

Sonoran Desert Enclosure: Mediating Regionalism versus Internationalism

DOMINIQUE BONNAMOUR-LLOYD
Georgia Institute of Technology

Few regions confront architects with the conflicts between *Regionalism* and *Internationalism* as well as the Sonoran Desert. Historically remote from centers of power, the area has resisted most international movements that shaped other cities and buildings of the Western world. Yet, the recent growth of the Southwest has imported principles of commodification and universalization. The eclectic built-landscape manifests a trilateral cultural heritage rooted in the land — Native American, Hispanic, and Anglo, in contrast to an international culture remote from local conditions and identity. Surviving in a harsh and fragile land still elicits specific responses to regional conditions, while joining in the post-industrial world introduces global concepts of space, site occupation, and construction methods. As a result of this dichotomy, the Sonoran Desert is significant for studying the paradigm of *regional* (that which is specific to a region and constitute its identity, resulting from tradition, conventions, and immutable conditions) versus *international* (that which is determined by or has value for a larger cultural, political, and economic context).

While such polarity is evident at the urban scale, the study of building *enclosures* brings a more subtle insight into the cultural setting in which design occurs. Indeed, the *enclosure* has been defined as one of the four main elements of architecture (Semper), as well as "the negotiation of the

trickiest shoal in architecture today" (Robert Campbell). Enclosure is here understood as the exterior envelope of a building, that which contains/defines living spaces, that which is between inside and outside. The last hundred years' technological and theoretical developments transformed the relationship of the enclosure to the three other Semperian elements: the *hearth* (or *raison d'être* of a project), the *mound* (or site), and the *structure*. These connections with respect to regional or international contexts will be the object of this inquiry.

This study of specific contemporary Sonoran enclosures intends to demonstrate how architects mediate regional and international design principles. Case studies have been selected from the works of three architects who are associated with contemporary desert architecture, using three different types of walls: 1- *Arizona Sonoran Desert Museum Restaurant*, Tucson, by Les Wallach of Line and Space (Fig 1); 2- Will Bruder's *Rock Art Center*, Deer Valley (Fig 2); 3- *Ventana Vista Elementary School*, Tucson designed by Antoine Predock in collaboration with Burns-Wald-Hopkins (Fig 3). The materiality of enclosures is here investigated in terms of physical properties, and of cultural and aesthetic inferences. This study adopts the view expressed by Viollet Le Duc¹ and Semper² among others, that a purely technological outlook on architecture can only be reductive. Be-



Fig. 1. Wallach's enclosure
Arizona Sonoran Desert Museum Restaurant
Tucson. Photo courtesy of Line and Space



Fig. 2. Bruder's enclosure
Rock Art Center, Deer Valley
Photo courtesy of William Bruder



Fig. 3. Predock's enclosure close-up
Ventana Vista Elementary School
Tucson. Photo by D. B-Lloyd

yond their technical performances, materials and means of assembly reveal how buildings relate to local or global contexts. This paper examines how enclosures use languages of tradition ³, modernity, post-modernity, or critical regionalism — respectively defined by critics Bruno Zevi ⁴, Charles Jenck ⁵, and Kenneth Frampton ⁶—to determine how program, site, and structure shape enclosures with respect to these regional and international conventions.

I- ENCLOSURE AND HEARTH: RELATIONSHIP TO TYPOLOGY AND USE

Semper identified the *hearth*, non-tectonic element, as the core of architecture, that around which enclosures are placed; this draws this analysis to begin with the role of the hearth in shaping the enclosure. Sonoran enclosures are traditionally simple and opaque. They have changed very little over time (Fig 4), although their *hearth* or *raison d'être* has varied significantly. One with nature, Native American dwellings were woven into Mother Earth and Father Sky, connecting the *hearth* of dwellings with the spiritual realm all around. Social and urban conventions guided the design of Spanish and Mexican enclosures: thick walls around courtyards protected the cores of private lives, distinct from public streets and plazas. Anglos, introducing the free-standing structure, transmuted enclosures into show cases: increasingly transparent, facades began to reveal owners' socio-economical status, exhibiting *hearths* onto the street (Fig 6). In all cases though, there was congruence between the design of the enclosure and the nature of the hearth. Such consistency has been recently contested, with Venturi's notion of buildings as 'decorated sheds,' and of enclosures as symbolic billboards within a consumerist society. This section explores how the idea of *hearth* shape Sonoran contemporary enclosures with respect to regional and broader cultural constructs.

The three building types are typical of our post-industrial society: Wallach's restaurant, place of pleasure, located within a highly touristic, has a dual purpose of education and entertainment; Bruder's museum, funded by a public agency (US Army Corps of Engineers), is an icon of a leisure culture concerned with fast-acquired knowledge; and Predock's public school, located in a socio-economically privileged neighborhood, reflects the evolution of educational approaches towards a child-centered culture. These buildings have a minimal budget —ranging from \$70/SF to \$100/SF— supporting Jencks' observation that the public realm today is "receiving major cut backs." Partly cultural, partly consum-

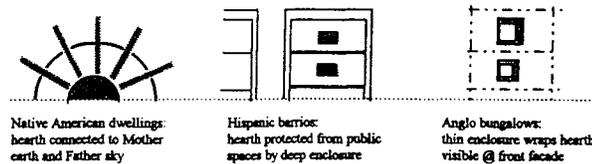


Fig. 4. Traditional Sonoran hearth-enclosure relationship Plan diagrams by D. B-Lloyd

erist, these projects address a typically post-modernist heterogeneous public: tourists from all over the world, visitors of diverse interests, and children of mixed cultural heritage. Despite their modest size, such typologies combine general manifestations of our civilization. Neither "marginal" nor flourishing "in the interstices," they fall short of critical regionalist definitions, namely Frampton's points 1 and 7. This societal *esquisse* however does not suffice to understand the specific role of the hearth in shaping the enclosure.

Arizona Sonoran Museum is conceived as a series of paths that take visitors from indoor to outdoor observation areas, along trails where they experience various facets of desert life. The restaurant is one of these stops where one may comfortably engage in another desert discovery (Fig 5). The sequence of entry into the enclosure encompasses adjoining trails, signaled only by a way-finding, purple ribbed steel canopy. The eating facility is broken down into smaller spaces stepping down from inside to outside, providing intimate desert experiences. Views and sun angles drive the orientation and location of spaces. Boundaries between inside and outside are unclear, for overhangs and walls extend outside and beams cantilever beyond occupied spaces. In fact, exhaust air from the indoor cooling system is released into outdoor dining areas for relief from the heat, affording climatic transition. One with the landscape, the enclosure defines a spatial continuum that is both visual and phenomenological, linking to a universal anthropomorphic *raison d'être* affected by local conditions.

Deer Valley Rock **Art** Center is the first curation facility built by the US Corps of Engineers. In the 1970s, severe flooding prompted the Adobe Dam construction which threatened the preservation of a petroglyph site dating from 900-1100 AD. The US COE eventually built the **Art** Center to protect these archeological remains. For Bruder, the COE left significant marks on the American territory, such as aqueducts and darns that bear timeless ideas. Thus the existing outlet of the dam becomes the *hearth* of the project over which the building spans (Fig 6). Like a 'time-machine,' the center transports voyagers from a chaotic suburbia to the sheltered sanctuary of the Hedgpath mountainside, where they can weigh the heritage of past

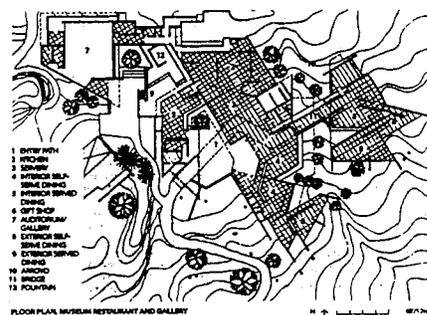


Fig. 5. Arizona Sonoran Desert Museum Restaurant Floor plan. Courtesy of Line and Space.

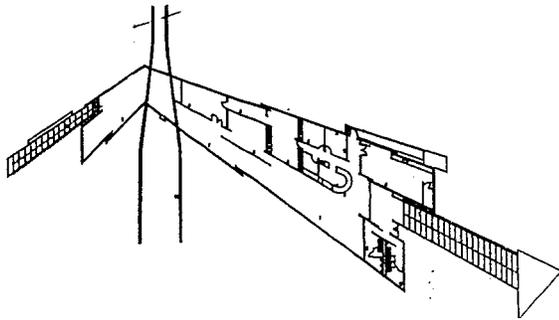


Fig. 6. Deer Valley Rock Art Center Floor plan. Courtesy of William Bruder.

civilization. The enclosure's shape reinforces this dynamic journey: a funnel made of shifting planes draws visitors in an inevitable flow. Raw, primitive concrete walls recall traditionally solid, opaque walls; yet their boldness conveys a contemporary vigor. In contrast to their sense of permanence, rusted steel elements suggest weathering and aging, evoking the notion of time passage. This enclosure links local and global *raison d'être*, past and present journeys with a vocabulary that is both regional and international.

The school volumes, shaped from within, express the rhythm of children's growth. This "city for children" is organized in separate villages climbing a hill (Fig 7). Small children inhabit the "Watery Realm of the Vortex," low on the site, close to Mother Earth's womb. Middle graders occupy the "Kingdom of Sorcerers and Stars," regulated by winter and summer solstices. At the top of the site, older students take up the "Realm of Science and Weather," marked by a tower. Finally, the central underground library, "the City of Invisible Connections," refers to a global village and to the intangible networks of today's information highway. Each village has a courtyard, outdoor living space that shades collective activities, bounded by opaque volumes. Such density recalls Hispanic cities planned per the Laws of the Indies. Windows through the walls themselves, the only link between indoors and outdoors, evolve with the age of children. Random and playful for low graders, they become larger and organized, like the minds of older children that have been molded and disciplined through educa-

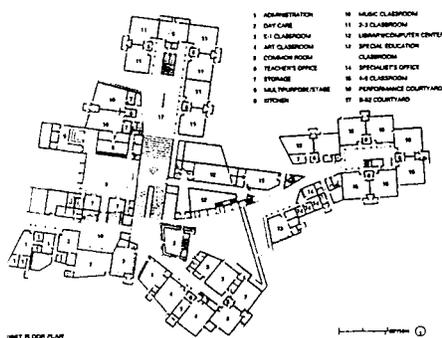


Fig. 7. Ventana Vista Elementary School Floor plan. Courtesy of Bums-Wald-Hopkins.

tion. Volumes defining public spaces and opaque enclosures both refer to tradition, while the free molding of enclosures around children's lives departs from regional convention and adopts a post-modernist playfulness.

These three hearths shape their enclosures. The restaurant enclosure results from a phenomenological understanding of its *raison d'être* modulated by local climate and landscape. The Art Center enclosure reinforces its symbolic purpose, taking on local and global layers that ratify Bruder's self-applied label of a "regional globalist." Narrative and mythical references (both regional and international) form the school enclosure. Devoid of consumerist reference, unlike "decorated sheds," overall volumes are molded by a poetic transcendence of their function. Abstraction precludes literal or infantile interpretations or gimmicks, yet speak to a diverse public. In that sense, these projects reconcile regional identity, modernist precepts of abstract or pure form making, and critical regionalist interpretation of vernacular elements into a post-modernist multi-cultural world.

II- ENCLOSURE AND MOUND: RELATIONSHIP TO THE SITE.

The second element to consider is how the mound or site shape these enclosures. Traditional Sonoran walls were rooted in the earth (as in Native American pits and kivas), or solidly anchored to the soil, erected as opaque barriers to a hostile environment (as in the Hispanic barrios); even though Anglos lightened the walls by adding porches and by raising floor levels, the turn of the century enclosures contained interiors that were clearly separate from the site (Fig 8). Later, Modernists challenged the idea of containers, fostering fluidity of spaces. Post-modernists revived appearances of vernacular walls. In reaction, critical regionalists emphasized the site three-dimensional matrix and the use of climate or light to generate forms. The three sites are located in remote suburban settings, calling for a response to natural settings, be it a forest of saguaros in the midst of immense horizons for the restaurant, a nested oasis of rocky wilderness in suburbia for the Art Center, or majestic rugged mountains such as the Catalinas for the school. Studying the type of transitions between inside-outside clarifies how these enclosures negotiate the site.

Wallach scrutinizes the site, looking for the unusual, the incidental, the opportunity — be it a saguaro, a rock, a wash, a view. Careful site impact analyses (both from within and from without the property) allow him to frame views,

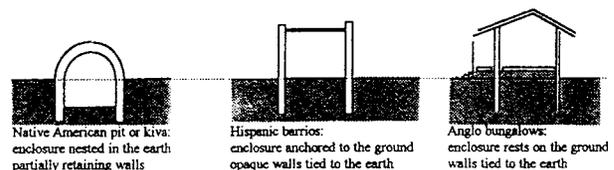


Fig. 8 Sonoran mound-enclosure relationship Sectional diagrams by D. B-Lloyd

preserve vegetation, and subsequently determine the building location. This intimate appreciation of the site's nooks and crannies enables him to design spaces that capture the terrain specificities and build a continuum between in and out. Free standing walls, veneered with rocks found during excavation of a near-by site, anchor the building symbolically to the terrain; their slanted side brings the desert into the man-made, linking the two. The landscape is not viewed as a hostile environment, but one in which architecture is nested. Deep overhangs, not merely formal, protect vertical surfaces from heat gain. Perimeter ground cover further reduces glare, constructing a complex four-dimensional climatic control system. The play of walls, screens, and transparencies emphasize, reveal, or conceal site particularities, defining a modernist and organic enclosure whose boundaries are undetermined, allowing gentle flows and transitions from outside to inside (Fig 9).

Bruder is interested in the gesture that a site evokes and the materials for which it calls. Like a bridge spanning the dam outlet (Fig 10), the Art Center seemingly connects two mounds: on one side is suburbia, on the other the trail to the petroglyph site. Shaped like a boomerang, the building directs voyagers from the parking lot to the entry, through the building, and outwards onto the nature trail. Rusted steel beams and perforated sheets project outwards in the direction of travel and shade the entry, as if thrown away from the sharp slices of walls of the actual enclosure. They stress the sense of penetration into the building that opens only at its entry and exit points. The enclosure restrains a portion of the travel that extends beyond its own limits and beyond the site itself. As a geological abstraction in the desert, the Center "is about the landscape, it's hard and brutal." The black-purple slag wall finish, actually from Lake Superior, matches remarkably the black rocks found on site. Its rusticity relates to Sonoran walls, yet the blind, opaque, and minimalist surfaces have a manufactured brutality that departs from the traditional soft, hand-crafted stone, mud or brickwork. The

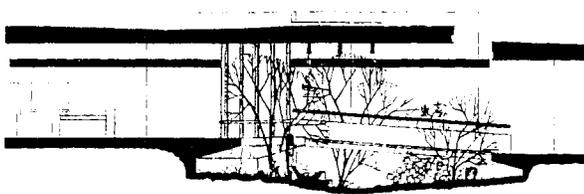


Fig. 9. Arizona Sonoran Desert Museum Restaurant Conceptual section. Courtesy of Line and Space.

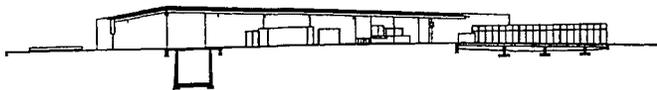


Fig. 10. Deer Valley Rock Art Center Section. Courtesy of William Bruder.

shifting planes of the enclosure, dynamic concrete walls slicing land and space, only let in narrow slits of light at their joints, for light is precious, to be mastered as it floods over the desert. These uninsulated thick concrete walls use thermal mass as part of the space conditioning diagram. The enclosure is both organic and industrial; it resists the harsh land and is instilled of an energy that emanates from the site, the climate, and an international culture that is about movement and change.

Predock sculpts a clay model in situ in which he imprints his impressions of the land, inserting slices of past and present history. For him, "the packrat and the Bomber are just as much about the desert" (Fig 11). He includes memories of Native Americans and Mexican presence into the *solstice wall* where sun rays strike the ground on the Cinco de Mayo (as in Chaco Canyon). He alludes to high-tech Tucson with a bomber recalling the near-by boneyard and Air Force Base. For him, the *wall* is the only answer to the desert. "It mediates the sky and the earth," providing a dark secret respite from the harsh environment. The wall is primarily opaque and its texture is rough to withstand the desert. Split concrete masonry units, mortared with flush joints matching the blocks' color, provide a rugged continuous surface with intermittent spikes that recall "the lizard's skin." Small windows to the outside world confine the inner world to a series of mysteries and secrets. The enclosure is a complete barrier to the land, an instrument of resistance to its harshness. Abstraction though is the key to a non-reductive architecture, one that does not try to mimic the past nor the landscape but opens up the viewer imagination. However, in terms of climatic control, Predock uses polystyrene panels anchored with Z-furring channels finished with sheet rock, ignoring vernacular or natural lessons of air flow, and relying on manufactured strategies of climatic control. These walls are shaped by a hybrid, mostly visual understanding of the land and of its tradition.

The three projects are site-specific; the shape and texture of their enclosures are molded by architects' attitude to the territory. In that sense *Critical Regionalist*, they all "insert reinterpreted vernacular elements as disjunctive episodes within the whole," using the *wall* as primary element of architecture. Yet, their connections to the mound construct very different enclosures. Wallach intertwines the natural and the man-made to define a continuum; walls are floating and independent planes. Bruder slices the ground to define spaces that claim their own identity; he links the organic properties of the terrain to a symbolic dimension that extend beyond its limits; walls are shifting directional planes, that combine modernist clarity and post-industrial kinetic energy. The school sits upon the site as a series of objects that mediate the topography while maintaining rigid boundaries; the site's sculptural properties constitute an abstract, even hostile base upon which metaphorical layers of local and global history can be built. Predock's walls are barriers to the outside; they contain dark interiors into opaque boxes in a post-modernist reference to ethnic tradition. Wallach adopts

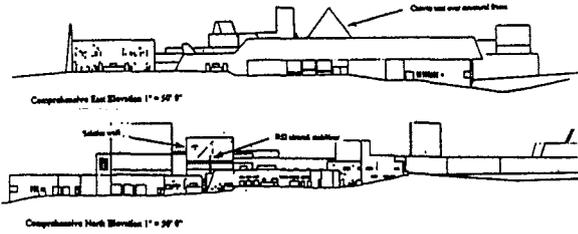


Fig. 11. Ventana Vista Elementary School Elevations. Courtesy of Burns-Wald-Hopkins.

passive solar strategies of climate control, Bruder relies on the thermal mass of concrete, while Predock adopts remedial manufactured strategies. Thus, the sensitivity to the climatic dimension of the site matrix varies from a simple light-shade concept to more subtle interpretations.

III- ENCLOSURE AND STRUCTURE

A closer examination of the enclosure constructive logic, that is 1) of the relationship between enclosure and structure and 2) of construction means and methods, continues to reveal how these enclosures rely on regional versus international architectural concepts. Sonoran structures are distinguished by overall simple, naked, and non-descript opaque forms. The *wall*, prevalent in sedentary and winter habitations, was primarily made of masonry (adobe, fired-adobe, and later bricks), solid, anchored to the ground, traditionally monolithic and opaque, providing thermal mass (Fig 12). Elsewhere, the wall has been progressively dematerialized over the last century. New materials and construction systems have freed the *opaque box*, architects have celebrated the *facade libre* and the autonomy of the enclosure **from** structures. Worldwide techniques of construction that favor light assemblies, diverge from and

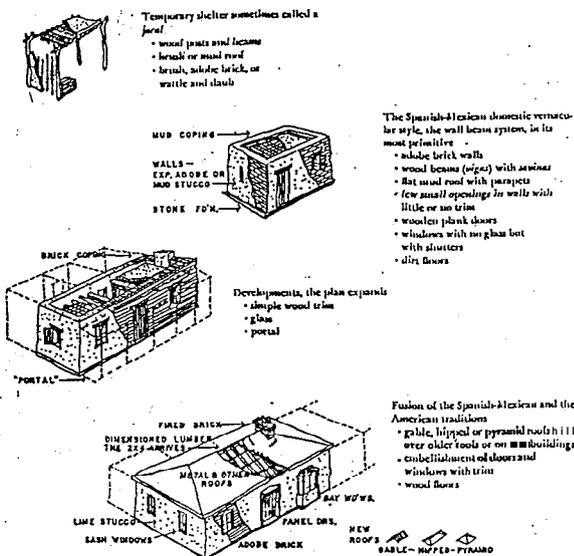


Fig. 12. Evolution of the Sonoran enclosure Courtesy of Arizona Historical Society.

isolate the Sonoran tradition of rustic, massive, bearing wall structures.

At the restaurant, independent horizontal and vertical planes construct the enclosure. Steel columns and beams spring up from composite walls, clearly non-bearing (Fig 13). Other partitions stop short of roof or ceiling planes. Cantilevers let the ground flow beneath, indicating that stones are used as veneer. Glazing and infill surfaces intersect, collide, or meet these masses. Structural elements are almost free from space enclosure, even though they occur within the same plane. Roofs project several feet beyond the enclosure. These "planes no longer form closed volumes, containers of finite forms" (Zevi, 31⁴). No longer bearing, composite assemblies, *walls* are free standing space dividers whose texture and solidity serves as transition to the roughness of the desert landscape. Wallach admits to being more interested in spaces than in structural integrity. As a builder, he limits spans to standardized sizes and places supports for ease of construction and economy of means rather than solely for visual effect. The resulting structure is a mixture of glue-lam and steel beams, steel columns and partial bearing partitions; materials are chosen for their efficiency and economy rather than to reinforce an abstract structural order. Market driven choices take precedent over purist integrity of materials (characteristic of Modernists) and over local traditions.

The Art Center's enclosure is defined by a series of shifting, abstract, and minimalist planes (Fig 14). Walls overlap, joined by narrow strips of glass that *break the box* while privileging one direction. Tilt-up concrete slabs and free-standing steel columns bear a concealed flat roof cover that is revealed only at entry points and above offices. At such points, steel beams clearly distinct from walls, project beyond their faces; connections are exposed, exhibiting rough and almost sloppy bolted or welded points. The unrefined quality of finishes, reinforced by the contrast with stainless steel scuppers, accentuates the rustic character of the whole project, in keeping with the unsophisticated Sonoran tradition. Bruder uses the universal "warehouse" technology of tilt-up panels, with a black slag facing that was placed at the bottom of the casting beds to address local conditions. The adherence ratio of these aggregates to the



Fig. 13. Arizona Sonoran Desert Museum Restaurant Steel columns spring up from composite walls. Photo by D. B-Lloyd.

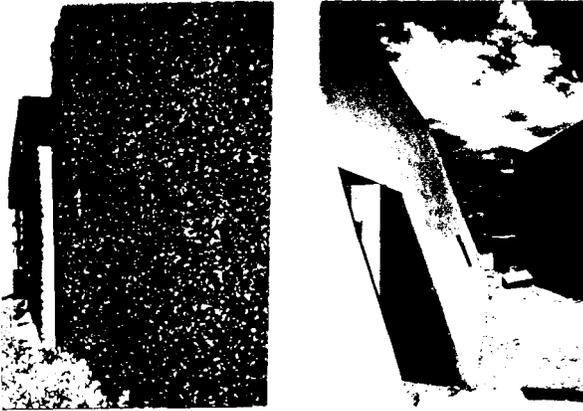


Fig. 14. (left) Deer Valley Rock Art Center
Shifting planes. Photo by D. B-Lloyd.

Fig. 15. (right) Ventana Vista Elementary School
Two types of walls. Photo by D. B-Lloyd.

concrete exceeded initial predictions, yet aggregates falling off on adjacent grounds visually link building and ground. Joints disappear to form a continuous abstract vertical plane. The actual construction is revealed only at exposed edges, where the sandblasted gray concrete extends inside into a fine grained, plaster-like surface. The rest of the structure itself is made of rusted steel. The limited palette of materials reinforces the dynamic parti.

The school is made of a mix of bearing walls made of split CMU and non-bearing walls of slanted metal studs finished with Dryvit, all firmly anchored to the ground (Fig 15). These skins suggest different structural behaviors, yet both walls are treated as opaque planes, butted together as surfaces that belong to the same mass. Corners are solid, revealing only at closer look the different nature of their faces. Elsewhere, heavy steel beams support flying parapet walls that are sculptural surfaces erected with little concern for the bearing nature of masonry. Flat roofs, concealed by parapets, wrap the box in the other dimension. The box contains interior spaces that are protected from exterior ones. Enclosure and structure merge into a composite assembly. Both CMU and stick walls are rather than on vernacular lessons.

Construction means participate of mainstream production, "placing these projects into emancipatory aspects of contemporary production" (Frampton) rather than among marginal practices. CMU, site-cast tilt-up concrete combined with light steel frame or steel columns are not only economical but standard methods of construction. It is in their arrangement that the three enclosures diverge most (Fig 16). Wallach and Bruder adopt modernist precepts of the exploded box, where vertical and horizontal surfaces are detached from each other, letting space or light flow between them to allow spaces to expand beyond their boundary. Wallach uses a hybrid structure of skeleton and planes, where enclosure and structure are clearly distinct. Bruder articulates a structure of surfaces that are bound-

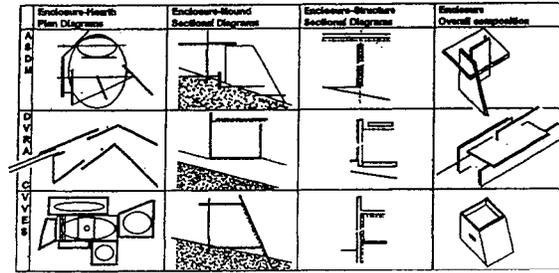


Fig. 16. Comparative diagrams of enclosures
Drawings by D. B-Lloyd.

aries, through which space escapes at privileged interstices. On the other hand, Predock's box is seemingly conventional, although the wall construction is a mixture of buried columns, steel beams, bearing studs and masonry. Predock uses "words" of architecture (walls) with a regional "semantics" (boxes), while the "syntax" (*composite* assemblies) is placed in post-modernist contemporary production. While referring to the vernacular, these walls depart from traditional structures made of stacked materials. With respect to construction logic, Predock and Wallach's enclosures have a post-modernist eclecticism while Bruder's offers integrity.

CONCLUSION: BEYOND TRADITION, MODERNISM, POST- MODERNISM, AND CRITICAL REGIONALISM

These deeply Sonoran walls still participate in a contemporary international culture. Even though shaped by post-industrial hearths, these enclosures are sober, *undermining* their consumerist nature. Instead, the buildings' functional, symbolic, or metaphorical *raison d'être* shape indirectly or abstractly these enclosures. Desert sites or mounds inspire mythical analogies that tie places to a greater whole. But much more than visual platforms, these sites are three-dimensional matrices that mold these walls. Using efficient, mainstream construction methods, enclosure and structure are technically separate. Bruder and Wallach exploit these tectonic relationships with varying degree of integrity, while Predock elicits an ambiguity that favors the metaphorical and the symbolic.

These works relate to the desert region without overt revivalist intentions. They exhort local history, myth, or beauty, avoiding literal stylistic vocabulary of the region, yet seeking its universal qualities. The emphasis on the *syntax* rather than on the *style/words* of architectural elements places them among modernist heirs. Walls are abstract planes and surfaces that speak an international language rather than a dialect. Attention to the region is not so much a nostalgic return to a notion of identity or otherness, as it is a necessity. What matters most are site *conditions*—*climate*, topography, vegetation, light, and heat—modulated by programmatic requirements. To master desert energy, light, and

heat calls for appropriate enclosures. Opaque surfaces that create dark retreats from the heat, slices of spaces that capture precious slits of light, and intersecting planes that generously shade outdoors are all means of creating livable spaces in the desert.

Using *mainstream* rather than *cutting edge* technology, these projects participate in a technological international culture that is currently as much economic as it is scientific. Colquhoun⁷ states that today's architectural production has to do with a pragmatic economic reality rather than an ideology, unless a project symbolizes one nation or state to the public eyes of other nations or states. In their pragmatic attitude towards materials, they adopt what Colquhoun qualifies as typically American (as opposed to European idealism towards technology). Responding to economic and social pressures to keep the budget viable, these modest projects are placed in mainstream international practice, inevitably tinted by a national interpretation of such culture.

Mediating local and global languages constructs an architecture that is more than modernist, post-modernist, or critical regionalist; it does not celebrate technology, it does not reduce the regional to the ethnic, nor does it place architecture in a marginal position. Linguistic discourses risk distancing architecture from its realistic conditions. The pragmatic and non-revivalist interpretation of regional and international contexts constructs an *architecture of post-industrial reality* that is as much regional as global, organic as high-tech, practical as mythical. The congruence of such seemingly diverging forces into a coherent vocabulary is ensured by a non-reductive understanding of context, that ties local to global conditions and reintegrates landscape and building, people and technology.

ACKNOWLEDGMENTS

I would like to thank Les Wallach, William Bruder, and Antoine Predock for their candid and continuous support for this project, for their time being interviewed, and for their releasing construction documents, correspondence and other data pertaining to the project. Additionally, I would like to acknowledge their office staff and Bums-Wald-Hopkins' staff and principals for their grace, patience, and collaboration.

NOTES

- ¹ Viollet-le-duc, Eugene Emmanuel. *Entretiens sur l'Architecture*. Ed. integrale, 4th ed., Entretien V. Bruxelles: Pierre Mardaga, 1986
- ² Semper, Gottfried. *The Four Elements of Architecture and Other Writings*. Cambridge: CUP, 1989
- ³ Comments on Sonoran Desert tradition were compiled from the major following readings: Gowans, Alan. *Styles and Types of North American Architecture: social Function and Cultural Expression*. USA: Harper Collins, 1992. Veregge, Nina. "Transformations of Spanish Urban Landscapes in the American Southwest, 1821-1900." *The Journal of the Southwest*, Vol. 35, #4. Tucson: UAP Southwest Center, Winter 93. Markovich, Nicholas et al. Ed. *Pueblo, Style, and Regional Architecture*. New York: Van Nostrand Reinhold: 1992.
- ⁴ Zevi, Bruno. *The Modern language of Architecture*. New York: Da Capo Press, 1994 (First edition University of Washington Press, 1978).
- ⁵ Jencks, Charles. *The Language of Post-Modern Architecture*. New York: Rizzoli, 1977
- ⁶ Critical Regionalism six points were defined, revised, and clarified in: Kenneth Frampton. *Modern Architecture: a Critical History*. London: Thames and Hudson, 1992. pp. 327. "Critical regionalism Revisited," *Critical Regionalism: The Pomona Meeting- Proceedings*. Ed. Spyros Amourgis. California: College of Environmental Design, California State Polytechnic University, 1991. —. *Out of Site: a Social Criticism of Architecture*. Ed. Diane Girhardo. Seattle: Bay Press, 1991.
- ⁷ Colquhoun, Alan. "Regionalism and Technology." *Casabella* 491: May 1983