gothic cathedrals are Roman Catholic, not Arian Catholic, not Orthodox, not Islamic.
- 2) As a result of the Second Council of Nicaea, Gothic cathedrals were covered in art.
- 3) They were erected in concentric circles around Paris and the Île de France, extending the political center of the Capétian monarchy - in itself a geographical power shift from the Mediterranean Sea to the north and west and centered inside the European peninsula.
- 4) Cut off from the Mediterranean by Islamic kingdoms, the great northern arc of Viking river routes connected Europe with the Middle East. The European peninsula was a virtual island, vulnerable to attack from both sea and rivers.
- 5) Eventually waterways lead to reconquest, travel, and trade. As Sicily and Spain gradually were recaptured by Christians, access to Arabic and Greek libraries offered opportunities for translation into Latin. Several extraordinary scholars uncovered the algebra and geometry of Euclid, Pythagoras, al-Khwarizmi and Islamic mathematicians.
- 6) Cathedrals with their relics attracted pilgrims looking for a safe journey to miracle healings or satisfaction for indulgences, or the experience of - as close as a person could approach it in this life - heaven on earth.
- 7) After the Carolingian Renaissance and the invention of minuscules (small letters), some punctuation, and standardized Latin, books were a lot easier to read and to write.

Transfiguration, Jesus washes Peter's feet, and Crucifixion Scenes from the Passion Window, 12th century, Chartres



8) Cathedrals were built at a time when plagues had receded, the Millennium had passed, cities were growing, and schools were re-opening. The school at Notre Dame in Paris and the school of Notre Dame in Chartres developed western music from monophonic to polyphonic, with notation, and scales based on Pythagorean ratios. Using ratios in architecture, rather than measuring, yielded continuity and stunning beauty. Ratios, considered the building blocks of the universe, were used to design cathedrals with each part related to the whole, in a symbolic reflection of the Creator's geometric design, a building that was a vision of the Celestial City, a gateway to heaven. By combining the luminosity of stained glass with cosmic proportions, architects created a heaven on earth.

Some of the great historians of architecture have offered theories about, and the reasons for, the aesthetics of the Gothic style.

In *The Gothic Cathedral*, Otto von Simson emphasized geometry, distinguishing between Romanesque style, where geometrical principles were largely unnoticed, and Gothic style, where composition was transparent, revealing its geometrical principles. Simson explored the works of Vitruvius and the irrational numbers of the Golden Ratio.²

In *Gothic Architecture and Scholasticism*, Erwin Panofsky was interested in the way Scholasticism thinks: for example, *manifestatio*, the “acceptance and ultimate reconciliation of contradictory possibilities” and applying it to architectural problems and solutions, such as William of Sens, *magister operis* at Canterbury Cathedral (1174-1178), alternating cylindrical and octangular columns in his rebuilt choir.³

In *Genius Loci: Toward a Phenomenology of Architecture*, Christian Norberg-Schulz interpreted architecture in the light of Martin Heidegger, the human need for symbols and the “poiesis” (ποίησις) of architecture situated in a particular geography and light. Architecture - the setting for words, music, images, and actions - provides for, even elicits, an ambiance for meaning, a tone signaling that something of consequence is available and happening right here, within these walls. As Norberg-Schulz explains, “Meaning is the fundamental human need... Architecture provides the experience of meanings.”^{4,5}

Captivated by the Medieval visual imagination, I wrote this article in the style of a contemporary illuminated manuscript, a photographic essay, to illustrate the generative forces behind Gothic cathedral architecture and the power and majesty of its compelling and insightful beauty.

Excursus: Iconoclastic Controversy

During the 8th century, under the direction of Byzantine emperors Leo III (717-741) and Constantine V (741-775), and after the Christological controversies of the previous centuries that shaped the Nicene Creed, a new controversy arose: should images be used in worship? In 787, the Second Ecumenical Council at Nicaea, distinguishing between veneration of images and adoration of what the images represented, upheld the use of images in worship, an act that had an enormous impact on the development of both eastern and western visual arts that tell the story of Christianity. Charlemagne, who could not read, was not invited to participate.

Byzantine Icon, 6th century
The only pre-iconoclastic icon in
North America is at the
Cleveland Museum of Art. In the
upper register archangels
Michael and Gabriel appear with
Christ in Glory. In the lower
register Michael and Gabriel
appear with the Virgin and Child.^a



Iconoclasts, emphasizing language and the preference for hearing the Word, asserted that God is invisible, and, therefore, they argued against the use of images in worship. These supporters for the priority for hearing quoted Deuteronomy, Exodus, and early Church Fathers.

Iconoclasts quoted the explicit injunction against making images:

*You shall not make for yourself a graven image,
or any likeness of anything that is in heaven above,
or that is in the earth beneath,
or that is in the water under the earth (Exodus 20:4).*

*Then the LORD spoke to you out of the midst of the fire;
you heard the sound of words, but saw no form;
there was only a voice (Deuteronomy 4:12).*

Hear, O Israel: The LORD our God is one LORD (Deuteronomy 6:4).

Iconoclasts also referred to the writings against the use of images by second/third century theologians, Origen of Alexandria (c.185 - 254) and Tertullian of Carthage (c. 155 - 220).

Iconodules, emphasizing light and the preference for seeing the “Word made flesh,” asserted that the incarnation made the invisible God visible, and, therefore, they argued in favor of the use of images in worship. These supporters for the priority of seeing quoted Genesis, the Gospel of John, the Letter to the Colossians, the Nicene Creed, and John of Damascus (c. 650 or 775?-c. 749), the Father of both the eastern and western Church.

The Gospel of John begins with the priority for the spoken Word of God at creation, but swiftly shifts to the priority of seeing the Word of God made flesh in the Incarnation:

*In the beginning was the Word
and the Word was with God,
and the Word was God...
The true light that enlightens every man
was coming into the world (John 1:1, 9).*

“I am the light of the world” (John 8:12).

“I and the Father are one” (John 10:30).

“..He who has seen me has seen the Father” (John 14:9).

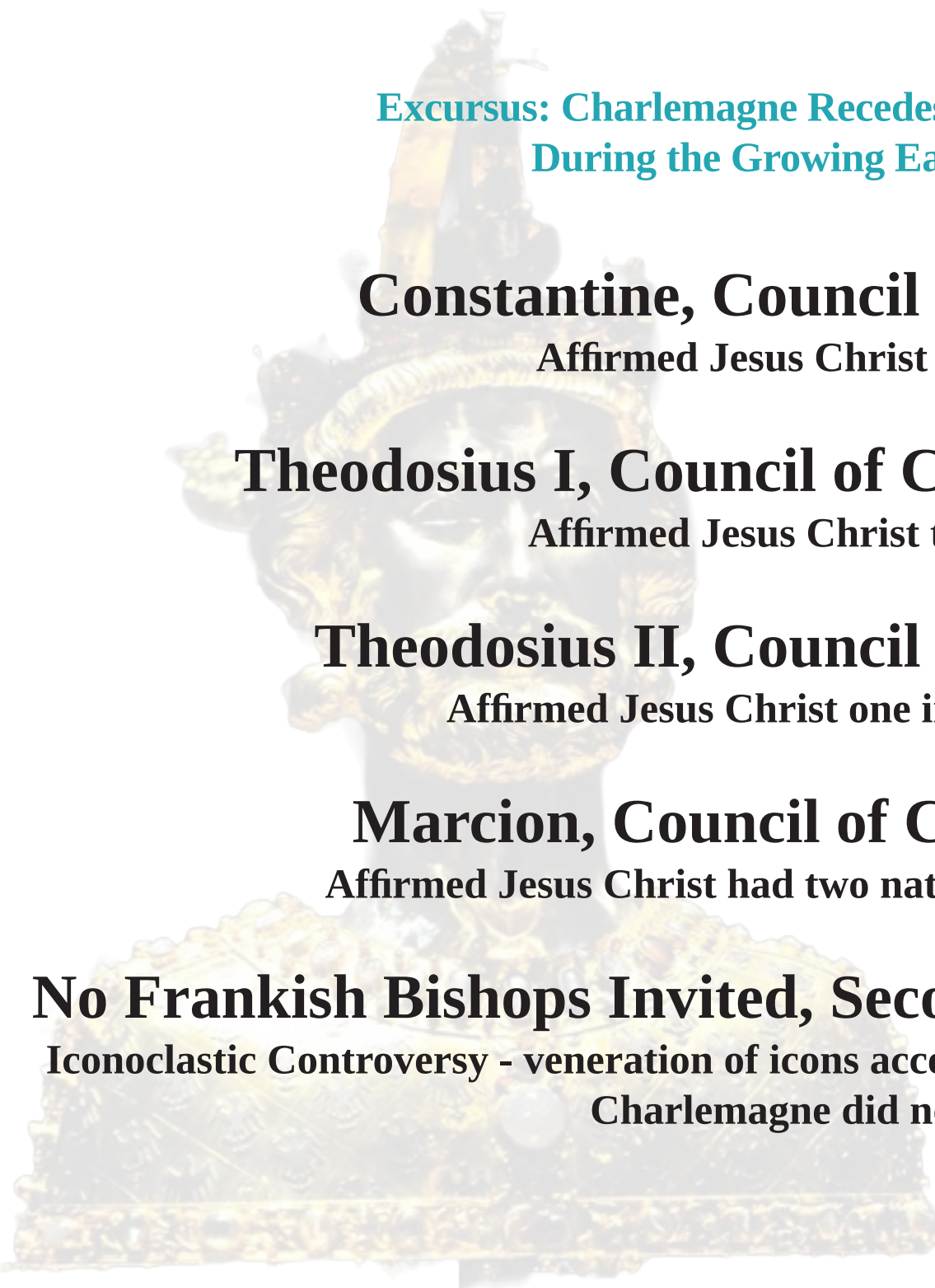
*So God created man in his own image,
in the image of God he created him;
male and female he created them (Genesis 1:27).*

Paul writes, *“He is the image of the invisible God,
the first born of creation” (Colossians 1:15).*

Iconodules quoted the Nicene Creed,
God of God, Light from Light.

John of Damascus argued in favor of icons:

*When he who is bodiless and without form,
immeasurable in the boundlessness of His own nature,
existing in the form of God,
empties Himself and takes the form of a servant
in substance and in stature and is found in a body of flesh,
then you may draw His image
and show it to anyone willing to gaze upon it.
Depict His wonderful condescension, His birth from the Virgin,
His baptism in the Jordan, His transfiguration on Tabor,
His sufferings which have freed us from passion, His death,
His miracles which are signs of His divine nature,
since through divine power He worked them in the flesh.
Show His saving cross, the tomb, the resurrection,
the ascension into the heavens.
Use every kind of drawing, word, or color.
(First Apology of Saint John of Damascus
Against Those Who Attack the Divine Images, 8)⁶*



**Excursus: Charlemagne Recedes into the Background
During the Growing East/West Split**

Constantine, Council of Nicaea (325)

Affirmed Jesus Christ truly divine.

Theodosius I, Council of Constantinople (381)

Affirmed Jesus Christ truly human.

Theodosius II, Council of Ephesus (431)

Affirmed Jesus Christ one integrated person.

Marcion, Council of Chalcedon (451)

Affirmed Jesus Christ had two natures, divine and human.

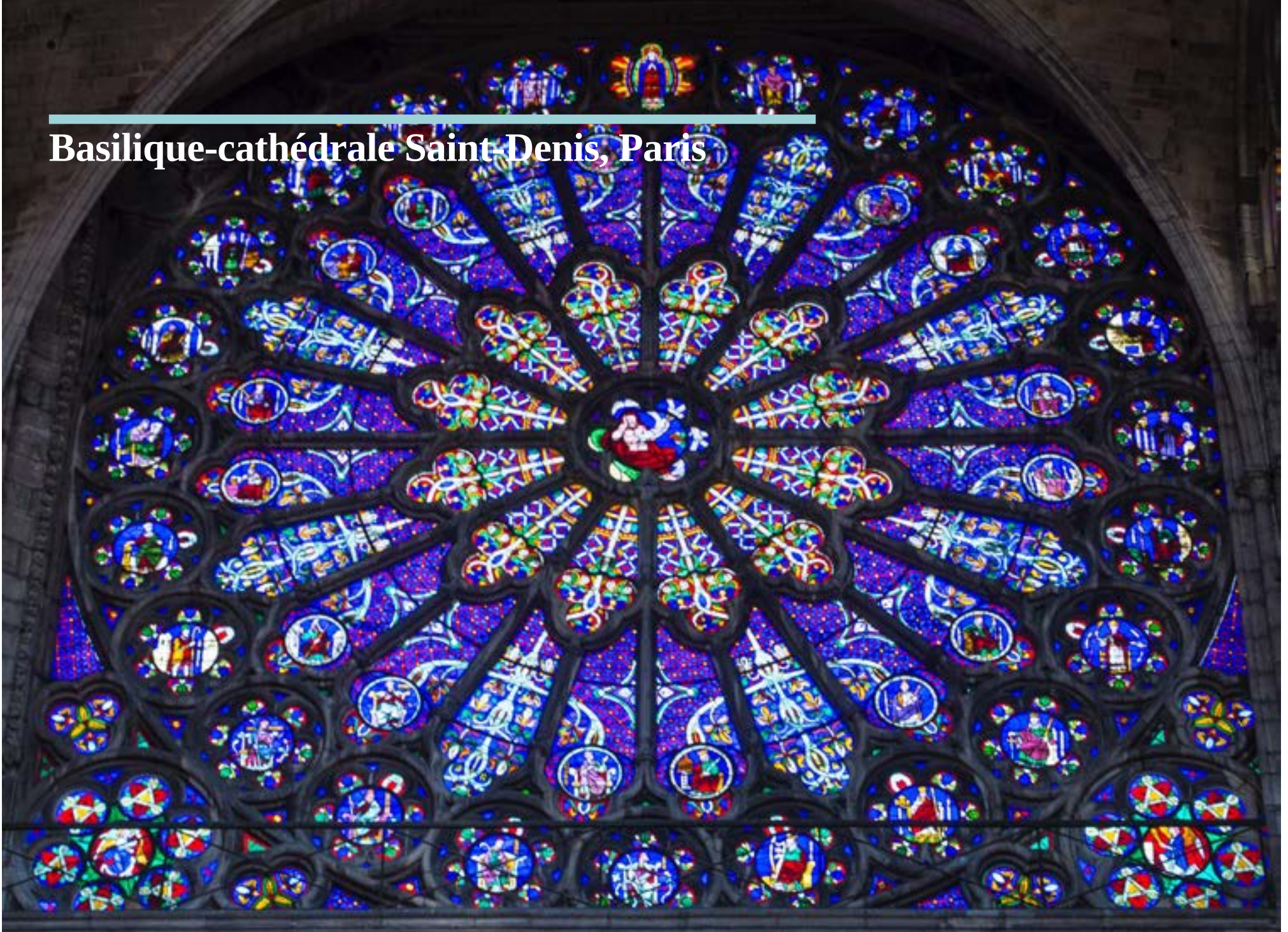
No Frankish Bishops Invited, Second Council of Nicaea (787)

**Iconoclastic Controversy - veneration of icons accepted by Pope and Byzantine Emperors;
Charlemagne did not attend.**

**THE SECULAR WORLD CONTRIBUTED TO THE EAST/WEST SPLIT
BETWEEN THE ROMAN CATHOLIC CHURCH AND THE ORTHODOX CHURCH**

- 286, 293** **Diocletian (242/245-311/312), tired from extensive travel fighting the Persians in the east and the barbarians in the west, started the East/West split in order to govern a sprawling Roman Empire efficiently and effectively; first in 286 with a co-emperor, and then in 293 as a tetrarchy (rule of four).**
- 313, 325** **As Emperor, Constantine reunited East/West into a single unified Roman Empire. The Edict of Milan secured tolerance for Christians (313). Constantine officiated at the Council of Nicaea (325), setting up the interconnectedness between government and religion. The emperor's or king's ranking as the highest ecclesiastical leader in ecumenical councils became the norm.**
- 380** **Under Theodosius I (347-395), with the Edict of Thessalonica, Nicene Trinitarian Christianity became Rome's official religion. Theodosius I, who had won two civil wars, was the last powerful Emperor, but the migrations of the Goths, who were escaping from invading Huns, overcame Roman resistance. Romans couldn't abide barbarian clothing, their long hair and beards, their use of butter instead of olive oil.**
- 476** **Fall of the Western Roman Empire in 476 to Germanic King Odoacer. The East/West ecclesiastical cultural split in language, liturgy, leadership, and most particularly in education, set East and West adrift in separate directions.**
- 508** **In the West, Barbarian groups had converted to Arian Christianity. Clovis 1, baptized Roman Catholic (Nicene Trinitarian, Jesus the same in essence with the Father; not Arian, Jesus' existence began when begotten by the Father) Christmas Day in Reims, set the trajectory for the dominance of the Roman Catholic Church in France.**
- 787** **Second Council of Nicaea, Iconoclastic Controversy, no Frankish Bishops were invited. Charlemagne did not attend.**
- 1054** **"The Great Schism" split for reasons of language, liturgy, interpretations of the eucharist, authoritative sources, styles of art, judicatory preferences, leadership, and politics. The East couldn't abide the West's illiteracy.**
- 1453** **Fall of Byzantium (Eastern Roman Empire). Sultan Mehmed II, Ottoman Empire, laid siege to Constantinople using gunpowder, smashing holes in the walls that Roman Emperor Theodosius II (401-450) had built centuries earlier.**
- 1494** **Aldus Manutius, a Greek and Latin scholar, moved from Constantinople to Venice to start the Aldine press that printed celebrated incunabula, including Greek and Latin texts, dictionaries and grammar books, many published with Desiderius Erasmus (1466-1536), and literature such as Dante's *Divine Comedy* (1502).⁷**

Basilique-cathédrale Saint-Denis, Paris

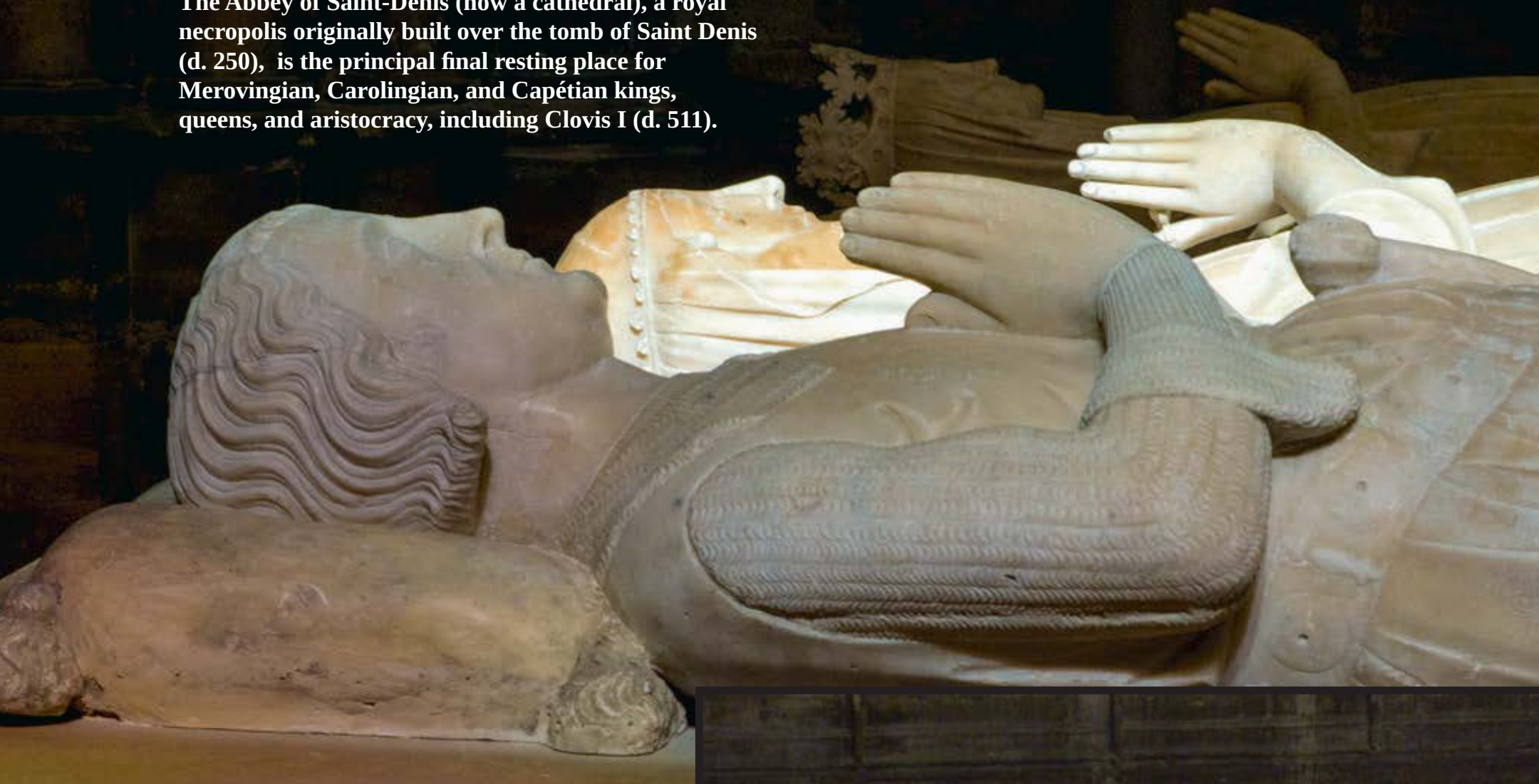


North Transept Rose Window, Saint-Denis, Paris, c. 1231

Abbot Suger (1081-1151) remodeled the abbey church of Saint-Denis with an innovative combination of architectural elements that became characteristic of the Gothic style: pointed arches for height and an expansive use of stained glass, including rose windows, for light.

GISANTS (recumbent tomb effigies)

The Abbey of Saint-Denis (now a cathedral), a royal necropolis originally built over the tomb of Saint Denis (d. 250), is the principal final resting place for Merovingian, Carolingian, and Capétian kings, queens, and aristocracy, including Clovis I (d. 511).



RIGHT: King Charles VI (1368-1422) and Queen Isabella of Bavaria, each holding an emblem of political power

ABOVE: More commonly, gisants hold their hands in a posture of prayer. The tradition in early Christian art, especially in the catacombs, was the orans position with arms held high and hands open (1 Timothy 2:8; Isaiah 1:15), often used now as a liturgical posture of blessing.



Excursus: Constantine and Relics



**Tomb of Christ, Church of the Holy Sepulcher
Jerusalem**

After a vision of a cross in 312, Constantine (c. 272-337) defeated Maxentius at the Battle of Milvian Bridge, became sole Emperor of the Roman Empire, signed the Edict of Milan legalizing (tolerating) Christianity in 313, and built The Church of the Holy Sepulcher, consecrated in 335.



**Dome over the chapel for
venerated saint, Joseph of
Arimathea, who provided the tomb**



The Church of the Holy Apostles, (Ἁγιοὶ Ἀπόστολοι) was built by Constantine, 330, to hold the relics of the twelve apostles. Saints, Church Fathers, and Emperors were buried there. Second in importance to Hagia Sophia (Ἁγία Σοφία), according to the the principle Roman historian of the 6th century, Procopius (c. 500-565), it was rebuilt by Justinian in 550. Looted by Crusaders in 1204 during the Fourth Crusade, its relics were taken to San Marco, Venice, that was built in the style of the Church of the Holy Apostles. *The Homilies of James Kokkinobaphos* (Paris Bibliothèque nationale de France Grec 1208, fol. 3v)^b



San Marco Square, Venice



**The Patriarchal Cathedral Basilica
San Marco, 1094**



**Mosaic entrance to The
Patriarchal Cathedral Basilica of
San Marco Venice**

Cathédrale Saint-Étienne de Sens



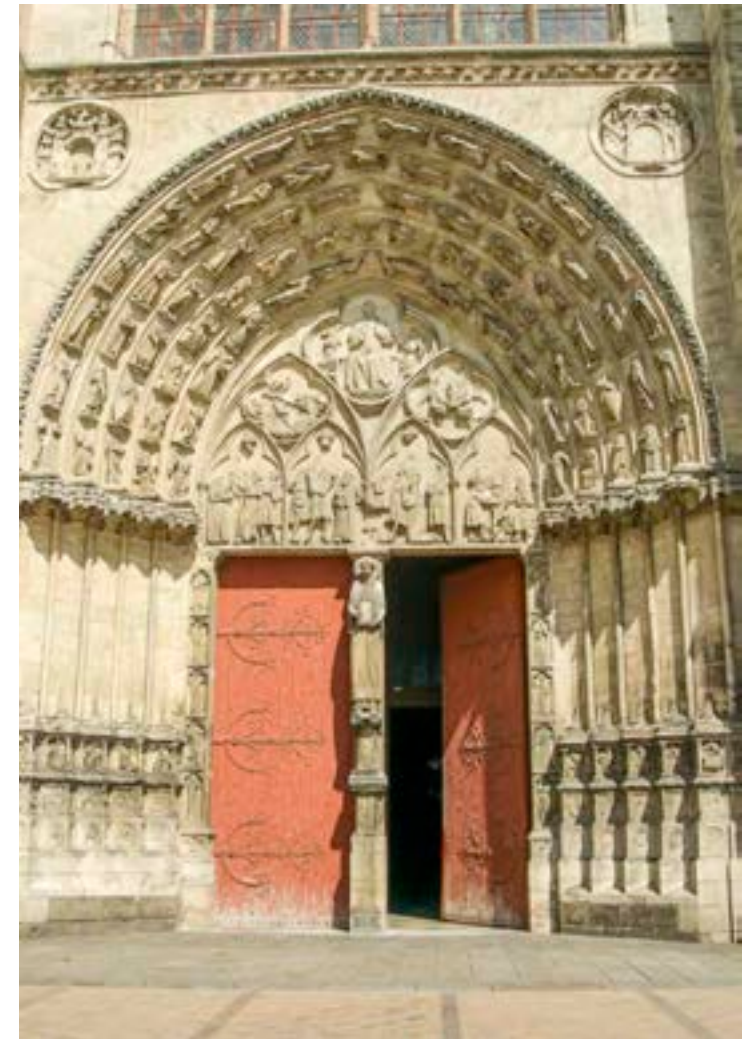
La Cathédrale de Saint-Étienne (Stephen), Sens
Saint Denis near Paris was the first renovated in the Gothic style. Sens was the first French cathedral originally built in the Gothic style, with three deep heavily sculpted entrance doors, but with only one tower. The market, an opportunity for entrepreneurs to offer goods and services to weary pilgrims, is enjoyed by weary tourists.

During the Romanesque period, many cathedrals and abbeys were named after Saint Stephen, the first Christian martyr (Acts 7:54-60). For example, William the Conqueror's Abbaye aux Hommes, Saint-Étienne de Caen. Some Gothic cathedrals continued the tradition, for example, Cathédrale Saint-Étienne de Sens and Cathédrale Saint-Étienne de Bourges.

The cathedral in Le Mans is dedicated to Saint Julien, whom some claim was born in Le Mans, La Cathédrale Saint-Julien du Mans. A 12th century Gothic church in Paris, Saint-Julien-le-Pauvre, is also dedicated to Saint Julien, as are some in other countries.

But, it is interesting that, coinciding with the developing emphasis on Mary in Roman Catholicism, many cathedrals, especially those associated with the Capétian monarchy and its growth encircling the Île de France, tended to be named after Mary, "Notre-Dame," rather than after Saint-Étienne (Sens) or Saint-Julien (Le Mans) or Saint-Pierre (Poitiers) or Saint-Gervais-Saint-Protais (Soissons).

La Cathédrale Notre-Dame de Paris
La Cathédrale Notre-Dame de Chartres
La Cathédrale Notre-Dame de Rouen
La Cathédrale Notre-Dame de Laon
La Cathédrale Notre-Dame de Senlis
La Cathédrale Notre-Dame de Reims
La Cathédrale Notre-Dame de
Strasbourg
Basilique Cathédrale Notre-Dame
d'Amiens
and many more

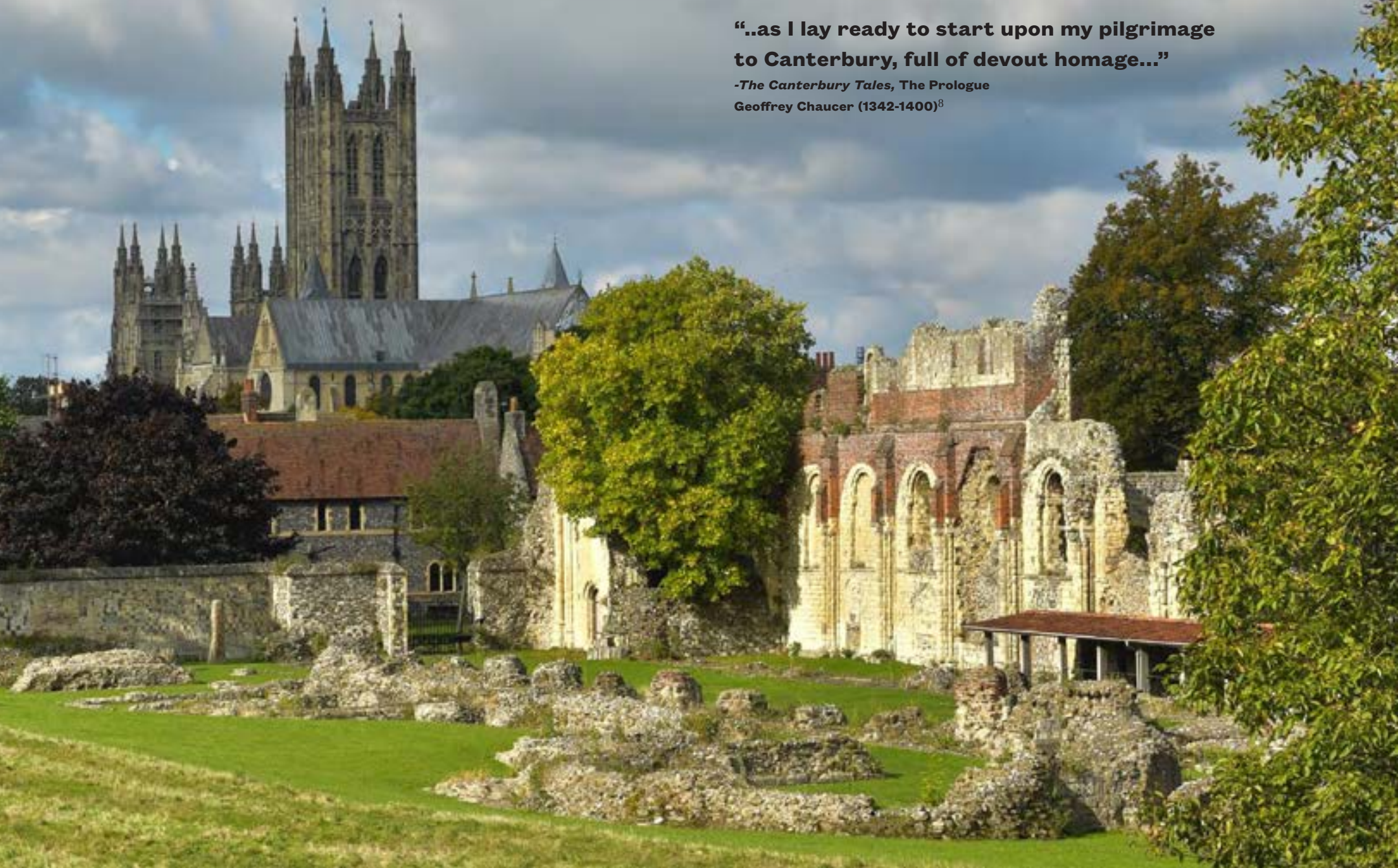


Sculptured Tympanum and Trumeau
A trumeau, the central pillar between the doors, supports the lintel, the beam over the doorway. The tympanum, the area over the doors between the lintel and arch, and trumeau are opportunities for sculptured story. Here the trumeau high relief sculpture is Saint Stephen (St Étienne), the first Christian martyr (Acts 7:59), for whom the cathedral is named, La Cathédrale de Saint-Étienne.

Canterbury Cathedral, Canterbury

**“..as I lay ready to start upon my pilgrimage
to Canterbury, full of devout homage...”**

**-*The Canterbury Tales*, The Prologue
Geoffrey Chaucer (1342-1400)⁸**



**In the foreground, St. Augustine's Abbey where many believe the Bayeux Tapestry was fabricated
In the background, Canterbury Cathedral**



Among those commemorated in sculpture on Canterbury's facade is Lanfranc of Pavia (1005-1089): scholar of Greek literature; Benedictine Monk; founder and Abbot of Abbaye du Bec; first Abbot of the Abbaye-aux Hommes (Saint-Étienne) in Caen; associate of William the Conqueror; and Archbishop of Canterbury.



Crypt aisle, Canterbury Cathedral
The crypt, where services are still held, has seen a lot of history pass through its hallways. A large display illustrates the story of the Cathedral and the many historical figures who have been part of its powerful history, like Lanfranc.

Photo taken with permission.



Pillars taper to give a sense of height; lierne vaulting; nave completed 1405.⁹



**Restoration of Canterbury Cathedral
 2024**



Like delicate lace, towers weave into the heavens.



**Adam, Ancestors of Christ Windows
Canterbury Cathedral**

The Ancestors of Christ windows are an example of narrative art with many windows in a single story. This photograph was taken *in situ* at an angle from the nave floor. Natural sunlight filters through the glass.¹⁰

ANCESTORS OF CHRIST: A GENEALOGY IN GLASS

Adam looks down at the earth; his feet are in the soil as he tills the earth; his hands grasp tools as he works for food; his skin is smudged with dirt. Although there is still some green in the land, he digs on the edge of rocks. A plant grows tall but has lost most of its color. The moment chosen by the artist to describe Adam's legacy is when Adam is no longer in paradise. The picture does double duty: to understand the reason why Adam labors, only a quick glance at his body reveals that Adam is lean and hungry. The suggestion of hunger reminds the faithful of another story: Eve ate an apple from the tree of knowledge, against the will of God and gave it to Adam. Adam has sinned. Sin is Adam's legacy. Work, a measured lifespan, and death are his punishments (Genesis 2:17; 3:3, 24). "The wages of sin is death" (Romans 6:23).

On the other hand, Enoch, sixth generation descendant from Adam, father of Methuselah, and grandfather of Noah, looks up at the heavens. His hands are in the ancient position of the orans, the position of prayer (Psalm 28:2; 63:4; 134:2; 141:2; 143:6; 1 Timothy 2:8; Hebrews 12:12). His eyes are open and paying attention to the heavenly hand that reaches down to take him up. As Enoch is lifted up, his feet leave the earth. There is no biblical record of Enoch's death ("Enoch walked with God; and he was not, for God took him." Genesis 5:24; Hebrews 11:5). During the period of Second Temple Judaism (the return from the Babylonian exile in the sixth century BCE to the development of the Mishnaic literature and Christian New Testament in second century CE), an entire literature about Enoch was written. *The Books of Enoch* provided an alternative theology for original sin - the rebellion in heaven and the fall of the angels. Luke's genealogy includes Enoch (Luke 3:37-38).

Both the Adam and Enoch windows in the Ancestors of Christ stained glass series are attributed to Canterbury's "Methuselah Master." When I visited Canterbury Cathedral in 2015, Léoni Seliger, Director of Stained Glass Conservation, asked me to take some pictures for a project that she was working on. She then took me into her studio workshop so I could photograph the Enoch window (which was being restored) for some research I was working on about the *Books of Enoch* at the University of Michigan. During our conversation, she told stories about William of Sens and his particular artistic style.



**Enoch, Ancestors of Christ
Windows, Canterbury Cathedral**

The light in the Enoch window differs from the Adam window on the left. The Enoch photograph above was taken in the Cathedral's conservation workshop at eye level in artificial light, 2015.

Excursus: Thomas Becket and William of Sens

In 1165, when Thomas Becket (Archbishop of Canterbury 1162-1160) fled to France to escape England and King Henry II's wrath, he visited Sens, once in 1164 to meet with Pope Alexander III, and again in 1170 before he returned to Canterbury. Although the pope had arranged an agreement between the king and the archbishop guaranteeing a safe return, Thomas was murdered in Canterbury Cathedral by four of King Henry II's knights.

Controversial in life, in death Thomas was considered a martyr. Many miracles were associated with him. In 1173, just a few years after his death, the pope declared him a saint. In 1179, France's King Louis VII traveled to Canterbury to pray at Thomas' shrine for his son Philip's health. Philip survived and lived to become Philip II, the first of the great Capétian kings. Crowned at Reims, he went on to recover French lands lost to English kings and, like Richard the Lionhearted, left on Crusade against Saladin (the Third Crusade), only to return in 1191, before Richard, because of ill health.

The domed shrine dedicated to Thomas Becket in Canterbury Cathedral where King Louis VII prayed, was built by stone mason and architect, William of Sens, who had been invited by the Chapter of Canterbury to repair the choir damaged in the 1174 fire. William of Sens introduced Gothic ideas to England, including the use of pale Caen stone contrasting with Purbeck marble, sexpartite vaults forming paired bays in the nave, and an expansive use of stained glass. In 1777, William slipped from the scaffolding. Not long after his fall, he died. His death coincided with the end of the stained glass windows fabricated by "The Methuselah Master," which has led some to suspect that William of Sens was "the Methuselah Master."¹¹



After the fire in 1174, William of Sens redesigned the Choir (Quier) with alternating round and hexagonal piers, a distinctive characteristic of his work.



The domed shrine, "The Corona" Canterbury Cathedral



Archbishop Thomas Becket appears to King Louis VII in a dream. After the King made a pilgrimage to Thomas Becket's shrine in Canterbury Cathedral and prayed for his severely ill son's health, the boy (Philip II), recovered. Thomas Becket's Miracle Windows, Canterbury Cathedral

I often think about William when I am crawling across cathedral rafters photographing high remote windows. It is so easy to be distracted by color reflecting on stone, the story in the glass, the history of kings, queens, clergy, knights, or pilgrims from distant lands, and to be tempted to reach out just a little bit further to get a better picture.

Excursus: A Theology of Light



Lewis and Clark Window, Willet Studios
Washington National Cathedral, Washington, D.C.
Neo-Gothic, 20th century
Color splashes on the window casing,
pouring into the Cathedral.

HEAVEN ON EARTH

And in the Spirit he carried me away to a great, high mountain, and showed me the holy city Jerusalem coming down out of heaven from God, having the glory of God, its radiance like a most rare jewel, like a jasper, clear as crystal... And the building of the wall of it was of jasper: and the city was pure gold, like unto clear glass. And the foundations of the wall of the city were garnished with all manner of precious stones... And the city had no need of the sun, neither of the moon, to shine in it: for the glory of God did lighten it, and the Lamb is the light thereof (Revelation 21:10-11; 18-18a, 23).

The LORD is my light and my salvation (Psalm 27:1).



**Saint Thomas Becket Window
Canterbury Cathedral**

**Stained glass is light dependent.
In the late afternoon, the window was backlit only by bleak weather and gray shadows. “For now we see through a glass, darkly, but then face to face...”
(1 Corinthians 13:12).**

*Thy word is a lamp to my feet and a light to my path (Psalm 119:105).
The people who walked in darkness have seen a great light; those who dwelt in a land of deep darkness, on them has light shined (Isaiah 9:2, Matthew 4:16).
In him was life, and the life was the light of men (John 1:4).
The light shines in the darkness, and the darkness has not overcome it (John 1:5).
Again Jesus spoke to them, saying, “I am the light of the world; he who follows me will not walk in darkness, but will have the light of life (John 8:12).
And night shall be no more; they need no light of lamp or sun, for the Lord God will be their light, and they shall reign for ever and ever (Revelation. 22:5).*

Excursus: Crusades, Pilgrimages, and Indulgences



Acre (Akko) Citadel, Israel
Built during the First Crusade by the
Knights Hospitaller, the halls of the
Citadel held thousands of weary
travelers and injured crusaders.
Whether seeking forgiveness or
recovery, the wounded (in every way)
received care from the Hospitallers
who were both knights and monks
called to a service of healing
(see Mark 1:4; 2:9).
Also, note the pointed arches.

At the conclusion of the Council of Clermont, on November 27, 1095, Pope Urban II (c. 1035-1099) gave an open air speech to a large audience. In his speech, Pope Urban offered a plenary indulgence to anyone who would go on crusade to retrieve the Holy Land from Muslim control. A plenary indulgence meant full remission of punishment for sin.¹²

LEFT: After the siege of Acre in 1104 during the First Crusade, the Knights Hospitaller (also known as Order of the Knights of Saint John that was founded before the Crusades to protect pilgrims on their journeys) built the Acre fortress next to a natural harbor on the Mediterranean Levantine Sea. According to *Pelrinages et Pardouns d'Acre* (Harley MS 2253, f.68, British Library), a portion of which is a guidebook for pilgrims taking the journey from Acre to Jerusalem and other holy sites, the Hospitaller brethren's hospital was a place where pardon for sins was granted.¹³

RIGHT: Robert I "The Magnificent" (1000-1035), the great great grandson of the Viking Rollo (who had received land in Normandy from Charles the Simple in 911 in exchange for military service and conversion to Roman Catholicism) made a pilgrimage to Jerusalem, but on his return journey became sick and died in Nicaea, leaving his son, William "the Bastard," about eight years old, vulnerable to attack. People went on pilgrimage for many reasons, but a pilgrimage also was a way to achieve a partial or full indulgence. Robert was lucky to be able to get as far as Jerusalem. It was a long and dangerous journey, full of treachery and disease. After the start of the Crusades, pilgrims were more likely to travel to a cathedral that possessed a relic of great theological import and reputation for the power to heal.



Robert I (1000-1035) "The Magnificent,"
Duke of Normandy and father of William
"the Bastard" (but after 1066 William
"the Conqueror") by Herleva of Falaise
(c. 1003-c. 1050), Falaise, France



Noah

THE REDEMPTION WINDOWS

Redemption is deliverance, a release from difficult circumstances or obligations. In the Hebrew Bible, redemption is revealed by what God has done for Israel, pictured here in the stained glass as mediated typologically through individuals. In the story of the flood, Noah preserved life and regenerated humankind. Jonah preached to the Ninevites who, consequently, repented. Taken by God, Elijah entered heaven alive, a story of particular significance for Gothic architects who visualized building a heaven on earth.



Jonah



Elijah



Resurrection

RIGHT The cross is green, a reference to the Garden of Eden (see **GREEN CROSS** below). The righteousness of Christ restores the hope that was lost with the unrighteousness of Adam.

REDEMPTION.¹⁴

Christ secured forgiveness of sins for the believer (Romans 3:22-24;

Ephesians 1:6-9, Colossians 1:13-14; Titus 2:14; Hebrews 9:11-15).



Crucifixion



Pentacost

Typology: the story of Noah is placed adjacent to the story of the Resurrection (notice the angel wing next to Noah and the dove).

For the faithful, redemption was an incentive to acquire indulgences (release from punishment for sin or reduced time in Purgatory). Plenary and partial indulgences were granted for crusades and pilgrimages.

Over time, indulgences became a problem. The misuse of indulgences was part of the 95 Theses that Martin Luther nailed to the door of Castle Church in 1520. When Luther refused to renounce his ideas at the Diet of Worms (an imperial assembly) in 1521, Holy Roman Emperor Charles V was not pleased and condemned Luther as a heretic in the Edict of Worms.¹⁵



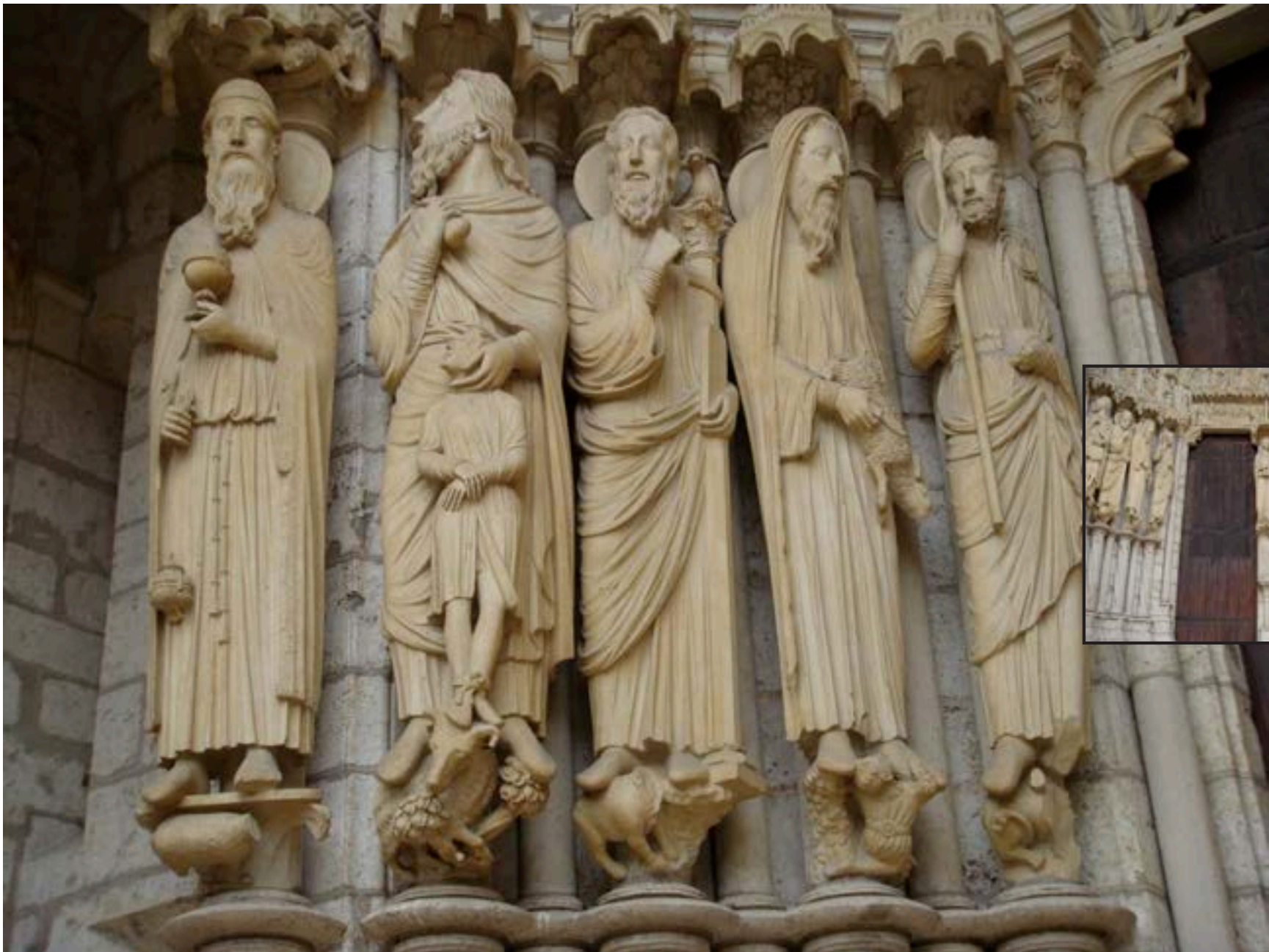
Ascension

Cathédrale Notre-Dame de Chartres



ABOVE: The Royal Portal (detail), West Facade, Chartres
Carved stone figures instruct and preach. Christ, wrapped in a mandorla, is surrounded by the symbols of the four Evangelists, just as noted above in the Notre-Dame de Paris' South Rose Window. The mandorla, an almond-shaped aureola or radiance, is a sacred geometrical enclosure depicting Christ or the Virgin Mary as holy, like a halo for the whole person.¹⁶

LEFT: Three Portals (doors), West Facade
The number three represents the Trinity. The north and south entrances each also have three doors, three threes making a total of nine, all the more perfectly Trinitarian. The visualized claim of Trinity marks Chartres' architecture as Trinitarian Roman Catholic, and specifically not anti-Trinity Arian Catholic. Elongated bodies of kings, queens, and saints decorate the jambs. With their contrapposto stances and benevolent expressions, these figures are more naturalistic and dynamic than their Romanesque counterparts characterized by upright poses and neutral gazes.



**EVERY
FIGURE
HAS A
STORY**



Elongated figures, left jamb of the Central Bay, North Porch, Chartres, 13th century

Left to right: Melchizedek, priest-king, holds a chalice containing bread and wine; Abraham protects his son Isaac with the ram caught in a thicket at Isaac's feet; Isaac's ankles are bound and his right hand restrains his left hand, a gesture of powerlessness; Moses, both law-giver and healer points to a serpent (John 3:14); Aaron or Samuel holds a knife and sacrificial lamb; and King David, with a spear and crown of thorns, foretells Christ's passion (Psalm 22).^{17, 18}

COMPARE the Norman arch of Harold's Bosham Church, the barrel vault with transverse ribs at Lanfranc's Abbaye du Bec, and the ribbed vault at Chartres.



Original Norman arch of Bosham Church, France, in the Bayeux Tapestry where Harold stopped to pray

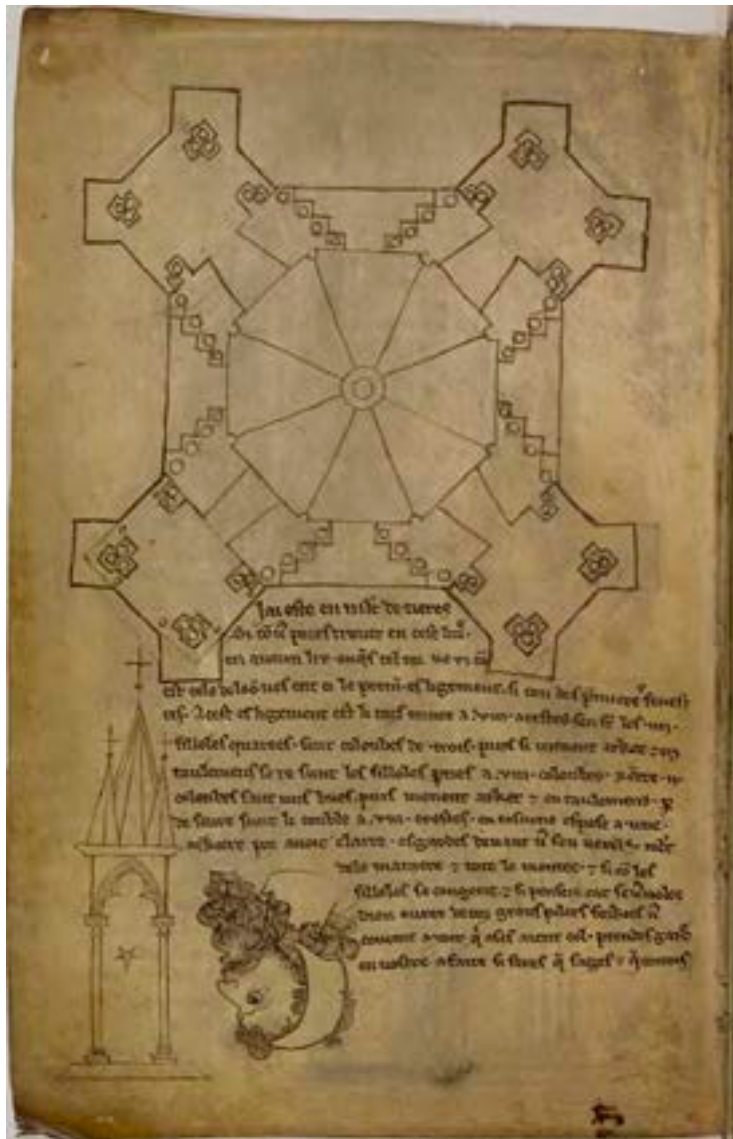


**Abbaye du Bec, barrel vault with transverse ribs
Lanfranc, archbishop of Canterbury, was founder and abbot of the abbey.**



Chartres, ribbed vault, tripartite elevation, filtered luminosity

ARCHITECTS AT CHARTRES TOOK IDEAS FROM OTHER CATHEDRALS, ESPECIALLY
LA CATHÉDRALE NOTRE-DAME DE LAON, THEN MODIFIED THOSE IDEAS FOR CHARTRES



Plan of the tower of Laon, *Carnet de Villard de Honnecourt*, architect of the XIIIth century, f9v, from an annotated facimile by J. B. A. Lassus, 1858; on line public domain July 16, 2013 by the Bibliothèque nationale de France (BnF) département Littérature et art, V-17873^d

Laon's walls are quadripartite.
Chartres' walls are tripartite.
At Chartres, the gallery was eliminated and monocylindrical columns were replaced by complex multiple pillars to strengthen the walls for additional stained glass. Laon completed five towers above the roof line. According to Emile Mâle, Chartres completed two above the roof line, but "should have had eight... perhaps nine."¹⁹



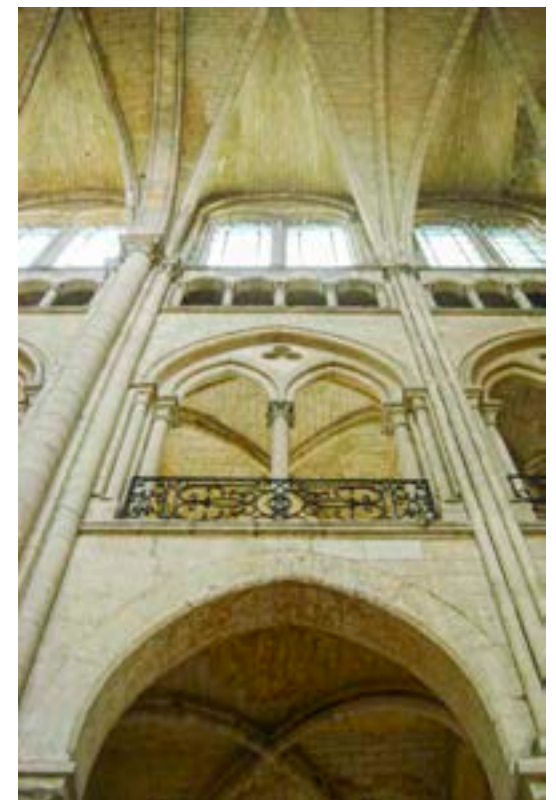
Ribbed vault, Cathédrale Notre-Dame de Laon

LAON, CAPITAL OF WEST FRANCIA, 895-988

895-920	Charles le Simple
936	Louis IV d'Outremer
954-986	Lothaire
986-987	Louis V
987-988	Charles de France, Duc de Lorraine ²⁰

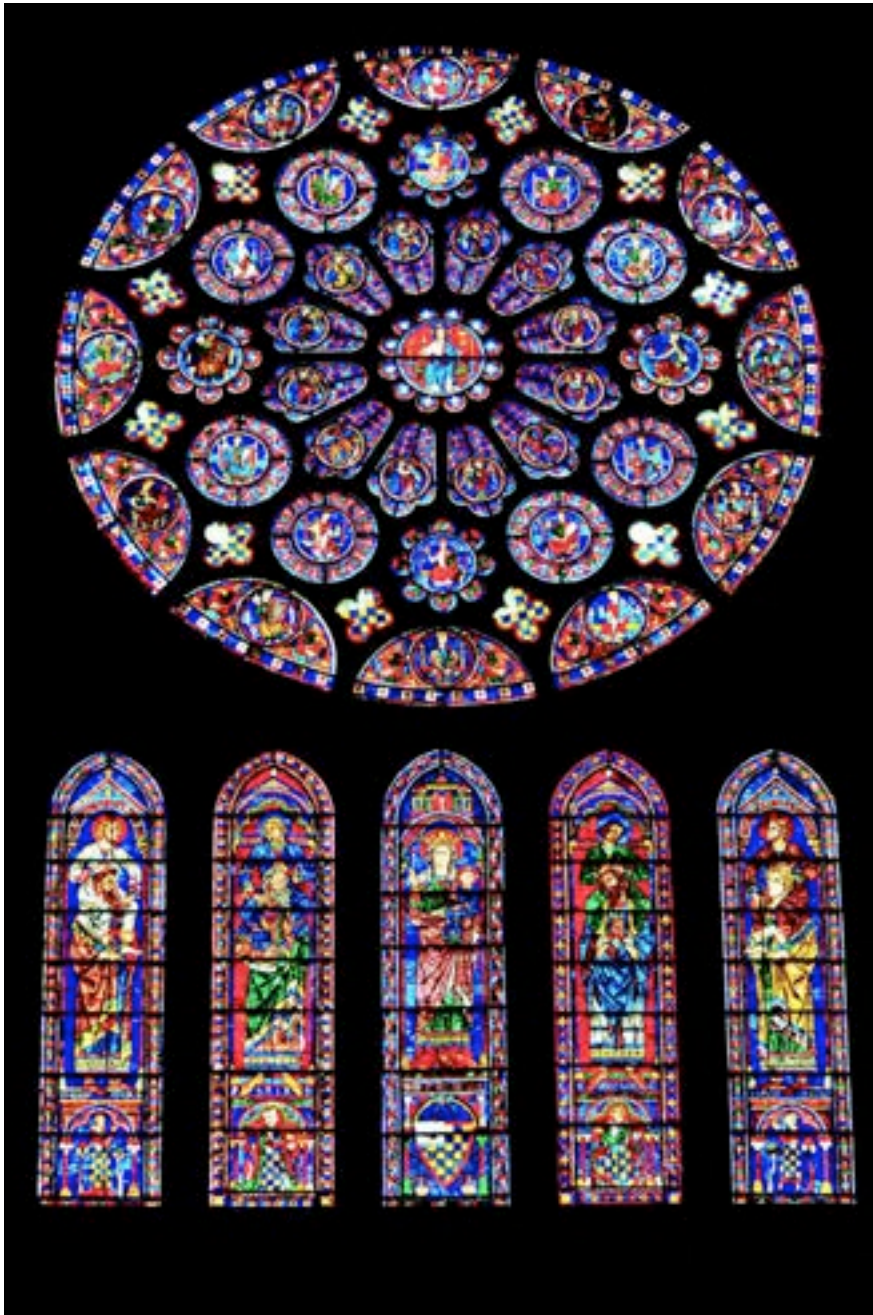


Two towers with lancet openings and a few of the sixteen sculpted oxen
West Facade, Laon

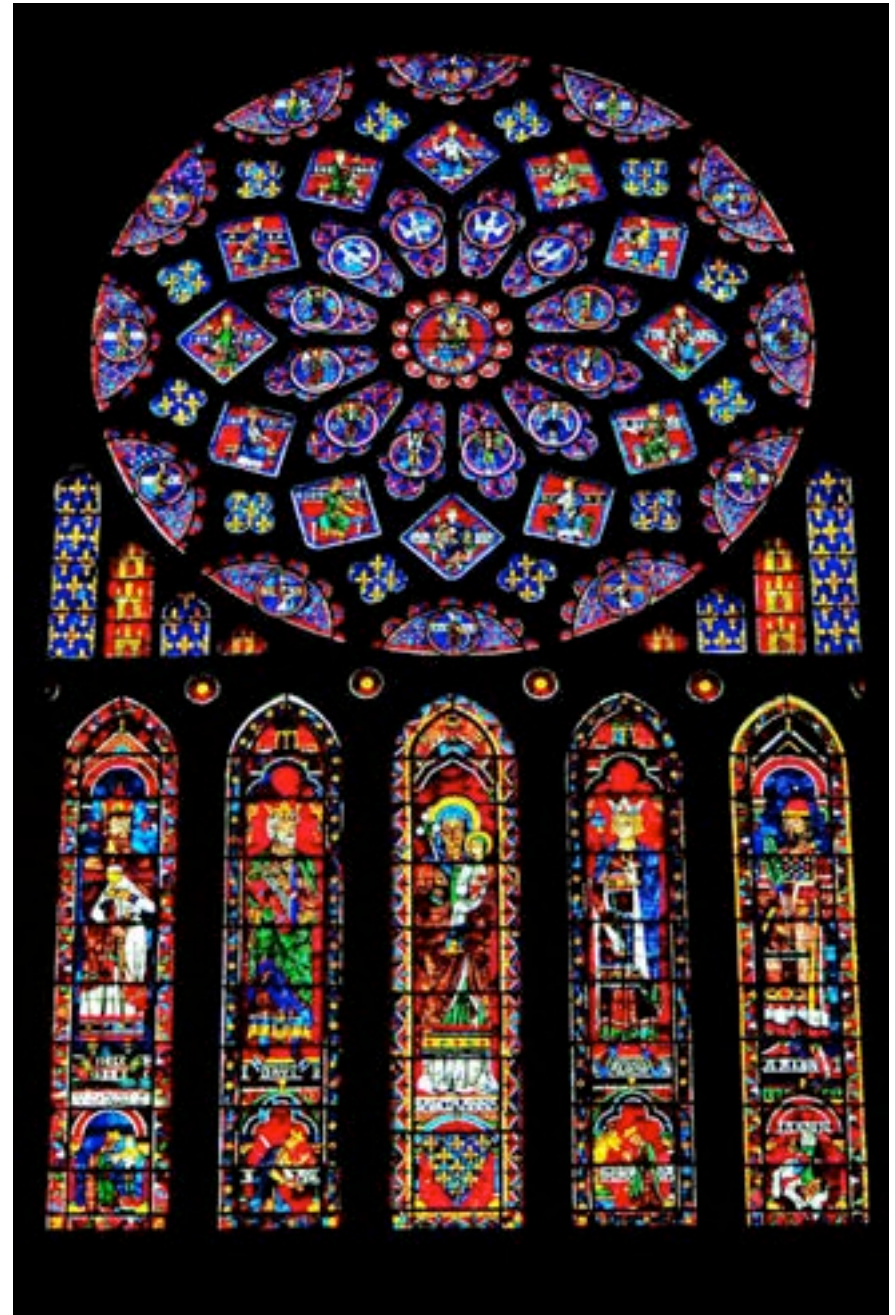


Quadripartite elevation, Laon

THE CIRCULAR SHAPE OF THE ROSE WINDOW SYMBOLIZES ETERNITY, WITH NO BEGINNING OR END, AND, THEREFORE, TIMELESSNESS, WHOLENESS, THE ONENESS OF GOD AND THE UNITY OF THE TRINITY.²¹



Rose Window and Lancets, South Transept, Chartres



Rose Window and Lancets, North Transept, Chartres

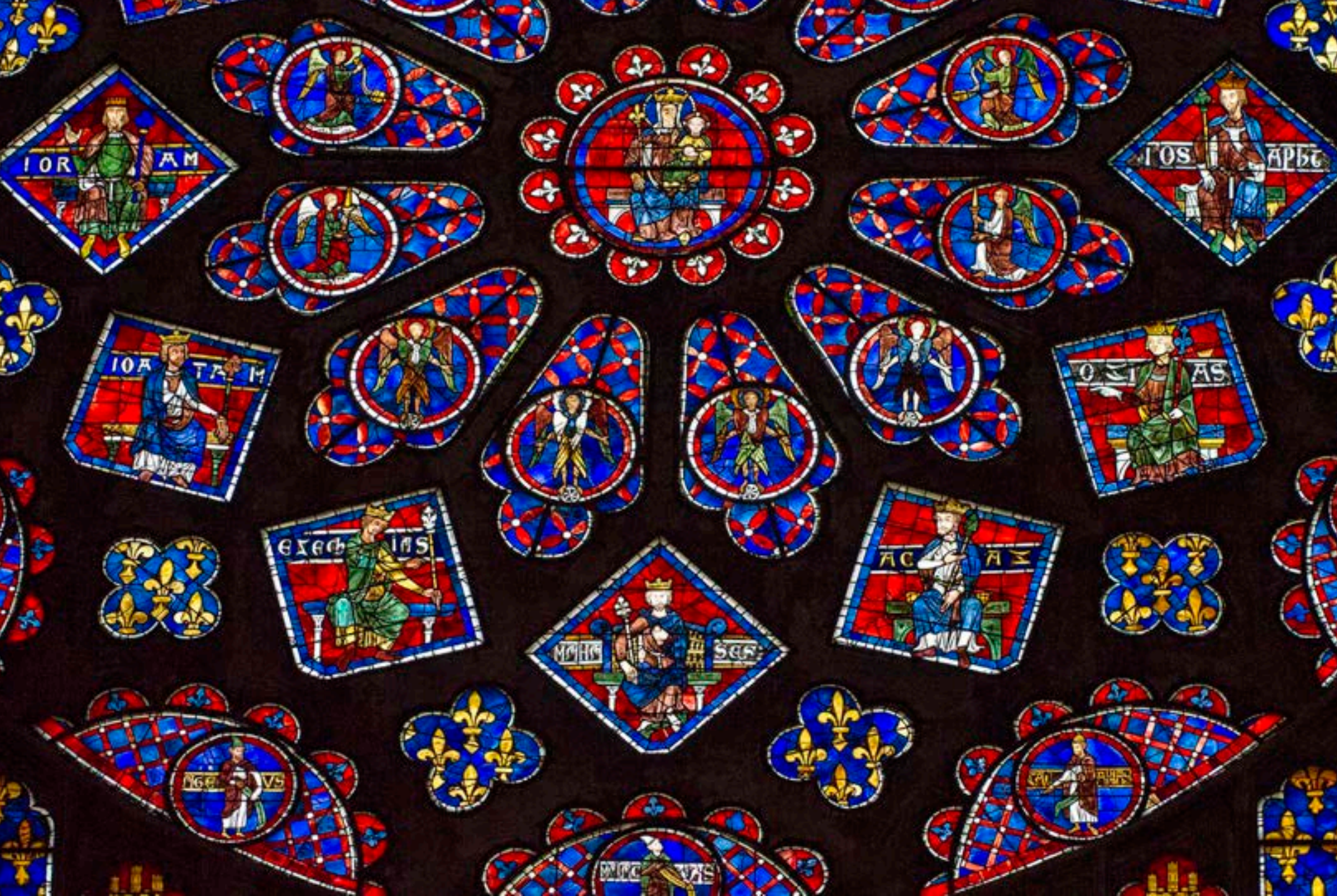


West Rose Window, La Cathédrale de Notre-Dame, Chartres

In the center, a risen Christ shows his sacrificial bleeding hands. Inner ring: Eight angels and emblems of the four evangelists encircle him. Outer ring: Scenes from the last judgement; for example, in the bottom medallion, the archangel Michael and a demon weigh the deeds of a soul, as portrayed in the Last Judgement, West Portal of La Cathédrale de Notre-Dame in Paris.



South Rose Window, detail, Chartres
Surrounded by angels and the emblems of the four evangelists, Christ is seated in Glory,
with “talking hands” and holding the Eucharistic Cup of Salvation.



North Rose Window, detail, 13th century, Chartres

Wearing a crown, Mary is portrayed as Queen of Heaven. In her lap she holds the Holy Child. Together they are surrounded in the inner ring by eight angels and four doves; in the middle ring by twelve minor kings of Judah; and in the outer ring by the minor prophets.

Excursus: Fulbert and the Cult of Mary

Bishop Fulbert of Chartres (960-1028) lived during the Millennium when fear of the end of the world with the approaching apocalypse gripped the Christian world view.

In 1020, when fire destroyed Chartres Cathedral, Fulbert raised money to rebuild and took the opportunity to design a building that glorified Mary. Fulbert was an advocate for the Feast of Mary's Nativity with its fidelity to Mary's innocence. He encouraged the illustrative Tree of Jesse that pictured Mary's genealogy. Mary's nativity is recorded in the second century apocryphal infancy gospel, the *Gospel of James* (5:2).

Fire again burned Chartres in 1194, and once again the Cathedral was rebuilt, this time retaining the profound influence of Fulbert's devotion to Mary. Although Fulbert was never canonized, he was acknowledged and celebrated at Chartres and Poitiers.²²

RIGHT: The dove, an emblem of the holy spirit (Jesus' baptism Matt. 3:16, Mark 1:10; Luke 3:22; John 1:32) descends over both Mary and the Holy Child. If Mary were to stand, she would be extremely tall, a characteristic of medieval art indicating importance. Because of her stature, together Mary and Jesus form an implied iconic almond-shaped oval, the mandorla, signifying holiness and Divine Glory. Whether mandorla, aureole, nimbus, or halo, each indicates the phenomenon of light. Angels bear candles as if to anticipate "I AM the light of the world" (John 8:12). This is one of the subtleties of ecclesiastical stained glass: light illuminates Christ's implied "I AM the light." Moses is by the light of the burning bush when God reveals his name, I AM THAT I AM (אֶהְיֶה אֲשֶׁר אֶהְיֶה Exodus 3:13-14). So many layers to consider. It's not like there is the perfect answer. The point is to go on a theological journey. The artist's medium literally illuminates the theological message.

The nimbus or halo is a single circle around the head. Only the halo of Christ bears a cross. The mandorla or aureole is a mathematical shape formed by the intersection of two congruent circles that makes a type of lens, *vesica piscis*, or mandorla in Italian. In Orthodox iconography, the mandorla is found in icons of Pascha, the Ascension, All Saints, Transfiguration, and Dormition. In today's iconography, the mandorla could be considered an emoji for a double halo (two intersecting circles) encompassing the entire body in majesty.

As Queen of Heaven, Mary sits on a throne and wears a crown. Her garments are shades of blue which denotes both her royal status and her purity.

Mary and Jesus are surrounded with red, the blood of birth and death. Jesus wears red and green, red for the Passion, green for a return to the garden of Eden and replacing Adam's sin with Jesus' sacrifice, mercy, and complete devotion of God's Word - a new heaven and a new earth (Rom. 5:12-21; 1Cor. 15:20-3, 45-9; 49; Rev.21:1).



Notre Dame de La Belle Verrière, detail
12th century, Chartres

Excursus: A Brief History of Glass²

DISCOVERY OF GLASS

According to historian Pliny the Elder (23/24-79 CE), who, coincidentally, served as *praefectus classis* in the Roman navy under Emperor Vespasian (9-79 CE), glass was discovered by Phoenician sailors when they landed their vessels on a sandy shore near the Bellus river (in today's Israel) and used chunks of cargo, Egyptian natron, to balance their cooking pots. The natron and sand melted together, creating a translucent vitreous liquid that cooled and hardened into glass (*Naturalis historiae*, XXXVI.190-199).

Faience and glass beads were among the treasure in the Uluburun shipwreck discovered by a sponge diver off the Mediterranean coast of Turkey in 1982. Dating from the 14th century BCE, the Late Bronze Age ship, built with edge joining cedar planks, contained in its vast cargo cobalt blue glass ingots and other treasure similar to the royal gift lists recorded in the Amarna letters written during the reign of my childhood hero, the Eighteenth Dynasty Egyptian pharaoh Akhenaton. The ship, however, sank during, or perhaps soon after, the time of Akhenaton's Queen, Nefertiti, as among the luxury items was a gold scarab inscribed with her name.

Glass-making is an ancient craft, most likely dating back 3,600 years to Mesopotamia, although some scholars point to Egypt. A recipe for glass was among the 30,000 cuneiform clay tablets and fragments discovered in the ruins of Nineveh, in the library of the Assyrian scholar/king Ashurbanipal (c. 668-631 BCE). Ashurbanipal was also famously known for his lion hunts, as illustrated in palace relief panels (now at the British Museum), a style of narrative visual art that continues in ecclesiastical architectural stained glass, such as in the great cathedrals of Europe. A medieval example is La Cathédrale Notre-Dame de Paris. A 20th century example is Washington National Cathedral in Washington, D.C.

Glass remained a luxury item until the first century when glass-blowing was invented, easing the way for manufacturing large quantities, thus reducing the price, and



Ashurbanipal's Library, a few of the 30,000 clay cuneiform tablets from his systematically collected and catalogued manuscripts in Nineveh British Museum, London
As an Assyrian scholar/king, Ashurbanipal (c. 668-631 BCE) could read and write several languages. Included in his "books" is a recipe for making glass.



11th century figurative stained glass, possibly the face of Christ
La Musée de l'Œuvre de Notre Dame
Strasbourg, France

making glass vessels commonly available. At Pompeii, shards of glass windows remain encased in window frames. As the Roman Empire moved north, windows became a necessity to keep out the cold. It was not uncommon for windows to be made of alabaster, for example in the Basilica Papale di San Paolo fuori le Mura in Rome and the Château de Falaise of William the Conqueror in Normandy.

FROM ROMAN GLASS TO MEDIEVAL STAINED GLASS

Gradually, translucent glass replaced opaque alabaster. Colored glass gave impetus to design. In 787 CE, the Second Ecumenical Council at Nicaea, by distinguishing between veneration of images and what the images represented, upheld the use of images in worship. Figurative stained glass became a growing part of ecclesiastical architecture.

Far from the sea, in the European interior, artists shifted from beach sand to potash, forest ash, to make their glass. For added effect, to create interesting glass that reflected dazzling splintered light, artists introduced a potato (or something similar) into the molten glass, which instantly exploded, creating bubbles, ripples, and striations.

ECCLESIASTICAL STAINED GLASS AS NARRATIVE ART

Just as Ashurbanipal's panels, Greek and Roman sculptures, and Byzantine mosaics told stories, stories told in Romanesque and Gothic stained glass became a powerful educator during Medieval times when few people could read. Some of the earliest examples of figurative/narrative stained glass in Christian ecclesiastical architecture are the thousand year old stained glass of Augsburg Cathedral, in Bavaria, Germany, and the 11th century figurative stained glass, possibly the face of Christ. It is notable that in this article there are many Romanesque stained glass windows that were preserved by Gothic architects for their technical achievements, theological insights, and exquisite beauty.

Excursus: Mosaics - the Stepping Stones to Stained Glass Windows



Charlemagne's Palatine Chapel, detail, Aachen, Germany
Stylized after the sixth-century Basilica of San Vitale, the octagonal dome reflects Byzantine techniques. Originally a fresco, then a Baroque stucco, the updated mosaic ceiling shows Christ in Majesty surrounded by the twenty-four elders of the Apocalypse holding crowns.



Angels on bended knee before Mary and the Holy Child
La Belle Verrière stained glass, detail, Chartres, 12th



A second look at the mosaic entrance to The Patriarchal Cathedral Basilica of Saint Mark, Venice
The mosaic's tesserae are made of gold and glass. Figures, landscapes and buildings are vitreous paste on fresh mortar. The tesserae of heavenly Jerusalem are gold leaf on a plate of soft vitreous paste covered with blown glass and rebaked.

Over the centuries, as the East/West split continued to grow, distinct preferences in art and architecture emerged.

In the Orthodox eastern church, mosaics and icons remain the traditional way to tell stories visually. Flickering candlelight can seem to bring icons to life, inviting the faithful into reverent prayer. Reverse perspective draws the worshipper into the icon's story as a witness. Backgrounds are often set in the gold peaceful brightness of heaven.

In the Catholic western church, mosaics, with tesserae sometimes made of glass, were the stepping stones to stained glass windows - windows that are also large architectural narrative panels made up of small pieces secured together in a pattern that tells a new story or interprets and comments on an already well known story. Sunlight through windows changes throughout the day and throughout the year, casting colors against casements, columns, floors, and pilgrims, bringing the entire building to life with the heartbeat of constant movement and slow, soft, graceful change, in a meditative ballet of light, shadow, and color.

Excursus: Large Narrative Panels From Nineveh, Athens, and Rome



Ashurbanipal's (c. 668-631 BCE) gypsum narrative panels, British Museum, London
Known for his lion hunts, as illustrated in intricately carved reliefs along the walls of his palace, Ashurbanipal demonstrates his courage and strength. Dramatic scenes of mastery over fear helped to keep his powerful throne secure.



"Three Goddesses," East Pediment, from the Parthenon in Athens, 5th century BCE
British Museum, London
Sculpture in-the-round honoring the goddess Athena celebrates the victory of the Greeks over the Persian Empire.

The style of huge panels of narrative visual art continued in ecclesiastical sculpture, mosaics, frescoes and architectural stained glass, to honor, to remember, to tell stories, to celebrate, to persuade.



Column of Marcus Aurelius, Rome
The column depicts Roman life and celebrates Marcus Aurelius' victories over the Barbarians north of the Danube, 161-180.



Arch of Constantine
Roman Forum, Rome, 315
The triumphal arch celebrates Constantine's victory over Maxentius at the Battle of Melvian Bridge, 312.



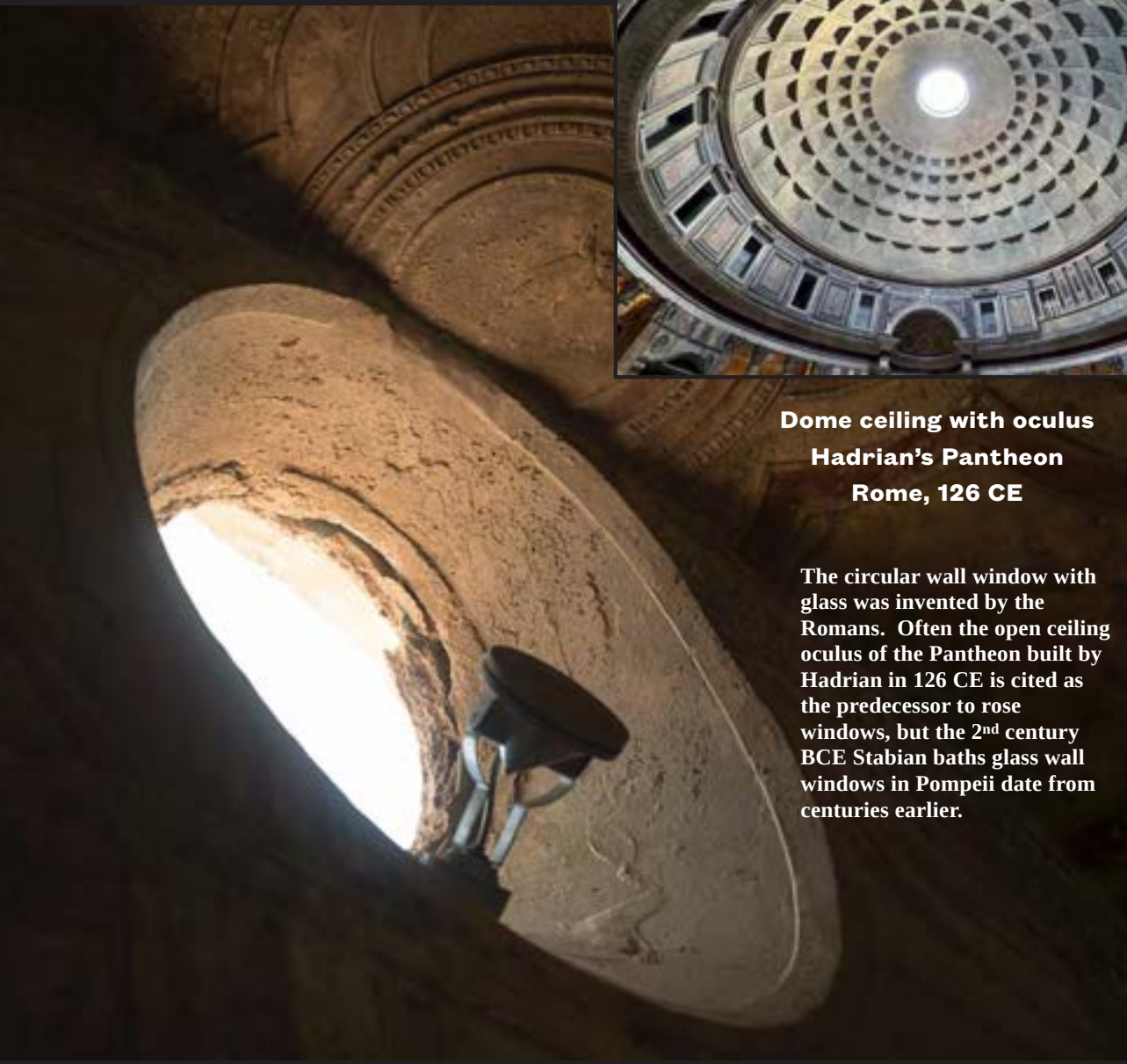
Arch of Titus, detail
Roman Forum, Rome, c. 81
Triumphal Procession panel celebrates the destruction of Herod's Temple in Jerusalem.

Excursus: Origin of The Rose Window



**Dome ceiling with oculus
Hadrian's Pantheon
Rome, 126 CE**

The circular wall window with glass was invented by the Romans. Often the open ceiling oculus of the Pantheon built by Hadrian in 126 CE is cited as the predecessor to rose windows, but the 2nd century BCE Stabian baths glass wall windows in Pompeii date from centuries earlier.



**Circular wall window (one of three) with shards of glass
Stabian baths, Pompeii, 2nd century BCE**



**Circular wall window with glass shards, detail
Stabian baths, Pompeii, 2nd century BCE**



**Pattern for stained glass inscribed on the crypt floor
Cathédrale Saint-Étienne de Bourges**

BLOWN GLASS

Before blown glass was invented by the Romans, artisans shaped glass by pouring the molten liquid into molds. Medieval techniques in glass-blowing developed thinner glass, and therefore thinner lead came.

POT METAL GLASS, FIVE MAIN COLORS

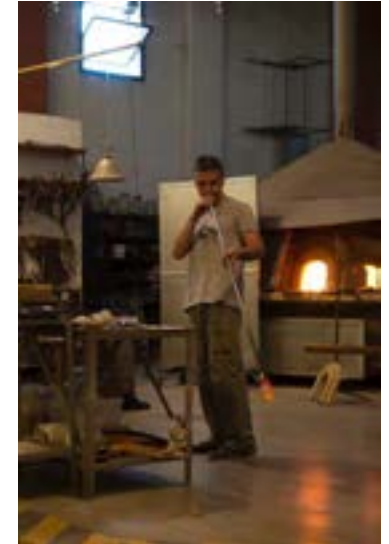
To create color, artisans added metals to molten glass: bright ruby **red** from gold chloride; sapphire **blue** from cobalt oxide or lapis lazuli; **green** from copper oxide; **yellow** from iron, sulphur, or soot; **purple** from manganese oxide. Copper can produce red, blue, and green glass. Chartres' artisans used river sand which meant more uniform coloring; pale glass became white. Beechwood was also harvested, especially for its manganese.

FLASHED GLASS

Some colored glass could be too dark for enough light to shine through. To increase the translucency of darker colors, especially red, artisans overlaid clear glass with a layer of colored glass. The second layer of color permanently adhered to the clear glass by re-firing it in the kiln, a process called "flushed glass."



**Roman blown window glass
2nd-3rd Century CE
British Museum, London**



**Murano blown glass
Venice**



**Pattern for stained glass inscribed on the crypt floor
Cathédrale Saint-Étienne de Bourges**

Excursus: Talking Hands, A Vassal's Posture, The Green Cross

TALKING HANDS

Jesus' hands express a double blessing. With "talking hands" his right hand blesses the viewer with the spoken Word written on the page he is holding with his left hand. "*Omnis vallis implebitur*," "Every valley shall be filled," a phrase from Isaiah 40:3-5 quoted by John the Baptist (Luke 3:4-6). The viewer is meant to "hear" the entire quotation. Using the window as visualized text for a sermon, a preacher may fill in the rest of the quotation in a homily. Christ's fingers also take the shape of the cross, reminding the viewer of the blessing of his sacrifice.

"A voice cries: 'In the wilderness prepare the way of the LORD, make straight in the desert a highway for our God. Every valley shall be lifted up, and every mountain and hill be made low; the uneven ground shall become level, and the rough places a plain. And the glory of the LORD shall be revealed, and all flesh shall see it together, for the mouth of the LORD has spoken'" (Isaiah 40:3-5).

"As it is written in the book of the words of Isaiah the prophet, 'The voice of one crying in the wilderness: Prepare the way of the Lord, make his paths straight. Every valley shall be filled, and every mountain and hill shall be brought low, and the crooked shall be made straight, and the rough ways shall be made smooth; and all flesh shall see the salvation of God'" (Luke 3:4-6).

Luke 3:5 with "tilde," a horizontal mark over a shortened word indicating that the reader needs to supply the missing letters, is a pesher (a literary re-interpretation) on Isaiah 40:3. With slight rephrasing, Luke claims that the Holy Child is the revealed Glory of the Lord as prophesied by Isaiah. In the literary form of pesher, the truth of the rephrasing

supersedes the truth of the original text. Artistically, Glory is expressed through the medium of color and light. In the Belle Verrière window, pesher expressed in glass is the perfect union of theology, metaphor, and medium, where artistic design mirrors the meaning of the image.

In this way, without appearing visibly in the window, both Isaiah and John the Baptist are associated with the story of the window, its reverent mood; and Christ is associated with the fulfillment of their prophecies.

In silence, the window speaks. Implied is the idea that the mouth of the Lord is speaking directly to you, the viewer, now, at this very moment in time, with words of peace and blessing.

Late Gothic/Pre-Renaissance architect and artist Giotto di Bondone (or simply Giotto, c.1267-1337), used "talking hands" in his paintings to express the action of announcing (*The Annunciation*, Padua, Arena Chapel), or as a gesture of miracle (*The Wedding at Cana*, Padua, Arena Chapel, and *The Raising of Lazarus*, Padua, Arena Chapel).²⁴



Notre Dame de La Belle Verrière, detail, Chartres, 12th century
In silence, the window speaks.

OTHER EXAMPLES OF TALKING HANDS



Chartres

Archangel Gabriel announces the coming of the Holy Child to Mary.



Genesis creation story - on the seventh day God, seated in the Glory of the mandorla, rested from his work and blessed that day.

Old English Hexateuch

MS Cotton Claudius B. IV, fol. 4r

c. second quarter 11th century

BritishLibrary

Fabricated at St Augustine's Abbey, Canterbury^e



Pericopes of Henry II

c. 1002 - 1012

Archangel Gabriel announces the coming of the Holy Child to Mary.^f



Consecration of Westminster Abbey

Bayeux Tapestry, 11th century^g

Talking hands make a connection with the observer. The gesture of two fingers indicates holy words. Pay attention, this is important!

LEFT: In the Bayeux Tapestry, the hand of God reaches down from the heavens as an artistic metaphor indicating God's presence and blessing on the day Westminster Abbey was consecrated.



Chartres

Jesus tells the story of the Parable of the Good Samaritan.

A VASSAL'S POSTURE



La Belle Verrière Window, detail, Chartres
Kneeling in the formalized posture of a vassal, angels demonstrate their allegiance and subservience to the Virgin and Holy Child.

In ancient literature comparison was a device used to describe someone or to explain how that person fit into the scheme of things. In the transfiguration, Jesus appears with Moses and Elijah (Matt. 17:3; Mark 9:4; Luke 9:30). He is a priest forever after the order of Melchizedek (Hebrews 7:17).

Kneeling angles, painted in the posture of a vassal's supplication, are portrayed as inferior in holiness to Mother and Holy Child. He is greater than John the Baptist (Matthew 3:11; Mark 1:7; Luke 3:16); and superior to the angels (Hebrews 1:4-6).

Inset:
Kneeling knight
Westminster
***Psalter*, Royal**
MS 2 A XXII,
c. 1200-1250
British Library^y



La Belle Verrière Window, detail, Chartres
On bended knee and with hands outstretched, angels assume the stance of a vassal taking an oath of loyalty to a feudal lord.

THE GREEN CROSS



The Green Cross, Typology Window of the Redemption, 13th century, Chartres

Typology is a style of story-telling that relates two independent stories, where the older story is reinterpreted to prefigure the newer story. In Christianity, typology reinterprets an Old Testament story to show how it anticipates an event in the New Testament. Pictured above on the left, Abraham, carrying a knife and fire for a burnt offering, ominously looks back at his son, Isaac, who is carrying wood for the fire. Isaac's firewood is shaped as a cross and is painted green. In Genesis, the color green describes plants living in the Garden of Eden (Genesis 1:30). On the right, Jesus is being taken down from the cross. The cross is also painted green, the painter's characterization - the color of the wooden cross is not mentioned in the New Testament. The two stories are easily related verbally in the lectionary and literature, but the painter not only has related them in glass physically by placing one story adjacent to the other, he has related them by painting the firewood in the shape of a cross and green, and Christ's wooden cross green, the color of new life and innocence, the color of the Garden of Eden. With paint the artist both envisions the sacrifice of Jesus on the cross prefigured in the story of Abraham and Isaac (Hebrews 11:17), he also portrays it in the Pauline theology of a new Adam (Romans 5:14; 1 Corinthians 15:47-49), and the Johannine theology of a new heaven and a new earth (Revelation 21:1, 10). The story of Isaac's sacrifice prefigures Christ's sacrifice where God is understood as Father and Jesus as Son. Isaac's green cross prefigures the renewal of hope given by the sacrifice of Christ on the cross. This tiny bit of glass in a massive building repeats the idea that the cathedral is a place where heaven touches earth and lingers. In literature this is called *peshet*: the truth of the interpretation supersedes the truth of the original story. "In Isaac shall thy seed be called" (Genesis 21:12; Romans 9:7; Hebrews 11:17-21).

Excursus: Thinking in Numbers

What was the quantitative value of the number one? In today's world, we think in feet or meters. The Roman foot was a little less than the twelve inch standard used today, but in the Western Roman Empire, Roman calculations were often lost with the plagues, along with so many other things, like how to make concrete. Decimated populations concentrated on survival, on having enough to eat, rather than acquiring a classical education.

In the Eastern Roman Empire, Byzantium, which did not fall until 1453 when the Ottomans conquered Constantinople, the Greek language dominated. Greek was the language of educated people and the market place. Greek was the language of the Church, its liturgy, its libraries, its history.

In the Western Roman Empire, from around 400 CE or so, Latin became the unifying language of the Church, and of the people. Slowly over generations, spoken Latin took on different pronunciations and vocabulary and became vernaculars, such as Old French or Old Italian. As people migrated across the Danube and other former Roman barriers and boundaries, mixed populations brought new words.

Masters of war like Charlemagne and William the Conqueror changed western language forever. Charlemagne and his court intellectuals, like Alcuin, standardized written Latin and introduced miniscules (small letters) and punctuation. A stabilized Latin for books, especially the Bible and liturgy, separated spoken colloquial language from written formalized Latin.

William the Conqueror brought French to England. English is a unique language with many roots and linguistic sources: Greek, Latin, Anglo Saxon, etc., so there are many words for the same things.

With the plagues and depopulation, teachers were lost, schools were closed, libraries unused and books un-copied. In the West, the general population lost contact with Greek libraries, or even any libraries. Except for some monasteries, literacy became a rarity, until Charlemagne, at a time when the population began to rebound and he, in spite of his own inability to read, made an effort to educate clergy, or anyone interested. The shift toward literacy took hold. A few succeeded in mastering classical Latin, like Anglo Saxon Alcuin and others in Charlemagne's court. Alcuin came from York where spoken language was vastly different from Latin, so he had to work extra hard to master it. Because he mastered classical Latin instead of colloquial Latin, he had easier access to classical literature, such as it was available.

Availability of books became the impetus for Charlemagne's library. The question is: what books were in Charlemagne's library? Did Charlemagne's library include Vitruvius? A recent archaeological study of Charlemagne's canal project that he abandoned in 793 has provided evidence that the "works of Vitruvius circulated in Charlemagne's court." Vitruvius' (80/70BCE-c.15CE) ten volume *De architectura* included studies on Pythagorean proportions, observing that the human figure could fit within both a circle and a square.

So it didn't matter which of many systems of measuring was used or what the value of the number one was. It could be almost anything. It could be the maximum weight of quarried stone blocks the oxen could carry up the hill to build the cathedral at Laon. Once the first block was laid, the rest of the building could be built in ratios.

The other thing about Pythagoras was that ratios represented ideas. The Golden Ratio, (aspect ratio of ϕ or 1:1.618 and endless), the Golden Section as it is sometimes called, carried with it the notion of geometry as the building block of the universe. Gothic architects shifted from including symbols in and on the building to making the building itself be a symbol. Gothic architecture represented the celestial framework for the story it housed. Building a cathedral in cosmic ratios was not only beautiful, it reflected the infinite grasp God has on creation, and visualized piercing the diaphanous barrier between heaven and earth.

In his introduction to *The Gothic Cathedral*, Otto von Simson writes about the dedication of Canterbury Cathedral's new choir in 1130, "The cathedral was the house of God, this term understood not as a pale commonplace but as a fearful reality... The sanctuary was the threshold to heaven."²⁶

LEFT: In a 13th century "bible moralisé," God the Creator, too large to be contained by the *trompe l'œil* frame and using a compass and the principles of geometry, is pictured as the architect of the universe.



"God as architect of the world"²⁵
prefatory miniature from a Bible
moralisée, folio I verso
Paris ca. 1220-1230
Ink, tempera, and gold leaf on
vellum, Österreichische
Nationalbibliothek, Vienna 2554.¹

*Thou hast ordered all things
in measure and number and weight
(Wisdom 11:20b).*

EVAGRIUS THE SOLITARY AND PETER'S 153 FISH

All this was very appealing to the Medieval mind that already understood numbers arithmetically as digits, geometrically as shapes, symbolically as ideas, metaphorically as analogies, and reminders of story, especially biblical story.

For example, in the fourth century, Evagrius the Solitary (c. 346-399) wrote an essay on prayer, notably 153 ways to pray. Why 153? Because 153 is the number of fish that Simon Peter and the disciples caught when Jesus appeared to them on the shore" (John 21:11). ("So Simon Peter went aboard and hauled the net ashore, full of large fish, a hundred and fifty-three of them; and although there were so many, the net was not torn.") To understand the cosmic and dynamic nature of the number 153 it is helpful to think of numbers less as arithmetic quantities and more as geometric, symbolic, and analogical world views.

In his introduction to "On Prayer: One Hundred and Fifty-Three Texts," Evagrius, a deacon who studied under the Cappadocian Fathers (who in 381 attended the Second Ecumenical Council that formulated the last portion of the Nicene Creed, who as a monastic in the Egyptian desert and possibly knew St. Macarius the Great) instructs and exhorts his readers about how to understand the number 153. His chapters on prayer are recorded in English in Volume One of the *Philokalia*. (The *Philokalia* influenced 19th century Russian spirituality and writers like Fyodor Dostoevsky.)

"Therefore, in dividing my saying[s] on prayer into one hundred and fifty-three I am catering for you a 'fish-dinner' from the gospels to delight you with a symbolic number in which you will find both a triangular and a hexagonal form. [These] signify both: reverent knowledge of the Trinity; and the boundaries of the orderly arrangement of the universe.

So, while the number one hundred by itself is 'square', fifty-three is a combination of 'triangular' and 'spherical'; because twenty-eight is triangular, and twenty-five is spherical (five times five equals twenty-five).



Evagrius Ponticus (the Solitary) Icon
Εὐάγριος ὁ Ποντικός
Saint Shenouda Monastery¹

153 is the sum of a square number (100), a triangular number (28), and a spherical number (25).

Square numbers are virtues; triangular numbers, the Holy Spirit; spherical numbers, time.

So you not only have a square number, on account of the tetrad of the virtues; but also the wise knowledge of this age that resembles the number twenty-five because of the spherical nature of time.

For week after week, month after month, year after year, [time] rolls on from season to season, as we see in the movements of sun and moon, spring and summer, and the rest.

The triang[ular number] you may take as signifying the knowledge of the Holy Trinity. Or else, if you obtain a hundred and fifty-three by adding up many numbers, since it is a triangular number, consider it to mean: praktiké [asceticism], physiké [natural science], and theologiké [theology]; or faith, hope, and love; (1 Cor 13.13); or gold, silver, and precious stones (1 Cor 3.12)."²⁷

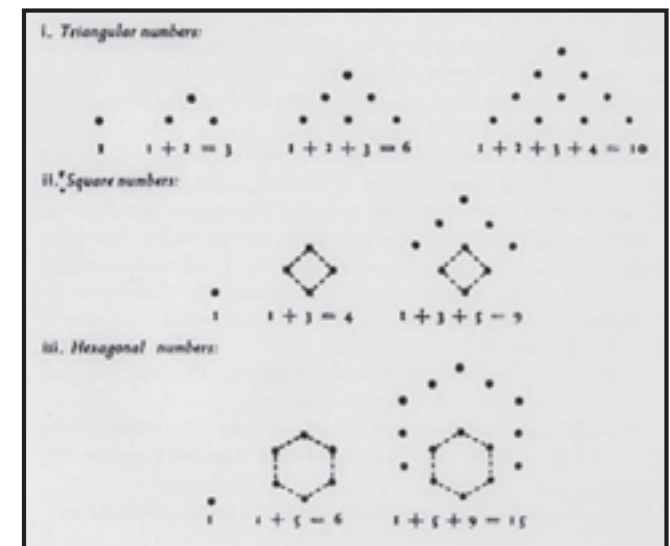


Diagram demonstrating how digits can be understood as geometric shapes, from the Prologue in "On Prayer: One Hundred and fifty-three Texts," *Philokalia*, vol. 1, p. 56^k, 28

LATIN TRANSLATIONS

Little by little, the geometry of Vitruvius, Euclid, and Pythagoras made its way into the Medieval imagination.

Boethius (480-524), a Roman senator, advisor to Theodoric the Great, and precursor of the Scholastic movement, translated Greek classics into Latin, including Euclid, Ptolemy, and Aristotle. In *De institutione musica* he wrote about “music of the spheres,” the motion of celestial bodies as an inaudible form of music. In *Arithmetica Geometrica Musica* he combined aspects of the quadrivium: arithmetic, geometry, music, and astronomy.

Following the reconquest of Sicily and Central Spain in the 11th century, Greek and Arabic libraries newly under Christian rule became more easily available to European scholars. A few curious twelfth century scholars travelled to Spain and Sicily, learned Arabic and Greek, in order to read Euclid and Pythagoras.

Adelard of Bath (1080-1142/1152), lectured at Laon and made the first translation of Euclid’s *Elements* from Arabic to Latin.

The first Latin translation of Ptolemy’s *Almagest* was by Henricus Aristippus (1105/10-1162) who was given a Greek copy when he was an envoy in Constantinople (1158-1160).

Gerard of Cremona (c. 1114-1187) translated Greek and Arabic texts into Latin, among them Ptolemy’s *Almagest* (c. 1175), Euclid’s *Elements of Geometry*, Archimedes’ *On the Measurement of the Circle*, and *On Algebra and Almucabala* which al-Khwarizmi had published in Bagdad (c. 820). He also translated astronomical works by Aristotle and Jabir ibn Aflah.



Frontispiece, Euclid’s Elements, British Library

accession number BL Burney 275, f. 293r

Translation attributed to Adelard of Bath

art attributed to the Meliacin Master

A woman holds a compass as a personification of

geometry, with the allegorical representation

of geometry based on Martianus Capella’s book,

***De Nuptiis Philologiae et Mercurii*.**

Martianus Capella was a 5th century founding precursor

of the Seven Liberal Arts:¹

analogically three and four - three (a triangle)

dialectic, rhetoric, and grammar,

and four (a square)

arithmetic, geometry, music, and astronomy.

The problem here is less the transmission of manuscripts as it is a problem of how available those translations were to Medieval architects, and what influence classical geometry may have had on their understanding of ratios, methodologies, and procedures.

The dates of translations line up with the development of Gothic architecture. Otto von Simson is clear that the Pythagorean Golden Ratio, “the most perfect of all proportions,” was known and applied by Chartres’ architect “as a matrix from which he could develop the pentagon... The medieval Platonists ascribed a technical function to perfect proportion, conceiving it as the ratio that bestows cohesion upon the aggregate of units.”^{29, 30}

The architects of the Gothic style merged newly re-discovered ratio theories with the design of the entire building while presenting story visually in narrative sculpture and stained glass windows. The infrastructure of didactic ecclesiastical architecture was based on the building blocks of ratios that were used to support both the building structurally and to express its theological reason for existing, the story it was built to tell. Understood in irrational numbers, ratios are infinite, cosmic, and beautiful.

Adelard of Bath teaching
***Regulae abaci*, c. 1400^m**

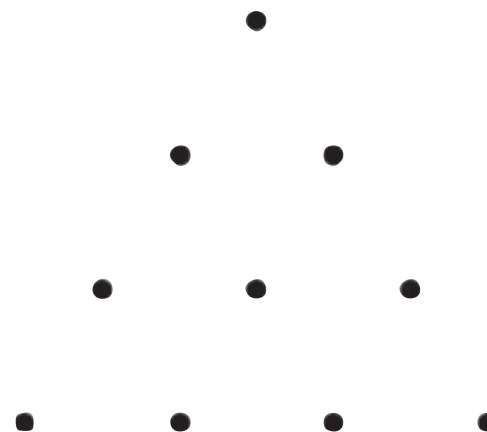




Leonardo da Pisa, Liber abbaci, Ms. Biblioteca Nazionale di Firenze, Codice magliabechiano cs cl, 2626, fol. 124r Source: Heinz Lüneburg, Leonardi Pisani Liber Abbaci oder Lesevergnügen eines Mathematikers, 2. überarb. und erw. Ausg., Mannheim et al.⁹

Enter Leonardo Fibonacci (c. 1170 - c. 1240/50). In the twelfth/thirteenth centuries Fibonacci, working in the Arabic number symbols we use today rather than Roman numerals, thought of a new way to understand how numbers are related to each other, eponymously named the Fibonacci Sequence, in which each number is the sum of the two preceding numbers: 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377 and so forth. The further out you go, the closer the Fibonacci Sequence approximates the Pythagorean Golden Ratio.³¹

There was a larger conversation going on, as well. Gerard of Cremona was a teacher in Laon. Thomas Becket was at Sens. In 990, Fulbert of Chartres had opened a school that drew scholars from all over Europe and England. At the schools of Chartres and Notre-Dame in Paris, music was influenced by Pythagorean ratios, music as mathematical proportions, 3:2 the perfect fifth and 2:1 the octave, music of the spheres. The 12th century music Renaissance introduced polyphony and staff notation. With multiple simultaneous melodic lines came an interest in pleasing the ear.



Pythagorean Tetractys (τετρακτύς) symbolizing *musica universalis* and the cosmos^o

AWE AND THE ROSE WINDOW

(Author's impression about what it must have been like to discover Euclid and Pythagoras.)

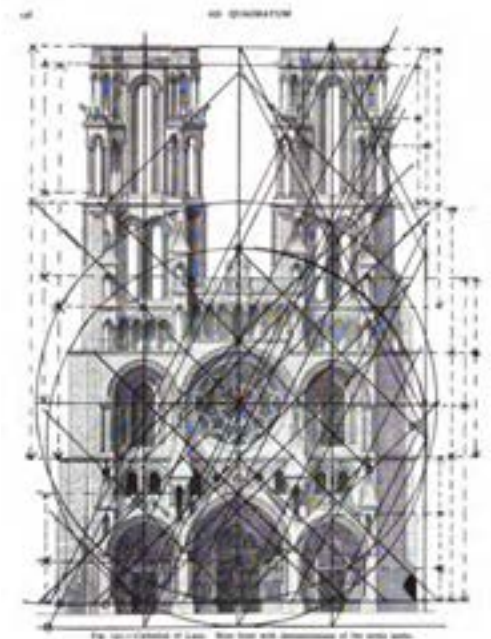
Pi, π , 3.1416, the ratio between a circle and its diameter

Phi, ϕ , 1.1618, The Golden Ratio

"Such knowledge is too wonderful for me"

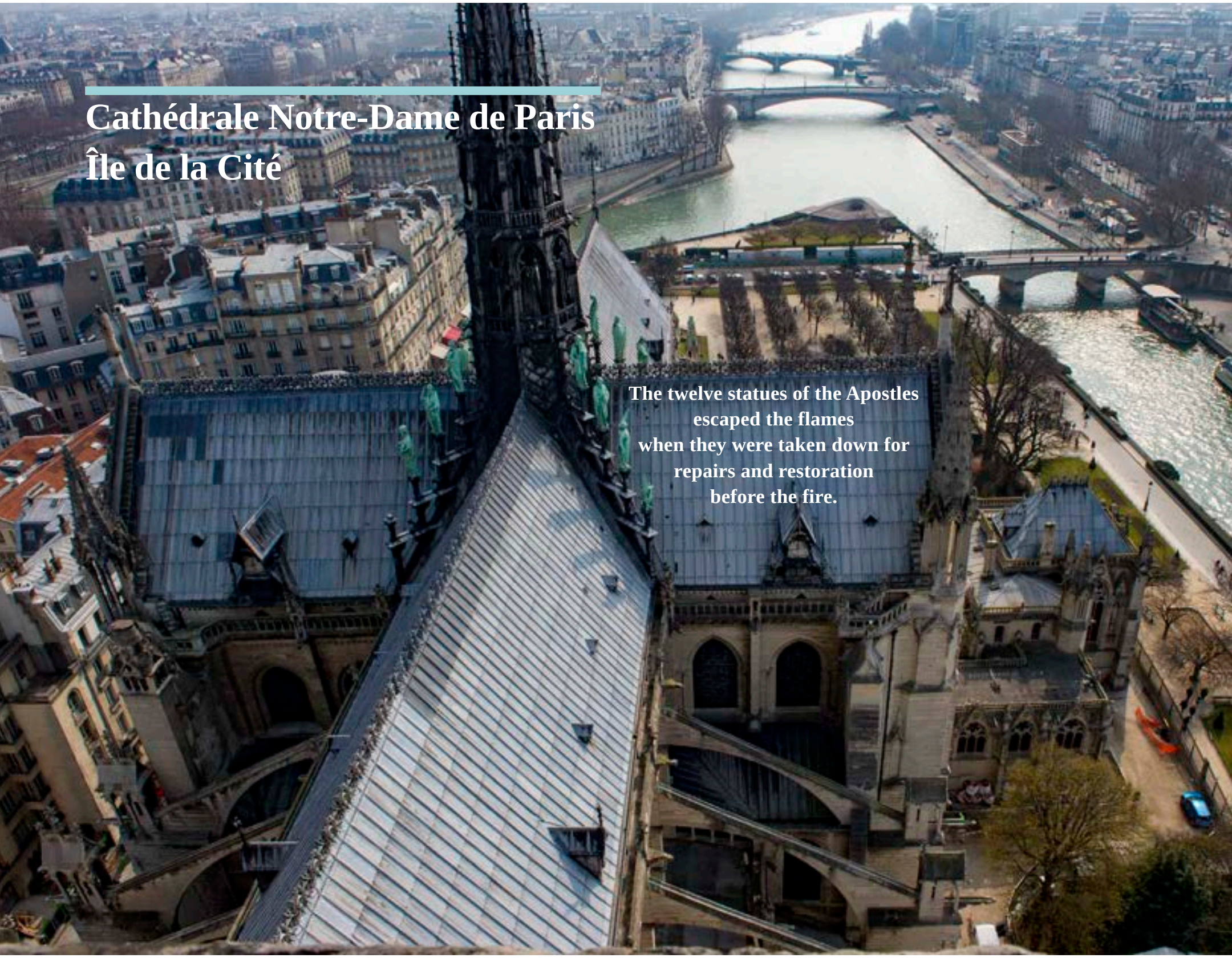
(Psalm 139:6a).

In his book published in 1919, *Ad Quadratum*, Frederik Lund, in an effort to prove that Laon Cathedral architects used Pythagorean Golden Ratio as the master plan, superimposed the Golden Ratio over the elevation of Laon.



Golden Ratio superimposed over the elevation of Laon Cathedral in *Ad Quadratum*, 1919, Frederik Lund^o

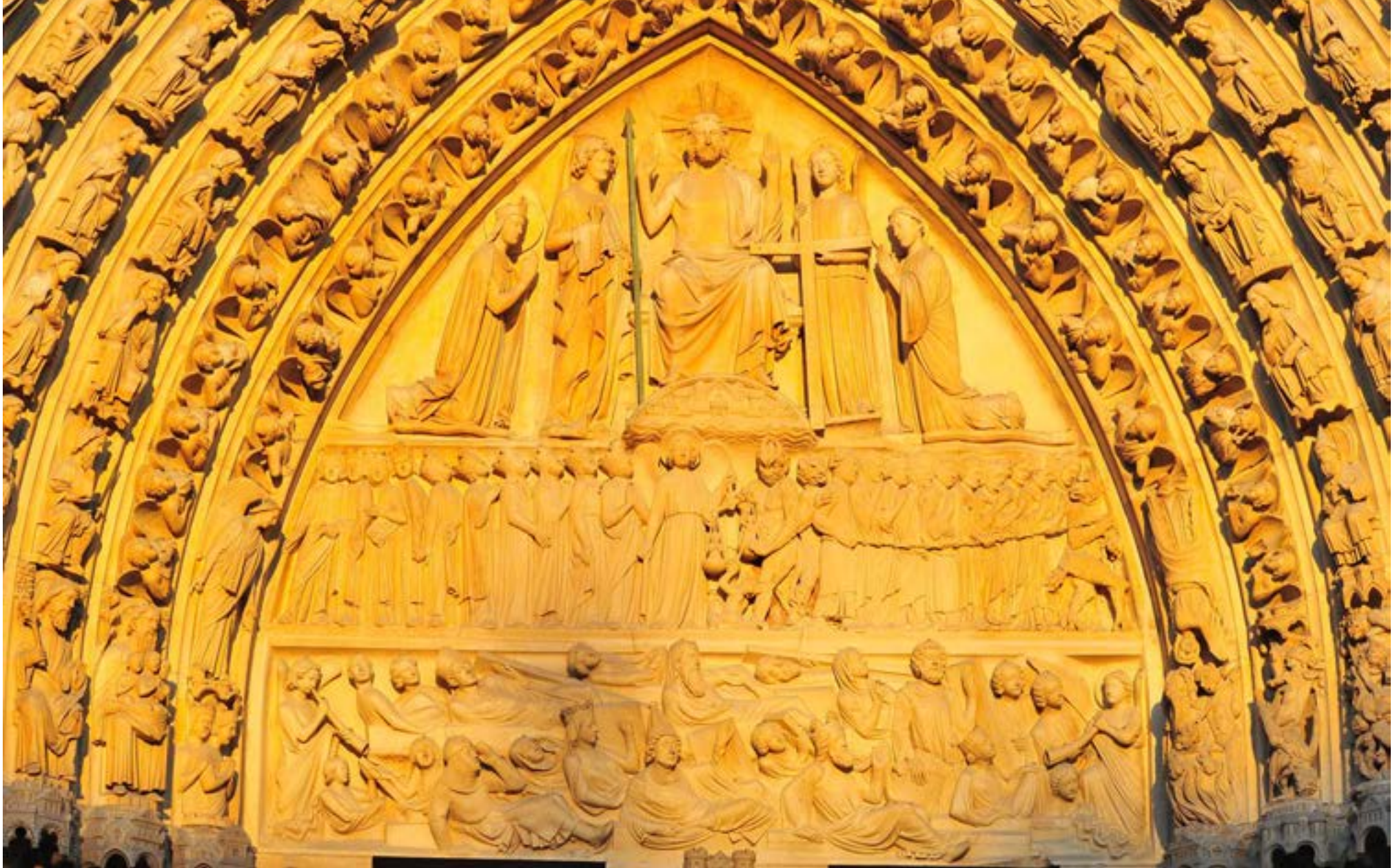
Symmetry and proportion mirror God's creation: (Genesis 1:1-2:3); Solomon's Temple (1 Kings 5-9; 2 Chronicles 2-7); Ezekiel's vision (Ezekiel 40-48); Revelation's vision of measuring the temple and the coming of a "new heaven and new earth" (Revelation 11:1; 21:1).

An aerial photograph looking down at the roof of the Cathedral of Notre-Dame de Paris. The roof is covered in grey tiles and features a row of twelve green-patina statues of the Apostles along the ridge. The surrounding Parisian cityscape, including the Seine river and various bridges, is visible in the background.

Cathédrale Notre-Dame de Paris

Île de la Cité

The twelve statues of the Apostles escaped the flames when they were taken down for repairs and restoration before the fire.



Spectacular late afternoon sunlight illuminates Notre-Dame's Last Judgement Portal, West Facade

In the upper register: Christ, showing his wounded hands, is seated in glory.

In the middle register: the archangel Michael, although believed to weigh the souls of the departed on perfectly balanced scales, here demons succeed in tipping them.

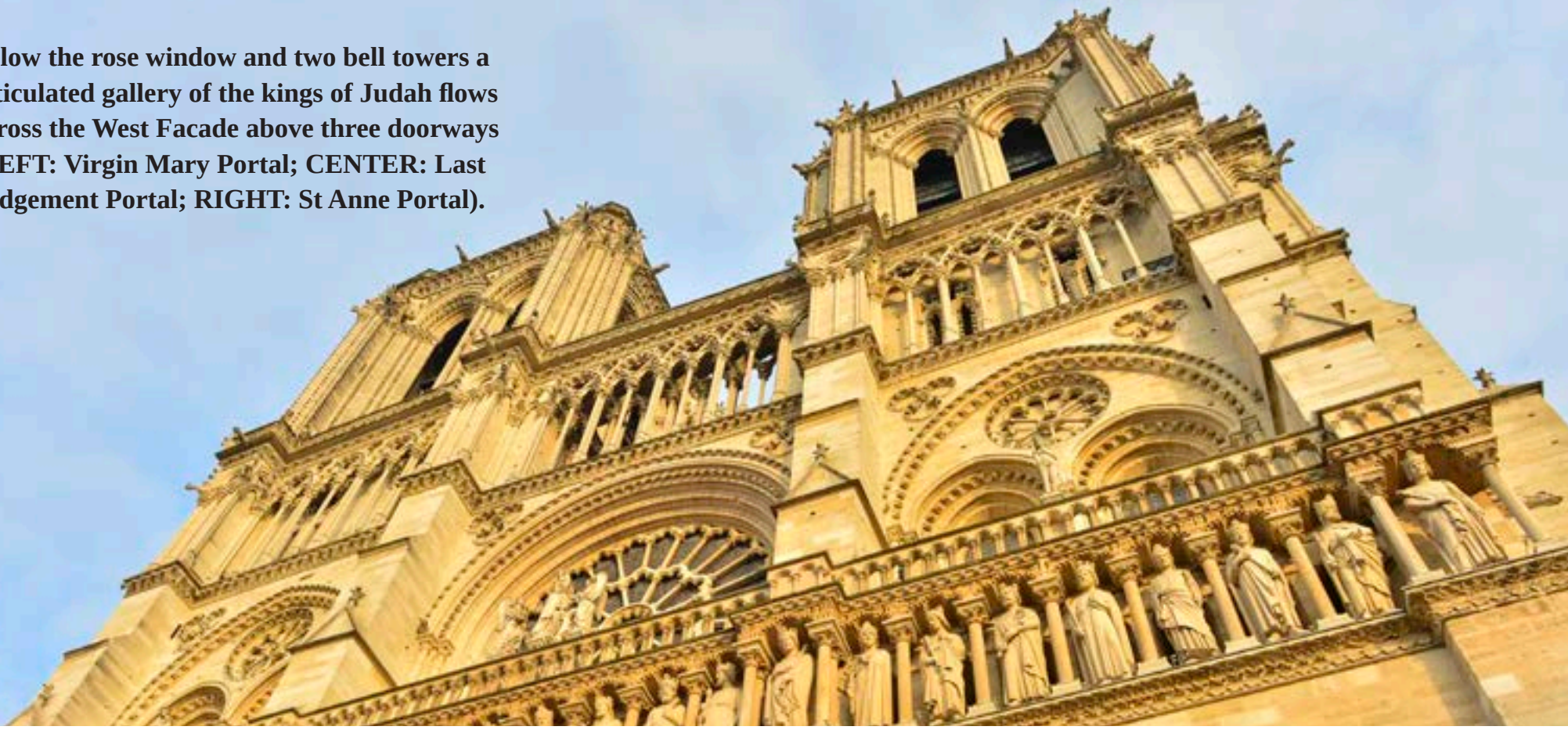
In the lower register: as the dead awaken, an angel blows a horn announcing the last judgement.

On the one hand, three registers suggest Trinity. On the other hand, the middle register has parallels in Egyptian mythology.

The Egyptian god, Anubis, weighs the soul while Thoth records the result. If lighter than a feather of Maat, they present the soul to Osiris who admits it to Sekhet-Aaru, the "Field of Reeds," a lush paradise.

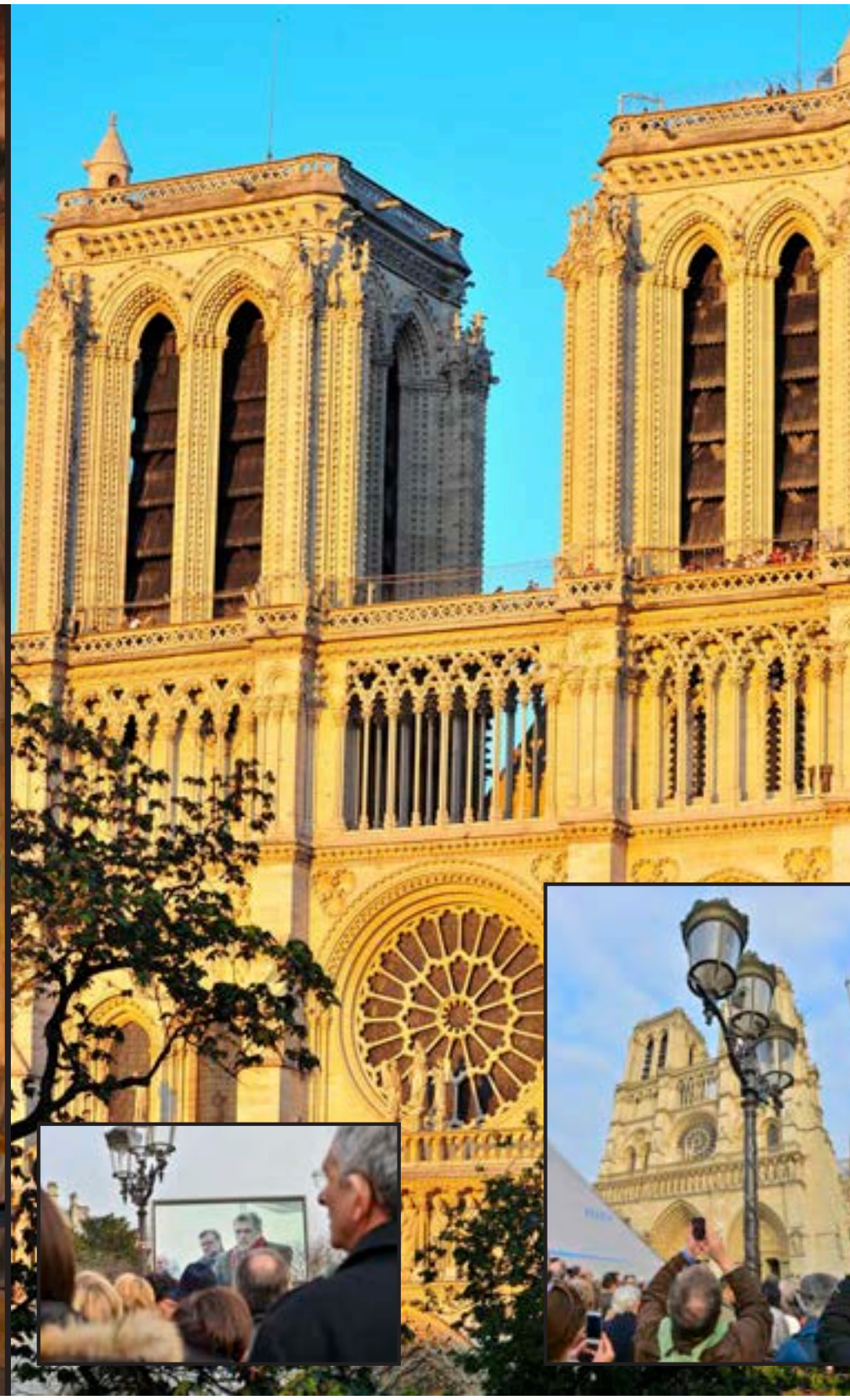


Below the rose window and two bell towers a reticulated gallery of the kings of Judah flows across the West Facade above three doorways (LEFT: Virgin Mary Portal; CENTER: Last Judgement Portal; RIGHT: St Anne Portal).



Installed in 1682 and weighing 13,000 kilos for the bronze bell and 474 kilos for the iron clapper, “Le bourdon,” the Great Bell, was baptized (large bells rung for major sacred services are baptized) and was named Emmanuel Louis Thérèse: Emmanuel after the grandson of Louis XIV and the chaplain who was responsible for the casting; Louis after sponsor and patron Louis XIV; and Thérèse after Maria Theresa of Austria, Queen of France.³²

On March 23, 2013, in front of a grand crowd (see insets), nine new bells (replacing bells that were destroyed in the Revolution) were rung for the first time. Emmanuel and the nine new bells survived the 2019 fire. Six older, smaller bells were destroyed in the flames.³³





Gargoyles mostly function as water conduits, drainpipes. But such a practical explanation takes all the fun - or fear - out of them.



In the rain gargoyles appear as exotic animals, drooling.

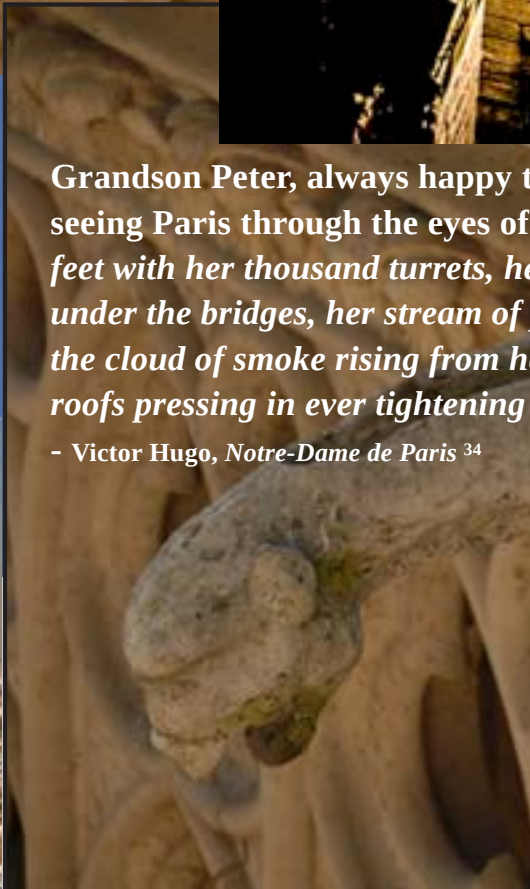


Some keep watch over the city and seem menacing, poised, and ready for action.



Grandson Peter, always happy to climb to the top of a cathedral, has fun seeing Paris through the eyes of a gargoyle. *"All Paris was spread out at his feet with her thousand turrets, her undulating horizon, her river winding under the bridges, her stream of people flowing to and fro in the streets; with the cloud of smoke rising from her many chimneys; with her chain of crested roofs pressing in ever tightening coils round about Notre-Dame."*

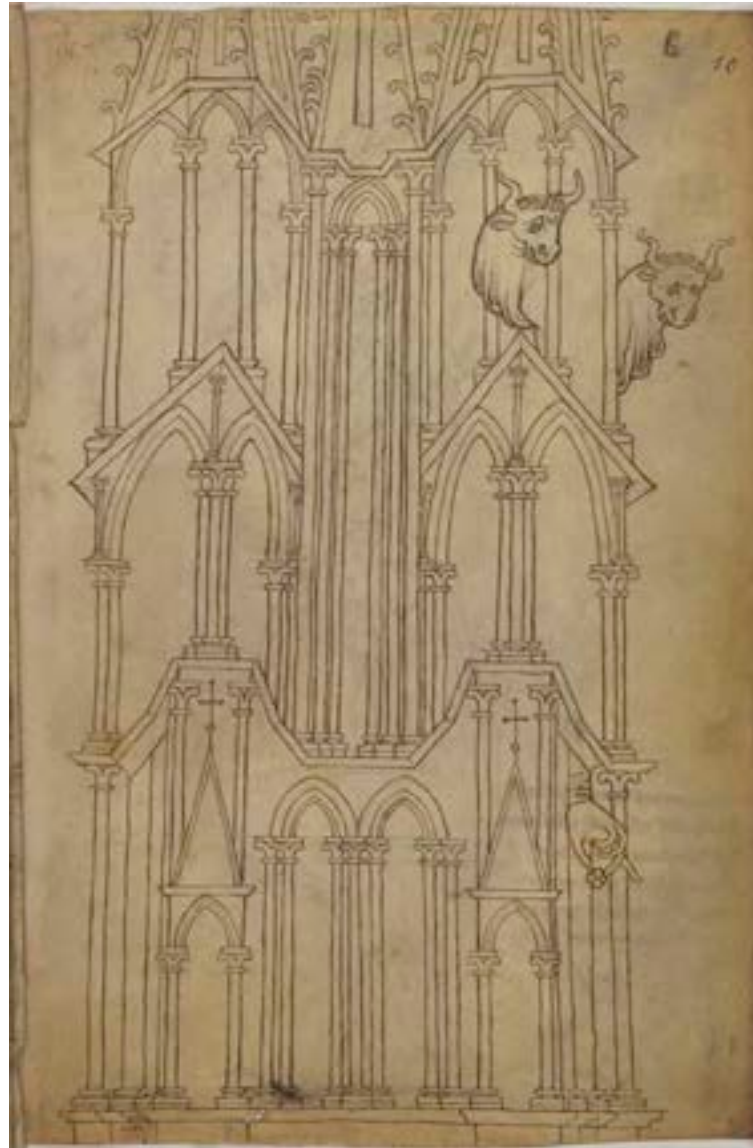
- Victor Hugo, *Notre-Dame de Paris* ³⁴



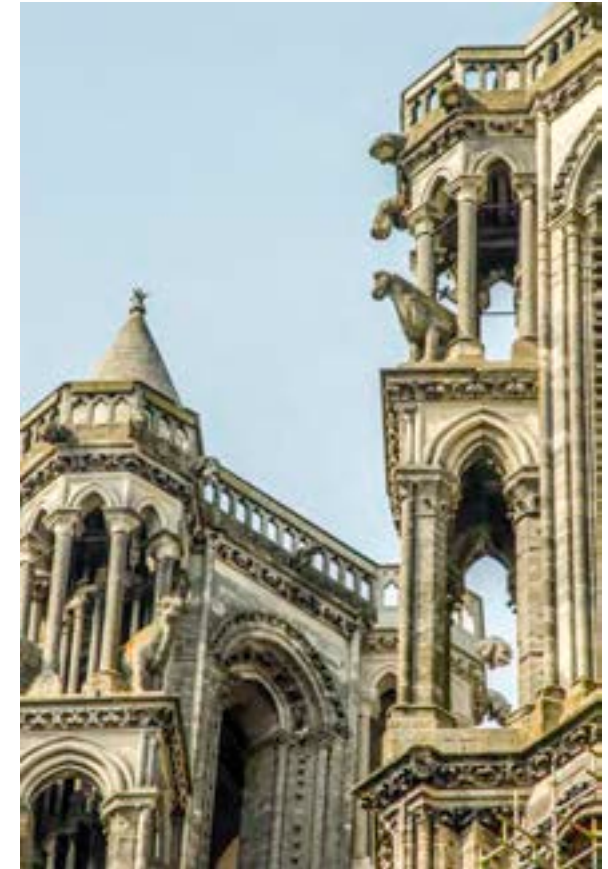
Excursus: The Beloved Oxen Gargoyles of La Cathédrale de Notre-Dame de Laon



So appreciated were the oxen who pulled the stone up the hill that the builders honored them with sculpted portraits, and places them high up for all to see.



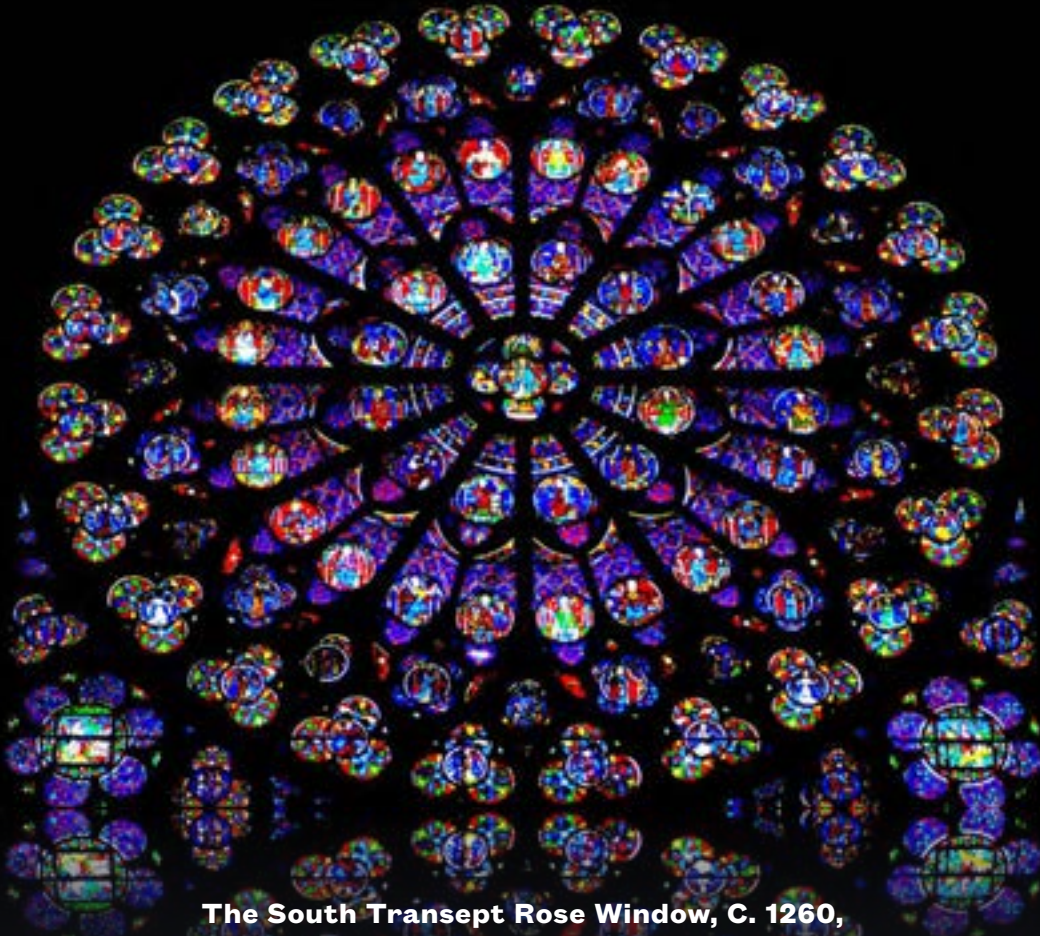
Elevation of the tower of Laon Cathedral, showing the treasured oxen who pulled the stone up the hill, and the hand of God, *Carnet de Villard de Honnecourt*, architect of the XIIIth century, f10r, from an annotated facimile by J. B. A. Lassus, 1858; online July 16, 2013 the Bibliothèque nationale de France (BnF), département Littérature et art, V-17873^a



THE SOUTH AND NORTH ROSE WINDOWS OF NOTRE-DAME DE PARIS

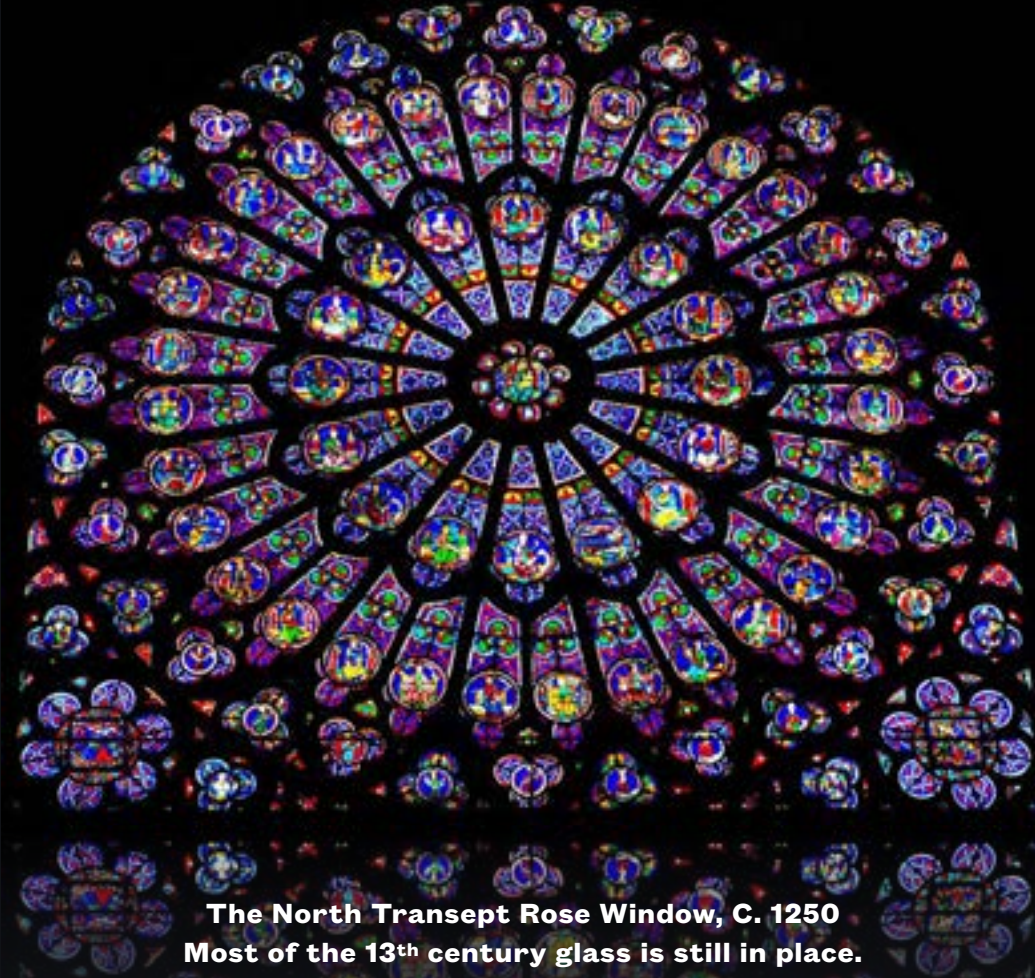
The South Rose Window has more red glass than the North Rose Window which has more blue.

The South Rose Window with the risen Christ showing his wounded hands in the center medallion is mirrored by the North Rose Window with the enthroned Virgin Mary and Holy Child in the center medallion.



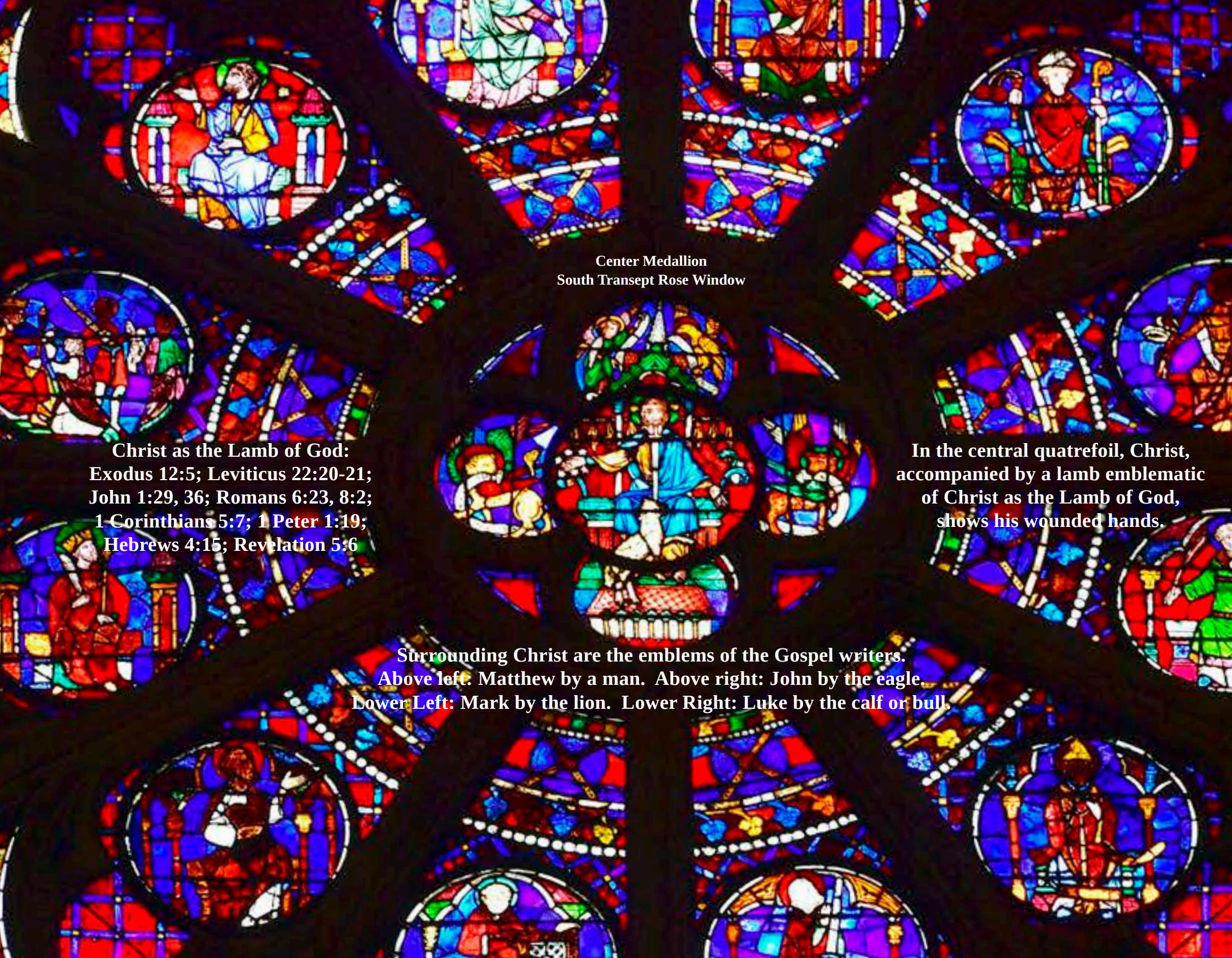
The South Transept Rose Window, C. 1260, the "midday rose" depicting the last judgement in 84 panels, was given by Louis IX (Saint Louis).

In the inner two circles the twelve apostles are shown among saints and martyrs. Scenes from the Bible are in the third and fourth rings, including the Flight into Egypt, Healing of the Paralytic, and the Life of Saint Matthew.



The North Transept Rose Window, C. 1250. Most of the 13th century glass is still in place. The stunning blue glass was fabricated using lapis lazuli from Afghanistan.

Circling Mary and the Holy Child are sixteen prophets in the inner circle and thirty-two judges and kings in the outer circle. All three Rose Windows - South, North, and West - survived the 2019 fire in tact.



Center Medallion
South Transept Rose Window

Christ as the Lamb of God:
Exodus 12:5; Leviticus 22:20-21;
John 1:29, 36; Romans 6:23, 8:2;
1 Corinthians 5:7; 1 Peter 1:19;
Hebrews 4:15; Revelation 5:6

In the central quatrefoil, Christ,
accompanied by a lamb emblematic
of Christ as the Lamb of God,
shows his wounded hands.

Surrounding Christ are the emblems of the Gospel writers.
Above left: Matthew by a man. Above right: John by the eagle.
Lower Left: Mark by the lion. Lower Right: Luke by the calf or bull.





Fire, April 15, 2019. Remarkably, the Rose Window, here seemingly aflame, was undamaged, except for smoke and lead.⁵ 35

Cathédrale Notre-Dame de Reims

Notable characteristics of the Gothic style at Reims Cathedral include the basilica floor plan, two towers, reticulated masonry, a steep roof, flying buttresses, high relief sculpted figures in contrapposto stance with faces showing personality, low relief sculpted archivolts, deep portals, restorations including magnificent newly fabricated stained glass by contemporary artists, rose windows with central medallions of Christ in Glory and Mary as Queen of Heaven.

ROMAN BASILICA PLAN



Basilica of Maxentius with nave and groin vaults, completed by Constantine in 312 after Maxentius drowned in Tiber River during the Battle of Milvian Bridge

RETICULATED MASONRY



TWO TOWERS



STEEP ROOF



FLYING BUTTRESSES



Drawing of flying buttresses, Reims Cathedral, by Villard de Honnecourt, architect of the XIIIth century, f32v, from an annotated facimile by J. B. A. Lassus, 1858; online July 16, 2013 the Bibliothèque nationale de France, département Littérature et art, V-17873s

HIGH RELIEF SCULPTED FACES WITH PERSONALITY



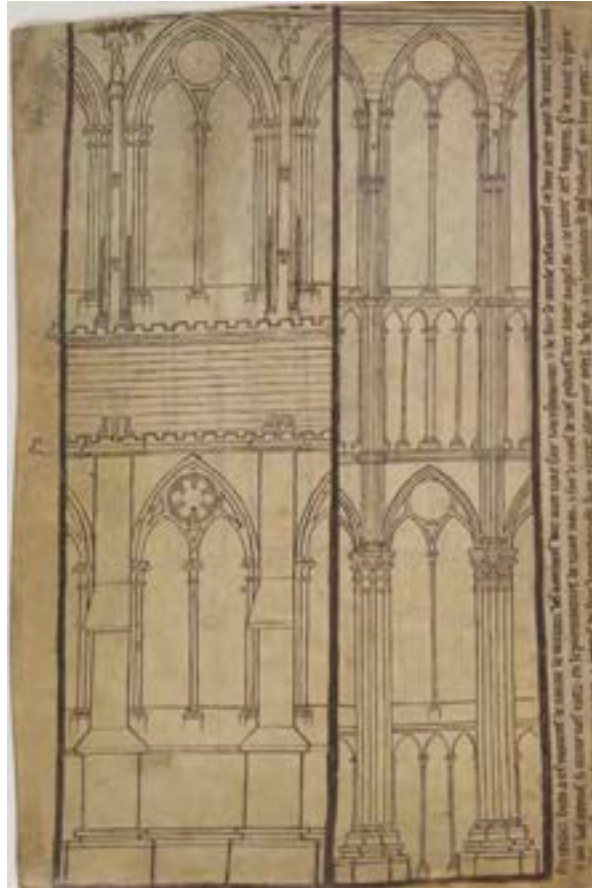
A smiling Gabriel, the Annunciation and Visitation, West Facade, Center Portal

LOW RELIEF SCULPTED ARCHIVOLTS DEEP PORTALS



**A Rose Window in the tympanum
West Facade, Center Portal**

LANCET WINDOWS



Drawing of lancet windows, Reims Cathedral, by Villard de Honnecourt, architect of the XIIIth century, f31v, from an annotated facimile by J. B. A. Lassus, 1858; online July 16, 2013, the Bibliothèque nationale de France, département Littérature et art, V-17873^t

MARY ENTHRONED AS QUEEN OF HEAVEN WITH THE HOLY CHILD CENTER MEDALLION OF A ROSE WINDOW



West Rose Window, 18th century

CENTURIES OF REGLAZED STAINED GLASS WINDOWS



**South Rose Window
1330s, 1581, 1937**

Excursus: The Extraordinary Stained Glass of Marc Chagall (1887-1985)



This is Martin Heidegger's experience of meanings, "poiesis," about which Marc Chagall so powerfully paints and architect Christian Norberg-Schultz so powerfully writes.



The red heifer, an offering brought to the priests for sacrifice, was a female bovine without defect or blemish and had never been yoked (Numbers 19). The Mishnah includes a tractate on the red heifer, Tractate *Parah*. Rain water may be used for a mikveh (ritual bath) but only "living" spring water may be used for a red heifer ceremony. The longest sura, *al-Baqara*, in the Quran is about the purity requirements Allah commands for Moses' heifer sacrifice. The Epistle of Barnabas, preserved in *Codex Sinaiticus*, equates Jesus with the red heifer (8:1-2). Chagall identifies the red heifer with the crucifixion by duplicating colors, inscribing the heifer inside three (Trinity) circles (a cosmic angelic outer ring similar to the Dante's *Primum Mobile* and the firmament of stars in Ptolemaic charts of the universe). To balance vast concepts with tactile intimacy, Chagall smudges the heifer with spilled red blood that cleanses the earth and penetrates *Primum Mobile*.³⁶

Crucifixion, Marc Chagall
Axial Chapel

Cathédrale Notre-Dame de Reims
For Chagall, the death of Jesus signified the suffering of the righteous. Lead lines bind Jesus to the cross. He is tinged with the blood of the red heifer. If the woman on the right is Mary, Chagall suggests she is the Queen of Heaven by asking: is this Mary or is this an angel?



Marc Chagall, Axial Chapel, Cathédrale de Notre-Dame de Reims

La Sainte-Chapelle, Palais de la Cité

After more than two decades of restoration, the medieval stained glass windows inside La Sainte-Chapelle are now protected from deterioration caused by pollution and condensation.

La Sainte-Chapelle is tucked into La Conciergerie (formerly a Capétian royal residential palace) on L'Île de la Cité, just a short walk from the recently burned Notre-Dame de Paris. The charred silhouette of Notre-Dame reminds us how precious and fragile sacred medieval architecture is.

A palatine reliquary, the 13th century Rayonnant style Gothic chapel - consecrated 26 April 1248 - was built by King Louis IX (1214-1270) as a place to house precious Christian relics that he had purchased from Baldwin II (1217-1273), Latin Emperor of Constantinople. The relics included what was believed to be fragments of the True Cross and the Crown of Thorns worn by Jesus Christ when he was crucified. Built between c.1243 and 1246 as a Gothic expression of a Carolingian palatine chapel (reminiscent of Charlemagne's chapel in Aachen), La Saint-Chapelle was erected as an exquisite jewel box, a masterpiece of color and light. Instead of using mosaics like those that cover the interior of the early 9th century Aachen chapel, Saint Louis chose monumental walls of glass that marked the apogee of the Gothic style. According to documents prepared for his canonization, Louis IX paid about forty thousand *livres* in construction costs, less than a third of what he had paid for the Crown of Thorns.

Hundreds of thousands of visitors crowd the upper and lower floors of



**La Rose de l'Apocalypse, a 15th century
with its dominant yellows and greens**

Using a new 14th century technique in coloring glass, “silver stain,” artisans applied silver nitrate to the surface of the glass to produce vibrant yellows, oranges, and greens. “Silver stain” is the source of the term “stained glass.”

La Sainte-Chapelle each year - during daylight to gaze at historic architectural stained glass and by night to attend concerts.

Fifteen stained-glass windows in the upper chapel represent biblical and hagiographic scenes, with narrations of Genesis through Kings, the Prophets, Tobit, Lamentations, Judith, Job, Saint John the Baptist, Saint John the Evangelist, the childhood of Jesus, and the Passion. The Isaiah window includes the martyrdom of Isaiah, an infrequent borrowing from apocryphal texts. Window fourteen is the story of Saint Louis' relics. The 15th century rose window, 29 feet in diameter and composed of 89 illuminated panels that are especially radiant late in the day, is the story of the Apocalypse. A third of the 15th century window is Vernon stone, the remaining from subsequent repairs and restorations. Dismantled and broken down into small panels for the restoration project,

all were reassembled in time for King Louis' 800th birthday in 2014. An image of the original 13th century rose window appears in the *Month of June*, a miniature in *Très Riches Heures du duc de Berry* by the Limbourg brothers (1413-1416).

The highly regarded French stained glass historian, Louis Grodecki, noted, “The multitude of subjects is such that eyes quickly renounce reading the [1,113] painted scenes in order to abandon themselves to the incomparable [expanse] of translucent walls” (translation and edits by the author). La Sainte-Chapelle masterfully balances line and volume, fastidious details of gesturing figures poised within openness and spatiality - simultaneously elegant, cozy, and comfortable, but tinged with royal power and awe of all that is holy.³⁷

Only about two-thirds of the glass at La Sainte-Chapelle is original. During the French Revolution, many windows and relics were destroyed. In 1806, a piece of the True Cross and a nail were taken to nearby Notre-Dame Cathedral for safe-keeping. During the 19th century, a movement of French intellectuals, including Victor Hugo, began a campaign to restore the famous windows under the direction of architect Eugene Viollet-le-Duc, who also restored Notre-Dame and many other medieval structures. Much of La Sainte-Chapelle, as it appears today, is a re-creation of what restorers and archeologists at that time thought it might have looked like in the late 13th century.

When the recent stained glass restoration began in 1994, it followed in the footsteps of centuries of previous restorations. Patented in 1994, a new cutting-edge technique involved the installation of thermoform exterior protective glass over the ancient stained glass, and is expected to protect La Sainte-Chapelle's windows for generations to come. In addition, from 2008 to 2014 in a second layer of restoration, each stained glass panel was meticulously hand cleaned using gauze and q-tips. With the help of infrared scanning, glaziers were able to differentiate between the decay and wear of time from the original drawings in gray tones that define the figures originally painted on the glass, thus conserving even the most damaged 13th century glass.

Saint Louis' relics once again survived the threat of destruction and loss in April 2019. Because of the heroic efforts of the Paris Fifth Arrondissement Fire Brigade chaplain, who entered Notre-Dame when the cathedral was still ablaze and the spire had already collapsed into the cavernous nave's fiery furnace, Saint Louis' relics were rescued and moved to the Louvre.³⁸



Walls of narrative glass tell stories under a starry ceiling. La Saint-Chapelle was built by Louis IX, Saint Louis (1214-1270), as a reliquary for the Crown of Thorns that he acquired in 1239. Crowned at Reims and patron of masons and builders, he launched two Crusades. Captured during the Seventh Crusade (1248-1254), he died of dysentery in Tunis during the Eighth Crusade, 1270.

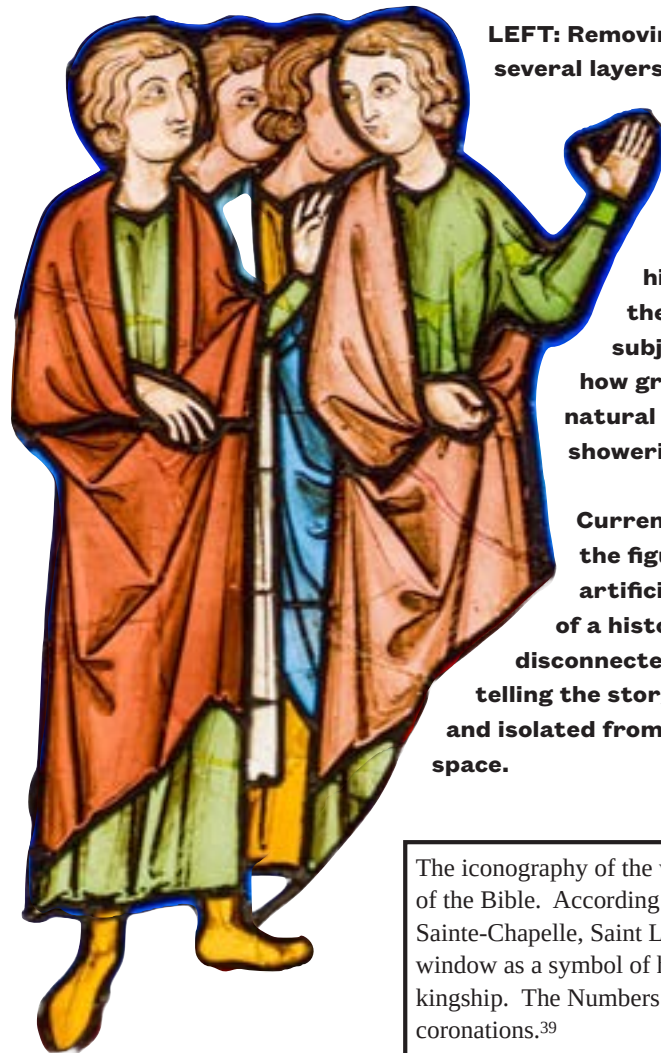
Planning on visiting La Sainte-Chapelle? Stained glass expert Crosby Willet (President *Emeritus*, Willet Hauser Architectural Glass, Inc., and Society of Cincinnati) recommends, surprisingly, “to see it on a cloudy day to appreciate the full range of the palette. The depth of the mullions creates shadows when the sun is shining, but it’s an exciting experience no matter what the weather.”

Excursus: The Expansiveness of Architectural Glass; The Tiny Details of Artistic Skills; Martin Heidegger's "Poiesis"



Inside La Sainte-Chapelle the ceiling floats on walls of glass. Light and color surround and embrace the viewer.

THE TINY DETAILS OF ARTISTIC SKILLS



LEFT: Removing the four figures from several layers of background grisaille (monochrome washes) demonstrates how negative space (the blue grisaille background) effects both highlighting the figures in the foreground that are the subject of the window, and how grisaille casts filtered natural light into the chapel, showering the viewer with color.

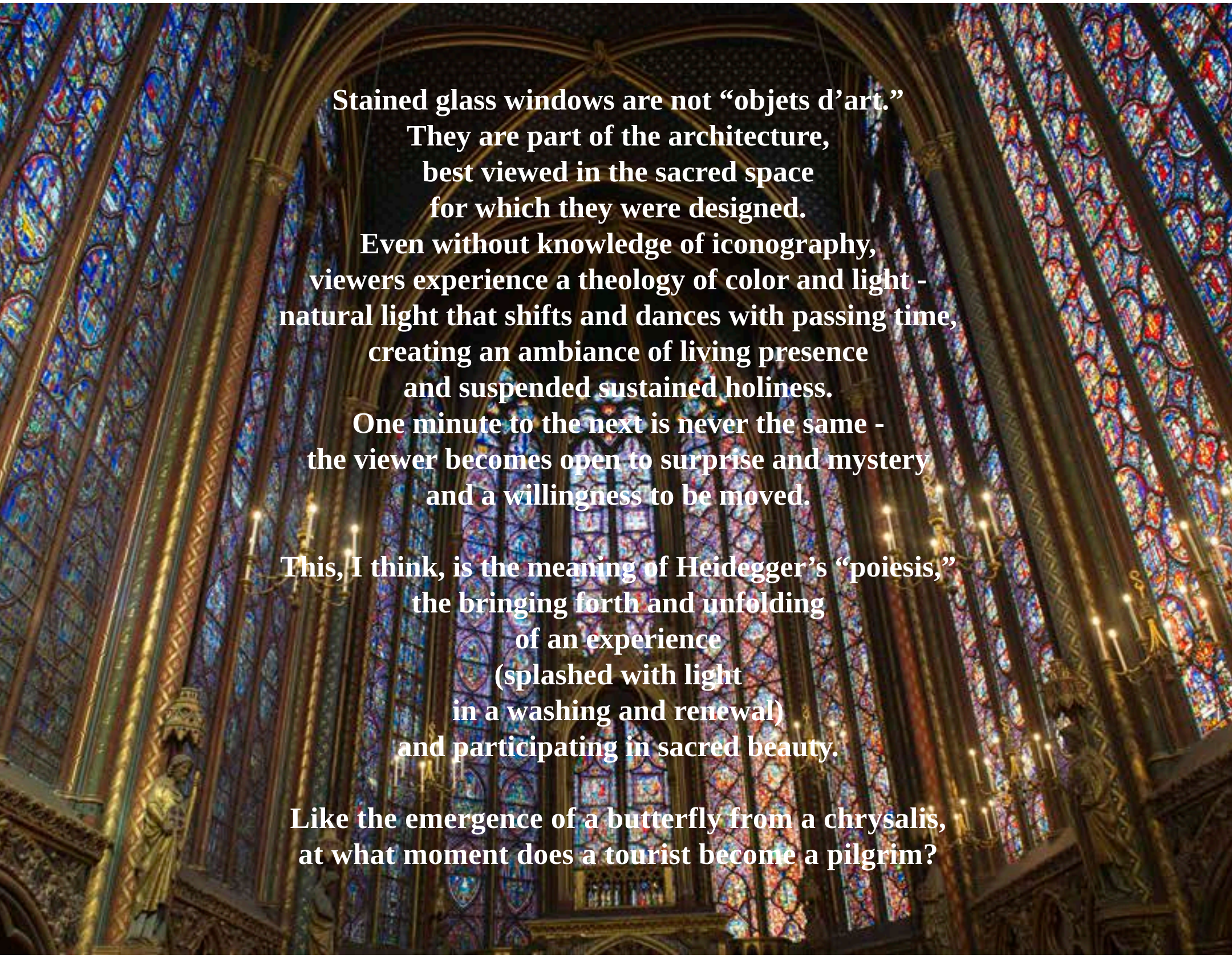
Currently housed in a museum, the figures are backlit by artificial light; now the subject of a historical survey, disconnected from the large window telling the story of the Book of Numbers and isolated from the context of sacred space.

The iconography of the windows includes the books of the Bible. According to note cards provided in La Sainte-Chapelle, Saint Louis sat under the Numbers window as a symbol of his royal authority and sacral kingship. The Numbers window includes many coronations.³⁹

The History of Stained Glass rooms in the Cluny Museum, Paris, preserve stained glass windowpanes from La Sainte-Chapelle's Book of Numbers Window. The description details artistic skills and procedures. "The stained-glass painter coated the glass with several layers of grisaille. He then began with light washes before using broad strokes to define drapery folds, facial features and other details. Lastly, he carefully scraped material away to create the impression of 'light' reflecting off the hems of the gowns. This skill and subtle colouring recall the work of the 'principal master' in charge of stained-glass work at the Sainte-Chapelle."⁴⁰



**Four Figures from the Book of Numbers
originally at La Sainte-Chapelle
now preserved in the History of Stained Glass rooms at
La Musée de Cluny-Musée National du Moyen Âge, Paris**

The background image is a photograph of the interior of a Gothic cathedral. It features high, vaulted ceilings with intricate ribbing. Large, colorful stained glass windows are visible, depicting various scenes and figures. In the lower left, a statue of a figure in a niche is partially visible. The lighting is warm, coming from the windows and possibly from chandeliers, creating a sense of depth and grandeur.

Stained glass windows are not “objets d’art.”

They are part of the architecture,
best viewed in the sacred space
for which they were designed.

Even without knowledge of iconography,
viewers experience a theology of color and light -
natural light that shifts and dances with passing time,
creating an ambiance of living presence
and suspended sustained holiness.

One minute to the next is never the same -
the viewer becomes open to surprise and mystery
and a willingness to be moved.

This, I think, is the meaning of Heidegger’s “poiesis,”
the bringing forth and unfolding
of an experience
(splashed with light
in a washing and renewal)
and participating in sacred beauty.

Like the emergence of a butterfly from a chrysalis,
at what moment does a tourist become a pilgrim?



HOW ONE STORY CAN LEAD TO ANOTHER

LEFT: Dazzling color splashes on thin meticulously painted columns and the figure of the prophet Jeremiah. Just as in Chartres' North Porch Central Portal, Jeremiah holds an equilateral cross enclosed in a circle or halo. In the light, the cross gleams red. A red cross was the symbol of the Knights Templar who supported Saint Louis' Seventh Crusade (1248-1254).

La Sainte-Chapelle is remarkable architecture. Its walls are very busy with an encyclopedic kaleidoscope of 1,113 biblical and historical scenes.

It has itself become a relic and in that way is multidimensional in layers of time. It tells ancient stories; it tells its own story; and then there are all the stories that people bring with them when they enter.

Inside Gothic architecture there is a lingering quiet whisper of a community that has shared an experience across centuries.

The transparency of the walls is like a looking glass into another world, the aggregate of all those stories and how they are bound together.

The past impinges upon and lives in the present. Being bound up in the past penetrates, transforms and redefines our interpretation of the present and lets us see and be aware of the multifacetedness of our lives.



By contrast, the skeletal ruins of L'Abbaye Saint-Jean-des-Vignes in Soissons, although fascinating, are only approachable from the outside, not from within.



Just like Ezekiel's dry bones, the abbey in Soissons may look like a skeleton, but green life is growing there.

Lincoln Cathedral Lincolnshire

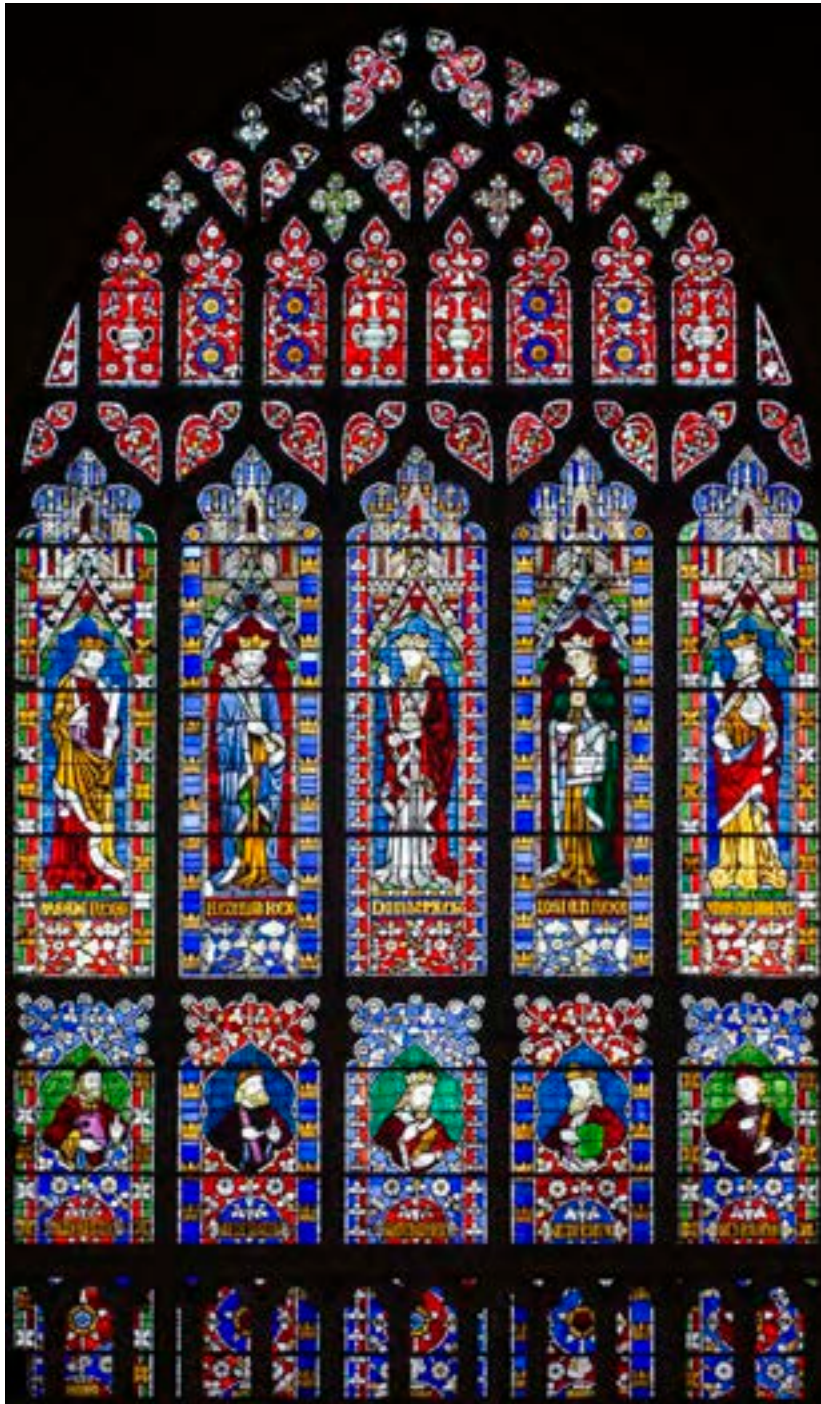
**Doors symbolize access to God's mercy.
"I am the door; if any one enters by me,
he will be saved..." (John 10:9a).**



**Note the five entryways, just as at La Cathédrale Saint-Étienne de Sens
and The Patriarchal Cathedral Basilica San Marco in Venice.**

**Windows take the place of the tympanum,
a variation of a similar style at La Cathédrale Notre-Dame, Reims.**

Photo courtesy of Lincoln Cathedral.^u



Kings and Prophets by Frederick and Augustus Sutton, 1859, but designed in Medieval style

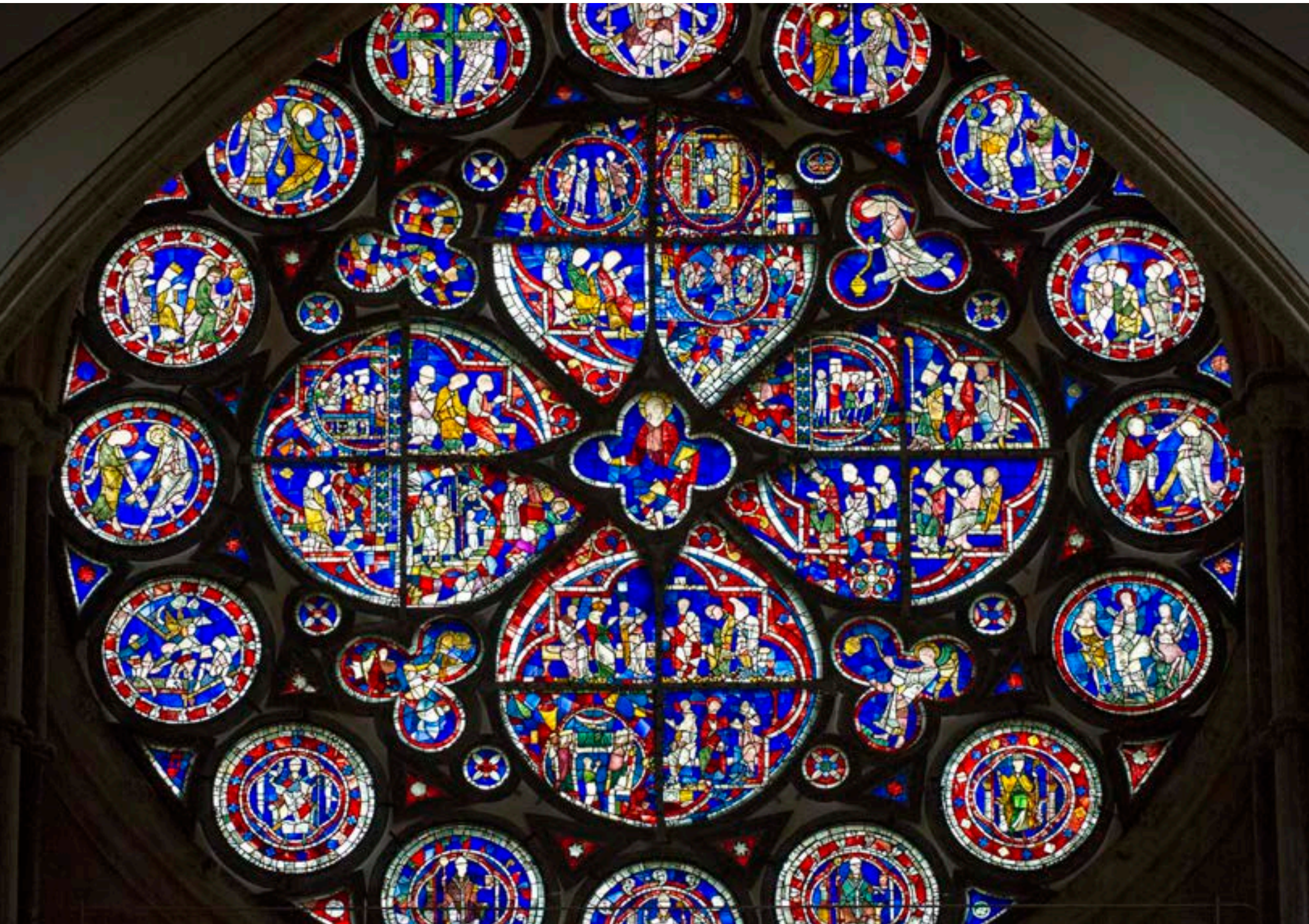


Bishop Remigius with a model of his 1092 Cathedral designed by J.G. Crace; fabricated by Butler and Bayne, 1858



Peter catches 153 fish after Jesus invites him to cast his net again (John 21:11; see Evagrius above).





ABOVE: The “Dean’s Eye” North Rose Window

LEFT, L-C-R, Looking up from underneath, the “Dean’s Eye”; the Alleluia Lancet, detail; and Chapter House Entrance Oculus

Excursus: Conservation

Constant repairs and restoration require specialists. In 2017, Lincoln Cathedral hosted the Heritage Skills Festival. Each year artisans gather to display their skills and their creations - stone masons, woodworkers, sculptors, painters, weavers, joiners and ceilers, roofers, plasterers, stained glass glaziers, people who raise their own silkworms to make thread for their embroidery.

By the time the entire cathedral is repaired, restored, and updated, it's time to start all over again. Stained glass windows are on a roughly one hundred year cycle. Over recent generations, stonework and glass have suffered from pollution and changes in weather patterns. Millions of visitors, the curious and the faithful, mesmerized by art, history, and theology, nevertheless put wear and tear on the buildings.



**The Heritage Skills Festival was sponsored by a car dealership.
The contrast between old and new technologies was striking.**

Right center photo courtesy of Lincoln Cathedral.™

The Baronial Order of the Magna Charta has supported several restoration projects at Lincoln Cathedral, including the Saint Nicholas stained glass window, Saint Hugh's Choir floor, and the Wren Library. Other Medieval groups have donated to Washington National Cathedral and the Cathedral of St. Matthew the Apostle in Washington, D.C.



St. Nicholas' miracles were a favorite subject of Medieval artists.

Conclusion: Legacy

Saint Clotilde, Queen of the Franks and the woman behind King Clovis' conversion to Roman Catholicism, is remembered and honored in a 19th century Neo-Gothic church, Basilique Ste-Clotilde in Paris.

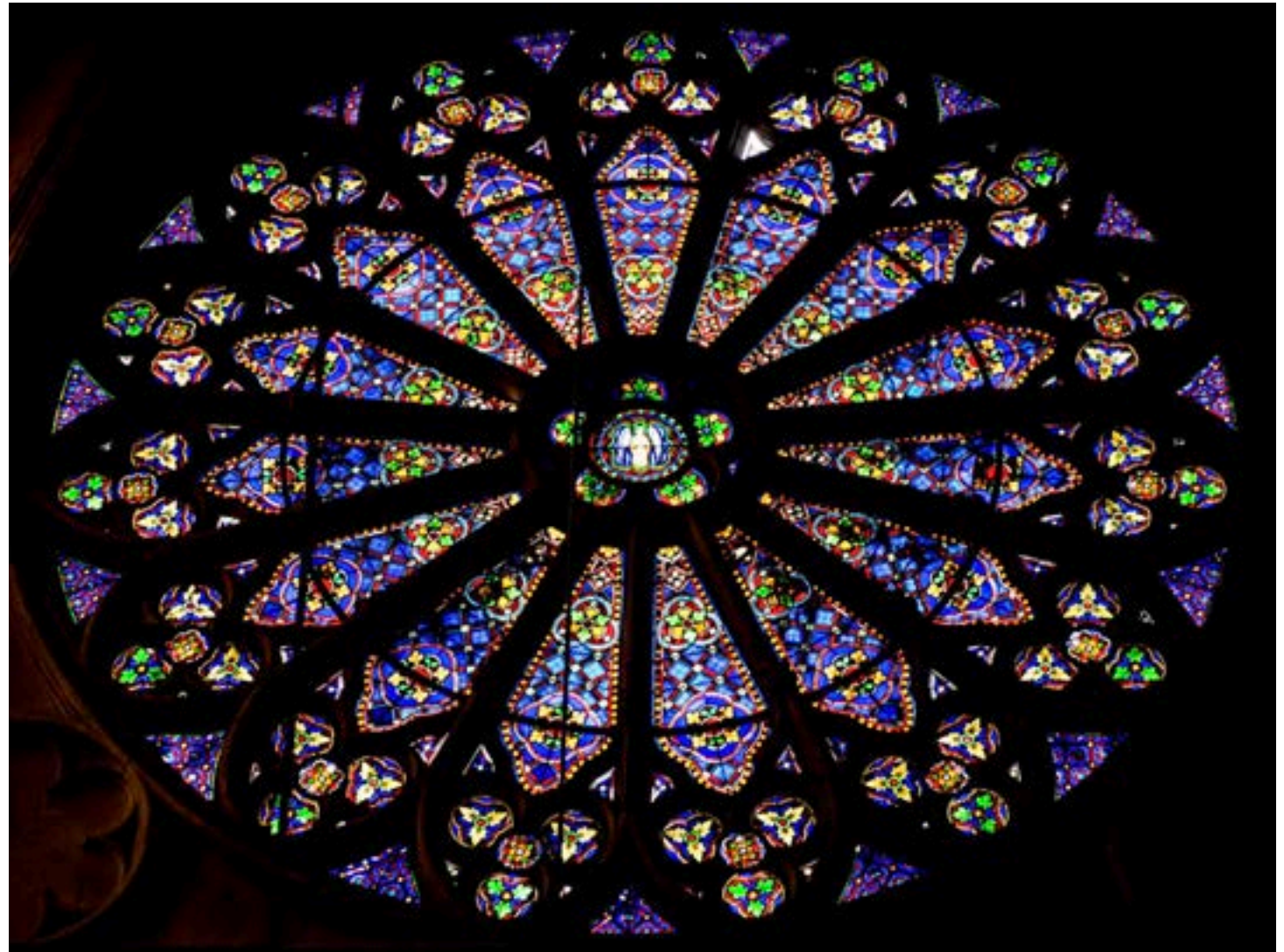
York Cathedral's centuries old rose window is reglazed and its historical significance reinterpreted for future generations.

Both 12th and 13th century Gothic churches and recently built Neo-Gothic churches design and fabricate stained glass to honor historic figures in refreshing new ways, finding inspiration in designs from famous historical artifacts, like the Bayeux Tapestry. Artists, such as Christopher Whall and Marc Chagall (above), retell old stories for old cathedrals, but design and fabricate those stories in ingenious styles.

Chapels, like La Sainte Chapelle, and cathedrals, like Lincoln Cathedral, are sometimes re-purposed, re-invented to serve as multi-use buildings for concerts and large dinner gatherings to celebrate historic events.

Artist John Hutton looks to Chartres for elongated figural designs but adapts them from the solidity of sculpture and shadow to ethereal glass and light.

Whether visitor or pilgrim, all are welcomed in the hope that some will linger to discover and to experience moments of Heidegger's "poiesis."



Rose Window, Basilique Ste-Clotilde de Paris

Built in neo-Gothic style between 1846 and 1856, the basilica was named after Ste-Clotilde, Queen of the Franks, who in 496 persuaded her husband, the Frankish King Clovis I, now considered the founder of the Merovingian Dynasty, to be baptized Roman Catholic. During the time of the Merovingians, non-trinitarian Arian Catholicism, adopted by many Germanic tribes, competed with Roman Catholicism for theological dominance. King Clovis' baptism into Roman Catholic Nicene Christianity rippled down through history into Charlemagne's court, Otto 1 the Great's court, and the development of the Holy Roman Empire.



South Rose Window, York Minster, England, late 16th century

Red and white roses illustrate the union of the houses of York and Lancaster when the marriage of Henry VII and Elizabeth of York in 1486 ended the War of Roses, or, in another interpretation, symbolize the house of Tudor with the Lancastrian red rose superimposed over the white rose of the Yorkists. Reglazed 1960-1970, it survived the fire in 1984.



**Notre-Dame de Ponterson on the Couesnon River
France, 11th century, glass fabricated 1926
As William and Herald cross the Couesnon River,
a dangerous estuary,
Herald rescues two companions from quicksand.
The design copies the Bayeux Tapestry.**



**Chapter House, Gloucester Cathedral, England
Glass design by Christopher Whall, 1903
William the Conqueror, Bishop Odo and Abbot Serlo
order the compilation of the survey for *The Domesday Book*.**



Lincoln Cathedral celebrated the 800th anniversary of the Charter of the Forest. Sealed in 1217 by young Henry III acting under the regency of William Marshal, 1st Earl of Pembroke, the *Carta de Foresta*, one of the first laws to regulate natural resources, intended to restore common access to an ordinary person by restricting how much royal land could be held for private use by a king. A few years earlier, Lincoln Cathedral held a similar celebration for the 800th anniversary of the Magna Carta sealed by King John in 1215.



**“The Bishop’s Eye,” Lincoln Cathedral, England
The South Rose Window, shattered during the Civil War (1642-1649),
was reassembled as a mosaic.
What a wonderful thing. As a redemption window, the mosaic is symbolic of grace.
We are all shattered, but not without hope. Grace puts us back together again.**

Coventry Cathedral, along with the City of Coventry, West Midlands, England, was heavily bombed by German aircraft during the night of 11 November 1940. New Coventry Cathedral, tucked in along side the shell of Old Coventry Cathedral, was consecrated with the premiere performance of Benjamin Britten's *War Requiem*, which, in a symbolic effort for reconciliation, included German, Russian, and British soloists.

Artist John Hutton drew inspiration from the elongated figures sculpted on Chartres Cathedral's West Portal. His engraved glass angels are ethereal, glittering in ever changing light, translucent, transcendent yet present. They look at you in the eye and sound their trumpets for the apocalypse. The sun has not quite set on the Middle Ages.



Engraved angels on clear glass
The Great West Screen, by artist John Hutton
New Coventry Cathedral, West Midlands, England, 1962

*One thing have I asked of the LORD,
that will I seek after;
that I may dwell in the house of the LORD all the days of my life,
to behold the beauty of the LORD,
and to inquire in his temple (Psalm 27:4).*

CREDITS

- a. “Icon of Virgin and Child,” Pre-Iconoclastic, 6th century Byzantine, Overall: 178.7 x 110.5 cm (70 3/8 x 43 1/2 in.), Cleveland Museum of Art.
<https://www.clevelandart.org/art/1967>.
- b. “Church of the Holy Apostles,” *The Homilies of James Kokkinobaphos*, 1208.
<https://gallica.bnf.fr/ark:/12148/btv1b55013447b/f18.item#>.
- c. “Bosham Church,” *The Bayeux Tapestry*. Photographs of the Bayeux Tapestry along with fascinating explanatory displays were taken years ago when access was configured differently, 2007. Also years ago they were available on the internet, public domain. Other images of the Tapestry are by special permission of the City of Bayeux, with special thanks to Mme Sylvette Lemagnen, Conservateur de la Médiathèque Municipale et de la Tapisserie de Bayeux, 2016, for my presentation about the Tapestry at the University of Michigan Art Museum. An excellent source of images is David M. Wilson’s *The Bayeux Tapestry: The Complete Tapestry in Color*, 2004.
- d. “Plan of the tower of Laon,” *Carnet de Villard de Honnecourt*, f9v, from an annotated facimile by J. B. A. Lassus, 1858. Gallica (BnF).
<https://gallica.bnf.fr/ark:/12148/btv1b10509412z/f21.item>.
- e. “Genesis creation story,” *Old English Hexateuch MS Cotton Claudius B. IV, fol. 4r* c. second quarter 11th century, British Library. Because of a cyber-attack, currently the Hexateuch is not available on the internet. Benjamin Withers’ *The Illustrated Old English Hexateuch, Cotton Claudius B. iv, 2007*, is an excellent source.
- f. “Gabriel and Mary,” *Pericopes of Henry II, c. 1002 – 1012*. This image is from the British Library but currently is not available. The Library of Congress has a copy.
https://www.loc.gov/resource/gdcwdl.wdl_14712?sp=237&r=-0.651,-0.081,2.303,1.459,0.
The entire book is available through the Library of Congress in association with digitized libraries around the world.
<https://www.loc.gov/item/2021668102>.
- g. “Consecration of Westminster Abbey,” *The Bayeux Tapestry*, op. cit.
- h. “Kneeling knight,” *Westminster Psalter*, Royal MS 2 A XXII, c.1200-1250, British Library. Not currently accessible at the British Library, but they are working on it.
- i. “God as architect of the world” prefatory miniature from a *Bible moralisée, folio I verso*, Paris ca. 1220–1230, Österreichische Nationalbibliothek, Vienna 2554.
https://en.wikipedia.org/wiki/Bible_moralis%C3%A9e#/media/File:God_the_Geometer.jpg.
- j. “Evagrius Ponticus Icon,” Saint Shenouda Monastery
<https://stshenoudamonastery.org.au/abba-evagrius/>.
- k. “Diagram” demonstrating how digits can be understood as geometric shapes, from the Prologue in “On Prayer: One Hundred and fifty-three Texts,” *Philokalia*, vol. 1, p. 56.
- l. “Frontispiece,” *Euclid’s Elements*, British Library, 1309-1316, accession number BL Burney 275, f. 293 r. Again, images are not available at the British Library website, but there are several at the Mathematical Association of America’s website.
<https://maa.org/press/periodicals/convergence/mathematical-treasure-adelard-s-translation-of-euclid-s-elements>.
- m. “Adelard of Bath teaching,” *Regulae abaci*, c. 1400, Leiden University Libraries Digital Collections.
<https://digitalcollections.universiteitleiden.nl/view/item/1805678>.
- n. *Liber abaci (or abbaci)*, Original manuscript, 1228, Leonardo da Pisa, Ms. Biblioteca Nazionale di Firenze, Codice magliabechiano cs cl, 2626, fol. 124r
Source: Heinz Lüneburg.
<https://fibonacci.com/liber-abaci/>.
- o. “Pythagorean Tetractys” (τετρακτύς) symbolizing *musica universalis* and the cosmos, public domain.
<https://en.wikipedia.org/wiki/Tetractys#/media/File:Tetractys.svg>.
- p. “Golden Ratio superimposed over the elevation of Laon Cathedral,” *Ad Quadratum*, Frederik Lund, 1919, p 196, Internet Archive.
https://archive.org/details/ad_quadratum/Full%20Text/page/n218/mode/1up?view=theater.
- q. “Elevation of the tower of Laon Cathedral, showing the treasured oxen who pulled the stone up the hill, and the hand of God,” Villard de Honnecourt, op. cit.
<https://gallica.bnf.fr/ark:/12148/btv1b10509412z/f20.item>.
- r. “Notre Dame Cathedral Burning,” *CNN Breaking News*. I took this photo in Michigan, April 15, 2019. This image was taken during the fire while live pictures were being broadcast on TV. Most of the pictures I took only showed the television’s pixilation. This one caught all the power, desolation, and tragedy of a day that caught the world by surprise and united us, however briefly, in a moment of shared grief.
- s. “Drawing of flying buttresses, Reims Cathedral,” Villard de Honnecourt, op. cit.
<https://gallica.bnf.fr/ark:/12148/btv1b10509412z/f66.item>.
- t. “Drawing of lancet windows, Reims Cathedral,” Villard de Honnecourt, op. cit.
<https://gallica.bnf.fr/ark:/12148/btv1b10509412z/f64.item>.
- u. Photos courtesy of Lincoln Cathedral, 2023. With thanks to Lincoln Cathedral for sending the photos for my presentation about Norman Architecture for the Order of the Norman Conquest and the Guild of Saint Margaret, April 4, 2023, and for permission to print them in this article.

NOTES

1. An excursus is a literary sidebar, a digression, longer than a footnote but shorter than a chapter, that amplifies an aspect of the discussion.
2. Otto Georg von Simson, *The Gothic Cathedral: Origins of Gothic Architecture and the Medieval Concept of Order* (Princeton: Princeton University Press, 1988).
3. Erwin Panofsky, *Gothic Architecture and Scholasticism* (New York: Meridian Books, 1957).
4. Christian Norberg-Schulz, *Genius Loci: Towards a Phenomenology of Architecture* (New York: Rizzoli, 1980).
5. Poiesis (pronounced poiésis), is from ancient Greek (ποίησις), meaning to do or to make. It is the same root word from which we get “poetry.” It is more than making or doing something, it is making or doing something that has meaning. It is this meaning that Heidegger points out is “the fundamental human need.” Norberg-Schulz says that architecture provides access to meaning, to experience the world as “Thou” rather than “it.” Norberg-Schulz, p. 23. “Poiesis” is used repeatedly in the New Testament. In other words, when you “do unto others” as you would “do unto yourself” it suggests that you fill that other person’s life with meaning, as well as your own. Another translation might be, “Do poetry unto others as you would have poetry done unto yourself” (Matthew 7:12). Thus all the biblical stories of redemption in Gothic sculpture and stained glass: Abraham and Isaac, Jonah and the whale, the red heifer as a way to understand Jesus. And just to make sure you are entering into the world of reflection, Gothic architecture captivates you and houses you with its invisible yet transparent geometry, inviting you deeper into figuring it out.
6. St. John of Damascus, *On the Divine Images* (Crestwood, New York: St. Vladimir’s Seminary Press, 1980), 18.
7. Incunabula are books printed before the year 1501.
8. Chaucer, Geoffrey, and J. U. Nicolson, *The Canterbury Tales*. (Mineola, N.Y.: Borders Classics, 2007).
9. Lierne vaulting, from French “lier,” to tie together, is an independent third rib connecting two ribs together, adding an elegant decorative starlike design.
10. For more about the Canterbury’s ancestors windows, see Jeffrey Weaver, Madeline and Harrison Caviness, *The Ancestors of Christ Windows at Canterbury Cathedral* (Los Angeles: The J. Paul Getty Museum, 2013).
11. For more about the “Methuselah Master,” *ibid*.
12. In 1095, the Council of Clermont granted remission of penalties for all penance incurred by crusaders. On hearing the call to the Crusades and the promise of plenary indulgences, the congregation “...boomed out, ‘Deus vult’ (God wills it).” Latourette, Kenneth Scott, *A History of Christianity* (New York: Harper & Row, 1975), vol.1, 410.
13. *Pelrinages et Pardouns d’Acre* (Harley MS 2253, f.68va-70rb-v, British Library), accessed 2019. Because of a cyber-attack, access to this manuscript at the British Library currently is unavailable. Transliteration and translation of the *Pilgrimages in the Holy Land and the Pardons of Acre* may be found at The University of Rochester Middle English Text Series website. <https://d.lib.rochester.edu/camelot/text/fein-harley2253-volume-2-article-39>.
14. For more about Canterbury’s redemption windows, see M.A. Michael, *Stained Glass of Canterbury Cathedral* (London: Scala Arts & Heritage Publishers Ltd) 2004. 2014.
15. For more about the Diet of Worms, see Jaroslav Pelikan, *The Christian Tradition 4: Reformation of Church and Dogma* (1300-1700) (Chicago: University of Chicago Press 1983).
16. On the arrangement of symbols of the four Evangelists, see Émile Mâle, *The Gothic Image: Religious Art in France of the Thirteenth Century* (New York: Harper, 1958) 7.
17. Isaac’s right hand restrains his left hand, a gesture of the inability to prevent an outcome. This insight into Isaac’s situation is not part of the original story. The voice of Isaac is expressed in his “talking hands” which betray his inner thoughts. Although this portrayal of Abraham and Isaac is typological, foreshadowing the sacrifice of Jesus, it is much more personal about Isaac himself, or at least the artist’s interpretation of Isaac’s thoughts. Similarly, Giotto uses the gesture for the witness in *The Massacre of the Innocents*, Padua, Arena Chapel, see Moshe Barasch, *Giotto and the Language of Gesture*. (New York: Cambridge University Press, 1987), 31, 88-95. Barasch credits Giotto with studying illuminated manuscripts, for example Dresden, *Sachsenspiegel* MS, fol. 37. Barasch also looks at sarcophagi, for example, from the tomb of Gautier de Sully, see pages 92- 94. I find that Giotto’s work reflects a familiarity with Romanesque and early Gothic cathedral stained glass and sculpture.
18. “In interpreting the Bible the Middle Ages attached itself to symbol rather than fact. Historical scenes... are much rarer than symbolic representations.” Emile Mâle, *The Gothic Image*, op. cit., 173-174.
19. Émile Mâle, *Chartres* (New York: Harper & Row, 1983, 78).
20. Suzanne. Martinet, *Laon Ancienne Capitale De La France*. (L’Imprimerie du Courrier de l’Aisne à Laon, 1989), *passim*.
21. Mircea Eliade, *Images and Symbols: Studies in Religious Symbolism*. (Princeton, N.J.: Princeton University Press, 1991, 51ff, 67).

22. For more about Fulbert, Fulbert, see Claude Genin, *Fulbert De Chartres (Vers 970-1028) Une Grande Figure De L'occident Chrétien Au Temps De L'an Mil*. Préf. De Pierre Riché. [Chartres]: Société archéologique d'Eure-et-Loir, 2003.
 23. Reprinted from Lynne A. Kogel's article, "The Stained Glass Windows of Mariners' Church." *ISMA 2023 Convention Souvenir Booklet*, 2023, 10-19.
 24. For an extensive exploration of talking hands in Giotto, see *Giotto and the Language of Gesture*, op. cit.
 25. God as Architect of a universe made up of geometric perfect circles, Bible moralisée, folio 1 verso, Paris, c. 1220-1230.
 26. Otto Von Simson, op. cit., p. xviii.
 27. Evagrius The Solitary, "On Prayer, " in Makarios Nicodemus, G. E. H. Palmer, Philip Sherrard, and Kallistos. *The Philokalia: The Complete Text*. (London: Faber and Faber, 1983) 55-56.
 28. *ibid*, p. 56.
 29. Otto Von Simson, op.cit., p. 208.
 30. Lon Shelby arrives at a different solution. In his 1972 article for the University of Chicago, first he explores a manuscript and translation history and concludes that there are not universal canons that provide the key to Gothic architecture. Instead, he concludes that there were "particular procedures used by particular master masons at particular times and places. Shelby, L. R. (1972). The Geometrical Knowledge of Mediaeval Master Masons. *Speculum*, 47(3), 395–421. <https://www.journals.uchicago.edu/doi/10.2307/2856152>.
- Whether or not it is accurate, or acceptable, to retroactively superimpose the Golden Ratio on Gothic architecture is a subject of considerable debate. However, it is notable that in his 1960 paper on Hannecourt's drawings, Robert Banner gave up on measuring the comparisons between spirals discovered on the "bed-face of a capital" with Hannecourts manuscript spiral figure. Banner concludes, "The real dimensions of the spirals have only a general importance for the dimensions of the keystones, since the relationship between the two is proportional." Whether or not Gothic architects knew the precise Golden Ratio, they understood working in the category of ratios, how one part related geometrically to another part. Branner, R. (1960). Villard de Honnecourt, Archimedes, and Chartres. *Journal of the Society of Architectural Historians*, 19(3), 91–96. <https://doi.org/10.2307/988023>. Otto Von Simson's measurements of Chartres approximate the Golden Ratio, *The Gothic Cathedral*, 209.

- In *Medieval Craftsmen: Masons and Sculptors*, Nicola Coldstream demonstrates that the Golden Ratio used at Ely Cathedral (Cathedral Church of the Holy and Undivided Trinity) can be "established either geometrically or numerically." Nicola Coldstream, *Medieval Craftsmen: Masons and Sculptors* (London: The British Museum Press, 1991), 37-38.
31. G.H. Hardy and E.M. Wright, *An Introduction to the Theory of Numbers*. 6th ed. Oxford, New York: Oxford University Press, 2008, 190-193, 197.
 32. Posters, *Le bourdon; Les cloches de Notre Dame*, Bourdon Bell Tower, Notre Dame, 2013.
 33. For information about the bells of Notre Dame de Paris, see the Friends of Notre-Dame website. <https://www.friendsofnotredamedeparis.org/>.
 34. Victor Hugo *Notre Dame De Paris* (New York,: P. F. Collier & son, 1917). Book VII, Chapter 2.
 35. For information about the fire and the status of the restoration, see the Friends of Notre-Dame de Paris website. <https://www.friendsofnotredamedeparis.org/notre-dame-cathedral/fire/>.
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36. See the "Heifer, Red" entry in David Noel Freedman, *Anchor Bible Dictionary* (New York: Doubleday, 1992) vol 3, 115-116.
 37. Louis Grodecki, *Vitraux des Églises de France*. (Paris, Éditions du Chêne, 1947).
 38. Reprinted from Lynne A. Kogel's article, "Did You Know? The Stained Glass of La Saint-Chapelle." *The Herald*, Fall 2019, 12-13.
 39. Wall text, *Vitraux de La Sainte-Chapelle de Paris*, Musée de Cluny le monde médiéval, Paris, 2014.
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