

THE SYMBOLIC GEOMETRY OF THE BAROQUE CAMALDOLESE MONASTERY AT PAŽAISLIS

Key words: Pažaislis, Camaldolese, symbolic geometry, Baroque, Pac, Kepler, Counter-Reformation, monastery, hexagram, hexagon, Trinity, equilateral triangle, centralized church, cosmic geometry, Kaunas.

No aspect of building requires more ingenuity, care, industry, and diligence than the establishment and ornament of a temple. [...] There is no doubt that a temple that delights the mind wonderfully, captivates it with grace and admiration, will greatly encourage piety.

Leon Battista Alberti, 1450¹

INTRODUCTION AND SYNOPSIS

Christopher Sigismund Pac (1621–1684), Grand Chancellor of Lithuania, brought closure to the period of political and military disasters, the so-called “Deluge” in Polish and Lithuanian historiography, by founding in the mid-1660’s a Camaldolese monastery at Pažaislis. Situated on a secluded estate near Kaunas, the new foundation became the order’s northernmost outpost. Officially called *Eremus Montis Pacis* (The Hill of Peace Hermitage), the designation deftly alluded to the Pac family and the Latin word for “peace”. Nonetheless, the formal title did not displace the property’s old name “Pažaislis,” which remains to this day the monastery’s usual appellation.

The general plan of Pažaislis reflected existing Camaldolese arrangements, but the monastery’s Church of Holy Mary’s Visitation did not². Instead of the customary rectangular basilica format, its plan

was hexagonal. Consecrated in 1674, the church’s unusual format has intrigued investigators, prompting speculation about its possible derivation, sources, and antecedents³. The study at hand addresses the very same issue.

Inspired by the idea expressed ages ago by St. Augustine that the most beautiful can be the most hidden, we attempted to expose and decode the church’s manifest six-sidedness. For primary evidence, we turned to measured drawings and the monastery’s dedication plaques. Our investigation led to the conclusion that symbolic geometry supplied and orchestrated the design. We can, therefore, suggest that Pažaislis is best accommodated and understood within the broad ecclesiastical design tradition which employed geometry to convey theology.

Symbolic geometry has long played an important role in the sacred architecture of many faiths, with examples in many cultures and roots extending to prehistoric times. The most ancient Western strand of the widespread practice is represented by early Christian churches whose plans referred to the *tau* cross, the Greek cross, or to the Latin cross. While Pažaislis emanated from the same general and venerable custom, the tensions arising from the Protestant Reformation and the Catholic Counter-Reformation gave particular meaning, relevance, and urgency to the chosen geometry. Scholarly

attention has been recently focused on the frescoes of Pažaislis which thematically supported Roman Catholic hagiography and Marian veneration⁴. It will be argued below that the monastery's geometric armature was likewise theologically engaged. The architecture of Pažaislis asserted Catholic doctrines. Lutherans, Calvinists, and Anti-Trinitarians would have considered the design unacceptable, completely at odds with their fundamental convictions and defining beliefs.

The very foundation of Pažaislis ignored Martin Luther's denunciation of monasticism and the cult of saints. The monastery's Church of Holy Mary's Visitation was laid out on a centralized hexagonal plan, demonstratively alluding to Her heavenly crown. This contradicted Calvinist and Lutheran rejection of the Blessed Virgin's special status. The hexagon fits inside a hexagram, a six-sided star figure defining the *chi-rho* monogram – a shorthand reference to Christ. This directly opposed the Anti-Trinitarian doctrine, which repudiated the divinity of Christ and belief in the Trinity.

The equilateral triangle, or one half of a hexagram, is a figure associated with the lily, which, in turn, refers to Mary and the Trinity. Additionally, the equilateral triangle and the hexagram transmitted associations from areas not directly associated with Christianity. For instance, Pythagoreans of ancient Greece and alchemists of the Middle Ages valued the equilateral triangle. And in the world of heraldry, the hexagram appears in the Camaldolese armorial and also provides a geometric underlay for the Pac family emblem.

Christians have long believed that churches were facsimiles of the Heavenly Jerusalem, that is, earthly analogues of the divine cosmos. Accordingly, their geometry could rightfully be invested with symbolic loads alluding to the heavens. During the Renaissance, the circle was held to be nature's most perfect form, becoming the ideal basis for the plan of a church. Simple and self-contained, it reflected the shape of the heavenly bodies and the geometric armature of the universe (as it was then conceived). Circular churches could also refer to Blessed Virgin Mary's heavenly crown. But despite such powerful

symbolic and visual virtues, towards the end of the 16th century churches based on sacred and cosmological circular geometries began losing their appeal.

Around 1600, Tycho Brache, Galileo Galilei, and Johannes Kepler were uncovering a solar system much richer and more complex than previously imagined. They found that elliptical, Platonic, and triadic geometries helped elucidate movements of planets, the distances between them, and the shape of their orbits. As geometry had clarified these previously mysterious and perplexing matters, astronomers concluded that geometrical relationships had structured the cosmos. Geometric cosmology came to represent the era's most advanced astrophysical thought. Equilateral triangles, previously a theological and a philosophical symbol, had acquired an ostensible empirical presence.

Architects thus had a good reason to add ovals and ellipses, hexagons and hexagrams to the old repertoire of circle and square, the Greek cross, the *tau* cross, and the Latin cross. The expanded design arsenal soon helped them to generate some of the Catholic Counter-Reformation's most inventive and memorable buildings. In the late 1630's Francesco Borromini designed *San Carlo alle Quattro Fontane*, a church for the Trinitarian Order in Rome which featured ellipses and equilateral triangles. In the 1640s he started on *San Ivo della Sapienza* where a hexagram overlaps a hexagon. In the 1650s Gian Lorenzo Bernini conceived an oval plan for the Church of *Sant' Andrea al Quirinale* and the grand elliptical piazza in front of *San Pietro Vaticano*. And in the 1660s Guarino Guarini used intricate geometries for the vaults of *San Lorenzo* and the *Capella della SS. Sindone*, both in Turin.

The subliminal geometric armature of Pažaislis asserted Roman Catholic orthodoxy, simultaneously rejecting Protestant revisionism. The equilateral triangle and the hexagram alluded to theological fundamentals, engaged the empirically validated geometric cosmology scholarship of the time, and conveyed heraldic references. Thus, several kinds of symbolic geometry – sacred, cosmological, and heraldic – suffused Pažaislis' underlying rationale. Architectural theorists of the Renaissance and

Baroque would surely agree that Pažaislis was a sophisticated design, created to encourage piety by “delighting and captivating the mind.”

ST. ROMUALD, THE CAMALDOLESE, AND THE SITE PLAN OF PAŽAISLIS

St. Romuald (952–1027), the guiding spirit of the Camaldolese Order, was convinced that the two kinds of Christian monasticism – the cenobitic, or communal type, and the eremitic, or the reclusive type, – could form one monastic community, each distinct component strengthening and complementing the other. He believed that neither group needed to lose its characteristics, its identity, or to forego its spiritual advantages. Instead of complete isolation, he sought to bring some parts of the eremitic life into contact with monastic communal life. He was sure that hermits could benefit by limited association with monks who lived together in the

monastery. The two groups would live separately, but form one congregation. Both groups would be confined within the same estate; both followed the same *regula*; both obeyed the same superior, and both came together for communal ceremonies and prayers. St. Romuald’s ideas led to the creation of the Camaldolese monastery layouts which were quite different from the prevailing Benedictine model.

St. Benedict (480?–543), the abbot of *Monte Cassino* and the founder of Western Monasticism, had approved both kinds of Christian monasticism⁵. However, unlike the Camaldolese hermits, the Benedictine hermits lived entirely alone. St. Benedict’s *regula* meant to primarily benefit the cenobite monks who had chosen to enter communal monasteries. He was convinced that those monks who entered the eremitic life had already proved themselves and did not need explicit guidelines or directives⁶. Therefore, St. Benedict completely separated the cenobites from the hermits, allotting to each entirely different living accommodations. The Benedictine cenobite monks lived together in monasteries, guided by a resident abbot. The hermits, on the other hand, led solitary lives, apart from their brethren, completely isolated from human contact.

Benedictine monasteries were centred on the cloister and the church. The cloister, usually south of the church, was an outdoor space, surrounded on the other three sides by the refectory, kitchens, and cellars. Outside this basic core of church, the cloister, and supportive buildings, lay the abbot’s quarters, guest lodgings, housing for the novices, an infirmary, workshops, and farm buildings. The Benedictine layout was slowly tested and refined, reaching one of its clearest formulations in the 9th century plan for the Abbey of St. Gall, Switzerland⁷.

The Benedictine scheme became the most widely accepted and imitated model for the monasteries of European monastic orders. Lacking organizational axes and completely avoiding symmetry, the layout could be easily modified, the various parts re-arranged in response to functional needs, orientation, prevailing winds, slope of the land, water supply, and so on. Since the Benedictine scheme was so adaptable, various permutations arose. Their casual layouts often

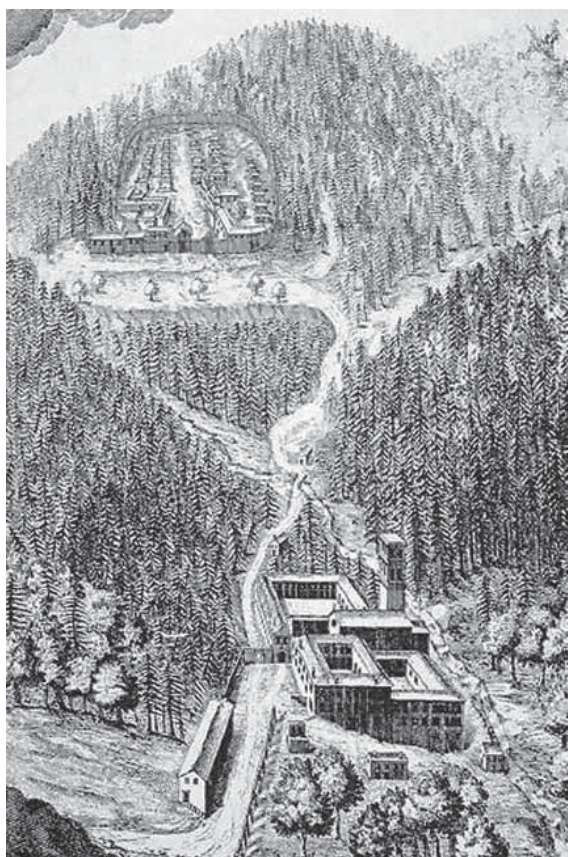


Fig. 1. The hermitage and the Fonte Buono monastery at Camaldoli. Frontispiece engraving of *Cenni Storici*, Florence, 1864.

make it virtually impossible to identify the particular monastic order of a given monastery from its plan alone. By contrast, the Carthusians, Hieronymites, and the Camaldolese orders developed their own distinctive monastery layouts, rejecting the loose and flexible arrangements of the Benedictine type.

The Camaldolese started building monasteries in the 11th century. Following the example of their first settlement at Camaldoli, they initially preferred large and remote estates, where the communal and eremitic buildings could be widely separated and loosely dispersed (Fig. 1). But by the time of St. Romuald's canonization in 1585 they were also founding monasteries closer to towns and on smaller estates. Of necessity the Camaldolese began appreciating compact and highly-rationalized monastic layouts.

The *Eremus in Montibus Taurinensibus*, Savoy, dated 1602, well illustrates the new attitude (Fig. 2). The monastery is entirely enclosed within a clearly-defined rectangular perimeter.

A central organizational axis organizes the bilaterally symmetrical arrangement. The huts of the hermits were placed on a grid, making it easy to distinguish the hermitage from the compacted communal buildings. The prevailing geometric order is worlds apart from the order's earliest haphazard layouts. It is highly likely that the enormously influential Escorial, designed in the 1560s and completed in 1584 by King Phillip II of Spain, provided the Camaldolese with important monastery planning ideas (Fig. 3).

Dedicated to St. Lawrence, whose emblem was a gridiron, the Escorial complex was, accordingly, also laid out as an immense quadrangular gridiron. Significantly, the Escorial featured "the first rigorous axially symmetric layout in Western monastic architecture"⁸. Its use of a central axis, bilateral symmetry, gridiron organization, and totally enclosed perimeter influenced the layout of the *Eremus in Montibus Taurinensibus*, whose severe rationalization demonstrated a thoroughly systemized vision of Camaldolese monasticism.

The Camaldolese came to Poland soon thereafter, erecting in 1605 the *Eremus Montis Argentini* on the Bielany hilltop near Cracow⁹. Its plan was sent

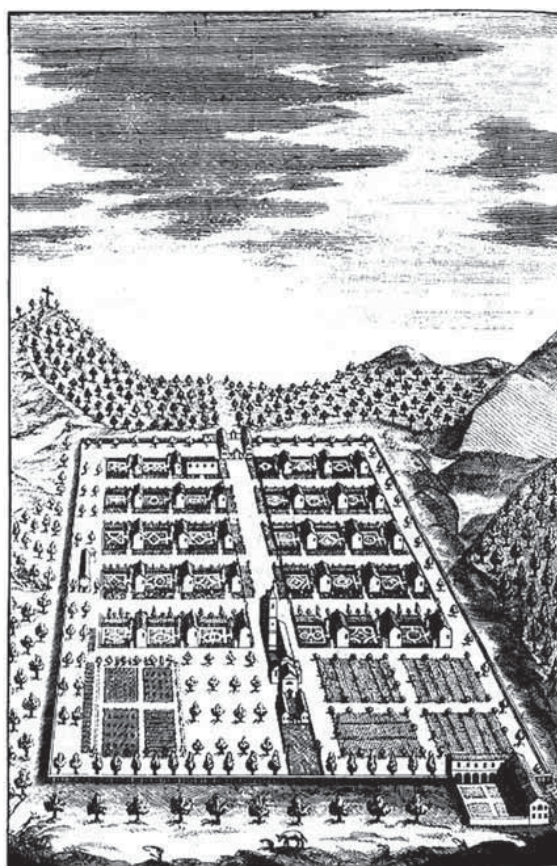


Fig. 2. Engraving showing aerial view of the *Eremus in Montibus Taurinensibus*. Mittarelli and Costadoni. *Annales Camaldulensis...* Vol. VIII, 1764.

in from Italy¹⁰. The *Eremus Sylv Aerae*, was next established in 1621 at Rytwiany. Twenty years later the *Eremus Montis Regii* monastery was founded at Bielany, not far from Warsaw. And in 1663 the Camaldolese set up *Eremus s.s. Quinque Martyrum* at Bieniszew. In Lithuania, the *Eremus Montis Pacis* at Pažaislis and the *Eremus Insulae Wigrensensis* at Lake Vygriai followed in 1664 and 1667, respectively¹¹. Both foundations were directly affiliated with the Congregation of Monte Corona in Perugia, Italy, the most actively expansive Camaldolese community at the time. The Camaldolese monasteries founded in Poland, Lithuania, and Hungary during the 17th and 18th centuries tended to display a very high degree of site plan organization¹². To the extent that a given Camaldolese monastery exhibits clearly defined internal zones, geometrical order, organizational axes, and overall formal relationships, it evidently derives from the *Eremus in Montibus Taurinensibus*.

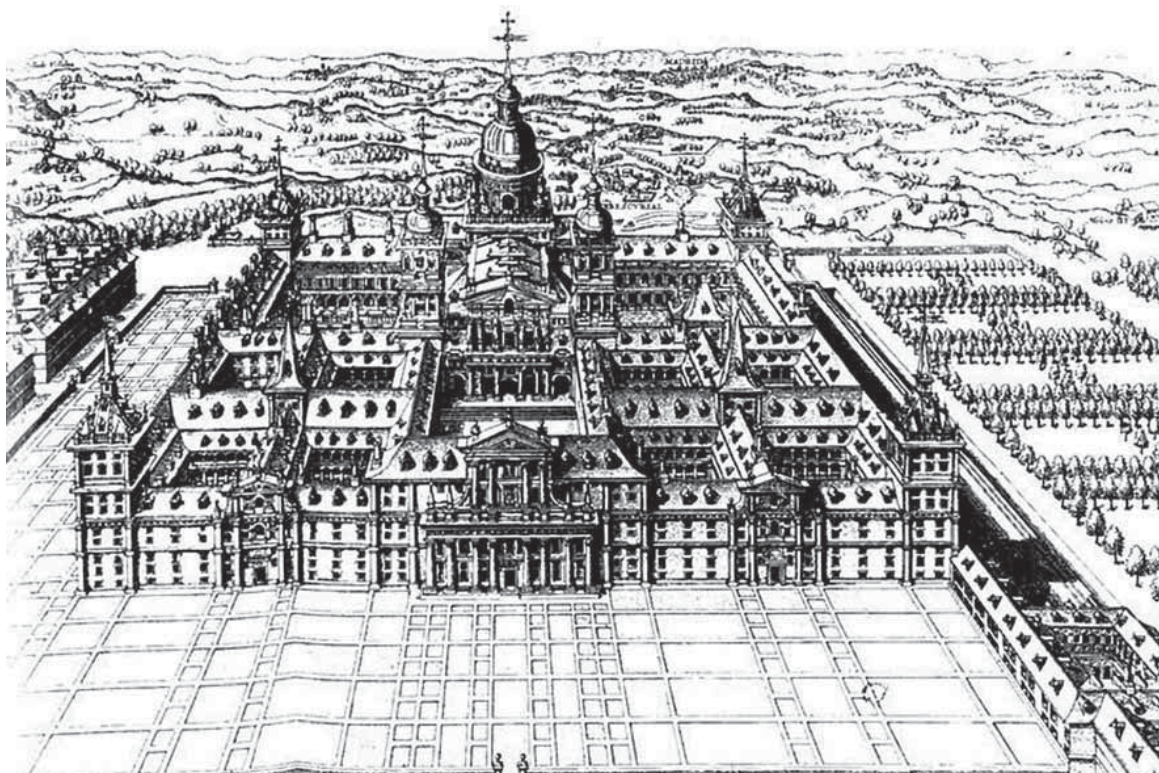


Fig. 3. Aerial view of El Escorial, Spain. Engraving based on Juan de Herrera. *Disegnos y Estampas del Escorial*. Madrid, 1589.

The architect of Pažaislis was evidently well-versed with monastery layouts designed to accommodate the Camaldolese monastic agenda. At the very least he must have been familiar with the *Eremus*

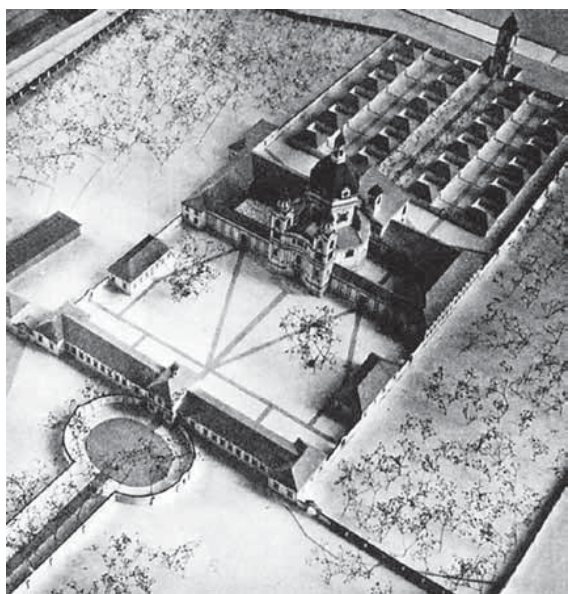


Fig. 4. Model of the Pažaislis monastery complex. Model by Stefa Čerškutė. *Meškauskas, Stasys. Pažaislis*. Vilnius: Mintis, 1983.

in Montibus Taurinensibus and the four monasteries in Poland cited above. Although the site plan of Pažaislis has many of their features, it does not directly copy any one in particular. The architect studied and refined existing examples, distilling the essentials to make their underlying rationale absolutely crystal clear (Fig. 4).

Pažaislis became a model of lucidity, its tri-partite layout systematizing the life stages of every Camaldolese. The schemes preceding Pažaislis did contain the elements which can generate a tri-partite arrangement, but Pažaislis stands out from them by fully realizing their nascent potential. Laid out with measured exactness and geometrical precision, Pažaislis became an exemplar of Camaldolese monasticism.

It all began with the entrance avenue. Taking up one-third of the monastery's entire length, the entrance *allée* can refer to the stage of life leading an aspirant to join the Camaldolese Order. The second part of the tri-partite scheme stretches from the *foresterium* and includes the church. The domain of the entire monastic community, it was mostly used by

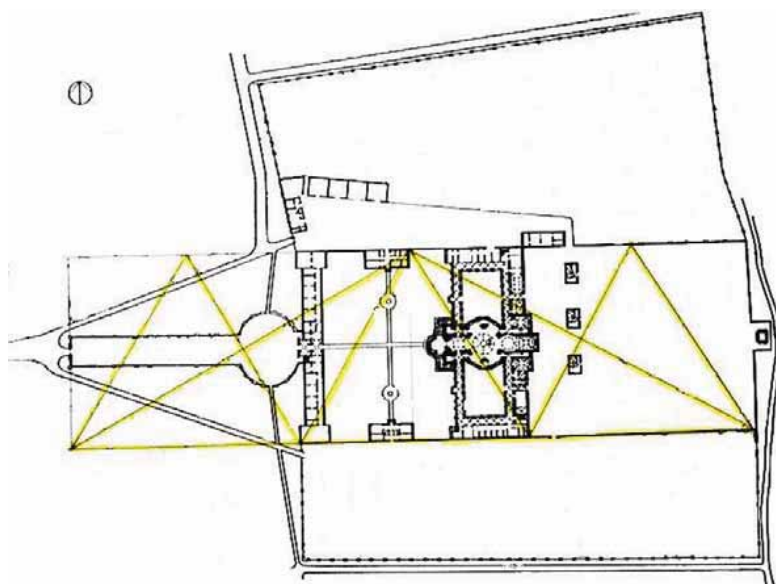


Fig. 5a. General plan of Pažaislis monastery showing regulating lines of equilateral triangles. Author's drawing. For the unaltered plan, see: Šinkūnaitė, Laima. Baroko pilnatis Pažaislio vienuolyno ansamblyje. In: Darbai ir dienos. T. 26, 2001, p. 8.

the novitiates. The hermitage, located immediately behind the church, became the third and concluding part of a Camaldolese monk's journey through life. The tri-partite layout of Pažaislis was a direct architectural analogue, a constructed exposition of a monk's spiritual quest, a long process leading to and ending in hermetic solitude (Figs. 5a, 5b).

Lay pilgrims visiting Pažaislis entered the *forestorium*, the guest lodgings housed in a long low building, placed frontally and perpendicular to the approach *allée*¹³. Passing through the *forestorium*, they entered the monastery's large courtyard, a large open space dominated by the majestic Church of Holy Mary's Visitation standing directly ahead. Two small

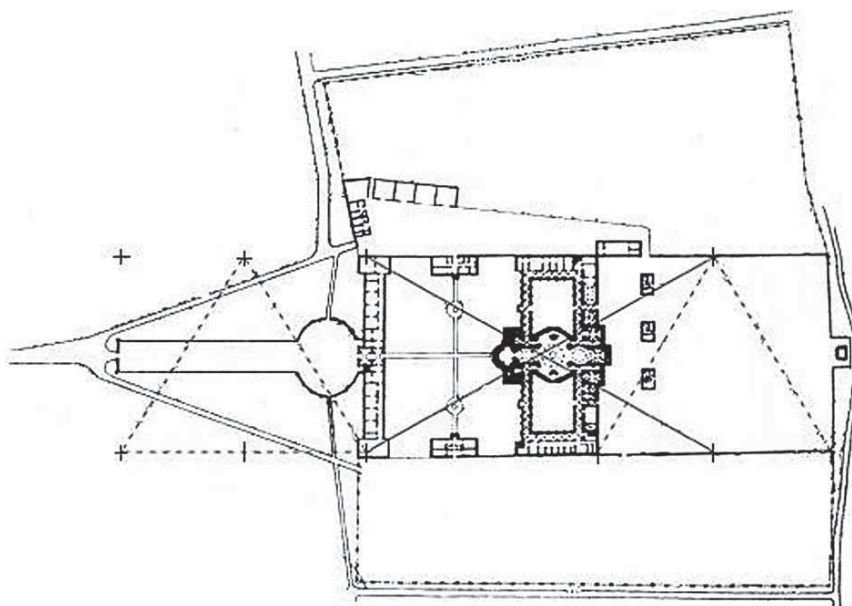


Fig. 5b. The geometrical centre of the Pažaislis general plan. Located inside the church, it marks the interface of the secular and sacred realms. Author's drawing.

buildings, the *oficina*, holding the courtyard's northern and southern flanks, handled the monastery's daily affairs. For the religious services, one proceeded through the courtyard straight to the church. Immediately adjacent north and south of the church were intimately-scaled cloisters and arcaded corridors. The northern one led to the laundry, kitchen, refectory, and quarters for the novices, who were still training for the solitary hermetic life. The southern one led to a small hospital, a pharmacy, the novitiate, and a refectory for guests. These supporting rooms, part of the fabric physically attached to the church, represented the communal aspects of Camaldolese life.

A masonry fence enclosed the hermitage's quadrangular precinct behind the church. When a monk received permission to live in the hermitage, he was assigned a hut and a small garden to tend. The Pažaislis hermitage started out with thirteen huts, the apostolic number plus one. Filled to maximum capacity, the restricted precinct could accommodate a maximum of twenty-four hermits, or twice the apostolic number. The actual number of hermits, novices, and lay brothers actually living in Pažaislis remains unknown. The entire community may have consisted of just two or three dozen men.

The layout of Pažaislis conveys the Camaldolese monastic agenda with exceptional clarity. The measured sequence of three major elements, all aligned on a central axis, gave a tangible form to the three-part narrative of monastic life. Triadic geometry governed the entire scheme, orchestrating a composition of measured and stately grandeur. The segmented sequence of three equilateral triangles precisely fixed the ensemble's length and breadth. Singular moments within the larger scheme situated the buildings and also marked important decision points of the circulation system, such as entrances, gates, doors, and landings. Geometry encapsulated the most significant aspects of monastic life, starting with the entrance gate and ending with the free-standing bell-tower. Geometry suffused the monastery's grounds, enveloping its daily pattern of life within a larger symbolic armature.

The tri-partite layout of Pažaislis can be usefully interpreted as an allegory, corresponding to the three life stages of a Camaldolese, that is: departure from the secular world, passage through the communal novitiate, and entrance into the hermitage – the third and final segment of a Camaldolese monk's earthly life¹⁴. Each part stood for a particular phase of life; the entire composition represented the fullness of life. The endmost *campanile*, a bell-tower constructed in the 1730s, marked life's earthly end. Interpreted in this manner, the life story of a Camaldolese was analogous to the earth – purgatory – heaven sequence.

THE TWO DEDICATORY PLAQUES

The Church of Holy Mary's Visitation was formally dedicated on October 20, 1667, and during those ceremonies Grand Chancellor Pac laid two silver plaques into the masonry fabric. Significantly, not one, but two plates were placed into Pažaislis' spiritual heart. Their inscriptions provide clear evidence of Marian veneration and belief in the Triune God. It is noteworthy that same text was not duplicated to secure its survival; instead, the two plaques bore distinctly different inscriptions. One of them started off by dedicating the Pažaislis church to the Blessed Virgin Mary; the other one began by invoking the Trinity. Not generic pieties or formulaic phrases, their epigraphs asserted the Grand Chancellor's faith and his primary motives for establishing Pažaislis¹⁵.

The first silver plaque began: *Humani generis redemptori Christo Jesu, beatissimae virgini Mariae Elisabeth visitatum eunti, cujus honori & nomini ecclesia haec dedicata est, sanctissimis patribus Benedicto & Romualdo [...]* ("To the Redeemer of mankind Jesus Christ, to the most beatific Virgin Mary, visiting Elizabeth, in whose honor and name this church is dedicated, to the most holy fathers Benedict and Romuald [...]"¹⁶). Through this dedication the Grand Chancellor identified his Roman Catholic faith, affirmed his personal devotion to Mary, and made tangible King John Casimir's dedication of the realm in 1656 to the Blessed Virgin. Given the intense sectarian polemics of the age, the

title of the church was nothing less than the patron's personal disavowal of the Calvinists and all others who rejected Marian veneration.

The epigraph on the other silver plaque began: *Trino unique Deo, Augustissimae coelorum reginae Matrem Praecursoris visitanti, sanctissimis patribus Benedicto magnae prolis monasticae parenti, & Romualdo primo ejus institute reformatore, ac vitae eremiticae restauratori [...]* ("To the three in one God, to the most holy queen of heavens, visiting the precursor mother, to the most holy fathers – Benedict, founder of the largest monastic order, and Romuald, the first reformer of his rules, and restorer of the hermetic life [...]"¹⁷). This invocation was, likewise, a clear declaration of the Roman Catholic faith, this time directly contradicting the very core of Anti-Trinitarian doctrine. The reference to the Trinity rejected the radical sect's defining tenet, their key belief. The plaque went on, recalling the recent political and military events, emphasizing the leading role that King John Casimir had played throughout the turbulent years of the "Deluge."

MARIAN DEDICATIONS AND CENTRALIZED CHURCH PLANS

The cult of the Blessed Virgin originated in early medieval times but gained authoritative approval

only during the 15th century. In 1439 the Council of Basel proposed the doctrine of the Immaculate Conception of Mary and in 1476 Pope Sixtus IV made it official. From the Renaissance onwards the belief that Mary was the Queen of Heaven and the Protector of the Universe led to centralized plans for churches and sanctuaries honouring the Blessed Virgin¹⁸. Centralized plans can be interpreted in circular, square, or polygonal geometries, but of all the possible figures which could refer to Her heavenly crown, the circular layout was deemed to be the best of all¹⁹. During the Counter-Reformation devotion to Mary increased throughout Europe, blossoming with particular vigour in Poland and Lithuania. Since centralized plans for churches with Marian dedications had become widely accepted by then, the centralized layout of the church at Pažaislis seems to fit into these larger and well-established trends.

However, centralized layouts were completely at odds with the church-building traditions of the Camaldolese. By the time Pažaislis was built, the order had been building monastic churches for more than five centuries. They had decided long ago that the elongated rectangular plans of the basilica type best suited its needs. Thus, except for Pažaislis, most of the Camaldolese monastery churches in Poland,



Fig. 6. Engraving of the Camaldolese monastery of San Michele di Murano, Venice, Italy. Cappella Emiliana is at the far left. Mittarelli and Costadoni. *Annales Camaldulensis...*, 1755 (1970 reprint).



Fig. 7. Engraving of Santa Maria della Salute, Venice, Italy. Author's collection.

Lithuania, and Hungary were accordingly constructed on the customary basilica pattern²⁰.

As already mentioned, the Camaldolese were solidly established in Poland early in the 17th century. Given their devotion to Mary and the developments just mentioned, it would be entirely reasonable to expect finding centralized churches in these communities. But this was not the case. The 1605 church of *Eremus Montis Argentini*, on a wooded hilltop at Bielany near Cracow, commemorated Mary's Assumption into Heaven. Nonetheless, its plan was of the basilica type. The 1621 church of the *Eremus Sylv Aurae* monastery at Rytwiany, named for the Annunciation of Mary, also had the basilican plan. The 1663 church of *Eremus s.s. Quinque Martyrum* at Bieniszew commemorated the Presentation of the Blessed Virgin Mary. Even so, its plan was of the basilica type. Only the 1641 church of Mary's Immaculate Conception at the *Eremus Montis Regii* at Bielany near Warsaw, departed from the basilica layout. It was based on an elongated lozenge.

In Lithuania, the Camaldolese church of *Eremus Insulae Wigrensis*, founded by King John Casimir Vasa in 1667 on an island in Lake Vygriai, was

named for the Immaculate Conception of the Blessed Virgin Mary. Nonetheless, it was a variant of the long-favoured basilica type. Clearly, the Marian dedication of a Camaldolese monastery church did not automatically result in a centralized layout, much less a hexagonal one. It must also be stressed that, whatever the dedication of a church may have been, hexagons and star-hexagrams were rarely used for the plans of ecclesiastical buildings²¹. Since the Church of Holy Mary's Visitation at Pažaislis is one of these rare instances, the wellspring of its design becomes a particularly intriguing issue.

Halina Kairiūkštytė-Jacinienė made the first significant attempts to identify the possible sources which may have inspired the unusual geometry of the Pažaislis church²². She argued that the hexagonal *Cappella Emiliana*, located on the island of *San Michele di Murano* in the Venetian lagoon and the octagonal church of *Santa Maria della Salute*, Venice, were the most likely antecedents (see Figs. 6, 7). Kairiūkštytė-Jacinienė concluded that the architect of the Pažaislis church simply "reduced" *Santa Maria della Salute*'s octagonal plan to a hexagonal one. Let us briefly glance at these two alleged sources.

The diminutive and charming *Cappella Emiliana* was erected in 1543 and remained the Veneto's only polygonal building for the duration of the Renaissance²³. It was an addition to the church of *San Michele*, which was built in 1470s, the earliest Renaissance structure in the area. Both buildings were closely associated with the Camaldolese community of *San Michele di Murano*, the order's island monastery (Fig. 6).

In Venice itself, the church of *Santa Maria della Salute* was erected as an *ex voto* offering to the Blessed Virgin, the city thanking Her for delivery from the plague of 1629–1630. Baldassare Longhena, the architect of *Santa Maria della Salute*, once explained the basic idea behind this magnificent edifice in the following words: “The dedication of this church to the Blessed Virgin made me think of designing the church, with what little talent God has bestowed on me, *in forma rotunda*, i.e. in the shape of a crown”²⁴. This general notion resulted in a centralized, octagonal building, whose domed silhouette, rising from eight sensuous volutes, remains to this day one of city's iconic images (Fig. 7).

By 1638 the construction of *Santa Maria della Salute*, the major polygonal building of the Venetian High Baroque, was well underway²⁵. Christopher Sigismund Pac was then studying in Padua and on any visit to Venice he could hardly have missed the immense building site at the entrance to the Grand Canal. If he did not notice the landmark structure, then two decades later Ludovico Fredo, the possible architect of Pažaislis, surely did²⁶. By 1660 the construction of *Santa Maria della Salute* was mostly finished, and no Venetian could possibly miss or ignore the imposing structure. Ludovico Fredo was then associated with the Camaldolese monastery of *San Michele*. However, it is still unclear whether his role at the monastery was that of a builder, an architect, or a master mason.

The *Cappella Emiliana* and *Santa Maria della Salute* were significant benchmarks of Venetian architectural creativity, and Pac and Fredo were certainly acquainted with both buildings. That said, the influence of these buildings on the design of Pažaislis remains moot²⁷. The *Cappella Emiliana* had been

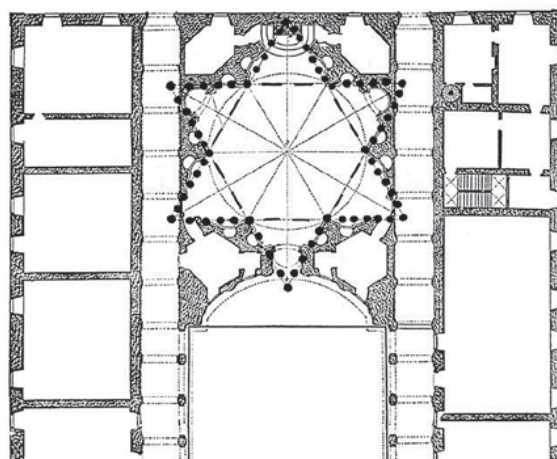


Fig. 8. Plan of *San Ivo della Sapienza*, Rome, Italy. The superimposed regulating lines of a circle, hexagon, and a hexagram established the layout. Giedion, Siegfried. *Space, Time and Architecture*. Cambridge, 1959.

charming visitors over many decades, and yet, as is evident from the Camaldolese churches in Poland, without any effect whatsoever. Furthermore, the alleged influence of the octagonal *Santa Maria della Salute* becomes less than convincing once the hexagonal church of *San Ivo della Sapienza* in Rome, is brought into the discussion²⁸. Designed by Francesco Borromini, its plan featured equilateral triangles, a hexagram, and a hexagon – the same geometric figures as in the Church of Holy Mary's Visitation at Pažaislis (Fig. 8).

Kairiūkštytė-Jacinienė rejected the possibility that *San Ivo della Sapienza* had any impact on Pažaislis. She believed that the Roman church was completed in 1666, too late to exert any influence²⁹. Actually, *San Ivo* was roofed in 1648, the floor laid down in 1660 and the church consecrated that very year³⁰. Since the construction of Pažaislis started in 1667, there was ample time in the interval for Roman, Italian, and Camaldolese architectural circles to become acquainted with *San Ivo*. A novel virtuoso design, it was the latest entry on the long list of the Eternal City's architectural wonders. The stunning interior, based on the six-pointed hexagram star, was created by overlapping and centring two equilateral triangles, placing the apexes of one triangle opposite those of the other. Borromini modified the resulting figure, by capping its pointed apexes with

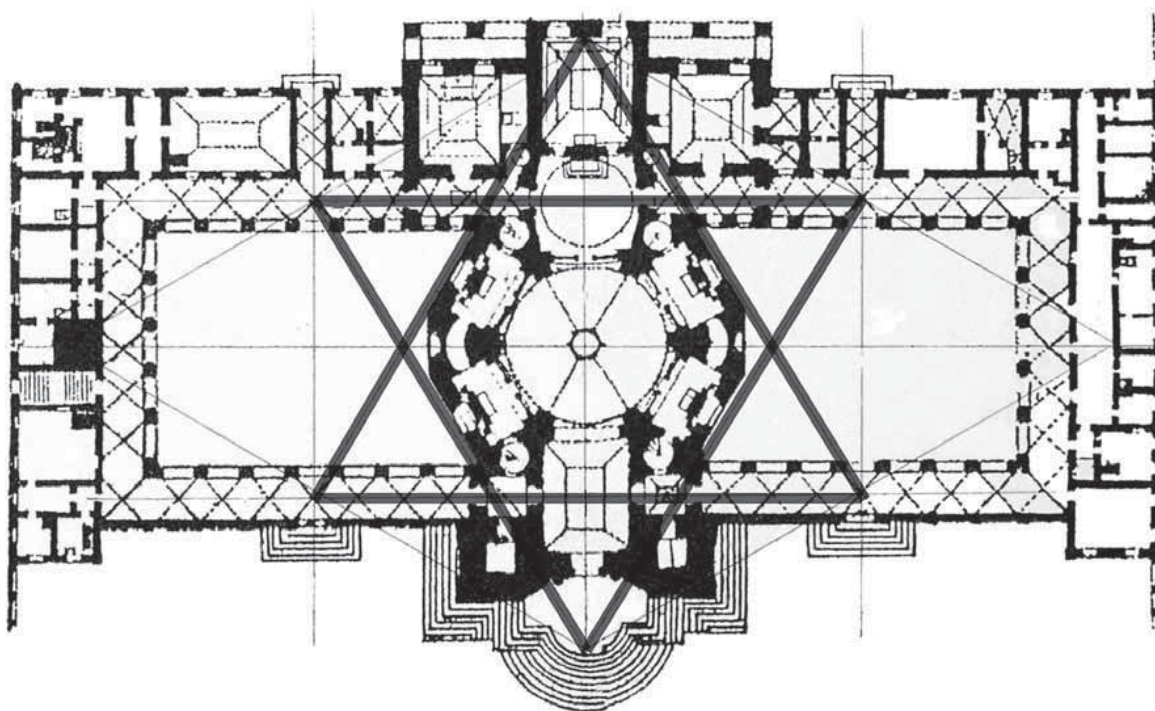


Fig. 9. Plan of Pažaislis Church. Regulating lines consisting of equilateral triangles, a hexagon, and a hexagram established the basic scheme. Author's drawing based on the 1832 measured plan of Karolis Gregotovičius. Meškauskas, Stasys. Pažaislis. Vilnius: Mintis, 1983.

alternating convex and concave wall surfaces. The design was not a value-neutral, formal exercise. Its geometry was symbolic to the core, underlining the significance of the hexagram and the equilateral triangle in Christian iconography.

THE EQUILATERAL TRIANGLE IN CHRISTIAN ICONOGRAPHY

The rich symbolic loads of the equilateral triangle, the hexagram, and the hexagon legitimated the unusual geometry of the Pažaislis church (Fig. 9). Of these figures, the equilateral triangle was the most potent. Already in classical times it had been associated with mystery and held in highest esteem. The Pythagoreans of ancient Greece, valuing numerical and geometric relationships, honoured the equilateral triangle, even swearing their oaths to its sign³¹. Calling the figure *tetraktys* (from the Greek word for four) they created the shape by arranging ten points into a pyramid – one point on top, two below, then three, and four points in the bottom row (Figs. 10a, 10b).

The points stand for numbers. Descending from top to bottom, they reflect the sequence of creation from

the monad, or first principle, to the bottom four, referring to the elements of earth, air, fire, and water. For the Pythagoreans, the *tetraktys* represented “a condensation of all universal wisdom, all numbers, and all possible numerical combinations”³². The *tetraktys* also represented musical harmony by identifying the four ratios of vibrating strings. The first, or fundamental, ratio is the vibrating frequency of a given length of string. The second ratio is established by a vibrating string half the length of the first, and so on. The fifth and the fourth were harmonics contained in-between the first and the second ratios (lengths of 3:2, the perfect fifth, and 4:3, the perfect fourth). These observations laid down the very fundamentals of Western music. The Pythagoreans likewise valued the equilateral triangle for producing the tetrahedron, the most elementary figure of the five Platonic solids. The ancient Romans, according to Plutarch, regarded the equilateral triangle to be the symbol of justice.

Initially, the earliest Christians had hesitated in expressing the profound mystery of the Trinity in visual terms. However, once they decided to respond to the controversies and to the schismatics who

rejected the doctrine of the Trinity, the Christians started using graphic means to indicate what they had always believed. In this manner the equilateral triangle, its apex pointing upward, became one of the earliest Trinity emblems. Having three equal sides and three equal angles, it conveyed the idea of unity. Although its sides and angles are identical in every respect, yet each one is distinct. And all combine to form one single figure. The equality of the sides and angles expressed the equality of Father, Son, and Holy Ghost in the Trinity. The union of three elements into one figure suggested the mystery of the divine essence³³.

Medieval images often represented the Trinity by three persons sitting side by side. When the Church forbade naturalistic representations of the Holy Spirit in the 10th century, the dove became the preferred image. On the rare occasions when the equilateral triangle was used as a halo, it usually referred to God the Father. The geometric representation of the Trinity gained increasing acceptance, especially when it was shown in the form of an equilateral triangle with the “all-seeing eye of God” inside the figure. This representation ultimately became one of the best-known symbols for the Trinity³⁴.

The mindset of medieval theologians and clergymen was steeped in symbolic numerology. The number three, besides referring to the Trinity, also alluded to the three elements of man – body, soul, and spirit; to the three Theological Virtues – Faith, Hope, and Charity; to the three Evangelical Counsels – Poverty, Chastity, and Obedience; plus a host of other associations too numerous to mention³⁵.

HEXAGONS AND HEXAGRAMS IN CHRISTIAN ICONOGRAPHY

In the Christian tradition the number six, the defining integer of the hexagon and the hexagram, is particularly rich with allusions. The Camaldolese novices and monks at Pažaislis would thus have pondered the many ways their six-sided church directed meditation to the wellsprings of their faith. For a start, the six piers and the chapels surrounding the central space recalled the six Biblical days of Creation. Particularly

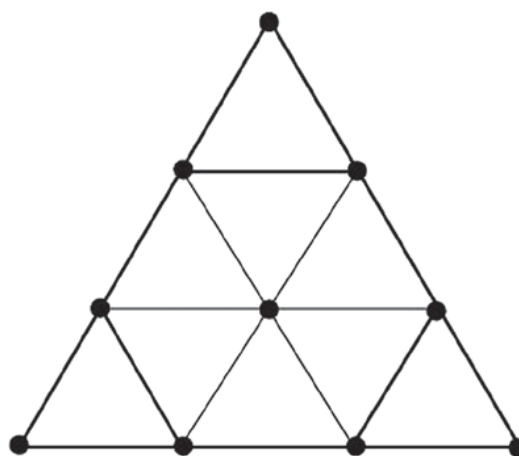


Fig. 10a. Tetraktys. Author's drawing.

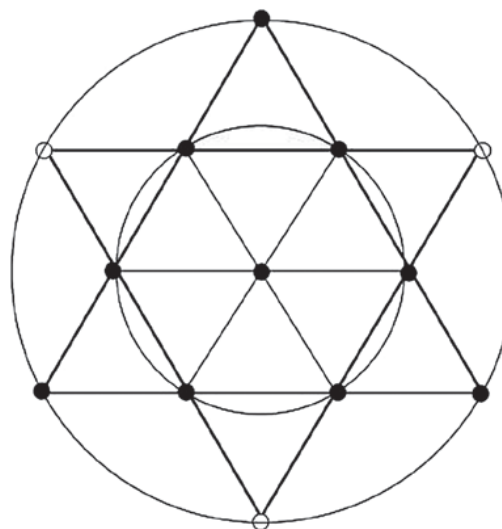


Fig. 10b. Tetraktys generating circles, a hexagon, and the hexagram. The six-pointed star was also known as the Star of Wisdom in mid-seventeenth century Rome. Author's drawing.

memorable – Jesus spent six hours on the cross before finally expiring. The number six also alluded to the attributes of the Deity, that is: Power, Majesty, Wisdom, Love, Mercy, and Justice³⁶. Furthermore, the Holy Bible states that acts of corporeal mercy likewise totalled six: “For I was hungry and you gave me something to eat; I was thirsty and you gave me something to drink; I was a stranger and you invited me in; I needed clothes and you clothed me; I was sick and you looked after me; I was in prison and you came to visit me” (Matthew 25: 35–36).

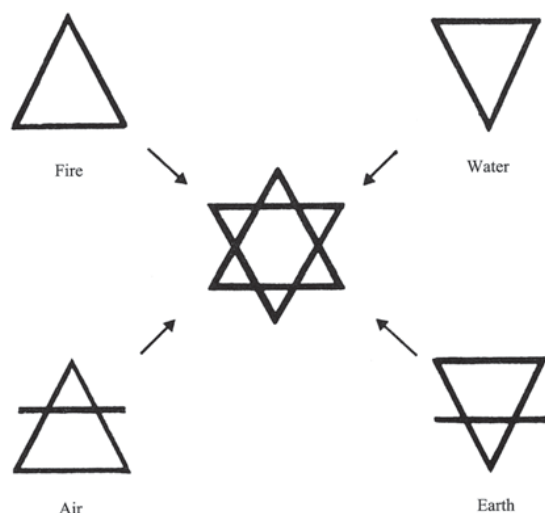


Fig. 11. A hexagram constructed from the alchemists' symbols for the four basic elements of primal matter. Biederman, Hans. *Dictionary of Symbolism*. New York, 1992.

St. Augustine was ever mindful that the Holy Scripture had said of the Creator *tuae sed omnia mensura et numero et pondere disposuisti* ("You have ordered all things in measure, number and weight", Wisdom of Solomon 11: 20–21). Accordingly, he felt duty bound to enlist the number mysticism of Pythagoras and the Neo-Platonists into the service of Christian doctrine. In *The City of God*, in the chapter entitled *The perfection of the number six*, St. Augustine wrote: "The works of Creation are described as being completed in six days [...]. The reason for this is that six is the number of perfection [...]. For six is the sum of its parts, and in this number God brought his works to complete perfection [...]. Hence the theory of number is not to be lightly regarded [...]"³⁷.

In Christian iconography the hexagon appears relatively infrequently, and its corresponding symbolic load is also relatively light. Hexagonal halos could identify the personifications of the virtues. Thus, the allegorical figures representing the theological virtues – Faith, Hope, and Charity, and the cardinal virtues – Justice, Prudence, Fortitude, and Temperance would often be identified by their hexagonal halos, that is, if they were shown wearing any halos at all³⁸. The usual symbol for the Holy Eucharist

was a chalice with a rising host. The bases of chalices, if not round, were customarily hexagonal, and the shafts of altar crosses and altar candlesticks were oftentimes hexagonally shaped. At Pažaislis, the tabernacle above the main altar was hexagonal.

The iconography of the hexagram, a six-pointed star, is much richer than that of the hexagon. This figure can be formed by centring and superimposing two equilateral triangles, the apex of one pointing exactly upward, the other one pointing downward. The six-pointed star was symbolically powerful for the alchemists of the Middle Ages. Believing that nature consisted of four basic elements: fire, air, earth, and water, they represented each element with a specific visual sign. Representing this idea in geometric terms, they assigned a particular orientation of the equilateral triangle to each of these elements³⁹. Thus, an equilateral triangle with the apex pointing upward represented fire; if the apex of the triangle pointed downward, the image stood for water. The emblem for air was an upright triangle crossed by one horizontal bar. A downward pointing triangle crossed by a horizontal bar referred to earth. Fig. 11 illustrates how they arranged triangles into a hexagram, a figure used to symbolize nature's totality.

In the Middle Ages the hexagram and the pentagram, a five-pointed star, were associated with alchemy and magic. Since Jews were often thought to be magicians, the hexagram and pentagram figures began to be associated with them⁴⁰. The belief was partially based on a passage in the Old Testament which stated that King Solomon relied on the six-pointed star to call up angels and exorcise demons. With the passage of time the hexagram came to be imprecisely and variously referred to as the *sigillum Salomonis* – "Solomon's seal," or as *scutum Davidis* – "David's shield." It was also called the "Star of Solomon" and, alternatively, the "Star of David." In the 16th and 17th centuries the Jewish communities of Prague and Vienna began using the six-pointed star as a specifically Jewish symbol. By the early 19th century the Star of David began to appear on Jewish ceremonial objects, first in Central, then in Western, and finally in Eastern Europe. With the advent of Zionism at the end of the 19th century the six-pointed star became Judaism's universally recognized symbol.

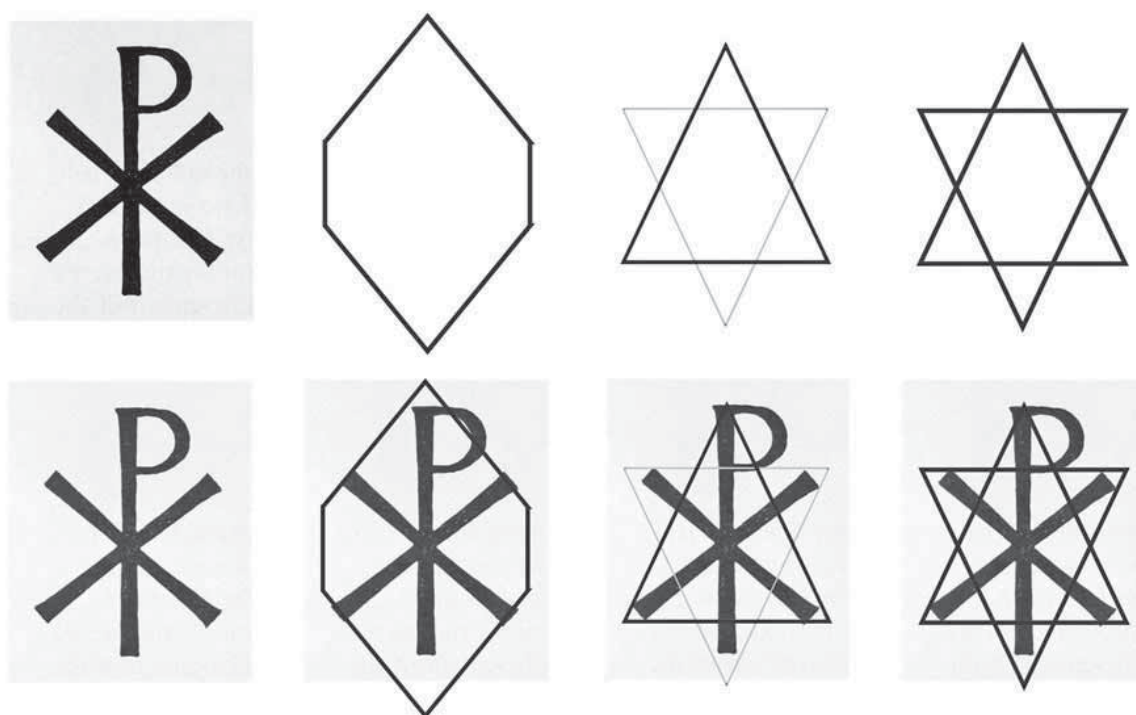


Fig. 12. Geometric armature of the chi-rho monogram. Author's drawing.

Christians developed their own mystical and symbolic allusions for the equilateral triangle, the hexagon and the hexagram, the latter two figures often being generated from equilateral triangles. Eventually these figures became accepted staples of Christian iconography, which had little, if anything, in common with their Jewish, Greek, Roman, or medieval antecedents. In the Christian tradition the six-pointed hexagram acquired considerable symbolic import, starting with the indication that Jesus was a descendant of David. The hexagram was also considered a symbol of creation, expressing the idea that the Triune God had created heaven and earth, the second and third persons of the Trinity concurring with the God the Father in the act of Creation⁴¹.

THE CHI-RHO MONOGRAM

The *chi-rho* monogram combines the first two letters of *Christ* (*X* and *P*) when the name is written in the Greek alphabet. The earliest Christians used the sign on their lamps, sarcophagi, and Eucharistic vessels. The status of Christians in the Roman Empire improved after 312 AD, once Constantine

had defeated Maxentius in the Battle of Milvian Bridge. Consolidating his power, Constantine adopted the *chi-rho* monogram as symbol of good omen, and the figure even began appearing on the coins he issued. The monogram had actually long existed before then as an abbreviation of the Greek word *chrestos*, meaning auspicious. It is thus unlikely that Constantine would have used the *chi-rho* with an exclusively religious intent. For the Christians, on the other hand, the *chi-rho* served as diagrammatic shorthand for the crucified Christ. The monogram also symbolized the universal victory of Christianity or, alternatively, the victory of the Saviour over the domination of sin⁴².

The hexagon and the hexagram accommodate the *chi-rho* figure with equal ease (Fig. 12). For example, its six outermost points may be linked together to form the closed, virtual figure of a hexagon. And, as the *chi-rho* itself is a linear six-pointed star, it fits well inside a hexagram. The *chi-rho* may also be seen as two superimposed equilateral triangles, the apex of one pointing upward, and the apex of the other pointing downward. In this manner the *chi-rho* forms a full-fledged star-hexagram.

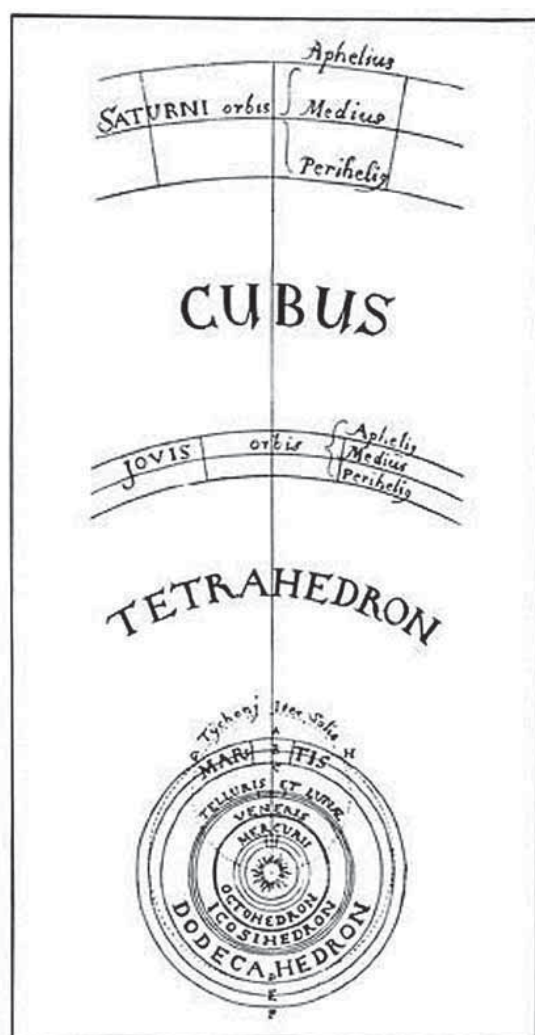


Fig. 13. Diagram showing the planetary orbit spacing ratios as nested Platonic forms. Kepler, Johannes. *Mysterium cosmographicum...*, 1596.

In mid-17th century Rome the hexagram was known as the “Star of Wisdom”⁴³. This particular allusion, rather than the Biblical reference to Solomon’s shield, would have been appropriate and operative for Borromini when designing *San Ivo della Sapienza* (see Fig. 8). The church served the *Archiginnasio* of Rome, an academy which eventually attained university rank. The Camaldolese would have appreciated the status and prestige of *San Ivo*, located in the very heart of Christendom. Just when the church of *San Ivo* was nearing completion in the late 1650s they would have become aware that Grand Chancellor Pac had hopes of establishing a monastery at Pažaislis.

THE GEOMETRIC COSMOLOGY OF JOHANNES KEPLER

The symbolic geometry of Pažaislis is further enhanced by its relationship to the cosmological theories of the time, most notably the ideas of Johannes Kepler, who believed that his astronomical discoveries had confirmed Biblical truths. The early 17th century has been called “the age of Kepler and Galileo,” even though residues of medieval thought patterns still coloured their thinking. Johannes Kepler (1571–1630) dabbled in alchemy and practiced astrology while making his remarkable discoveries. During 1601–1609 he was employed in Prague by Emperor Rudolf II as the Imperial Mathematician. Also serving as the court’s official Astrologer, he would supplement his income by casting horoscopes for his patrons and friends. When a bright new star appeared in the constellation of the Serpent in 1604, coinciding with the rare conjunction (once in eight hundred years) of Jupiter, Saturn, and Mars, it is not surprising that Kepler responded in 1606 with *De stella nova*, which discussed the astrological significance of the unusual event.

Steeped in mysticism, Kepler attributed causal properties to numbers and geometric forms⁴⁴. The last of the geometric cosmologists, he was convinced that the universe was a gigantic architectural construction, governed entirely by geometry and mathematical proportions⁴⁵. Like Kepler, most enlightened minds of the time considered the teachings of the Paracelsians, the Rosicrucians, astrologers, alchemists, cabalists, and hermeticists as entirely valid⁴⁶. His proposition about the geometrical basis of the solar system was just the last of a long series of comparable hypotheses first put forward in ancient Babylonia.

It is now generally acknowledged that Kepler’s most lasting contribution to modern science was the formulation of the three Laws of Planetary Motion, which described the velocities and elliptical orbits of the planets observable to the naked eye. These landmarks in the history of science and astronomy appeared in *Astronomia nova*, published in 1609. The Laws were precise, verifiable statements which resolved visual observations into consistent

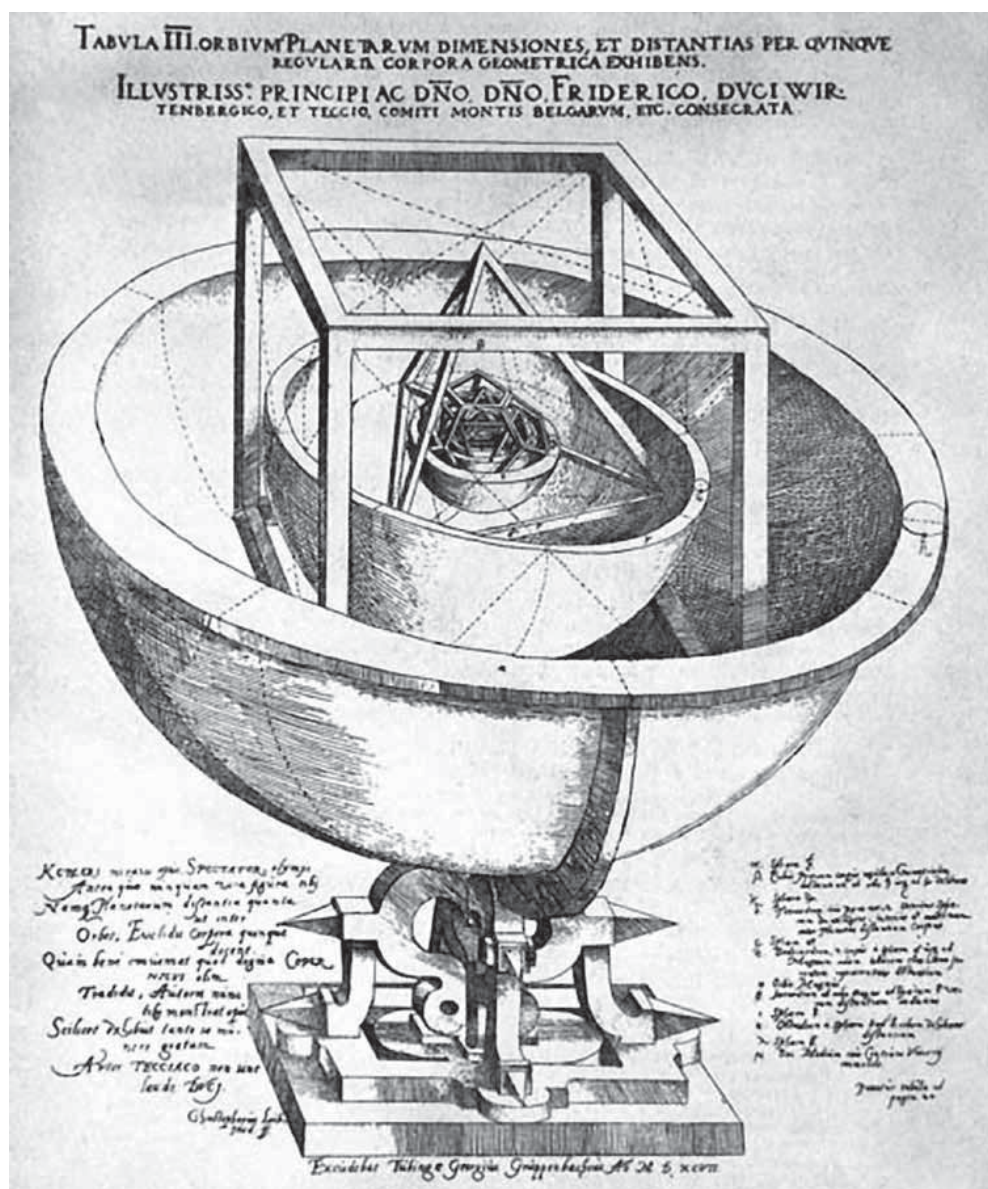


Fig. 14. Model representing the solar system in terms of notional Platonic forms. Kepler, Johannes. *Mysterium cosmographicum*..., 1596.

mathematical terms. Eventually, they divorced astronomy from theology, forever marrying astronomy to physics⁴⁷.

The importance of the Laws of Planetary Motion was not immediately recognized. Perhaps it was because the crucial proofs were buried deep inside an enormous volume; or perhaps because Kepler's use of Latin was not particularly lucid⁴⁸. Also, the elliptical orbits are nearly circular, thus not sufficiently different to quickly discomfit planetary theories describing circular orbits⁴⁹. In any case, Kepler's contemporaries, even Galileo, were incapable of recognizing the profound significance of

his achievement. In fact, it was not fully appreciated for another century, not until Isaac Newton's Law of Universal Gravitation became widely known and proved Kepler's findings.

It is ironic that Kepler himself never realized the importance of the Laws that he had formulated⁵⁰. Instead, he was more proud of his explanation for the number of planets and their spacing in the solar system. Although these latter ideas are completely false, they eventually led to the Laws of Planetary Motion and to the birth of modern cosmology. In the *Mysterium cosmographicum*, published in 1596, the twenty-five year old Kepler addressed and answered

the questions: Why were there only six planets, not twenty or a hundred? What governed the distances between them?⁵¹

Believing that the distances between the planets could not be arbitrary, Kepler sought the underlying geometric principles that governed their number and distribution. He eventually concluded that there could only be six planets – the only ones known at the time – because there were five intervals between them. It was a felicitous correspondence to the five Platonic solids – the tetrahedron, square, octahedron, icosahedron, and dodecahedron. Kepler was convinced that this particular group of regular polyhedrons provided the key to unlock the solar system's divine blueprint (Fig. 13).

Also known as the five perfect geometric figures, they comprise a unique group of three-dimensional forms. They are the only ones whose respective facets, edges, and vertexes are identical. Also, a sphere can perfectly surround or circumscribe each of these figures, so that all the vertexes touch the sphere. Likewise, each of these forms perfectly inscribes a sphere, which would touch the centre of every figure's facets. These properties distinguish the regular polyhedrons from all other three-dimensional geometric forms. Euclid demonstrated ages ago that they are the only figures with such characteristics⁵².

The geometrical basis of the solar system came to Kepler as an epiphany while teaching at Graz. Conducting a lesson, he drew an equilateral triangle on the blackboard. Then he showed the class how the figure defined two circles – a smaller one inside the triangle and a larger one outside. The larger outer circle, just touching the apexes, circumscribed the triangle. The smaller inner circle fit exactly within the triangle. As Kepler looked at the two circles on the blackboard, it suddenly struck him that their ratios resembled the orbits of Saturn and Jupiter⁵³.

He surmised that this might also hold true for the spacing ratios of the other planets. If so, the task would be to nest them in proper sequential order, to find the proper location for each figure. Since 120 different nesting combinations are possible, Kepler

re-assessed and checked his initial insight⁵⁴. He finally postulated that:

- a notional cube separates the orbits of Saturn and Jupiter;
- a notional tetrahedron separates those of Jupiter and Mars;
- a notional dodecahedron separates Mars and Earth;
- a notional icosahedron separates Earth and Venus;
- a notional octahedron separates the orbits of Venus and Mercury.

He summarized these relationships in a widely-published engraving (Fig. 14).

When the ratios of these figures were compared to the available observational data, there was a high degree of correlation. Kepler was convinced that there was now undeniable, empirical support for his geometrical hypothesis – the belief that the notional geometry of the solar system consisted of the five perfect three-dimensional geometric forms⁵⁵.

These ratios agreed with the postulates of Euclid as well as with Plato's thoughts expressed in *Timaeus*, which Kepler regarded as a particularly inspired work. To Kepler's way of thinking, it was "beyond all possible doubt, a commentary on the book of Genesis, otherwise the first book of Moses, transforming it into Pythagorean philosophy as will be easily apparent to an attentive reader who compares it with Moses' own words."⁵⁶ The most advanced astronomical scholarship of the late 16th and early 17th centuries had seemingly confirmed the insights of the ancient Greeks, also supporting the cosmological representations found in the Holy Bible. Kepler was certain that his discoveries had provided independent and secular confirmation of Biblical truths.

Given the premises underlying Kepler's mode of thinking, and, given their internal consistency, these conjectures were eminently plausible. After all, the equilateral triangle, symbol of the Trinity, was the basic building block for four out of the five Platonic three-dimensional figures:

- four equilateral triangles compose the tetrahedron;
- one tetrahedron establishes the diagonals of a cube;
- eight equilateral triangles construct the octahedron;
- twenty equilateral triangles create the icosahedron.

The dodecahedron is the only figure of the Platonic solids that cannot be constructed from equilateral triangles. Instead, it is constructed from twelve pentagons.

The armature of the solar system which Kepler had conceived was, for the most part, reducible to the equilateral triangle. Triadic geometry, whose symbolism had long been mostly alchemical and theological, had now, with the help of his astronomical observations, acquired a virtual presence in the heavens.

Catholics could therefore link Kepler's geometric cosmology to their own beliefs. The equilateral triangle had long been a symbol of the Trinity, a core tenet of Roman Catholic theology. The Anti-Trinitarians disagreed. Rejecting the notion of a Triune God, they dismissed the equilateral triangle's sacred geometry and all of its other religious associations. Thus, the star-hexagram geometry defining the layout of the Pažaislis church directly alluded to the Roman Catholic faith (see Fig. 9).

Since the underlying triadic geometry also mirrored cosmic order, the design became all the more compelling. Besides the sacred associations, it also referred to the very geometric constructs with which the leading European astronomers of the early 17th century had conceptualized the cosmos.

CHRISTOPHER SIGISMUND PAC AND ASTRONOMICAL SCHOLARSHIP

The persons responsible for and approving the design of Pažaislis – the Camaldolese, Grand Chancellor Pac, and the monastery's unidentified architect – all had ample opportunity to encounter the notion of geometrical cosmology. An old idea in

Western thought, it had dominated the mind set of countless generations. The astronomical discoveries of the early 17th century had confirmed the customary beliefs and provided seemingly empirical links to Catholic theology. The Camaldolese congregation at the *San Michele* monastery in the Venetian lagoon was a centre of scholarship, but the extent to which particular members of that community may have accepted the ideas of Brache, Galileo, or Kepler, remains to be determined.

More can be said about Christopher Sigismund Pac. He matured in the milieu in which it was fashionable to have some familiarity with the latest astronomical discoveries. Pac would have certainly encountered the notion of symbolic geometry through his education, travels, relatives, and social circle. Having obtained the best available academic education at Padua, Perugia, Graz, and Leiden, he rounded out his studies by visiting France, Spain, and England before returning to Lithuania in 1644⁵⁷. His father had also studied at Padua. It is noteworthy that Christopher Sigismund Pac's grand-uncle – John Pac (1580?–1610), later the Voivode of Minsk, had been a student of Galileo Galilei at Padua. Galileo was fully aware of Kepler's discoveries about the solar system, to the point of conveying the ideas he had borrowed from Kepler as if they were his own⁵⁸. Late in life Galileo summarized these notions in the famous quote: "Philosophy is written in this grand book, the universe, which stands continually open to our gaze. [...] It is written in the language of mathematics, and its characters are triangles, circles, and other geometric figures without which it is humanly impossible to understand a single word of it; without these, one wanders about in a dark labyrinth".

Besides the already mentioned academic centres, Grand Chancellor Pac also had ready access to advanced astronomical thought in Koenigsberg, Cracow, Danzig, and, much closer to Pažaislis, in Vilnius. A brief glance at Lithuania's capital should suffice to suggest the intellectual climate which, presumably, likewise prevailed in the other major cities of the Baltic region⁵⁹. In the late 1620s the Jesuit Academy in Vilnius taught Galileo and Copernicus, even though their works were listed in the *Index librorum prohibitorum*⁶⁰. Galileo once wrote to King

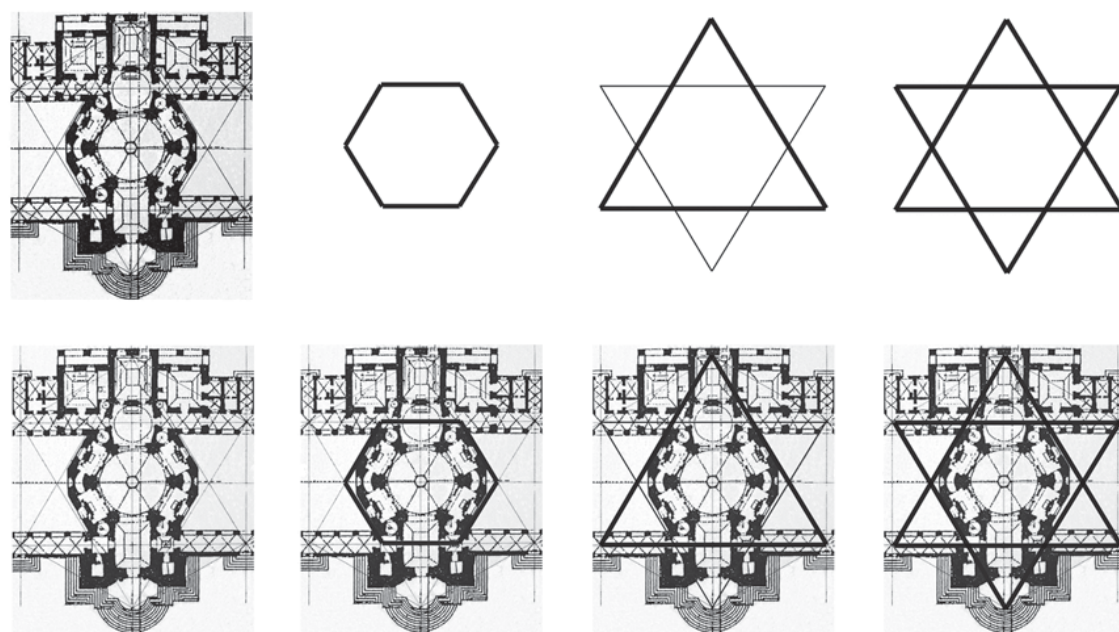


Fig. 15. Geometric armature of the Pažaislis church. Author's drawing.

Sigismund III Vasa to see if it would be possible to publish his works in Vilnius. He also sent a set of his lenses there to be installed into a telescope, but their ultimate fate is uncertain. It is known that in 1632 Oswald Krueger (1598–1655), a professor of mathematics at Vilnius, was using a Galilean telescope in his classes to observe Mercury, Venus, and the satellites of Jupiter⁶¹.

Some of Oswald Krueger's students soon made important contributions in their own right. In 1633 Jonas Mykolas Rudamina-Dusetiškis published *Illustriora theoremata et problemata mathematica*. And in 1639 Albertus Dyblinski *Centuria astronomica* was printed in Vilnius. This treatise, the first astronomical work printed in the city, supported Copernicus by providing more evidence that Mercury and Venus did indeed revolve around the sun⁶². Shortly thereafter, Krueger published *Theoremata de oculo* in 1641, following up with *Theorecentriae* three years later, and *Iris sive de coloribus apparentibus* in 1647. By the middle of the 17th century Vilnius printers were publishing more important works in mathematics, astronomy, and optics.

Grand Chancellor Pac had ready access to the advanced astronomical thought of the era through

multiple conduits both at home and abroad. It was then widely accepted that geometry conveyed theology and that geometry governed cosmology. These basic notions infused the layout of the church at Pažaislis. It could never be mistaken for either a Calvinist or an Anti-Trinitarian house of worship. Instead, the Church of Holy Mary's Visitation became a permanent testimonial, tangible evidence in bricks and mortar, stating the patron's religious affiliation, his firm allegiance to Roman Catholic orthodoxy.

Astronomical issues also concerned the Camaldolese. While all the monastic orders had to observe the Canonical Hours, that is, to recite prayers at set hours of the day, the Camaldolese did so with particular diligence. At Pažaislis clocks and sundials were always in view. Each of the two bell-towers fronting the church contained two immense mechanical clocks, making four clocks in all. A large sundial was also mortared into the southern wall of the church, its motto reading: *Sis memor occasus, sole cadente, tui*. ("Remember at sunset, that your sun will also set."). The Camaldolese monks allegedly greet each other with the phrase *Memento mori* ("Remember, you must die"). Also, each hut in the

hermitage evidently had a sundial painted on their south-facing wall. It is clear that the Camaldolese were obsessed with observing and marking the passage of time. Regrettably, constraints of space prevent further discussion here of their time-measuring traditions and practices.

The architectural overseers of the Camaldolese Order, for their part, were obliged to be well-informed about the intellectual currents of the time, especially since the latest astronomical discoveries had influenced the forms of churches created by Bernini, Borromini, and Guarini⁶³. Their most prominent ecclesiastical commissions, erected with the Vatican's knowledge and consent, alluded to geometric cosmology. If the Camaldolese Order ever had any reservations about the hexagonal church at Pažaislis, or the star-hexagram generating its layout, the geometry of the latest churches in Rome must have assuaged their doubts (Fig. 15). Additional support for the unusual format of the Pažaislis church was provided by the geometric references to the lily – symbol of the Blessed Virgin, as well as the armorials of the Pac family and the Camaldolese Order.

HERALDIC REFERENCES

The main entrance to Pažaislis is an arched Great Gate, the tympanum in its pediment containing an epigram and a heraldic cartouche. Both provided pilgrims with material for thought. The cartouche in the tympanum displaying the heraldic double-lily armorial of Grand Chancellor Pac will be discussed shortly; now for the inscription. Much deteriorated over time, it was reconstituted only in the 1970's⁶⁴. Identified as Isaiah 35: 1–2, the Latin Vulgate version of the text reads: [...] *deserta et in-via et exultabit solitudo et florebit quasi lilium germinabit et exultabit [...]* ("The wilderness and the solitary place shall be glad for them; it shall blossom as the lily and rejoice [...]"). This gentle prologue suggests encounters with Marian subjects to come, which are fulfilled by the frescoes inside the monastery's church⁶⁵.

In Christian iconography the lily alludes to pure, virginal love, especially that of the Blessed Virgin. For this reason, Gabriel, the Angel of the Annunciation, is commonly portrayed holding or presenting a lily flower to Mary. The lily flower also became

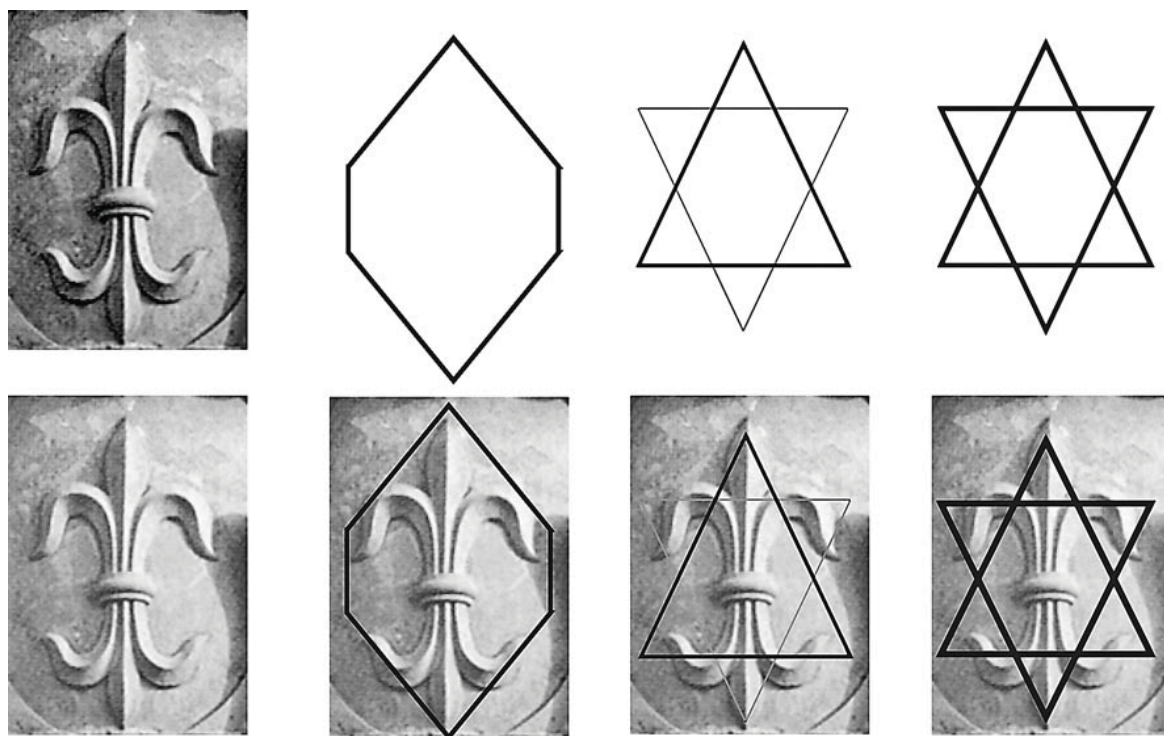


Fig. 16. Geometric armature of the Pac armorial. Author's drawing.



Fig. 17. Interior of dome, San Ivo, Rome. Detail of stucco decoration on vault ribs showing six-pointed stars, a reference to Pope Urban VIII, and eight-pointed stars, a reference to Pope Alexander VII. Author's photo.

the attribute of many saints, including Anthony of Padua, Dominic, Philip Neri, Catherine of Siena, Philomena, and Casimir, Lithuania's patron saint. In the 14th century the allusions of the three petal *fleur-de-lis* were further enriched as the emblem became identified with the Holy Trinity⁶⁶. Considered symbolically, the lily's trefoil leaflets induce a rich and broad array of religious, devotional, and regal associations.

The royal references go back to the 6th century when an angel allegedly presented a lily to Clovis I, King of the Franks. In the 11th century, King Louis VII established the precedent of displaying a lily on his coat of arms, and ever since the *fleur-de-lis* has been associated with French royalty. The device consists of an upright three-petal lily flower, a horizontal band, and three petal tails extending below. Viewed realistically, the lily flower's shape resembles a regal sceptre. Adding this resemblance to the use of *fleur-de-lis* by French kings, lilies came to be seen as royal flowers. Clara Izabelle Eugenie Genevieve de Mailly Lascaris, the wife of Grand Chancellor Pac, was, on her father's side, related to the Bourbon line of French royalty. The *fleur-de-lis* could thus be

rightfully associated with her and her illustrious forebearers.

The Pac heraldic emblem consists of three lily petals facing upwards and three petals downwards. The stems of the double-lily are bound at mid-section by a ribbon. The resemblance between the Bourbon and the Pac armorial was as serendipitous as it was striking (Fig. 16).

Although the lower petal treatment of the *fleur-de-lis* differed from the Pac coat of arms, the upper petals were identical. The similarities between the two heraldic devices outweigh the difference. Most important, the emblems of both families evoke a wide range of multivalent allusions, some of which have already been addressed above.

The Pac armorial appears throughout Pažaislis, initially at the entrance Great Gate, then most visibly in the large cartouche on the front façade of the Church of Holy Mary's Visitation. Prominently situated, the heraldic emblem is directly above the entrance to the monastery's church. Inside, the Pac armorial was represented in numerous stucco decorations and the sacristy's wood carvings. Most

remarkably, the plan of the church can also be linked with the geometry of the Pac family emblem (see Figs. 15, 16).

This was no coincidence. Such usage had ample precedent, the church of *San Ivo della Sapienza* in Rome providing a relevant example. Its construction started in 1643, during the pontificate Pope Urban VIII Barberini. Several sources, including the architect Borromini's own drawing, suggest that the church's hexagram geometry referred to the papal patron's armorial which featured bees. "The plan was originally intended to symbolize the bee of the Barberini family, the head, body and four wings corresponding to the six bays of the church [...]"⁶⁷. After some delays, *San Ivo* was consecrated in 1660, under Pope Alexander VII Chigi. His armorial featured an eight-pointed star hovering above six crowned mountains. Significantly, Borromini decorated the internal ribs of *San Ivo*'s dome by alternating six and eight-pointed stars. The hexagram referred to Pope Urban VIII, who had initiated the project, while the eight-pointed star alluded to Pope Alexander VII, who approved the church's completion (Fig. 17).

Lastly, we turn to the armorial of the Camaldolese Order⁶⁸. Their heraldic device consists of a golden chalice on a blue field. White doves with red legs and beaks flank the chalice and sip its wine. A star with a tail of fire rises above the chalice (Fig. 18). The two doves refer to the hermetic and communal aspects of Camaldolese monasticism. Both the contemplative hermits and the active monks draw spiritual sustenance from the mystery of Christ, who is represented by the chalice filled with wine, symbolizing His redemptive Blood. The star with a tail of fire, or comet, rising above the chalice alludes to the guiding light of faith.

At Pažaislis, the Camaldolese armorial first appears in decorative work on the low ceiling of the *forestorium*. The comet's head is shown as having six rays. The bottommost ray, smaller than the others, is set off to one side, intentionally deflected from its customary vertical position, even though it would have been a lot easier to simply hide the sixth ray beneath the comet's tail. Fig. 19 shows how visual clarity and



Fig. 18. Armorial of the Camaldolese Congregation of San Michele di Murano, Venice. Zamagni, Giulio. *Il valore del simbolo...* Cesena: Il Ponte Vecchio, 2003.

the hexagram's customary radial symmetry were disregarded.

Evidently, the Camaldolese insisted on the absolute necessity of depicting the comet's head with exactly six rays – no more, no less, even if one of the rays had to be offset. The result may have been an irregular hexagram, but it was a six-pointed star figure nonetheless.



Fig. 19. Armorial of the Camaldolese Congregation. Stucco ceiling medallion in the *forestorium* at Pažaislis. Author's photo.

IN CONCLUSION

Grand Chancellor Pac fulfilled at his long-held intention of bringing the Camaldolese into Lithuania by establishing a monastery in 1667 for the reclusive monastic order at Pažaislis. The new foundation's general plan was an improved version of arrangements derived from existing schemes. Governed by a tight geometric armature, the layout of Pažaislis gave physical form to St. Romuald's monastic vision, expressing his ideals more clearly than ever before.

The monastery's Church of Holy Mary's Visitation's dedication plaques enunciated important points of Roman-Catholic doctrine – belief in Christ, in the Trinity, the veneration of saints, and Mary's special status. The fresco cycles inside the church used pictorial means to convey these core beliefs. The hexagonal church, for its part, alluded to Catholic theology through the medium of symbolic geometry. Created to support Roman-Catholic spiritual needs and doctrinal tenets, the art and architecture of Pažaislis contradicted Lutheran, Calvinist, and Anti-Trinitarian revisionism.

The equilateral triangle and the hexagram, which established the church's hexagonal format, are saturated with multiple symbolic references and allusions. In the realm of sacred geometry, these geometric forms were emblematic of Catholic doctrine, with links to the *chi-rho* monogram, the lily, the Trinity, and Mary's heavenly crown. In the field of geometric cosmology, the equilateral triangle referred to Pythagorean tenets and underpinned Kepler's astrophysical theories. And in the area of heraldry, the armorials of the Camaldolese Order and of Grand Chancellor Pac made respective use of the hexagram and the hexagon.

Geometry suffuses Pažaislis, enveloping and orchestrating the monastery's programmatic components and the unusual plan of its hexagonal church. As the geometric framework was symbolic to the core, the resulting design was saturated with sacred, cosmological, and heraldic significance. The comprehensive rationale governing Pažaislis raised Camaldolese monastic design to a new, much more sophisticated level.

Notes

¹ Alberti, Leon Battista. *The Seventh Book of Leon Battista Alberti on the Art of Building. Ornament to Sacred Buildings: De re aedificatoria* (On the Art of Building in Ten Books) / Translated by Joseph Rykwert, Neil Leach, Robert Tavernor. Cambridge, Mass.: MIT Press, 1988, p. 194.

² For a discussion of the Camaldolese monasteries in Poland, see: Čerškutė, Stefa. *Pažaislio ansamblio plano svarbesnieji bruožai*. In: *Architektūros paminklai*. T. 2. Vilnius: Paminklų konservavimo institutas, 1972, p. 72–88. For the Baroque aspects of Pažaislis, see: Šinkūnaitė, Laima. *Baroko pilnatis Pažaislio vienuolyno ansamblyje*. In: *Darbai ir dienos*. T. 26, 2001, p. 7–28.

³ See: Kairiūkštytė-Jacynienė, Halina. *Pažaislis, ein Barockkloster in Litauen*. Kaunas: Kauno Universitetas, 1928, S. 130–131; recently translated into Lithuanian as: Kairiūkštytė-Jacynienė, Halina. *Pažaislis, baroko vienuolynas Lietuvoje*. Vilnius: Vilniaus dailės akademijos leidykla, 2001, p. 179–182.

⁴ For a well-illustrated guide to the frescoes of Pažaislis, see: Paknys, Mindaugas. *Pažaislis: menas ir istorija* (Pažaislis: Art and History). Vilnius: E. Karpavičiaus leidykla, 2005; for an analysis of their Marian iconography, consult: Ruzgienė, Birutė. *Marijos išaukštinimas – Pažaislio freskų ikonografinė programa*. In: *Naujasis židinys-Aidai*. 1992, Nr. 2, p. 56–66; also see: Šinkūnaitė, Laima. *Apšviesta Triumfuojančiosios Bažnyčios: Kauno bažnyčių dailė XVII a. II p.–XVIII a. pr.* In: *Naujasis židinys-Aidai*. 1994, Nr. 9–10, p. 95–103.

⁵ Saint Benedictus, Abbot of Monte Cassino. *The Rule of Saint Benedict* / Translated with an Introduction by Cardinal Gasquet. New York: Cooper Square Publ., 1966; also see: Schroll, Mary Alfred, OSB. *Benedictine Monasticism as Reflected in the Warnefrid-Hildemar Commentaries on the Rule*. New York: AMS Press, Inc., 1967; and: Leyser, Henrietta. *Hermits and the New Monasticism: A Study of Religious Communities in Western Europe 1000–1150*. London: Macmillan, 1984, p. 20.

⁶ Ibid, pp. 7–8.

⁷ Price, Lorna. *The Plan of St. Gall in Brief*. Berkeley: University of California Press, 1982; also see: Brooke, Christopher. *Monasteries of the World: The Rise and Development of the Monastic Tradition*. New York: Crescent Books, 1982.

⁸ Braunfels, Wolfgang. *Monasteries of Western Europe: The Architecture of the Orders*. Princeton, NJ: Princeton University Press, 1972, p. 199. See especially: Kubler, George. *Building the Escorial*. Princeton: Princeton Architectural Press, 1982, Chapter 4: *The Escorial Design: Origins and Antecedents*, pp. 42–56.

⁹ Zarewicz, Ludwik. *Zakon Kamedulów, jego fundacye i dziejowe wspomnienia w Polsce i Litwie. Przeważnie według źródeł rękopiśmiennych archiwum OO. Kamedulów w Bielanych przy Krakowie*. Kraków: Władysław Jaworski, 1871.

¹⁰ *The Baroque in Central Europe: Places, Architecture and Art* / Ed. by M. Brusatin and G. Pizzamiglio. New York: Marsilio, 1993, p. 128.

¹¹ Matulaitis, K. A., MIC. *Kamalduliai Lietuvoje (300 metų nuo jų įsikūrimo)*. In: *Tautos praeitis*. T. 2, Kn. 3–4, 1967, p. 249–256.

¹² Čerškutė, op. cit.

¹³ One day each year excepted, women were prohibited

from entering male Camaldolese monasteries. Likewise, men could not enter Camaldolese nunneries. The threat of ex-communication gave teeth to the rule.

¹⁴ In rare cases, after years of the reclusive life and after reaching the highest levels of the spiritual maturity, the hermit might be permitted to leave the hermitage and return to the secular world. Becoming an apostle, he would preach to the unconverted, proselytize amongst the pagans, and, perhaps, even make the conclusive sacrifice by becoming a martyr. Martyrdom would be the ultimate homage to his faith.

¹⁵ The plaque starting off with the Marian theme identified the individuals who had supported the creation of Pažaislis. The Grand Chancellor's wife – Clara Izabelle Eugenie Genevieve de Mailly Lascaris headed the list. Next named was the recently-deceased Pope Alexander VII, followed by the newly-elected Pope Clement IX. Completing the list, the plaque named George Bialozoras – Bishop of Vilnius, King John Casimir Vasa, his wife Queen Louise Marie de Gonzague, and, finally, Casimir Pac – Bishop of Samogitia.

¹⁶ Mittarelli, Giovanni Benedetto; Costadoni, Anselmo. *Annales Camaldulenses ordinis Sancti Benedicti*. (Reprint of the 1764 Venice edition). Farnborough: Gregg, 1970, Vol. 8, p. 375; also see: Kairiūkštytė-Jacinienė, 2001, op. cit., p. 111–112.

¹⁷ Mittarelli, op. cit., p. 375; also see: Kairiūkštytė-Jacinienė, 2001, op. cit., p. 111–112.

¹⁸ Wittkower, Rudolf. *Architectural Principles in the Age of Humanism*. London: Academy Editions, 4-th rev. ed., 1988, p. 40.

¹⁹ A variety of geometric figures – circles and squares, triangles and octagons, star shapes and Greek crosses, can generate centralized plans. Of these forms, the square, the circle, and the Greek cross were the most popular, the most frequently chosen. The other figures, if not entirely rejected, were generally sidelined, even though architectural theorists such as L. B. Alberti and S. Serlio had approved their use.

²⁰ Čerškutė, op. cit.

²¹ Wittkower, Rudolf. *Art and Architecture in Italy: 1600–1750*. Harmondsworth: Penguin Books Ltd., 3-rd revised edition, 1973, p. 137.

²² Kairiūkštytė-Jacynienė, 1928, op. cit., S. 130–131; also see: Kairiūkštytė-Jacinienė, 2001, op. cit., p. 180–182.

²³ Meneghin, Vittorino, OFM. *S. Michele in Isola di Venezia*. Vol. 1. Venezia: Stamperia di Venezia, 1968, pp. 333–339.

²⁴ Minor, Vernon Hyde. *Baroque & Rococo: Art & Culture*. London: Laurence King, 1999, p. 95.

²⁵ Hopkins, Andrew. *Santa Maria Della Salute: Architecture and Ceremony in Baroque Venice*. Cambridge: Cambridge University Press, 2000, p. 191.

²⁶ Fredo's role in the design of Pažaislis has not been conclusively demonstrated, see footnote in: Kairiūkštytė-Jacinienė, 2001, op. cit., p. 27.

²⁷ The hexagram's geometry clearly generated the Star Royal Summer Palace in Prague (*Letohradek Hvezda*). Built in 1555, the design may have been known to the Camaldolese or to Grand Chancellor Pac. However, as the palace was a secular building, albeit thoroughly suffused with symbolic and astrological references, its influence on Pažaislis is debatable and remains to be demonstrated.

²⁸ See: Blunt, Anthony. *Borromini*. Cambridge, Mass.: Harvard University Press, 1979.

²⁹ Kairiūkštytė-Jacinienė, 2001, op. cit., p. 178.

³⁰ Blunt, op. cit., p. 111.

³¹ “By that pure, holy, four-lettered name on high, nature's eternal fountain and supply, the parent of all souls that living be, by him, with faith find oath, I swear to thee.”

³² *History of Beauty* / Ed. by U. Eco. New York: Rizzoli, 2004, p. 64.

³³ Webber, F. R. *Church Symbolism: An Explanation of the More Important Symbols of the Old and New Testament, the Primitive, the Mediaeval and the Modern Church*. Cleveland: Jansen, 1937, p. 40.

³⁴ Biedermann, Hans. *Dictionary of Symbolism* / Translated by J. Hulbert. New York: Facts on File, 1992, p. 355.

³⁵ Webber, op. cit., p. 384.

³⁶ Ibid, p. 167.

³⁷ Saint Augustine. *Concerning the City of God against the Pagans*. Book XI, Ch. 30. *The perfection of the number six*. London: Penguin, 1972, p. 465.

³⁸ Fisher, Sally. *The Square Halo and Other Mysteries of Western Art*. New York: Abrams, 1995, p. 93.

³⁹ Biedermann, op. cit., p. 173.

⁴⁰ Soltes, Ori X. *Our Sacred Signs: How Jewish, Christian, and Muslim Art Draw from the Same Source*. Cambridge, MA: Westview Press, 2005, p. 147.

⁴¹ Webber, op. cit., p. 42.

⁴² Biedermann, op. cit., p. 66; also see: Hall, James. *Dictionary of Subjects and Symbols in Art*. New York: Harper & Row, 1979, rev. ed., pp. 66, 73.

⁴³ Blunt, op. cit., p. 116.

⁴⁴ *Discoveries and Opinions of Galileo* / Translated by S. Drake. New York: Doubleday, 1957, p. 223.

⁴⁵ Padovan, Richard. *Proportion: Science, Philosophy, Architecture*. London: Spon, 1999, p. 247.

⁴⁶ Koestler, Arthur A. *The Watershed, a Biography of Johannes Kepler*. New York: Anchor, 1960, pp. 223–224.

⁴⁷ Ibid, p. 123.

⁴⁸ Drake, op. cit., p. 18.

⁴⁹ Wilson, Curtis. *Astronomy from Kepler to Newton*. London: Variorum Reprints, 1989, p. 2; also see: Martens, Rhonda. *Kepler's Philosophy and the New Astronomy*. Princeton: Princeton University Press, 2000; and Stephenson, Bruce. *The Music of the Heavens: Kepler's Harmonic Astronomy*. Princeton: Princeton University Press, 1994.

⁵⁰ Koestler, op. cit., pp. 148, 223.

⁵¹ Translated into English, the full title of *Mysterium cosmographicum* reads: *A Forerunner to Cosmographical Treatises, containing the Cosmic Mystery of the admirable proportions between the Heavenly Orbits and the true and proper reasons for their Numbers, Magnitudes, and Periodic Motions* by Johannes Kepler, Mathematicus of the Illustrious Estates of Styria. Tuebingen, anno 1596. A second edition appeared in 1621.

⁵² Padovan, op. cit., p. 149.

⁵³ Koestler, op. cit., p. 45.

⁵⁴ Heilbron, J. L. *The Sun in the Church*. Cambridge: Harvard University Press, 1999, p. 10.

⁵⁵ Padovan, op. cit., pp. 249–251.

⁵⁶ Field, Judith Veronica. *Kepler's Geometrical Cosmology*. London: The Athlone Press, 1988, p. 1.

⁵⁷ Kamuntavičienė, Vaida. *Kristupas Zigmantas Pacas – XVII a. Lietuvos valstybės veikėjas*. Masters Thesis. Kaunas: Vytauto Didžiojo universiteto Istorijos katedra, 1998, p. 13.

⁵⁸ Koestler, op. cit., p. 180; see: Galilei, Galileo. *Il*

Saggiatore (The Assayer). Roma, 1623, excerpt cited by Drake, op. cit., pp. 237–238.

⁵⁹ A longer discussion of the dissemination and public reception of the *Machina coelestis* by Johannes Hevelius (1611–1687), active in Danzig, and *Theatrum cometicum* by Stanisław Lubieniecki (1623–1675), active in Poland, is beyond the present study's limits.

⁶⁰ *Vilniaus miesto istorijos skaitiniai* / Sud. E. Manelis, R. Samavičius. Vilnius: Vilniaus knyga, 2001, p. 921–923.

⁶¹ Klimka, Libertas. *Vilniaus astronomijos observatorijai 250 metų*. In: *Draugas: Literatūra – menas – mokslas*. Chicago, IL., No. 67 (14), April 5, 2003, p. 1–2.

⁶² *Senoji Lietuvos knyga. XVI–XVIII a.*: exhibition catalog / Sud. A. Baziūnienė. Vilnius: Baltos lankos, 1997, p. 40.

⁶³ The youthful Galileo was educated in the Camaldolese monastery at Vallombrosa, near Florence. This was reason enough for the Camaldolese to follow his subsequent career and to become familiar with his controversial ideas, especially as they could have implicated Camaldolese pedagogy.

⁶⁴ The fragmentary surviving text had read: *DESERT... INVM EXVITABIT... SOLITVDO ET FLORE... LILIVM*

ET MINONS GERMINABIT... EXVITABIT... In: Kai-riūkšytė-Jacinienė, 2001, op. cit., p. 226.

⁶⁵ Consult the references cited in footnote 2 above.

⁶⁶ Neubecker, Ottfried. *Heraldry: Sources, Symbols and Meaning*. London: Macdonald, 1998, p. 132.

⁶⁷ Blunt, op. cit., pp. 114–116; also see: Blunt, Anthony. *S. Ivo della Sapienza*. In: *Guide to Baroque Rome*. New York: Harper & Row, 1982, pp. 66–68. For an alternative interpretation, see: Connors, Josep. *S. Ivo all Sapienza: The First Three Minutes*. In: *Journal of the Society of Architectural Historians*. Vol. 55, Nr. 1 (March, 1996), pp. 38–57.

⁶⁸ Vigilucci, Lino. *Camaldoli – A Journey into its History & Spirituality* / Translated by P.-D. Belisle. Trabuco Canyon, CA: Source Books, 1995, p. 52. This heraldic device was apparently used by most the Camaldolese Order's congregations, the community at *Monte Corona* being a notable exception; see: Zamagni, Giulio. *Il valore del simbolo – Stemm, simboli, insegne e imprresse degli Ordini religiosi, delle Congregazioni ed degli altri Istituti de Perfezione*. Cesena: Il Ponte Vecchio, 2003, pp. 40–41, 98.

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PAŽAISLIO KAMALDULIŲ VIENUOLYNŲ SIMBOLINĖ GEOMETRIJA

Reikšminiai žodžiai: Pažaislis, kamalduliai, simbolinė geometrija, barokas, Pacai, Kepleris, kontrreformacija, vienuolynas, heksagrama, heksagonas, Švč. Trejybė, lygiakraštis trikampis, centrinio plano bažnyčia, kosminė geometrija, Kaunas.

Santrauka

Maždaug prieš tūkstantį metų šv. Romualdas (952–1027) įstojo į benediktinų vienuoliją ir tapo vienu uoliausių šio ordino narių. Siekdamas sugrąžinti vienuolystę į pradinį tyrumą, jis daugelį metų keliavo po Italiją ir reformavo daug vienuolynų bei atsiskyrėlių eremų. Aistringiausi jo mokiniai keliavo kartu su juo į Arezzo vietovę, kur šv. Romualdas norėjo įkurti naują eremą. Kaip tik ten, apie 1012 m. jis sutiko grafą vardu Maldolus, kuris dovanojo jam kalnuose žemių, o slėnyje – pastatus. Kalnuose šv. Romualdas įkūrė eremą, vėliau pavadintą *Campus Maldoli*, arba *Camaldoli*, o slėnio pastatuose – *Fonte Buono* vienuolyną, kuris ilgainiui tapo motininiais kamaldulių ordino namais. Šv. Romualdo idėjos apie aktyvaus ir kontempliatyvaus vienuoliško gyvenimo būdų derinį buvo susistemintos po jo mirties, tačiau, griežtai kalbant, kamaldulių ordinas oficialiai atsirado tik 1072 m., kai popiežius Aleksandras II išleido bulę *Nulli fidelium*.

Pavyzdinga kongregacija, įsikūrusi Kamaldolio vienuolyne ir ereme, buvo daugelio ordino atšakų ir kongregacijų pirmtakė. Viena iš šių bendruomenių, įsikūrusi prie Rua kalno, esančio šalia Paduvos ir Torreglia miestų, padėjo Žemaičių vyskupui Mikalojui Pacui (1570–1624) išlaikyti sveikatą. Rua filialas buvo įkurtas 1537 m. *Colli Euganei* kalnų apylinkėje. Šios vulkaninės zonos karštos versmės ir purvo vonios buvo gerai žinomos nuo romėnų laikų kaip gydančios ligonius, kenčiančius nuo reumato ar kitų ligų. Atmindamas tą geraširdišką ordiną, Kristupas Zigmantas Pacas vėliau nusprendė įkurti kamaldulių vienuolyną Pažaislyje.

Po Romualdo kanonizacijos 1595 m. kamaldulių ordinas išgyveno nepaprasto plėtimosi laikotarpį. Vyrų ir moterų

vienuolynai kūrėsi Italijoje, Prancūzijoje, Austrijoje, Vengrijoje, Slovakijoje, Lenkijoje. 1664 m. K. Z. Pacas Pažaislyje įsteigė pirmąjį Lietuvoje kamaldulių vienuolyną *Eremus Montis Pacis*. 1667 m. karalius Jonas Kazimieras Vaza įkūrė antrąjį, *Eremus Insulae Wygrensis*, Vygrių ežero saloje. Abu priklausė *Montis Coronae* kongregacijai Perudžoje. Iki to laiko, kol buvo pastatytas Pažaislis, kamalduliai vienuolynus statėsi jau šešis amžius. Pradžioje ordinas teikė pirmenybę didelėms ir nuošalioms vietovėms, dėl to pastatai buvo plačiai išsidriekę. Vėliau vienuolynai buvo statomi nedidelėse valdose, esančiose arčiau miestų, kaip Pažaislis, ir reikalavo kompaktiško išdėstymo. Pažaislio ašinis planavimas, abipusė simetrija, siauras perimetras, tinklinis išsidėstymas, vidiniai kiemai primena *El Escorial*, sukurta 1560-aisiais. Ypatingas Pažaislio vienuolyno planas aiškiai yra kilęs iš *Eremus in Montibus Taurinensibus*, įkurto 1602 m. netoli Turino. Šis vienuolynas priklausė labai energingai ir išplitusiai *Montis Coronae* kongregacijai.

Švč. Marijos Mergelės Apsilankymo bažnyčia Pažaislyje buvo pašventinta 1674 m. Jos neįprastas šešiakampis planas visiškai skyrėsi nuo kitų kamaldulių bažnyčių – pirmenybę jie paprastai teikdavo stačiakampės bazilikos tipui. Kad geriau suprastume jos kitiškumą, turime pažvelgti anapus akivaizdžių dalykų, ištyrinėti, kodėl, kur ir kaip architekto vaizduotėje gimė šešiakampė bažnyčios geometrija, ieškoti loginio pagrindo, kuris pagrįstų šią neįprastą formą. Šiame darbe teigiama, kad sidabrinės pašventinimo lentelės, liudijančios bažnyčios paaukojimą Švč. Mergelei Marijai ir Švč. Trejybei, pateikia argumentų, pateisinančių šio pastato neįprastą geometriją.

Šešiakampį bažnyčios planą galima sukurti vieną ant kito sudėjus ir sukant du lygiakraščius trikampius taip, kad susiformuotų šešiakampis. Tokios šešiakampės žvaigždės vidus sudaro heksagoną. Kadangi lygiakraštis trikampis siejamas su lelija, o ši, savo ruožtu, yra simbolinė nuoroda tiek į Švč. Mergelę Mariją, tiek į Švč. Trejybę, šešiakampė Pažaislio bažnyčios geometrija buvo visiškai tinkama.

Religiniais statiniais jau seniai siekiama teologiją perteikti per geometriją. Pradžioje, pirmieji krikščionys bažnyčių planams naudojo *tau*, graikų bei lotynų kryžių. Renesanso apskrito plano bažnyčios dažnai perteikė nuorodą į Švč. Mergelės dieviškąją karūną. Simbolinė geometrija išliko svarbi per visą kontrreformacijos laikotarpį, tad Pažaislio planas nebuvo neutralus, bet teologiškai pagrįstas. Patvirtindamas Romos katalikų dogmas, jis buvo visiškai nepriimtinas liuteronams, kalvinistams ir antitrinitoriams.

Pažaislio įkūrimas jau reiškė, kad ignoruojamas Martino Liuterio vienuolystės ir šventųjų kulto pasmerkimas. Centrinis šešiakampis vienuolyno bažnyčios planas prieštaravo ypatingos Švč. Mergelės Marijos padėties nepripažinimui, skelbiamam kalvinistų ir liuteronų. Kalvinizmas draudė visas Marijos garbinimo formas, net giesmes ir maldas, kuriose minimas jos vardas. Heksagonas, ir ypač heksagrama, žymėjo *chi rho* monogramą, sutrumpintą Kristaus vardą. Tai tiesiogiai prieštaravo antitrinitorių doktrinai, kuri nepripažino Kristaus dieviškumo ir tikėjimo Švč. Trejybe. Ši sekta taip pat nepritarė vergovei, naudojimuisi pinigais, privačiai nuosavybei ir valstybinei tarnybai. Ir kadangi antitrinitoriai atsisakė tarnybos kariuomenėje, kai į šalį įsiveržė kazokai, švedai ir maskviečiai, 1658 m. Seimas išvarė visą radikaliąją pacifistų sektą iš Abiejų Tautų Respublikos.

Krikščionys nuo seno tikėjo, jog bažnyčios yra žemiški dieviško kosmoso analogai. Taigi bažnyčių planams galėjo būti teisėtai taikoma geometrija, kuri darė aliuziją į dangų. Renesanso metu apskritimas vaizdavo dangaus kūnų formą ir buvo tikima, kad jis atspindėjo geometrinių visatos sąrangą. Apie 1600 m. įtakingiausi tūkstantmečio astronomai – Tichas Brahė, Galilėjus Galilėjus ir Jonas Kepleris – atrado, kad elipsinės, Platono ir triadinės geometrijos išaiškina planetų judėjimą, atstumus tarp jų ir jų orbitų formą. Geometrinė kosmologija ėmė reprezentuoti pažangiausią tuometį astrofizinį mąstymą. Architektai esamą geometrinių formų repertuarą papildė trikampaiais ir elipsėmis, šias neseniai įteisintas figūras panaudojo kai kuriems įsimintiniausiems katalikų kontrreformacijos pastatams kurti. 1630 m. Francesco Borrominis naudojo elipses ir lygiakraščius trikampius Romos Šv. Karolio prie keturių fontanų (*San Carlo alle Quattro Fontane*) bažnyčiai kurti. 1640-aisiais Romoje jis pradėjo *La Sapienza* universiteto Šv. Ivo (*San Ivo della Sapienza*) bažnyčią, vaizduojančią heksagramą ir heksagoną. 1650-aisiais Gian Lorenzo Berninis sumanė panaudoti ovalo formą Šv. Andriaus al Kvirinale (*Sant' Andrea al Quirinale*) bažnyčioje ir sukūrė įspūdingą elipsės formos aikštę priešais Šv. Petro baziliką Vatikane. O 1650 m. Guarino Guarinis pritaikė sudėtingas geometrijas Šv. Lorencio (*San Lorenzo*) bažnyčioje ir Šv. Drobulės koplyčios (*Capella della SS. Sindone*) skliautams Turine.

Jonas Kepleris atrado, kad išsidėstymas tarp planetų atitinka Platono penkių tobulų geometrinių kūnų koncentrinį sudėstymą. Tai buvo reikšmingas atradimas. Keturios iš šių figūrų sudarytos iš lygiakraščių trikampių. Geometrinė figūra, kuri nuo seno simbolizavo Švč. Trejybę, aiškiai formavo ir dangų. Taigi galima daryti išvadą, kad kosmologinė geometrija iš tikrųjų atspindėjo Romos katalikų tikėjimo sakralinę geometriją. G. Galilėjus visiškai priėmė J. Keplerio idėjas ir atradimus ir mokė jų Paduvoje lyg savo paties mokslo. Astronomai Vilniuje buvo susipažinę su teorijomis, kurias skleidė J. Kepleris ir G. Galilėjus. Taigi, papildydamas su juo susijusį sakralinį simbolizmą, lygiakraštis trikampis taip pat darė aliuziją į kosmologinius dalykus.

Lygiakraštis trikampis ir heksagrama ne tik įkūnijo Romos katalikų esminius principus ir patraukė tuometinio empiriškai pagrįsto kosmologinio mokslo dėmesį, bet ir rezonavo su įvairiais filosofiniais šaltiniais. Senovės Graikijos pitagorininkai vertino lygiakraštį trikampį, nes jis sudarė *tetraktys*. Viduramžių alchemikai lygiakraštį trikampį laikė keturių pagrindinių elementų simboliu. XVII a. viduryje Romoje heksagrama buvo žinoma ne kaip žydų simbolis, o kaip „Išminties žvaigždė“. Krikščionims šešiakampė žvaigždė simbolizavo pasaulio sukūrimą ir įkūnijo mintį, kad Triasmėnis Dievas sukūrė dangų ir žemę.

Prisimenant heraldikos svarbą tais laikais, įsidėmėtina, kad heksagrama pasirodo kamaldulių ordino emblemoje ir vaizduoja dvigubą leliją Pacų giminės herbe. *San Michele* kamaldulių kongregacijos Venecijoje emblema vaizduoja kometą su šešiakampe liepsnojančia galva. Geometrija, kuri sudaro Pacų giminės herbo – dvigubos lelijos pagrindą, gali būti pavaizduota trikampaiais, heksagonu ir heksagrama. Šios figūros yra identiškos toms, iš kurių sukurtas Pažaislio bažnyčios planas.

Į ankštą erdvę įterpta geometrinė sąranga nulėmė Pažaislio išsidėstymą ir Švč. Mergelės Marijos Apsilankymo bažnyčios planą. Geometrinės figūros yra daugiavalentės – toms pačioms formoms yra suteikiamos simbolinės reikšmės keletoje sričių. Tokiu būdu kosmologinės, filosofinės ir heraldinės aliuzijos papildo vienuolyno sakralinės geometrijos pirmines prasmes. Simbolinės geometrijos užuominų sodrumu Pažaislis išsiskiria iš kitų, žvelgiant paviršutiniškai – panašių, bet iš esmės ne tokių sudėtingų kamaldulių vienuolynų.

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