

The importance of the relationship between religion and architecture through the lens of architectural education

Joanna Gil-Mastalerczyk

Kielce University of Technology
Kielce, Poland

ABSTRACT: In this article, the author presents the most recent initiatives and research projects carried out with the participation of architecture students from Kielce University of Technology, Poland, focused on the relationship between religion and architecture, and the narratives related thereto in contemporary architectural education and research activity. Within this academic activity framework, a series of encounters with living religion was inaugurated, motivated by the special position of religion in Poland, and by a large number of poorly documented and researched modern Roman Catholic churches in the vicinity of the University campus. The key task was to provide future designers with appropriate resources and skills indispensable in recognising intangible values of church architecture, and to make them aware of the social needs of the religious. The original undertaking was carried out with the participation of 150 students, using a mixed-method approach. The knowledge, skills and experience amassed by the students during the often-demanding projects clearly indicate their high level of preparedness to meet the strict requirements related to church architecture and the life of the religious.

INTRODUCTION

At the turn of the 21st Century, globalisation and ubiquitous mediatisation led, without a doubt, to the increased visibility of religion, and the emergence of societies diversified both with regard to religion and other matters [1]. The situation has drawn greater attention of researches towards religion with its connection to interdisciplinary science.

The religious trends, observed over the recent years and forecasted for the future, indicate major shifts in the global religious landscape. Among the population of Europe, the most often observed phenomena include: a growing religious diversity, non-religious attitudes and the spread of non-religious outlooks [2]. In many countries throughout Europe, organised religion has played an ever lesser or non-existent role in the lives of the people. The recent demographic predictions developed by the Pew Research Centre in the Pew-Templeton Global Religion Futures project [3] point to the largest religious group in the world continuing to be Christians (32%) - with over 2.3 billion adherents [4]. On the basis of global religious trends, it has been forecasted that in 2050, providing that the current trends hold, Europe will be the only continent experiencing a population decline, with the Christian populace significantly lowered, though remaining the largest religious group in Europe.

Taking into consideration the most up-to-date forecasts and the current religious trends, as well as the fact that at the outset of the 21st Century the major religious tradition in Europe continues to be Catholicism, a dominant religion in Poland, one should acknowledge the growing role and importance of religion in the contemporary educational and research activity. Particularly in the age of development and against the backdrop of the new visibility of religion, what becomes very important is an active and interdisciplinary approach in the practice of higher education. A case in point are the activities in the field of religion and architecture, including the narratives associated therewith, undertaken by the Faculty of Architecture at Kielce University of Technology (KUT), in Kielce, Poland.

Purpose and Scope

Based on the literature review conducted recently by the author, one field of research often overlooked and not sufficiently covered in academic publications worldwide is that of the connection between education and religion. In the literature available through the open-access model, including books, journals and conference proceedings, there is a paucity of academic publications that would combine the two matters. In the broad and diverse group of contributions, the ones most often recurring in academic literature are: *religious education (RE)* (e.g. [5][6]), *didactic of religion* (e.g. [7]), *religion in sustainable development strategies* (e.g. [8][9]), etc. That is why the research outlined in this article was carried out guided by the following key question: what is the significance of the presence of religion, and of the relationship between religion and architecture in architectural activity, both education and research? The author investigated this aspect at a higher education level focusing on engineering, from the perspective of the academic discipline of architecture and urban planning.

Considering the above issues, the key objective of the current study was to examine the heritage of contemporary religious architecture and the way in which architectural education is provided to ensure student awareness and knowledge of religious aspects in architectural practice. The knowledge and skills obtained through the activities outlined in this article may be applicable to other disciplines. The undertaken activities were also aimed at arousing students' interest in contemporary religious architecture, but in strict connection with the issues of the visibility and presence of religion. The activities at the core of this study were performed between 2018 and 2020/21 with architecture students from Kielce University of Technology, Poland.

Methods

In this study, action research was combined with an interpretive approach. The original plan, concerning current and important issues, was carried out with the participation of 150 students of architecture, using mixed methods that included:

- analysis of the best works by students, constituting experimental (project) material and resulting from the combination of action research with an interpretive approach, the use of analytical skills, and a harmonisation of research objectives with educational objectives through the involvement and co-operation of a group of outstanding students with the local and religious communities;
- insightful observation of the participants in the inaugurated activity involved in various academic experiences: hands-on experience of teaching, enhancing students' retention and educational successes, visits to the places of worship, meetings with practicing designers of sacred architecture and with the local community, exhibition organisation;
- conversations as an important means facilitating the evaluation of the effects of learning by doing, within the framework of co-operation between students, academic professors, religious institutions and local communities.

EXPERIMENTAL DIDACTIC PRACTICE AND RESEARCH INVOLVING STUDENTS

In the process of educating future architects at the KUT, the emphasis is placed on the development of interdisciplinary skills, for the academic discipline of architecture and urban planning requires specialist ways to engage in effective and discipline-defined thinking, and solve many complex problems [10]. The process of architectural design requires students to be able to perform analyses, use diverse interpretation techniques, be familiar with technical aspects of engineering expertise, as well as apply an interdisciplinary approach [11] to numerous complex phenomena, such as the relationship between religion and architecture. For that reason, within the framework of the Contemporary Architecture subject, taught to third-year students, research-oriented experimental forms of didactic activity were introduced in order to deepen students' knowledge accumulated in the combined field of religion and architecture. In the experimental approach outlined in this article, of particular value was the involvement and participation of students in activities outside the University.

As mentioned earlier, within the experimental didactic practice and research undertaken, the key objective was to provide students with knowledge of the heritage of contemporary religious architecture, further enhanced by its religious aspects and immaterial values, as demonstrated on the example of:

1. local architectural heritage of the city of Kielce and the Diocese of Kielce. Contemporary churches constitute a generally recognised architectural legacy; however, seldom are they considered in terms of their historic and artistic aspects. Because of their religious and social value, that can bring the residents together, as happened; for example, during the 1970 and 1980 political upheavals, and because of their strong connection with the religious and collective memory, they constitute a significant category for analysis.
2. outstanding projects developed internationally, analysed through comparison in terms of the applied solutions, and the integration of religious and architectural aspects, the main point of reference being the motif of the visibility of religion, mediated by architectural visibility and the interconnection between these aspects.

The city of Kielce is situated in the Diocese of Kielce - one of the four dioceses of the Metropolitan Diocese of Kraków, in central and eastern Poland. For centuries, it has been the capital of the Holy Cross Province, and has served as the seat of the Bishops of Kielce. It is one of the earliest settlements in the region, with the first organisational centres of the Church established here in the 9th Century. Religious buildings have grown into the cityscape of Kielce - they reflect the various aspects of its history and shape its contemporary appearance [12].

The architecture of contemporary churches constitutes a special record of the city's history and has been a part of the heritage of its residents. It was created by outstanding Polish architects, such as Władysław Pieńkowski, Witold Cenciekiewicz, as well as by many local artists and architects active in the city, about whom few documents and research works are available. These are, without a doubt, edifices the analyses of which require an interdisciplinary approach, due to their original and complex structures.

At the outset of the research, an examination of over forty 20th Century churches of Kielce Diocese was performed, including *in situ* observations. Subsequently, 14 Roman Catholic churches in Kielce, exceptional for their forms of

architectural expression, were selected as research subjects. Each edifice, location, community and organisation was studied, and an urgent need to create documentation was recognised.

LEARNING BY DOING AND ACTION RESEARCH

Within the initiated learning-by-doing process, academic methods were combined with research activity. Emphasis was placed on hands-on education, with the priority placed on students' participation in the research, and their collaboration with the religious institutions, creators of the churches and local communities.

In the traditional part of their education, students attended regular lectures and studied the specified literature. Besides theoretical tasks, they were offered an opportunity to perform direct analyses in the field - also in order to grow their awareness of the importance of such research. The practical phase consisted mainly in thorough analyses of the churches, which enabled students to verify the notions derived from theoretical studies.

At the first stage, commencing the research, students were given all the basic information on the selected contemporary churches, and workgroups were suggested as a course of action. The research was oriented towards specific matters mainly that of contemporary sacred architecture with particular attention paid to its practical aspects, needed in actual architectural practice. Co-operating with one another, they were able to identify the basic research problems. Within the framework of participatory action research, they gathered data about the churches, interviewed the local communities, and parish members, parishioners, investor-priests, church designers, thus recognising the contemporary needs of the users of religious buildings. They then performed insightful observations in the field, creating hand-drawn studies and sketches, as well as photographic documentation. They developed historical analyses, as well as a series of reviews of architectural structures from the perspective of the established cultural values and intangible messages, thus further expanding their knowledge with diverse aspects related to the tasks they were assigned to do.

Through active participation and visits to the places of worship, seminaries and workshops, students were able to learn about the complex history and construction process of these buildings. They also broadened their knowledge of the heritage of contemporary religious architecture. Although they were superficially familiar with these edifices, the proposed activities provided them with an opportunity to take a different look at church architecture, and enabled them to develop new skills of analysis and interpretation of structural features of architecture and mystical elements, which in the language of contemporary architecture constitute man's significant relationship with the immaterial and transcendent reality. Unquestionably, only direct experience provides certain and true knowledge and paves the way for explanation grounded in contemporary architectural and artistic solutions. For that reason, what became of particular importance in the research carried out were the analytical skills, a vibrant involvement, the relationship with religious narrative, the symbolic dimension, and a strict correlation of the function with the sacred activity (performance of the liturgy).

Another important aspect was the identification and acknowledgment of the imperfection of architectural and functional utility solutions, in the majority of cases resulting from erroneous decisions of the investors, or the social and economic circumstances. These aspects proved very important in the academic research, because the architecture of the studied churches is the result of a non-uniform construction process, a reflection of the various historical events and complicated phases of their development. These were strictly connected to the unprecedented and dynamic transformations occurring in the country mainly in the 1970s and the 1980s, which were influenced by the complex political and socio-economic situation, determining the emergence of churches, whereas after the Second Vatican Council by the need to align the architectural solutions to the requirements of the renewed liturgy.

It should be emphasised that besides the large amount of archival data and credible documents gathered, the academic method of analysis should also incorporate secondary and less significant aspects, which also constitute a source of valuable knowledge. The identified *imperfections of architecture* resulted from various stages of temple-building, adjustments to new architectural trends and adaptations to new aesthetic parameters, which changed over time and reflected the circumstances. Particular attention was paid to the shaping and structural modifications, influencing the final dimension and form of the sacred, for - as indicated by Socrates - the material and artistic greatness of a temple should enable believers to reach mystical oneness. It was determined that besides looking for innovations in terms of vision, form and function, as well as the material and structure, the design of a temple always has to be oriented towards a specific religion and person. It must focus on solutions that take into consideration not only the actual requirements of the liturgy and worship, but most of all the ever-changing contemporary needs of the community of believers. Of no small importance is the direct vicinity of the churches, as it should always be available to serve both in its practical and spiritual function, respecting the regulations of a given religion.

Observation of the Activity and the Results Obtained

It was observed that students, though not professional researchers themselves, were keenly involved in the entire investigative process. At every stage of the work, all students were assisted by their teacher-instructor, who helped them acquire the skills necessary to fully participate in the process of gathering, analysing and interpreting the data. The task oftentimes required students' involvement and some knowledge of several various fields (such as theology, religious studies), which enabled them to enhance their ability of critical analysis. It should be stressed that the applied research

approach entailed both undertaking activities and the development of knowledge, a theory based on their activity [13]. That is why the action research engendered not only new knowledge, but also a description of activity and practical results, that students could reflect upon. That way, young researchers were able to gather a vast collection of materials - comprising analyses of both written and retrieved archive documents to use for further studies. Consequently, it enabled them to establish new knowledge on buildings, which represent important legacy due to their symbolic value, artistic importance and quality.

During the multi-stage works, carried out using the methods and correlations presented, each building was studied, alongside with each location and the associated community, and materials were created to document the following: graphic works on the architectural heritage of contemporary churches, which express the value of sacrum in relation to the works by the most distinguished architects.

The most spectacular works were presented as academic posters during several thematic exhibitions, which attracted attention and intrigued not only architects, but also general public. Meanwhile, with the involvement of the leading and most talented young researchers, an individual exposition was organised, titled *Sacrum źródłem różnorodności języka architektonicznego i sztuki* (Sacrum as the source of diversity in architectural language and art), which was held during the European Exhibition of New Museum Technologies, Art Conservation and National Heritage EXPOSITIO, and during the International Exhibition of Church Construction, Church Fittings and Furnishings and Religious Art SACROEXPO in Kielce (see Figure 1a and Figure 1b).

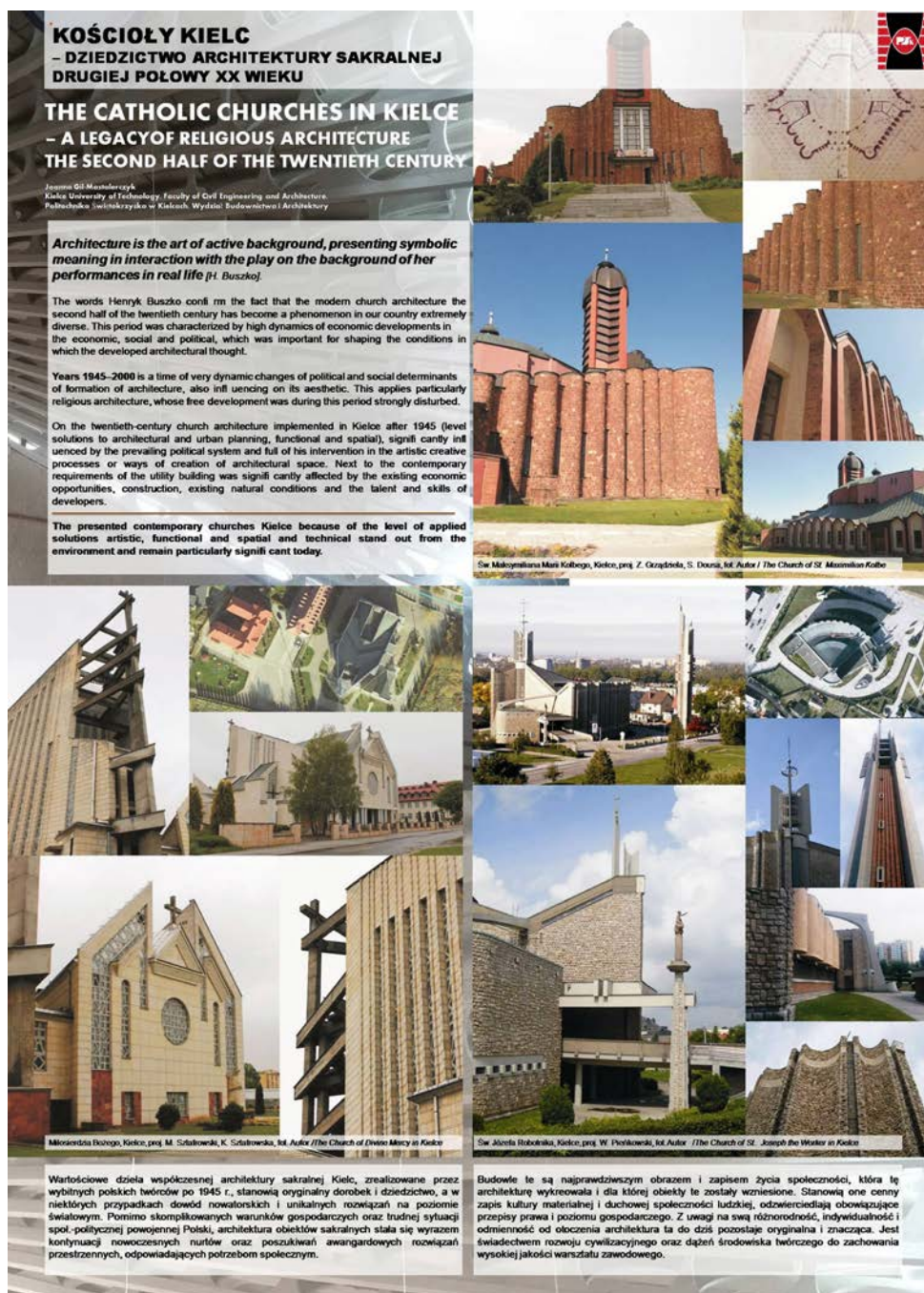


Figure 1a: Academic posters - results of the involvement of students.



CROSS SYMBOLISM IN SACRED ARCHITECTURE

SYMBOLIKA KRZYŻA W ARCHITEKTURZE SAKRALNEJ

Introduction

The church is not a work of engineering. It is a symbol. A building of stone becomes a church only after it has been consecrated, in the same way that a child becomes a Christian in baptism. To see the church as only a building, a material structure, is like deconsecrating it, emptying it of its fundamental significance as a symbol. The church is the body of Christ. You cannot explain the body of Christ by measuring it in meters, cataloguing the material and the building techniques used in constructing an edifice.

Wstęp

Objekt sakralny nie jest tylko budynkiem, ale również symbolem. Budynek staje się kościołem po poświęceniu, tak samo jak dziecko staje się chrześcijaninem podczas chrztu świętego. Postrzeganie kościoła tylko jako budynku, to jak pozbawienie go podstawowego znaczenia symbolicznego. Kościół symbolizuje ciało Chrystusa, nie można zdefiniować go w metrach, czy użytych technikach konstrukcyjnych. Budynek architektury sakralnej kojarzy się z symbolem krzyża. Pojawia się on, jako znak charakterystyczny dla przeznaczenia budowli nadając jej uniwersum symboliczne i charakter „miejsca świętego”

Symbol krzyża

W architekturze sakralnej ma pierwszym miejscu możemy wyróżnić krzyż jako formę zewnętrzną, która jest komunikatem w każdym języku świata. Symbol ten informuje odbiorcę o przeznaczeniu obiektu. W różnych epokach niezależnie od stylu, jako znak chrześcijanin, był i jest umieszczany zazwyczaj na najwyższym punkcie obiektu wieńcząc kopułę lub wieżę kościoła.

Plan krzyża

Święty Hieronim, w objaśnieniach do Ewangelii wg św. Marka pisał, że kształt krzyża jest obrazem kwadratowej formy świata. Krzyżowy plan kościoła jest pochodny od czworobocznego, który w późniejszym czasie stał się wzorcem dla wznoszonych budowli chrześcijańskich. Powstał z rozłożonej siatki sześcienu - z sześciu kwadratów sześcienu, cztery tworzyły całą długość kościoła, zaś trzy tworzyły szerokość ramion krzyża. Znajdujący się w środku kwadrat, który liczony był dwukrotnie, nazwany został jednością i był podstawą miary, według jakiej określano wielkość wszystkich części budowli.

W Ewangelii św. Jana, Chrystus opowiada o Świątyni Jerozolimskiej i mówi, „gdyby Żydzi zburzyli ją. On obuduje ją w trzy dni”. Tworzy w ten sposób parabolę ze swym ciałem, a jego słowa wskazują jaką formę powinny przyjąć świątynie powstałe po Jego śmierci na Krzyżu. Nawa i transept przedstawiają ciało i wyciągnięte ramiona, ołtarz główny głowę Boga, zaś kaplice rozpięte wokół absydy tworzą koronę ciemniową.

Analiza planów obiektów sakralnych na przestrzeni epok, od romanizmu do współczesności (przedstawiona obok), ukazuje powielanie symbolu krzyża, aczkolwiek nie zawsze w jednoznacznej formie.

Symbolika

„Symbol jest w człowieku. Jest w nim od zawsze. Bo człowiek, jako homo religiosus z natury swej jest również homo symbolicus. Nieustannie dąży do przewyższenia siebie, dąży ku czemuś od siebie większemu, nieznanemu i nie ogarniętemu, ku Bogu. Oczekuje zbawienia- zmerza więc do czegoś, co poza to życie wykracza. Życie to jest więc z natury swej symboliczne.”

Krzyż we współczesnej architekturze sakralnej

We współczesnych przykładach architektury sakralnej motyw krzyża jest główną inspiracją dla projektantów. Możemy go zauważyć w planie bryły i jej kształcie, na zewnętrznych fasadach jako wejście do świątyni, otwór okienny, azur bądź zdobienie, a także we wnętrzach za pośrednictwem gry światła i cienia na ścianach i sklepieniach. Symbol światła występuje w architekturze sakralnej we wszystkich kulturach bez względu na religię. Reprezentuje on strukturę całego wszechświata oraz symbolizuje słońce. Światło jest istotnym elementem wystroju wnętrz sakralnych występujące jako wieczna lampa, symbolizująca Chrystusa. W dzisiejszych realizacjach panuje tendencja do podświetlania ołtarza lub krucyfiksu umieszczonego nad nim, w celu podkreślenia istoty najważniejszego miejsca we wnętrzu kościoła.

Figure 1b: Academic posters - results of the involvement of students.

Results

Architectural analyses of churches, further deepened by an insight into their religious aspects, proved to be a perfect way for students to visualise the intangible and immaterial religious values, nowadays oftentimes neglected and concealed. For in the contemporary world, in light of the forecasted global religious trends and non-religious attitudes, it is the religion that faces the fundamental decision whether to opt for visibility or concealment. That is why the creation of meanings to benefit students within an active environment brought immeasurable benefits, whereas the experience of engaging and discipline-oriented approach in architectural practice allowed for a broader and more complex understanding of religion. Additionally, it enabled students to diagnose the real-life problems closely connected to the religious dimension, it influenced their retention and success. As it turned out, religion does not necessarily have to be publicly visible, for it starts to be expressed by actual architecture, while in the process of education its emergence can be observed in student practice - in the pre-project preparations and in the process of architectural design.

To sum up:

- *The interdependence between architecture and religion* creates a specific world of narratives. They refer to their own models, measures, criteria, traditions, customs, laws and doctrines. For that reason, the initiated activities resulted in students acquiring skills, performing interpretation, and integrating various religious and architectural aspects.

- *Church architecture* expresses religion in a most distinct and evident manner, and enters in interactions therewith; it is not associated with any political influence, being solely the vision of its creator, developed with respect for religious sentiments to serve the faithful. Undoubtedly, it constitutes a multidimensional compilation, combining within itself aspects of the artist, the religious art and sacred building - reaching beyond other forms because of its function, creativity and message. Therefore, already at the design stage, the crucial qualities for architects become courage, initiative and excellence, enriching the religious edifice with features setting it apart among other elements of the cityscape.
- *The practice of architectural education*, grounded in the importance and the new visibility of religion, constitutes a powerful testament to the validity and significance of the taught material. The result seems very important, as it indicates that architectural education fosters the ability to perceive and creatively react to the social and religious needs, it initiates participatory pre-project studies and helps to recognise the needs of the users of places of worship, in order to co-create those on the basis of knowledge. For students of architecture, academic practice is the first encounter with the need to take into consideration in their projects an in-depth approach to religion and spiritual needs. It teaches them to consciously shape and reflect on the space of the sacred, developed first and foremost by man (an architect or an artist) with respect for the customs, faith, traditions and all the religious guidelines entering into narratives with architecture. That is why - regardless of the system of values, religious regulations and restrictions that impose a certain framework upon the designer - the most important notions for those developing religious buildings tend to be:
 - taking into consideration religious principles in creating space harmonised with faith;
 - being respectful and understanding of spiritual needs of any religious community, being oriented and open to a specific religion and the needs of a unique client;
 - developing sensitivity in listening, which enables one to detect frequently unnamed and only indirectly expressed thoughts;
 - maintaining the functionality and keeping in with modern trends.

DISCUSSION - ANALYSIS AND EVALUATION OF THE RESULTS

In order to foster students' interest in the studied phenomenon, and to provide them with a dose of professionalism and self-confidence, various models of teaching were adopted. Emphasis was placed on learning by doing with the priority placed on students' participation in the research, and their collaboration with religious institutions, church designers and local communities.

To ensure data comprehensiveness, there were several levels of:

1. careful observation of classes;
2. conversation space established, so that the authors of best works and students participating in exhibitions could discuss their experiences and exchange knowledge.

The main research questions were centred on the following issues:

- What were the actual changes during the acquisition of more in-depth knowledge, and the narratives related thereto, in the process of architectural education at various stages of the subject focused on the relationship between architecture and religion?
- Could a shift in thinking be observed, and could any such shift be attributed to being exposed to new experiences, grounded in the new visibility of religion?
- What did students value most in the subject, and what new experiences to benefit their future did they gather?

At this juncture, it should be emphasised that at every stage students were enabled to get to know the results of the research and to address them. On every occasion, they expressed their opinions adequately. An in-depth analysis of the research findings, grouped according to the respective level, resulted in the following conclusions:

Level 1: Observation of classes. In the course of the initiated activity, young designers were very keen to improve their skills and tools as architects. At the stage of traditional education, the majority of students, amounting to over 80%, demonstrated great willingness to participate in extracurricular classes. Such involvement motivated their openness to undertaking various activities aimed at experimental and creative acquisition of knowledge and new experiences. A development particularly welcome by all students was the fact that they were all provided with open space for activity. That way, they were able to implement and exchange their ideas, develop their problem-solving and communication skills, while at the same time developing lasting benefits for themselves.

A notable incentive for students turned out to be the public exposure of their work results, as showcased in Figure 1 depicting an individual poster exhibition, which consequently increased their eagerness to acquire new knowledge and stimulated their creativity [14]. Through graphic works, students were able to demonstrate the great importance in their architectural education of the format of religion (regardless of confession), and of the experiences of *living religion*. Of particular value in the course of education proved group learning as it was creative and based on participation in

workshops, seminars and other activities. Equally important turned out to be the mobility, taking the forms of field trips, on-site verifications, research walks and themed meetings, as well as the participation in various discussions and presentations of their original projects.

To sum up, the proposed methods enabled students to develop interdisciplinary skills, whereas the experimental activity bore the fruit of an increased interest in contemporary religious architecture. The effects of the research suggest that the acquired skills added to students' professionalism within the studied discipline. The results indicate that all the students who participated in the activities were able to identify in all the analysed Roman Catholic churches the interdependencies between architecture and religion, and the narratives related thereto.

Level 2: Conversations. A themed discussion was held, covering all aspects involved in the research, organised in the respective groups. In the course of learning and experiments, students most appreciated the importance of active forms of education. Particularly the fact that they were given an opportunity to participate and collaborate in a research process. More than 70% of the students acknowledged that the most valuable element turned out to be their mutual co-operation, dialogue and constructive conversations with the coordinating teacher, particularly *when undertaking activity and performing analyses, when formulating conclusions*, as well as the direct contact with architectural objects, *the analyses made from their own experience*.

During joint meetings, they discussed and shared with one another the freshly acquired knowledge. They admitted that when performing a series of complex analyses *they were able to grasp the issues centred on the relationship between architecture and religion*. It enabled them to *broaden the scope of their knowledge by its practical application*. They are certain to benefit from that knowledge in the future, to better understand other complex issues at various levels in their continued education, and in their individual experiences of project work. All conversation participants said that the experience fostered solidarity, co-operation and creativity, and that it sparked discussions and an in-depth reflection on the importance of religious values in the manner of shaping church architecture. The implementation of reflective practice, during the introduction to various educational methods and encounters with living religion, fostered both the personal and professional development of students. As indicated by the results of the conversations, the group turned out to be uniform with regard to their attitudes and evaluations; furthermore, they all valued highly the activity inaugurated in the region.

CONCLUSIONS

The richness of the performed research project illustrates the fact that academic experiences educate the contemporary generation of designers and help win over the society for the cause of introducing novel architectural solutions - in the context of challenges faced by the modern world and the religious life of today. Students' experiences support the didactic process, whereas learning by doing, without a doubt, helps initiate new ways of making people involved with religion in the field of architectural education. The research project also proved to be a valuable opportunity to create a new social value, while respecting the memory and importance of the place, and introducing a partnership for religion. It is favourable for the development of a socially sustainable city [11], and it influences the advancement in the knowledge of the studied heritage of contemporary churches.

Therefore, it can be ascertained that the skills acquired by students will be fully demonstrated in demanding architectural projects with strict religious requirements. Based on the vast resources of knowledge and experience amassed, as well as the attitudes and competence acquired in architectural education, young graduates will certainly prove inspirational in tackling bold challenges related to designing fully functional spaces for believers of the world's largest religions.

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