Fr. Antonio Lobato de Santo Tomas, O.P.: His Legacy in Cagayan Valley

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Abstract: Fr. Antonio Lobato de Santo Tomas, O.P., a notable 18th-century architect, left an enduring legacy in the Cagayan Valley with his creative designs, construction projects, and preservation of indigenous culture especially in the Ibanag language. This article investigates Fr. Lobato's important contributions to the Cagayan Valley, particularly his iconic masterpiece, the Tuguegarao Cathedral, and his innovative building techniques. By looking into his work, architectural achievements, and long-term effect on the Cagayan Valley architectural landscape, we acquire a better understanding of his visionary approach to design and commitment to molding the built environment in line with local customs. Fr. Lobato's legacy demonstrates his architectural brilliance, creativity, and long-term impact on the region's cultural history.

Keywords: Antonio Lobato, Dominican Mission in Cagayan Valley, Tuguegarao, architecture, masonry construction

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• *PHILIPPINIANA SACRA*, Vol. LX, No. 182 (May-August 2025) pp. 343-370.
DOI: https://doi.org/10.55997/2005pslx182a5

Introduction

Fr. Antonio Lobato de Santo Tomas, O.P., or simply Fr. Antonio Lobato, O.P., is best known in Tuguegarao City as the architect[1] of its Cathedral. He's also "famous" for his multifaceted talents as an architect, philologist, and faithful missionary, and left a lasting architectural legacy in Cagayan Valley during the Spanish colonial era. This article delves into his architectural achievements, innovative designs, and construction projects that have shaped the landscape of the region.[2]

Fr. Lobato was born in 1724 in Manzanal de los Infantes, commandery of San Juan de Rubiales, in the province of Zamora, in Castilla la Vieja and diocese of León, Spain. After being trained in priesthood, he professed around 1744, took the habit of the Dominican Order, possibly about the age of 20, in San Pablo de Valladolid. In Fr. Lobato's early years, he was known as a man of great probity and talent, a Collegiate of San Gregorio in which he spent the first years of his religious life in acquiring science and virtue in the city of Valladolid. He was also a Lector in León. In 1753 at the age of 29, he arrived in the Philippines, and then was assigned to the Ituy missions,[3] in which he worked with great zeal for some years. As a young missionary in the Philippines, his zeal was evident when he served in Ituy and continued as a young Vicar of Buhay (now Aritao, Nueva Vizcaya) from 1755[4]-1759.[5] Later, he served

[1] Fr. Julian Malumbres, *Historia de Nueva Vizcaya y provincia montañosa,* 1919. In this book, Fr. Malumbres distinguished Fr. Antonio Lobato as an *arquitecto* and is rightfully so due to his accomplishments that will be narrated in this article.

[2] His extensive works on the Ibanag language are recorded and catalogued in various Spanish-period reports. Perhaps, one of his best known works on the Ibanag language is his restructuring of Fr. Jose Bugarin's Ibanag dictionary, where it also included an appendix on the construction of the Tuguegarao horno, production of clay bricks, and lime for mortar and plastering.

[3] In his arrival and mission at Cagayan Valley in the second half of the 18th-century, most of the settlements lined along the Cagayan River and other large estuaries have been pacified, nonetheless, Spanish barracks or fortifications are still visible and active in this period. The location of his assignment is along the southern end and upstream portion of Cagayan Valley, which is now Nueva Vizcaya along the Caraballo mountains. This difficult terrain is the link between the Dominican missions of Pangasinan and Cagayan Valley. Traveling by the shores of Pangasinan northwards and turning eastward to the mouth of Cagayan River in Aparri and continuing southward upstream to reach the Ituy mission territory would be highly impractical. It can be assumed then, that arriving in the Philippines to the mission area posed the challenge of finding a practical route from Pangasinan to Ituy, Nueva Vizcaya on foot by crossing the Caraballo mountainrange.

[4] In 1755, together with Fr. Cristobal along with natives and military escort, they decided to survey a route to cross the Caraballo Mountains to go to Pangasinan.

[5] Fr. Julian Malumbres, OP, *Historia de Nueva Vizcaya y Provincia Montañosa* p. 52-54. During this trek, Fr. Lobato wrote the arduous and treacherous journey in their exploration in finding a path from Pangasinan to Cagayan Valley and vice-versa by not taking the usual itinerary by sea.

DOI: https://doi.org/10.55997/2005pslx182a5

Santa Cruz de Gumpat (now Conner, Apayao). He remained in Tuguegarao from 1765 as its vicar until his death in 1794, he was 70 years old.[6]

Architectural Vision and Boldness

Fr. Lobato's remarkable boldness and visionary approach to architecture are evident in his construction of the Tuguegarao Cathedral, a monumental undertaking that showcased his architectural prowess. His use of locally available materials and innovative building techniques set him apart as a resourceful and skilled architect in the region. In this article, it will deal with an analysis of Fr. Lobato's "design process" and proposes how the Tuguegarao Cathedral façade was designed, his contribution engineering materials for construction and the structural systems the goes with it, as well as his contribution to urban planning and infrastructures.

Tuguegarao Cathedral's Design Process

A testament to visionary architecture, the most iconic architectural achievement of Fr. Lobato was the construction of the Tuguegarao Cathedral, a monumental structure that stands as a testament to his visionary architecture.[7] In 1761, at the age of 37, Fr. Lobato embarked on the ambitious project of designing and building this grand church, showcasing his boldness and unwavering faith in his architectural abilities.[8] In context to the existing population of Tuguegarao around this time, it is then necessary for Fray Lobato to design a spacious church for the populace. Notable also is the transfer of the diocese of Nueva Segovia from Lal-lo, Cagayan to Vigan, Ilocos Sur which "lessened" the importance of the town of Lal-lo as an ecclesiastical center.[9]

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[6] Hilario Maria Ocio and Eladio Neira. 2000. *Misioneros Dominicos en el Extremo Oriente*. San Juan: Orientalia Dominicana General No. 7.

[7] An installed historical marker on the lower left side of the façade of the Tuguegarao Cathedral of the National Historical Institute (now the National Historical Commisssion of the Philippines) reads: *"Ang Katedral ng Tuguegarao/ Ang mga Paring Dominiko ay dumating sa Cagayan Valley noong 1600 at sinimulan ang kanilang misyon sa Tuguegarao noong 9 Mayo 1604. Unang Bikaryo si P. Tomas Villa, O.P. Ang Simbahan na may kampanaryo ay ipinagawa ni Reb. Antonio Lobato, O.P. simula noong 1761 hanggang 1767 sa tulong ng mga mananampalataya. Ito ang pinakamalaking Simbahan sa Cagayan. / Ang Diyosesis ay itinatag ng Papa Pio X noong 10 Abril 1910 at itinalaga si Mons. Mauricio P. Foley bilang unang Obispo nito noong 6 Disyembre 1911./ Nagiba noong Panahon ng Pagpapalaya noong 1945. Ang Katedral ay muling ipinatayo ni Mons. Constance Jurgens. Ang nasirang kampanaryo at mga kampana ay muling isinaayos ng mga mananampalataya at ng Knights of Columbus."*

[8] Macarubbo explained in detail the history of the Tuguegarao Cathedral from the pre-cathedral phase to its latest construction interventions. This article will contribute to the design process of the Tuguegarao Cathedral.

[9] In comparison to Lal-lo's population of 920, Tuguegarao has 7,644 inhabitants by 1750.

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In building the church, existing structures may have inspired Fr. Lobato in his design of the Cathedral.[10] Architect Manolo Noche notes that a large church – San Pablo of Cabagan Viejo (now the town of San Pablo, Isabela), in which Fr. Lobato once served as an interim priest, may have served as a reference in the construction of the present Saint Peter Metropolitan Cathedral.[11] This may be true when comparing the architecture of the two churches San Pablo and Tuguegarao in plan form, including its belltower. However, in this article, the author would like to propose a hypothesis in the design process not only of the plan, but also of the famous "Tuguegarao Style" or "Cagayan Style" façade of the Saint Peter Metropolitan Cathedral.[12]

Estimating the genesis of the façade would entail a simple approach in architecture known as "juxtaposition," where two or more elements can be combined to create an entirely new design. Two Proto-Tuguegarao Phase[13] brick-built chapels can be inferred here as the basis of the Tuguegarao Cathedral's façade namely the funerary chapel of San Vicente Ferrer in San Pablo, Isabela and the Ermita de San Jacinto of Tuguegarao. Legarda[14] fortunately published a photo of the façade as well as a glimpse of its masonry retablo inside the San Vicente Ferrer chapel. This chapel is one of the best examples of facades that featured finials as a dominating element of the pediment, albeit the photo of Legarda only showed three surviving finials (on the left side of the pediment) in the 1980s. When photoshopped (Figure 1), it looks *almost* the same as the familiar silhouette of the present Tuguegarao Cathedral, including the chainlike cornice of the façade in following the slant of the pediment and the base of each finial.[15] A difference in the placement of the elements above the pediment would be the central semicircular crown of rays, while the Tuguegarao Cathedral has a finial (now replaced by a rood cross). Also, the oculus surrounded by rays or *rayos solares*[16] of the façade at the center of the pediment is present in the Tuguegarao's.

[10] Pedro G. Galende. *"Philippine Church Facades." Vibal Publishing House, Inc. and San Agustin Museum.* Galende's work presents the most extensive collection of church facades in the Philippines. Notably, Cagayan Valley and the Batanes islands is characteristic of the usage of finials to its facades.

[11] Manuel M.L. Noche. *"The Dominican Missionaries in the Cagayan Valley: Their Missions and Architecture." Philippiniana Sacra* XXXIX (117).

[12] In this paper, the Saint Peter Metropolitan Cathedral will be simply referred to as the "Tuguegarao Cathedral."

[13] Manuel M.L. Noche. *"The Dominican Missionaries in the Cagayan Valley: Their Missions and Architecture." Philippiniana Sacra* XXXIX (117).

[14] Legarda, Benito y Fernandez. 1981. "*Angels in clay: the typical Cagayan church style." The Filipinas Journal of Science and Culture Volume 2*, 68-81.

[15] Ibid. No wonder Legarda regard this as one of the seeds in the "Main Cagayan Style" that is to come in façade design in Cagayan Valley in the 18th-century.

[16] Javier Galvan Guijo, "*Heritage churches of the Cagayan River basin*," Vibal Foundation, 75. The sun beams of the oculus is a masonry version of the San Vicente Ferrer chapel, but different in execution on the sun beams of the Ermita de San Jacinto of Tuguegarao.

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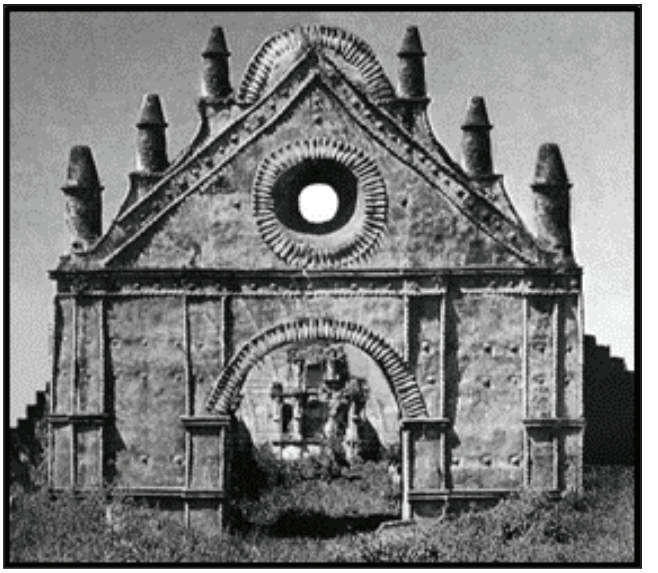

Figure 1. A photoshopped version (by the author) of the now lost San Vicente Ferrer funerary chapel in San Pablo Isabela which presents an estimate of the original outline of the façade complete with its finials. Original photo source: Angels in clay: the typical Cagayan church style, Benito Legarda, 1981, published by Filipinas Heritage Library. This facade of ca. 1724 has influenced the design of the Tuguegarao Cathedral and the subsequent ones in the 18th-century.

The San Vicente Ferrer funerary chapel's façade shape falls under what Architect Javier Galvan Guijo considers as pentagonal in shape, that is considering if the finials are removed from the pediment. This means that the chapel's façade (like the outline of San Raymundo de Peñafort or Malaueg church) showing a "real gabled roof," but in this chapel's case finials began propping out while also articulating its pediment.[17] Today, the San Vicente Ferrer funerary chapel's remains can still be visited in San Pablo's public cemetery but the façade and the apse is no longer there – only the side walls remain of this once beautiful stone chapel (Figure 2).

Figure 2. Remains of San Vicente Ferrer funerary Chapel in the San Pablo public cemetery. Photo: M. T. Tabao, 2024.

[17] Galvan, "Heritage churches," p. 27.

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The second chapel considered here that may have been influential in Fray Lobato's design of Tuguegarao Cathedral's façade is the Ermita de San Jacinto of Tuguegarao. The Ermita (built in 1724) and the San Vicente Ferrer may have been built during the period following the order to construct chapels to principal barrios after the 1718 insurrections.[18] The façade feature of the Ermita that can be taken as a reference to the design of Tuguegarao Cathedral's façade is its first three (3) tiers consisting of triplet pilasters in each tier composed in axes in 3 X 3.[19] Basing on architect Galvan's definition, the 3 X 3 composition of the Ermita was layered in each tier as:

- Tier 1: the façade's entrance with the main portal in its center and flanked by two arched side entrances. In between these entrances as well as both ends, the triplet pilasters are placed and ends the first tier with an entablature consisting of a cornice with dentils and a rope band. There are four triplet pilasters. The triplet pilasters are simply three semicircular columns (the center is the largest in width) integrated to the façade. On the base of each triplet pilaster is a rectangular base tapering upwards following each pilaster's width. The cornice doubles as a sort of a capital for each triplet pilaster.
- Tier 2: the façade's blank wall where it continued the triplet pilasters as well as a copy of its entablature as below.
- Tier 3: the façade's most ornate portion where in included urn-like finials in each end, the dominant semicircular pediment with its cornice, dentils, and rope band capped in its center the espadaña carrying the present bells, the two triplet pilasters, and its oculus at the center.

Figure 3. Ermita de San Jacinto of Tuguegarao. Photo: M. T. Tabao, 2022.

[18] Regalado Trota Jose. *"A Visual Documentation of Fil-Hispanic Churches – Part XIX: The Church of San Pablo Apostol in Cabagan Viejo (Now San Pablo), Isabela (PHILIPPINIANA RECORDS)."* Philippiniana Sacra Vol. LIII - Issue No. 160, September-December.

[19] Galvan, "Heritage churches," p. 27.

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Now, how does the two mentioned chapel's façade may have been the main influence in the design of the Tuguegarao Cathedral's by Fray Lobato? By using the upper triangular (and lobed) pediment and the finials of the funerary chapel of San Vicente Ferrer of San Pablo plus the first three tiers of Ermita de San Jacinto of Tuguegarao (excluding its urnlike finials, espadaña, and its semicircular pediment, we can see a rough estimate of the design of the Tuguegarao Cathedral (Figure 3). The present form of the Tuguegarao Cathedral, while by proportion is not the same, shows a comparative similarity with Figure 2: the usage of triplet pilasters to the third tier, oculus, lobed pediment (following the gabled roof), and usage of finials.

Figure 4. A juxtaposed version by the author combining the three tiers of the Ermita de San Jacinto of Tuguegarao and of the pediment outline of the San Vicente Ferrer Chapel of San Pablo, Isabela. This gives resemblance to the now known Tuguegarao Cathedral facade. Graphic Analysis by M. T. Tabao, 2022.

Figure 5. Present form of Tuguegarao Cathedral. Photo by M. T. Tabao, 2021.

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The façade's proportion

As mentioned above, the design process for the façade of Tuguegarao Cathedral may be credited from two stone chapels. The question now is how to apply the façade in a larger scale. The most straightforward approach would be Architect Galvan's three by three (3 X 3) proportioning system[20] for the Tuguegarao Cathedral's façade where it can be estimated that for the vertical measurements from the base to the tip of the triangular pediment the estimated height of the first tier cornice is 1/3, the second tier to the top the lower part of the cornice of the pediment 1/3, and from the top of the second tier to the pediment cornice another 1/3. For the horizontal dimensions it can be assumed that the 3 X 3 system can be applied by dividing the horizontal line into six (6) segments for the placement of the finials and pilasters (See Figure 6).

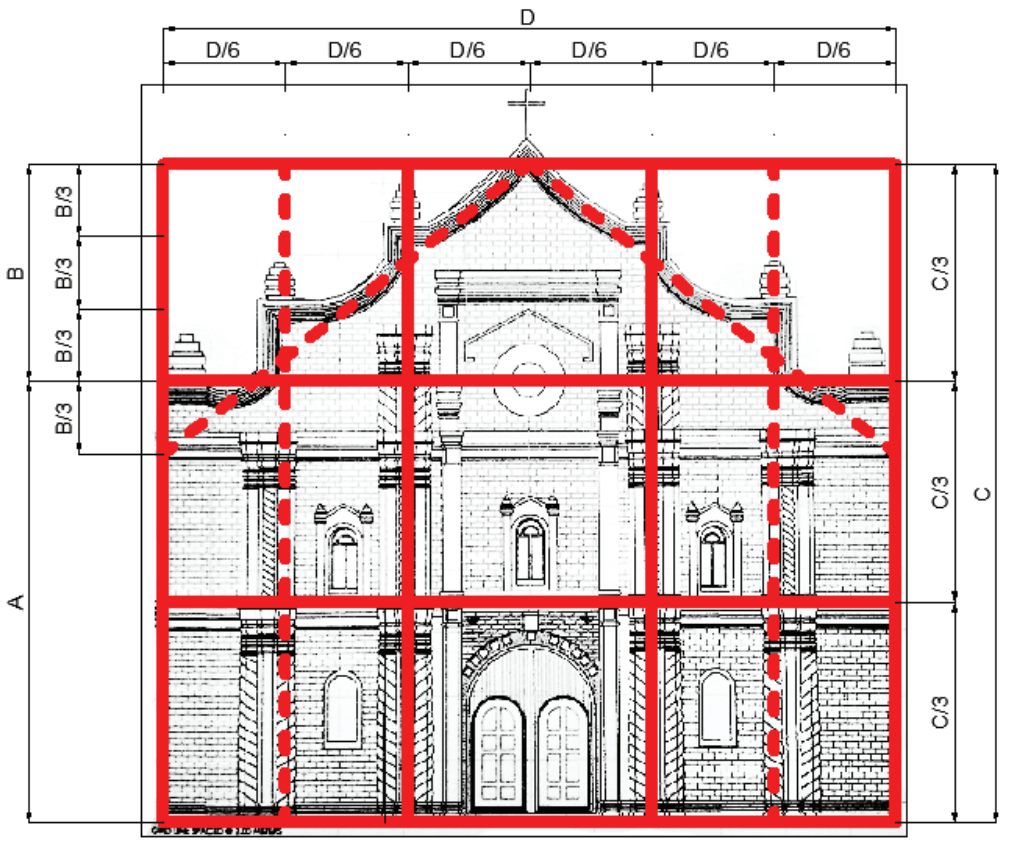

Figure 6. Tuguegarao Cathedral facade in 3 X 3. Facade plan from the drawings of the work of Architect Edgardo Mar A. Castro and Fr. Alex O. Baustista as the Consulant. Graphic analysis by M. T. Tabao, 2024.

[20] Ibid.

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Architect Galvan also presented in an exhibition in the National Museum of Anthropology in Manila, Philippines where he showed the four types of façade design in Cagayan Valley churches namely the square, pentagonal decorative façade, 3 X 3 compositional axes (which is showed here), and altarpiece-like façade. Given these methods in designing Cagayan Valley's church facades, in seems clear that the Tuguegarao Cathedral is a combination of the 3 X 3 composition and the altarpiece-like character due to its usage of engaged pilasters, niches/recesses for windows/images, and also of the articulating elements of the pediment like the lobed cornice and finials.[21]

Another theory can be offered in the proportioning system for the design of the Tuguegarao Cathedral's façade is the Golden Section. The Golden Section is one of the most widely used proportional systems in Classical architecture and even in the Renaissance period, where it tries to use basic units and proportioning "rules" by projecting lines and diagonals,[22] visualized below (see Figure 7). As to the case of Tuguegarao Cathedral's façade, Fr. Lobato may have used this system in enlarging the "small" façade of the funerary chapel of San Vicente Ferrer in San Pablo, Isabela into a grander version for the Tuguegarao Cathedral (see Figure 8).[23] To imagine the difference in scale, Figure 9 shows the estimated comparative heights of San Vicente Ferrer chapel with the Tuguegarao Cathedral.

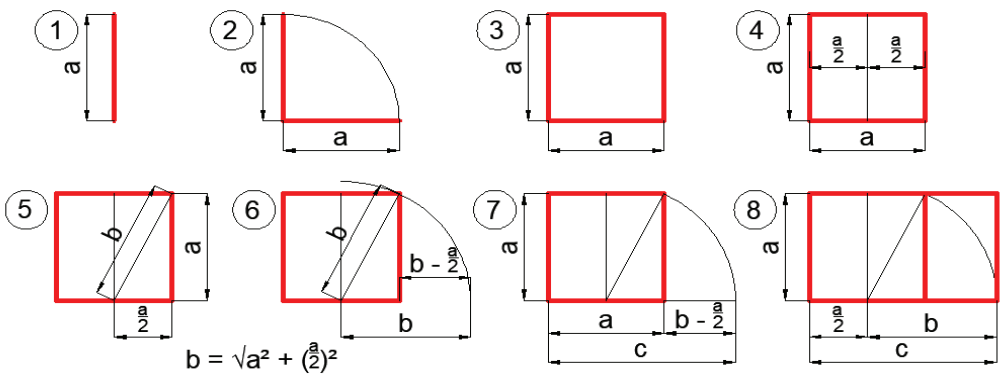

Figure 7. Step-by-step procedure in projecting the Golden Section using only a square and compass. Graphic analysis by M. T. Tabao, 2024.

[21] National Museum of the Philippines. *"Las Iglesias de Tierra Roja: Heritage Churches of the Cagayan Valley Region."* Manila, Philippines.

[22] See also Francis D. K. Ching's *"Architecture: Form, Space, and Order"* Second Edition. Van Nostrand Reinhold, International Thomson Publishing, Inc. p. 286-288.

[23] The width of current ruin of San Vicente Ferrer chapel is about 11 meters, and may have the same measurement with its former height, up to the tip of its pediment based on its proportion in Figure 1. Based on the architectural drawings now held in the archives of the Archdiocese of Tuguegarao, the Cathedral has its façade height at approximately 21.23 meters.

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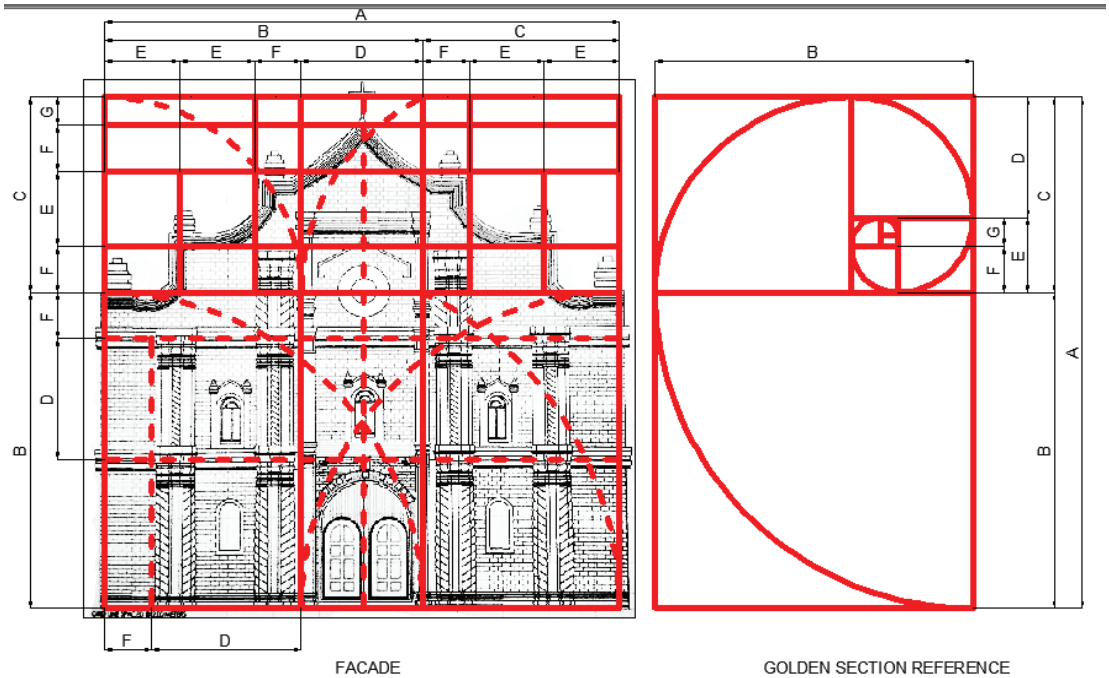

Figure 8. An estimated proportioning method in the design of the Tuguegarao Cathedral facade based on the Golden Section. Facade plan from the drawings of the work of Architect Edgardo Mar A. Castro and Fr. Alex O. Baustista as the Consultant. Graphic analysis by M. T. Tabao, 2024.

Figure 9. To-scale comparative height of the San Vicente Ferrer funerary chapel with the Tuguegarao Cathedral. Digitally manipulated for scalar comparison by the author. Photo: M. T. Tabao, 2024.

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As presented above, there should have been a measurement and proportional method and transferring the façade plans from one place to another. This is especially true to Cagayan Valley when it witnessed the Tuguegarao Phase of church façade architecture from Tuguegarao to the towns of Alicia and Cauayan of Isabela and of Bambang, Bayombong, and Dupax in Nueva Vizcaya. Fr. Lobato may have been involved in the direction or consultancy of the construction of the churches of Nueva Vizcaya since he died a much later year. The churches of Alicia and Cauayan were built decades later after Fr. Lobato's death in 1794.

Figure 10. Our Lady of Atocha, Alicia, Isabela. Photo: C.M. Matias, 2024.

Giant S-scrolls

Another element borrowed by the Tuguegarao Cathedral's iconic façade is its giant S-scrolls, now stripped off due to renovations in the 1980s. Perhaps the first usage of these scrolls appeared in the façade of San Pablo church which is typical of the baroque period specially applied when flanking facades or retablos. These S-shaped scrolls are placed left and right of the first tier of the San Pablo church façade, almost occupying the tier's height. In the case of Tuguegarao Cathedral, the scrolls were placed at the first and second tiers in both sides of the façade. Today, a mere ghost of the scrolls can still be traced after they were stripped-off from the

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façade some 40 years ago. Figure 15 shows the 19th century view of the Tuguegarao Cathedral with the S-scrolls still intact.

Mastering Brick, Mortar, and Stone

Fr. Lobato's architectural vision extended to his utilization of locally available materials and innovative designs. His use of bricks and lime, produced locally under his guidance, not only showcased his resourcefulness but also highlighted his commitment to sustainable and efficient construction practices. Not only that, his method on structural design may have contributed to the extended life of the Tuguegarao Cathedral – perhaps an indication also of the Philippine earthquake baroque period due to its usage of walls, massive arches, buttresses, and flying buttresses. As a decorative element, Fr. Lobato also maximized the usage of molds to produce different products out of clay: brick, roof tiles, inserts, moldings, and even pipes.

Construction Techniques and Innovations

Through the production of bricks and lime, Fr. Lobato revolutionized the architectural landscape of Cagayan Valley. His meticulous instructions for building brick kilns and producing materials highlight his expertise in construction technology and his commitment to quality craftsmanship. The published version of Fr. Lobato's narrative came into typeface version in 1854.[24] Since there may be yet to be discovered architectural plans by the hands of Fr. Lobato himself, the only surviving architectural narrative available directly connected with the construction of the Tuguegarao Cathedral is the instructions for the construction of *hornos* and production of bricks and lime.[25]

In brick making, Fr. Lobato began his technique by carefully selecting ground mixed with horse excrement to assure the quality of the bricks. The material was thoroughly kneaded[26] and formed into bricks using molds. After curing in a darkened

[24] There are three Spanish versions as mentioned earlier: (1) the linotype version of Fr. Jose Bugarin, 1854. BDH HA/9441 *Diccionario Ibanag-Español* endnote pp. 369-370; (2) the "refined" handwritten version by Jose Morales, 1801-1900? BDH MSS/9875: *Vocabulario de la lengua ybanag* pp. 386-387; and (3) the original manuscript by Fr. Antonio Lobato, 1766. BDH MSS/9876: *Vocabulario de la lengua ybanag* pp. 637-638.

[25] See also Regalado Trota Jose's *"An 18th Century Manual on Architecture: Fray Juan Albarrán's Barias Reglas de Arquitectura, 1735 (PHILIPPINIANA RECORDS),"* Philippiniana Sacra, 2022 where they discovered an early 18th century, and perhaps the first, detailed manual for architecture in the Spanish colonial Philippines in building the church of Santo Nino of Cebu.

[26] This method of mixing fiber, horse manure, and clay soil using carabao and oxen to walk over

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location, the bricks were given specialized finishes and treatments. Any extra material was carefully cut out, and the bricks were cured, dried, polished, and ready for building, highlighting Fr. Lobato's meticulous attention to detail and dedication to creating high-quality building materials.

For lime production, Fr. Lobato stressed the necessity of choosing white stones with unique qualities.[27] These stones were combined with clean, gritty sand in specific proportions. The lime mixture's ideal consistency required gradual water addition. Allowing the lime to rest allowed it to assume shape, assuring its suitability for use in construction projects, said Fr. Lobato's commitment to quality in material manufacture.

In the building of *hornos*,[28] which is required for brick and lime manufacturing, Fr. Lobato's thorough approach was clear. The method entailed constructing ovens with precise dimensions and characteristics, such as establishing foundations, cutting apertures for coal and lime disposal, and inserting reed rings for structural support. Firing the oven needed a slow rise in heat, covering it with cogon for insulation, and utilizing cow dung for further protection, as demonstrated by Fr. Lobato is dedicated to efficient and environmental building processes. As to the final architecture of the *hornos* of Tuguegarao, Fr. Lobato mentions it having (1) a flue (mouth) of the horno which totals about 1-1/4 *braza*[29] or about 2.09 meters and (2) with the height of the flue (and even its exterior wall) of the *horno* which totals five (5) *braza* or roughly 8.36 meters high.

The technical data about Fr. Lobato's processes, which include site selection and molding in brick-making, stone selection and water addition in lime-making, and the precise stages needed in horno building, demonstrate his competence and commitment to workmanship. His inventive approaches and attention on quality indicate a dedication to sustainable construction practices, which continue to influence current ways in the Cagayan Valley, cementing his position as an architectural innovator.

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an open area is ingenious since the pressing force of the beasts instead of humans in the raw material preparation is great, resulting in a dense and high-quality brick tile.

[27] This account is corroborated with that of Fr. Esteban Guzman's that "children helped in collecting small stones from the *Pinacanauan*" as recorded by Vicente S. Nepomuceno in his *Historia Nac Cagayan*, p. 188. According to him, Fr. Esteban was very old when he recounted this.

[28] A *horno* is an oven used to bake bricks and other clay products. In this case, to function also for the production of lime. The *hornos* of Cagayan were repeatedly mentioned in the *Historias* of Fr. Malumbres.

[29] One Spanish braza is equal to 1.672 meters.

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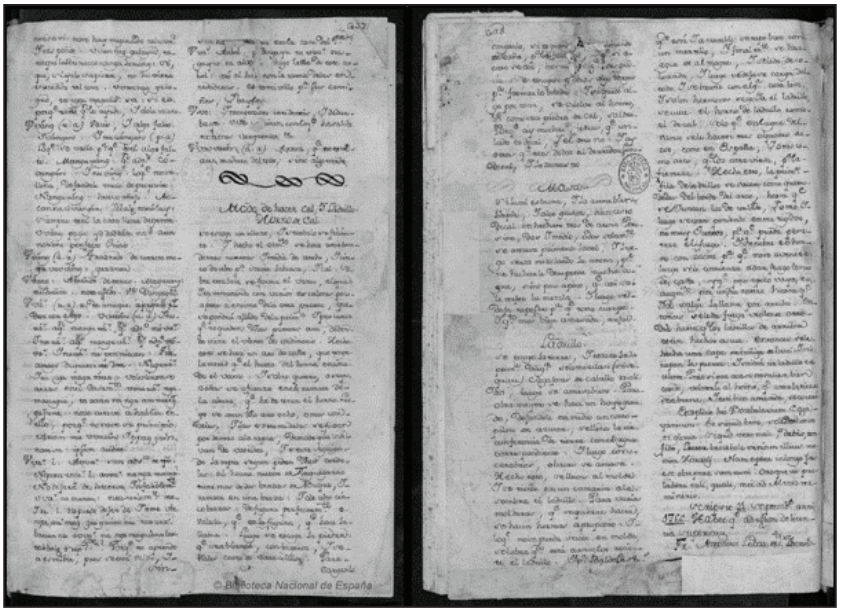
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Figure 11. The horno account of Fr. Lobato in 1766 (found on pages 637 & 638). Source: Vocabulario de la lengua ybanag [Manuscrito] / compuesto por el P. Fr. José Bugarin ; y reducido a mejor forma por el P. Fr. Antonio Lobato de Santo Tomás. Biblioteca Nacional de España.

Reckoning the timeline of the construction of the Cathedral *hornos* being by the end of 1760, almost thirty-seven years ago, the San Jacinto chapel was completed by Fr. Bernabe de la Magdalena in 1724.[30] The San Jacinto chapel might have used only one *horno* since two brick-built *hornos* may have been uneconomic with building materials. As a commentary with the above-mentioned narrative, Fr. Lobato understood the need for two brick kilns - one for the production of lime and the other for the production of bricks. It is also worth noting that to build the two *hornos* of 1761, the pre-1724 *horno* that was built for the San Jacinto chapel may have been reused during Fr. Lobato's time. This decision to build two great *hornos* is not merely designed for the production of bricks, but also of producing bricks, inserts, and roof tiles *simultaneously* during construction.

Current state of the three hornos of Tuguegarao

The *horno* narration of Fr. Lobato is one of the most important architectural narratives in the 18th-century Cagayan construction period due to its graphic description including the raw materials, methods, measurement, and estimated timing of the process. This account of the method of using two *hornos* in Cagayan Valley projects might have been a reference to subsequent clay brick construction

[30] Malumbres, OP. *Historia de Cagayan*, p. 379.

DOI: https://doi.org/10.55997/2005pslx182a5

projects after the Tuguegarao Cathedral. The two surviving *hornos* of Fr. Lobato along with the ruined *horno* of Fr. de la Magdalena can be located at the southeastern tip of the Tuguegarao Poblacion along the junction of Pinacanauan and Cagayan River. The two *hornos* of both the same architectural style are suspected as the ones built by Fr. Lobato himself. These are the ones that flank a modern barangay gymnasium of Brgy. Centro 9, Tuguegarao City, Cagayan. The *horno* at the eastern side of this gymnasium has vegetation and tree growth which visibly damages the structure and has a collection of garbage at its center. The best preserved *horno* is the western one. The front portion of these *hornos* are only one storey in height, submerged by modern earthfill. The rear portion of the western *horno* best captures the idea of its full height - being two storeys high - consistent with Fr. Lobato's description of five *brazas* or 8.36 meters high.[31]

In these three *hornos* mentioned, the southeasternmost one might have been built by Fr. de la Magdalena of the 1720s,[32] but analysis on the age is needed to confirm this. This *horno* of the 1720s has a tree (about 60-80cm diameter) grown at its center, damaging its surrounding wall. Adding to the difficulty of access with this *horno* is the existing houses built around the *horno*. The *only* good view of this *horno* is at the concrete slope protection from below along the old remains of a river route.

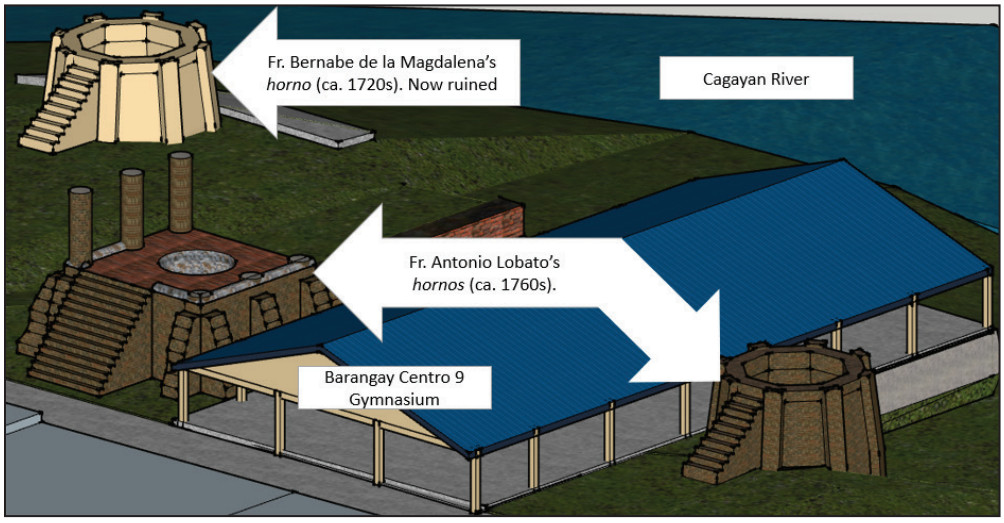

Figure 12. Visualization by the author of the present location of the three Tuguegarao hornos using the Sketchup model. Photo: M. T. Tabao, 2024. Fr. Magdalena's horno is now in shattered state (Fig. 13) while the ones flanking the gymnasium is in a state of disrepair.

[31] James Edward Cleland. *The Silent Sentinel: San Pablo Apostol de Cabagan Church Reveals 300 Years of Secrets of the Philippines. Revised*. Bloomington, Indiana: AuthorHouse (TM). 2009. On pages 88-91 and 144-147 of this book documents the San Pablo church *horno.*

[32] Vicente Nepomuceno y Siriban. *Historia Nac Cagayan.* University of Santo Tomas. 1919, p. 188.

DOI: https://doi.org/10.55997/2005pslx182a5

Figure 13. Horno along the southeast tip of Tuguegarao Poblacion area, probably by Fr. Bernabe de la Magdalena in the 1720s. The vantage point of taking this photo is along the concrete slope protection. Photo: M. T. Tabao, 2022.

Figure 14. Fr. Lobato's horno along the east side of the gymnasium. Photo: M. T. Tabao, 2021.

Figure 15. Full height of the western horno of Fr. Lobato viewed about 2 meters below the floor of the gymnasium . It is partially buried with soil. Photo: M. T. Tabao, 2022.

DOI: https://doi.org/10.55997/2005pslx182a5

Fray Lobato's Structural Design

Another point to be taken is the possibility that some of the natives of Tuguegarao and of other towns who built the *horno* of 1720s and of the San Jacinto Chapel were still alive during the construction of the Tuguegarao Cathedral. This is because of the relatively short window of time from 1724 to 1761, the latter of which is the beginning of the Cathedral's construction. This even gives further historical influence of the construction of Fr. Lobato - that the construction of the Cathedral where built by master masons or experienced and skilled laborers.

Some points needs to be clarified during the massive construction project. For instance, it can't be concluded that the supervision of the construction by Fr. Lobato of the Cathedral was interrupted from 1761-1767/8,[33] which Macarubbo posited that Fr. Lobato appeared only in Tuguegarao from 1765 onwards and that the construction was interrupted or Fr. Lobato just inherited the project from a former supervisor. However, on closer inspection, points should be considered on this matter. First, it seems highly possible that based on the intimate knowledge on the *horno* and brick manufacturing, Fr. Lobato was indeed involved from the start of the project from 1761. Second, if the assumption of being uninvolved with the project was based on Fr. Lobato's status as interim of San Pablo de Cabagan is unlikely since (a) San Pablo de Cabagan (Cabagan Viejo) is very near from Tuguegarao and (b) Fr. Lobato served for only about 35 days as interim (March 27, 1763 - May 1, 1763).[34] Third, if this is really the case, where did Fr. Lobato served from Ituy Mission (1755-1759) to his alleged appearance with the Cathedral project in 1765, then refining Bugarin's *Diccionario* a year later?[35] As cited by contemporary accounts of Fr. Corripio in his projects,[36] Fr. Lobato's exceptional wisdom on architecture and construction is legitimate.

[33] Prince Wilson Macarubbo (2019) p. 504, including the footnotes referring to the works of Pedro V. Salgado, *Cagayan Valley and Eastern Cordillera (1581-1898): Volume 1,* (Quezon City: Rex Commercial, 2002), 309; Hilario Maria Ocio and Eladio Neira's *Misioneros Dominicos en el Extremo Norte: 1587-1835 (Manila: Orientalia Dominicana, 2000)* 356.

[34] See also R.T. Jose's *A Visual Documentation of Fil-Hispanic Churches Part XIX: The Church of San Pablo Apostol in Cabagan Viejo (Now San Pablo), Isabela* (2018), p. 548.

[35] This may explain Fr. Lobato's appearance as a missionary in Sta. Cruz de Gumpat and Aparri, though the exact years are not yet confirmed by this writer. Keesing also notes in his *Ethnohistory* pp. 226-230 places the elusive Sta. Cruz de Gumpat near Malaueg along the Itawit Missions.

[36] See also R.T. Jose, *a Visual Documentation of Fil-Hispanic Churches Part V: Parish Church of San Vicente Ferrer, Dupax del Sur, Nueva Vizcaya.*

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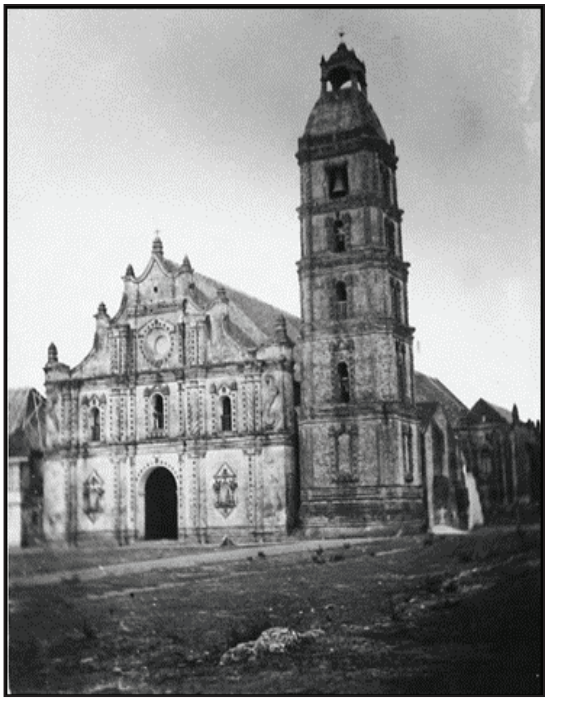

Figure 16. Oldest known photo of Tuguegarao Cathedral. Photo: La Iglesia de Tuguegarao (Álbum Provincia de Cagayan), ca. 1875-1880. Museo Nacional de Antropología, Madrid.

The Tuguegarao Cathedral is a masterful composition of not only architecture, but of careful structural design. It features one of the greatest displays of large arches in Cagayan Valley. The great arches used in the Tuguegarao Cathedral are in the form of Roman arches (semicircular) and quarter arches for the flying buttresses. These transcept arches, located at the crossing area (the East and West cross naves intersecting with the main nave) of the Cathedral (though its scale may not be fully appreciated due to the architectural decorations) has a clear span of about eleven (11) meters.

The very reason the Tuguegarao Cathedral lasted for centuries and is still functional today is because of the generous usage of buttresses and arches. These ancient structural methodology for carrying and supporting massive brick-masonry structures even have their origins from the Roman Empire.[37] Spain, or *Hispania* being a remnant of the Roman Empire, introduced this technology to its colonies including the Philippines. In the Cathedral, there are at least four different buttress types employed in the walls: (1) sidewall buttress, (2) corner buttress along the transept, (3) pier and flying buttress along the eastern wall, and the (4) three flying buttresses attached to the apse. The sidewall buttresses and corner buttresses are estimated to have a square plan equal to the wall thickness, constant volume, and receding in its

[37] National Geographic Partners, LLC. 2020, *Atlas of the Roman World.*

DOI: https://doi.org/10.55997/2005pslx182a5

last quarter in height. The eastern flying buttress is a combination of a pier and arch terminating into the topmost portion of the southeast corner of the crossing. And the three flying buttresses at the apse are of quarter-arch from the street level to the top of the first storey level of the Cathedral.[38] The greatest display of arches are seen at the crossing (transept) areas. These giant arches are found at the Eastern, Western, and Northern (sanctuary) portion of the transept - tying these great spans in effect. Clearly, the Tuguegarao Cathedral is an example of an earthquake-resistant Baroque structure that is worth maintaining to be enjoyed by the parishioners and the future generations.

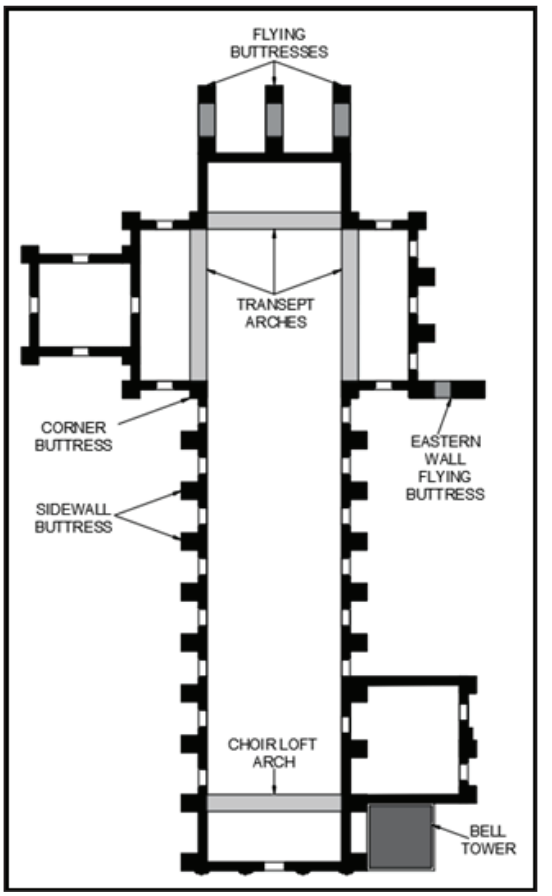

Figure 17. Structural plan of the Cathedral's buttresses and arches. Note also that the main church's body is in the shape of a Latin Cross. This image is an estimate and is not drawn to scale.

[38] In the nearby town Iguig, its church apse is also supported by three flying buttresses. See Figure 21.

DOI: https://doi.org/10.55997/2005pslx182a5

Figure 18. The three great transcept arches of Tuguegarao Cathedral. Photo: M. T. Tabao, 2024.

Figure 19. The eastern side wall of the Tuguegarao Cathedral. Beside it is the old Campo Santo now filled with gravel. Photo: M. T. Tabao, 2024.

Figure 20. Eastern flying buttress. Photo: M. T. Tabao, 2024.

DOI: https://doi.org/10.55997/2005pslx182a5

Figure 21. Northern flying buttresses (showing the intrados) now part of Tuguegarao Cathedral's Adoration Chapel. Photo: M. T. Tabao, 2022.

Figure 22. St. James church of Iguig having its three flying buttresses in its apse. Photo: M. T. Tabao, 2022.

Of Roads and Bridges

By 1750, the population count of Tuguegarao was 7,644 out of the total 29,051 of Cagayan while Lallo only has 920.[39] This means that Tuguegarao as an urban center for Cagayan will be needing a controlled plan for its population. The method Fr. Lobato used in planning the center of Tuguegarao is the *quadricula* most

[39] Malumbres. *Cagayan.* 1918, p. 428. Tuguegarao's population in 1750 is 26.3% of Cagayan and eight times more than Lallo.

DOI: https://doi.org/10.55997/2005pslx182a5

commonly used in Spanish colonies that time as prescribed in the *Leyes de las Indias.* The *quadricula* is done by creating rectilinear roads and leave blocks of rectangles for plots of land to be used for the church, civic government, and its people - or the classic "plaza complex." Nepomuceno writes about Fr. Lobato as the urban planner of Tuguegarao: "*Si Padre Lobato yaya gapa in nanguicalli-t anna napanguicua tam mat-tunung annau a dala-ralan ta ili nat Tuguegarao* (Father Lobato also drew and constructed the straight roads of the town of Tuguegarao)." To this day, this plan by Fr. Lobato is still visible in satellite imagery in Tuguegarao City.[40]

In addition to the successful and strong design of the Tuguegarao Cathedral, one of the greatest contributions of Fray Lobato would be the construction of bridges of Tuguegarao and in other parts of Cagayan Valley. The large spans of semicircular arches of Tuguegarao Cathedral (especially along the transcept portion of the church) gives us an idea on the capability and possibility of arches to clear large spans in between two points, like in between rivers for example. In Tuguegarao alone, detailed maps and urban plans from the late 19th century shows plans[41] where bridges are visible with a symbol like these: >=<,]=[, or] [. The same symbol is still used in modern engineering drawings for bridges or culverts. After the Bureau of Public Works of the American Colonial Period took over the Philippines, the masonry bridges of Cagayan were eventually replaced with reinforced concrete, in effect the "systematic" vanishing of these brick-and-mortar bridges. There are documented bridges where Fr. Lobato was credited on constructing: the bridge of Carig (now Santiago City, Isabela) and in Cabagan (Viejo?).[42] Nepomuceno records: "*it tadday-a taletay tap pane-t tac Cabagan, nga obra gapa ni Padre Lobato, ya nga pamaro-c da sa id dagun nam 1783, tac cunnac caguian ni P. Mora, nga nasingan na paga it tadde tal ladrillo sa a naqueturacan nam 1783"*[43] (a bridge in Cabagan, that is also a work of Father Lobato, was built in the year 1783, according to Fr. Mora, who saw a brick with the year 1783 written on it.) Architect Noche also credits Fr. Lobato in a still intact bridge in barangay Atulayan in Tuguegarao.[44] The construction of these bridges surely benefitted the populace in transportation inland, and lessened the risk of travelling through rivers or waterbodies.

[40] Michael Tabao. *A Morphological Study of a City Center in the Northern Philippines*. Jxiv, Japan Science and Technology Agency. 2024.

[41] Ardanaz y Crespo, Fontana y Esteve and Aguilar e Hipolito. *Itinerario de Tuguegarao a Enrile (Cagayan)*. 1892.

[42] Nepomuceno. *Cagayan*, 1919, p. 188.

[43] Ibid.

[44] Noche. Puentes de España en las Filipinas, 2011.

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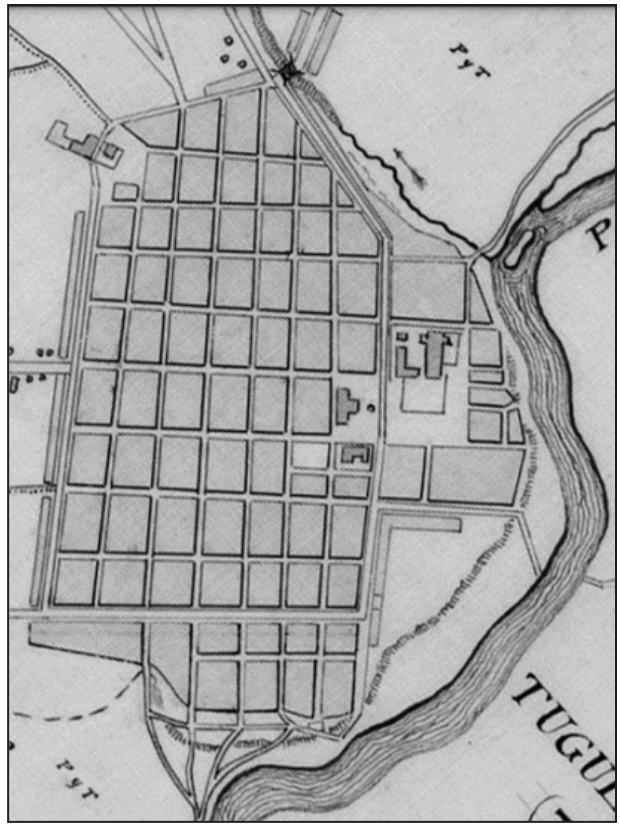

Figure 23. Spanish-period urban plan of Tuguegarao. Photo: Ardanaz y Crespo, Fontana y Esteve and Aguilar e Hipolito, 1892.

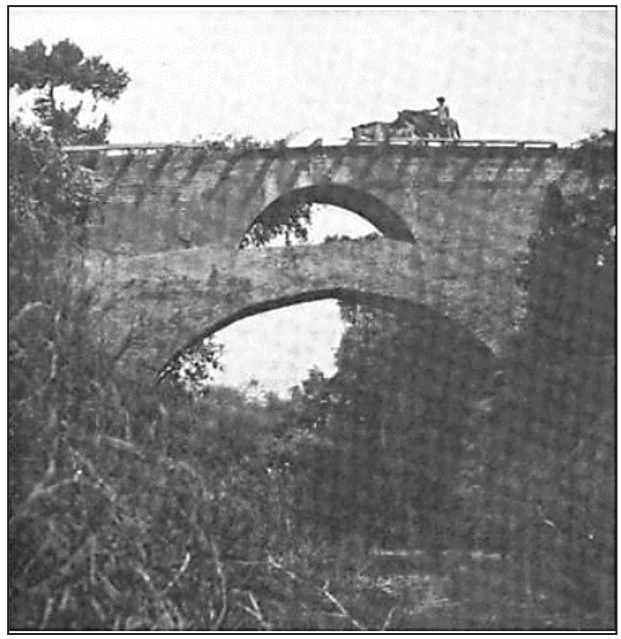

Figure 24. Iguig arched bridge. Photo: Bureau of Public Works Quarterly Bulletin, 1913.

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Figure 25. Two-arched bridge in Atulayan, Tuguegarao City. Photo: M.T. Tabao, 2024.

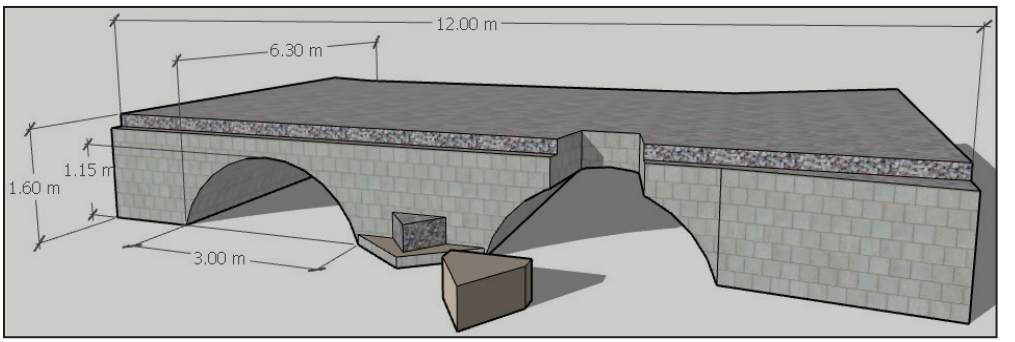

Figure 26. General measurement of the Atulayan bridge. Photo: M. T. Tabao, 2024.

Architectural Legacy of Fray Lobato

The Tuguegarao Cathedral's design made its mark and is scholarly known as the embodiment of the "Main Cagayan Style" or what Architect Manuel M.L. Noche termed as the "Tuguegarao Style." It is an example of not only of an evolution of architectural style in Cagayan Valley in façade design from the current style of pentagonal (five-sided) and of San Pablo's lobed/scrolled pediment, but also of its design process – that it is a combination of past designs being reused and improved to create a more massive version of it from the San Vicente Ferrer funerary chapel, Ermita de San Jacinto of Tuguegarao, and of the San Pablo church. Since it is a beautifully-proportioned façade, no doubt it attracted other parishes to copy the same design to their own place. This façade of the Tuguegarao was widely copied throughout the Valley (a total of 5 post-Tuguegarao Cathedral churches), notably those upstream the Cagayan River – in the province of Isabela the churches of Alicia (1849) and Cauayan (1825-1830)[45] and in the province of Nueva Vizcaya the

[45] Galende, "Church facades."

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churches of Bambang (1775/79), Bayombong (1805), and Dupax del Sur (1776).[46] Out of these five churches, one is recognized as a "national cultural treasure" in 1972. This begs the question, why does the Tuguegarao Cathedral, the source of the façade designs of the beautiful churches, not considered also as a "National Cultural Treasure"?

Figure 27. The Tuguegarao Cathedral and the copies of facades. Photo source: Tuguegarao Cathedral by the author; Cauayan, Alicia, Bambang, and Dupax churches by Florentino Hornedo, 2002:[47] Bayombong church by Niño Kevin Baclig.

Fr. Lobato's architectural influence extends beyond physical structures, instructing people in brick-making and construction procedures. His architectural works, such as the front of the Tuguegarao Cathedral, demonstrate his extensive knowledge and ability in architecture. The facade of the Tuguegarao Cathedral, which is adorned with elaborate embellishments and symbolic motifs, displays his great regard for local culture and history. Fr. Lobato's architectural accomplishments in the Cagayan Valley demonstrate his passion, creativity, and talent as an architect. His ideas, building efforts, and use of local materials have had an indelible impact on the region's architectural landscape. By exploring Fr. Lobato's architectural legacy, we gain a better understanding of his role in defining the built environment of the Cagayan Valley during the Spanish colonial era.

His clever approach to building, use of local materials, integration with religious themes, and legacy of architectural innovation all contribute to his lasting influence as a visionary architect of the 18th century. In addition to his architectural

[46] Galvan, "Heritage churches."

[47] Florentino Hornedo. "On the Trail to Dominican Engineers, Artists, and Saints." University of Santo Tomas Publishing House. 2002.

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accomplishments, Fr. Lobato's work as an urban designer in Tuguegarao exemplifies his diverse skills and long-lasting impact on the region. His design of straight roadways in the town, which can still be seen in satellite images today, demonstrates his innovative approach to city planning and infrastructure development.

Fr. Lobato's lasting effect as a visionary architect of the 18th century can be seen in the enormous structures he designed and erected, the revolutionary techniques he used, and the artistic legacy that he asserted. His legacy is a reminder of architecture's ability to transcend time and location, linking us to our history while encouraging future generations to aspire for excellence in design, construction, and artistry. Fr. Malumbres' wrote: "*merece se le levante una estatua al inmortal dominico Fr. Antonio Lobato…* "[48] While he deserves it, his legacy in Cagayan Valley lives on not in the form of his own statue, but in his written and monumental works – all in God's name and glory.PS

Acknowledgements

The author would like to thank the following people and institutions who in one way or another supported this paper: Ciarleyn Mataro, Ceazanne Mirth Matias, Jan Michael Cayme, Jan Karl Coballes, Niño Kevin Baclig, Prince Wilson Macarubbo, Fr. Dennis Jake Ordillos, Fr. Darwin Mamauag, Roman Catholic Archdiocese of Tuguegarao, University of Saint Louis (Tuguegarao City), Cagayan Museum and Historical Research Center.

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[48] Malumbres. *Cagayan.* 1918, p. 280.

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