

## Sacred geometry: unifying church interiors with green spaces

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### Abstract

In an era of speed, very few of us take the time to observe and appreciate the details of our surroundings. Sacred Geometry offers a visual and mathematical language for understanding the relationship between parts and the whole in nature, ranging from molecular structures and microscopic organisms to the intricate design of the human body, the patterns of landscapes, and even the vast order of the cosmos. Master builders from diverse traditions designed religious edifices with sacred significance by intertwining basic shapes, such as the circle, triangle, and square, and proportional systems to symbolize different dimensions of existence and divine relationships. In this article, we analyzed five churches located in the Banat region, presenting how geometric patterns are used in their interiors and proposing ways in which these patterns could be extended into the surrounding green spaces, to apply sacred geometry principles of goodness, beauty, and truth to the surrounding landscape.

**Keywords:** cult edifices, shapes, harmonious proportions, spatial unity, symbolic design, landscape architecture

### Introduction

Although many previous practitioners and thinkers contributed to geometry in ancient Egypt, Mesopotamia, China, India, Greece, and Rome, Euclid, who lived in Alexandria between the 4th and 3rd centuries BC, was the first in history to base a science on a fundamental system of unprovable true propositions that we know today as axioms [13, 15]. Building on these principles, sacred geometry holds that certain shapes and proportions reflect the laws of the universe and cosmic order, serving as a symbolic language for designing religious edifices that connect the physical and spiritual realms [5]. The principles behind this geometric design echo the patterns and harmonies that form the foundation of proportion and compositional design in traditional architecture and art.

Throughout history, artists have conveyed innovative ideas to the world by embedding symbols in music, architecture, painting, sculpture, gardens, and other forms of creative expression, drawing on the patterns and harmonies that form the foundation of proportion and compositional design. Musical ratios have a close relationship with art, architecture, and the order of nature: those ratios which are pleasant to listen to, are also delightful to see and feel, creating harmony with the space itself. Master builders from diverse traditions, ancient pagan cultures, Hinduism, Buddhism, Christianity, and Islam, imbued every geometric element in their religious and ceremonial edifices with sacred significance. Basic shapes like the circle, triangle, and square were intertwined to represent various dimensions of existence and divine relationships. Certain systems of proportion, such as the Fibonacci sequence, the Golden Ratio, and the Fibonacci spiral, are employed in sacred geometry to embody goodness, beauty, and truth [12, 14].

In 301 AD, the Kingdom of Armenia became the first state to embrace Christianity as its official religion, and here sacred geometry took on a distinctive form [1]. Armenian cities, fortresses, and churches were conceived as reflections of the cosmos, where mathematics, astronomy, and theology were woven into the very fabric of stone. By drawing on local materials, harmonizing with the natural landscape, and applying architectural ingenuity, Armenians shaped spiritual environments that were both places of worship and cultural landscapes imbued with enduring divine significance [10]. The combination of an octagon with cruciform extensions is a distinctive architectural style in early Christian and Armenian church architecture, blending symbolic geometry, the octagon, with the liturgical layout of a cross [3, 7]. This motif has transcended time,

being transmitted from the earliest Christian churches to modern ones, so that sacred geometry can be found in present-day Christian churches [4, 11]. In this article, we analyzed five churches located in the Banat region, presenting how geometric patterns are used in their interiors and proposing ways in which these patterns could be extended into the surrounding green spaces, with the purpose of extending sacred geometry into the landscape.

### **Material and Method**

Geometric patterns can serve as a link between the interiors of churches and their surrounding green spaces, a relationship that this study explores through the analysis of five churches in the Banat region, selected for their historical, architectural, and artistic significance. Detailed field observations were conducted to document interior layouts, geometric patterns, and decorative elements. Photographs were collected to analyze the spatial organization and the proportions used within the sacred spaces. Geometric analysis included identifying recurring patterns, such as the use of the octagon, cruciform layouts, Fibonacci sequences, the Golden Ratio, and spirals. The study also examined how these interior geometries could be conceptually extended into the surrounding green spaces, illustrating methods that preserve harmony between the built structures and the landscape, thereby reflecting the principles of sacred geometry in the surrounding landscape architecture.

### **Results and Discussion**

#### **Case Study 1: The Orthodox Church dedicated to the 'Descent of the Holy Spirit'**

The church was built between 1994 and 1997 in Timișoara, near Dacia Park. Work on the ecclesiastical painting began in 1999 and was completed in 2003, the church being consecrated on the 14<sup>th</sup> of December in the same year. The edifice and its architecture integrate a multiplicity of ecclesiastical works, the diversity of church painting, liturgical furniture, and decorative elements being remarkably rich. While at first glance one might perceive an apparent abundance of detail, upon closer and more attentive observation, the distinctions become evident, conferring upon the edifice a particular and unmistakable uniqueness as shown in Figure 1.

The church exhibits a massive volume and a wide roof, with the façade featuring a pavilion -or bell-tower-like structure and an open porch supported by massive pillars. Its broad roof, with pronounced eaves and tiered loggias, directly references Neo-Romanian Architecture, drawing inspiration from the Brâncovenesc style. However, the design is simplified and adapted to modern volumetry, emphasizing functionality and clarity. This contemporary Neo-Romanian approach focuses on the essence of traditional Romanian architecture, foregoing excessive ornamentation in favor of clean lines, open spaces, and a sense of structural harmony, reflecting modern principles of functionalism while maintaining cultural continuity.

On the exterior walls of the church, there are icons executed in mosaic. In the narthex of the church, there are several ecclesiastical paintings framed with borders displaying traditional motifs or designs inspired by the world bestowed by God. At the same time, the wood carvings on the entrance doors can also be observed. Entering the pronaos, one can notice the ecclesiastical paintings that bestow upon the church the beautiful representation of Creation.

The interior frescoes follow canonical iconography and employ vivid colors, using techniques and chromatics typical of the Neo-Byzantine School. The representations are plastic and dynamic, especially in narrative scenes, and often feature stylized backgrounds adorned with gold and stars. This Neo-Byzantine approach adheres to the traditional Erminia (iconographic canon) while embracing the expressiveness and rich chromatic palette characteristic of Romanian mural art after 1990, resulting in a harmonious blend of tradition and contemporary artistic interpretation.

The interior wood carving of the church forms a continuous artistic narrative, beginning with the entrance doors, extending through furniture, chairs, lectern table, and icon support, the frames of the icons, and culminating in the iconostasis with its Royal (Holy) Doors and Deacon's Doors. The iconostasis and doors are crafted from richly carved wood, featuring a dense array of floral and vegetal motifs, twisted columns, and perforated royal doors adorned with the vine motif. Executed in the Maramureșan/Neo-Romanian style, with influences from traditional folk sculpture, these works represent the pinnacle of wood craftsmanship. They embody a "horror vacui" approach, an intricate filling of every available space, highly characteristic of contemporary artisans from regions with a strong woodcarving tradition.

The embroideries within the church reflect both artistry and theology, combining intricate patterns with symbolic motifs. Common themes include crosses, floral designs, and geometric shapes, each meticulously stitched to enhance the liturgical vestments, altar coverings, and other ecclesiastical textiles. These works of art not only serve a decorative function but also convey spiritual meaning, linking the visual beauty of the

church with the sacred rituals performed within it. The Altar houses objects of both liturgical and artistic significance. The priestly vestments are richly adorned with embroidery, from simple traditional and geometric patterns to motifs inspired by nature, each reflecting their role in Christian life and worship. Similarly, the Cross on the Holy Table bears depictions of the Savior and scenes from His earthly life, integrating spiritual symbolism with aesthetic beauty. The Tabernacle on the Holy Table is of a simple design, adorned with modest engravings and featuring a flower resembling a cross on each side. The covers of the Holy Gospel depict two defining moments in the life of the Savior: The Crucifixion and, subsequently, The Resurrection. The stainedglass windows on the entrance doors portray the four Evangelists, Saint Mark, Saint Matthew, Saint Luke, and Saint John, each represented as both Apostle and Evangelist.



**Figure 1. The Ortodox church “Descent of the Holy Spirit”, Timișoara A Ecclesiastical painting and the iconographic representations on the exterior of the church; B Ecclesiastical painting and the iconographic representations of the church interior; C The wood carving in the interior of the church; D Details of the embroideries; E The wooden carvings of geometrical patterns in the church courtyard**

From the diverse styles of the saints' vestments, through the intricately designed frames and ornamental motifs, to the masterfully carved furniture and iconostasis in the prothesis area, the church's interior decoration showcases a harmonious progression of artistic craftsmanship.

The wooden carvings of geometrical patterns in the church courtyard serve as a symbolic element, connecting the exterior space with the sacred interior of the church.

The dome and tower illustrate the use of octagonal and cruciform forms. In plan, the dome is organized around a central circle containing Christ Pantocrator, from which radial lines extend, dividing the surface into sections that suggest either an octagonal or star-shaped (cruciform) layout. Similarly, the mosaic at the entrance, within the templon, employs a cruciform scheme: Christ "Ancient of Days" occupies the center, while the four arms are filled with saints. These arrangements, both vertical and horizontal, symbolize Heaven and the Divine Center, from which light and sacred order radiate throughout the sacred space.

Decorative motifs further reinforce these geometric principles. The painted pillars feature double spirals (volutes) and intricate interlacing knots reminiscent of Celtic and Byzantine patterns, which converge into vegetal forms such as stylized flowers. The wooden doors are similarly adorned with networks of spirals and vegetal volutes, producing a dynamic horror vacui effect. These spirals and infinite knots are not merely decorative; they function symbolically, representing eternity, the continuity of life, and the interconnectedness of the divine and material realms.

Proportional systems, particularly in the multi-tiered iconostasis, demonstrate the careful application of harmonious ratios. The relationship between the height of the main tier, which holds the royal icons, and that of the upper tiers often follows a principle comparable to the golden ratio, achieving visual equilibrium between the dense carved mass and the surrounding negative space.

This proportional harmony, together with the formal and symbolic motifs throughout the church, exemplifies a successful integration of functional modernity and the artistic revitalization of Orthodox tradition in the Romanian post-communist urban context.

### **Case Study 2: The Orthodox Church under the patronage of "Saint George the Martyr"**

Situated in the village of Beregsău Mare, within the administrative territory of Săcălaz Commune, this ecclesiastical edifice was constructed during the 18th century, with the works reaching completion in 1793. The church stands as a remarkable example of stylistic stratification and cultural continuity. Today, it is recognized as a historical monument and is recorded in the National Archaeological Register.

The architectural style is eclectic, with neoclassical and baroque influences, characteristic of the ecclesiastical edifices erected in the Banat region during that period. These stylistic elements are evident in the spacious interior, the ample vaults, and the use of rectangular windows, as well as in the naos structure articulated through pillars and arcades. Other architectural particularities include the nave-type ground plan, with a semicircular altar (apse), the bell tower situated on the western façade, the interior ecclesiastical painting together with the period-specific icons, and the present roofing, the central tower being surmounted by a metallic spire.

The interior church painting, excluding the icons and the iconostasis, was restored during the years 2024–2025. Since the edifice is a historical monument, the earlier ecclesiastical paintings remained untouched. Worthy of note is the visual distinction between the pre-existing icons and the newly executed painting: the icons stand out vividly to the observer, the contrast being both aesthetically pleasing and readily discernible. The newly repainted vault frescoes employ strong chromatic accents—deep blue fields studded with stars and warm ochres—while adhering to the traditional Orthodox iconographic canon. A deliberate visual tension emerges between the patina of the older, heritage icon paintings and the luminous freshness of the newly executed murals. The vaults feature classical themes (the Last Supper, the Dormition of the Theotokos) alongside symbolic motifs (Christ the Shepherd), all set within a painted background that imitates marble (trompe l'oeil), a technique typical of the Baroque.

The iconostasis is not the original one; the present structure formerly belonged to the Orthodox Ecclesiastical Edifice dedicated to the "Ascension of the Lord" in the Mehala District of Timișoara Municipality. Its elements interweave harmoniously with the rest of the church's interior, producing a visually agreeable ensemble.

The recent liturgical furnishings such as choir stalls and analogia, are crafted in the Brâncovenesc idiom, characterized by vegetal motifs (vine leaves, wheat stalks) and zoomorphic details (confronted birds). This ornamental vocabulary reflects the synthesis of local tradition and Renaissance-Baroque influences typical of the Neo-Romanian style as shown in Figure 2.



**Figure 2. The Ortodox church “Saint George the Martyr”, Beregsău Mare**

Sacred geometry plays a central role in the spatial organization and aesthetic coherence of the church's interior, adapted here to Baroque style. Major compositions are inscribed within circular medallions framed by octagonal or star-shaped bands, while the vault is articulated through a modular system of rectangular and circular divisions, reflecting the symbolic dialectic of the circle as perfection and eternity (cosmos) and the rectangle as the Earthly Church. The cruciform layout is emphasized both theologically and visually, most notably in the altar painting, where the vertical axis of the dome (the Holy Spirit) intersects with the horizontal liturgical cycle (from the Last Supper to the Dormition of the Theotokos), as well as in decorative bands where alternating squares, diamonds, and crosses reinforce the motif. Baroque ornamental vocabulary further enriches this geometry: the iconostasis integrates volutes, spirals, and arabesques that animate the gilded framework, while carved wooden furnishings display vegetal spirals and zoomorphic motifs organized through C-shaped volutes. The proportional system underlying the iconostasis often approximates the Golden Ratio, creating a rhythm of large and small panels whose harmonic balance epitomizes Baroque aesthetics while sustaining Orthodox symbolic tradition.

**Case Study 3: The Orthodox Church under the joint patronage of the “Holy Archangels Michael and Gabriel” and the “Holy Prophet Elijah the Tishbite,**

Situated in the village Beregsău Mic, within the administrative territory of Săcălaz Commune, this ecclesiastical edifice was constructed in 2008 and completed in 2010, while the mural painting program was executed and finalized between 2013 and 2015. •

On the exterior of the church, there is only a single ecclesiastical painting, depicting the church's patron feast, placed on the bell tower, as shown in Figure 3.

The decorative program of the church reflects a synthesis of Neo-Byzantine and Brâncovenesc vocabularies, adapted to contemporary ecclesiastical art. Already in the pronaos, the beautiful ecclesiastical paintings can be observed, accompanied by finely crafted frames and highly detailed decorative motifs, some imitating the traditional church wood carvings. The frescoes employ a vivid palette of red, dark blue, and gold, with frontal figures and clear contours, complemented by stylized floral bands. While adhering to the Erminia (Orthodox iconographic canon), the execution demonstrates a modern, luminous approach characteristic of mural painting in Romanian Orthodox churches of the 20th and 21st centuries.



**Figure 3. The Orthodox Church “Holy Archangels Michael and Gabriel” and the “Holy Prophet Elijah the Tishbite”, Beregsău Mic**

From the very entrance, the carved wooden doors announce the importance of wood as a defining artistic medium within the church. The craftsmanship of these entrance carvings introduces a decorative language that continues throughout the interior, where wood carving predominates in the liturgical furnishings and architectural details. These sculptural elements harmoniously blend with the ecclesiastical mural painting, creating a unified ensemble in which material, ornament, and iconography mutually reinforce one another. The wood carvings, executed in deep relief, display a rich ornamental repertoire: vases with flowers, pomegranates, wheat, and vines, alongside acanthus and spiral motifs incorporated into columns and frames. These elements draw directly on the Brâncovenesc tradition of the 17th–18th centuries, itself a synthesis of Oriental floral patterns and Western Baroque influences, thus reaffirming a distinct national style. Additional decorative features, such as painted bands of lilies (fleur-de-lis) and volute-based ornaments, further highlight the persistence of Late Baroque and Brâncovenesc adaptations in the present context.

The artistic significance of these elements is closely tied to the modern Romanian Orthodox cultural revival. The adoption of the Neo-Byzantine and Brâncovenesc styles in the Timiș county functions as an explicit reaffirmation of Romanian identity in the Banat area, uniting canonical Byzantine iconographic principles with the ornamental repertoire of the Brâncovenesc tradition. The choice of wood for the iconostasis, choir stalls, and other liturgical furnishings carries strong symbolic value, linking ecclesiastical art to vernacular craft traditions while elevating them into a more sumptuous, monumental aesthetic. At the theological level, the iconographic program maintains strict fidelity to Orthodox norms, with representations of the Holy Fathers (e.g., St. Cyril, St. Alice) and angelic figures forming part of the essential liturgical framework. The central

Christological image—bearing the inscription IC XC NI KA (“Jesus Christ the Conqueror”), whether subtly integrated into ornament or carried by an angel—underscores the theme of victory over death, a core affirmation of Orthodox theology.

The vestments, the sacred objects in the Altar, as well as other liturgical items such as the chandelier, display a rich variety of carvings, embroideries, and colors representative of church life. It is worth noting that the “grape” motif appears very frequently—a Eucharistic symbol (Holy Communion / the Divine Liturgy), fruitfulness, and eternal life—rooted both in Byzantine and folk artistic tradition, and naturally integrated into the Romanian liturgical context. In the case of the priestly vestments, the grapes allude to the permanent presence of the Eucharist in the priest’s ministry.

Elements of sacred geometry and harmonious proportion are deeply embedded in both the structural and decorative vocabulary of the church. The use of spirals and volutes, evident in capital ornamentation and in the framing of floral motifs such as vases with pomegranates, recalls the classical composite and Corinthian models but is reinterpreted through stylized acanthus leaves, symbolizing growth, continuity, and the cosmic movement central to Christian decorative art. The cruciform scheme is equally significant: the massive wooden cross with equal arms, along with the recurring motif of the cross inscribed within a circle bearing the inscription IC XC NI KA, functions as a geometric expression of cosmic order and Christ’s victory, while also reaffirming the centrality of the cross in Orthodox architecture and theology. Proportional harmony further governs the architectural and pictorial program; the articulation of arches and pillars into measured registers, and the calculated distribution of chromatic fields—blue backgrounds offset by red decorative bands—contributes to an intuitive yet effective application of the Golden Ratio. These geometric and proportional systems generate balance, rhythm, and a sense of divine beauty, underscoring the theological dimension of sacred art as both ordered and transcendent.

#### **Case Study 4: The Roman Catholic Church under the patronage of the “Most Sacred Heart of Jesus”**

Motivated by the fervent devotion of their Christian community, the German inhabitants of Timișoara’s Elisabetin district commissioned the construction of their own Roman Catholic church, executed in the Neo-Gothic style reminiscent of Vienna’s Votivkirche. While the bulk of the construction was completed by 1914, the outbreak of the First World War delayed its finalization. Even in its unfinished state, the church impressed with its monumental dimensions: 52 meters in length, 22 meters in width, and a total height, including the towers, of 57 meters. Designed to accommodate up to 2,000 faithful, the building stands as a testament to both the religious dedication and architectural ambition of the Timișoara German community [2, 9]. This church represents an important stage in the architectural history of the Banat region, marking the end of the Austro-Hungarian era and the strong influence of German Romanticism, which revived the Gothic style [6].

The church features twin façade towers, a central rose window, and pointed (ogive) arches, characteristic of the Neo-Gothic (or Late Neo-Gothic) style. The twin towers dominate the façade, while the pointed arches of windows and portals, together with the geometrically divided rose window, exemplify the stylistic vocabulary of 19th–early 20th-century Neo-Gothic architecture. The primary artistic significance lies in creating a space that inspires ascent, transcendence, and grandeur.

Inside, ribbed cross vaults and tall arcades emphasize verticality, with slender pillars and ribs converging in pointed vaults that naturally direct the gaze upward, symbolically toward the divine. The spatial composition reinforces the Neo-Gothic emphasis on height, light, and an impression of ethereal elevation. The pronounced verticality, characteristic of Gothic architecture, symbolizes the divine quest and the transcendence from the earthly world.

Neo-Gothic architecture achieves a full integration of the arts, where structural elements (ribbed vaults), sculpture (altars and gilded capitals), and light (stained glass) converge to create a cohesive and mystical spatial experience.

The side altars and other furnishings are richly sculpted, featuring miniature turrets, stylized floral motifs, and intricate detailing. This combination of Neo-Gothic and Neo-Baroque elements reflects a popular decorative approach in the 19th–early 20th centuries, merging Gothic structural references with Baroque richness in ornamentation.

The church’s stained-glass windows employ vivid colors and figurative representations, reinterpreting Gothic techniques. While the windows filter light against the light-colored stone interior in the manner of traditional Gothic cathedrals, the figurative and narrative style aligns more closely with post-Renaissance artistic conventions, creating a harmonious interplay of light, color, and iconography, as shown in Figure 4.



**Figure 4. The Roman Catholic Church “Most Sacred Heart of Jesus”, Timișoara**

Sacred geometry forms the conceptual and visual foundation of the Gothic style, structuring every architectural and decorative element. The pointed arch, or ogive, is the defining geometric motif, resembling a sharp triangle and appearing consistently in windows, doors, and ribbed cross vaults. In the vaults, ribs form a cruciform network horizontally and descend along slender pillars, emphasizing verticality and guiding the gaze upward—symbolically toward Heaven. The overall cathedral plan, typically a Latin cross, reinforces this cruciform symbolism. Circular geometry is equally significant, particularly in rose windows. Exterior rose windows are radially divided into petal-like sections, while interior rose windows display intricate compositions based on a central circle subdivided into twelve primary segments, evoking the Apostles or months of the year, each enriched with arcs, octagons, or hexagons. These circular forms represent the Eternal Wheel, Heaven, and the Sun, expressing divine order and geometric perfection. Proportional systems, evident in the arrangement of slender columns and the nave’s height-to-width ratio, often rely on equilateral triangles or historically inspired applications of the Golden Ratio. Together, these geometric principles integrate structure, ornament, and symbolism, producing a harmonious and transcendent spatial experience that defines Gothic architecture.

**Case Study 5: The chapel located in the basement of The Greek Catholic Church dedicated to ‘Holy Mary, Queen of Peace’**

The Greek Catholic Church, dedicated to ‘Holy Mary, Queen of Peace,’ constitutes a contemporary ecclesiastical architectural edifice in the Elisabetin District of Timișoara Municipality, erected between 2001 and 2008. The construction integrates modern elements while simultaneously reinterpreting the Byzantine tradition specific to the Eastern liturgical space, as shown in Figure 5.

Regarding the exterior, the façade of the edifice is marked by compositional balance and simplicity, hallmarks of modern architecture, while the semicircular arches over the windows and main entrance evoke Neo-Romanesque or refined Neoclassical influences. The gable roof and absence of elaborate historical ornamentation indicate a construction period from the latter half of the 20th century or the early 21st century. The emphasis of the main entrance is realized through a portico with semicircular arcades. These are constructed of exposed brick, which may be said to evoke both Byzantine and Romanesque influences. Retaining the perimeter of the façade, one also observes the presence of elongated vertical windows, arched at their upper extremity.



**Figure 5. The chapel of The Greek Catholic Church 'Holy Mary, Queen of Peace', Timișoara**

The interior reflects a modern, minimalist aesthetic dominated by white walls and uncluttered lines. Passing to the chapel space, located in the basement, one observes an emphasis on light and functionality. The space follows a rectangular plan, comprising a single nave oriented towards the main altar. The lighting elements, together with the structural ceiling insertions of concrete, suggest a contemporary note that deliberately avoids excessive ornamentation. The bell tower, integrated within the structure of the church and not standing separately, accentuates the unity of the construction. The use of simple materials, such as plain plaster, exposed brick, and the modest coloration of the plaster, creates a harmonious and sober contrast.

The iconographic decoration of the chapel is discreet, with icons placed upon the lateral walls without supplementary embellishment. The paintings are executed in a contemporary religious realist style. Departing from the stylized, frontal Byzantine iconography, these works employ perspective, chiaroscuro, and expressive human emotion, aligning with post-expressionist and Western figurative traditions.

The functional furniture, particularly the pews, integrates harmoniously into the simplicity of the space. Light-wood benches complement a central luminous band on the ceiling, contrasting with exposed or textured concrete panels along the side walls, emphasizing simplicity and contemplative space. Likewise, although the altar is simple in form, it is nonetheless highlighted by the central crucifix and by the floral arrangements present. Freestanding sculptures of the Crucified Jesus and the Virgin Mary are classical and figurative, based on realistic human anatomy. They follow the conventions of Catholic and Greek-Catholic devotional art, providing three-dimensional focal points for liturgical and contemplative purposes.

Thus, the chapel corresponds to the general stylistic orientation of the church, namely the modern, whose principal aim is liturgical functionality and the creation of a space for recollection and prayer.

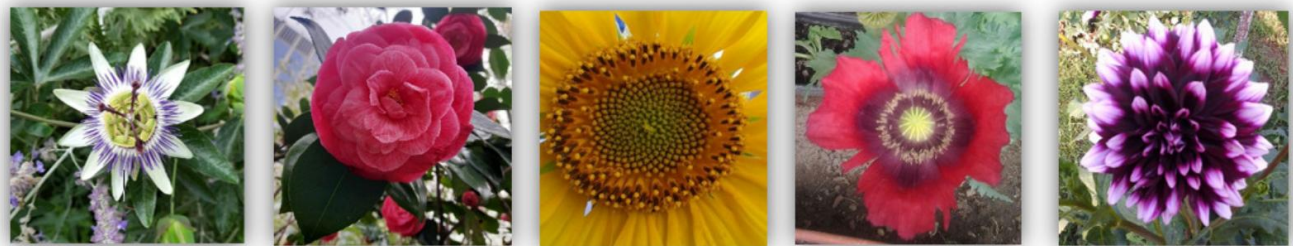
The interior of the church is defined by strict bilateral symmetry, with all elements arranged along a central axis guiding the eye from the entrance toward the Altar. This axuality establishes classical order and a sense of progression toward the focal point, while proportional relationships contribute to visual harmony, even when precise measurements are not available.

Circular and cruciform forms are central to the spatial and symbolic design. Above the Altar, the ceiling features a circular element—either a minimal dome or vault—that illuminates the holiest area, while the Monstrance itself is circular, with radiating rays evoking the sun. Exterior windows and entrance frames employ semicircular (Roman) arches, reflecting classical geometry. The Cross, or *Crux Immissa*, serves as the dominant geometric form, reinforcing the centrality of Christian faith. Circles symbolize divinity and celestial perfection, whereas the cruciform layout emphasizes spiritual centrality and liturgical focus.

Squares and rectangles structure the remainder of the interior space. Floor tiles, wall shapes, and pews are organized along right angles, and the absence of a traditional dome or complex transitional elements preserves a simple, Euclidean geometry. These rectilinear forms symbolize earth and stability, creating a visual and symbolic contrast with the circular forms associated with divinity above the Altar.

This modern chapel represents a distinct phase in the evolution of places of worship in Timișoara, focused on post-conciliar functionalism and symbolic realism in art [2].

Sacred Geometry offers a visual and mathematical language for understanding the relationship between parts and the whole in nature, ranging from molecular structures [8] and microscopic organisms to the intricate design of the human body, the patterns of landscapes, and even the vast order of the cosmos. It is also present in ornamental flower species, which are arranged to create geometrical compositions that embellish the green spaces surrounding the churches, as shown in the Figure 6.



*Passiflora caerulea L. Camellia japonica L. Helianthus annuus L. Papaver somniferum L. Dahlia pinnata Cav.*

**Figure 6. Systems of proportion in natural beauty [36]**

At the same time, any of the geometric patterns shown in the Figure 7, when used, contributes to harmonizing the interior space with the surrounding landscape. These patterns can be used in various plant arrangements, as well as in furniture and constructions that are part of the green spaces.

As shown in Figure 8, geometric shapes such as the star pentagon, star hexagon, star heptagon, star octagon, star nonagon, and star decagon can be used to design plant compositions and ornamental constructions that symbolically connect church interiors with the surrounding landscape.



**Figure 7. Geometrical patterns connecting churches and their green spaces**

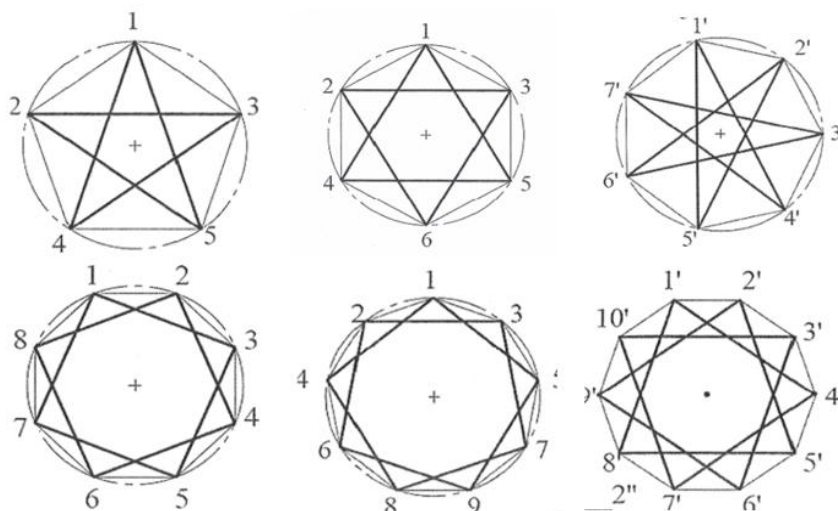


Figure 8. Star-shaped geometries for landscape design

### Conclusions

A careful analysis of the five places of worship in the Municipality of Timișoara and its surrounding urban area provides a stylistic map of the evolution of sacred art in the Banat region from the 18th to the 21st century. The principal conclusion highlights that confessional diversity (Orthodoxy, Roman Catholicism, Greek-Catholicism) is reflected in the geometric and ornamental variety observable in these buildings, which all convey the same divine transcendence, albeit through distinct visual languages.

On one hand, the Western styles of the Roman Catholic Churches are expressed through pronounced verticality, linear columns, and pointed arches (ogives). These geometric elements create an ascending spatial dynamic that directs the gaze toward a single focal point—the Altar.

On the other hand, Orthodox sacred art is characterized by massive volumetry, rounded arches, and the use of circles and octagons in domes and medallions. In particular, the Orthodox Church in the Dacia area of Timișoara, executed in fresco technique between 1999 and 2003, demonstrates that geometry not only structures the space but also organizes dogmatic hierarchy through the rhythmic repetition of Byzantine knots and spirals on the pillars.

This chronological transition is especially evident: historic churches exhibit richly elaborate ornamentation, whereas post-Communist places of worship reveal a tendency toward canonical purism (as in frescoes and Neo-Byzantine decoration), and even functional minimalism. This demonstrates how sacred geometry adapts to contemporary needs without significantly compromising Christian symbolism.

Ultimately, sacred geometry in Banat transcends confessional boundaries. From the Neo-Gothic rose window to the Pantocrator of the Neo-Byzantine dome, the circle remains the enduring symbol of perfection and eternity, while the cross defines the spatial plan. Thus, these places of worship are not merely architectural testimonies, but also repositories of a universal geometric language, locally adapted, a manifestation that defines the cultural and spiritual identity of Banat.

The presence of sacred geometry within the interiors of these churches—manifested in proportional systems, cruciform layouts, and ornamental spirals, finds echoes in their exterior articulation and integration into the surrounding landscape. The principles of order, symmetry, and cosmic symbolism that govern frescoes, wood carvings, and architectural elements also inform the orientation of each building, its alignment with cardinal points, and its relationship to adjacent open spaces. From the perspective of landscape architecture, the ensemble of churches functions as a network of sacred sites, where pathways, courtyards, and vegetation reflect and reinforce the geometric and symbolic logic of the edifices themselves. Consequently, sacred geometry serves as a unifying principle across multiple cultic buildings, linking interior and exterior, material and symbolic, and situating each church within both its local environment and the broader cosmic order it embodies.

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