

BUILDINGS THAT NURTURE - Victor Sidy

First printed in the Journal of the North American Montessori Teacher's Association (NAMTA), Spring 2003, pp. 143-154.

Doing field research in 1997 for the North American Montessori Teacher's Association (NAMTA) on the architecture of Montessori schools, I began to formulate a paper that intended to prove that good architecture makes good Montessori education. I was persistently haunted, though, by instances of remarkable education that occurred in spaces that I had classified as substandard: poor quality of light, limited space, bad acoustics, etc. Montessori teachers were making miracles happen in the most unsuspecting places and were skewing my data. Unable to discount these anomalies, I realized that perhaps the Montessori tradition might itself teach me things that were missing in the typical architectural discourse.

The ensuing journey to explain my mixed-up data has led me to fruitful research and a number of projects with Montessori schools. Each project has contributed to unwinding the mysterious presence of *nurture* in buildings, among other enigmas. In the next several pages I will explain some of the lessons learned from Montessori classrooms, educators, and administrators in a quest to understand architecture from the Montessori point of view, and in versa, understand Montessori through the lens of architecture.

I began with origins. I enjoyed the etymology of *education* (from Latin, *educere*: to draw out). I studied ancient lore; the adage "all that is needed for education is a Teacher, a Student, and a Tree" fascinated me for the primacy of the Tree image, the archetype of shelter and sanctity. Schools built in the ensuing thousands of years were increasingly abstract extensions of the (nurturing) Tree form, with noteworthy examples as the shady groves of Plato's *Academe* and the Corinthian columned porticos of the American Ivy League. I turned then to the Montessori pedagogy, which

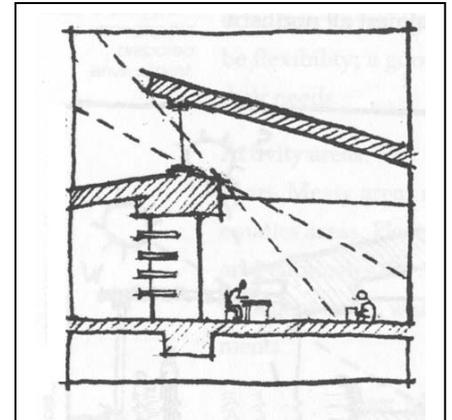


Fig. 1: Natural Lighting from Multiple Sources. NAMTA Handbook, 1999

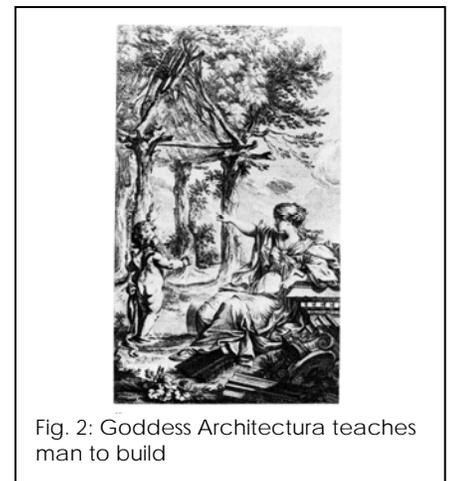


Fig. 2: Goddess Architectura teaches man to build

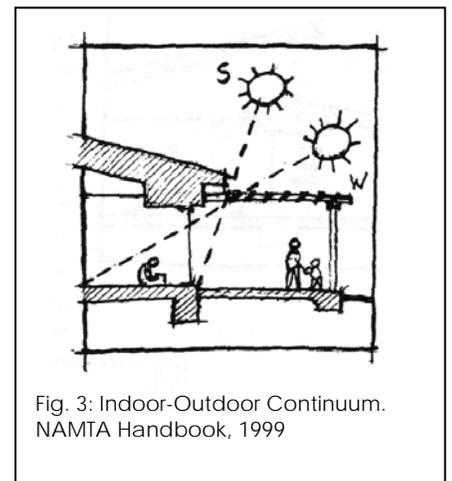


Fig. 3: Indoor-Outdoor Continuum. NAMTA Handbook, 1999

though less than 100 years old has been applied successfully in literally every world culture, from poverty to wealth. In Third-World settings, a well-trained Montessori teacher under a Tree can indeed captivate the minds of children with little more than resourcefulness and recycled objects. It was disconcerting, from an architectural point of view, that education could transcend the school. The Montessori quip that there is “not inappropriate weather but rather inappropriate clothing” hints to the negligibility of buildings for her education to work.

Nowadays, though, American parents send their children to schools that ensure safety and a reliable education. Trees, despite their shelter and sanctity, just don't perform. And here is the challenge of the architect: our clients want modern performance and comforts, but also don't want to be alienated from a nurturing, nature-embracing environment. Factors such as sufficient square footage per child, minimum allowable indoor temperature levels, acceptable lumens of light, and the standards of the Americans with Disabilities Act (ADA), are excellent for establishing building performance criteria, but make for miserable classrooms if they don't have windows, natural ventilation, humane interior finishes.

When I started designing prototype schools with a team of students at the Frank Lloyd Wright School of Architecture for NAMTA's Montessori Design Project, we isolated what we called design “patterns” for future schools. The resulting study, published as Chapter 5 in NAMTA's Whole-School Montessori Handbook (Kahn, Dubble & Pendleton 131-147), highlighted design patterns such as the indoor-outdoor continuum, light from multiple sources, south-facing outdoors, and north-side protection which were demonstratively effective for the design of Montessori classrooms. The research remains useful and valid. However, we just scratched the surface when it came to solving the enigma of what makes nurturing buildings in the context of Montessori education.

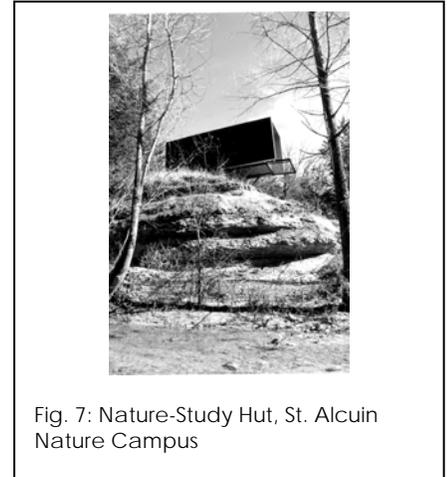


Fig. 4: Bio-Waste Treatment Facility, St. Alcuin Nature Campus



Fig. 6: Outdoor Pavilion, St. Alcuin Nature Campus

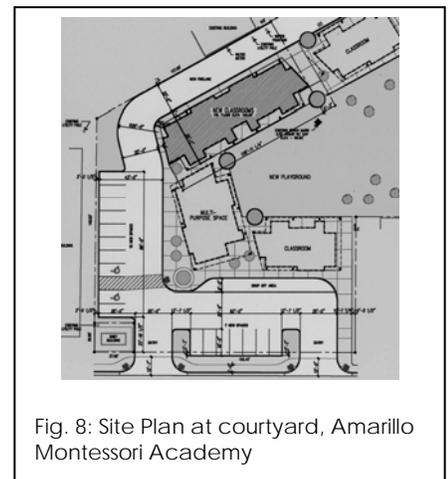
As a result of the Frank Lloyd Wright School of Architecture study, I was invited to consult with the St. Alcuin Montessori School in Dallas, Texas. One of the larger and established Montessori Schools in the country, St. Alcuin was just starting the process of developing an adjunct campus in the countryside for nature activities. Working directly with the Middle School faculty and students, we formulated a master plan for the 80-acre campus and earmarked four structures to be built to provide support for the education program: 1) bio-waste treatment facility (i.e. porta-potty), 2) outdoor classroom pavilion, 3) remote nature-study hut, 4) pedestrian bridge across a deep ravine. In the course of several workshops, I worked directly with the students and collaboratively designed the structures. Immersed in the Montessori setting, the subtleties of patterns of use and relationship with the physical environment became critically important.



With generous funds from certain parents of students at the school, we proceeded with the construction phase of the projects, engaging the students with specialists for some of the actual construction work, in the spirit of Montessori's 'Erdkinder.' The resulting structures were significant as an expression of the less concrete ideas of *nurturing*:

- buildings which related to the land and surrounding nature
 - responded to the solar cycle of the day
 - responded to the cycle of the seasons
- buildings with the purpose of caring, sheltering their users
- buildings which were born of community interaction
- buildings which in their materials and structure could teach lessons (pedagogy of place)

As an example of how the buildings responded to the cycle of the day and seasons, the nature study hut was built on a central pivot, lazy-susan style, and could be rotated from southeast to southwest so that the main windows either tracked the sun (winter) or were shaded from it (summer). The classroom pavilion, as another



example, was built to the north of a grand pecan tree, so that in the summer it is shaded during the hottest part of the day but yet flooded by sun in the winter, when the sun is low and the tree has lost its leaves. Far from chopping down the pecan tree, we used it to moderate our comfort. In a subtle way we consecrated the Tree and harkened back to the primeval roots of education.

In a counterbalance to the experimental projects being built on the St. Alcuin Nature Campus, I simultaneously began work on the designs of a very practical school expansion project for the Amarillo Montessori Academy in Amarillo, Texas. The brief was clear: the school had purchased property adjacent to the existing school and wanted to expand. We worked out an expansion strategy that featured a horseshoe of classrooms around an east-facing courtyard. The ring of buildings sheltered the courtyard from the brutal winter winds and provided a focus to an otherwise flat, industrial landscape. The classrooms themselves are oriented to the courtyard, a safe and calm oasis.

Recently, I began the design of an expansion to a Montessori school in the coastal highlands of New Jersey. The existing school was an agglomeration of decades of incremental expansion. The time had come to rebuild the school methodically and comprehensively. I formed a team with a construction manager/contractor (also a parent of children at the school) and we worked directly with the school administrators, teachers, and broader school community to determine the vision, scope, and needs of the school. As the project progressed, we brought in local structural, mechanical, and civil engineers into our project team.

The new school, when built, will be a two-story structure, oriented such that the winter morning sun can fill the entry vestibules and classrooms and the hotter afternoon sun would be shaded by a bank of trees to the west of the building. We decided to preserve

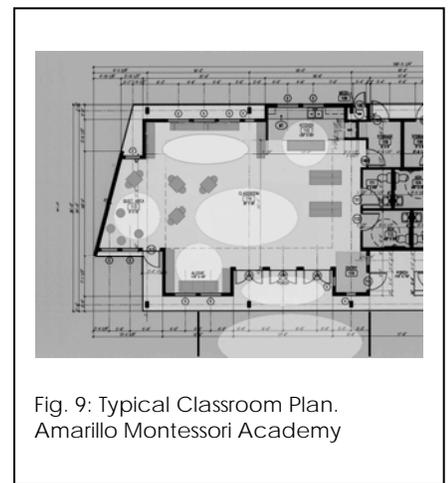


Fig. 9: Typical Classroom Plan.
Amarillo Montessori Academy

the original building on the property and extend the new building beyond this historic core.

Inside the classrooms, we configured the lighting and heating/cooling ducts such that we could build an open vaulted ceiling rather than the institutional drop-down ceiling. The slender, compact arrangement of classrooms allowed us to effectively use natural ventilation so that air conditioning is needed only on the warmest, most humid days. Electric lighting should only be necessary during especially cloudy days, cutting energy use considerably. The circulation hallways are oversized and well windowed, with French doors opening directly to alcoves from the classrooms, so that during class time, small groups of students can make use of an otherwise empty space. Inside the classrooms themselves, the space is laid out such that the quiet areas are furthest away from the distractions of the entrance, cubbies, restrooms, and kitchen area. The classrooms are otherwise open in plan, allowing the teachers to flexibly organize and customize the space as they need. Every portion of the classroom is visible from every other portion, important for the teacher to be able to monitor the children.

Nurture in buildings, despite all of the design strategies I have experimented with in the course of my journey, is still an elusive force. I might design an intelligent, advanced building, but without inspired teaching, it might be just another school. As a violinist myself, I am reminded of the relationship between the instrument and the musician- without the other, music is indeed difficult to make. Years ago my violin teacher picked up the forlorn instrument of the worst student in the class and dazzled us with a beautiful Bach fugue. Although masters can make music from the poorest of instruments, give them a Stradivarius, and they will sing. Although our most revered Montessori teachers are making wonderful music, with buildings which help them nurture, we may indeed help them sing.

Reference:

Kahn, David, Sharon Dubble, &
Renee Pendleton. *The Whole
School Montessori Handbook*.
Cleveland: NAMTA, 1999.