

«TROPICAL ARCHITECTURE»

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The Beginnings of Sustainable Architecture The year 1954 witnessed particularly important developments related to the inter-relationship between modern architecture, colonialism, CIAM, “Tropical Architecture” and the United Nations (UN) – as well as the origins of sustainable architecture in the sense of Agenda 21.



Text: Susanne Kohte

In 1954 a call was made for a new approach to architecture, “... a new paradigm in architecture and planning focused on energy and resource conservation [...] by consuming less and on the use of appropriate technologies in service of a utopian intention to raise the overall standard of living for the poor at a global scale.”¹ In the same year, a new degree programme for this architectural approach was developed at the Architectural Association (AA) in London. The goals of the programme reflected the new demands being placed on the field of architecture: the development of energy- and resource-efficient architecture, as well as environmentally friendly technologies, the scientific investigation of traditional

knowledge on bioclimatic building and the goal of developing adequate shelter for all.

The call to rethink architecture with regard to environmental and social sustainability was made 55 years ago – long before the subject of sustainability reached the general public. The protagonists of this movement were modernist architects – Maxwell Fry, Jane Drew and Otto Königsberger. Maxwell Fry was a co-founder of the British MARS Group and member of CIAM. Jane Drew was also a member of MARS and CIAM. Otto Königsberger had studied under Hans Poelzig and Bruno Taut and worked in the office of Ernst May. In 1954 these three architects founded the new degree programme at the AA under the name “Tropical

Architecture". A confrontation between the paradigms of European modern architecture and the realities outside of Europe and America had triggered the above-described change of thought in the field of architecture in the years 1953 and 1954.

Broadening of Perspective

Many modernist architects found exile outside of Europe during the Nazi period: for example, Ernst May in Uganda and Kenya, Bruno Taut in Japan and Otto Königsberger in India. In the 1950s many of them returned to Europe. During this period other modernist architects in colonial administrations were dealing with urban planning, architecture and ethnological studies, such as Georges Candilis, Shadrach Woods and Michel Ecochard in Morocco or Jane Drew and Maxwell Fry in Nigeria. Architectural firms in England and France took advantage of the opportunity for projects in the colonies, such as the Smithsons in Ugandaⁱ or Jean Prouvé with the Maison Tropicale for colonies in West Africa.

At the same time, many architects worked for former colonies, African, Asian and Latin American countries that had since become independent. These architects included Le Corbusier, Maxwell Fry and Jane Drew in India, Josep Lluís Sert in Peru and Konstantinos Doxiadis in Iran and Pakistan.

In the 1950s, coinciding with decolonization, the European and American architects' associations were also becoming more international, with members from various continents. New questions were being raised, as can be seen in a 1947 letter from Sert to Sigfried Giedion: "I think, we cannot continue to consider Central Europe as the main field of interest for CIAM."ⁱⁱⁱ

At the CIAM IX congress in 1953 in Aix-en-Provence, the GAMMA group (Groupe d'architectes modernes Marocains; Ecochard, Bodiensky, Candilis, Woods and others) from the French Protectorate of Morocco presented a series of panels, with studies of bidonvilles (slums), traditional buildings and residential construction projects in which the architects had set out to develop a type of housing "suitable for the culture and climate of Morocco".^{iv} From the Algerian colony, P. A. Emery and L. Miquel presented a grid on the Bidonville Mahieddine. A series of panels presented by N. S. Lhamba, Maxwell Fry and Jane Drew dealt with "low cost housing" in Chandigarh.^v These studies, on the one hand, indicated a direction that other architects, such as Aldo van Eyck with his interest for traditional architecture, would continue to pursue; on the other hand, they identified serious problems, desiderata and urgent tasks for modern architectures. Within CIAM these studies would become a source of controversy over the future direction and task of architecture.

"Tropical Architecture" in London

At roughly the same time in 1953 the International Conference on Tropical Architecture was held in London. Participants included Maxwell Fry, Jane Drew, Ove Arup and Otto Königsberger.^{vi} "Tropical Architecture" has its origins in the

British colonial empire. Initially dominated by the discipline of hygiene and sanitation engineers,^{vii} it became a domain of colonial architecture beginning in the 1930s. Using knowledge that had been gathered on climate and hygiene, these architects sought to develop buildings suitable for the climatic conditions of the respective region. By 1953 the end of the British colonial empire was foreseeable. Around this time many architects who had been working in the colonies – including modernist architects – returned to England, bringing along their experience, which was undeniably still rooted in the colonial tradition of thought.

Maxwell Fry and Jane Drew, for example, had been working as architects in Nigeria (1949-1960 University of Ibadan) and Ghana (1950 St. Francis College, Hohoe, and 1951 Adisadel College). In the African colonies, far away from Europe, they reconceptualised their architecture: "How invigorating it has been for us as architects working in England to shake free from the crippling mental state brought about by too great a reverence for habits and customs which have outlasted their time."^{viii} The couple returned for short stays in London; then, in 1951, the experience they had gained in Africa with the development of a "tropical", bioclimatic architecture led them to India, where they were involved in the construction of Chandigarh, together with Le Corbusier. Otto Königsberger, another representative of modern architecture, came from India to England in 1951. In 1933 he had been forced to leave Berlin, owing to his Jewish heritage, and found exile in India. In the years before the country attained its independence, he worked as an architect and urban planner in Mysore, a princely state under British protectorate. In the newly independent India, he was entrusted by Nehru with the planning of Bhubaneswar, the new capital of Orissa, as well as with the design of cities for refugees who had been forced to leave their homelands owing to the partition of India. In a country with more than ten million refugees, permanent cities had to be developed very quickly with extremely limited resources^{ix} – a challenge that could not be met using the tools of modern urban planning and architecture. Therefore, Königsberger sought new approaches. For him the Indian experience, as well as "Tropical Architecture", was geared towards the search for a new approach to architecture and urban planning for all, developed on the basis of climatic factors and the prudent use of resources.^x

From CIAM to the UN

In 1954 a group within CIAM was also occupied with the above-described tasks of architecture outside of Europe and America – dealing with the scarcity of resources, local needs and shelter: Jacqueline Tyrwhitt, Maxwell Fry and Jane Drew were the representatives of CIAM at the UN Seminar on Housing and Community Planning in New Delhi. Jacqueline Tyrwhitt, who had been the acting secretary of CIAM since 1951, was involved in the planning of the seminar and worked for an exhibition on low-cost housing as a UN advisor for the Indian government.^{xi} Representatives of CIAM and "Tropical Architecture" were

1 GAMMA: Habitat du plus grand nombre, panels for CIAM IX, Aix-en-Provence 1953 (selection)

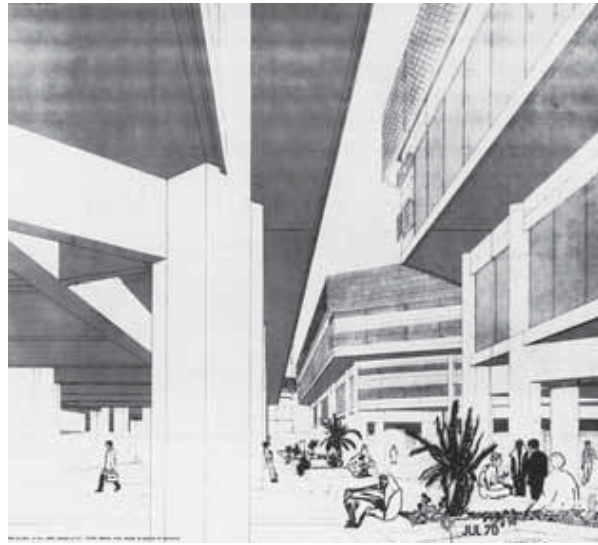


2a

2 Alison and Peter Smithson: Government Offices, Mat-building, Kuwait 1970; Advisors: Otto Königsberger, Ove Arup

2a Aerial view of building complex from the south (illustrations from: Alison and Peter Smithson, *The Charged Void: Architecture*, New York 2001)

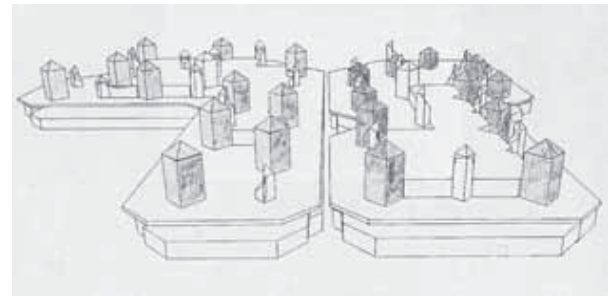
2b



2b Model photo with mosque in background

2c + 2d Axonometric projections by the Smithsons for the exhibition *Climate Register* 1994

2c 2d



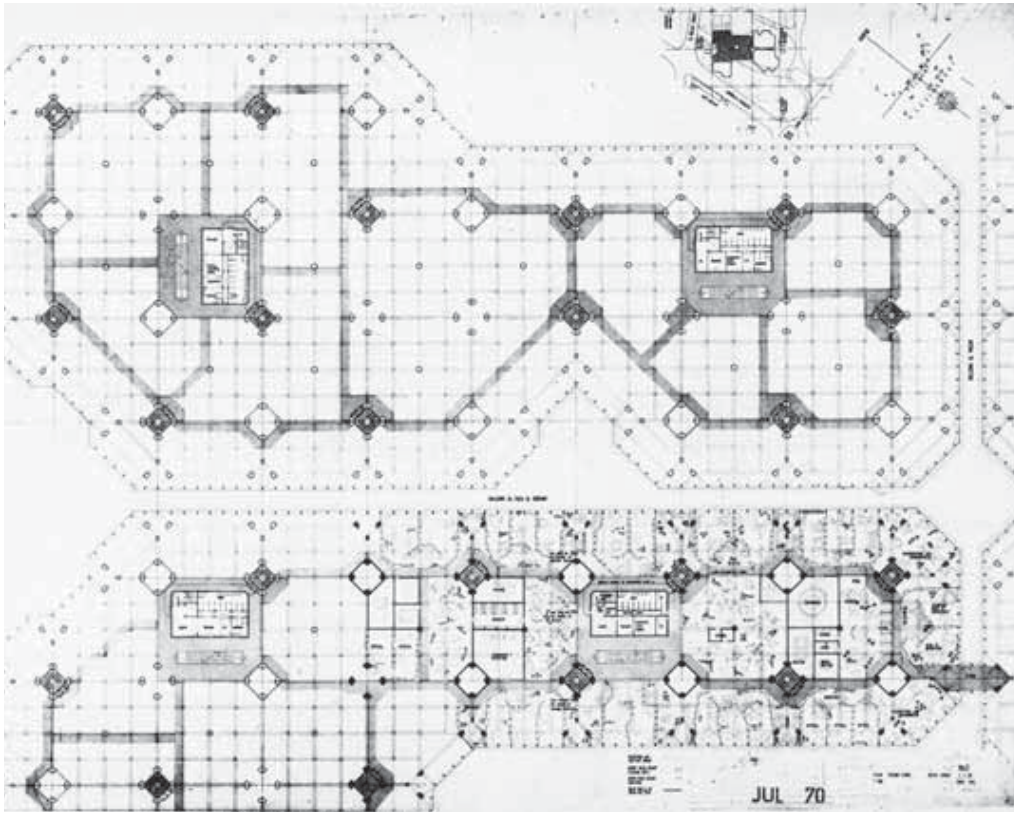
also involved in the further development of UN housing and planning programmes and studies: in 1954 Otto Königsberger and Vladimir Bodiansky, a member of GAMMA and ATBAT-Afriquexii, undertook a study in Ghana;xiii in the following years, Otto Königsberger would become one of the most important UN experts on housing and planning. At a seminar in Delhi in 1954, Jacqueline Tyrwhitt met Konstantinos Doxiadis, a prominent Greek architect and urban planner who was already involved in UN programmes. In the same year, they began working together. Starting in 1954 they published a journal on Tropical Housing and Planning for housing experts of the UN and staff members of Konstantinos Doxiadis. Topics included resource conservation, energy efficiency and traditional forms of construction; the journal was renamed *Ekistics* in 1957. It soon became an organ for sustainable, visionary architecture with an international orientation and remained closely associated with the development of the UN. The journal's contributors

and advisers included Buckminster Fuller, Margaret Mead, Hassan Fathy, Marshall McLuhan, Barbara Ward and, later, Sigfried Giedion.xiv

The Career of "Tropical Architecture"

Also in 1954 the above-described degree programme "Tropical Architecture" was founded at the Architectural Association by Maxwell Fry, Jane Drew, Otto Königsberger and others.

In the degree programme, architecture was developed on the basis of climatic and local conditions. The programme was designed to help architects acquire knowledge, for example, about climatic principles, an area often factored out of architecture today, and actively apply this knowledge as a design instrument for new solutions and designs – in Africa, Asia, America and Europe.xv The books on "Tropical Architecture"xvi that were published by Maxwell Fry and Jane Drew in 1956 and 1964 illustrate the advocated



2e Section of floor plan, first floor

2f Sketch of connective outdoor spaces

2g Model photo, entrance area

2e



2f

2g

architectural approach with examples from Maxwell Fry and Jane Drew (University in Ibadan, Nigeria), Amancio Guedes (Smiling Lion Flats, Mozambique), Paul Rudolph (Cocoon House, Florida), the group ATBAT (Cit  Diar et Ourida, Blida, Algeria), Geoffrey Bawa (St. Thomas' Primary School) and Josep Llu s Sert (US Embassy, Baghdad). These books were initially conceived as textbooks for university students – as was Otto K nigsberger's *Manual of Tropical Housing and Building*.xvii

Instead of offering numerous examples of architecture, the *Manual of Tropical Housing and Building* addresses fundamental parameters of planning and design. Otto K nigsberger understands "Tropical Architecture" as a concept, not an architectural style. He also developed his seminars on the basic design parameters of "Tropical Architecture" for universities in India, Pakistan, Thailand, Iraq and Kenya and served as consultant for many groups and individuals, including Alison and Peter Smithson with the Mat-building project in Kuwait.

The concept of "Tropical Architecture" was disseminated through university teaching, realised buildings and, last but not least, publications. In the newly independent countries of Tanzania and Nigeria, for example, it was adopted as the "new national architecture", and thereby still provokes debates on post-colonial mechanisms.xviii

In its early years, the degree programme at the AA attracted primarily students from the former colonies; however, this





3a



3b

3 Maxwell Fry and Jane Drew: University College Ibadan, Nigeria 1949-1960

3a View of the courtyard of the Arts Block (Figs. 3a, b, e, f from: Maxwell Fry and Jane Drew, *Tropical Architecture in the Dry and Humid Zones*, London 1964)

3b View of the courtyard of the Arts Block

PROTAGONISTS

MAXWELL FRY (1899-1987) Maxwell Fry was a founding member of the Modern Architectural Research Group (MARS) and member of CIAM. From 1934 to 1936, he worked together with Walter Gropius (Gropius & Fry). In the 1950s he built various universities and schools in Nigeria, Togo and Ghana together with Jane Drew; beginning in 1951 they collaborated with Le Corbusier on the planning of Chandigarh.

JANE DREW (1911-1996) Jane Drew was a member of the Modern Architectural Research Group (MARS) and CIAM. She initially worked in London before building various universities and schools in Nigeria, Togo and Ghana in the 1950s together with Maxwell Fry. Beginning in 1951 they collaborated with Le Corbusier on the planning of Chandigarh.

OTTO KÖNIGSBERGER (1908-1999) Otto Königsberger studied architecture in Berlin under Hans Poelzig and Bruno Taut, among others. He worked in the office of Ernst May before being forced to leave Germany in 1933, owing to his Jewish heritage. Königsberger spent several years carrying out research in Egypt before moving to India in 1939. From 1939 to 1948, he was the chief architect in Mysore; after India attained independence, he became director of housing for the Indian government. In 1951 he returned to Europe and worked as an urban planner for Basildon New Town in Essex, England. In 1954 he was appointed professor at the Department of Tropical Housing of the Architectural Association in London, and

in 1973 he became head of the Development Planning Unit at the University College London. In 1954 he began working for the United Nations as a planning and housing advisor.

JACQUELINE TYRWHITT (1905-1983) Jacqueline Tyrwhitt was a member of CIAM. During her studies at the Architectural Association in London, she was influenced by the work of Patrick Geddes and would later become the editor of books about him. From 1939 to 1946, she worked as Director of Research and Studies at the School of Planning and Regional Reconstruction in London. In 1951 she became a council member and the acting secretary of CIAM. She was also a professor at Harvard University and the School of Graduate Studies in Toronto. In 1954 she began working together with Konstantinos Doxiadis.

KONSTANTINOS DOXIADIS (1913-1975) Konstantinos Doxiadis studied in Athens and obtained his doctorate in Berlin. In 1937 he became Chief Town Planning Officer for the Greater Athens Area and later worked as head of the Department of Regional and Town Planning in the Ministry of Public Works. In 1951 he founded the firm Doxiadis Associates, which implemented projects in roughly forty countries, including the urban planning for Islamabad. In 1945 he began working in various UN programmes and was Chairman of the Session on Urban Problems at the UN Conference in 1963.

changed in the sixties and seventies. With the emerging environmental movement in Europe and America, sustainability evolved into a universally recognised issue. At the AA new degree programmes were created on sustainability – on the basis of the forerunner programme “Tropical Architecture”.

xix

The above-described demands for a new, sustainability-oriented approach to architecture in 1954 developed directly from modern architecture – in connection with the broadening of perspective beyond Europe and America.

These are demands that have been inherent in the field of architecture for 55 years and have nevertheless long received little attention – demands for environmental protection, resource conservation and an equitable distribution of resource consumption around the planet, with no differentiation between rich and poor countries.

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1 - Vandana Baweja, A Pre-history of Green Architecture: Otto Koenigsberger and Tropical Architecture. From Princely Mysore to Post-colonial London, Ann Arbor 2008, p. 135.

2 - Offices for the Electricity Board, Kampala, Uganda (1952/53), in: Alison and Peter Smithson, The Charged Void: Architecture, New York 2001.

3 - Eric Mumford, The CIAM discourse on urbanism 1928-1960, Cambridge, Massachusetts 2000, pp. 185-240.

4 - GAMMA Grid 1953, in: An Architektur 22, Berlin 2008.

5 - Mumford, The CIAM discourse, p. 232.

6 - Arthur M. Foyle (ed.), A report on the Proceedings of the Conference Held at University College London, London 1954.

7 - For example, J. A. Jones, A Manual of Hygiene, Sanitation and Sanitary Engineering: With Special Reference to Indian Conditions, Madras 1896.

8 - Maxwell Fry / Jane Drew, Tropical Architecture in the Dry and Humid Zones, London 1964.

9 - Otto Königsberger, “New Towns in India”, in: Town Planning Review 23, July 1952, pp. 94-131.

10 - See also Königsberger’s concept on “Action planning” and: Otto Königsberger, “The Role of the Planner in a Poor (and in a Not Quite so Poor) Country”, in: Habitat International, Vol. 7, No. 1/2, Oxford 1983.

11 - Panayiota Pyla, Ekistics, Architecture, and Environmental Politics 1945-1976, Cambridge, Massachusetts 2002.

12 - ATBAT-Afrique was the African branch of ATBAT, Atelier des bâtisseurs. It was founded in 1947 by Le Corbusier, Vladimir Bodiansky, André Wogenscky and Marcel Py.

13 - Habitat International, Vol. 7, No. 5/6, Oxford 1983, p. 14.

14 - Pyla, Ekistics, Architecture, and Environmental Politics.

15 - See also the designs for three museums, in London, Khartoum and Port Harcourt, created as a studio exercise by Harris J. Sobin, a student at the AA, in: Vandana Baweja, A Pre-history of Green Architecture, pp. 203-205.

16 - Maxwell Fry / Jane Drew, Tropical Architecture in the Humid Zone, London 1956; and, by the same authors, Tropical Architecture in the Dry and Humid Zones, London 1964.

17 - Otto H. Königsberger / T. G. Ingersoll / Alan Mayhew / S.V. Szokolay, Manual of Tropical Housing and Building, London 1974.

18 - Ola Uduku, “Modernist architecture and ‘the tropical’ in West Africa: The tropical architecture movement in West Africa 1948-1970”, in: Habitat International, Vol. 30, No. 3, September 2006, pp. 396-411.

19 - Architectural Association Graduate School Environment & Energy Studies Programme, Programme Guide 2008-09.

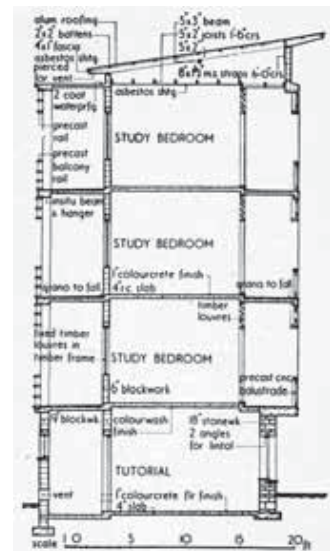
3c Site plan (Figs. 3c, e from: Maxwell Fry and Jane Drew, Tropical Architecture in the Humid Zone, London 1956)

3d Sultan Bello Hall, dining hall

3e Mellanby Hall, dining hall

3f Cross section and floor plan of a typical housing unit

3c



3d

3e

3f

