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RESEARCH ARTICLE

The Sustainable Church: A New Way to Look at the Place of Worship

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Abstract

For centuries, the notions of sacred and development were closely related in European culture, both in the field of architecture, and, more broadly, in the arts. Sustainability, in this respect, mostly appeared in non-architectural terms. (The word "sustain" appears multiple times in the Bible, but mostly in relation to humans: me, you, him, them.) Beginning with the Enlightenment, a gap has developed between the two, which is still experienced, and which results in a general distrust, misinformation, and, accordingly, a fundamental misunderstanding between artists, architects and the church. Is the gap too wide to reconnect these two notions? The changes of the 20th and 21st Centuries, having affected and continuing to affect Europe, represent a valid need for the different congregations to rethink their role, and the role of their places of worship. This paper highlights some positive examples of modern and contemporary sacred architecture, designed to reflect an awareness of today's issues — sustainability, attention to environmental and social issues.

Keywords

sustainability, church, architecture, design, culture

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"Wer möchte, dass Kirche bleibt, wie sie ist, möchte nicht, dass Kirche bleibt." (*Douglass, 2001*)¹

1 Introduction

The title of this paper seems to hide a controversial wording. How can sustainability and new ways of looking at the place of worship be present in one phrase?

One of Klaus Douglass' direct points from his 96 radical theses, speaks for the attitude of this paper, which attempts to solve this tension.

2 What Sustainability?

The question of sustainability is a current, sensitive and frequently addressed issue, and with our everyday experiences, a serious one.

Sustainability, meaning "the ability to be maintained at a certain rate or level" and "the property of biological systems to remain diverse and productive indefinitely" as defined in Wikipedia, provides 196,000,000 results on a Google search in 0.48 seconds, so we can readily refer to it as commonplace.

Sustainability, as a public perception, was generally connected to issues of environmental protection, waste management, economic consumption and recycling; in recent years, the benefits of sharing economies and knowledge, collaboration, service design or even political design have been involved, mostly on the professional side.

Eco-spirituality, the science of connecting ecology with spirituality, which aims at bringing religion and environmental activism together, "a manifestation of the spiritual connection between human beings and the environment" (Lincoln, 2000), as well as environmental awareness are approaches with stronger focus on the sustainability of the created world.

The concept of the sustainable church, however, goes further: with the inclusion of congregation (Russel, 2016), and in certain cases, with the critique of the current establishments.

¹ "Whoever wants the church to stay as it is, does not want the church to remain." (author's translation)

The Sustainable Church, a California-based organisation propose "The Germination of a New Church in a Post-Christendom World" by following their three-folded mission "to liberate communities through sustainable-minded education, cultivate relationships through a lived spiritual ecology, and propagate an economy of simple and sustainable living." (The Sustainable Church)

In line with this, when we speak of the 'sustainable church' we need to clarify what we mean by 'church'. The words signifying the edifice and the organisation in different languages reflect different concepts. In the author's native language, Hungarian, the word 'templom' signifying the church building comes from the Latin 'templum' referring to the space, the place, the sacred place. The English wording 'church' can be translated as 'the Lord's (house)', while in several Neo-Latin languages the term is derived from the Greek 'ekklesia' (see French 'église', Spanish 'iglesia').

These meanings reflect highly different understandings (the place, the house of the Lord, an object, an earthly transcription of the heavenly Jerusalem, "where the sacred manifests itself in space, *the real unveils itself*, the world comes into existence" (Eliade, 1987, p.63), versus an edifice including the worshippers, the congregation.

A place, a house or a house with people, that is the question. Is it enough to think of eco-friendly, off-the-grid sacred architecture created from locally sourced materials, such as thatched churches with rooftop solar panels or, using comprehensive contemporary design thinking, and considering the parts only in terms of the whole, should we speak of church buildings and structure, congregation and institutions as one? (See Fig. 1)

Most of the "sustainable" solutions offered to religious institutions, unfortunately, reflect the first two concepts. However, there are companies like Future Church (Beck Architecture) offering not only 'sustainable' churches (churches with "an example of stewardship of God's creation and a greater benefit to the community using sustainable building concepts", but also 'flexible' churches (able to follow the changing needs of an evolving congregation), or 'found' churches (transportable building structures). Their solutions offered include all modern technologies assisting the user experience, too.

To understand why we need new solutions, it is important to reflect on the past.

For centuries, in Europe and the Western world, Christianity developed to be the state religion. The growing urban centres with increasing populations also meant larger congregations and groups of worshippers who needed bigger church buildings and institutionalised systems to provide adequate religious services. At the same time, accordingly, the income and the sustainability of the institutions was secure.



Fig. 1 Sustainability needs more than solar panels neatly arranged on the church roof (St. Christopher's Episcopal Church, Roseville, MN, USA) (source: aishasoffice.wordpress.com)

The second major schism², initiated by the Reformation, impacted this security; following the acts of tolerance, the divided groups of worshippers required multiple points of worship (several coexisting churches and congregations in the same settlement), with smaller congregations and increasing problems of economic sustainability.

The Enlightenment and the following trend of secularisation further increased the problem by establishing a slowly declining participation in religious practices in the Western world. This was (and is) not always understood, accepted and followed by the views and actions of the institutionalised religion: whereas, in the period of growth, the smaller church buildings were replaced by larger ones, in the era of decline, large cathedrals were not demolished and replaced by smaller churches and organisations. This led to requirements for external (for example state) financing or, in the absence of such, to closure (followed by the sale, functional and architectural conversion or demolition) of churches.

Nevertheless, even in the last Century, there have been good, modern days examples of the developing understanding of sustainability. An early example is the Benedictine Abbey Christ in the Desert, Abiquiu, New Mexico (See Fig. 2). The monastery, founded in 1964, was designed by the great architect and furniture designer George Nakashima and built from locally sourced materials. It is operating with a sustainable off-the-grid system and has since developed two dependent monasteries in Mexico, as well as a mostly Vietnamese community near Dallas, in Kerens, Texas.

The more recent trend and terms in this field are 'regenerative architecture,' "the practice of engaging the natural world

² The first major schism, also called the East-West Schism of 1054, was an event that precipitated the final separation between the Eastern Christian churches and the Western church. The second major schism, Reformation, celebrate their 500th anniversary this year, in 2017.



Fig. 2 Sustainability: from construction to everyday life at the Christ in Desert Monastery, Abuquiu, NM, USA (source: christdesert.org)

as the medium for, and generator of the architecture" which "responds to and utilizes the living and natural systems that exist on a site that become the »building blocks« of the architecture" (Littman, 2009, p.iii), as well as 'positive impact architecture'. Attia dates the start of regenerative architecture from 2016, connects it to the paradigm of 'Recovery'³, and defines 'Positive Impact Building' as a natural state of the regenerative sustainable building seeking "the highest efficiency in the management of combined resources and a maximum generation of renewable resources." (Attia, 2016, p.397)

3 Current Issues

For an overview of the biggest challenges humanity, and as a part of that, Christianity currently faces, we have to look at the changes to the world map. The issues include global warming, the decreasing ice cap, rapidly growing world population and urbanisation, the growth of mega-cities, uneven distribution of population and wealth, unequal access to water, and migration, just to name a few.

While religiosity is generally on the rise globally (See Fig. 3), in the Global North, due to the secularisation that began with the Enlightenment, a decline in religious adherence, trust and participation in religious institutions and practices is experienced. In the Global South, it is the opposite.

There are, however, exceptions. For example, the "re-Christianised"⁴ world of several Central and East European countries, where states, following the transition from the communist

Global religious adherence, 1970-2020

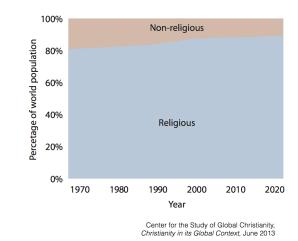


Fig. 3 Not a marginal question: religiosity in growth globally due to growth in the Global South (source: Center for the Study of Global Christianity, Christianity in its Global Contexts, June 2013)

systems have used religion as a tool in shaping identity (and national identity). They have, typically, strongly subsidised the historic churches, (mis)used religious terms in political rhetoric, and expect the churches to closely cooperate with them. In some countries (see Poland, Russia, Romania), this resulted in an outstandingly high religious adherence, and by the building of extremely large church buildings. (Characteristic examples are the Cathedral of Christ the Saviour in Moscow, Russia, and the Cathedral for the Salvation of the Romanian People in Bucharest, Romania.)

There has also been a similar phenomenon in North America: the rise of "mega-churches" (churches with 10 or 20 thousand worshippers) in line with the rise of the 'alt-right'⁵ movement is a good example. However, this is only one side of the story, as Peter Beinart argues:

"Americans — long known for their piety — were fleeing organized religion in increasing numbers. The vast majority still believed in God. But the share that rejected any religious affiliation was growing fast, rising from 6 percent in 1992 to 22 percent in 2014. Among Millennials, the figure was 35 percent." (Beinart, 2017)

However, a growth of religion, especially Christianity, in the Global South (South America, Africa, particularly Sub Saharan Africa and East and South East Asia), is occurring, and in places like Sub Saharan Africa, it is predicted to grow further (Pew Research Center, 2017).

The effect of humanity on the world has been addressed innumerable times with differing success. In scientific terms,

³ See Table 1 (Attia, 2016, p.395) listing the sustainability paradigms influencing Architecture in the 20th and 21st century. After Bioclimatic, Environmental, Energy Conscious, Sustainable, Green and Carbon Neutral it is Regenerative Architecture as the last paradigm proposed.

⁴ The term is quoted from a presentation by Dr. László Gonda, Pastor and Docent at the Debrecen Reformed Theological University, Institute of Theology, Department of Missiology and Confessiology, at the Interserve Conference on March 20, 2017 in Budapest

⁵ Shortened for 'Alternative Right' the term refers to "a right-wing, primarily online political movement or grouping based in the U.S. whose members reject mainstream conservative politics and espouse extremist beliefs and policies typically centered on ideas of white nationalism" according to the definition in the Merriam-Webster Dictionary.

the more precise classifications of the era, as Schneider rightfully points out in his essay, is the nowadays fashionable, originally, geological term, 'Anthropocene' (Schneider, 2017). The more recent terms 'Capitalocene' and 'Necrocene' have also been applied. The term Anthropocene, first used by Paul J. Crutzen appeared in 2002:

"The Anthropocene could be said to have started in the latter part of the eighteenth century when analyses of air trapped in polar ice showed the beginning of growing global concentrations of carbon dioxide and methane. This date also happens to coincide with James Watt's design of the steam engine in 1784." (Crutzen, 2002, p.23)

As we can see, Crutzen counts the period beginning with Watt's steam engine; although, some scholars, like Damian Carrington, calculate it from a later date:

"The new epoch should begin about 1950, the experts said, and was likely to be defined by the radioactive elements dispersed across the planet by nuclear bomb tests, although an array of other signals, including plastic pollution, soot from power stations, concrete, and even the bones left by the global proliferation of the domestic chicken were now under consideration." (Carrington, 2016)

Jason W. Moore, accepting the Industrial Revolution as a turning point, creates a different perspective in his recent papers, arguing for "the Capitalocene, understood as a system of power, profit and re/production in the web of life," representing "the creativity of capitalist development." He also mentions the 'Necrocene' of "deep extremism," as "a system that not only accumulates capital but drives extinction" (Moore, 2017a, 597). Moore sees the rise of capitalism as an "environment-making revolution" making use of "Cheap Nature," including "cheap human nature," particularly over the past five centuries; thus, radically transforming our world, resulting in the current ecological crisis. Moore quotes Einstein's point: "We can't solve problems by using the same kind of thinking we used when we created them," and to 'ease our souls' adds:

"The bad news is that we find ourselves at multiple tipping points — including the destabilization of biospheric conditions that have sustained humanity since the dawn of the Holocene, some 12,000 years ago. The good news is that our ways of knowing — and acting — are also radically changing" (Moore, 2017b, 35).

4 Losses and Gains

Moore's arguments have many common points with the comprehensive view of design thinking and design culture (WHAT is happening? + WHY is it happening? + HOW to answer/act?). Not only in his views of our world of the 'design capitalism' but also of the radically rethought systems of understanding and reacting to arisen issues. Similarly, it is important to clarify the negative and positive experiences regarding the sustainability of the church and sketch possible positive examples.



Fig. 4 Radical demolition is a returning issue: detonation of the Versöhnungskirche in Berlin, Germany in 1985 (source: arbetsbok.wordpress.com)

4.1 Loss One: Destroyed

Perhaps the most shocking experience of all is the destruction and discontinuation of a phenomenon, sacred object or building, illustrated by the following examples.

Berlin, 1985, a Protestant (Lutheran) church coincidentally and tragically named 'Versöhnungs-kirche' (Church of Reconciliation). The church was unfortunately located in the no-gozone separating East and West Berlin, marked by the Berlin Wall. Due to its position, people could not visit the church. In 1985, against all protests, the East German 'Democratic' Republic decided to destroy the building by blowing it up with explosives. (See Fig. 4) The image of the falling church tower remained a symbol of the blind radicalism and hatred towards all religious systems. After the unification of the two Germanies, in 2000 a new chapel (Kapelle der Versöhnung) was built on the site of the destroyed church.

1988, Bözödújfalu / Bezidu Nou / Neudorf, Romania was a village that stood in the way of the Communist dictator, Ceausescu's dream of establishing a dam and a water reservoir. Inhabitants of the village (Hungarian, Gypsy and Romanian people of Catholic, Unitarian, Orthodox and Sabbatical religion) were forced to move out, and the village was flooded. The image of the slowly disappearing church tower remaining the only visible point of the flooded village became a symbol of the totalitarianism wishing to eliminate history, religion and national minorities. (The church has since collapsed.)

4.2 Loss Two: Out of Use

Due to the changes referred to earlier, there are church buildings in the Global North that are becoming unsustainable. A possibly cynical though correct expression of the phenomenon is the 'redundant church' used mainly in the UK for Anglican churches becoming empty. The same phenomenon is experienced in several places such as France and the USA, but also in countries like Hungary. In some villages, there are still people wishing to go to church, but due to the small size and the economically unsustainable nature of the congregation, the lack of priests and pastors, several churches are only used on very rare occasions, if at all.

4.3 Loss Three: Sold

Some of the no longer used churches are sold as vacant real estate and 'reused' for other secular functions — sports halls, dance clubs, bars, galleries, shops or homes. This subject is so popular that we can find many examples of reused church buildings, as well as several theses discussing it comprehensively. Kiley (2004) and Lueg (2011) bring several examples from Germany and the United States.

4.4 Loss Four: Solo Souls

The nature of worship (see 'ekklesia') would assume a community, that is several people worshipping God. The Bible also states "For where two or three are gathered together in My name, there am I in the midst of them." (Matthew 18:20) Praying alone is possible, but the luxury of a private chapel (and not a private church) was and is still an exceptional case. Nevertheless, this phenomenon of luxury is still experienced today, which may also concur with the idea of separation, the growth of spirituality as a form of private faith, replacing religious practice. We can find several examples of such private chapels in Austria and Germany, but perhaps the most striking example was designed by the Italian architect Michele de Lucchi and built in Auerberg, Germany: the small chapel is designed for solo use, with one round window allowing a single perspective on a distant cross on top of a hill.

4.5 Gain One: Timeless Value

The latter example already shows us architecture of lasting value. Although this characteristic is not always considered among the features of sustainability, we should highlight, that architectural value is one of the most crucial points in defining the sustainability of an edifice. In the author's homeland, Hungary, there have been many items of sacred architecture built since the proclamation of the republic in 1990, although many were already outdated during construction. Ugly, dysfunctional churches might be physically sustainable, but their value is highly questionable, whereas a well-designed and self-sufficing church can surprise visitors and worshippers decades or even centuries after it was built.

4.6 Gain Two: Just Enough

While for centuries, the cathedrals of growing size prevailed in the northern hemisphere, decreasing congregations represent the biggest challenge, as pointed out by Jákó Fehérváry OSB.⁶



Fig. 5 Enough to serve sustainability: Apostle Peter and St. Helen the Martyr Chapel, Paphos, Cyprus, Michail Georgiou (source: dezeen.com)

A church designed for hundreds cannot suit and be maintained by a congregation of ten or less. The principle of "small is beautiful"⁷ might be a possible solution of contemporary sacred architecture in the Western world (See Fig. 5).

4.7 Gain Three: Shared (Common House)

Another solution to the decreasing congregations' needs and capacities is the idea of sharing economy: several different denominations on an ecumenical basis, or even different faiths using a shared, common sacred space for worship and other congregational occasions.

Interfaith chapels are usually found in locations with major and more complex communities. For example, at universities in the United States (like Chapman University, Orange, CA and University of Rochester, NY); whereas, ecumenical churches provide solutions mostly for parochial use in places with a dominantly similar religion, for example in smaller settlements in Hungary (with examples in Herceghalom, Hortobágy and Sajósenye, Hungary).

4.8 Gain Four: New Territories

This paper has already mentioned the out-of-use and re-used churches. However, this phenomenon also operates in the opposite direction. Having understood the message of the Turkish proverb transferred to Western thinking by Sir Francis Bacon ("if the mountain won't come to Muhammad then Muhammad must go to the mountain")⁸, several religious organisations understood that the changing habits of people would need churches to be established out of traditional urban centres, in new urban hubs — like airports or shopping complexes.

⁶ Personal note after a comment by Jákó Fehérváry OSB at an open session talk on contemporary sacred architecture, Fuga Architectural Center, Budapest, on February 3, 2017

⁷ The phrase came from the economist, Leopold Kohr, and was published by economist EF Schumacher in 1973

⁸ In original wording: "If the hill will not come to Mahomet, Mahomet will go to the hill." (Sir Francis Bacon, Essays of Francis Bacon, 12, On Boldness)



Fig. 6 From shopping complex to church: Beech Park Baptist Church, Oliver Springs, TN, USA (source: www.facebook.com/BeechParkKDO/)

In certain cases, making use of the closed and unused entire premises, complete shopping malls have been converted into churches, as in the case of the Beech Park Baptist Church, Oliver Springs, TN. (See Fig. 6)

4.9 Gain Five: Resistance

Certain churches represent more in structural qualities and meaning than just a religious institution. The church of San Paolo Apostle in Foligno (Perugia), Italy, designed by Massimiliano and Doriana Mandrelli Fuksas, is an example of that. Finished in 2009, besides being an edifice capable of resisting earthquakes (frequent in the region), it is a symbol of rebirth after the Umbria-Marche earthquakes of 1997, occupying a place where temporary housing for the then displaced residents once sat.

4.10 Gain Six: Think Big

Whereas in the Global North, decreasing population, religious adherence and congregations gave rise to the need for smaller churches, in the Global South, it is just the opposite. However, copying sacred architecture from the northern hemisphere, which used to be a habit in the times of colonialism, is not the best solution due to differing climatic conditions, habits and cultural-architectural traditions, so local solutions are needed.

A good example is the Sacred Heart Cathedral of Kericho in Kenya by John McAslan + Partners; built for the Diocese established in 1995. (See Fig. 7) The congregation is growing, the church, built using natural materials honouring the faith and the cost sensitivity of the rural community, seats 1,500.

4.11 Gain Seven: Fast Reaction, Low Budget

Erecting a church building is regarded as a major investment, requiring robust funding and a significant amount of time. Perseverance, dedication or 'civil disobedience' to quote Thoreau's wording, seasoned with creativity might, however, lead to great solutions.

Temporary churches can answer the needs of events, festivals, or other temporary uses — from serving as a chapel for construction workers to victims of natural disasters. The awarded Japanese architect, Shigeru Ban built recycled cardboard and paper structures for survivors of major catastrophes. Among his buildings, there are also churches to provide housing not only



Fig. 7 Room for growth: the Kericho Cathedral in Kenya (source: dezeen.com)



Fig. 8 Room for spiritual life for those living in refugee camps and wishing to practice their faith (source: curbed.com)

for the body but for the tormented soul. Ban has called to life the Voluntary Architects' Network, a movement to aid those in need.

From the professional side, a recent example, answering one of the major current issues, migration and the refugee crisis, was created by two students from the Yale School of Architecture. Lucas Boyd and Chad Greenlee came up with a radically new solution of 'pop-up' sacred buildings to use in refugee camps. Their concept was first exhibited at the 2016 Venice Biennale. (See Fig. 8) They believe that

"While [places of worship] do not provide a basic need for an individual's biological survival, they do represent a fundamental aspect of not only an individual's life beyond utility, but an identity within the collective, a familiar place



Fig. 9 Spirit matters: St. Michael's Eritrean Christian Orthodox Church in the Jungle at Calais, France (source: la-croix.com)

of being—and this is something that we consider synonymous with being human—a requirement for the persistence of culture" (Doroteo, 2016).

There are also excellent examples from the non-professional side. From the spontaneously erected St. Michael's Eritrean Christian Orthodox Church, constructed by Eritrean refugees in the Jungle, Calais, using recycled lath and greenhouse plastic foil (See Fig. 9), to the low-cost temporary baptismal immersion pool of the Free Christian Congregation of Szigetszentmiklós, Hungary was created from a cheap inflatable plastic pool — also used by children in the congregation for entertainment purposes. (See Fig. 10)

5 Conclusions

It is reasonable to conclude that a seemingly peripheral subject, the place of worship and its sustainability, although significantly challenged, can also challenge us to view it from different perspectives, and create complex, sometimes provoking and often creative thoughts.

There are, however, certain fields/actions needed:

- 1) Instead of isolated initiatives a complex (design) approach.
- 2) Well-understood design thinking from designerly ways of knowing, artistic and empiric research through design thinking and acting (NOT product design only!).
- 3) Sharing and collaborating (to facilitate a faster solution).
- 4) Education (to clear misunderstanding and secure potential partners in thinking and action).

As Mircea Eliade perfectly formulated:

"It must be understood that the cosmicization of unknown territories is always a consecration; to organize a space is to repeat the paradigmatic work of the gods." (Eliade, 1987, p.32)



Fig. 10 Ready made baptismal immersion pool in use: Free Christian Congregation of Szigetszentmiklós, Hungary (photo by Boglárka Zellei)

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