

## Particular Qualities of Modern Multifunctional Temples Design and Construction

Lyudmila I. Kolesnikova, Margarita V. Perkova,  
Tatiana P. Shcherbakova and Irina V. Yarmolenko  
Belgorod State Technological University Named after V.G. Shukhov,  
Kostyukova Street 46, 308012 Belgorod, Russia

---

**Abstract:** Due to the up-to-date activities of the Russian Orthodox Church, there raised a vital need for the construction of temples and multifunctional complexes that would include liturgical, cultural, educational, charitable and economic functions. The most common form of the temple complex is the parish church. The study considers, the construction of prefabricated parish churches and multifunctional Orthodox complexes, their design features, spatial composition and functional zoning. Technical solutions that allow to build quickly multifunctional temples are being considered. Belgorod and Stary Oskol diocese temple complexes reveal new compositional structure of temple construction in post-industrial space of the urban environment. Variants of multifunctional wooden temples construction are considered (wooden churches are built quickly, they are majestic and beautiful), a variety of precast concrete solutions that made it possible to modify the space-planning composition of temples depending on the needs while constructing in each locality; mixed constructive system multifunctional temples (brick walls of curved shape overlapped by precast concrete domes).

**Key words:** Parish church, multifunctional temple complex, Belgorod and Stary Oskol diocese, the spatial composition of the temple, wooden churches, Orthodoxy

---

### INTRODUCTION

Due to the up-to-date activities of the Russian Orthodox Church, there appeared a vital need for the construction of temples and multifunctional complexes that would include liturgical, cultural, educational, charitable and economic functions. The most common form of the temple complex is the parish church.

Because of the spread of Orthodoxy around the world, there is a great variety of temple architecture connected with the traditions of Byzantine architecture. It represents a synthesis of ancient construction and decorative techniques and canons with the stylistic features typical for the architecture of a particular region. Thus, within the same Christian denomination original and unique temple structures are embodied, reflecting not only the essence of Christian doctrine but the attitude of certain nation (Potamianos, 1996). Orthodox churches exist in many countries (England, France, Belgium, Germany, Italy and Hungary where the number of natives who converted to Orthodoxy, range from several hundred to thousand (each). The first Orthodox churches are built in Iceland and Thailand. Regarding Eastern and Southern

Europe, many of them, such as Greece, Cyprus, Serbia, Montenegro, Macedonia, Romania, Bulgaria, Moldova, Belarus and Ukraine, Armenia are Orthodox pertinent to culture and choice of the population majority. In Albania in recent years there is a rapid return and conversion of the Albanian people to Orthodoxy (the president of the country is Orthodox). In North Korea Orthodox church in Pyongyang (Moscow Patriarchate) has been built, since 2006. There the North Korean clergy officiates. Temples and monasteries were created in South Korea, Singapore, Cambodia during the last decades. According to some estimates in the US Orthodoxy is the fastest growing denomination.

According to their functionality Orthodox churches complexes are divided into diocesan centers, spiritual mission, parish and monastic complexes and temples in the complexes of buildings and facilities of public and residential purposes. Modern temples are made of different building materials: wood, brick, concrete, precast concrete panels, mixed structural systems. Selection of the structural system usually depends on the location of construction and building materials produced in a territory.

## THE MAIN PART

In Belgorod region congregational temple complexes mass construction began with Belgorod and Stary Oskol diocese revival in 1995. That event synchronized with the Eminentissimus Ioannes mission assignment (secular name S.L. Popov) of diocesan July 18, 1995 and of Archbishop on February 18, 1999. There were 141 temples according to the datum of July 19, 1995 in the diocese, 31 of them were urban and 110 rural. It was necessary to restore urgently not only functional temples but also restore those remained intact in the ruins. And what is more it was essential to build new multifunction temples as in many parts of the area churches were bombed and dismantled brick by brick for Soviet construction and the buildings of a parish obtained new owners. In this situation, it was indispensable to find technical solutions that would allow to build quickly feature-rich temples. In this difficult time, the wood material traditional for Russian architecture was called to mind (Lysenko, 1984). Wooden churches construction in Russia has a long history. Wooden churches are built quickly, they are majestic and beautiful. In the 20th century after 1917, the first re-constructed temple in Belgorod became the wooden church of St. George the Victorious in Kostyukov street. This temple has been conceived as a small temple of large multifunctional Orthodox complex in the Kharkov grief area to the Holy Martyrs Faith, Hope, Charity and their mother Sophia (tab stone was made May 25, 1997). The temple is designed in the tradition of the northern Russian wooden architecture of the 17th century (architect Kolesnikova LI) (Perkova and Kolesnikova, 2014). A stone ground floor was erected in a space design as a tribute to modern requirements on which a wooden frame is posed (Fig. 1 and 2). The church joined the following functions: the liturgical (top floor), baptismal, Sunday school, office (in the basement). Erection of wooden churches in the period under review did not get mass distribution, since the wood had to be imported from other regions. It was realized with some help from modern technology mastered by the concrete structures plant (Belgorod) in the field of panel construction. Plant design engineers under the supervision of the chief architect Berseneva A.V.) developed prefabricated structures of temples with their subsequent manufacturing on the process lines at the plant (Fig. 1 and 2).

Various solutions have been proposed which made it possible to modify the space-planning composition of temples depending on the needs in the construction of the temple in each village.

Temples could be erected with a belfry and refectory or without them but for all variations of temples



Fig. 1: Wooden multifunctional church of St. George the Victorious



Fig. 2: Wooden multifunctional temple of the Holy Martyrs Faith, Hope, Charity and their mother Sophia in Belgorod

space-planning composition the main volume has always been the quadrangular temple dome, completed with light drum and crowned with bulbous head with a cross. In architectural decoration of concrete panels wall protections reliefs were applied. They are traditional for Russian stone architecture the arched niches and ogee framing of the windows and doorways, pilasters and bands, that divide walls in curtain walls to give the harmony to facade, drawn rustications and multifunctional cornices and multi attic little walls finishing facades of temples quadrangles erected without the refectory and bell tower. Small insertion of face brick or bell tower, constructed entirely of brick complement a variety of architectural solutions. The 14 temples all in all were built of precast reinforced constructions. Twelve of them are multifunctional temples which combine the liturgical functions (ground floor), cultural, educational and economic-office (in the basement). These temples were in demand in many parts of the Belgorod region: Temple of the Icon of Mother of God "Sign" in the village

Bessonovka Belgorod region (consecrated on August 6, 2000), the temple of Martyr Tatiana in the village Bobrava in Rakitjansky region (consecrated on January 25, 2004), the temple of the Apostle John the Evangelist in the village Kholodnoye in Prokhorovsky District (consecrated on May 29, 2002), the temple of the Intercession of the Holy Virgin in the village Bobroviye Dvory in Gubkin district (consecrated on July 13, 2003), Church of the Nativity in the village Viesiolaya Lopan in Belgorod region (consecrated on January 8, 2000), Church of the Resurrection in the village Octiabersky in Belgorod region (consecrated on May 24, 2003). Temples were often erected without the refectory and bell tower (Kuznetsov, 2003). In this case, above the main (Western) entrance a small belfry is constructed. The temples of this kind are: Nativity of the Blessed Virgin in the village Foschevatovo in Volokonovsky District (consecrated on October 17, 2004), Church of St. Nicholas in the village of Golovino in Belgorod region (consecrated on January 14, 2008), Church of St. Nicholas in the village Kupino in Shebekinsky district (consecrated on December 16, 2001), church of St. John the Baptist in the village of Melihovo in Korochansky region (consecrated on July 7, 2007),

Church of the Nativity of St. John the Baptist in the village of Severnoye in Belgorod region (consecrated on January 15, 2010), the last temple in the name of Not-Made-by-Hand Image of the Saviour in the village Golovchino in Grayvoronsky district (consecrated on January 15, 2010). The idea of multifunctional pre-fabricated temples fully justified itself on the revival stage of the diocese when it was essential to meet quickly the needs of believers in spiritual shepherds and houses of God after the devastating destruction of Orthodox churches in the 20th century. Along with the pre-fabricated concrete structures of the region the only multifunctional temple was elevated in the Belgorod region which had the mixed structural system: brick walls of curved shape topped with the precast concrete domes (Dubovoye town in Belgorod region, architects L.I. Kolesnikova, A.V. Bersenyev) (Fig. 3).

In modern conditions of temples construction sometimes it is essential to create a multi-temple complex not in the newly constructed building but in the old one which for various reasons have to be reconstructed as a temple. As an example the Church of the Intercession of the Lady in the village of Podolhi in Prokhorovka district

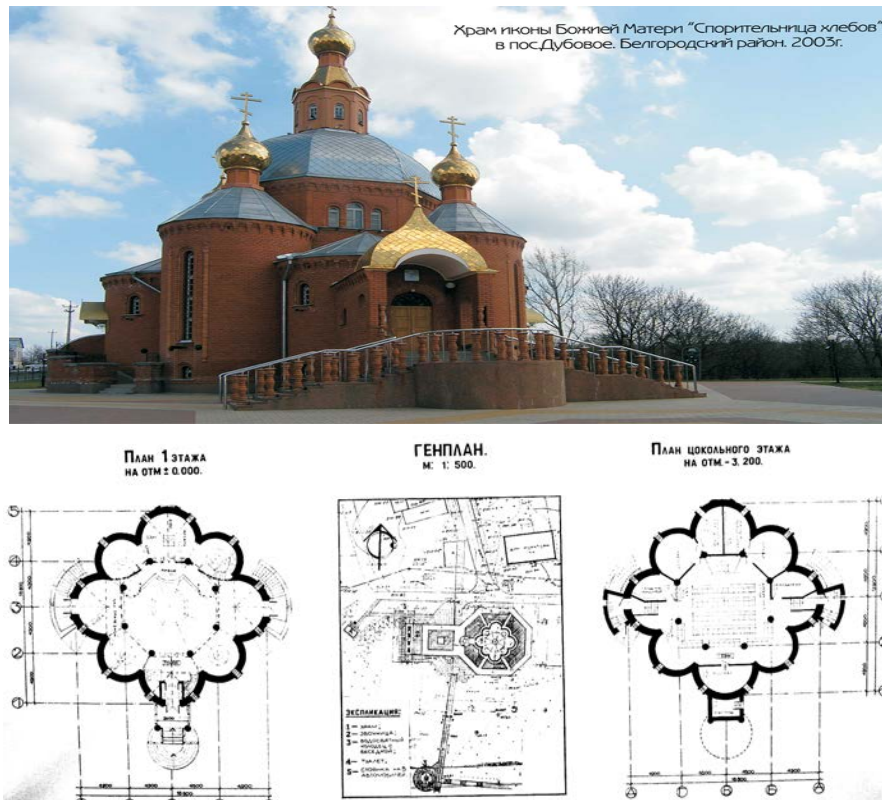


Fig. 3: Perspective view and the plan of the church of Lady in Dubovoye habitation of Belgorod region named “The Grower of Crops”

can be mentioned. In 2004, the reconstruction project of former parochial school into the multi- temple complex was carried out (architect L.I. Kolesnikova, engineers N.D. Sandpiper, G.V. Koren'kova) as the old temple was destroyed and a modern school was built in its place (Fig. 4 and 5). In order not to remove the temple from the village center, it was decided to reconstruct the old school building. Upon the initiative and with the great support of A.V. Kulabuhov the Head of Culture Authority of Belgorod Regional Administration work began. The temple complex included: church, Sunday school intended for children and adults, refectory, kitchen, prior office. In the process of reconstruction replanning was made to attach a semicircular altar apsis, porch of the main entrance (North side) which also serves as a belfry, height of the temple premises was increased. A three-headed temple having four internal piers, goes with little light drum. Arched windows settle down on perimeter of facades of the building. The walls are plastered and painted in blue with white details. A small area of the temple is landscaped and fenced by a metal fence. Temple was consecrated on December 9, 2006 by Archbishop of Belgorod and Stary Oskol. We return to the temple complex in the name of Holy Martyrs Faith, Hope, Charity and their mother Sophia as it is the only multifunctional complex in Belgorod and Stary Oskol diocese. Let us consider the features of its design. The complex includes

two multifunctional-churches: the first is a small church of St. George the Victorious which began to be constructed in 1997. Temple is cruciform in plan and three-headed.

Temple of octagonal structure, bell tower and altar apsis are overarched with domes. Double-height quadrangular frame of the temple with deaf octagonal drum and single-tiered octagonal bell tower are completed with hipped roofs. Three-part altar apsis with predominant in height volume with a barrel-covered roof of completion bent plough share. Wind porch and window casings are decorated with voluminous sawn tapping. The temple interiors are decorated with carved wooden iconostasis and icon-cases. There is a small wooden chapel of the Holy Trinity on the south side of the temple, the Clergy House is erected on the north side, it houses the church shop and refectory with a kitchen. Along the longitudinal axis between the temple and a large refectory there is a big church of the Holy Martyrs Faith, Hope, Charity and their mother Sophia (authors: planning volumetric composition of the general plan development - architects A. Likhachev, L.I. Kolesnikova; interiors, improvement, technical documentation development LL "Gold Line" Architect as Project Manager I.N. Chechel. This main temple of the entire complex was designed as a multifunctional Orthodox spiritual-educational center. On the ground floor, there is a temple in the name of Holy Martyrs Faith, Hope, Charity and their mother Sophia. Large occupancy

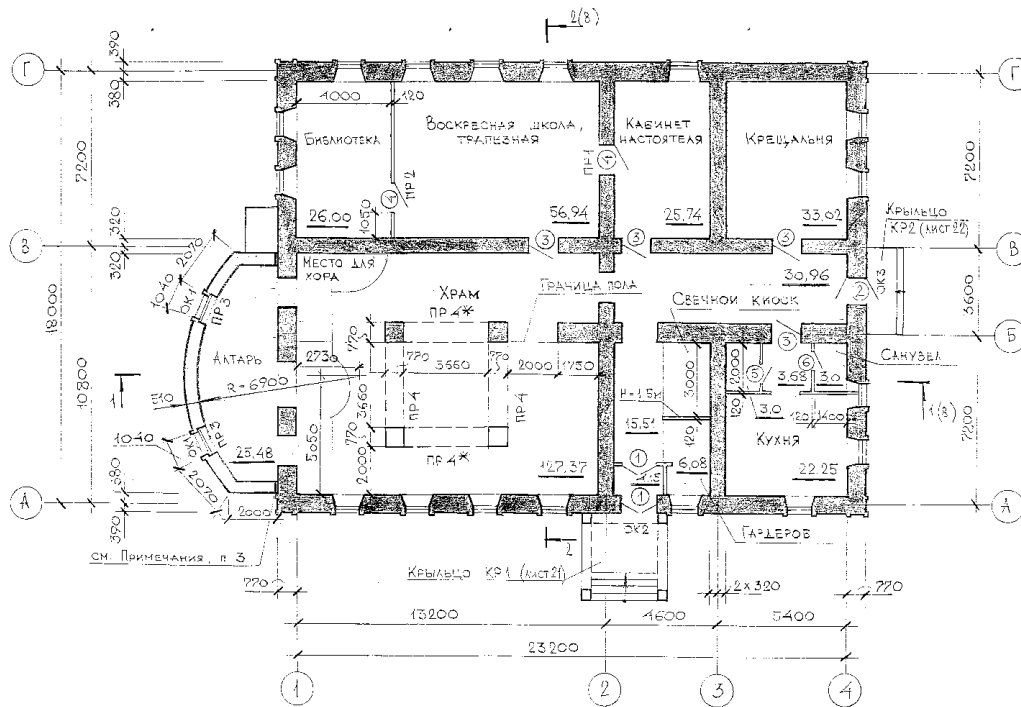


Fig. 4: Plan of Pokrovsky Cathedral in the village of Podolhi in Prokhorovka area





Fig. 5: Pokrovsky Cathedral in the village of Podolhi in Prokhorovka area

load spacious hall of divine service has powerful lateral pylons carrying temple light octagon. In the basement, there is a multi-purpose hall for scientific seminars, conferences, meetings with transformable partition-walls through which room can be divided into three separate rooms. Total hall capacity is 300 people. In the days of the big Orthodox holidays such as Christmas and Easter, festive receptions are held here. The Eastern side of the hall for receptions hosts the lounge for VIP guests. There is the exhibition hall, offices for cultural professionals and hobby groups for children in the mezzanine floor. In the spatial composition of the temple spiritual and educational center dominates the light octagonal structure, carrying 9 gold domes, numbering 17 gold domes all in all. Among them two small cupolas which are at different levels on all four sides of multilevel roofs. West, North and South entrances have perspective arched portals completed with ogee sidepiases. Basement and entrance portals are lined by the finishing stone for 2/3 of highness above are plastered and painted white. All other walls are covered with wooden block house. The windows are framed with sawn carving architraves, glass transoms over doorways and some windows are decorated with colored part stained glass. In main areas of the complex the lower parts of the wall are shingled with marble panels, above them the walls are covered with Venetian plaster, a complex pattern of the floor is laid of marble flags. In the basement in its multipurpose hall there is a coffered ceiling which creates a feeling of space and light, the abundance of crystal chandeliers reinforces this impression. Majestic iconostasis, covered with braid gold, inscribed harmonically in the temple space, concludes solemnly longitudinal composite axis of the temple. Icon-cases and iconic pictures are carried out in a single style with the iconostasis. In the South-Eastern, part of the temple complex territory a belfry is erected. On the central alley axis of the park (on the North side of the temple) wooden

well-room log-crib buildings and a bookshop are built, united by three arches. The idea of a new composite structure in post-industrial space of the urban environment is laid down in the concept of architectural design of the temple complex. Located in the Southwestern part of the park on Koroliov street, it forms the building in this part of the square on two streets: Koroliov and Schors. The spatial structure of the complex is based on identifying the dominant-multifunction temple in the name of the Holy Martyrs Faith, Hope, Charity and their mother Sophia surrounded by subordinate objects. These objects by their architecture, their dimensions and elevations are compositionally reconciled with each other. It allowed to fill organically the space to be built up with the temple complex objects. Uniformity of construction materials: wooden cabins, wooden paneling with blockhouse, golden domes-join complex complete composition. Living warmth of wood and man-made product made it possible to create a vivid, memorable image in the urban environment of postindustrial space. It is perceived and as a metaphor of past centuries architecture and as a herald of the eternally living in its development of an Orthodox church. Temple complex was consecrated on May 2, 2010 by His Holiness Moscow and All Russia Patriarch Kirill. The formation of the temple complex on Kharkov Mount was completed with the construction of multipurpose spiritual and educational center in the name of Holy Martyrs Faith, Hope, Charity and their mother Sophia. The complex was conceived back in 1996 by His Eminence Lord Ioannes as a major Orthodox center in the modern city of Belgorod where none temple have been built during past centuries.

## CONCLUSION

Thus, the construction of Orthodox churches and multifunctional complexes, including both diocesan and parish centers and monastery complexes and temples, plays a major role today in the implementation of a religious mission. One of the conditions for solving a number of problems facing the Orthodox Church in the modern world is the construction of multi-functional buildings and structures of church architecture. Features of the present temple construction on the example of Belgorod and Stary Oskol diocese considered in the article, open solutions to this problem based on the local characteristics of the construction industry and new compositional structure of temple construction in post-industrial space of the urban environment. They correspond to the greatest possible extent the parishes subsistence in modern conditions the activities of the Orthodox Church, realizing the needs of the spiritual life of the congregation.

**REFERENCES**

- Kuznetsov, A.V., 2003. Vaults and their Decor. Publisher V. Shevchuk, Moscow, Pages: 420, (In Russian).
- Lysenko, L.M., 1984. Wood in Architecture. Stroyizdat, Moscow, Pages: 176, (In Russian).
- Perkova, I.V. and L.I. Kolesnikova, 2014. Holy trinity monastery. Features Volume and Spatial Composition. Bulletin BSTU Named After V.G. Shuhova, No. 2, pp: 135-138, (In Russian).
- Potamianos, I., 1996. Light into architecture: Evocative aspects of natural light as related to liturgy. Ph.D. Thesis, University of Michigan, USA.