

## **The Spirituality of Architecture: From historic to modern times**

*'Architecture, of all the arts, is the one which acts the most slowly, but the most surely, on the soul'* Ernest Dimnet

Architecture has been present, in one form or another, since the dawn of humanity, with detailed planning and design often resulting in some of the most spectacular constructions ever known. Inspiration for such creations varies as much as their physical appearance, just as the emotional value derived varies greatly from person to person, culture to culture and even between eras. Many of these 'behemoths of the horizon' were made for specific spiritual or religious reasons, some of which are now open only to speculation and debate. Others were erected as historical markers of particular time periods or cultures. What about today's architecture? In a world of constant spiritual, moral and emotional upheaval, how does the architecture of modern times compare to that of the past? Does Stonehenge still invoke mystery? If the Leaning Tower of Pisa was such an architectural disaster, why does it still remain? What was the inspiration behind the design of the Sydney Opera House? Are we still able to appreciate the spirituality of architecture as our ancestors did?

*'Architecture is frozen music'* Johann Wolfgang van Goethe, conversation with Eckermann

### **Stonehenge**



Probably one of the most mysterious of the world's architectural monuments, both historical and modern, is Stonehenge. Located in the open landscape of Salisbury Plain, Amesbury in the county of Wiltshire in Southern England, construction of this fascinating structure is thought to have started around 5000 years ago, with the digging of a ditch foundation. It is believed that the massive stones of the inner circle, called Bluestones, numbering 80 in all and weighing upwards of 4 tons each, were transported some 240 miles from their original home in the Prescelly Mountains of South West Wales. This involved a huge amount of labour as the stones had to be dragged, ferried via river and moved on rollers over land to the current site. The stones of the outer circle, called Sarsen Stones, weighed significantly more than the

Bluestones: around 50 tons each! These were transported some 20 miles south from their original location in Marlborough Downs, probably by at least 600 men. Given the intense labour that was required to move the materials needed for this impressive structure and, of course, construct it, the inspiration behind its design must have been widely felt or supported. Unfortunately, the reasons or motivation behind the construction of this spectacle are subject only to speculation as very few records exist. It is thought that there is some astronomical significance to the structure, perhaps relating to the rising and setting of the sun, or the position of certain stars. It is widely believed that Stonehenge was built by the Druids for sacrificial ceremonies. Others believe that it was built by Danes, Romans, Saxons or Greeks and yet others attribute the construction to King Arthur or even Merlin. Today, despite being a little worse for wear, Stonehenge still conjures up emotions of magic and mystery amongst the thousands of people who travel to its site every year.

*'An architect is the drawer of dreams'* Grace McGarvie

### The Great Pyramid Of Giza

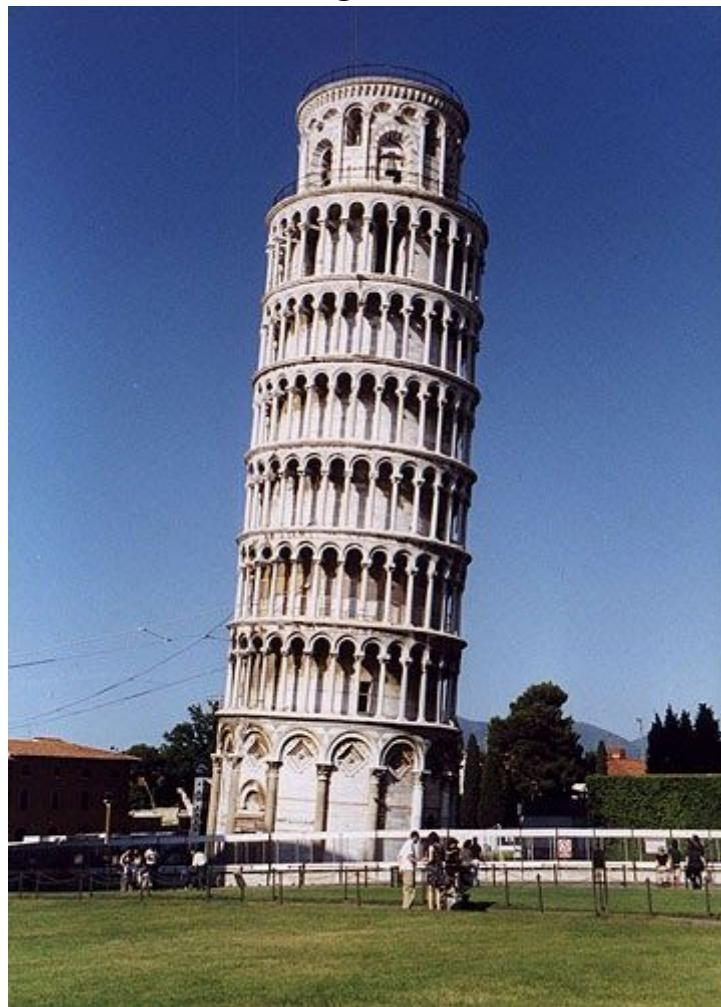


Just the shape of the Great Pyramid is enough to invoke a sense of almost divine wonderment. Any mention of Egypt immediately conjures images of endless smooth desert, spotted by the shimmering impressions of pyramids on the horizon. The captivating structure of Giza's Great Pyramid, thought to have been built in 2560 BC over a period of 20 years, is the only remaining Wonder of the original seven. As with Stonehenge, the reason for its erection is unknown, as is the mastermind behind its design. It is widely acknowledged that, even despite today's technology and architectural capabilities, a structure such as the Pyramid would be near impossible to build. This adds to its mystery, as many theories exist as to how each of the 2 million limestone blocks, weighing around 2 tons each, were manoeuvred into place in such a way. Even more fascinating is why each side of the Pyramid exactly faces each direction of the compass, when knowledge of this kind was unknown at the time of its construction. Furthermore, the accuracy in the building of the structure is reflected in its maximum error between side lengths of only 0.1%. Some insist that such precision cannot possibly be attributed to any human efforts of that time, thus resulting in

theories of 'higher power' or extra terrestrial intervention or influence, possibly with some astronomical significance. Most believe that the Pyramid was erected by the Ancient Egyptians as a grand tomb for their King Khufu, indicated by a large sarcophagus inside one of the many chambers. Many regard the Great Pyramid as no small feat, even by today's standards.

*'Architecture is inhabited sculpture'* Unknown

### The Leaning Tower Of Pisa



Peculiar would probably be the word that springs to mind upon mention of this Italian monument. All original intentions were for the construction of a *vertical* bell tower behind the city of Pisa's cathedral in August of 1173. Shortly after the construction started, which took 200 years to complete, the insufficient 3 metre foundations began subsiding into the soft soil at its base. Luckily for the tower, the soil settled enough to prevent the complete collapse of the building, though this left it standing with an alarming tilt, now measured to be about 5.5 degrees. Many methods were implemented over the years in an effort to remedy the lean, more often than not resulting in near collapse and more subsidence. The tower was subsequently closed to the public between 1990 and 2001 to allow for major stabilization works, where 38 cubic metres of soil from underneath the raised end of the base were removed. Despite its current inclination of 5.5 degrees, the tower has been declared stable for at least 300 years. As the tower was constructed in 3 separate stages, the contributing

architects are believed to have been Bonano Pisano, Giovanni di Simone and Tommasso di Andrea Pisano respectively. The aesthetic oddity of the structure seems to invoke awe but also inspiration in many at its seemingly resilient nature against all odds.

*'Architecture is a social act and the material theatre of human activity'* Spiro Kostof

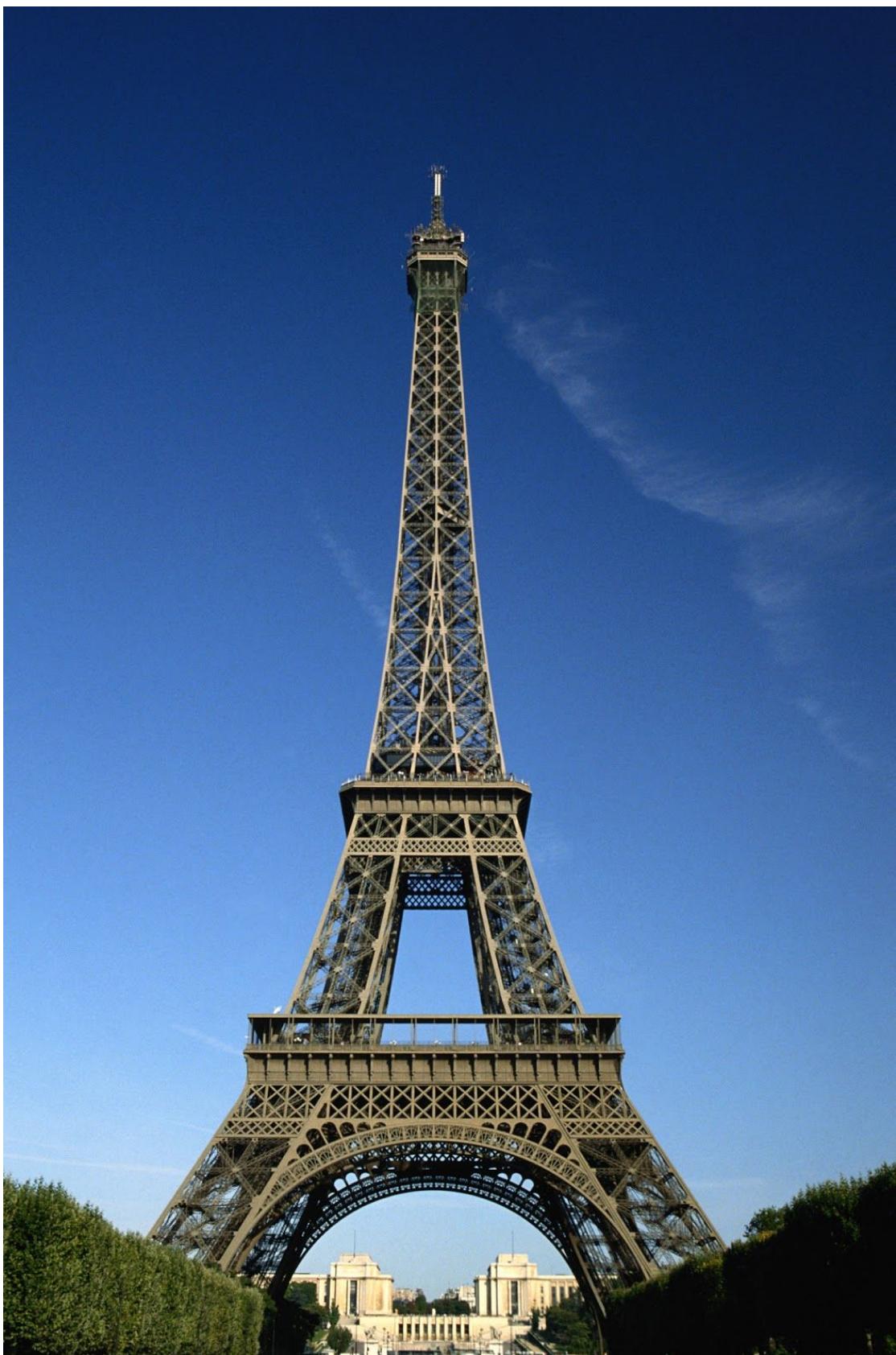
### The Taj Mahal



Arguably one of the most beautiful architectural creations in the world, the Taj Mahal really was a labour of love. Located in the city of Agra (ancient capital of the Muslim Emperors' rich empire), its construction was ordered by Emperor Shah Jehan as a promise to his favourite and most beloved wife, Mumtaz Mahal, on her deathbed. It was designed and built in 1630 as a material representation of woman, as a symbol of the Emperor's love for his wife and later became their tomb. Persian architect Ustad Isa designed the monument, which was then constructed by a workforce of over twenty thousand masons, craftsmen, sculptors and calligraphers, mainly from Persia and Europe. The mausoleum's beauty is evident not only in its structure but also in its carefully designed surroundings such as the river, garden and the main gates. Detailed artwork and inlaid gemstones add to the intricate elegance and femininity of the building. Visitors often take their time viewing this grand symbol of eternal love, which impresses romance and spirituality upon those that behold it.

*'Our architecture reflects truly as a mirror'* Louis Henri Sullivan

### The Eiffel Tower



Another such architectural creation renowned for conjuring feelings of romance and love, but from a more modern and functional perspective, is the Eiffel Tower. This world famous landmark, consisting of 7000 tons of iron latticework, was built in 1887 and took 2 years to complete. It was designed by structural engineer

Alexandre Gustave Eiffel and architect Stephen Sauvestre and was opened at the 1889 Universal Exhibition and Centennial of the French Revolution by the then Prince of Wales (later to become King Edward VII of England) as a celebration of the advances in science and engineering of the time. Testament to this is the way in which the base pylons, called bents, were specifically designed to support the rest of the structure against the shearing forces of the wind, thus resulting in a sway of only 4 and a half inches in even the strongest gales. Despite being the tallest structure in the world at the time, its proposed construction was initially met with fierce controversy, so much so that a petition was delivered to the French government in protest. It was unsuccessful, of course, and construction went ahead as planned. Today it is recognised as an integral part of the French capital, often serving as inspiration for romantic writers and poets and regarded with admiration and awe by tourists and locals alike.

*'A doctor can bury his mistakes, but an architect can only advise his clients to plant vines'* Frank Lloyd Wright

### The Sydney Opera House



Australia's claim to architectural fame comes in the form of what appears to be a grand ship in full sail on Bennelong Point of Sydney Harbour. In the late 1950s, the New South Wales government launched a competition for the design of the Opera House, which was won by Danish architect Jorn Utzon. However, his original design was deemed impossible to construct due to the nature of the structure's main feature: its 'sails'. Utzon reworked his design, which was finally finished in 1961. Problems persisted, though, when the government threatened to halt construction due to lack of funding. This was the last straw for Utzon, who resigned from the project in 1966. Construction was later continued by others and finally completed in 1973, officially opened by Queen Elizabeth II on the 20<sup>th</sup> of October. The spectacular roof design consists of 2194 pre-cast concrete sections, weighing up to 15 tons each and covered

with over 1 million tiles. The interior boasts 1000 rooms, including several concert halls and even a restaurant. Thousands travel to Sydney every year, not only to view one of the 3000 events held in the Opera House, but also simply to enjoy this architectural marvel.

*'Architecture is the art of how to waste space'* Philip Johnson, New York Times

### The Millennium Dome



Perhaps the most controversial monument of today, the Millennium Dome is situated on the Greenwich Peninsula of London, England. As the name suggests, it was originally designed, by architect Richard Rogers, to celebrate the New Millennium and was thus opened on the 31<sup>st</sup> of December 1999. The white roof of the structure, with a maximum height at its centre of 50 metres, is composed of a fibre-glass material coated in Teflon, which surprisingly weighs less than the air inside the Dome itself! Twelve yellow steel towers 100 metres high support the building. Criticism began in the planning stages of the Dome, as people believed the money could be better spent on other, more deserving ventures, such as attempting to solve the growing problem of homelessness in the British capital, rather than on an extravagant construction for a one-off occasion. Such views were fuelled when government power changed hands from the Conservatives to the Labour party, leaving the developers with little but sketchy ideas as to what was to be contained within the Dome. What resulted was a division of the interior into 14 sections, representing different aspects of British culture and its technological developments and issues relating to the changing face of humanity. At the centre, a stage was constructed to host the millennium celebrations, with a performance by singers and acrobats that was repeated 999 times over the year the Dome was open. The number of visitors was predicted to be 12 million over the course of the year, but with a true figure of just 6.5 million, opinions that the whole idea had been a huge waste of money and resources seemed justified, especially considering there were no plans for the Dome after 2000. With London recently announced as host for the 2012 Olympic Games, current plans are for a refurbishment of the Dome, where events such as artistic gymnastics, trampolining and the basketball finals are projected to be held.

General opinion is still very critical of the Millennium Dome, with the structure viewed by many as a symbol of the inadequacies of British government.

*'Architecture is the learned game, correct and magnificent, of forms assembled in the light'* Le Corbusier

### The Campo Volantin Footbridge



Located in Bilbao, Spain, this stunning piece of architecture was originally designed by architect Santiago Calatrava as a replacement for a previous footbridge that had been deemed structurally unsound. Calatrava was commissioned by the Bilbao authorities to design the bridge in such a way so as to maintain the symbolism portrayed by the original bridge: that of the trade relationship between the areas on either side of the river Nervion. Constructed in 1990 and completed in 1997, the 'Zubizuri', or 'white bridge', measures 246 feet in length and is composed of a steel tubing parabolic 'wave' supported by steel 'spokes', concrete sides and a base that is made, surprisingly, of glass! Many describe the footbridge as 'a joy to walk across' and view the design as a functional object made almost elegant with the addition of the backbone-like wave feature.

*'The mother art is architecture. Without architecture of our own we have no soul of our own civilisation'* Frank Lloyd Wright

It seems, as time has progressed, that architecture has become more focussed on functionality rather than spirituality. While much speculation surrounds the inspiration behind Stonehenge and The Great Pyramid of Giza, most agree that they were intended for spiritual or religious worship. It is also evident that the great effort

that these first two monuments required to transport the materials and achieve construction using manpower alone signifies a deep-seated belief in the works. It also indicates that labour efforts were not regarded as significant as the reason and need for the creation, which did, nonetheless, result in an extremely high level of structural craftsmanship. Focus then shifts more towards functionality with the Taj Mahal and, in particular, The Leaning Tower of Pisa. Inspiration for the Taj Mahal still demonstrates a strong link with spirituality and deep emotion, though in the end the building serves as a tomb. The initial intentions for The Leaning Tower of Pisa were for a bell tower to accompany the nearby cathedral, it just so happens that the events that occurred during its construction lent it a more spiritual significance. A similar story can be attributed to The Eiffel Tower, which received much criticism from the very beginning and only attained its image of love and romance in retrospect. Emotional influence is still evident in the Sydney Opera House, with its billowing sail-like roof structures, but, again, intentions were strictly functional, with much of the original design by the architect lost or abandoned. This was not the case for Calatrava, however, with his Campo Volantin footbridge, as he seems to have injected his inspirational artistic license into the piece, much to the pleasure of its supporters. The Millennium Dome could be regarded as one of the most controversial architectural creations of our time, not to mention the general opinion of it being an unpleasant monstrosity and focus is more on its expense rather than its pleasing emotional effects, if any! It seems a shame that today's architecture, in general, does not appear to reflect any spiritual or religious beliefs or ideas. Money has become a major factor when contemplating new creations and functionality appears to be the main drive. Perhaps a happy medium can be reached, as demonstrated by Calatrava, where functionality and spirituality can come together for future developments, as recognition of the importance of both aspects in the representation of modern times.

© Sarah McIver

### **References:**

- <http://www.britannia.com/history/h7.html>
- <http://witcombe.sbc.edu/earthmysteries/EMStonehenge.html>
- <http://www.christiaan.com/stonehenge/index.php>
- <http://www.plim.org/greatpyramid.html>
- <http://www.gizapyramid.com/>
- <http://ce.eng.usf.edu/pharos/wonders/pyramid.html>
- [http://en.wikipedia.org/wiki/Leaning\\_Tower\\_of\\_Pisa](http://en.wikipedia.org/wiki/Leaning_Tower_of_Pisa)
- [http://torre.duomo.pisa.it/index\\_eng.html](http://torre.duomo.pisa.it/index_eng.html)
- <http://www.endex.com/gf/buildings/ltpisa/ltpisa.html>
- <http://www.taj-mahal.net/>
- <http://ce.eng.usf.edu/pharos/wonders/Forgotten/tajmahal.html>
- <http://www.angelfire.com/in/myindia/tajmahal.html>
- <http://www.discoverfrance.net/France/Paris/Monuments-Paris/Eiffel.shtml>
- <http://www.endex.com/gf/buildings/eiffel/eiffel.html>
- <http://www.paris.org/Monuments/Eiffel/>
- <http://www.cultureandrecreation.gov.au/articles/sydneyoperahouse/>
- <http://www.sydney.com.au/operahouse.htm>
- [http://en.wikipedia.org/wiki/Sydney\\_Opera\\_House](http://en.wikipedia.org/wiki/Sydney_Opera_House)
- <http://www.britannia.com/travel/top/millendome.html>
- [http://en.wikipedia.org/wiki/Millennium\\_Dome](http://en.wikipedia.org/wiki/Millennium_Dome)
- <http://architecture.about.com/library/blmilldome.htm>
- <http://www.calatrava.info/viewWork.asp?ID=14>

[http://www.greatbuildings.com/buildings/Campo\\_Volantin\\_Footbridge.html](http://www.greatbuildings.com/buildings/Campo_Volantin_Footbridge.html)

[http://en.wikipedia.org/wiki/Campo\\_Volantin\\_Footbridge](http://en.wikipedia.org/wiki/Campo_Volantin_Footbridge)