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Helsinki: Temppeliaukio Church

This essay will explore the Temppeliaukio Church in Helsinki, Finland, which has other names such as Taivallahti Church, Church in the Rock or simply Stone Church.[1] It will explain Finland's and Helsinki's history and the role of churches in the city through the works of Lars Sonck. Then it will connect the Temppeliaukio Church to the ideas of well-known architects such as Le Corbusier, Frank Lloyd Wright, Bruce Goff and Frank O. Gehry. It will also attempt to connect to Land Art and architect-artists such as Herbert Bayer and James Turrell. It will compare Temppeliaukio Church and France's St. Pius X Church and present the elements that would make a successful underground building. Lastly, the essay will conclude by explaining the benefits of underground construction and how Helsinki executes a master plan for an underground city.

The Temppeliaukio Church, named after and situated on Temppeliaukio Square near Helsinki downtown, was designed by architects and brothers Timo and Tuomo Suomalainen in 1969. It was a part of a design competition that attempted to provide a church for two catholic congregations that are Finnish and Swedish speaking, who are living in the apartment houses surrounding the square.[2] The church consists of a structure implemented within an existing granite rock without profoundly altering the natural rock site to maintain the site's character of open space. It also consists of a reinforced concrete and copper dome with glass panels that

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[1] R. Stephen Sennott, *Encyclopedia of 20th Century Architecture* 1, (New York: Fitzroy Dearborn, 2004), 463.

[2] Arquitectos Timo Y Tuomo Suomalainen, "Iglesia Taivallahti, Helsinki – Finlandia," *Informes De La Construcción* 26, no. 255 (1973): 29-36, https://doi.org/10.3989/ic.1973.v26.i255.3082.

allow natural lighting into the interior space.[3] The site also acts as a recreational area where residents can enjoy the exterior space without disturbing the Church.[4]

To understand the reasoning behind the use of underground space and the importance of churches in Helsinki. It is important to note that Finland is considered Europe's most forested country due to its dense forest covering about 86 percent of the area.[5] Forest preserves a national and cultural significance in which the country has a great attachment to its natural landscape.[6] Helsinki is also the central city that reflects Finland's national, cultural and modern identity.[7] This fact was due to 1969's SALT (Special Armament Limitation Treaty) negotiations, which prompted Finland to construct public buildings and use Helsinki to present its identity to visitors.[8] After the Second World War, public buildings were essential to reflect Helsinki's identity through traditional features that embodied the social situation in Finland.[9]

Sweden occupied Finland until 1809, then Russia took over the country until 1917 before Finland finally gained its independence.[10] During the occupations, it was important to construct a church to demonstrate the leader's power in the city. Sweden and Russia's influence played an

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[3] Thomas A. DuBois, *Sacred to the Touch: Nordic and Baltic Religious Wood Carving* (Seattle: University of Washington Press, 2018): 15.
[4] Suomalainen, "Iglesia Taivallahti," 29-36.
[5] DuBois, *Sacred to the Touch,* 32.
[6] DuBois, *Sacred to the Touch,* 34.
[7] Salla Emilia Jokela, "Tourism and Identity Politics in the Helsinki Churchscape," *Tourism Geographies* 16, no. 2 (2013): 261, https://doi.org/10.1080/14616688.2013.865070.

[8] Anna-Maria Astrom, "The Capital as a symbol of the country and its meaning for the inhabitants: The case of Helsinki," in *A Nemzet Antropologiaja,* (Budapest: A. Gergely András editor, 2002): 30, http://mek.oszk.hu/06800/06812/06812.pdf#page=101.

[9] Astrom, "The Capital as a symbol," 30

[10] Jokela, "Tourism and Identity," 255.

essential role in shaping Helsinki and its churches through political, social, and cultural changes.[11] The churches also present a historical and artistic evolution in Helsinki.[12] Sweden had a Lutheranism system, whereas Russia formed an Orthodox system through churches.[13] When Finland gained independence, Orthodox churches were destroyed, westernized, or converted into Lutheran churches to coincide with the west.[14] However, after being defeated by the Soviet Union during World War Two, it made peace with its Russian neighbours.[15] The Temppeliaukio Church helped form a connection between Lutheran and orthodox religions and aided Sweden and Russian-speaking Finns residing nearby the Church.[16]

Before the Temppeliaukio Church, the 19th century shaped the architectural scene in Helsinki. For example, architect Lars Sonck designed several churches in which he incorporated national romanticism and Art Nouveau that reflected folk art and Finnish values and formed an architectural heritage.[17] He was admired for handling materials, and the use of granite rocks.[18] One of his most famous churches is the Kallio Church because it reflects the national identity and national romanticism of Helsinki's 19th-century heritage.[19] Sonck's Kallio Church has a large structure with a tower and a granite façade. Many of his churches and the Temppeliaukio Church

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[11] Jokela, "Tourism and Identity," 253.
[12] Jokela, "Tourism and Identity," 252.
[13] Jokela, "Tourism and Identity," 252.
[14] Jokela, "Tourism and Identity," 259.
[15] Jokela, "Tourism and Identity," 260.
[16] Suomalainen, "Iglesia Taivallahti," 29-36.
[17] Jokela, "Tourism and Identity," 257.

[18] Henry-Russell Hitchcock and G. E. Kidder Smith, "Aalto versus Aalto: The Other Finland," *Perspecta* 9 (1965): 134, https://doi.org/10.2307/1566914.

[19] Edward Marc Treib, "Lars Sonck: From the Roots," *Journal of the Society of Architectural Historians* 30, no. 3 (1971): 234, https://doi.org/10.2307/988749.

share similarities. They are similar in using granite in the construction in different ways that contribute to the national character of Finland and the Finnish landscape.[20] However, the Temppeliaukio Church is a modern representation of the 20th-century churches that symbolized a new architectural beginning for Helsinki after World War Two and an exciting departure from 19th-century architecture.

Another architect that contributed to the national identity of Helsinki is Alvar Aalto by forming harmony and a link between humans and nature.[21] The architect incorporated wood as an important element in Finnish architecture that expresses national identity and Finnish love for its nature.[22] Aalto pursued natural forms and materials, where he would wrap steel columns in wood to achieve a natural appearance.[23] Inside the Temppeliaukio Church, the dome and wooden furniture predominate the interior, reflecting warmth and intimacy in the space for religious symbolism.

During the Church's construction, many people were against it because it did not possess the traditional appearance of a church. People went as far as to vandalize the site to express their disapproval.[24] However, the Church changed people's perspectives once it opened. It is now considered unique for its innovation, beauty, and acknowledgment of nature, reflecting an alliance with the environment and landscape in which humans respect their environment.[25]

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[20] Jokela, "Tourism and Identity," 262.
[21] DuBois, *Sacred to the Touch,* 35.
[22] DuBois, *Sacred to the Touch,* 35.
[23] DuBois, *Sacred to the Touch,* 35.
[24] Asko Salokorpi, "The Movable Church," *Design Quarterly*, no. 84 (1972): 18, http://www.jstor.com/stable/4090817
[25] DuBois, *Sacred to the Touch,* 36.

Moreover, the Church echoes memories and shares similar ideas of architects such as Le Corbusier, Frank Lloyd Wright, Frank O. Gehry, and Bruce Groff.

First, architect Le Corbusier, who used nature as a theme in his work, designed a similar project, a basilica hewed from rock, but the project was not executed.[26] His project aimed to emphasize and push the viewer to acknowledge the interior rather than the exterior.[27] He believed that architecture would enhance from within the rock.[28]

Second, Frank Lloyd Wright is another architect whose work naturally urges people to interact with nature by providing open space and heightening the sense of nature in his buildings.[29] Like Corbusier, he strove for architecture that grows within the interior outwards and in harmony with its exterior.[30] His buildings' exterior is incorporated as a part of their surroundings to reflect the relationship between landscape and nature.[31] Wright believed that one should design according to the site, nature, and materials.[32] He also emphasized that humans and buildings are as free as nature in which they all cooperate.[33]

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[26] Ernst Von. Meijenfeldt and Marit Geluk, *Below Ground Level: Creating New Spaces for Contemporary Architecture,* (Basel: Birkhäuser, 2003): 14.

[27] Meijenfeldt and Geluk, *Below Ground Level,* 15.

[28] Meijenfeldt and Geluk, *Below Ground Level,* 15.

[29] Meijenfeldt and Geluk, *Below Ground Level,* 16.

[30] Meijenfeldt and Geluk, *Below Ground Level,* 16.

[31] Meijenfeldt and Geluk, *Below Ground Level,* 16.

[32] Arn Henderson, *Bruce Goff: Architecture of Discipline in Freedom* (Norman: University of Oklahoma Press, 2017): 37.

[33] Henderson, *Bruce Goff,* 51.

Third, Bruce Goff is an architect who enjoyed experimenting with various materials, especially local ones, in which he gave new meanings to reflect the surrounding landscape with the materials used in his designs. His most exceptional architectural achievement is a Boston Avenue Methodist-Episcopal Church that he designed during his time in Tulsa in 1926. It is a semicircular auditorium with an unevenly positioned rectangular block of office space and a tower[34] The exterior is made of Bedford limestone with buff-coloured terracotta spandrels and pleated form glass.[35] It is one of America's great churches, admired for its expression in its different components and sculptural and ornamental presence.[36] The architect frequently used elements in his work, such as glass, that provide natural light and privacy. He also used structural wood decking for roofing membranes or ceiling surfaces.[37] The Temppeliaukio Church also uses glass efficiently to simultaneously provide natural light and privacy. Its interior dome and other elements also used wood to achieve the desired natural effect. However, it is important to note that Goff did not favour a specific material and instead used a combination of materials in his work.

Furthermore, Goff's Church has an interior much bigger than the Temppeliaukio Church and still emits the familiar warmth the Temppeliaukio Church has However, the Temppeliaukio Church is a much simpler church that still emphasizes warmth and spirituality without the excessive detailing present in Goff's Church. The Temppeliaukio Church is an example that an underground space can evoke feelings without needing heavy ornaments or large structures. Goff believed that art and nature were strongly integrated, where art mediates between nature and

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[34] Henderson, *Bruce Goff,* 40.
[35] Henderson, *Bruce Goff,* 40.
[36] Henderson, *Bruce Goff,* 44.
[37] Henderson, *Bruce Goff,* 70.

freedom, and that the artist works according to the natural world's organic principles.[38] The Temppeliaukio Church has little alteration to the rock, proving the architects worked according to nature's principles. Goff also had a few principles he worked with called Textural Dichotomies, where he used smooth versus rough and natural versus humanmade to create an expressive design.[39] The Temppeliaukio Church seems to achieve a similar effect through its rough granite walls, smooth ceiling, and concrete flooring.

Lastly, in an interview with Helsinki's *Arkkitehti* magazine, Frank O. Gehry explained his use of cheap and recycled materials and his interest in art as a tool that enabled him to view materials as a powerful tool that integrates art and architecture.[40] He also explained that art and architecture should be reexplored as united elements in modern times.[41]

Furthermore, the Church appears to provide artistic and architectural aesthetics that combines Gehry's interest through Land Art. Land Art, also known as Earth Art, is a term used by artist Robert Smithson. It is an art movement that emerged in the late 1960s in the US that linked landscape and art by integrating natural materials such as soil or rock and materials such as concrete or metal.[42] In this case, the Church coincidentally suggests a relation to Land Art, in

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[38] Henderson, *Bruce Goff*, 53, 54.

[39] Henderson, *Bruce Goff*, 72.

[40] Hannu Hellman and Anne Jarvinen, "Leisure Architecture, Frank O. Gehry," *Arkkitehti*, (1986): 24-27, https://www.ark.fi/en/1986/05/.

[41] Hellman and Jarvinen, "Leisure Architecture," 14-27.

[42] "Land Art - Saylor Academy," Accessed June 10, 2020, 1, https://resources.saylor.org/wwwresources/archived/site/wp-content/uploads/2011/05/Land-Art.pdf.

which the Church combines natural materials such as rock and introduced materials such as concrete and metal in its architecture to reflect the link between architecture and art and nature.

Another figure of Land Art is Herbert Bayer, an architect that aimed to harmonize human relationships with the natural world through his designs.[43] He worked on transforming Aspen, where he cultivated his ideal of living most realistically.[44] He also used natural sciences and environmental abstractions as sources of inspiration to produce practical landscape art.[45] Like most architects discussed, he believed that artists should not imitate nature but work with nature side by side, where the natural environment and humanmade environment can exist if their boundaries are understood.[46]

A few underground churches exist. The oldest one is in Ethiopia from the 13th century, in which Christians built a church underground with its roof exposed to ground level and a carved interior.[47] One of the first modern underground churches is the Basilica of St. Pius X, constructed in 1958 in Lourdes, France, to host many worshippers.[48] It was made of concrete and looked like an upturned ship due to the low ceiling supported by concrete pillars.[49] However, the concrete

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[43] Peder Anker, "Graphic Language: Herbert Bayer's Environmental Design," *Environmental History* 12, no. 2 (January 2007): 254. https://www.academia.edu/26440265/Graphic_Language_Herbert_Bayers_Environmental_Design.

[44] Anker, "Graphic Language," 262.

[45] Anker, "Graphic Language," 262.

[46] Anker, "Graphic Language," 263.

[47] Meijenfeldt and Geluk, *Below Ground Level*, 21.

[48] Mohamed El-Fers, *The Complete Guide to Lourdes*, (Lulu Enterprises, Inc., 2009): 22.

[49] El-Fers, *The Complete Guide*, 22.

prevents worshippers sitting at the back from being able to hear well due to the echoes of the space.[50] The Church also expands horizontally, making it difficult for the worshippers to see the sanctuary properly and participate.[51] Since underground spaces sometimes do not provide proper functions, many aspects should be considered when designing to improve the practicality of a subterranean building.

For this reason, Jaakko Ylinen offers a few elements in "Spatial Planning in Subsurface Architecture" that would elevate the interior's atmosphere and functions. First, as James Turrell believed, light was an essential nutrient that engages with space and people and helps influence human perception.[52] In Churches, lighting helps intensify spirituality and peace within the space. The author explains that the light should also cast little or no shadows.[53] The Temppeliaukio Church carefully managed to execute a dome that also allows light in through window panels without casting too much shadow. Other elements include subtle colours, soft textures, gentle outlines, uniformity, and repetition to make the space appear more spacious.[54] Elements such as intense colours, contrasts of form, undivided space, and heavy textures should be avoided in underground space construction.[55] The Church is an excellent example of successful underground work. It uses earth-tone colours with pink-purple cushions for the furniture to balance the tones within the interior. The addition of small plants around the space helps view

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[50] El-Fers, *The Complete Guide*, 23.
[51] El-Fers, The Complete Guide, 23.

[52] Designboom, *Designboom* (Nina Azzarello, October 2018), https://www.designboom.com/art/james-turrell-interview-light-10-16-2018/.

[53] Jaakko Ylinen, "Spatial Planning in Subsurface Architecture," *Tunnelling and Underground Space Technology* 4, no. 1 (1989): 7, https://doi.org/10.1016/0886-7798(89)90026-6.
[54] Ylinen, "Spatial Planning," 7.
[55] Ylinen, "Spatial Planning," 7.

the space as an underground mysterious, peaceful cave. The repetition of the granite work and the dome above the space help enlarge and brighten the area through small adjustments. The design's minimal use of colours and simplicity help present airy spaciousness that connects spirituality, nature, and humans.

In addition, underground spaces provide peace and relaxation in a fast-paced world driven by technology. They evoke feelings of mythical dimensions and provide integration between nature and the built environment.[56] In "Why Underground Space Should be Included in Urban Planning Policy- And How this will Enhance an Urban Underground Future," Han Admiraal and Antonia Cornaro explain the benefits of underground space and how it could be the future, especially when the world's population will rise to 66% by 2050.[57] Some benefits include: it can help reduce climate change's impact and provide ground-level spaces for green spaces[58], provide sustainable, affordable, and reliable modern energy and proper management of water and sanitation[59], and lastly, improve employee productivity, aid economic growth, and protect against climate disasters.[60]

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[56] Meijenfeldt and Geluk, *Below Ground Level,* 22.

[57] Han Admiraal and Antonia Cornaro, "Why Underground Space Should Be Included in Urban Planning Policy – And How This Will Enhance an Urban Underground Future," *Tunnelling and Underground Space Technology* 55 (2016): 215.

[58] Admiraal and Cornaro, "Why Underground Space," 219.

[59] Admiraal and Cornaro, "Why Underground Space," 219.

[60] Admiraal and Cornaro, "Why Underground Space," 219.

Finally, since the 1980s, Helsinki has been the first city to provide an underground space masterplan for the municipality that continues to expand over time.[61] The reason is also the city's respect for nature, which mostly consists of bedrock and enables the city to go underground without disturbing the landscape and provide protection and warmth against winter's harsh weather.[62] Helsinki's master plan is evidence that an underground infrastructure could be the future if appropriately used in providing the functions and comfort people need. Many cities have also already used underground infrastructures, such as Shanghai, Singapore, Minneapolis, Tokyo, and Montreal.[63] Underground development helps offer a chance to acquire new functions without damaging the environment or heritage.[64] It can also solve urban problems such as traffic and environmental problems like lack of green space, protection against disaster, and reducing pollution and noise in urban areas.[65]

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[61] Ilkka Vähäaho, "Underground Space Planning in Helsinki," *Journal of Rock Mechanics and Geotechnical Engineering* 6, no. 5 (2014): 390, https://doi.org/10.1016/j.jrmge.2014.05.005.

[62] Ilkka Vähäaho, "An Introduction to the Development for Urban Underground Space in Helsinki," *Tunnelling and Underground Space Technology* 55 (2016): 325, https://doi.org/10.1016/j.tust.2015.10.001.

[63] Chiara Delmastro, Evasio Lavagno, and Laura Schranz, "Underground Urbanism: Master Plans and Sectorial Plans," *Tunnelling and Underground Space Technology* 55 (2016): 103-111, https://doi.org/10.1016/j.tust.2016.01.001.

[64] Wout Broere, "Urban Underground Space: Solving the Problems of Today's Cities," *Tunnelling and Underground Space Technology* 55 (2016): 246. https://doi.org/10.1016/j.tust.2015.11.012.

[65] Broere, "Urban Underground Space," 247.

Moreover, humans have been utilizing underground spaces for different purposes for thousands of years.[66] The Greeks and Ancient Egyptians played a role in developing underground use, especially in constructing tombs, water passages, and tunnels. Additionally, underground meant shelter from potential outside danger and was used for clandestine operations during times of war. Today, underground spaces give new opportunities to reimagine the use of underground construction through modern and contemporary methods and perspectives. The Temppeliaukio Church is an example that proves less is more and reflects the beauty of spaces when nature and humanmade work together.

Overall, the Temppeliaukio Church is one of the most famous churches in Helsinki. It helps one to think more in-depth about the connection between nature and humans and how churches can beautifully emphasize spirituality by combining a few elements such as rock, wood, and metal. The Church not only excels in an architectural sense but also in connecting its people and representing Helsinki.

[66] Meijenfeldt and Geluk, *Below Ground Level,* 19.

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