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# CONCRETE ARCHITECTURE AS A SIGN OF THE TIMES. THE NATIONAL SPORTS COMPLEX IN PHNOM PENH

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## ARCHITEKTURA BETONOWA JAKO ZNAK CZASÓW. NARODOWY KOMPLEKS SPORTOWY W PHNOM PENH

### Abstract

The monumental form of the Olympic Stadium rises in the heart of Phnom Penh (1964). As one of the examples of *new khmer architecture*, the stadium combines the concepts of European modern movement with the vernacular architecture of Cambodia. It has become a symbol of the brief dynamic period of searching for Cambodian identity in the years between obtaining colonial independence from France and the destructive rule of Pol Pot.

*Keywords: modern movement, brutalizm, żelbet*

### Streszczenie

Monumentalna bryła Stadionu Olimpijskiego wznosi się w sercu Phnom Penh (1964). Jako jeden z przykładów obiektów zbudowanych w stylu *nowej architektury khmerskiej* stadion łączy założenia europejskiego modernizmu z wernakularną architekturą Kambodży. Stał się symbolem krótkiego dynamicznego okresu poszukiwania tożsamości państwa w latach pomiędzy uzyskaniem kolonialnej niezależności od Francji a destrukcyjnymi rządami Pol Pota.

*Słowa kluczowe: modernism, brutalism, reinforced concrete*

## 1. Introduction

In the context of Cambodia's traditional, rural architecture and colonial style large city buildings, the concrete heritage represented by *New Khmer Architecture* can be surprising. For decades, architecture was defined by European modern movement assumptions, making them prevalent. As a surprising consequence, rarely published style masterpieces are hidden away in Cambodia's busy Phnom Penh streets. Buildings designed by Van Molyvann,

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an architect educated in Europe, represent international style in an elegant, harmonious and context sensitive variation. Architectural solutions can be seen and analysed here which subscribe to the modern movement, but gracefully reinterpret the local architecture, adapt it to the local climate and are addressed to a non-European aesthetic sensitivity. The article describes a complex which is at risk of being demolished –and which has already been partially and irrecoverably lost. Pressure by investors seeking plots in central Phnom Penh locations has already spelled the end for many modern movement icons in Cambodia’s capital.

## **2. Phnom Penh contemporary context**

Phnom Penh, Cambodia’s capital city, lies at the confluence of the Mekong River as well as Bassac and Tonle Sap rivers. The prevalence of water and the monumental waterfront are the city’s calling card. In the colonial era, Phnom Penh was referred to as the “Pearl of Asia”, but to this day it enchants with its historic centre featuring a royal palace and the surrounding pagodas. The city’s history is visible in its architecture, composition and spatial forms; in that sense, the spirit of the place is unchanged. The interest of visitors is divided between the fanciful colonial architecture –beautiful, refined pagodas, and monuments of the atrocities which took place under the rule of Pol Pot. The national Museum is located in the central French quarter, occupying an Art Nouveau epoch building with an extensive collection of ancient Khmer sculptures on display. On the opposite pole of tourists’ interests are locations which commemorate genocides: Stupa at ChoeungEk and TuolSleng Prey school.

In Phnom Penh, public use buildings in European modernist style are few and far between and stand out against the backdrop of street and square frontages. They are marked by a discipline of shapes, colours and compositional layout. They constitute a fleeting style episode in a historic perspective, which failed to be adopted as a standard for subsequent developments. In the West, many modernist dogmas within the scope of architecture and urbanism were never rejected. The modern movement still constitutes the most important point of reference to architecture in Europe and America and is often consciously continued in modern developments. Whereas in South East Asian countries, the dominant style within the scope of shaping architecture after the 1980s was based on different assumptions. Standards were primarily adopted from expressive and eclectic Chinese solutions – with their trademark complexity of shapes, textures and colours. This phenomenon is not surprising, considering the fact that the surrounding countries started looking up to China, which consolidated its regional political hegemony and achieved economic success –also in terms of propagating style trends in architecture.

Structures which arose in the modernist spirit afforded a new identity to Phnom Penh by their major scale and significant public use functions: administration, education and sports. The Olympic Stadium together with the national sports complex in Phnom Penh are most noteworthy.

## **3. Vann Molyvann**

Post World War II architectural education in Europe sought to rebuild destroyed cities; that rejuvenation was naturally linked with the modernist concepts lurking even during the pre-war period. The modern movement became the dominant direction amongst recognised academic circles.

This was also the time colonial empires, built by European countries in Africa and Asia collapsed. Great Britain, France, Belgium and The Netherlands were changing their political relationships with the former colonies whilst attempting to maintain economic and cultural ties. France lost its grip on its colonies in Indochina, which spread across the territories of today's Vietnam, Cambodia and Laos. These three countries gained independence through the first French colonial war: the 8-year Indochina War (1946–1954). Molyvann was born in 1926 and came to Paris in 1947 as part of a government sponsored scholarship, where he began studying at the School of Fine Arts in Paris (Ecole Nationale Supérieure des Beaux-Arts). Whilst at university, he was fascinated by Le Corbusier's designs, who was engaged with numerous buildings during that period and who enjoyed international acclaim. In 1956 Vann Molyvann returned to Cambodia as an architect with some experience and very quickly became involved with public projects upon bequest of the king, Norodom Sihanouk. Sihanouk's rule, referred to as the "golden age", was a period when Cambodia's post-colonial identity was built. Cultural heritage was the primary source: literature, poetry, music, dance and architecture. The most important landmarks designed by Vann Molyvann include the Chaktomuk conference hall, the Council of Ministers building in Phnom Penh, the Preah Suramarit national theatre, the White House residential buildings. He supervised the design and construction of new cities such as Tioulongville (Kirirom) and Sihanoukville (Kompong Som).

In 1970 the Cambodian cultural renaissance, a period of new investments and modernist architecture came to an end together with Pol Pot and the Khmer Rouge coming to power. An attempt to introduce a utopian system resulted in the deaths of millions of people and a radical depopulation of Phnom Penh.

Vann Molyvann, moved to Switzerland together with his family where he worked with the UN Human Settlements Programme for 10 years. In 1991, he returned to Cambodia where he served as President of the Council of Ministers, Minister of Culture, Fine Arts, Town and Country Planning. Despite his significant and influential political position as well as the social respect which he commanded, Vann Molyvann was unable to avert the demolition of valuable buildings which he designed in the 1960s. In 2008, he completed his doctoral thesis on the development and planning of Asian cities and modern Khmer Cities.

#### **4. New Khmer Architecture**

The political situation in the reborn country required Vann Molyvann to define the national style anew. He achieved this by using mature modernist architecture forms as the basis combined with local architectural forms. New Khmer Architecture was based on the adoption of an international, up-to-date language of forms and managed to preserve the characteristic properties of construction in Cambodia across a broad range: from the famous Angkor temples to a common rural house. Gaining independence from France in 1953 was a powerful political incentive to search for a cultural identity, and a redefinition of architecture became one of the manifestations of a cultural re-emergence in a post-colonial, modern country, which celebrates its own roots (Grant Ross H., Collins D. L., 2006). Expansion and major additions to the language of forms and ornaments constituted a major challenge for the simplicity and universal values ingrained in the structures of a modern movement. Despite that the formal results were perfect. In explaining design ideas Vann Molyvann wrote "It is impossible to create a new architecture without roots" (Eimer, 2016).



III.1. Olympic Stadium (1962), design by Van Molyvann, view from the North, phot. A. Bonenberg

The formal properties of native structures evolved in close relation to the region's climate. High temperatures which prevail throughout most of the year as well as intense rainfall dictated a number of particular spatial solutions, such as openwork walls, buildings raised off the ground on columns, roof forms which facilitate airing. Characteristics associated with the mature local material culture seen in intricately sculpted representative architecture (palaces and temples) also made their mark.

A successful synthesis of a modern material –concrete and new modernist forms as well as vernacular architecture was achieved through:

- **searching for and emphasising common elements and solutions**, for example the use of columns, framework structures and freeing up of the ground floor – all characteristics features of Cambodia's vernacular architecture but also included in LeCorbusier's five points.
- **repetition and interpretation of architectural cultural forms**, seen in the spatial forms of Vann Molyvann's buildings, for example the tower atop the Chaktomuk Conference Hall styled on Cambodia's stupa tops.
- **synthesis of architectural cultural forms**, seen in the forms of The Independence Monument (1953) in Phnom Penh with its obvious references to the towers of the Grand Khmer Temple in Angkor (12<sup>th</sup> century).

- **climate taken into account in ventilation and lighting solutions** part of the Olympic Stadium (1962) stands structure elements
- **climate taken into account in storm water management and frequent floods** seen in the Teacher Training College 1972 university structures which can be compared with typical rural framework type houses, raised on stakes.
- **protection against excessive sunlight** in the form of openwork walls and brises-soleils in the Teacher Training College 1972 architecture.

## **5. Hydrological reinforced concrete structures part of the national sports complex in Phnom Penh**

Phnom Penh is home to the monumental Olympic Stadium spatial form. The reinforced concrete elements of the structure, designed in harmonious rhythms, constitute the frames for openwork façade partitions emphasising the grand character of the space. The frontal vantage area of the majestic building with water pools and a public space ideal for strolls has suffered degradation a long time, and the open space is slowly disappearing under new developments. The raw, concrete details of the central building are emphasised, when the light and shadow contrasts envelop the porous façade surfaces.

The Olympic stadium was designed by Vann Molyvann as part of the National Sports Complex in 1962. The 60,000 capacity Stadium was once the most prized arena in all of Southeast Asia. It was built to Olympic standard and is still Cambodia's largest. Initially the investment was to house the 1963 Asian Games, but when these were cancelled, the stadium was finally opened in 1964. Since that time, it served as a venue for important sports, public and political events, and in particular the 1966 state visit by the President of France, Charles de Gaulle.

The open spaces part of the urban complex contained a swimming pool and a diving pool, volleyball and tennis courts. In terms of composition, site development was based on an orthogonal grid, with the oval footprint of the stadium as its heart. Different levels of the complex are linked by monumental alleys. Apart from the swimming pools, shallow ornamental water pools were an integral element which were designed to cool down the surroundings and improve air quality. Water also has a different, culturally determined significance in the sports and recreation complex architecture. Van Molyvann used it to establish a reference to the artificial reservoirs of ancient Angkor, which lies at the foundation of Cambodia's urban planning traditions. Unfortunately, after the grounds of the National Sports Complex were partially taken over by a private investor –the pools were buried.

Whereas inside the stadium building, the system of storm water drainage channels is well exposed and it circumvents the building's ground floor flowing into shallow pools. The location of channels and pools ensure uniform air humidity in the auditorium above. Architectural elements are noteworthy here: the structural columns are integrated with a water discharge system from the roof, and the modernistic "gargoyles" suspended above the pools are an interesting touch. The water part of the Olympic Stadium's architecture carries a specific aesthetic quality. The greyness of the concrete used to construct the channels and cast geometric forms brings to mind a stream flowing over grey stones, fed by expressive cascades.

The solutions adopted for the ventilation, natural cooling and humidification of the air within the stadium's stands as well as the natural light for this building, achieved by the openwork structure of the seats, are also significant. Openings are located beneath the seats



III. 2. Olympic Stadium (1962), design by Van Molyvann, interiors lit by natural light and openwork structure of the stands, phot. A. Bonenberg

and apart from a functional significance, they play an aesthetic role, furnishing the structure with a certain lightness.

### **6. Brutal concrete and colour of the National Sports Complex in Phnom Penh**

Brutal concrete is the dominant material of the National Sports Complex: architecture, street architecture, urban details. It is combined with the bold colours of selected architectural elements, facilitating a dynamic distribution of compositional accents across the complex.

Brutal concrete with its characteristic texture and grey colour is a specific material, which from the point of view of spatial form appearance in light, requires robust forms. Compositions designed using this material should be fairly simple, solid with well defined details. Precise light and shadow contrast accentuation is restricted by colour and light effects. There is little contrast between the grey background and the greyness of shadows. The differences in their intensity disappear and that makes it difficult to achieve the desired appearance. The subtleties of the shapes go unnoticed.

In this context, the Olympic Stadium in Phnom Penh is an excellent example of a geometric, spatial form approach to architectural composition and of enhancing it by a multiplication of elements and the introduction of rhythm.

One of the stadium's significant colour accents is the edge of the roof's reinforced concrete slab, which has been painted an intense yellow colour. This establishes an effective boundary visually defining the covering surface. The cantilevered roofing covering of the stands is very deeply undercut. As a result, a contrast is established between the yellow edge and shadow intensity. The underside of the covering features reinforced concrete ceiling tiles constituting a sculpted, decorative pattern, fully in line with the logic of the structure.

The judges' tower is another, specific element of the stadium. A slim, expressive and bold form, reminiscent of the spectacular Soviet avant-garde concepts is also made out of reinforced concrete. Here, the crude concrete is interspersed by the glass walls of the cabin, which, in such a setting looks intricate, elegant and uncompromisingly futuristic in its appearance.

The frontal vantage area for the stadium's grey spatial form is the intense orange crushed brick colour plane of the forecourt.

The synthetic form and colour of the roof are interesting: four yellow, geometric accents emphasize the expressive spatial form of the stadium. They bear resemblance to the rooftop structures of the royal palace.

## **7. A lost heritage – summary**

Many buildings which make up Cambodia's modernistic heritage survived the destructive conflicts and political changes in the second half of the 20<sup>th</sup> century. Phnom Penh is one of them. Paradoxically, the exceptional architecture is more endangered now than before. Pressure by investors, particularly the Chinese and South Koreans, to develop the plots in attractive locations which are home to these buildings is significant. Developers are interested in investing in centrally located areas of the city, and modernist structures, designed with flare on large plots brimming with vegetation constitute hot pickings in the intensely urbanised Phnom Penh. The National Theatre and Council of Ministers buildings designed by Vann Molyvann are some of the prestigious projects lost irrecoverably.

The uniqueness of Cambodia's modernist heritage is one reason for its protection:

the fact that the buildings fulfil public and general access functions: sport's facilities, including the stadium discussed in this article, but also those which house cultural, art and scientific institutions

these structures are often accompanied by green public spaces which are in such short supply in Phnom Penh



III. 3. Olympic Stadium (1962), design by Van Molyvann, rhythm of the stands constituting the West elevation, phot. A. Bonenberg

the original, unique style which constitutes a fusion of that which the European modern movement contributed to the architectural tradition and the thousand year old local construction and ornamental tradition

the buildings are becoming tourist attractions for specialists: architects, urban planners

the modern movement in Cambodia constituted a short-lived yet intense phenomenon, which took place over the space of just a decade, and as such is cohesive in terms of style and features recognisable stylistic characteristics

it made an impact on modernising the country as well as the development of its identity and culture.

Today, extraordinary buildings amaze architects and experts, yet remain unappreciated by their users and owners. At the same time, the available alternative in the form of new developments rarely takes into account the identity of a location, and the aesthetic standards promoted by foreign investors are devoid of references to the local culture. If Phnom Penh loses the modernist elements of its concrete heritage, the landscape would lose an important historic theme, robbing the city of its specific identity and the multidimensionality which is currently one of its features.

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