ERASING THE FACE: SOLAR CONTROL AND SHADING IN POST-COLONIAL ARCHITECTURE

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Mexican Cross, Acolman. Early 16th century.
(Pál Kelemen, *Baroque and Rococo in Latin America*)

HENRY KLUMB. Library, University of San Juan, Puerto Rico.
Photo: William Braham

The "wall" in its undifferentiated meaning is still strongly associated with masonry materials which served for both enclosure and load-bearing, neither used efficiently. . . . Inevitably, the "skin" was born with the invention of the skeleton.

—Olgyay and Olgyay (1957)[1]

The faciality function showed us the form under which man constitutes the majority, or rather the standard upon which majority is based: white, male, adult, "rational," etc., in short, the average European, the subject of enunciation.

—Deleuze and Guattari (1980)[2]

Sun control and shading constitute the second (or possibly third) chapter in the heroic story of the modern wall, of the wall transformed by the new potentials of iron, glass, and reinforced concrete. In the now-classic version of the tale, the first chapter explains the progressive refinement of the steel or concrete framework, which leads inexorably to the free-plan and the emancipation of the window from its status as a mere hole-in-the-wall, allowing glass to expand to its full potential as a "curtain" wall. The ever larger expanses of transparency, however, led just as inexorably to new environmental problems of overheating and glare, especially when the walls were sealed or built in warmer climates. The development of air conditioning in the 1930s helped ameliorate the overheating problem and facilitated the increased use of glass, but from the beginning of the chapter on glass walls architects sought more expressive means of dealing with the sun and preserving the recognisable qualities of the wall, leading more or less directly to the use of *brise-soleil* of the 1940s and fifties.

The many varieties of *brise-soleil* were carefully catalogued in the definitive work on the subject, *Solar Control and Shading Devices*, the 1957 book by Aladar and Victor Olgyay which documented their years of research at Notre Dame, MIT, and Princeton.[3] The book was well received at the time, and remains in print as a textbook on the subject, but the particular fashion for expressive solar shading devices recorded in the book passed almost as quickly as it arose and demands more than a deterministic, technological explanation. Their arguments for solar shading devices drew on numerous other sources: the hot climate work of Le Corbusier, pre-industrial or primitive overhangs, louvres, arcades, and grillework, and the suppression of the academic tradition of anthropomorphism in massive construction. The fact that *brise-soleil* appeared largely in countries previously colonised by the European nations added considerable force to one aspect of the suppression of the anthropomorphic, the elimination of the "white man's" face. The story of the modern wall has numerous such subplots, which have been more and more closely examined in the ongoing reconsideration of architectural modernism. This essay offers a small contribution to that process, not to reestablish the use of *brise-soleil*, but to ask what was at stake in solar shading and how might a different understanding affect our own reconciliation with the modern.

OSCAR NIEMEYER. Ministry of Education.
M.M.M. ROBERTO. A.B.I. Building in Rio de Janiero.

The decision to comment on this tale at the end of its second chapter was inspired by an encounter with the buildings that Henry Klumb built at the University of Puerto Rico in the 1940s and fifties.[4] Klumb was invited to the island in the early 1940s, after leaving a Taliesin apprenticeship with Frank Lloyd Wright to search for a place and practice of his own. He found both in Puerto Rico, where he worked until his death in 1984, refining his ideas about ventilated ("breathing") screen walls and an architecture conditioned by its climate. In many respects his buildings typify the use of *brise-soleil* that has become so familiar in its lesser forms that they barely attract attention. Perhaps it was the contrast between Klumb's buildings and those of old San Juan, between repetitive concrete grids and traditionally discrete masonry openings, but the shock of my first encounter with his buildings was absolute: "These buildings have no faces!"

Brise-soleil shade building interiors from the sun, while permitting breezes to pass freely through, but they also eliminate the familiar relation of window and wall. The new walls were consciously made permeable, open, even inviting, but they were still faceless. Many of the classic examples cited in the Olgyay book—Oscar Niemeyer's Ministry of Education in Rio de Janiero (designed in conjunction with Le Corbusier, Costa, and many others) or the Pan American Life Insurance Building by Skidmore, Owings, and Merrill—exhibit the kind of facelessness that has come to characterise the large corporations and bureaucracies of the late twentieth century. It is the facelessness of the anonymous or the interchangeable. Nostalgia grows easily from that observation, from a longing to recover the visible signs of humanity and individuality, to find aspects around which identity can be situated. The importance of such anthropomorphism seems so clear, so deeply written in every aspect of our nature. In fact, many of the words in the previous description derive from seeing or looking at the face: "visible" from *visus* (to see) and *vis* (face), suggesting that face is simply that part of the body which is seen. "Aspect" (from *aspicere,* to look at) is metaphorically synonymous with "face" as the first thing that appears to us in a glance. The faces on the new dollar bills issued by the U.S. Treasury feature substantially enlarged portraits of the presidents because it has been determined that people more readily distinguish changes in human faces than in any abstract pattern. But is the loss of the face in such buildings necessarily the loss of the human or of identity? After all, hasn't the image and understanding of the body itself changed radically through the modern period?

The Olgyays advocated the new form of wall as a rejection of precisely that anthropomorphic tradition. They introduced their book with a comparison between two buildings in Rio de Janiero, a new screen wall construction and an adjacent Beaux Arts edifice. They argued that the symbolism of the older Academic system had become "anaemic," that its principles were simply inadequate to the new social and technical conditions that had emerged in the twentieth century.

Entablement Toscan de Vignole.
(J.-F. Blondel, *Cours d'Architecture*, 1750. Planche XII)
Olgyay Solar Shading Protractor.
LOF Sun Angle Calculator.
Solar Orientation Chart. (*Architectural Graphic Standards*,1932)
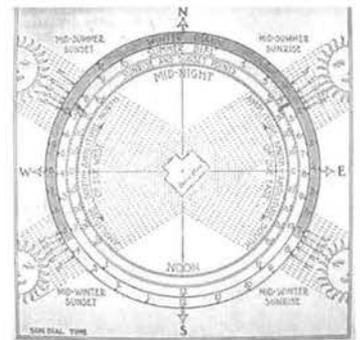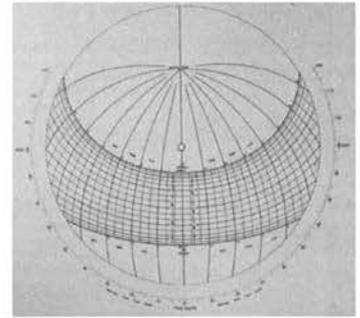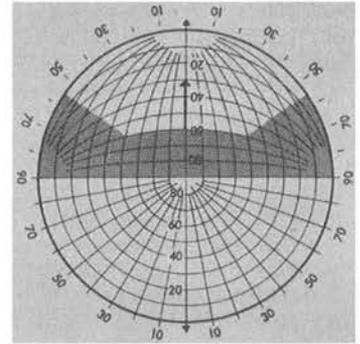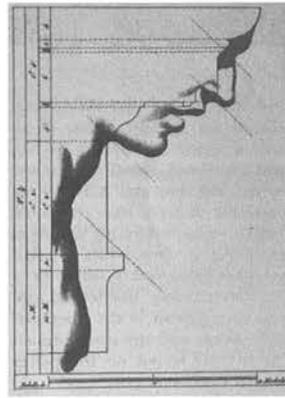
The new form of wall was "the result of a thorough reevaluation of man's relation to his surr-
oundings."[5] The importance of the face to the earlier tradition was underlined by another com-
pelling comparison between one of J.F. Blondel's explanatory figures from the *Cours
d'Architecture* of 1750 and the solar shading protractor that they had developed to facilitate the
design of screen walls. The first shows the profile of a young man superimposed on a cornice,
which Blondel used to explain the superiority of the Tuscan order used by Vignola over those by
Palladio or Scamozzi. The faces that lurk in and behind the different cornices explain the char-
acter of the respective mouldings, expressing the relations among the parts in an operative,
rather than a metaphorical, form. The Olgyays dismissed Blondel's comparison as a facial anal-
ogy, arguing that the older system drew its module and proportions from simple visual relation-
ships, while the new method "stems not from visual proportions, but is correlated with the
movements of the sun and formulated to satisfy man's biological needs."[6]

The Olgyay's ability to correlate wall design with sun paths relied on a relatively new
diagrammatic representation of the location and movement of the sun: the equidistant horizontal
projection made nearly universal in the United States by the Libbey Owens Ford (LOF) Sun
Angle Calculator, first released in 1951.[7] The now-familiar circular depiction of sun-paths has
become the standard form of reporting sun location data for architects, appearing for example in
Architectural Graphic Standards, Time Saver Standards, and so on. It provided a considerable
advance over previous diagrams, such as the "Orientation Chart" included in the early editions
of Graphic Standards. It is telling that the advance in representation was propagated by a com-
pany that manufactured glass. The industry sponsored the research that led to such tools because
they understood intimately the problems that large amounts of glass caused when they were not
correctly used. Ultimately, companies like LOF preferred to solve problems with new products,
like heat-absorbing or reflective glass, that could be added to their catalogue.

The Olgyays recognised the ease of adopting enhanced glass products, but assigned such
glasses second place in their four-step, illustrated hierarchy of (faceless) curtain walls. Fourth
place, or the beginning of the evolution of the modern curtain wall, was occupied by the all-
glass skin, illustrated by Mies van der Rohe's Lake Shore Apartments (1952). The obvious
overheating problems of such walls, caused by the well-known greenhouse effect, led them to
"treat the whole shading and sun control question from the standpoint of heat regulation."[8] But
neither was total exclusion of the sun an acceptable solution, which they illustrated as the third
place in their hierarchy using the side elevation of a bank building in Texas by Harrison and
Abramovitz (1952) that had a wholly opaque, aluminum "breathing wall." Not only did this
deny the occupants any view of the outside, politely referred to as a "psychological deficiency,"

4. I owe my introduction to the work of
   Henry Klumb, and the Puerto Rican
   context of breathing walls, to the
   dissertation research of Rosa Otero at
   the University of Pennsylvania.
5. Olgyay and Olgyay, *Solar Control*, 4.
6. Olgyay and Olgyay, *Solar Control*, 5.
7. Reviews of the LOF Sun Angle
   Calculator: *Architectural Record* 109
   (April, 1951): 171; *Progressive Archi-
   tecture* 32 (April, 1951): 106; and *Archi-
   tectural Forum* 94 (April, 1951): 32.
8. Olgyay and Olgyay, *Solar Control*, 6.
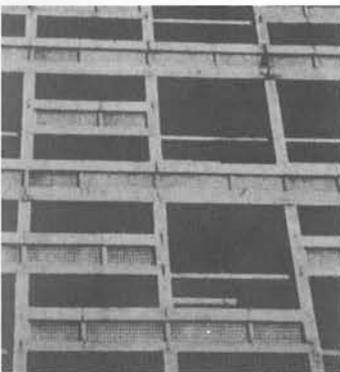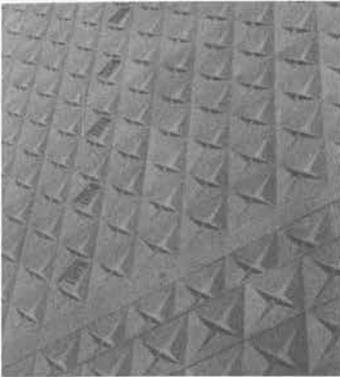
Hierarchy of curtain wall types: Mies van der Rohe, Lake Shore Apartments; Harrison and Abramovitz, Republic Bank, Texas; SOM, Lever Brothers House, New York; Le Corbusier, Unité d'Habitation, Marseille.

but they argued that solar heat gain is actually welcome during the winter. The need for seasonal selectivity forms the crux of their argument against heat absorbing glass, in addition to the fact that it provides a somewhat less effective barrier to solar heat gain (40%) than external shading devices (70-85%). While acknowledging the popularity and "abstract" appeal of tinted-glass, illustrated by the Lever Brothers House by SOM, they reserved first place for external shading of the glass, represented by Le Corbusier's Unité d'Habitation in Marseille. Here, they argued that "the method is fundamentally sound. Interception of the energy happens at the right place— before it attacks the building."[9] In conclusion they summarised the expressive possibilities that derive from the precise orientation to place and climate:

> By shaping the devices according to the changing seasonal sun-path, both summer shading and utilization of winter energies can be performed. To accomplish this—to strive to achieve a relatively constant comfort equilibrium—careful consideration should be given to location, latitude, and orientation, since all these factors play their roles in the formulation of an effective device. In return, the sun-breaker can express a strong spatial character, add new elements to the architectural vocabulary, and phrase a truly regional consciousness.[10]

External shading devices offered three compelling attractions. First was the sheer elegance of using the relative motion of the sun to seasonally exclude and admit heat; second was the "strong spatial character" that reintroduced the depth associated with mass walls to thin curtain-wall construction; and third was regional specificity to location and climate.

Like the arguments for the basic virtues of the *brise-soleil*, the concept of regionalism involved both technical and cultural components. The 1950s criticisms of CIAM focused on both the narrow functionalism that had come to characterise modernism between the wars and the portability of European models to different cultures and climates. It also involved new ideas about the more active nature of the environment. To take but one point from John Voelker's 1959 list of features distinguishing Team 10 from the earlier mandate program: "1930. To popularize the already established style of the modern movement—didactic. 1950. To search for a plastic system which reciprocates and intends in architectural form existing ecological patterns."[11] The shift from mechanical explanations to ecological ones had begun well before this period, detected by Lewis Mumford, for example, throughout the sciences in the early 1930s and associated at that time with organic architecture from Louis Sullivan and Frank Lloyd Wright to the town planning of Patrick Geddes.[12] The *Organica* became Bruno Zevi's rallying concept in Italy at the end of the War, while James Stirling's decisive 1957 article was titled "Regionalism and Modern Architecture."[13] While it is not accurate to reduce these architectural concepts to a single motive, *brise-soleil* offered a compelling, novel technical solution to architects concerned about regionalism. The specific formal sources are not difficult to locate.

Like Voelker's Team 10 critique and so much of the post-war discussion about modernism, Stirling's first articles were formulated as a comparison between Le Corbusier's work of the 1920s and that of the fifties.[14] Certainly any investigation of the *brise-soleil* must begin with Le Corbusier's achievements, and the Olgyays devote a considerable discussion to that history. In

their account, the first discovery came in the (unbuilt) apartment house "Clarté" in Geneva of 1922, where elongation of the floors over the *jardin-suspendu* provided shade in the summer and allowed sun to penetrate in the winter.[15] Similar principles were followed in the Villa at Carthage, but the real advances came in the projects for Rio de Janiero in 1936 and Algiers in 1938. The fully articulated *brise-soleil* (called a *quebra sol* in Portugese), differentiated according to orientation, appeared in the sketches prepared for the Ministry of Education that were then elaborated and executed by Niemeyer, Costa, and others. In many subsequent projects, the *quebra sol* achieved real distinction and over half of the examples in the Olgyay's book are drawn from Brazil. It was even reported as news in the *Architectural Forum* when the first *brise-soleil* "crossed the border" into California in 1948.[16]

Le Corbusier's contribution to this development cannot be overstated, but it is worth noting that the need for *brise-soleil* occurred because of the introduction of large glass areas into warmer climates. It is not surprising that the early projects in Geneva, and even Paris, did not demand such rigorous attention to the sun. The first real difficulty arose with the vast, sealed glass wall of the Salvation Army building of 1932-4, whose primitive cooling system was unable to deal with the overheating. Though *brise-soleil* were added much later (by others), that building represented the failure of his equally fascinating but less developed ideas about mechanical ventilation: *respiration exacte* and the *murs neutralisant*.[17] During his trip to America in 1935-36, a tour through the air-conditioned offices at the Rockefeller Centre showed Le Corbusier how far the technology had been advanced by engineers in the United States. The *brise-soleil*, on the other hand, was a formal solution under the control of architects.

Nevertheless, the simplicity and appeal of reflective glass, combined with mechanical air conditioning, became increasingly persuasive in the years after the Olgyays published their book. The use of *brise-soleil* decreased through the 1960s, especially on larger or high-rise buildings that had developed an environmental condition not anticipated in the Olgyay's attention to seasonal adaptation. The concentration of lights, equipment, and people in ever more massive buildings released increasing amounts of heat internally.[18] There was little need for any additional heat, even in winter, and the environmental task of these big, bulky buildings was entirely that of cooling their overheated interiors, of limiting or excluding any external source of heat. In that situation, the elegant seasonal filtering of sunlight offered little or no advantage over heat-absorbing or reflecting glass.

Faciality

Neither the story nor its examination ends there, however. In the wake of the energy crisis of the late 1970s, and as a result of dissatisfaction with ever larger interior spaces that lack any connection to the outside, the desire for natural light and ventilation was reasserted. The interest in atriums, skylights, lightshelves, operable windows, and even *brise-soleil* revived much of the earlier interest in connecting buildings to their climate through sunlight. The contradictory currents of postmodernism simultaneously strengthened the interest in regionalism and fostered nostalgia for the image or appearance of the pre-industrial wall with discrete openings. In addi-

9. Olgyay and Olgyay, *Solar Control*, 7.
10. Olgyay and Olgyay, *Solar Control*, 7.
11. John Voelker, "Team 10," in Oscar Newman, *New Frontiers in Architecture: CIAM '59 in Otterloo* (New York: Universe Books, 1961), 16.
12. Lewis Mumford, *Technics and Civilization* (New York: Harcourt Brace & World, 1934), 370-1.
13. Bruno Zevi, "Constitution of the Association for Organic Architecture in Rome" (1945); and James Stirling, "Regionalism and Modern Architecture" (1957). Both are reprinted in Joan Ockman, *Architecture Culture 1943-1968: A Documentary Anthology* (New York: Columbia Books of Architecture/ Rizzoli, 1993), 69, 243-48.
14. James Stirling's first article was titled "From Garches to Jaoul: Le Corbusier's domestic Architecture in 1927 and 1953," *The Architectural Review* (November, 1953).
15. Olgyay and Olgyay, *Solar Control*, 10-11.
16. "Brise-Soleil crosses the border to California," *Architectural Forum* 88 (April, 1948): 15.
17. For a discussion of Le Corbusier's ideas on mechanical ventilation see Reyner Banham, *The Architecture of the Well-Tempered Environment*, 2nd ed. (Chicago: The University of Chicago Press, 1984), 154-62.
18. That process and the characterisation of "internal-load dominated" buildings is discussed in Solar Energy Research Institute (SERI), *The Design of Energy Responsive Commercial Buildings* (New York: Wiley-Interscience, 1985).

tion, much of the more recent interest in architectural phenomenology focused attention on the diurnal and seasonal movements of the sun, and the ability of that specificity to link buildings to their places.[19] In order to make sense of these newly articulate and solar responsive building walls—whether they are conceived according to environmental, nostalgic, regional, or phenomenal logic—we must examine the claims of these earlier buildings about their erasure of the face. We must also ask the question, whose face?

Facelessness and its negative connotations—anonymity and interchangeability—are as apparent in the repetition of discrete windows in traditional construction as in those with glass curtain walls. This loss of the single face derives from the neutralisation brought about by repetition; it is a question of number, size, and of the contrast between elements, what Deleuze and Guattari called the "white wall/black hole system."[20] Identification of a face begins by associating two adjacent holes as eyes—nose and mouth are optional—but it can play across a grid of openings, producing a monstrous multiplication of faces. This is no longer an operation of simple resemblance, but an "order of reasons" that takes over any anthropomorphism.[21] The "faciality machine" they describe subsumes any latent body, operating as a relentlessly abstract process. The ancient architectural procedure, masking or dressing the wall, attempts to keep it connected to a body, resisting the "territorialisation" that converts every trace of dark hole/light field into the polarised opposite of its corporeal, animal origins. In this form of abstraction face and façade are detached from their original configurations and meanings in the process of articulating some "assemblage of power."[22]

The form of power is not difficult to determine if we reconsider the Olgyay's initial polemical comparison between a modern, screen wall building and a neoclassical edifice in Rio de Janiero. A Beaux Arts building in Brazil, Algiers, Puerto Rico, or Cuba belonged to the first "International Style," the architectural component of the vast colonising effort by the European nations. That historical fact adds considerable weight, especially in this context, to the claims by Deleuze and Guattari about the Eurocentric nature of the faciality machine.

> "Primitives" may have the most human of heads, the most beautiful and most spiritual, but they have no face and need none. The reason is simple. The face is not a universal. It is not even that of the white man; it is White Man himself, with his broad white cheeks and the black hole of his eyes. . . .
>
> The faciality function showed us the form under which man constitutes the majority, or rather the standard upon which the majority is based: white, male, adult, "rational," etc., in short, the average European, the subject of enunciation. Following the law of arborescence, it is this central Point that moves across all of space or the entire screen, and at every turn nourishes a certain distinctive opposition, depending on which faciality trait is retained: male-(female), adult-(child), white-(black, yellow, or red), rational-(animal). The central point, or third eye, thus has the property of organizing binary distributions within the dualism machines, and of reproducing itself win the principal term of the opposition; the entire opposition at the same time resonates in the central point.[23]

The general project of Deleuze and Guattari, formed in Paris in 1968, was to lay bare the channels by which desire becomes totalitarian. In their terms, disassembling the hierarchical, colonial imposition of the white face means deterritorialising the faciality machine and constructing multiplicities, which can never be "a question of a return to … the presignifying and presubjective semiotics of primitive peoples."[24] Nor can it involve a complete erasure of the white wall and black hole: "we are born into them, and it is there we must stand battle," meaning that any overcoming of the colonialising faciality machine in architecture requires a healing, and adaptation.[25] For that process, there are many models throughout the countries that adopted *brise-soleil*.

Colonial regimes have been resisted, appropriated, and transformed at many levels, while the complexity of class and color designations across Latin America, for example, suggest that the Eurocentric face must assume quite different roles in different contexts. To cite only one example, when the Spanish first established the Church in Mexico, they omitted representations of the body of Christ on the Cross to avoid any encouragement of the Aztec penchant for human sacrifice. Instead, they placed only his face at the centre of the crossing members, producing a configuration that on one hand fulfills the very terms of Deleuze and Guattari's proposition, while on the other it was an image wholly appropriated in the syncretic blending of Catholicism with Aztec gods and rituals. Similar acts of syncretism created voodoo and *santeria* in the Caribbean, while the appearance of the dark face of Our Lady of Guadalupe, a Mexican manifestation of the Virgin in the image of a native woman, only signalled the beginning of that appropriation in the sixteenth century. Surely many such faces lurk behind the screen walls of the 1950s, suggesting that the abstract process of faciality described by Deleuze and Guattari might be resisted or accommodated by the procedures of masking and dressing, finding the corporeal instead of the representational aspect of the wall.

The most productive connection between the broad schematic claims about faciality and the particular discourse from which the use of solar shading devices arose would have to be the authority granted to the "primitive" and the vernacular. From the early writings of Ozenfant and Le Corbusier, which explored the affiliation between advanced mechanical products and those of primitive cultures, to the distinction made in German cultural theory between native, indigenous *Kultur* and modern, international *Zivilisation*, the concept of the pre-industrial informed the work of the historical avant-garde.[26] It would be inaccurate to suggest that such themes were original to the twentieth century. Much of the Gothic Revival in the nineteenth century involved the search for specifically French, German, or English artefacts, facilitating the identification of an originally nationalist architecture.[27] The successes and failures of such a process are always provisional, limited by the inability "to return to" origins of any kind, and subject to further disruptions. The regionalism of the 1950s adapted to the breakdown of the older colonial orders, just in time for the onslaught of international "development," characterised architecturally by the facelessness of the reflective glass wall and the air conditioner, which multiply to create the polluted mega-city.

The Olgyay's final arguments for solar control and shading assumed the form that has been followed by regionalists, environmentalists, and solar enthusiasts ever since. Seeking a local

19. For example "The Light Laboratory, The Story of Water, and Strange Attractors: Steven Holl's Sensuous Alchemy at Cranbrook's Institute of Science," *Architecture* (March, 1999): 80-90.
20. Deleuze and Guattari, *A Thousand Plateaus*, 167.
21. Deleuze and Guattari, *A Thousand Plateaus*, 170.
22. Deleuze and Guattari, *A Thousand Plateaus*, 175.
23. Deleuze and Guattari, *A Thousand Plateaus*, 176, 292.
24. Deleuze and Guattari, *A Thousand Plateaus*, 188.
25. Deleuze and Guattari, *A Thousand Plateaus*, 189. This sense of overcoming as a healing is drawn from Gianni Vattimo, "Crisis of Humanism," *End of Modernity: Nihilism and Hermeneutics in Postmodern Culture* (Baltimore: The Johns Hopkins University Press, 1988), 41.
26. Susan Hiller, ed., *The Myth of Primitivism: Perspectives on Art* (New York: Routledge, 1991); and Francesco Dal Co, *Figures of Architecture and Thought: German Architectural Culture 1880-1920* (Rizzoli Essays on Architecture. New York: Rizzoli, 1990).
27. Xavier Costa, *Mercurial Markers: Interpretations of Architectural Monuments in Early Nineteenth-century France* (Ph.D. Diss., University of Pennsylvania, 1991).
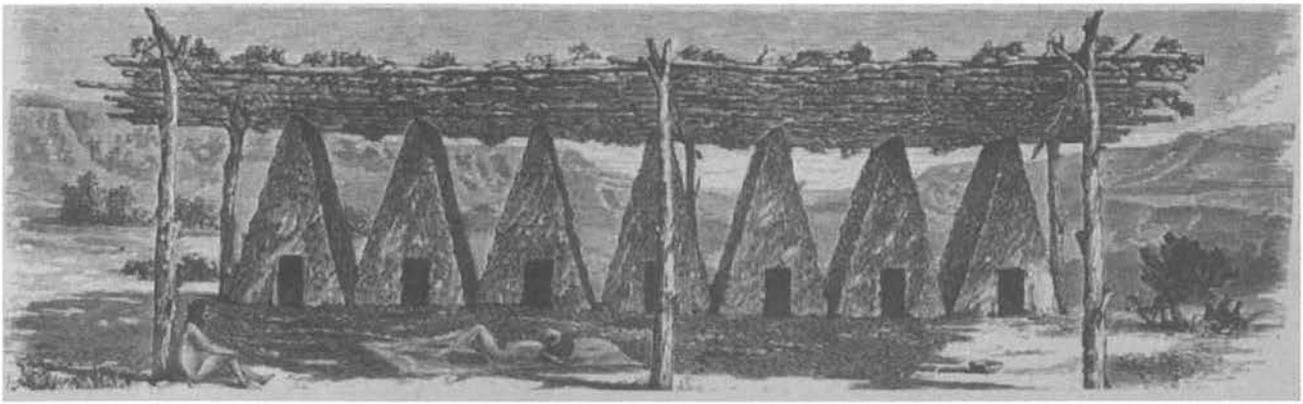
Yokut Tule Lodge, Southern California.

provenance for shading devices, they cited the Yokut Tule Lodge from Southern California because it used an external branch superstructure to shade a collection of wedge shaped huts that would certainly have excited Le Corbusier's geometrical imagination. The Native American example was followed by a French plantation house on the Gulf Coast of Louisiana and a colonial country house with deep gallery arcades built in Tucumania, Argentina. The underlying message is instructive. The initial arguments for solar shading were based on a scientific logic of heat gain and loss, but they were balanced by a compelling appeal to the common sense of native or uneducated peoples. The colonial examples, in particular, suggest that such common sense might be drawn from direct experience with the climate and locale, that "northern" peoples might forget their own origins sufficiently to adapt to new conditions.[28]

And so they do, given time. After all, every generation, people, or culture has to continually construct and reconstruct their identities. The Olgyays attributed the loss of common-sense climatic adaptation in architecture to the "rapidity of migration and remigration" in the Americas and to the power of industrialisation that produce the "possibility of remedying constructions poorly adapted to climatic environments."[29] The project of discovering a more open and adaptive kind of immigration, the aspect of colonisation characterised as "going native," contains a deep sympathy with the nostalgia for pre-industrial conditions that undermines both architectural environmentalism, now called sustainability, and postmodern historicism.

Therein lies the value of asking about faciality, about the relentless opposition between the white face and the "other." It demonstrates that the use of *brise-soleil* and the interest in regional climatic adaptation were neither mere technical operations nor items of fashion, though they contain aspects of both. The screen wall buildings of the 1950s bequeath to us a difficult task: separating the nostalgic, defensive aspects of regionalism and environmentalism from the dressing of buildings to display their allegiance to local, natural rhythms.[30] Make no mistake: the same degree of solar shading and selective admittance of the sun could have been accomplished by many other less visible means, from the louvred shutter to the venetian blind. The *brise-soleil* made visible its dedication to the local and the particular, paradoxically articulated according to an international architectural device.

The potentials and dangers of this *brise-soleil* can be discerned in the smaller projects examined by the Olgyays, such as Richard Neutra's Kaufman house in Palm Springs or Niemeyer's Yacht Club in Pampulha. They are as faceless any of the large curtain wall buildings, but they possess a quite different and more inviting quality, similar to that of Klumb's buildings. This effect may be largely a question of scale, but there is considerably more to that conventional architectural concept than the issue of visual proportion. Indeed, the discussion of scale was an important topic of discussion in the Puerto Rican circles in which Klumb travelled. One of his
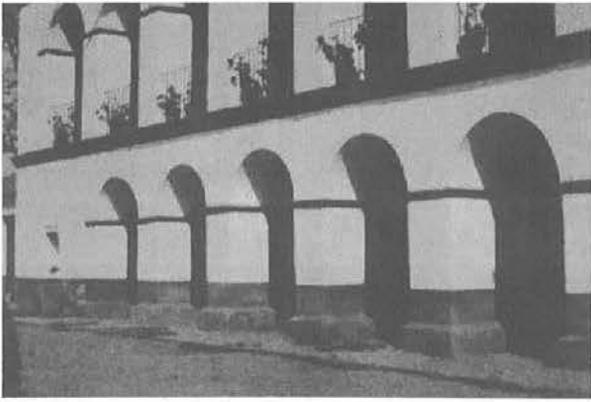
Tucuman country house, Argentina.

friends, Leopold Kohr, first developed the "small is beautiful" arguments in the early 1950s, deriving his economic and political arguments about scale from ecological thinking.[31] In a tribute to Klumb written many years later, Kohr recalled his own efforts in 1967 to help the short-lived Republic of Anguilla apply "the ecological principle of self-sufficiency instead of the unitarian concepts of interdependence and integration." He decided that the most persuasive argument would be to invite the Anguillar leadership to visit Klumb's house in Rio Piedras, which was embedded in an anachronistic stand of tropical jungle that Klumb had restored around the house in contrast to the urban sprawl of San Juan that surrounded it. With its open self-shading walls and moist surrounding vegetation, the house required none of the advanced and expensive air conditioning equipment that had already come to characterise modern development in the Caribbean.

Kohr used the example to demonstrate the economic benefit of regionalism, but touched on the more pressing relationship of architects to places. He cited a question about Klumb posed by a Puerto Rican student to Haitian architect Albert Mangones, asking whether the "native" has anything to learn from the "outsider." Mangones argued that in architecture, the architect *is* the insider, not the native, and that he himself had learned more from Klumb about designing in the tropics, even though Klumb originally came from Cologne. The lesson evident to such an insider, however, involves the most radical critique of contemporary technology and development, a critique pursued by another participant in that bright circle of intellectuals in Puerto Rico, Ivan Illich, who demonstrated that instrumentality in all its forms is just another form of desire, an overwhelming and insidious desire for control that achieves the illusion of objectivity when it is explained as "needs."[31] In effect, the appeal to needs reveals the operative justification of the faciality machine, the standard by which a single model of the face or desire can be replicated and imposed again and again.

An architecture that adopts this critique cannot be guaranteed only by technical accommodation of local conditions, nor the use of local materials. Both are equally subject to appropriation according to needs. The expression of solar control should not blind us to the other aspirations expressed by the Olgyays, to somehow situate a modern architecture in its context, a context that now includes the buildings of the first and second movements of colonisation. That task, from which nostalgia and instrumentality must be excluded, begins with a recovery of the full-bodied play of masking, of the "making animal" and making-visible that culture demands of its artefacts. It also demands an accommodation of the now partly erased face.

28. Olgyay and Olgyay, *Solar Control*, 8-9.
29. Olgyay and Olgyay, *Solar Control*, 9.
30. Alan Colquhoun, "The Concept of Regionalism," in *Postcolonial Space(s)*, eds. G. B. Nalbantoglu and C. T. Wong (New York: Princeton Architectural Press, 1997).
31. Leopld Kohr, unpublished typescript of a talk.
32. Ivan Illich, *Tools for Conviviality* (Berkeley: Heyday Books, 1973); and Ivan Illich, "Needs," *The Development Dictionary: A Guide to Knowledge as Power*, ed. Wolfgang Sachs (London and New Jersey: Zed Books, 1992).