

Essential Reading?

The Institut für Tropenbau's Publications as Primers for the Design-Build Movement

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Edited by

Vera Simone Bader

DesignBuild

in Postcolonial Contexts: A Critical Interrogation



Essential Reading?

The *Institut für Tropenbau*'s Publications as Primers for the DesignBuild Movement

The *Institut für Tropenbau* (Institute for Building in the Tropics, IFT), founded by the German architect Georg Lippsmeier in 1969, impacted architectural production in diverse geographies and cultural contexts until the late 20th century. As the research arm of the international architectural practice Lippsmeier+Partner (L+P), which focused on building in the “Global South,” IFT contributed to the growing discourse on so-called “tropical architecture,” (King and Chang, 2016; le Roux, 2003) and later on “appropriate technologies.” The interest was manifested most strongly through IFT’s publications. Beginning with *Tropenbau = Building in the Tropics* (1969), IFT published a series of books, reports, brochures, and newsletters that were circulated within “development” oriented architectural circles. Two editions of *Tropenbau* (1969 and 1980; Figure 1a-b) were stocked in libraries around the world.¹ IFT’s research and publication activities were inseparably intertwined with Lippsmeier’s private architectural practice.

With a practice-oriented, handbook-like character, IFT’s bilingual publications (German and English) aimed to support building design and construction processes on the ground. Their technical content, which addressed building materials and methods, infrastructure and technologies, and specific building typologies, drew on a combination of in-house and external research. In the main, this was conducted by architectural practitioners from the “Global North” who were working on building projects in the “Global South.” IFT’s publications can be categorized as belonging to the expanded heritage of building manuals spanning those written and circulated by Christian missionaries during the 19th century, to publications by sanitary engineers and physicians in the late 19th and early 20th century, to those produced by colonial administrations and their attendant bodies of operation such as public works departments in the 20th century.

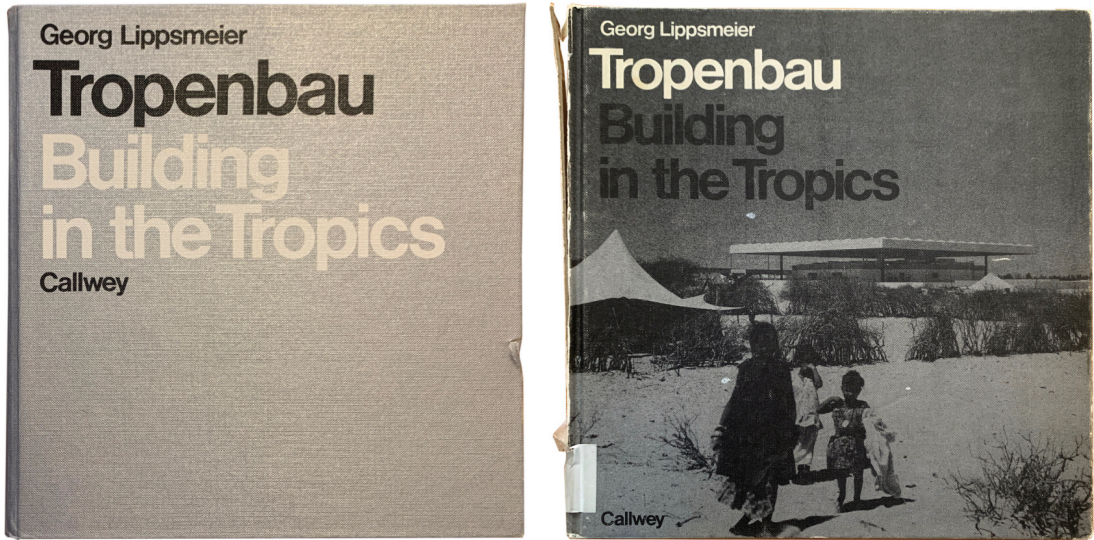


Figure 1a-b: The covers of the 1969 and 1980 editions of *Tropenbau = Building in the Tropics*.

In the British Indian Empire, for example, the Public Works Department of the Government of India was responsible for designing and constructing much of the infrastructure and utilitarian architecture that built the framework on which the expansion and consolidation of empire was based (Scriver, 2007; Jackson and Holland, 2014). The civil servants and engineers who worked on these projects used building manuals as the basis for their designs. The manuals were circulated throughout the British Empire as building guides that could be adapted to local conditions. These were also in direct conversation with more contemporary practical guides for builders in tropical regions, such as Jane Drew and Maxwell Fry's *Village Housing in the Tropics* (1947), Alfred Alcock and Helga Richard's *How to Plan Your Village* (1953), and Otto Koenigsberger et al's *Manual of Tropical Housing and Building* (1974) to name just the few most widely known titles from the Anglophone context.

In this chapter, we analyze IFT's publications in relation to their conception, production, and reception, discussing their significance within architectural practice and education. This analysis is embedded within the context of the discourse and practice of tropical architecture that emerged and was sanctioned by "experts" in the "North" as a particular approach to building in the mid-20th century. Through their commitment to spreading technical building know-how, we will position IFT's body of work as primers for the DesignBuild movement that emerged in the

1970s in Germany. We situate the DesignBuild approach within the expanding genealogy of tropical architecture, in part supported and perhaps even enabled by the technical publications produced by IFT. By cross-examining the content of IFT's publications and the scope of the library in Starnberg, we demonstrate how parallels in the project-based approach can be traced between L+P/IFT and the precursors of the (German) DesignBuild movement (Bader, 2023). Our aim is to uncover broader contexts and networks of these phenomena that occurred almost simultaneously, without establishing a causal link.²

Tropical architecture

With roots in colonial building practices, tropical architecture was institutionalized as a discipline and field of practice in Europe and North America in the mid-20th century. Combining a techno-scientific approach to building design and construction, tropical architecture focused on optimizing architectural design, particularly in terms of building performance, within the climatic zones that have been categorized as "tropical." The theorization of building practices in tropical regions that prioritize aspects including improving the circulation of air, perfecting sun-shading, and minimizing thermal gain can be traced to the work of colonial sanitation engineers and physicians in the 19th century (Anglophone: Jeffreys, 1858; Luki and Blackham, 1911; Platt, 1923; German: Pauli, 1904). In many cases, these technicians were building on foundations laid by missionaries who had accrued considerable knowledge in colonial building practices which they communicated to wider audiences through exhibitions and publications (Osayimwese, 2017: 168; Christian Missionary Civilization, 1842).

The development of tropical architecture is particularly evident in the typology of dwellings for various ranks of the colonizers, including villas and military barracks, but extends to other building forms, including public buildings such as schools and hospitals, as a means to protect the bodies of those involved in colonial conquests from what they perceived as physically and mentally threatening local environments. The quantification and codification of building practices through the collection and collation of data was key in developing standardized building types that ascribed to certain design principles. Through publications such as building manuals, these designs could be reproduced in different colonized parts of the world. In some contexts, colonial officers appropriated local building types and forms, adapting them to serve different cultural needs. As analyzed by Anthony King, the northeast Indian bungalow is an example of this (King, 1995). The manuals did not replace individual agency but rather provided a hands-on compilation of technical solutions and an ideological framework for developing buildings. Simultaneously, as links were made between ill health and the built environment in Europe through diseases such as tuberculosis, the emerging architectural profession began prioritizing health at the intersection of spatial design and climate.

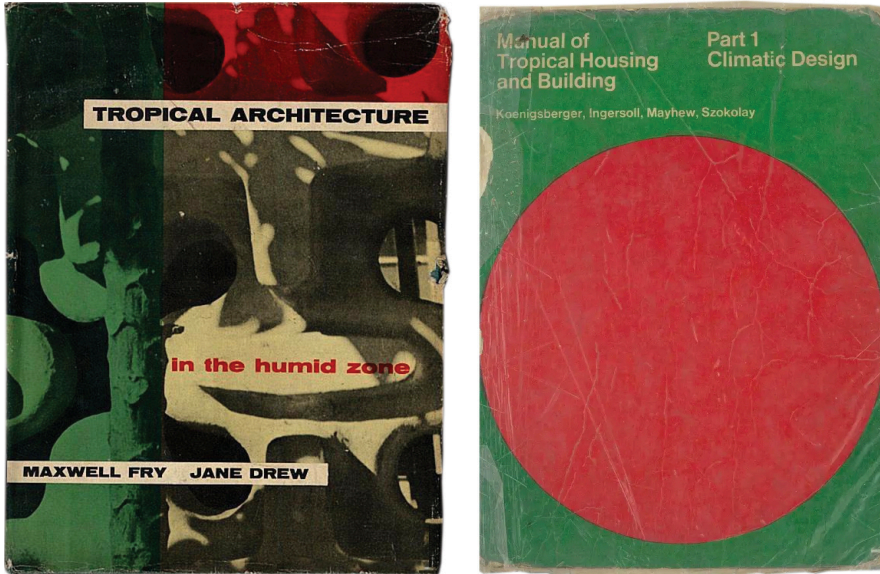


Figure 2a-b: Covers of Maxwell Fry and Jane Drew's *Tropical Architecture in the Humid Zone* and Otto Koenigsberger et al's *Manual of Tropical Housing and Building*.

This was taken up in earnest by the international modernist movement in the early 20th century with light, air, and openness becoming design focal points aimed to combat the desperate living conditions in rapidly growing European cities. Through case-study approaches, architects involved in international networks such as CIAM compared housing design solutions that responded to local climatic conditions, communicating their findings in exhibitions and publications (International Congress for Modern Architecture, 1930 and 1931). This scientific approach to architectural design contributed to the development of a sub-field of architecture that understood research as a key informer of appropriate design.

As well as having experiences in European cities, some of these architects also practiced internationally, and indeed, colonially. These included the British partnership of Maxwell Fry and Jane Drew, and Michel Écochard from France, among many others (Verdeil, 2012). Otto Koenigsberger accrued his international experience in a different context. Exiled from Germany due to his Jewish background, he was employed as Chief Architect and Town Planner of Princely Mysore State in south India before becoming the Director of Housing in the government that was formed after India won its independence.

His 12 years working in connection with India's built environment were surely affected by colonialism but were not undertaken in its service (Lee, 2019 and 2015). Through a combination of practical experience, observation, and an increased focus on dedicated study (through building research stations, for example), these architects and planners became key figures in the development of the tropical architecture discourse and its institutionalization in (ex)colonial metropolises during the immediate post-Second World War period. The focus on climate-responsive building techniques that was typical of the tropical architecture discipline subjugated cultural and socio-spatial aspects of architecture, while "comfort" was employed as an all but neutral category to justify continued interventions in foreign geographies (le Roux, 2020; Chang, 2016).

The ongoing engagement of colonial figures and institutions in post-colonial contexts and the adoption of the tropical architecture approach by architects of the Eastern, Western, and non-aligned blocks, as well as transnational organizations such as the UN, for building projects in the "Global South" raises obvious neo-colonial associations. Fry and Drew, for example, continued to receive commissions abroad. During the 1950s and 1960s, they worked in Chandigarh, India, where their colonially gained architectural expertise was applied in a post-colonial context. In addition to UNESCO, in Africa, the World Bank embarked on extensive school-building programs that combined multiple agencies from diverse, mostly Western contexts, in transnational construction projects. As well as providing educational infrastructure, these projects aimed to perpetuate the influence of the main funding agencies in the de-colonizing world (De Raedt, 2022). The Department of Tropical Studies, founded in 1954 at the Architectural Association in London, played a crucial role in this process.

Initially directed by Maxwell Fry, Otto Koenigsberger, who had co-designed the curriculum, took over the leadership of the department's in 1957, maintaining that role through the department's various incarnations until he retired in 1976. Employing teachers with experience in tropical, and mostly colonized environments, the department sought to educate international cohorts of young architects—many of them from decolonizing and tropical environments—preparing them specifically for work in tropical areas. Several of the instructors at the Department of Tropical Studies also conducted research and published their findings in manual-format books (Levin, 2015).

Jane Drew and Maxwell Fry's books *Village Housing in the Tropics* (1947) and *Tropical Architecture in the Humid Zone* (1956; Figure 2a) both provide guidelines for designing settlements as well as distinct building types (from residential architecture, to commercial and educational as well as healthcare) in tropical climates.

Drawing from their own work in West Africa, India, and the West Indies, as well as projects by other mainly “northern” architects working in tropical zones, the publications explain how to approach architectural design by highlighting factors such as sun-shading and through-breeze. Accompanied by plans and sections, which illustrate the penetration of sunlight into structures or visualize the flow of air through spaces, as well as indications of how to apply more technical tools such as sun-path diagrams or heliodons, the books provide principles and guidelines for architects intending to construct buildings in tropical regions. By embedding these principles in examples of executed building projects by architects in tropical zones, Drew and Fry’s books began to reflect a community of practice. As well as Drew and Fry, through the mid-20th century other architects contributed to building this growing field of knowledge through manual-style publications.

These include AES Alcock’s *How to Plan your Village* (1953) and Otto Koenigsberger, TG Ingersoll, Alan Mayhew, and SV Szokolay’s *Manual of Tropical Housing and Building* (1974; Figure 2b).³ Victor Olgyay’s *Design for Climate* (1963) also presents a contribution to the climate-driven design discourse, in this case from the USA. In her work on the manuals produced by Yona Friedman and Eva Schaur for the UN-funded Communication Center of Scientific Knowledge for Self-Reliance, Frederike Lausch points out the inherent imbalance in expertise assumed through the production of that type of publication, whereby foreign expertise outweighs local knowledge (Lausch, 2023). The particular role of Israeli expertise has recently also been investigated (Levin, 2022). It is important to acknowledge that in the mid-20th century scholars in the “Global South” were also contributing to the production of knowledge around architecture in tropical areas, yet their publications remain less well-known (Rivera de Figueroa, 1980).⁴

Theoria cum praxi?

Genealogy of *Tropenbau = Building in the Tropics* (1969)

The book by Georg Lippsmeier and his collaboration partners, *Tropenbau = Building in the Tropics* published in 1969, also falls into the broad category of tropical architecture, however, contrary to the works mentioned above, it emerged within a specific, non-anglophone context. Its history is closely intertwined with Lippsmeier + Partner (L+P)’s architectural practice and its attendant research laboratory, the *Institut für Tropenbau* (Institute for Building in the Tropics) (IFT) (Folkers, 2022). The interconnectedness of long-term practice and research in tropical regions was translated into the production of shared knowledge through publications such as *Tropenbau*. This created a platform that enabled a diverse range of actors to access architectural design and building projects in decolonizing countries, including those involved in the emerging DesignBuild movement. In the early 1960s Lippsmeier identified a knowledge gap in the German architectural realm in relation to building in tropical regions. Not a single architecture school in West Germany

offered a course in tropical building (Bader, 2023). Aware of the developments in the UK in particular, Lippsmeier was keen to support West German architects in successfully securing and executing commissions around the world. So, with the aim of collating and systemizing existing knowledge for the benefit of future designers engaging with architecture in tropical regions, Lippsmeier developed *Tropenbau*. Its publication in 1969 coincided with the emergence of courses on tropical architecture in German universities, and by the time of the publication of the second edition in 1980, at least seven architecture schools in West Germany offered education on architecture in tropical regions with their programs integrating excursions and practical experience to countries including Zambia, Malaysia, and Tanzania (Bader, 2023). IFT also closely followed and collected grey literature that stemmed from the research-design activities across West Germany and was a cornerstone in the collection, communication, and networking of knowledge (IFT, 1970; Schwencke, 1975; *Städtebauliches Institut im Fachbereich Architektur und Stadtplanung der Universität Stuttgart*, 1979).

L+P was founded in 1950 in Düsseldorf by Georg Lippsmeier, a year after his graduation from the Technical University in Braunschweig and before he completed his PhD in 1953. The venture was successful, and in 1960, L+P expanded, opening a branch in Munich before moving to Starnberg, a rather idyllic getaway destination for the wealthy citizens of Munich, in 1965. Although L+P maintained the office in Düsseldorf, perhaps not to forgo the beneficial proximity to one of the centers of German industry, it was in Starnberg that practice and research in tropical architecture most strongly intersected.

Remarkably for a small practice without an extensive professional network, already in 1953 L+P was awarded with their first international commission, namely the design of a (German) pavilion for the Rand Easter Show, the largest trade fair in Johannesburg, South Africa. From then on, trade fair architecture became one of L+P's mainstays—and it is no exaggeration to say the architects used it as groundwork for their successful business model (Forthcoming; Motylińska and Lee, 2024). It provided the office with a reliable and substantial income.

Although there is no proof in the sources to indicate that it was indeed the German pavilion in 1953, and we can thus only speculate,⁵ L+P designed and constructed trade fair projects which represented the German industry (e.g. New Delhi 1961, Khartoum 1961, Accra 1967) either for whole venues or as single pavilions. These were not only perceived as “rewarding” (“dankbare Projekte”) for financial reasons. As short-term involvements that resulted in temporary buildings, these projects reduced the necessity for maintenance and the liability of the architect was also limited.

In addition, involvement in trade fairs proved to be beneficial to L+P in terms of establishing a substantial transnational network, enabling the striving architects not only to build ties to representatives of German industry and international politics but also, and perhaps more importantly, to have extensive contact to potential clients and commissioners from Asia, Africa, and Latin America.

Nevertheless, the first major long-term commission for L+P outside Germany, the regional hospital in Diourbel, Senegal (completed in 1966 and still functioning under the original name Hôpital Heinrich Lübke) was a seemingly straightforward development aid project financed by the West German state and skilled labor coming from Germany to the newly independent West African nation. However, this project cannot be reduced to its perception as a purely development aid intervention, since simultaneously, it was also part of the Senegalese nation-building project that focused on the domains of healthcare and education. We can only speculate how it was possible for L+P to be granted such a large commission, but the fact that Lippsmeier was described by his colleagues as a “great networker” surely helped.



Figure 3a: Heinrich Lübke Regional Hospital in Diourbel, Senegal, architect: Lippsmeier + Partner. State: May 2022.



Figure 3b-c: Heinrich Lübke Regional Hospital in Diourbel, Senegal, architect: Lippsmeier + Partner. State: May 2022.

One of the reasons for the architect to get involved must have been his growing interest in healthcare architecture and climatic adaptability of buildings that intensified throughout the 1960s. Diourbel was an ideal “testing ground” for both—a project supported by local politicians for a hospital built from scratch in a region known for extremely high temperatures and arid, desert-like conditions. With its efficiently designed pavilion structure, it offered smooth circulation of staff, patients, and family members undertaking care duties.

The adaptability of the project that could be—and in fact has been—expanded over the following decades of intense use became one of the trademark design principles of L+P (Figure 3a-c). As it seems, the hospital in Diourbel was not widely publicized or commented upon—there is only one article by Lippsmeier published in *Baumeister* (Lippsmeier, 1966). And yet, it became a major milestone, as one of the two largest early international projects of L+P (the second one was a hospital in Da Nang, Vietnam). Besides, the hands-on approach to experimenting with building under tropical conditions, accompanied by an intense study of the international discourse on the topic, meant that Lippsmeier and his colleagues started to generate a large—and in the German context—unique body of expertise.

L+P's building work informed its research and vice versa, in what could be termed an action research approach to practice. Capitalizing on it and thanks to the income generated through trade fair activities, Lippsmeier founded the research arm of his architectural practice, *Institut für Tropenbau* in the Starnberg office in 1969.

Although globally connected and a key node in the tropical architecture networks, IFT was not affiliated or bound by international organizations such as UN Habitat or UNESCO. This is the difference in comparison to specialized research units such as s.m.u.h. in Paris or architectural offices that emerged in the late colonial period within imperial contexts. IFT functioned independently, traversing borders and boundaries and acquiring contracts and research funding from a variety of sources, including the West German state or *Deutsche Forschungs Gemeinschaft* (DFG) (German Research Foundation). Committed to publishing in both German and English, IFT contributed substantially to the discourse surrounding the growing international tropical architecture field, serving a global audience while targeting the German-speaking architecture, construction, and research markets. Through the collection, collation, and dissemination of material referring to tropical architecture, IFT became a one-of-a-kind institution, both a knowledge hub, and a center of expertise.

By the 1970s, L+P was running regional offices in Togo, Mauritania, Tanzania, Laos, South Vietnam, and Brazil. A permanent office was established in Dar es Salaam, Tanzania, from which a wide range of projects—including hospitals, universities, printing presses, radio stations—were constructed across Africa. While in the 1960s, Lippsmeier's office had strong links with South-East Asia (mostly Vietnam), Africa gradually became the continent in which L+P and IFT were most active, with a significant number of buildings being built, particularly in Tanzania. These regional offices were indispensable for acquiring further commissions, but they were also crucial for the functioning of IFT since they gave the research institute direct access to publications and experts from the "South." This is visible in the structure of the extensive library collection of the IFT (which was donated to the Canadian Center for Architecture, CCA in 2017) that includes a huge collection of literature on building materials, local contractors, or infrastructural planning in Africa (and to a lesser extent, also Asia and Latin America), among other topics. However, even if the decolonizing countries seemed to be the main addressees or targets of L+P as potential clients and commissioners, the interest and specialization in building in the tropics was understood in more general terms. IFT defined the "tropics" as the zone between the tropics of Cancer and Capricorn in the 1969 edition and more specifically in the 1980 edition as the undulating band around the equator between the 20° isotherms of the northern and southern hemispheres in which the average annual temperature does not drop below 20°C (IFT, 1970)—following the sup-

posedly objective geographical category (Motylińska, 2020). The maps in both editions consistently show the 20° isotherms.

Reading and building *Tropenbau*

Both the practical experiences gained through commissions, especially in Senegal and Vietnam, as well as nascent research activities at IFT resulted in the institute's first major publication, namely *Tropenbau = Building in the Tropics* (1969). This book is one of several mid-20th century publications that highlights approaches to building in regions with tropical climates, and must be interpreted in relation to those, and embedded within the longer history of tropical architecture as outlined above. Working with similar architectural publication tropes, *Tropenbau* made a distinct contribution to the field. It was the first of many application-oriented research publications that IFT produced in the form of books, reports, articles, and newsletters, establishing them as a committed player in the tropical architecture realm. Reissued in 1980, *Tropenbau* has become widely stocked in libraries and collections concerned with building in tropical climates around the world.

Despite the singular name on the cover, the authorship of the book is, as we have established through oral history collection,⁶ in fact collective. Georg Lippsmeier was the leading persona and *spiritus movens* behind the publication and it would not have materialized without his continuous engagement in the topic. However, the publication emerged out of a close collaboration with his colleagues, both credited and not. Their contributions were crucial for the development of the geometrical model of adaptability to changing solar conditions and for integrating observations from the field. As well as technical diagrams, the visual layer of the book included numerous photographs, roughly half of them documenting L+P's own projects and mostly taken by Sigrid Neubauer, a photographer from Munich. A specialist in architectural photography, she worked for L+P and accompanied the team on several missions, delivering high quality images of the architecture projects. Unlike the vast majority of previous publications on tropical architecture, *Tropenbau* was bilingual (cf. Danz 1967).⁷ Formatted with two text columns, each page presents a German text on the left and its English translation on the right.

While offering German as the original language, thereby centering German knowledge production and appealing particularly to a German-speaking audience, the translation ensured access to a far wider international readership, creating a foothold in the wider tropical architecture discourse. Its format and design also set it apart from other publications. Its square format, clear layout, and sans-serif font speak to rationality and clarity, while its silver cover indicates technical expertise and a sensibility for materials. The bright orange endsheets contrast with the minimalism and monochrome design of the rest of the book, making a bold, confident impression.⁸ To a far greater degree than the other publications,

Tropenbau is a design object, employing an aesthetic language that aims to appeal to design professionals. It is a high-quality publication that demands to be taken seriously. While the text does not offer advice or advance theories related to building aesthetics or architectural forms, the high-quality photographs that enliven its pages further illustrate Lippsmeier's aesthetic standards. This is perhaps particularly the case in relation to the presentation of L+P's own building projects, which appear as high-tech, finely hewn objects that cast shade in attractive geometric patterns. Such images conflict somewhat with the narrative conveyed through the text that promotes the production of high quality buildings with limited means.

In terms of content, the book follows a similar structure to the others, beginning with chapters on tropical regions and climate before moving into analyses that speak directly to architectural practice and design. However, rather than focusing on particular building typologies like Fry and Drew or the specificities of thermal design, with particular attention paid to lighting and noise as seen in Koenigsberger et al, *Tropenbau* highlights aspects of construction. It includes chapters on building materials, infrastructure, and construction of the external envelope, for example. While the book draws on the same visual language of architectural photography, analytical drawings and diagrams that, for instance show how to analyze window openings in terms of solar penetration or indicate the movement of air around buildings, and technical architectural drawings—particularly sections—that communicate how spaces function in terms of thermal performance, it contains many more detailed tables of information that reveal how particular materials perform in certain conditions (Bouet, 2021).⁹

Through this compendium-like approach, *Tropenbau* seems to go further in assisting in the overall design, detailed design, and construction of buildings, better enabling those involved in the construction process to make decisions on the ground. However, the application of the technocratic vocabulary and decorum follows the long tradition of the discourse on tropical architecture with its problematic relation to architecture designed in other climates—as recently analyzed by Jiat-Hwee Chang and Daniel Ryan (Chang and Ryan, 2020).¹⁰ Yet—to complicate the interpretation of Lippsmeier's legacy—this positioning in line with technocratic thinking does not mean a complete lack of sensitivity to local contexts. While discussing practical aspects of designing social infrastructure in their other, more detailed publications, especially with regard to the hospital design projects, Lippsmeier and his collaborators acknowledged the crucial task of accommodating local customs by the designers, for instance, by adding open cooking spaces where family members could prepare meals for their sick relatives (Demeter, 1987). However, this sensitivity is obscured in *Tropenbau*.

A similar collation of information marks the end of the book, with several pages dedicated to listing institutions and organizations related to tropical building research around the world. It includes a forest research institute in Dehra Dun, a materials and soils mechanics laboratory in Kuala Lumpur, and the East African Industrial Research Board in Nairobi, as well as UN organizations and the Department of Tropical Studies in London. Collecting and sharing this type of knowledge is an indication of the IFT's intention of becoming a knowledge hub committed to communicating and multiplying the practice of building in tropical regions.

Apart from that, *Tropenbau* can be interpreted as publicity for L+P architectural practice. As mentioned above, many projects by Lippsmeier and his colleagues were included in both editions to demonstrate the application of design principles—and to convey a strong visual message positioning L+P/IFT as experts in the field of building in the tropics. Among the prominently featured examples was the tertiary hospital in Mwanza, Tanzania (completed in 1972) (Lee, Mkony, Motylinska, 2021). Similarly to the regional hospital in Diourbel, it was one of the crucial investments in Tanzania's provincial social infrastructure and part of the nation-building project. For L+P, it was one of the largest hospitals they ever built, becoming a major reference project. For the IFT, it was simultaneously also a site of experimentation, as will be explained in the following section.

The book's bibliography too, is extensive and was likely intended as an additional resource to architects considering working in the tropics. It is predominantly bilingual, German and English, however, especially in the second, revised and updated edition from 1980, publications in French and Spanish are also featured. Lippsmeier and his co-authors were familiar with the knowledge production on climatic design in the US and Australia, which is also confirmed by findings in the Lippsmeier Collection at the CCA, including grey literature from Queensland University or the Division of Building Research of the Commonwealth Scientific and Industrial Research Organization. As for publications in German, those from the GDR are also listed, thus demonstrating that IFT kept track of the discourse in the Eastern Bloc.

This does not come as a surprise, particularly if we take into account that some East and West German architects either maintained direct professional contact or at least attended the same international conferences. The exchange only intensified during the 1970s, following the abolition of the Hallstein doctrine and the beginning of diplomatic relations between the countries. Strikingly, no titles published before 1945 are included, though a closer look proves that IFT knew and was in possession of *Tropenhygiene* by Ernst Rodenwaldt,¹¹ which was, in fact, the fourth edition of a publication by a physician leading a research unit in

Heidelberg conducting research on tropical medicine throughout the Nazi era. Rodenwaldt based his chapter on architecture under tropical conditions on publications by Friedrich Vick, a German architect active in the 1930s and 1940s who gathered substantial knowledge on issues of natural and mechanical ventilation in Southeast Asia and during the Second World War was involved as an expert in the malaria prevention campaign for the *Wehrmacht*. This means that, although no direct references ever appear in the text, the authors were familiar with the German-speaking discourse on building in the tropics from the interwar period and it might have informed their concept of applying different forms of ventilation (which were discussed at length in both editions of *Tropenbau*).

In terms of the potential readership of the book, Lippsmeier writes that while increasing numbers of architects from “tropical countries and from industrial countries of the temperate latitudes” are employed in tropical regions, there is a lack of education in tropical building. He sees the book as “a compendium for planners, architects, engineers, and also clients who can be assumed to have a basic knowledge of building.” (1969, foreword) The book is devised as a tool to deepen practitioners’ knowledge in building in tropical regions. However, in the foreword of the second edition of *Tropenbau*, Lippsmeier notes that the book has been unintentionally used as a textbook.

Unexpectedly, *Tropenbau* had become a book employed as essential reading in architecture schools in departments that were also increasingly focused on designing architecture in tropical zones. Furthermore, the 1980 edition was edited with a view to further serving that audience. Beyond the AA’s Department of Tropical Studies mentioned above, in Darmstadt a chair for tropical building was founded in 1969. By 1980, the TU Berlin, Stuttgart University, and Cologne’s University of Applied Sciences, among other universities in the Federal Republic of Germany, were also all engaging with architecture and planning challenges in tropical regions (Misselwitz, 2017). Beyond design studio work in Germany, these departments also took students on excursions or field trips to the tropical regions where their design projects were located, sometimes also including them in executing projects designed by their instructors.¹² This form of engagement can be seen as a precursor to the DesignBuild studios that began emerging in the 1970s. Even if Georg Lippsmeier himself or his colleagues from L+P and IFT were not directly involved in teaching, exchanges with university-based research institutes outside Europe such as the Research Committee on Solar Energy and Tropical Housing affiliated at University of Queensland and the Department for Architecture at the University of Puerto Rico demonstrate that the academic context was not off the radar for the architects from Starnberg.

IFT.

INFORMATION 1

INSTITUT FÜR TROPENBAU · DR. ING. GEORG LIPPSMEIER · 813 STARNBERG/GERM. WALDSCHMIDSTR. 6A TEL. 08151/2374 · TELEX 526444

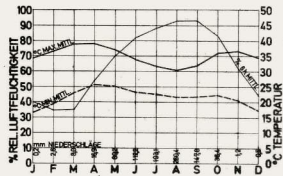
FRAUENGEWERBESCHULE

Ouagadougou, Obervolta, West-afrika
12° Nord, 2° West

Auftraggeber:
Republik Obervolta, Ministerium für Entwicklung und Tourismus

Planung:
Planungsbüro Fuhmann, Düsseldorf
Dietrich Fuhmann, Jörn Janssen

Klima:
Savannenzone



Maßnahmen:
Wärme- und kältespeicherfähige Mauern mit großen Fensteröffnungen zum Wärmeaustausch und zur Querlüftung (jahreszeitlich verschiedene Anforderungen). Dachüberstand 1,80 m, Gebäudelängsachse senkrecht zur vorherrschenden Windrichtung. Rückstrahlende Aluminiumdachhaut, belüfteter Dachzwischenraum.

Konstruktion:
Erdgeschossige Anlage in Ziegelsichtmauerwerk. Außenwände und Innenwände 20 cm stark. Rand- und Deckenbalken vorgefertigte (Baustelle) Stahlbetonelemente. Deckenplatte Ziegelhourdis, im Abstand Dachhaut aus Aluminiumblechen.

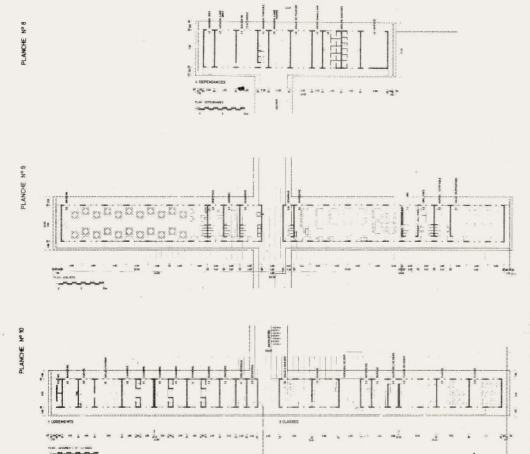
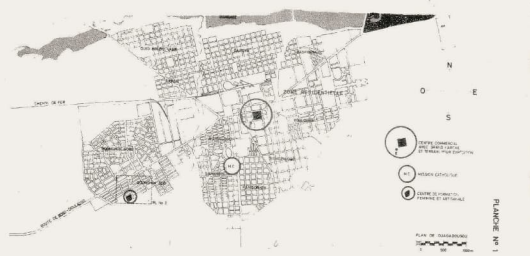
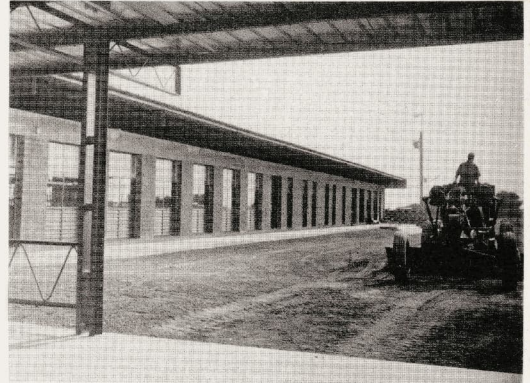


Figure 4: INFORMATION 1, published in 1970 by IFT.

Moreover, their varied body of work, which we describe in more detail in the following section, was received beyond the “Iron Curtain” (Lippsmeier, 1984; *Hochschule für Architektur und Bauwesen*, 1991).¹³

Circulating *Tropenbau*

While *Tropenbau* was undoubtedly IFT’s most significant publication, the institute also produced and disseminated other forms of knowledge, notably in the form of newsletters and reports. IFT’s newsletter, entitled *INFORMATION*, was published between 1970 and 1972 (Figure 4).

The first two issues were in German, but the subsequent issues were bilingual. In line with the approach tested in *Tropenbau*, the newsletters presented architecture projects in tropical regions. As well as short descriptive texts, sun-path diagram analyses, climate charts, architectural plans and sections, photographs and construction details, the project profiles included the addition of the tropical country’s number according to the international decimal classification system (e.g. 663 for Senegal, 597.3 for South Vietnam) in an attempt to further collate the information for ease of reference. The newsletters also include a round-up of current events, including conferences and workshops as well as the laying of foundations stones and progress on projects, in relation to the field. *INFORMATION 3* includes a list of projects by German architects practicing in tropical zones, again suggesting a particular interest in national networking and consolidating and promoting German interests.

INFORMATION can be read in relation to other similar publications related to the field of tropical architecture. Following World War II, in the UK the Colonial Office published a series of pamphlets entitled “Colonial Building Notes” from 1950, rebranding them as “Overseas Building Notes” in 1958. These drew on research in the form of technical reports by architects and engineers active in tropical regions, that were compiled by the Building Research Station in Garston (Uduku, 2014; Fry, Knight, 1978). The *Tropical Housing and Planning Monthly Bulletin* edited by the planner Jaqueline Tyrwhitt was a similar experimental and exploratory collection of book digests, UN reports, conference proceedings, field reports, and her own editorial introductions and comments. The founding of the Bulletin in 1955, which was renamed *Ekistics* in 1957, was instigated by the architect-planner Constantinos Doxiadis, who saw it as a means to keep his staff, who were working in diverse locations around the Middle East, informed of the most recent international developments in housing and planning thought and practice.

The IFT’s newsletter, however, cannot be considered separately from other practically oriented publications. The most, extensive of them were the reports—

in total, eight were published during the 1970s and 1980s. They serve as annexes of sorts to both editions of *Tropenbau* and give far more depth to matters introduced in *INFORMATION*.

In Report 2 on *Micro-climate and Comfort in Tropical Buildings* from 1973 (Mukerji, 1973) results of a long-term study of climatic properties of the hospital built by IFT in Mwanza, compared with observations from the hospital project in Da Nang provided the main empirical groundwork for the multilayered study of the topic—and in this respect we can say that L+P's projects were indeed sites of experimentation necessary for developing the practically informed expertise and further fine-tuning of architectural projects, while situating the own body of research within a much broader international discourse.

The wealth of practical expertise gathered through the involvement of the architects in all the stages of the construction process permeates these longer research publications. This also includes the execution phase during which the architect had—according to the author of these observations, who could have been Hans Demeter¹⁴—oftentimes to act as a site manager as described in Report 7 *Hospital Architecture* (Demeter, 1987). The message here is that IFT's authors were experts familiar with the realities of the construction business under various specific local conditions that require constant adaptability, for instance, due to the lack of resources.

DesignBuild practitioners often face similar challenges, taking a practical approach to architectural education that relies on an understanding of construction methods, materials, and processes. IFT's publications provided basic, concise, and filtered information about building in different locations around the world, which could support teachers and students in gaining knowledge before they travelled. The compiled information, while better equipping the students for the technical aspects of building, offered little by way of growing a socio-cultural understanding of the local building practices and customs. This priming of experts might have led to conflicts on the ground (Arboleda, 2022), and to projects that failed because of a lack of consideration of local values and traditions that could not be replaced by merely respecting sun path diagrams or optimizing cross-ventilation. Through oral history collection and scattered fragments of correspondence of the IFT to be found in the CCA¹⁵ collection we can establish that these practically oriented publications circulated within professional networks on a global scale, potentially impacting architectural education in diverse contexts.

IFT was approached by or sought contact to architects and engineers from South Africa (mostly from NBRI, National Building Research Institute from Pretoria), the

Asian Regional Institute for School Building Research (ARISBR), Colombo, or Australian institutions such as the already mentioned Research Committee on Solar Energy and Tropical Housing affiliated to the University of Queensland.

Conclusion

The diverse body of work of IFT including publications, research projects, and more ephemeral exchanges through different networks and platforms stem directly from the practical experience of L+P, while simultaneously offering groundwork for further projects. From the beginning it was addressed to a broad professional and academic audience, as its multilingual character demonstrates. Even if the activities of the binary design-research practice from Starnberg could be positioned within the context of the Cold War rivalry and under the assumption of the developmental agenda as proposed by Esra Akcan (Akcan, 2022), the analysis of complex circulations of knowledge proves that their architectural research and design practice cannot be interpreted solely within this specific framework. If we consider the context of long-term engagement with and continuous presence of the satellite offices of L+P in certain countries like Togo or Tanzania, as well as the multinational character of the architectural practice, this picture becomes more nuanced.

Nevertheless, the production of specialized knowledge about architecture design, planning, and building processes in tropical zones, and its communication through clear, aesthetically produced publications that emphasized its on-site application can be linked to the development of the DesignBuild movement in which students from the “North” work in short-term on-site assignments with materials such as those provided by IFT to implement design projects in the “South.” The primers produced by IFT enabled such practitioners, arming them with technical knowledge about the contexts they were working in. These publications substantially lessened the need for engagement with local people involved in the design and construction of settlements, buildings, and infrastructure. This subjugated and “othered” local knowledge, much in the tradition of the 20th century approach to the development of tropical architecture.

- 1 A search of World Cat reveals that libraries in Africa, Asia, Australasia, Europe, and North and South America hold copies of the book. It is important to note that many libraries do not participate in World Cat, so the search results are not representative.
- 2 This would only have been possible based on further archival sources. However, the archive of L+P/IFT only contains very scattered correspondence.
- 3 Victor and Aladar Olgay's *Design with Climate* (1963) can also be seen in this vein, although it relies less on analyses of existing buildings, focusing rather on the development and explanation of theories.
- 4 Numerous examples can be found in the IFT library (e.g. Joubert, S. J. P. *Air conditioning in the tropics*. National Mechanical Engineering Research Institute, South African Council for Scientific and Industrial Research (as well as many other publications stemming from the apartheid era in South Africa); Report on urban health center buildings. [New Delhi] National Buildings Organisation [1963]). Both the 1969 and 1980 editions of *Tropenbau = Building in the Tropics* include references to institutions in the Global South that were conducting research on aspects of tropical architecture. 32 of the 73 institutions listed in the 1969 edition were located in the Global South. In the 1980 edition, 22 of the 66 institutions were in the Global South. The bibliographies in the two editions also include literature published in the Global South, with Pretoria, New Delhi, and Roorkee emerging as publishing centers in the 1969 edition and Nairobi, New Delhi, and Pretoria featuring prominently in the 1980 bibliography.
- 5 Although we have no documentation of this, interview partners who worked with both L+P and IFT have indicated that the trade fair architectural work executed by L+P generated large profits.
- 6 In-depth interviews with Kiran Mukerji and Hans Demeter carried out in the autumn 2018.
- 7 Overview of existing examples, different solutions for solar protection of buildings, not only in tropical zones. This publication appeared simultaneously in Spain (Danz, Ernst: *La arquitectura y el sol: protección solar de los edificios*. Barcelona: Gustavo Gili, 1967) and reached architectural departments across Latin America (copies can be found from Chile to Cuba). Danz's work was already referenced in the first edition of *Tropenbau* in 1969.
- 8 These were replaced by black endsheets in the perhaps more conservative second edition.
- 9 Bouet offers a useful reference demonstrating how such seemingly objective diagrams might obscure or silence their colonial origins.
- 10 For a critical reflection on categories of comfort and (climatic) adaptability, see also the conclusion of Solano-Meza, Natalia. 'Aesthetics of Comfort: A Third Moment in Costa Rican Histories of Tropical Architecture'. *ABE Journal. Architecture beyond Europe*, no. 17 (2. September 2020). <https://doi.org/10.4000/abe.8146>
- 11 In the bibliography of both editions of *Tropenbau = Building in the Tropics*, the edition from 1945 was listed; Rodenwaldt, Ernst, *Tropenhygiene*, Stuttgart 1945. In the Lippsmeier collection hosted at the CCA, the 1966 edition is available (with the signatory library main georg lippsmeier 298990).
- 12 See G. Minke reports from IFT collection.
- 13 The Russian translation of *Tropenbau* appeared in 1984. Publications of IFT were available at the *Hochschule für Architektur und Bauwesen* in Weimar (HAB) – and as the ongoing research by the doctoral candidate Juliane Richter from the *Bauhaus-Universität Weimar* shows, the Chair for Building in the Tropics was taking a close note of the IFT activities. Thus, they indirectly also impacted the experimental teaching practice that bears similarities with the DesignBuild approach due to its hands-on attitude and similar mobility pattern.
- 14 As we speculate after the comparative reading of his publications and the interview in the fall of 2018.
- 15 The library of the IFT and fragments of the L+P archive were acquired by the CCA in 2017 from Antoni Folkers who managed the holdings after the closure of the office in Starnberg, thus preventing a further dispersal of the collection. At the same time, part of Kiran Mukerji's archive was also acquired by the CCA.

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1 The covers of the 1969 and 1980 editions of *Tropenbau = Building in the Tropics*

2a-b Covers of Maxwell Fry and Jane Drew's *Tropical Architecture in the Humid Zone* and Otto Koenigsberger et al.'s *Manual of Tropical Housing and Building*

3a-c Heinrich Lübke Regional Hospital in Diourbel, Senegal, architect: Lippsmeier + Partner. State: May 2022. Copyright: Rachel Lee

4 INFORMATION 1, published in 1970 by IFT

ARCHITECTURE – DesignBuild REFLECT, Edition 02

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In this book, nine authors explore the DesignBuild learning method within the postcolonial context. Using concrete examples, the hands-on approach is critically examined and evaluated. One focus is on the overseas engagements of European and US students, who actively apply their newly acquired knowledge in cultures foreign to them. The authors also document and analyze projects by students from Latin America, Asia and Africa, who use the method, among other approaches, as a field of experimentation to question colonial norms. In addition to the students' viewpoints, the contributions also address those of the community, educators, and supporters, thereby specifying the problems and challenges faced by all those involved.

