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ARCHITETTURA E SAPERI

ARCHITECTURE AND KNOWLEDGE

A CURA DI / EDITED BY SONJA HILDEBRAND,
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BENTON · BERSELLI · BIERMANN
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Architettura e saperi
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Sonja Hildebrand, Daniela Mondini, Roberta Grignolo

Con / With
Bruno Pedretti



Sascha Roesler

Allegory of the Sustainable City

The Wind Catchers of Hyderabad (Pakistan)
and Their Spread in the Modern
Architectural Discourse

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The roofscape
of Hyderabad,
by Martin Hürlimann,
1927 (Fotostiftung
Schweiz, Estate
Martin Hürlimann).

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The “walk’s map”
(*Wanderstrassenkarte*)
of cultural exchange
between North and South,
East and West by Aby
Warburg (between 1908
and 1914) as part of the
MNEMOSYNE project
(C. Wedepohl,
*Ideengeographie. Ein
Versuch zu Aby Warburgs
“Wanderstrassen der
Kultur”*, in H. Mitterbauer,
K. Scherke, ed., *Ent-grenzte
Räume. Kulturelle Transfers
um 1900 und in der
Gegenwart*, Wien 2005).

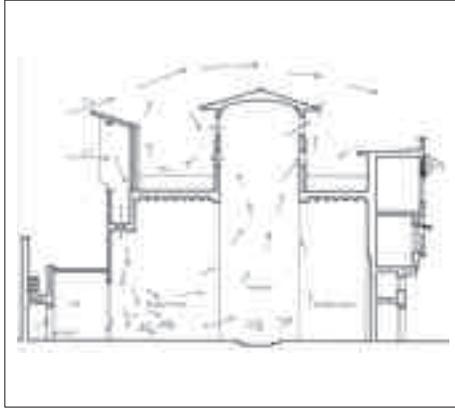
— Globally circulating images

While the mass media character of modern architecture and the role of the media in its promotion have received attention for quite some time now, the global circulation of architectural concepts and images and the new type of knowledge that is acquired in the process have become the focus of research interest only very recently. Such a contemporary “geography of ideas”, which picks up where Aby Warburg left off, follows the modern “migratory routes” of motifs and images.¹ Much more so than during Warburg’s lifetime, globalised distribution channels and globally operating stock photo agencies generate and leave traces which themselves produce a new «space of knowledge» and a cross-cultural «collective memory»³ of architecture. Nowadays this global circulation of images requires a new «way of looking at things in terms of the history of images» which regards *historicity* as an immanent part of the (circulating) motifs and images. Not insignificantly, the increasing globalisation of images is a consequence of the Internet and of digitisation, which contribute to a double and certainly ambivalent encoding of images. On the one hand digitisation tears the specific characteristics in images out of their local context and transforms them into globally circulating commodities, which necessarily open up to new types of meaning. On the other hand the Internet allows for a comparative

recourse to databases, which was inconceivable until a few years ago. Lines of argument that employ a rhetoric of images can thus be invalidated by revealing them to be half-truths or even hoaxes. As a consequence, having been robbed of the historical context in which they were generated, the images can be placed in a new context.

The roofscape of the city of Hyderabad in Pakistan (province of Sindh), which has been published many times, is subject to such double encoding in an exemplary way. Since it was published in Bernard Rudofsky’s influential book *Architecture With-*





out *Architects* in 1964, the roofscape with its scores of wind catchers has repeatedly appeared in publications on architecture and the ecology movement.⁵ Rudofsky's exhibition catalogue shows three views of the wind catchers on a double-page spread. The recurring reference to the *roofscape shown by Rudofsky* has imbued these images with a twofold reference character which follows the interpretation of Hyderabad that was created by the New York MoMA exhibit. Rudofsky's exhibit and exhibition catalogue have constituted the framework for an interpretation of the circulating images of Hyderabad's roofscape ever since.⁶ We might ask with Roland Barthes what constituted «the power of attraction» which this «specific photo» – the motif of Hyderabad's roofscape – exerted on Bernard Rudofsky and the many architects referring to him. What was the «fascination»,⁸ even the promise, which this motif exuded? The iconic character of the city view can best be compared to the Uthman Katkhuda Palace (c. AD 1350) in Cairo, which Hassan Fathy had introduced into research literature. This palace, too, with its striking wind catcher, was part of a region where Islamic civilisation ruled, which extended from the Maghreb countries to South Asia. And it, too, was used as a code for a different kind of energy supply in the discourse which communicated modern architecture to the public at large.

— Stock photo agencies as brokers of the world

The photographs which have generally been used in the global distribution of the roofscape since Rudofsky were taken by the Zurich-based photographer, author and publisher Martin Hürlimann (1897-1984) in 1927, during the final stage of his two-year trip around the world. Two pictures in particular appear again and again in architectural publications.⁹ One shows the roofscape from a slightly elevated position at the former fort; the other represents a building with wind catchers from a point of view in the street. Martin Hürlimann put these two photos into circulation just one year after his return to Europe in his book *India*.¹⁰ With this illustrated travel book Hürlimann launched a publishing career that led to the foundation of the journal "Atlantis" in 1929, and one year later to the foundation of the eponymous publishing house; a publishing house which increasingly also took on the role of an early modern stock photo

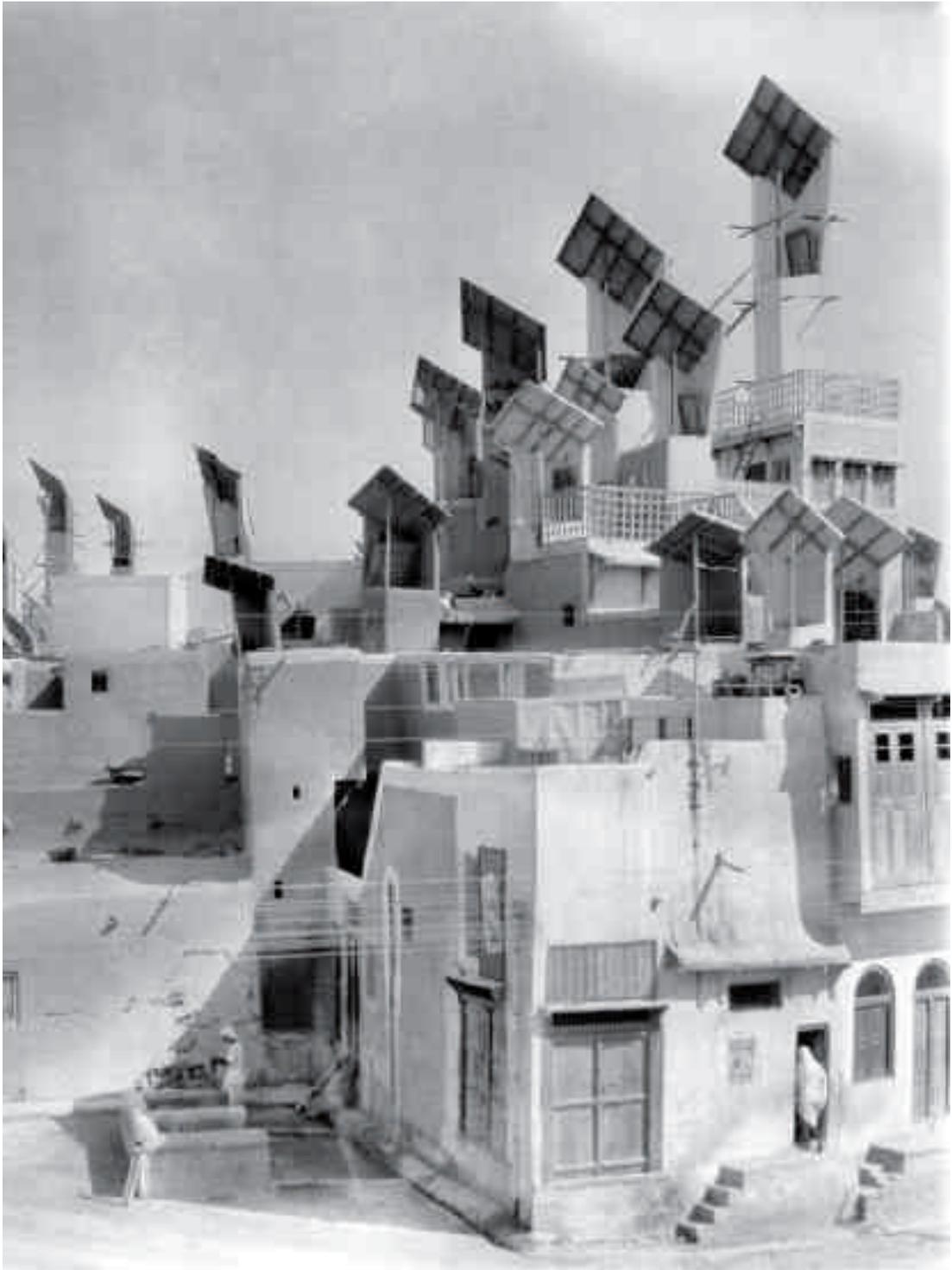
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View of the exhibition *Architecture Without Architects* (New York, MoMA, 1964), by Bernard Rudofsky (*The Prodigious Builders. Notes toward a natural history of architecture with special regard to those species that are traditionally neglected or downright ignored*, London 1977).

Section of the Uthman Katkhuda Palace (c. AD 1350) in the old town of Cairo (Egypt), highlighted by Hassan Fathy in his publication *Natural Energy and Vernacular Architecture* (Chicago 1986).

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Street scenery of Hyderabad, by Martin Hürlimann, 1927 (Fotostiftung Schweiz, Estate Martin Hürlimann).



agency.¹¹ With his threefold Atlantis project (journal, publishing house, stock photo agency) Hürlimann was not the only broker of global and exotic stock photography of his day. The first stock photo agencies in today's meaning of the word had come into being simultaneously in Europe and the U.S. in the 1920s. In this connection we may mention, e.g., the "phototheque" of the Berlin press photographer Willy Römer or the Ewing Galloway Agency of the New York journalist and photo editor Ewing Galloway.¹² Driven by a new phase in the «structural transformation of the public sphere»¹³ and the new paradigm of «technical reproducibility»,¹⁴ combined with a popular curiosity about the world, photography attained a novel force of impact during the years between the wars. New forms of publication and presentation took on the role of agents that conveyed the colonial non-European realm of experience to a European and American audience.¹⁵ Accordingly, Hürlimann regarded his Atlantis project as an attempt to bring the world, which as a result of colonialism and economic interrelations had become increasingly globalised, closer to a European (German-speaking) audience after World War I. The journal, which existed until 1960, «gave the Germans and Swiss a whiff of the world», as Hürlimann remarked in hindsight.



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Cover of the
"Atlantis Magazine",
May 1930.

“Atlantis” was one of the first European consumer magazines which was, explicitly in a non-political way, dedicated to the «world», to «countries, peoples, and traveling».¹⁶ It always had to satisfy the expectations of the European readership as well, even though – as the following quotation from Hürlimann’s book *India* from 1928 suggests – the observed reality did not measure up to expectations. The world that was presented was one of expectations the readers were presumed to have, which, despite Hürlimann’s actual objective, gave his book an exoticising and orientalisising bias: «Raj-putana, the area which best matches our concept of medieval India, is colourful and full of proud characters, and still filled with the brilliance of ancient princely courts. On Mount Abu and further west, on the Kathiawar peninsula, are some holy sites of the Jainas. Ahmedabad was once the seat of powerful Islamic rulers, like Hyderabad, the former capital of Sindh, which today is far surpassed by the powerfully emerging trading place of Karachi».¹⁷

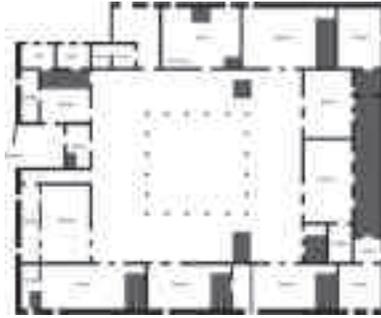
— Allegory of the sustainable society

The photographic representation of Hyderabad that was now beginning to spread was accompanied by the growing presence of Europeans in the city. Current Internet databases contain photos from the 1890s and the 1930s, which show us the city studded with wind scoops.¹⁸ In the 19th century Hyderabad constituted the economic and cultural centre of Sindh province; in the Indus River Hyderabad possessed a privileged trading route to China.¹⁹ From 1843 the city was subject to British colonial rule not too long after it had been founded as the fort of a regional prince in 1768. The majority of all extant photographs of Hyderabad were taken from this very fort. The gate to the city, which was located outside the fort, also appears in some of Hürlimann’s shots. Remarkably, Hürlimann’s *India* albums contain documentation of urban conditions only from the area that today is Pakistani territory. The central motif of the three cities documented – Lahore, Peshawar and Hyderabad – consists of their roofscapes.²⁰ Yet while in the case of Lahore and Peshawar the picture of the city was enriched with portraits of inhabitants, with everyday street scenes and architectural details, the photos of Hyderabad remained strangely stylised, even anaemic. Hürlimann pursued that «cultivated ennui» which dominated the European city portraits of the 19th and early 20th centuries; the main photographic motifs were «the fabric of entire cities».²² Accordingly, there tend to be few people in Hürlimann’s photos of Hyderabad; the city appears to be nearly desolate. This puts all the more emphasis on the wind catchers and the roofscape as the true motif of the photographs. The striking quality comes from the overall view of the roofs as thermal regulators of the city. Not just privileged buildings but the majority of buildings – from palace to the lowliest cottage – were equipped with wind catchers. One of Hürlimann’s pictures shows us a building constructed by the British colonial administration whose roof also had a wind scoop. While wind catchers were used not only in Hyderabad, but in the entire Sindh province, Hyderabad was widely known as *manghan jo shaharu*, “the city of the wind catchers”.²³

As a general rule, each room had one to two wind catchers. These were triangular flues, which funnelled the air into the storeys below. Due to the thermodynamic principle of the “stack effect,” the winds (in the flue) were accelerated, which generated

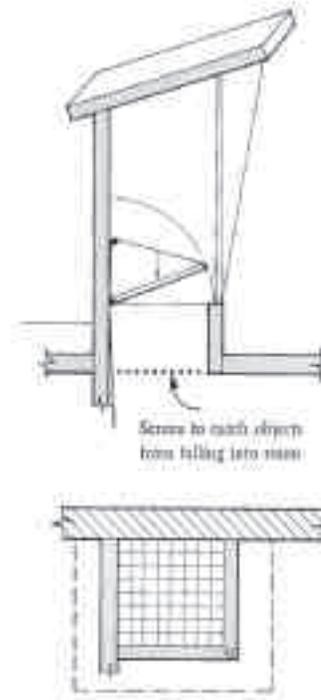
additional cooling effects. All wind catchers were facing in the same direction: they were oriented toward the incident summer monsoon winds. In the summer months, the monsoon weather brought these winds from the Arabian Sea in the southwest. This made staying inside the buildings more bearable when outside temperatures reached up to 48 °C (>118 °F). In addition to the high temperatures in the summer, Hyderabad typically has extremely high humidity. The flues also included a system of flaps, which made it possible to direct the incident winds. When temperatures rose around midday, the flaps were closed for a few hours. Conversely, during the winter months the wind catchers, all of which were aligned in one direction, were protected against cold winds from the opposite direction. In winter outside temperatures are as low as 0 °C (32 °F). As the outdoor air was heating up on the protected side of the wind catchers, it was funnelled into the interior rooms, again modifying their temperature profile.²⁴

The further spreading of the motif of the roofscape that was robbed of its historical context resulted in object and representation becoming indistinguishable; there was no longer a clear separation between *medium* and *reference* (Roland Barthes), since no particular knowledge of the historical context of the wind catchers was included in the distributed photograph. On the other hand, it was only the discursive dissemination of the motif of the roofscape that made it an *allegory* with many different meanings, which were yet to be deciphered – an allegory of modern, energy-dependent society. According to Walter Benjamin's comprehension in *The Origin of German Tragic Drama*, the *allegory* is a «mode of expression» and not just a «conventional system of signs» the way *symbols* are.²⁵ Benjamin sees the allegorical connection between «meaning and sign» particularly clearly in the «antinomies of the allegorical»: «Any person, any object, any relationship can mean absolutely anything else».²⁶ In the allegory, «all of the things which are used to signify derive, from the very fact of their pointing to something else, a power which makes them appear no longer commensurable with profane things, which raises them onto a higher plane».²⁷ Accordingly, Benjamin put photography in general close to allegorical representation. «All of the things which are used to signify» (wind catchers) and which



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Floor plan of a house in Tatta (province Sindh), indicating the position of the air shafts (grey). Almost every room possesses its own wind catcher (J.-L. Bourgeois, C. Pelos, B. Davidson, *Spectacular Vernacular. The Adobe Tradition*, New York 1989, p. 96).



Vertical and cross section of a wind catcher (B. Rudofsky, *The Prodigious Builders. Notes toward a natural history of architecture with special regard to those species that are traditionally neglected or downright ignored*, London 1977).

Rudofsky and many others presented make use of this ability of «pointing to something else» that Benjamin mentioned; the wind catchers become part of a modern “iconography of the wind” making visible what is in fact an invisible phenomenon.²⁸ Only in its capacity to point to the energy and comfort problems of Western societies does the photograph rid itself of its own profanity; the image now also represents a more sustainable modern architecture.

— Modern knowledge of the winds

It was architects of Central European extraction who introduced the Pakistani wind catchers into the architectural discourse of the 20th century. As early as 1951 Ernst Egli published a photograph of this city in *Climate and Town Districts*. This was followed in 1963 by Victor Olgyay who, in his study *Design with Climate*, raised the previous research on passive climatization of architecture to a new level.²⁹ The publications by Egli and Olgyay, in other words, had determined the direction of the interpretation of wind catchers, which Rudofsky had started in his *Architecture without Architects*. The Austrian-Hungarian socialisation of these three architects (Ernst Egli, born in Vienna in 1893; Viktor Olgyay, born in Budapest in 1910; Bernhard Rudofsky, born in Zauchtel, today's Czech Republic, in 1905)³⁰ may have contributed to their perceptiveness to culturally connotated forms of knowledge³¹ and «the problem of cultural exchange».³² In any event, it was not until the 1970s (1975 and 1977) that the Englishman Philip Steadman (*Energy, Environment, and Building*) and the American Richard Stein (*Architecture and Energy*) placed the roofscape explicitly into the context of energy, ecology and environmental protection. At that time the way the roofscape was to be interpreted had long since been established; from then on it was the modern discourse on energy that determined the interpretational framework for the reception of the roofscape. Examining the different approaches to interpretation of Egli, Olgyay, and Rudofsky before the general direction of the interpretation was set is therefore quite revealing. *Climate and Town Districts*, *Design with Climate* and *Architecture without Architects* represent three alignments in the reception of this modern allegory of the sustainable society. They represent modern forms of knowledge regarding the passive use of the winds in architecture.

133

1951: Interdependencies of culture and climate in Ernst Egli

In his *Climate and Town Districts* Ernst Egli pursued a quasi-empirical and culturalist approach in order to form links between climatic conditions on the one hand and urban form on the other. Examining the impact of the climate on global urbanisation, Egli applied an environment-related rationality that has concrete historical and cultural consequences. «We must learn how to classify the towns of our earth according to their climatic zones», was the program Egli pursued.³³ The central architectural «motifs» of the «town of India», for instance, are «garden, oriel, and balcony, airy halls with waterworks, cool and shadow».³⁴ The «courtyard house» is identified as the most important architectural type of Indian cities, which, according to Egli, repeats on a small scale the spatial arrangement of the cities. It is a characteristic of the courtyard house that «there is a definite turn towards the street, expressed by richly decorated oriels, and the house

is built so as to ensure continuous airing of the rooms: ventilators on the roofs, ventilating channels down the house, communicating cool underground living-rooms. The structure of the main storey is repeated on the upper floors, but diminishing in size, so that the house is a terraced building, with roof gardens and galleries on the different levels». ³⁵ In Egli's line of argument, Hyderabad is an exemplary Indian town. In the case of Hyderabad he speaks of an «urban body» that is ventilated inside via airlocks: «View of the town of Hyderabad: many air-channels renew the air in the inner town». ³⁶ In accordance with his book's programme, Egli focuses on the city as a whole in his description of the wind catchers.

1963: The winds' potential for expression in Victor Olgyay

134

Design with Climate combined the scientific description of passive climatisation and the objective of a design method for the first time. Olgyay's achievement consisted in generating a «universally applicable method for architectural climate control». ³⁷ He possessed the ability to systematically take into account the interdisciplinary research literature on the link between architecture and climate and to synthesise it to meet the requirements of architectural design. Hyderabad's roofscape appears in a chapter on “Wind effects and air flow patterns”. The optimum shape and alignment of buildings is achieved when solar irradiance and wind effects are considered simultaneously; the weight of each of the two respective parameters must be assessed in relation to the other. «In order to evaluate the specific effects of wind on human comfort conditions, both the annual and monthly variations of prevalence, the velocity, and the temperature of the winds must be analyzed by direction». ³⁸ Olgyay's focus is on the form-generating potential of the climate for architecture. In this respect *Design with Climate* continues a discursive tradition, which examines the tectonic qualities of external and internal forces of architecture. The wind catchers are outstanding examples of this; and modern architecture has yet to reach the level of their expressive power. The winds determine the appearance of this traditional architecture: «The town of Hyderabad is strangely silhouetted with air-shafts and wind catchers standing erect on the roofs». ³⁹

1964: Other forms of building and lifestyles in Bernard Rudofsky

Rudofsky emphasises the parallels between primitive and modern man with subtle irony and a dichotomising rhetoric. In line with his didactic ambition, Rudofsky stresses the ingeniousness and diversity of vernacular solutions. He recognises that the central principles and achievements of modern architecture have already been anticipated in vernacular architecture. Rudofsky also sees the natural ventilation of buildings as just another form of mechanised air-conditioning. The caption for the three photographs⁴⁰ of Hyderabad in his book reads: «The air-conditioners of Hyderabad Sindh». ⁴¹ Rudofsky presents the vernacular ventilation system as a technical accomplishment in the modern sense, to which he juxtaposes the «mania for mechanical comfort». ⁴² The concept of ventilation as a technical mechanism and contraption, which Rudofsky proposed, must be seen in the context of the triumph of air-conditioning in the USA. «We learn that many audacious “primitive” solutions anticipate our cumbersome technology; that many a feature invented in recent years is old hat in vernacular architecture – prefabrication, standardization of building components,

flexible and movable structures, and, more especially, floor-heating, air-conditioning, light control, even elevators».43 The vernacular ingeniousness, which Rudofsky suggested, has a timeless character, as it were. The contradictory statement that the origins of the wind catchers of Hyderabad are unknown while claiming that they have been used for 500 years reveals his intention to place the wind catchers outside of real time and real space: «Although the origin of this contraption is unknown, it has been in use for at least five hundred years».44

Two hundred years after the city's foundation, the wind catchers of Hyderabad had already disappeared again. With the construction of an electric power station by the British during World War II they literally lost their significance. «This tradition started to wane with the advent of electricity [*sic*] during the World War II when the British authorities built a powerhouse at Tando Agha. Most of the new houses and buildings have switched to other methods of room cooling, e.g. electric fans, room coolers and air conditioners and, therefore, the wind catchers are no longer numerous over the cityscape. Only few buildings have continued to follow this tradition of having Manghu on their rooftops. These include the newly constructed Civic Centre and the Aga Khan Maternity and Child Care Centre».45 In other words, right as Rudofsky was in postulating the quasi-timeless presence of these wind catchers, their *real distribution* in Hyderabad was already largely a thing of the past. Their *medial distribution* however, which started at that time, took place by resorting to images from the late 19th and early 20th centuries. A rereading of the interpretational approaches to the wind catchers reveals the questionable character of the one-sided transfer of modern energy and technology concepts onto architectural forms that originated in a different cultural and historical environment. Illustrations of wind catchers in modern architectural publica-



Contemporary roofscape
of Hyderabad.





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“Dome Over Manhattan” (1960), proposal of a new thermal regime for Manhattan (New York) by Buckminster Fuller and Shoji Sadao (Department of Special Collections, Stanford University Libraries).

tions tell us as much about the energy societies in Europe and the U.S. as about the vernacular thermal forms of knowledge in Pakistan. «The preindustrial city» keeps demanding ever new patterns of analysis if we do not merely wish to reproduce the point of view of a specific era. In the case of the wind catchers, both the use and the interpretation of the winds are subject to historical change.

— Energy commons

An allegorical interpretation of the wind catchers may help to counter the equation of object and representation, which has proliferated widely in architectural discourse, and to recognise vernacular forms of knowledge as mediated and as circulating on a global scale including thought patterns from different regions and eras. By tracing the photographic tradition of Hyderabad’s wind catchers, this article reveals the historical character of this motif and thus an allegorical concept of the relationship between architecture and environment which, given today’s focus on sustainability, is becoming increasingly important. «Nature» says Walter Benjamin «has always been allegorical»,⁴⁷ thus anticipating an insight of contemporary science and technology studies. The allegorical interpretation does not exclude the technical conception of the wind catchers as a *ventilation system* but even credibly incorporates it.

A comparison of photo databases suggests that only the presence of the English and European population had resulted in the wide spread of the wind catchers in Hyderabad. The spread of the wind scoops in the age of colonialism must have been

as much linked to the European sense of comfort as to the architectural traditions of the native population. Their sprouting throughout the city gives the wind catchers an aspect of urban development which Ernst Egli comprehended better than others. Unlike Olgyay and Rudofsky, Egli was more prone to apply standards of urban development than of architecture, a fact that reflects his experiences with urban planning in Turkey.⁴⁸ Even though both Olgyay and Rudofsky had a Central European background, their line of argument was directed toward the technological and cultural environment of the United States of the 1950s and early 1960s. Both championed an object-oriented and technological interpretation of tradition. This was meant to upgrade the vernacular but in fact resulted in reducing it. Grounded in American individualism, this kind of interpretation ignored the overall urban context by focusing on the climatisation (acclimatisation?) of individual buildings.

Contemporary observers, however, (again) direct their focus much more on the overall urban aspect of this motif. With its wind catchers, which became widespread in the 19th century, it has left us with the image of a contemporary form of *energy commons* whose incisiveness was only achieved in Buckminster Fuller's *Dome over Manhattan*. A few years before Rudofsky's exhibit, in 1960, Buckminster Fuller created an icon of urban energy supply with this photo montage. With its ideal-typical shape, the glass dome is an allegory of New York's citizens forming a community gathered under the heading of energy supply. In the context of the *Dome over Manhattan*, the wind catchers of Hyderabad take on new meaning. The roofscape implies the uniform cooling system of an entire city and appears to be a precursor of a thermal regime, which does not leave the energy supply up to the individual homeowners but regulates it citywide. Beyond the cultural (Egli), the sculptural (Olgyay) and the technological (Rudofsky) interpretation of the wind catchers, the motif directs our eye to a general solution for the entire city, which is gaining importance in today's reflections on urban forms of energy supply.⁴⁹ The task of cooling is transferred from the building scale to the urban scale and from high to everyday culture. The likewise decentralised and citywide approach of the wind catchers is its paradigm.

Abstract

Hyderabad, in Pakistan, è da sempre nota come *manghan jo shabaru*, “la città delle torri del vento”. Nella seconda metà del Novecento, questi elementi architettonici sono diventati parte di una moderna iconografia: da quando le vedute delle torri disseminate su un paesaggio di tetti furono pubblicate da Bernard Rudofsky nel suo *Architecture Without Architects* (1964), esse sono state ripetutamente inserite in libri dedicati all’architettura e all’ecologia. Ripercorrendo la tradizione fotografica delle torri di Hyderabad, l’articolo illustra il carattere storico di questi sistemi di ventilazione naturale e quindi il rapporto allegorico tra architettura e ambiente: un tema sempre più importante in un’epoca in cui si parla tanto di sostenibilità. «La natura è sempre stata allegorica», diceva Walter Benjamin anticipando un’intuizione confermata dagli studi scientifici e tecnologici contemporanei.

L’interpretazione allegorica delle torri del vento può quindi aiutare a riconoscere il modo in cui le forme vernacolari della conoscenza vengono mediate e circolano su scala globale. Le immagini delle torri del vento che troviamo nelle moderne pubblicazioni sull’architettura ci dicono tanto sullo sfruttamento dell’energia nelle società europee e statunitensi, quanto sulle forme di conoscenza specificamente pakistane in materia di ventilazione. Al di là dell’interpretazione culturale, architettonica e tecnologica, la torre del vento guida la nostra attenzione verso una soluzione generale valida per l’intera città: una tematica che sta acquisendo sempre più importanza nelle attuali riflessioni sulle forme urbane di approvvigionamento energetico.

– 1. See C. Wedepohl, *Ideengeographie – Ein Versuch zu Aby Warburgs ‘Wanderstrassen der Kultur’*, in H. Mitterbauer, K. Scherke (eds.), *Ent-grenzte Räume – Kulturelle Transfers um 1900 und in der Gegenwart*, Studien zur Moderne 22, Wien 2005, p. 253. See also R. Wittkower, *Allegory and the Migration of Symbols*, London 1977.

– 2. M. Foucault, *Die Ordnung der Dinge – Eine Archäologie der Humanwissenschaften*, Frankfurt am Main 1969, p. 11.

– 3. M. Halbwachs, *Das kollektive Gedächtnis*, Fischer, Frankfurt am Main 1991. See also C. Bull et al. (eds.), *Cross-Cultural Urban Design. Global or Local Practice?*, Routledge, London 2007; H. Yamamoto, C. Ivanovic (eds.), *Übersetzung – Transformation. Umformungsprozesse in / von Texten, Medien, Kulturen*, Würzburg 2010; K. Kashiwagi-Wetzel, M. Wetzel (eds.), *Interkulturelle Schauplätze in der Grossstadt. Kulturell Zwischenräume in amerikanischen, asiatischen und europäischen Metropolen*, Wilhelm Fink, Paderborn 2015.

– 4. F. Saxl, *Brief von Fritz Saxl an den Verlag B G. Teubner, Leipzig*, in M. Warnke, C. Brink (eds.), *Aby Warburg, Der Bilderrat MNEMOSYNE*, Berlin 2003, p. XVIII.

– 5. Note the exhibition *Umdenken Umschwenken* presented in Switzerland, Germany and Austria. See S. Roesler, *Nach Sparta – Zwei Ausstellungen als Plädoyers für eine schwach technisierte Lebensweise*, in *Kunst + Architektur in der Schweiz, Lebensstil – Experimente nach 1970*, Heft 2, 2009, pp. 6-13.

– 6. Clearly exemplified by Philip Steadman: «In his book *Architecture Without Architects*, Rudofsky illustrates a design of natural air conditioning device in use for over five hundred years in the lower Sind district of Pakistan»: P. Steadman, *Energy, Environment and Building*, Cambridge 1975, pp. 32-33.

– 7. «Das eine Photo kommt bei mir an [m’advient], das andere nicht»: R. Barthes, *Die helle Kammer. Bemerkungen zur Photographie*, Frankfurt am Main 1989, p. 28.

– 8. *Ibid.*, p. 26.

– 9. The photographic gains of his trip to India were documented by Hürlimann in five photo albums, of which four are now available in the Hürlimann estate of the Fotostiftung Schweiz. Album V, devoted, among other things, to the city of Hyderabad, contains 13 photographs of wind catchers.

– 10. M. Hürlimann, *Indien. Baukunst, Landschaft und Volksleben*, Zürich 1928, p. XXV.

– 11. In January 1929 Hürlimann published the first issue of the magazine “Atlantis” (then still Wasmuth Berlin), showing his photographic works and those of others.

– 12. From 1925 Galloway began to expand systematically his collection of photographs and to acquire whole archives. In this way, in 1925 he succeeded in purchasing 8000 images from Africa and Asia. In the following years he opened agencies in Chicago, Detroit, Los Angeles, Boston, London, Berlin and Amsterdam. http://library.syr.edu/digital/guides/g/galloway_e.htm#series4 (29/4/2016), <https://de.wikipedia.org/wiki/Bildagentur> (June 7, 2016).

– 13. See J. Habermas, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, Cambridge 1989.

– 14. See W. Benjamin, *The Work of Art in the Age of Its Technological Reproducibility, and Other Writings on Media*, Cambridge (MA) 2008.

– 15. The photographic visualisation of the world continued and flourished after the Second World War due to the work of famous stock photo agencies such as Magnum. Founded in Paris by Henri Cartier-Bresson and Robert Capa, Magnum was a stock photo agency with a global reach. Its importance only declined with digitalisation and the emergence of multinational corporations such as Getty Images since the 1990s.

– 16. M. Hürlimann, “Nennen wir das Ding einfach Atlantis!”, “Züri Leu”, 2 September 1977, p. 13. With the takeover by Conzett and Huber, “Atlantis” was merged with the magazine “Du”.

– 17. M. Hürlimann, *Indien. Baukunst, Landschaft und Volksleben*, Zürich 1928, p. XXIV.

– 18. http://flickrhivemind.net/User/msb1606_2012/Recent (21/6/2016).

_19. The products of Hyderabad were presented at the Great Exhibition in London in 1851. See M.A.M. Talpur, *The Vanishing Glory of Hyderabad (Sindh, Pakistan)*, in “webjournal in cultural patrimony”, 2007, p. 51, <http://www.webjournal.unior.it/dati/19/72/web%20journal%203,%20hyderabad.pdf> (17/3/2016).

_20. Fotostiftung Schweiz, estate Martin Hürlmann, volume *Indienreise III*, pp. 85-90; volume *Indienreise V, Kashmir – Heimreise*, pp. 65-70.

_21. R. Sachsse, *Photographie als Medium der Architekturinterpretation: Studien zur Geschichte der deutschen Architekturphotographie im 20. Jb.*, München 1984, p. 91; cited according to L.P. Günther, *Die bildhafte Repräsentation deutscher Städte. Von den Chroniken der Frühen Neuzeit zu den Websites des Gegenwart*, Köln-Weimar-Wien 2009, p. 217.

_22. R. Sachsse, *Photographie als Medium der Architekturinterpretation: Studien zur Geschichte der deutschen Architekturphotographie im 20. Jb.*, München 1984, p. 110; cited according to L.P. Günther, *Die bildhafte Repräsentation deutscher Städte*, see note 21, p. 217.

_23. M.A.M. Talpur, *The Vanishing Glory of Hyderabad (Sindh, Pakistan)*, see note 19, p. 59, <http://www.webjournal.unior.it/dati/19/72/web%20journal%203,%20hyderabad.pdf> (17/3/2016).

_24. See <http://insideflows.org/project/ancient-wind-catchers-in-hyderabad/> (15/7/2016).

_25. W. Benjamin, *Ursprung des deutschen Trauerspiels*, Frankfurt am Main 1978, p. 141.

_26. *Ibid.*, p. 152.

_27. *Ibid.*, p. 153.

_28. A. Nova, *Das Buch des Windes. Das Unsichtbare sichtbar machen*, München-Berlin 2007, p. 17.

_29. The research was carried out in close collaboration with his brother Aladar Olgyay, who was also an architect.

_30. Today’s *Suchdol nad Odrou*, in the eastern Czech Republic.

_31. See A. Moravanszky (ed.), *Das entfernte Dorf, Moderne Kunst und ethnischer Artefakt*, Wien-Köln-Weimar 2002.

_32. R. Wittkower, *East and West: The Problem of Cultural Exchange*, in *Allegory and the Migration of Symbols*, London 1977, pp. 10-14.

_33. E. Egli, *Climate and Town Districts. Consequences and Demands*, Zurich 1951, p. 64.

_34. *Ibid.*, p. 106.

_35. *Ibid.*, p. 102.

_36. *Ibid.*, p. 107.

_37. V. Olgyay, *Design with Climate – Bioclimatic Approach to Architectural Regionalism*, New York 1963, p. 10.

_38. *Ibid.*, p. 95.

_39. *Ibid.*, p. 94.

_40. B. Rudofsky, *Architecture Without Architects. A Short Introduction to Non-Pedigreed Architecture*, New York 1964, images 113, 114, 115.

_41. «These unusual roofscapes are a prominent feature of the lower Sind district in west Pakistan.

From April to June, temperatures range above 120 °F [48.88 °C], lowered by an afternoon breeze to a pleasant 95 °F. To channel the wind into every building, “bad-gir”, windscoops, are installed on the roofs, one to each room. Since the wind always blows from the same direction, the position of the windscoops is permanently fixed. In multistoried houses they reach all the way down, doubling as intramural telephones. Although the origin of this contraption is unknown, it has been in use for at least five hundred years»: *Ibid.*

_42. *Ibid.*, Preface.

_43. *Ibid.*, Preface.

_44. *Ibid.*, images 113, 114, 115.

_45. M.A.M. Talpur, *The Vanishing Glory of Hyderabad (Sindh, Pakistan)*, see note 19, p. 59, <http://www.webjournal.unior.it/dati/19/72/web%20journal%203,%20hyderabad.pdf> (17/3/2016), <http://www.sindh.photography> (24/6/2016).

_46. G. Sjöberg, *The Preindustrial City. Past and Present*, Glencoe (Ill.) 1960; L. Mumford, *The City in History. Its Origins, Its Transformations, and Its Prospects*, London 1961.

_47. W. Benjamin, see note 25, p. 145.

_48. See O. Atalay Franck, *Architektur und Politik: Ernst Egli und die türkische Moderne 1927-1940*, Zürich 2012.

_49. «How will the rooftops of the future look, as we begin to optimize their form in order to aid in the generation of electricity? Will our cities begin to look like Hyderabad, Pakistan, with its wind catcher-ed skyline? From April to June the temperature in Hyderabad can exceed 50 °C, but the wind always blows from the same direction, so the position of rooftop windcatchers are fixed and define the image of the city. What are other implications of sculpted rooftops?»: <https://thefunctionality.wordpress.com/2009/01/08/mag-lev-turbines-roofs-of-the-future/> (14/6/2016).