

An exploration of the influence of art historian Osvald Sirén’s study of Chinese architecture on Jørn Utzon’s design for the Sydney Opera House.

The metaphorical expression of Nature in Jørn Utzon’s design for the Sydney Opera House

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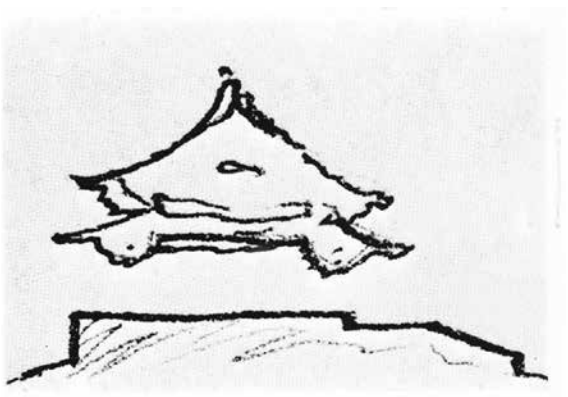
The year 2004 marks an important milestone in the career of Danish architect Jørn Utzon (1918–2008), as the Louisiana Museum of Modern Art in Denmark launched the first retrospective exhibition of his life’s work.¹ For this event, Utzon selected only two books as the summation of his architectural inspiration: one was the 1937 edition of *Billeder fra Kina (Images of China)*, by Osvald Sirén, 喜龍仁 (1879–1966);² the other was the 1925 edition of an ancient Chinese technical treatise on architecture and craftsmanship first published in 1103 CE, *Yingzao fashi*, 營造法式.³ In a documentary film to commemorate the exhibition, Utzon alluded to the significance of *Billeder fra Kina* by presenting two lavishly-printed photographs of the Great Front Hall of the Ancestor Shrine, 太廟, in Imperial Beijing from this book [1]. The roof/earthwork juxtaposition shown in these photographs directly recalls Utzon’s now well-

known sketch of ‘Chinese houses and temples’:⁴ one of the keys indicating the architect’s inspiration and vision for the Sydney Opera House [2].⁵

Previous scholars have pointed out the link between Sirén’s work on Chinese architecture and Utzon’s Opera House design.⁶ However, arguments have largely been presented without much supporting analysis. This article aims to clarify the interrelationship between Sirén and Utzon by explicating Sirén’s interpretation of Chinese architecture and its impacts on Utzon’s design intentions and aesthetic principles, in the creation of the Sydney Opera House (1956–66) – a monument that gives metaphorical expression to ideas of a dualistic Nature, articulated through concepts of Yin and Yang.

The article poses four questions. First, what were the sociopolitical contexts both of Sirén and Utzon’s approach to Chinese architecture? Second, how did Sirén interpret Chinese architecture in his scholarly work? Third, what was the interrelationship between Sirén and Utzon? And fourth, how did Utzon reinterpret Sirén’s concept in his design for the Sydney Opera House? To respond to these questions, the authors surveyed the literature associated with Sirén and Utzon, reviewed their private collections, and undertook interviews with their friends, colleagues, and followers. On this basis, the authors constructed a series of ideological analogies between Sirén and Utzon’s work, with particular emphasis on Utzon’s design for the Sydney Opera House.

In addition, to expand the historiography both on Sirén and Utzon generally and on their approach to Chinese architecture in particular, this article closely explicates Utzon’s inspired design intentions and aesthetic principles. Utzon’s perception of ideas



1 Two pages of Osvald Sirén’s 1937 *Billeder fra Kina (Images of China)*, showing T’ai Miao, The Great Front Hall of the Ancestor Shrine and its interior, Beijing.

2 Jørn Utzon, sketch for ‘Chinese houses and temples’, 1962, the monumental roof/earthwork juxtaposition indicating Utzon’s inspiration and vision for the Sydney Opera House.

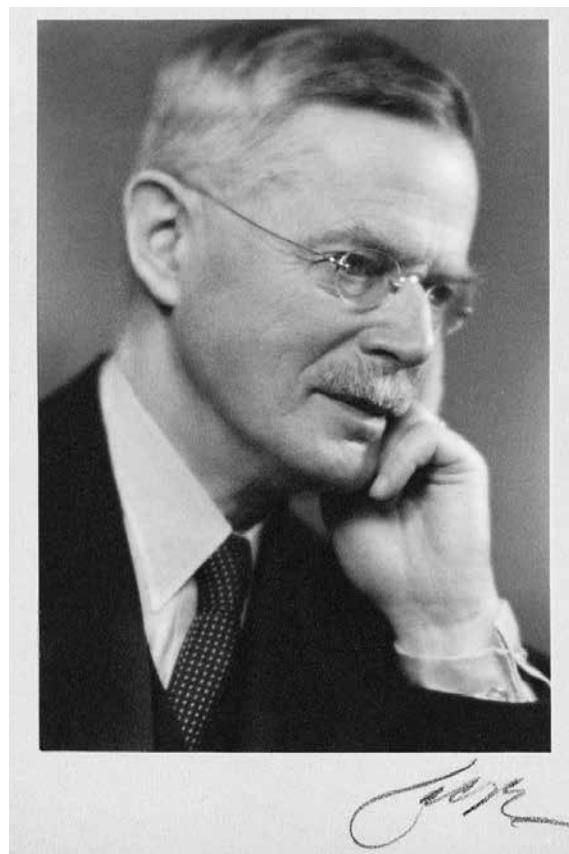
associated with Chinese building culture and his application of these ideas to his designs for Sydney Opera House should be considered in future restoration of the building.

The origin of Sirén's China

Osvald Sirén was born in Helsinki, Finland in 1879 [3]. As the first Scandinavian PhD in the new field of Art History, Sirén's initial academic research focused on the early Italian Renaissance. In 1901, Sirén was employed as an assistant at the National Museum in Stockholm. During this time, he made contact with Bernard Berenson (1865–1959) – the pre-eminent American art historian who specialised in the Renaissance. In 1909, Sirén took up the first professorship of Fine Arts at Stockholm University. The transition of Sirén's academic interest from the Renaissance to Chinese Art was apparent through his first scholarly output on Chinese painting in his 1917 *Rytm och form och andra främter om kinesisk och europeisk målarkonst (Rhythm and Form: Comments on Chinese and European Paintings)*.⁷ The content of this book was largely based on the historical survey by Herbert Giles's (1845–1935), *An Introduction to the History of Chinese Pictorial Art* (1905), and was aligned ideologically with the transcendentalism seen in Ernest Fenollosa's (1853–1908) *Epochs of Chinese and Japanese Art* (1912).⁸

In 1918, Sirén undertook his first field research in China, which was, in large part, motivated by the explorative and archeological approaches of both Sven Hedin, 斯文 海定 (1865–1952), and Johan Gunnar Andersson, 安特生 (1874–1960).⁹ Later, two circumstances further provoked Sirén's passion for Chinese art and architecture. The first was that, in the period following the First World War, China was much more accessible than continental Europe for travel. The other was that Sirén was charged with an advisory role in making acquisitions and authentications for an emerging collection of Chinese art, made under the royal patronage of the Swedish Crown Prince Gustaf VI Adolf.¹⁰ This patronage, combined with Sirén's personal enthusiasm and expertise, has made Stockholm a European centre for Chinese archaeology since the early twentieth century.

Sirén visited China frequently during the 1920s and 1930s. He documented architecture with his camera and purchased select art works for the Swedish Crown Prince. In 1921, he travelled to China for a second time and, in Shanghai, acquired a copy of the 1919 edition of *Yingzao fashi*. He later sent this book to Utzon's uncle, Professor Einar Utzon-Frank (1888–1955), at the Danish Royal Academy, as a mark of their friendship.¹¹ Sirén's frequent visits to China resulted in a series of publications on China during the 1920s and 1930s. In 1924, he issued his first monumental volume – *The Walls and Gates of Peking* – with a highly preservationist, romantic tone in the text, juxtaposed with large, lavishly printed photographs and illustrations.¹² Two years later, Sirén published *The Imperial Palaces of Peking* (1926) both in English and French, in a similarly extravagant format.¹³ In 1927, Sirén published the article 'Tch'angnagn au temps des Souei et des T'ang'



3 A portrait of Osvald Sirén with his signature.

('Chang'an city in the time of the Sui and Tang Dynasties') in *Revue des Arts Asiatiques* – the product of his careful study of city planning in ancient China.¹⁴ In 1929, he published one of the early scholarly surveys of traditional Chinese art and architecture, a summary of his earlier academic writing. It appeared in English as *A History of Early Chinese Art: Architecture* (and in French translation).¹⁵ In 1937, Sirén published *Billeder fra Kina (Images of China)*, both in Danish and Swedish – a sober edition of his early work on Chinese architecture for the general readers in the North.¹⁶ Later, confined to Sweden during the Second World War, Sirén wrote and published his first comprehensive review on Chinese Art in Swedish – *Kina konst under tre Årtusenden (Chinese Art over Three Millennia)*.¹⁷

With a total of 465 publications, mainly in English and Swedish, Sirén's prolific scholarship on China covered vast areas from calligraphy, painting, sculpture, architecture, to gardens and city planning.¹⁸ Sirén's writings were descriptive rather than analytical, and his early scholarship was largely based on German and Japanese studies of Chinese building culture, which Sirén translated and further synthesised with his own work.¹⁹ Meanwhile, the publication of Sirén's books, supported by the Swedish Royal family, reflected the surviving cultural strength of the former absolutist monarchy in the modern democratic era. Afterward, the success of Sirén's books signalled Sweden's readiness and eagerness to embrace a new creative vision resting on a common archaic foundation.

Theosophy in Sirén's China

Before undertaking research work on China, Sirén became an active member of the Theosophical Society in America, which was first founded in late 1875 in New York City and remains in operation today, worldwide.²⁰ The Society is dedicated to the realisation of 'the essential oneness' – a notion of ideological unification between the Nature and ancient cultures that members of the Society promoted as a model that the modern world should embrace.²¹

Sirén's 1917 *Rytm och form* and its analysis of Chinese painting represent the first evidence of his interpretation of Chinese art on the basis of these theosophical beliefs.²² His comparative study on early Renaissance and Chinese painting aims to introduce a universal belief that art:

[...] reflects ideas, emotions, and concepts nourished by its intimate sympathy with Nature in the widest sense of this word; and therefore it [art] also acquires a religious significance.²³

Sirén's study on Chinese painting also conveyed the liberal and optimist view of the Society towards non-European cultures. In particular, Sirén's study strongly reflected the Society's transcultural intention to counteract the then dominant conservative Eurocentrism:

[...] it is only by studying the various great religions and philosophies of humanity, by comparing them dispassionately and with an unbiased mind, that men can hope to arrive at the truth. It is especially by finding out and noting their various points of agreement that we may achieve this result. For no sooner do we arrive – either by study, or by being taught by someone who knows – at their inner meaning, than we find, almost in every case, that it expresses some great truth in Nature.²⁴

After *Rytm och form*, Sirén published several articles to portray and promote Chinese art as a theosophical model, to the readers of the Society journal, *The Theosophical Path*.²⁵ These journal articles were Sirén's philosophical foundation for representing Chinese architecture as a theosophical manifestation. This is evident in Sirén's introduction in *The History of Early Chinese Art: Architecture*:

The development of architecture in China has since the earliest times been largely determined by intimate contact with nature, which to the Chinese, as to many other ancient peoples, was ensouled. They planned their buildings with reference to the spirits of the earth, the water and the wind, they built their palaces according to heavenly constellations and they dedicated their earliest sanctuaries, which were simply open-air altars, to the gods of the soil. Their activity as builders just as well as their religious ideas reflect a search for co-ordination with nature which also has been of great importance for obtaining artistically successful results [...].²⁶

Sirén's study on Dutch Sinologist and religion historian Jan Jakob Maria de Groot's, 高延 (1854–1921), *The Religious System of China* (1892–1910) provided him with a conceptual framework through which to align Chinese architecture with his Theosophical belief.²⁷ De Groot defined the religious

system in China as 'animism', 'an animated Universe', and 'creating [not created] by the operation of its Tao, and composed of two souls' – the 'Yang and Yin'.²⁸ To de Groot, 'the Yang represents light, warmth, production, and life, as also the celestial sphere from which all these blessings emanate; the Yin is darkness, cold, death, and the earth [...]'.²⁹ Sirén directly followed this animist and dualist idea in his writing and summarised Chinese architecture as a synthesis presenting the creative forces of Yin and Yang, saying:

One may trace in their architectural activity just as well as in their pictorial and decorative arts a striving to express something of the life-impetus, the movement or the creative forces (Yin and Yang) which they found everywhere, though such endeavours are, indeed, modified by practical and constructional ideas.³⁰

In *Billeder fra Kina*, Sirén further explained Yin and Yang as two combined and contrasting elements, which were in parallel with de Groot's concept:

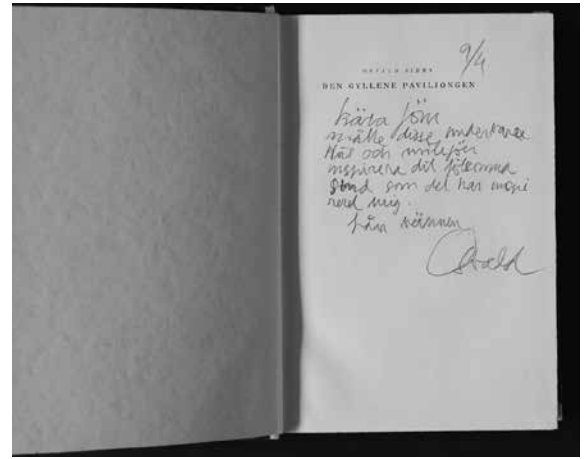
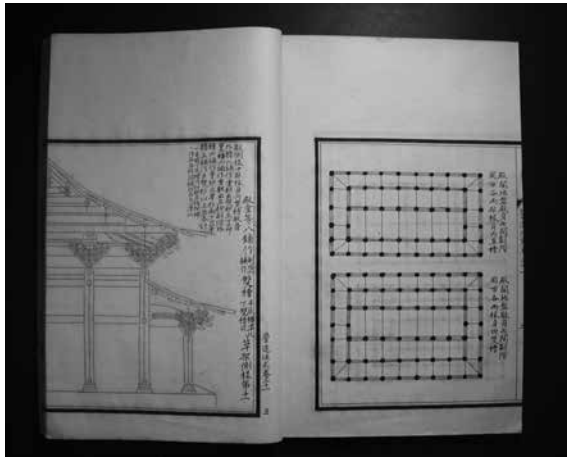
Chinese call the positive creative principle – Yang principle. It represents light, heat, sun and all that these concepts with productive power in both spiritual and material respects. The opposite principle is Yin, which is negative, representing the darkness, earth, moon, a suspension or absorbing force, in contrast with the power of positive energy. Yang principle is symbolized by the dragon, Yin by the tiger; the colour of the former is orange, the latter is green or deep blue. When these two basic elements are brought into harmony, happiness and prosperity prevail in the Middle Kingdom and the people live in peace.³¹

Sirén's approach to China and his conceptualisation of Chinese architecture as a theosophical manifestation of the Nature generally and as the Yin-Yang creation in particular, provided young Utzon with an important channel for understanding this subject from the very beginning of his career.

Sirén's China in Utzon

Utzon's initial interest in Chinese building culture was encouraged by Professor Utzon-Frank's extensive collection of Chinese antiquities. As evident in his sculpture work, Utzon-Frank was a proponent of critical primitivism and exoticism. His creativity found focus away from the then dominant French Art Nouveau movement. Utzon's eldest son, Jan Utzon, explained: 'My grand-uncle told my father to search for inspiration from the unknown East culture, instead of the West with which we were more familiar.' Utzon first came across Sirén's *Yingzao fashi* at Utzon-Frank's studio, before he entered the Royal Danish Academy in 1937 [4]. Later, this book was donated to the Academy's library, where Utzon might have once again encountered as a student of the Academy.³²

Soon after Utzon's graduation in 1942, Denmark was occupied by Nazi Germany. During this period, 1937–45, the Chinese were fighting Germany's ally, the Japanese Imperial forces. Utzon's patriotism and nationalism strengthened his cultural and political sympathy with and empathy for China.³³ The architectural historian, Tobias Faber (1915–2010), one of Utzon's lifelong friends, was in Stockholm with



4 Einar Utzon-Frank's 1919-edition *Yingzao fashi* in the Library of School of Fine Arts (Danish National Art Library, the original Library of School of Architecture).

6 Utzon's 1919 *Den Gyllene paviljongen, minnen och studier från Japan* (The Golden Pavilion, memories and studies from Japan) written and given by Oswald Sirén who wrote: 'Dear Jörn, I hope these wonderful houses and surroundings will inspire you as much as they have inspired me. your friend Oswald'.

5 Jørn Utzon (left) and Tobias Faber (right) at Stockholm in 1945, wearing military uniform and preparing their trip back to Copenhagen with Danish Defense.

7 Jørn Utzon, the front court Three Large Halls (left), the Three Large Hall (middle) and the northwest corner of Taihe Dian (the Hall of Supreme Harmony, the Major Hall of the Three Large Halls) (right) in the Forbidden City of Beijing, 1958.

Utzon during the war [5], and recalled, in interview: 'Compared with Sweden, Denmark was more isolated at that time. So, in Stockholm, Utzon and I discovered real China together!'³⁴ During this time, they acquired and studied Sirén's early works on Chinese architecture, including *The Walls and Gates of Peking*, *The Imperial Palaces of Peking*, 'Tch'angnagn au temps des Souei et des T'ang', *A History of Early Chinese Art: Architecture*, and *Billeder fra Kina*.³⁵

Utzon and Faber also visited the Museum of Far Eastern Antiquities, which was dedicated to early Chinese decorative art, and studied Chinese paintings at the Department of Painting in the

National Museum of Fine Arts, where Sirén was the Keeper (curator).³⁶ They also studied the items relating to ancient China at the Swedish Museum of Ethnography, founded by Hedin, including its first Japanese tea house – Zui-Ki Tei 瑞輝亭, inaugurated in 1935, though they had less interest in Japanese architecture at that time because they considered it to be more degenerate.³⁷

After the Second World War, Utzon and Faber met Sirén in Copenhagen to discuss Chinese architecture with him, particularly in relation to Chinese dualism and its metaphorical expression of Nature.³⁸ Sirén gave Utzon his scholarly work *Den Gyllene paviljongen, minnen och studier från Japan* [*The Golden Pavilion, Memories and Studies from Japan*] (1919) to mark their

friendship [6].³⁹ Utzon planned his later 1958 trip to China, based on information in Sirén's books. This is the same period when Utzon was drafting the competition drawings for the Sydney Opera House.⁴⁰

In 1957, Utzon won the first prize in the Sydney Opera House competition, and travelled to Australia for the first time. On his way back to Denmark, he made his first visit to Japan.⁴¹ This helped Utzon affirm his decision to visit China – a communist regime in the midst of the Cold War – because 'China is [just] next door to Japan.'⁴² The following year Utzon travelled to China, on his way back to Denmark, after his second visit to Australia. During this two-month tour of China, with Norwegian architect Gier Grung (1926–89), Utzon visited most of the buildings and historical sites documented in Sirén's *A History of Early Chinese Art: Architecture, Billeder fra Kina* and *Kina kunst under tre Årtusenden*.⁴³ These include the historical sites in rural areas of central China and monuments in Imperial Beijing [7].⁴⁴ While he was in Beijing, Utzon acquired two copies of the 1925 edition of *Yingzao fashi* with the help of Professor Liang Sicheng (1901–72), a colleague of Sirén.⁴⁵ These experiences would have affirmed the importance of Sirén's early work in influencing Utzon's perception of Chinese building culture. The tour would also have put Utzon in good stead when approaching the design of the Sydney Opera House, a design in which he incorporated ideas that emerged through his study of Sirén's work and Chinese architecture.

Expressing the metaphor of Nature

According to Sirén, the monumental earthwork was the outstanding element of Chinese building culture. Sirén presented two case studies to demonstrate his point: the walls, and the sacrificial altars and terraces.⁴⁶ To Sirén, Chinese walls, are 'more than an ordinary architectural monument' or 'defence structures'.⁴⁷ They 'impart a unified and monumental architectural character' and constitute a fundamental feature of the Chinese villages, cities, and the whole realm.⁴⁸ He explained:

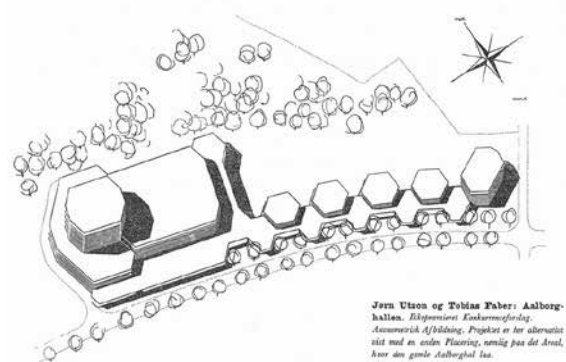
*Walls and more walls, constitute, so to speak, the skeleton or groundwork of the Chinese community. They encircle it; they divided it up; and they dominate it more than any other structure. There is no real town in China which is not surrounded by a wall, as also appears from the fact that the Chinese use the same word, ch'eng, to designate a town and a town wall. A town without a wall is for them as inconceivable as a house without a roof.*⁴⁹

To Sirén, the Chinese sacrificial altars and terraces 'closely related to the walls', and 'perpetuate the most primitive form of religious architecture in China'.⁵⁰ Sirén emphasised their 'architectural appearance' and their important role in the religion of feudal China:

The fact that there are still such open-air altars and that the sacrifices were continued during the whole run of Chinese history, in spite of many sweeping religious innovations and reforms, is in itself a remarkable proof of the fundamental importance of these places to the Chinese people. These altars typified, so to say, the

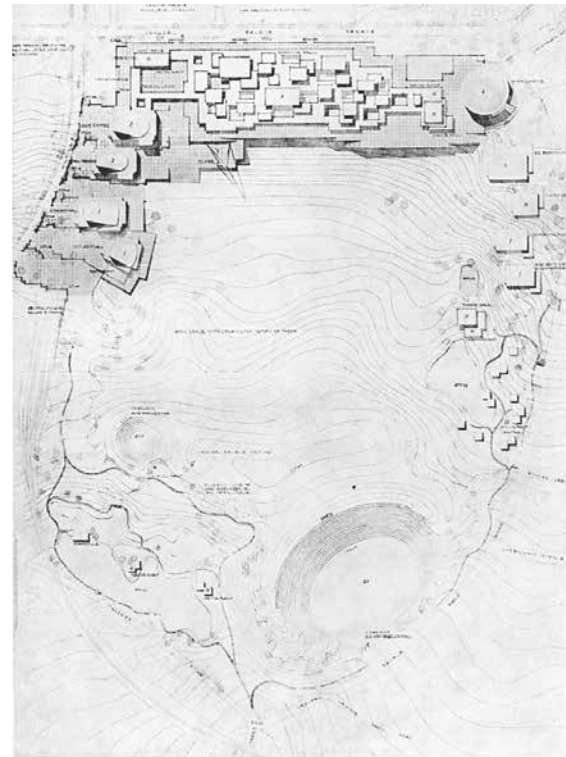


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Jørn Utzon og Tobias Faber: Aalborg-hallen. Eksplicit konkurrenceforslag. Annuerisk Afhandling, Projektet er her alteret sit med en anden. Placering, nemlig paa det Areal, hvor den gamle Aalborggård laa.

9



Tobias Faber, Mogens Irming og Jørn Utzon: Konkurrenceforslag til Crystal Palace i London. Situationsplan

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8 Oswald Sirén, the city wall and gate tower of Yongdingmen 永定門 (The Gate of Eternity) of Imperial Beijing.

9 Jørn Utzon and Tobias Faber's 1945 competition proposal for the Aalborg Convention Centre.

10 Tobias Faber, Mogens Irming og Jørn Utzon's 1946 competition proposal for the Crystal Palace.

*emperor's position as the spiritual head of the people, and the great sacrifices which were performed here, either by himself or by his representatives, were the means by which the life of the nation was brought in harmony with the guiding powers and the inherent laws of nature.*⁵¹

Sirén's study also noted that the city walls of Imperial Beijing were constructed in the same fashion as the sacrificial altars, terraces, and the Great Wall. The wall in Chinese architecture became not only the most important element, but also the most permanent and most imposing structures of Chinese capital city.

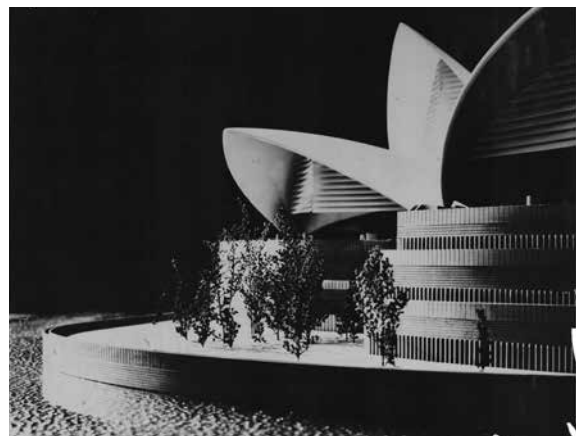
Sirén's notion of 'walls' resonated well with Utzon. In his 1947 'Tendenser i Nutidens Arkitektur' manifesto, jointly written with Faber, Utzon reproduced Sirén's photograph of the city wall and gate tower of *Yongdingmen* 永定門 (the Gate of Eternity) of Imperial Beijing [8]. Utzon and Faber considered this structure as sharing a common foundation with their own architectural design, both drawing on inspiration from organic forms and natural phenomena.⁵² Utzon expressed his impression of the terrace-like Chinese wall in a caption for Sirén's photographs:

*Chinese wall, whose individual strength is so great that, even the highly-detailed tower is controlled by the wall, and the tower adapts and enriches the whole.*⁵³

This was not the first time Utzon expressed his affinity for the Chinese walls. Before this manifesto, Utzon had a clear intention in incorporating walls and terraces in design. His competition proposals for the Aalborg Convention Centre in 1945 [9] and the Crystal Palace in 1946 [10], both collaborations with Faber, were the two most expressive projects using wall as a major design element. The former had a series of bastions reminiscent of the fortification of city walls of Imperial Beijing, and the later set all the main buildings on an urban-scale podium with a strong resemblance to the combination of city walls and gate tower of Imperial Beijing. To Utzon and Faber, the uniformity and monumentality of walls generated a sense of strength, consolidating the expressivity of the proposed building and its site.⁵⁴ This explains the formal analogy between Utzon's Sydney Opera House and *Yongdingmen* – both projects depend on curved walls and monolithic volumes, set at the extruding waterfront site on the edge of town [11].

Utzon's early study of the terrace-like city walls of Imperial Beijing and the sacrificial altars and terraces in China formed part of his broader interest in varied historical and monumental earthworks, developed in the late 1940s and 1950s.⁵⁵ Utzon reflected and wrote about ancient platforms in Mexico, India, China, Japan, and the Middle East in his 1962 'Platforms and Plateaus' manifesto. He conceived these platforms as a universal statement on the intimacy between human cultures and Nature – a strong echo of Sirén's Theosophical belief. This is also the fundamental architectural principle in his Sydney Opera House design. Utzon wrote:

The platform as an architectural element is a fascinating feature. I first fell in love with it in Mexico on a study trip in 1949, where I found many variations,



¹¹ Jørn Utzon, his own photograph on an early model of the Sydney Opera House, 1957-8.

both in size and idea of, the platform, and where many of the platforms are alone without anything but the surrounding nature.

All the platforms in Mexico were positioned and formed with great sensitivity to the natural surroundings and always with a deep idea behind. A great strength radiates from them. The feeling under your feet is the same as the firmness you experience where standing on a large rock.

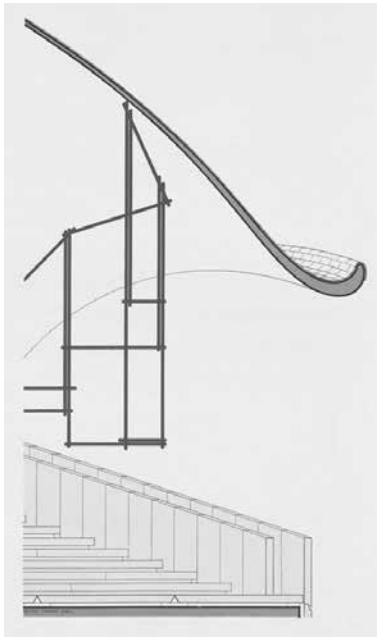
*By introducing the platform with its level at the same height as the jungle top, these people [of Mayans] had suddenly obtained a new dimension of life, worthy of their devotion of their God. On these high platforms – as long as 100 meters, – they built their temples. They had from here the sky, the clouds and the breeze, and suddenly the jungle roof had been converted into a great open plain. By this architectural trick they had completely changed the landscape and supplied their visual life with a greatness corresponding to the greatness of their Gods.*⁵⁶

To further explain his perceived use of platforms in China, Utzon wrote:

*Chinese houses and temples owe much of their feeling of firmness and security to the fact that they stand on a platform with the same outline as that of the roof or sometimes even of larger size, depending upon the importance of the building. There is magic in the play between roof and platform.*⁵⁷

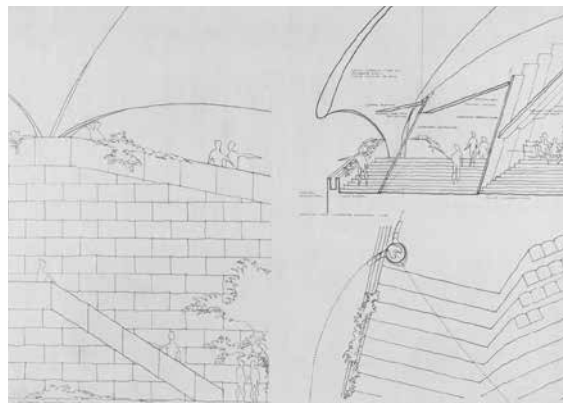
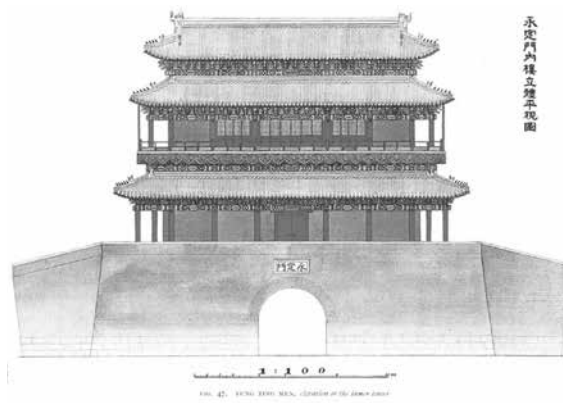
It seems that Utzon didn't stress his perception of Chinese architecture in great detail, possibly due to the sociopolitical censorship during the Cold War. In fact, Utzon never published any material related to his 1958 trip to China during his whole career. Nonetheless, Utzon's conceptualisation of Chinese architecture as a monumental roof/earthwork juxtaposition is directly in parallel with Sirén's idea. Through studying Sirén's work, as well as through his travel experiences, Utzon must have understood that there were no palaces and temples in China without 'the support of a terrace'.⁵⁸ This is because 'the ancient religious traditions of China' required that 'the more important the building, the larger and finer the terrace'.⁵⁹ Therefore, Utzon's now

12 Jørn Utzon, 'Section through shell'. Detailed section showing the proposed red mullion of movable glass walls on the two lateral sides of the Opera House, 1958.



13 'Yung Ting Men (the Yongdingmen), elevation of the inner tower' (above) and 'Yung Ting Men (the Yongdingmen), elevation of the outer tower' (below), in Osvald Sirén's *The Walls and Gates of Peking*.

14 Jørn Utzon, the original competition drawing for the Sydney Opera House – 'Exterior Elevation; Section and Interior Elevation', 1956.



famous sketch of 'Chinese houses and temples', with an expressive roof floating above a platform [2], was a visualisation of Sirén's notion:

*The architectural importance of the terraces in China is, indeed, of such a fundamental kind and wide range that it is hardly surpassed by any other feature of Chinese architecture unless it be the roofs.*⁶⁰

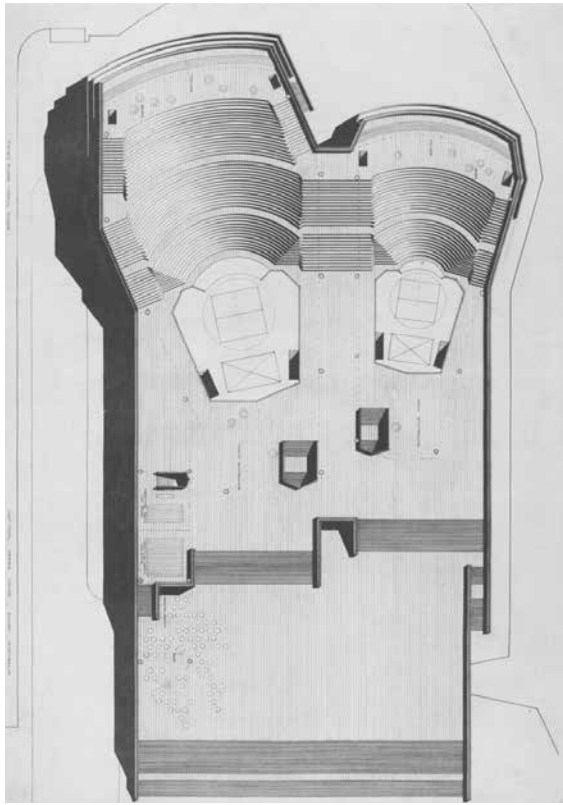
It is important to note that, as emphasised by Sirén, unlike other platform cultures noted in Utzon's 1962 manifesto, Chinese architecture is unique in its embodiment of a monumental roof form.⁶¹ For this reason, Utzon's expressive projection of curved roof shells above an urban-scale podium in the Sydney Opera House design is more closely in line with Chinese architecture than other platform cultures. This supports the analogy between the *Yongdingmen* and Utzon's Sydney Opera House, for both of their multifaceted roof forms were vividly in contrast with the monolithic podium volume below.

Subsequently, Utzon proposed the moveable red glass mullions between his shell/podium juxtaposition, as illustrated in his 1958 *Sydney National Opera House (Red Book)* [12].⁶² Utzon's mullions echoed the painted structural carpentry of the *Yongdingmen* [13]. These analogies with the *Yongdingmen* both aligned and affirmed the monumentality and locality of Utzon's Opera House at Sydney, a harbour city that his now constructed 'walls' and 'gate towers' so proudly represent and guard. For this iconic roof/earthwork juxtaposition of his Opera House design, Utzon explained:

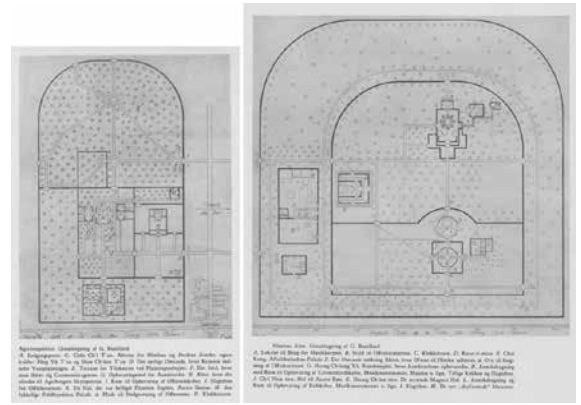
*As shown here in the schemes for the Sydney Opera House [...], you see curved forms, hanging higher or lower over the plateau. The contrast of forms and the constantly changing heights between these two elements result in spaces of great architectural force made possible by the modern structural approach to concrete construction, which has given so many beautiful tools into the hands of the architect.*⁶³

The parallel between Chinese architecture and the Opera House could not have come without Utzon's

careful study of Sirén's work. According to Sirén, the earliest altar in ancient China was dedicated to the god of the soil and was representative of the remote holy mountains in the settled countryside.⁶⁴ Over time, the original primitive mounds or altars were transformed into permanent masonry platforms and monumental terraces.⁶⁵ These altars also became attached to the Imperial palaces, where the emperor – the Son of Heaven and spiritual father of the nation – had the right to offer sacrifices to the great divinities of Nature.⁶⁶ The analogy between sacred Altars and the Earth could explain why Utzon initially proposed an urban-scale podium with yellow sandstone-cladding to emphasise the 'stone-character' of the Bennelong Point in his competition scheme [14].⁶⁷ Rhetorically, the Opera House podium could be seen as rising from the site largely consisting of rocks, and being lifted by a series of steps and terraces [15]. The feature of Utzon's one-hundred-metre wide grand steps, leading to the



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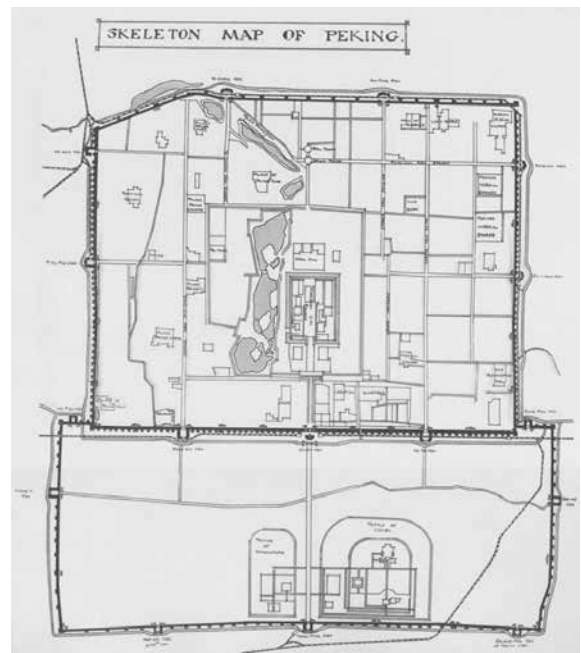
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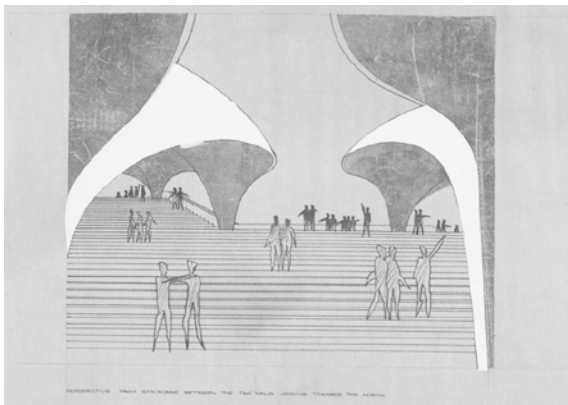


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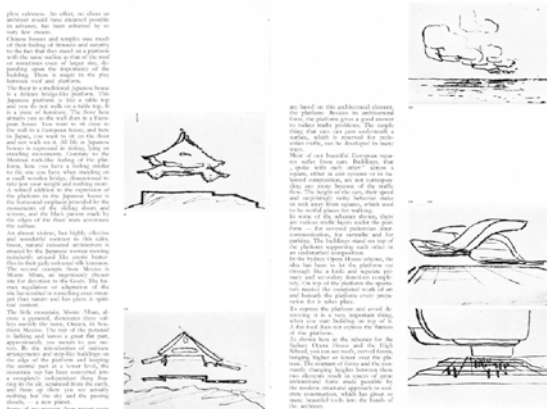
- 15 Jørn Utzon, the original competition drawing for the Sydney Opera House – 'Third floor, main floor', 1956.
- 16 'The Imperial Pathway in front of Tai Ho Tien (Taihedian) (The Supreme Harmony Hall), seen from below', in Osvald Sirén's *The Imperial Palaces of Peking*.
- 17 G. Bouillard, drawings for the Altar of Agriculture (left) and The Altar of Heaven (right) in Osvald Sirén's *Billeder fra Kina*.
- 18 'Peking, Tien Tan (Beijing, the Altar of Heaven)', in Osvald Sirén's *Billeder fra Kina*.
- 19 Osvald Sirén, the map of Imperial Beijing.



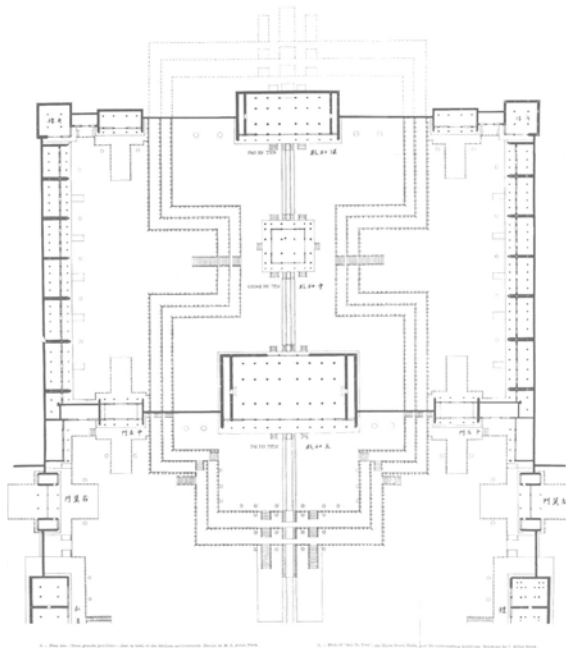
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20 Jørn Utzon, the original competition drawing for the Sydney Opera House – ‘Perspective, from staircase between the two halls looking towards the North’, 1956.

Plateaus’ manifesto, showing his sketches indicating inspiration and vision for the Sydney Opera House, 1962.

23 ‘Plan of “San Ta Tien (Sandadian)”’, the Three Great Halls (the Three Large Halls), and the surrounding buildings. Drawing by Albin Stark’, in Oswald Sirén’s *The Imperial Palaces of Peking*.

21 Utzon, two pages from the architect’s ‘Platforms and

22 Jørn Utzon, the cladding both of glazed and un-glazed white ceramic tiles on the shell vaults of the Sydney Opera House.

fifteen-meter high podium, also coincides with Sirén’s impression of the stone-paved stairway in Chinese platform [16]:

*Their great width (in proportion to the height) and their gentle slope give an impression of commodity and ease. The steps are low and deep, necessitating a slow and measured ascent.*⁶⁸

Sirén also provided a detailed study on the Altar of Heaven, 天壇 and the Altar of Agriculture, 先農壇, complex in Imperial Beijing [17].⁶⁹ He highlighted that the two south-facing Altar complexes were juxtaposed with each other on the southern edge of Imperial Beijing and were aligned to Beijing’s south-north central axis. Both of the complexes were defined by the walls, with a curved northern outline, symbolising Heaven, in contrast to the angular southern boundary, symbolising the Earth. This interplay of shape and sacredness is also shown in Utzon’s planning of the Opera House site, where he kept the curved northern edge but removed the eastern piers of the Bennelong Point to achieve a

mirroring effect to the U-shaped outline of the two Imperial Altar complexes, possibly with the intent to recreating the symbolism of Nature [15]. Arguably, Utzon seems to ignore the different hemispheres of Beijing and Sydney where the Sun is in the North and the Opera House is south-facing. To Utzon, it was possibly more important that the reshaping of the site created a ‘sacred’ Bennelong Point where its own ‘altar’ – the Opera House podium with curved and tiered terraces – is reminiscent of the podium of the Altar of Heaven [18].

Utzon could also have identified with Sirén’s use of Chinese cosmology and celestial belief in defining the ideological basis of the site layout of Imperial Beijing.⁷⁰ First, Utzon must have understood the naming origin of the Purple Forbidden City – Tzu Chin Cheng, 紫禁城, which was named after a literary allusion to the ‘purple’ northern pole star or Tzu Wei Hsing, 紫微星. The Purple Forbidden City was the Imperial residence for the emperor. The Chinese of the time regarded it as the centre of the terrestrial world, just like the central position of the Northern Pole star in the celestial world. For this reason, all the main palaces and shrines in the Purple Forbidden City were south-facing, like the northern pole star and the emperor facing the citizens coming from the

south of the Imperial Beijing's central boulevard, symbolically connecting the Earth and the Heaven, as well as the secular and the sacred world [19].

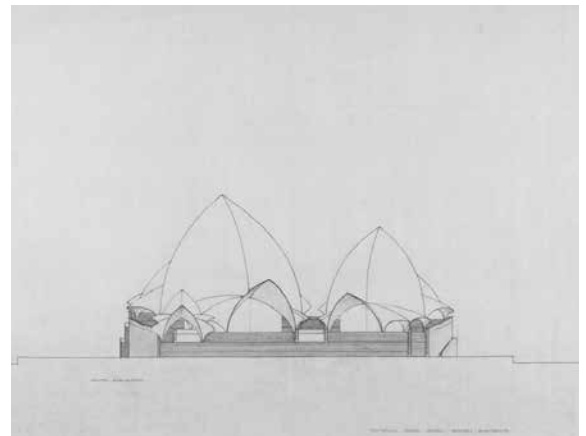
Utzon's understanding of Imperial Beijing was emulated in his competition perspective drawing in pencil and gold-leaf [20]. He set the south-north oriented central passage between the two performance theatres, so as to create an experience of 'a festival procession' for the visitors as they make pilgrimage towards the northern sky [15].⁷¹ Utzon's two south-facing performance theatres, with their curved walls at the northern edge, further reminisce with the juxtaposition of the two Imperial Altar complexes on the two sides of Beijing's central boulevard.

Utzon's Opera House roof/earthwork juxtaposition may be seen as an expression of the duality of earth and sky articulated in built form. Such an intention seems indicated in the correlation between Chinese roof and podium in one sketch, and the moving clouds above the oceanic horizon in another, both from his 'Platforms and Plateaus' manifesto [21]. Utzon's analogy between Chinese roof and clouds could be one of the reasons for him proposing the cladding of white ceramic tiles on the shell roofs in his 1957 competition proposal. Over the next three years, Utzon meticulously studied roof tiles collected from China and Japan with a Swedish tile manufacturer, Höganas. After a much protracted construction process to transform the roof from the early proposed shell membranes to shell vaults, Utzon finally announced in 1964 the commencement of the last stage of roof construction, using both the glazed and unglazed white square ceramic tiles as the elements for roof cladding [22]. Utzon explained:

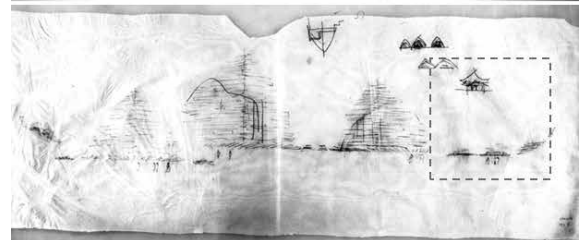
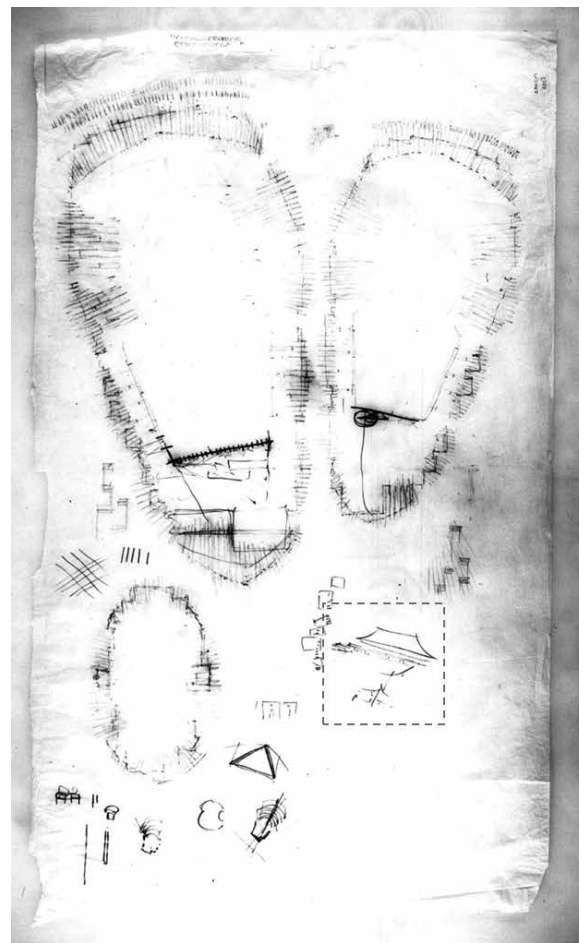
The material would have to be sought in the building of the ancient world, which has stood up to many years use without deterioration, but has aged and acquired harmonious patina, and the only material that would satisfy such demands was found to be the ceramic tile.

*Studies were carried out in the homelands of the art of ceramics, China and Japan, from where I brought back samples for further studies of textures, colours, glazes, etc.*⁷²

Utzon's decision to take inspiration from the ceramic art of China and Japan, could have come from Sirén's scholarship on Chinese roof tiles, particularly his work on their symbolism.⁷³ Sirén noted that roof tiles with vibrant colours were exclusively reserved for Imperial use in feudal China. They represented the superiority and sacredness of the feudal monarchy and religion – certain glazed ceramic tiles were applied both to enforce the grading of building typologies and hierarchies, and to symbolise natural phenomena. For example, yellow-gold glazed tiles were only used in the Imperial court, as, for example, in the Three Large Halls, 三大殿, at the centre of Purple Forbidden City. Here they symbolise the earth and the emperor [7]. Blue glazed tiles were only used in the Altar of Heaven complex, where they symbolise Heaven and God – they were superior to the yellow-gold. Utzon



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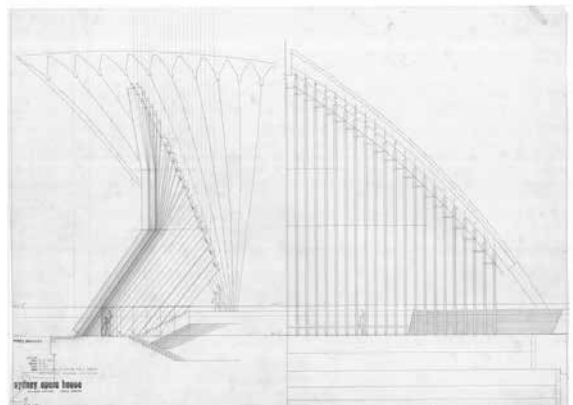
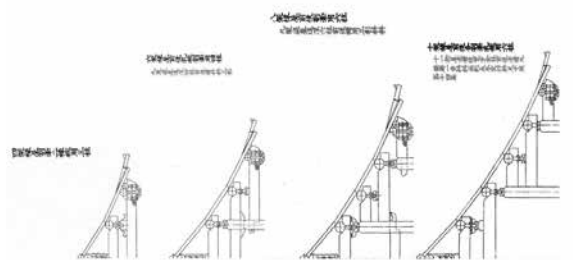
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24 Jørn Utzon, the original competition drawing for the Sydney Opera House – 'South Elevation', 1956

25 Jørn Utzon, two of his preliminary conceptual sketches of the Sydney Opera House with accompanying drawings of the Three Large Halls.



26 LE TRÔNE IMPÉRIAL ET LES COLONNES DÉCORÉES AU TAI HO TIEN. THE IMPERIAL THRONE TOGETHER WITH THE DECORATED COLUMNS IN TAI HO TIEN.



26 'The Imperial throne together with the decorated columns in T'ai Ho Tien (Taihedian, the Hall of Supreme Harmony)' in Osvald Sirén's *The Imperial Palaces of Peking*.

27 The curvature Chinese roof frames extracted from Utzon's *Yingzao fashi* (above), and 'Glass walls Major Hall North' (1965) of the Sydney Opera House, showing

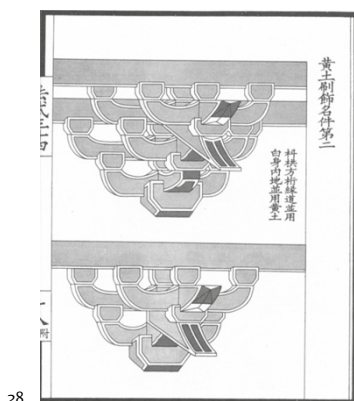
Utzon's later developed geometric principle for the northern glass walls of two Main Halls (below).

used the white ceramic tiles 'symbolically', to present 'nature's colour' and to establish the Opera House shell vaults as 'clouds'.⁷⁴

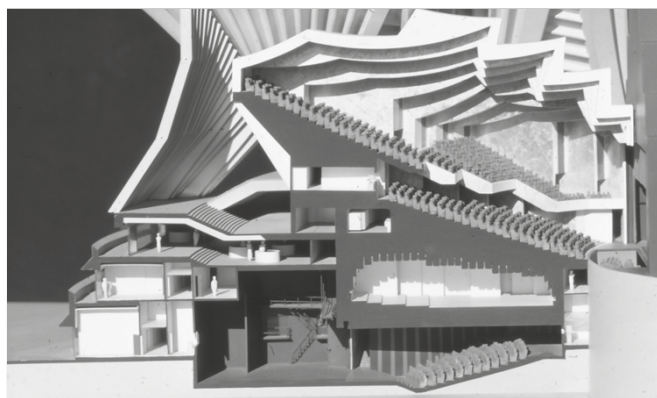
More analogies between the Three Large Halls and Utzon's Opera House design could be found.⁷⁵ As representing the highest status of Imperial Chinese palaces and shrines, the Three Large Halls are built on a white marble clad podium fronting an enormous court to the south. All the Halls are south-facing and built on the central axis of Imperial Beijing. From South to North, these are the Hall of Supreme Harmony, 太和殿 – the major/front hall; the Hall of Central Harmony, 中和殿 – the small/middle hall; and the Hall of Preserving Harmony, 保和殿 – the minor/back hall [23]. In Sydney, the urban scale podium of Utzon's Opera House is also fronting a 'court' to the south. On the Opera House podium, the Major Hall for operas and concerts, the Minor Hall for theatrical plays, and the small hall for a restaurant, are analogous to the composition of the Three Large Halls [24]. In both assemblies, the outward forms of the two main Halls are very similar, and each may be seen as a reflection of the other.

Analogies with the Three Large Halls at Beijing are confirmed by Utzon's conceptual sketches for the glass wall mullions for each group of shell vaults at Sydney [25]. Utzon's sketches show composite sections and elevations of Beijing's Three Large Halls, made in order to study their external form, especially the projecting eaves of their roof volumes. Therefore, it is safe to assert that Utzon's combination of shell vaults and multifaceted plywood mullions at Sydney can be seen as his transformation of the relationship he observed between the roof volumes and projecting bracketing substructure of Beijing's Three Large Halls. This may further explain why Utzon adopted timber as the major material for the Opera House interior in contrast with the stereotomic roof/earthwork juxtaposition outside and reflecting of the carpentry of the Three Large Halls. Moreover, Utzon's early proposal to burnish the soffits of his groups of shells with gold-leaf certainly had a resemblance to the interior of Hall of Supreme Harmony where the golden interior was vividly documented in Sirén's *The Imperial Palaces of Peking* [20, 26].

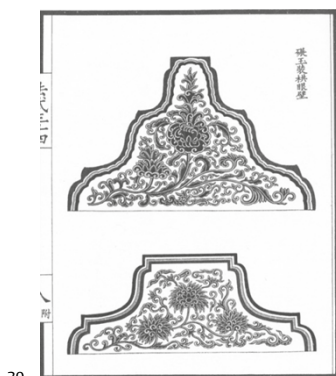
As documented in his own sixteen-millimetre film, in 1958 Utzon spent a lot of his time at the Three Large Halls of the Forbidden City [7]. Following his trip to China, Utzon proposed a type of 'metallic' gold, hot-bonded bronze laminate to cover the plywood glass wall mullions (a radical change from his earlier scheme of red, moveable glass mullions). These bronze laminate mullions are visually similar to the linear gilding on the bracketing substructure of Beijing's Three Large Halls, which Utzon inspected, and their geometric principle could have been the result of Utzon's study of the 'raised' and 'folded' eaves of Chinese architecture, documented in the 1925 edition *Yingzao fashi*, which he owned [27]. Sequentially, Utzon proposed three tiers of external colours for his Opera House at Sydney: white for the ceramic tile cladding of the shell vaults, 'metallic' gold for glass mullions and a



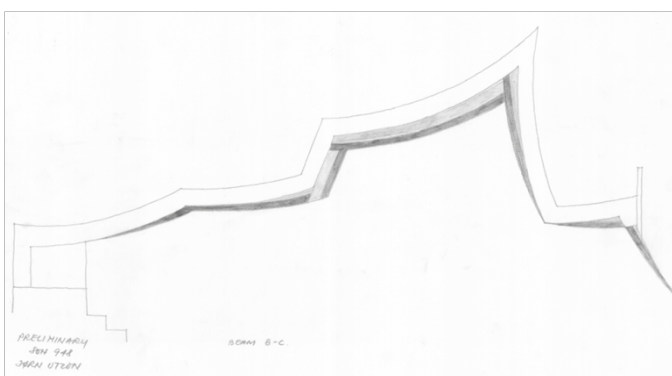
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28 Chinese brackets with carefully manipulated colours documented in Utzon's Yingzao fashi (left), and the model, constructed by Finecraft Scale Models, Sydney, in 1966, shows Utzon's final designs for the glass walls and the interior of the Major Hall of his Sydney Opera House (right).



29



29 Chinese inter-bracket-set boards with carefully manipulated colours documented in Utzon's Yingzao fashi (left), Utzon's study on the colour scheme of Minor Hall interior of his Sydney Opera House (right).

reddish pink for the granite in the pre-cast concrete cladding of the podium, thus acknowledging the three Imperial reserved colours: white for the marble clad podiums, yellow for the glazed roof tiles and red for all carpentry.

Yin and Yang as aesthetic expression of the dynamic dualism of Nature

To Utzon, the cloud-like white roof is part of a 'counterpoint', composed between two distinct elements. As he wrote:

Counterpoint between the plateau and the roof is strong: the heavy mass of the plateau and the light sculptural roof.

*The difference in character of the two components forming the building, the massive and imposing base, and the light and graceful shells on top of it.*⁷⁶

Utzon's idea of 'counterpoint' indicates his intention to embrace dualism, expressed here in the juxtaposition of his Opera House roof with the urban scale podium. His design for its cladding further emphasises the distinct characters of the Opera House roof and podium:

*[... the podium's] uniformity with the cladding will help to give the rock-like character desired for the base, as a contrast and anchor to the soaring roofs.*⁷⁷

*The precast granite elements [of the podium] are needle hammered to give a slightly matt surface in contrast with the shiny roof tiles.*⁷⁸

Utzon's dualistic concept demonstrates his strategies to reconcile the relationship between the Opera House and its surroundings by using the dark plateau to effectively merge the Opera House to the site, while contrasting the white roof against the site:

It is the interplay between the building and its surroundings ... that is important.

*Keep it white because the Harbour (surrounding buildings) is dark, with all its dark red or brown brick structures.*⁷⁹

This dualistic setting also played a key part in shaping two distinct zones inside the Opera House, as Utzon described:

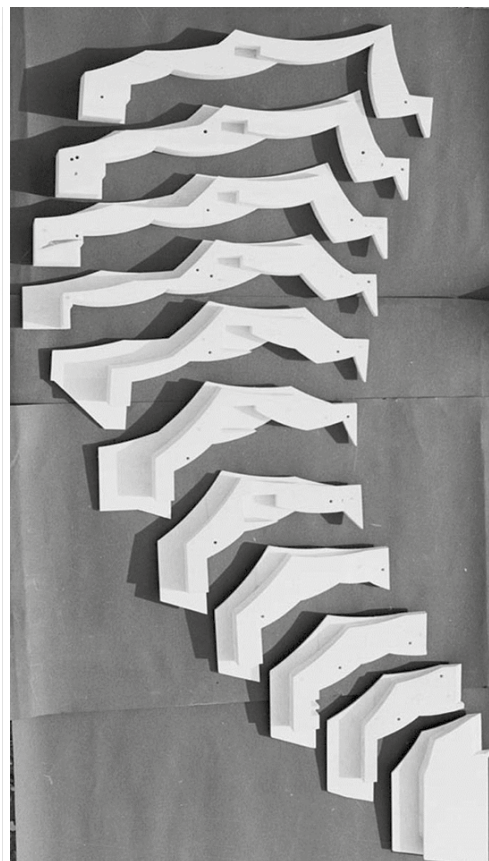
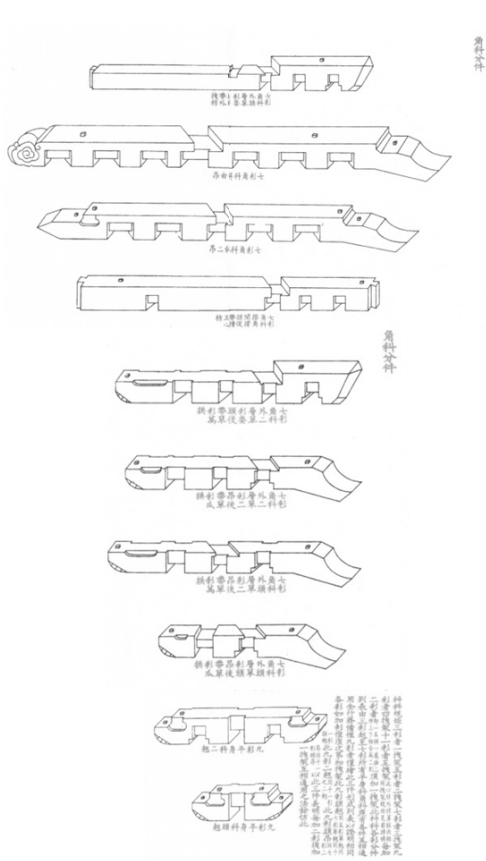
*In the Sydney Opera House scheme, the idea has been to let the platform cut through like a knife and separate primary and secondary functions completely. On top of the platform the spectators receive the completed work of art and beneath the platform every preparation for it takes place.*⁸⁰

Utzon's dualist concept in his Opera House design could have been developed from Sirén's Yin/Yang conception of Chinese architecture. In fact, the Opera House design was not the first time Utzon had expressed the dualistic design intention. In 1952, in explaining the design of his house at Hellebæk, Utzon explained his use of the contrasting loadbearing yellow brickwork for the walls and podium, against the black painted timber frame for the roof form, with reference to Chinese dualism expressed in architectonic juxtaposition, saying:

*In traditional Chinese architecture, the constructions are all visible; the elements have been divided up into male, bearing, and female, borne, and this system is also carried through in the treatment of colour.*⁸¹

Later in the publication for his Middelboe House in 1955, Utzon again emphasised a similar idea for his design:

The constructive elements have been stressed by strong colours: black and red together with the very distinct



30 The architectonic composition of the bracket set extracted from Utzon's Yingzao fashi (left), and Utzon's wooden models showing his proposed plywood-box beams for constructing the acoustic ceiling of the Minor Hall (right).

30

reinforced-concrete construction emphasizing the relation between the carrying and the carried elements.⁸² Utzon would later transfer his thoughts onto a sketch of 'Chinese houses and temples' in the 'Platforms and Plateaus' manifesto, in which he depicted a floating, symmetric curved roof volume that was combined and contrasting with a solid, asymmetric angular podium [2].⁸³ Sirén's Yin-Yang concept is apparent in Utzon's sketch, which juxtaposes the clouds against an oceanic horizon [21]. Also in the 'Platform and Plateau' manifesto, Utzon depicts two floating and intertwined forms, which could be seen as his visualisation of Sirén's Yin-Yang or male-female interplay. This interplay is further exemplified in the sketch of an angular urban-scale podium with curved floating roof mega-structures, signifying dualism as the apotheosis for his Sydney Opera House design.⁸⁴

Utzon never provided clear explanations for most of the above-mentioned sketches. However, the parallelism between Sirén's Yin/Yang concept and Utzon's idea of dualism in his design work from the 1960s is more than coincidental. In his manifesto, Utzon deployed the theme of 'platforms' as ancient altars and the theme of 'plateaus' as natural highlands, to present his dualist concept as a strategy for integrating human culture into the Nature through design. Utzon's proposal of a contrasting colour scheme for the interior and exterior of the Opera House provides further evidence in support of this point:

*Exterior colours were nature's colours. Within this landscape you had the halls which were to be richly decorated in festive colours.*⁸⁵

In terms of the 'festive colours', Utzon proposed a colour scheme of gold-leaf, red and white for the Major Hall, for opera and concert performances [28], recalling the three Imperial reserved colours, and a scheme of silver, deep blue, and black for the Minor Hall, for dramas [29].

This could be also the result of Utzon's study of the carefully manipulated colours of Chinese brackets and inter-bracket-set boards in his 1925 edition *Yingzao fashi*. Indeed, Utzon's design of the plywood-box-beam acoustic ceilings of the two main Halls could have been inspired by the composition of Chinese brackets with representational wooden units [30]. Interestingly, Utzon's two contrasting colour schemes directly echo Sirén's explanation on the contrasting colours of Yin-Yang. Utzon explained:

The theater darker and warm, the concert hall more cold and light plywood.

*The Major Hall was to be used for Grand Opera and concerts with an optimistic, light colour scheme [...]. The Minor Hall was programmed primarily for theatrical productions, which require a relatively dark or subdued colour scheme for the auditorium.*⁸⁶

Utzon indicated his reference to Chinese art and architecture, specifically in relation to the Major Hall colour scheme:

*Look here, these kinds of colours are very different from outside, only inside you have it in the caves and in the temples colours which are always on the edge of being cream to yellow and red to orange.*⁸⁷

Unfortunately Utzon had not completed his colour studies for the Minor Hall at the time of his forced departure from the Opera House project in 1966.

Since his departure, none of Utzon's proposed colour schemes for the interior of the Opera House has been realised. Today, the Opera House only presents Utzon's masterful roof/earthwork juxtaposition with a combination of the white ceramic tiles and reddish-pink hued granite faced concrete.

Conclusion

Utzon's early perception of Chinese architecture was nurtured by Sirén's study on the subject within the ethos of Nordic national romanticism and the idea of unifying Nature and ancient cultures, as championed by the Theosophical Society. Through Sirén's work, Utzon understood Chinese building culture as an expression of the sacredness and transcendence of Nature and Chinese architecture as a dualistic synthesis and metaphorical expression of Natural dynamic harmony. Sirén's study also stimulated Utzon's interests in historical monuments and city planning of Imperial Beijing. These were conducive to Utzon's intense interest in the platform cultures around the world, and ultimately contributed to his conceptualisation of Chinese architecture as a monumental roof/earthwork juxtaposition – the

key concept in his Sydney Opera House design. More importantly, Utzon's understanding of Chinese architecture contributed to the philosophical ideas expressed in his Sydney Opera House design: bringing back Nature to modern society through architecture, as stated in his 'Platforms and Plateaus' manifesto. Utzon did not, however, simply imitate Chinese built forms in the Opera House design. In Chinese architecture he found a metaphorical expression of Nature in general, with an aesthetic principle of dualism in particular. These concepts provide a structure through which Utzon could articulate his own felt response to the site of the Opera House, and from which he could develop his design around architectural forms analogous to those of Chinese architecture. In his design, Utzon could find a representation both of natural phenomena – clouds, sky, earth – and Chinese building culture.

Since Utzon's forced departure from the Sydney Opera House project in 1966, none of his proposal for its interior has been realised. Utzon's perception and application of ideas associated with Chinese building culture should be considered in future restoration of the Sydney Opera House.

Notes

1. Jørn Utzon was fully involved with the preparation, after having repeatedly declined prior invitations. The information was from the interview with Utzon's oldest son – Jan Utzon – in the Sydney Opera House in 2008.
2. Osvald Sirén, *Billeder fra Kina* (Copenhagen: Gyldendal, 1937).
3. For the origin, content, and purposes of the *Yingzao Fashi*, see: Jiren Feng, *Chinese Architecture and Metaphor* (Honolulu: University of Hawaii Press and Hong Kong University Press, 2012); see: the documentary film, Peter Bech, *Jørn Utzon – The Architect's Universe*, DVD (Copenhagen: Louisiana Museum of Modern Art, 2007).
4. This sketch was first published in Jørn Utzon's 1962 manifesto 'Platforms and Plateaus: Ideas of a Danish Architect', in *en/in Zodiac 10 (The International Magazine Of Contemporary Architecture)* (Milan: Edizioni di Comunità, 1962), pp. 112–17 (p. 116), to indicate his inspiration received from Chinese building culture.
5. Later, in Utzon's *Sydney Opera House: Utzon Design Principles* (Sydney: The Sydney Opera House Trust, 2002), p. 6, he republished the same sketch to present his 'vision' for the Sydney Opera House.
6. The role of Chinese architecture in Utzon's Sydney Opera House design was first argued by Peter Myers in his 'Une histoire inachevée', in *L'Architecture d'Aujourd'hui*, 285 (Paris: Fevrier, 1993), p. 65. Later, in *Jørn Utzon, Architect of the Sydney Opera House*, Françoise Fromonot noted the important role of the *Yingzao fashi* in Utzon's colour schemes, but did not clarify its precise role (p. 177). Recently, Richard Weston's *Utzon: Inspiration, Vision and Architecture* (Hellerup: Edition Blondal, 2002), provided a comprehensive summation of previous scholarship on Utzon. However, this book only refers to the colour scheme of the two main Halls as 'organic decoration systems' (p. 180).
7. For its English translation, see: Osvald Sirén's 'Rhythm and form', in *Essentials in Art* (London: John Lane, 1920), pp. 1–45.
8. Sirén studied and later noted these two books in his *Rytm och form*. Today, these two books are surviving in the book collections of Osvald Sirén at the Rietberg Museum.
9. Sven Hedin (1865–1952), explorer and cartographer, travelled through Central Asia in 1893–7, 1899–1902, and 1905–8. Hedin later became one of the founders of the Swedish Museum of Ethnography, where the first Japanese tea house, Zui-Ki Tei was inaugurated in 1935, and which Utzon visited during his stay in Stockholm. Inspired by Hedin's approaches to China, the geologist, palaeontologist, and archaeologist, Johan Gunnar Andersson (1874–1960) began his pursuit of Chinese archaeology in the 1920s. Later, an important collection of objects from prehistoric East Asia, discovered by Andersson, became the foundation of the Swedish Museum of Far Eastern Antiquities (Östasiatiska Museet), established in 1926 with Andersson as its first director. Both Hedin and Andersson's approaches to China represented the strength of Sweden in the international competition for discovering the legendary dynasties of China's history and for proving the origins of Chinese culture, see: Minna Torma, *With Osvald Sirén in the Chinese Gardens* (Stockholm: Östasiatiska Museet, 2007), p. 18.
10. Gustaf Munthe, 'Introduction', in *Osvalso Sirén Octogenario Die Sexto Aprilis A.D. MCMLIX* (Stockholm: Victor Pettersons Bokindustri AB, 1960), p. VII.
11. Else Glahn interview, Birkerød, Denmark, 2009.
12. Osvald Sirén, *The Walls and Gates of Peking, Researches and Impressions* (London: John Lane, 1924).
13. Osvald Sirén, *Les palais impériaux de Pékin: deux cent soixante-quatorze planches en héliotypie d'après les photographies de l'auteur, douze dessins architecturaux et deux plans [The Imperial Palaces of Peking]* (Paris: Bruxelles: G. Vanoest, 1926).

14. Osvald Sirén, 'Tch'angngan au temps des Souei et des T'ang [Tch'angngan the time of the Sui and T'ang]', in *Revue des Arts Asiatiques*, 4 (1927), pp. 46–104.
15. Osvald Sirén, *A History of Early Chinese Art: Architecture* (London: Ernest Benn Ltd, 1929).
16. Sirén, *Billeder fra Kina*.
17. Osvald Sirén, *Kinas konst under tre Årtusenden [Chinese art over three millennia]* (Stockholm: Natur och kultur, 1942).
18. See: Gustaf Munthe, 'Bibliografi', in *Osvalso Sirén Octogenario Die Sexto Aprilis A.D. MCMLIX*.
19. Like the work of his predecessors, Sirén's books were invariably conceived as lavishly printed, with sensational photographs and an accompanying text. The monumental published format resembled the work of German architect Ernst Boerschmann 柏希曼 (1873–1949), Japanese scholar Ito Chuta 伊東忠太 (1867–54), Sekino Tadashi 関野貞 (1868–1935), and Tokiwa Daijo 常盤大定 (1870–1945).
20. The Theosophical Society is a worldwide association dedicated to practical realisation of the oneness of all life and to independent spiritual search. It was founded in New York City in 1875 by Helena P. Blavatsky, Henry S. Olcott, William Q. Judge, and others. Blavatsky (1831–91) is the primary force behind the modern theosophical movement. Her works and those of her teachers express the principal concepts of its philosophy. A Russian by birth, she travelled for over twenty years through Europe, the Americas, Asia, and the Near East studying mysticism and occultism before devoting her life to The Theosophical Society and its objectives. See: <http://www.theosociety.org/pasadena/ts/h_tsociety.htm> (accessed 16 December 2015).
21. See: <http://www.theosociety.org/pasadena/ts/h_tsideas.htm> (accessed 16 December 2015).
22. For Sirén's early theosophical writings before 1917 *Rytm och form*, see: 'Temple of Greece', in *The Theosophical Path*, 3:3 (1912), ed. by Katherine Tingley (Pasadena, California: Theosophical University Press, 1912), pp. 185–8; 'A remarkable philosopher of the Renaissance: Giovanni Pico della Mirandola, 1463–1494', in *The Theosophical Path*, 3:6 (1912), ed. by Katherine Tingley (Pasadena, California: Theosophical University Press, 1914), pp. 373–81; and 'The essential in theosophy', in *The Theosophical Path*, 6:3, ed. by Katherine Tingley (Pasadena, California: Theosophical University Press, 1914), pp. 158–65.
23. Osvald Sirén, 'Our attitude towards Chinese art', in *The Theosophical Path*, 39:4 (1931), ed. by G. de Purucker (Pasadena: Theosophical University Press, 1931), p. 316.
24. Helena P. Blavatsky, *The Key to Theosophy* (Pasadena: Theosophical University Press, 1889), p. 59.
25. For Sirén's theosophical projection on Chinese art and architecture, see: 'Studies of Chinese and European painting 1–7', in *The Theosophical Path*, 14:2–7, ed. by Katherine Tingley (1918), pp. 159–77, pp. 229–48, pp. 333–4, pp. 337–348, pp. 431–52, pp. 530–50; and in *The Theosophical Path*, 15:1, ed. by Katherine Tingley (1918), pp. 56–70; 'Changan in the Sui and T'ang periods I–II', in *The Theosophical Path*, 25:6, ed. by Katherine Tingley (1923), pp. 532–47; *The Theosophical Path*, 26:1, ed. by Katherine Tingley (1924), pp. 21–36; 'Our attitude towards Chinese art', in *The Theosophical Path*, 39:4, ed. by G. de Purucker (1931), pp. 316–22.
26. Sirén, *A History of Early Chinese Art*, p. 1.
27. Today, Sirén's collection of de Groot's *The Religious System of China* (1892–1910) is surviving in the library of Museum Rietberg, Zurich. Sirén sold his book collection on East Asia (around four thousand books) to the Museum in 1961.
28. Jan Jakob Maria de Groot, *The Religious System of China, Volume IV* (Leyden: E. J. Brill, 1901), pp. 1–25.
29. *Ibid.*, pp. 1–25.
30. Sirén, *The History of Early Chinese Art*, p. 1.
31. Sirén, *Billeder fra Kina*, p. 12.
32. Tobias Faber interview, Copenhagen, 2009.
33. Tobias Faber interview, Copenhagen, 2009.
34. Tobias Faber interview, Copenhagen, 2009.
35. Tobias Faber interview, Copenhagen, 2009.
36. Tobias Faber interview, Copenhagen, 2009.
37. Tobias Faber interview, Copenhagen, 2009.
38. Tobias Faber interview, Copenhagen, 2009.
39. Osvald Sirén, *Den Gyllene paviljongen, minnen och studier från Japan [The Golden Pavilion, memories and studies from Japan]* (Stockholm: P. A. Norstedt och söners, 1919).
40. Tobias Faber interview, Copenhagen, 2009.
41. Else Glahn interview, Birkerød, Denmark, 2009. As a close friend of Utzon since studying at the Royal Academy, Glahn met Utzon and visited Japanese architecture together, while she was studying in Japan.
42. Dagny Kjødø interview, who was married to late Gier Grung, Oslo, 2010.
43. Grung bet his travel companion on the outcome of the Sydney Opera House competition. Grung arrived in China earlier and met Utzon in Beijing. After their two-month stay in China, Utzon went back to Denmark, and Grung continued his study trip to Japan.
44. Sirén's early work on Chinese art and architecture provided an important base for young Liang studying on these subjects. Today, few letters in-between are surviving in Osvald Sirén's collection in the Museum of Far Eastern Antiquities, Stockholm.
45. Jan Utzon interview, Sydney, 2009.
46. Sirén published his study on these two subjects repeatedly in his major monographs on Chinese Architecture.
47. Sirén, *The Walls and Gates of Peking*, pp. 5, 7.
48. *Ibid.*, p. 6.
49. *Ibid.*
50. *Ibid.*, p. 7.
51. *Ibid.*
52. Tobias Faber and Jørn Utzon, 'Tendenser i Nutidens Arkitektur', in *Arkitekten*, vols. 7–9 (København, Arkitektens Forlag, 1947), p. 69.
53. *Ibid.*
54. Tobias Faber interview, Copenhagen, 2009.
55. In Utzon's first manifesto, there are twenty-seven images, but there is no image referred to historical and monumental earthwork, except the walls of Imperial Beijing.
56. Utzon, 'Platforms and Plateaus', p. 116.
57. *Ibid.*
58. Sirén, *A History of Early Chinese Art*, p. 10.
59. *Ibid.*
60. *Ibid.*, p. 11.
61. Although Utzon's sketch on Japanese building is embodied in a roof form, it was referred to as sukiya-style, a domestic dwelling unit, instead of a monumental statement. Meanwhile, Utzon did not mention the roof form of Japanese house in his writing, as well as other building cultures.
62. As Utzon's chief assistant for his Sydney Opera House project, Mogens Prip-Buus, wrote to the authors on 26 June 2013, 'Movable red glass mullions: When we produced the *Red Book*, we had no ideas about the way of making the

- glass walls; we only indicated graphically that there should be some, remember that the competition scheme had none.'
63. Utzon, 'Platforms and Plateaus', p. 116.
64. Sirén, *Billeder fra Kina*, p. 7.
65. Ibid.
66. Ibid.
67. See: Utzon's competition drawings submitted to the Opera House Committee, 1956. State Records, NSW, Australia, NRS 12825: Competition drawings submitted by Jørn Utzon to the Opera House Committee.
68. Sirén, *A History of Early Chinese Art*, p. 13.
69. See: Sirén, 'Hellige Bjerger, Offeraltre, Forfædrenes Templer', in *Billeder fra Kina*, pp. 1–28.
70. Osvald Sirén, *The Imperial Palaces of Peking* (Paris and Brussels: G. Van Oest, 1926), p. 5.
71. See: Utzon's competition drawings submitted to the Opera House Committee, 1956.
72. Jørn Utzon, 'The roof tiles', in *Architecture in Australia* (December 1965), p. 85.
73. Sirén, *A History of Early Chinese Art*, p. 13.
74. Jørn Utzon, *Sydney Opera House: Utzon Design Principles*, p. 58.
75. For the details of the Three Large Halls, see: K. C. Chiu, *The Grand Forbidden City—The Imperial Axis* (Beijing: The Palace Museum Publisher, 2008), pp. 123–50.
76. Utzon, *Sydney Opera House: Utzon Design Principles*, p. 70.
77. Ibid., pp. 70–1.
78. Ibid.
79. Ibid.
80. Utzon, 'Platforms and Plateaus', p. 117.
81. See: English translation in Richard Weston's *Utzon: Inspiration, Vision*, p. 61.
82. Jørn Utzon, 'Huset Ved Søen', *Mobilia*, 11 (November 1955), p. 59.
83. Utzon, 'Platforms and Plateaus', p. 116.
84. Ibid., p. 117.
85. Utzon, *Sydney Opera House: Utzon Design Principles*, pp. 70–1.
86. Ibid., p. 80.
87. Ibid., p. 81.

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Peter Myers worked for Jørn Utzon on the Sydney Opera House until Utzon's forced resignation in 1966. In 1970 he established his own architectural practice and has built projects in remote, rural, and urban Australia. He has also taught in Sydney and abroad and writes variously on Utzon's work, urban consolidation and architectural history.

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