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One educational built environment

An example for school administrators and planners

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Abstract

Purpose – The purpose of this paper is to offer an example, for, school administrators and planners, of the cohesiveness of community policies and school design and planning endeavors during the 1980s in Arizona, USA.

Design/methodology/approach – The paper reports the results of a qualitative, discourse analysis involving images of the exterior and interior of a high school.

Findings – The built environment included three separate discourses which supported a community ideology that was common in the late 1980s. The three discourses involved natural surveillance, fostering neighborly interactions, and planned diversity of spaces.

Practical implications – This paper provides insight into school design and planning, the integration of the surrounding community and how schooling practices can be influenced because of this context.

Originality/value – Tanner's article in 2000 discussing the influence of school architecture on academic achievement introduced this discussion to administrators and planners and articles in the May issue of *Journal of Educational Administration* continued the discussion. This paper furthers the discussion through a qualitative, visual study; so as to generate new understandings.

Keywords United States of America, School buildings, Architecture, Community planning

Paper type Conceptual paper

As published in an earlier volume of the *Journal of Educational Administration* (*JEA*), C. Kenneth Tanner (2000) discussed in his article, "The influence of school architecture on academic achievement", how the higher standards being promoted in the restructuring movement have not trickled down to the design and planning of educational built environments. Tanner (2000) argued that the problem is, "Communications barely exist between the research branches of education and architecture" (Tanner, 2000, p. 311). To further compound the argument, Roberts (2009) added that:

> Conventional measurements of school facilities use an engineering "property management" perspective which takes no account of the purpose of schools. When such measures are used, little connection to learning outcomes is evident (p. 369).

In the recent May 2009 issue of *JEA*, Tanner and Roberts, along with other authors, continue discussing specific elements of school built environments and how they influence the actors in the teaching and learning environment. Uline (2009) summarized:

> This themed issue [. . .] examines what we know about the relationship between educational facilities and students' and teachers' work and learning, as well as the role the public plays in shaping these learning places and joining the community of learners" (as paraphrased from Uline, 2000).

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The main assumption of this issue is the need to examine the school built environment as a context. Tanner (2009) stated the importance of contemplating "the interaction between people and their environments" (p. 382). To continue, Uline (2009) further explained that "[. . .] schools exist within larger social, political and fiscal circumstances [. . .]" In the special issue, each article described situations in and elements of such social, political and/or financial contexts. Uline (2009) highlighted the need for those of us interested in investigating the school built environment and the practices that occur within to work together to "generate new understanding[s]" about the school built environment. Thus, the intent of this paper is to continue to generate new understandings.

Uline *et al.* (2009) underscored the need for further discussion in this journal on those interactive influences which are related to "social factors" and "somewhat more difficult to define and quantify" (p. 403). Many of the articles were quantitative, while some integrated qualitative elements of data collection. Only the Uline *et al.* (2009) study was qualitative; but extended an examination of two "high-poverty" schools from a previous quantitative study. Uline *et al.* (2009) stated about their study that, "[. . .] the school place influenced and shaped the identities of the human occupants, individually and collectively [. . .]" (p. 417, as paraphrased from Cooper as cited in Proshansky *et al.*, 1995). Such qualitative studies, like Uline *et al.* (2009), can bring about the richness of data needed to understand what influences shaped individual and collective actions. In addition, only Ornstein *et al.* (2009) and Uline *et al.* (2009) offered visual images of the interiors and/or exteriors of the school built environment, from a post-positivist perspective of "reading" the images as probabilistic statements (Philips and Burbules, 2000). As Uline *et al.* (2009) stated, "Photographs are useful artifacts in documenting and obtaining knowledge" (p. 407, as paraphrased from Harper, 2005; Collier and Collier, 1986). These comments brought attention to the significance of visual research for investigating the school built environment as a context wherein social practices occur. Mason (2002) stated:

> The idea that everything we are interested in exists in language or text, or is expressible in those ways, and that we can explore it using words or readings texts, can be argued to be a rather limited and uncreative one (p. 104).

Visual research offers another avenue for generating new understandings about the school built environment. As Wagner (1979) stated and what Ornstein *et al.* (2009) and Uline *et al.* (2009), inadvertently, uncovered was that, "We simply have not seen enough of what people do and the physical contexts in which it is done" (p. 286).

This paper intends to see more of the physical context and extends thought on the special issue articles with a qualitative, visual study that examines the built environment of one American high school in the state of Arizona. The aim of this visual study is to offer school administrators and planners an example of the cohesiveness of the community orientation and the built environment of the high school as a context under study.

The Arizona high school was built in the late 1970s due to the population growth in the region. I had attended this "campus-style" high school in the Phoenix Metro area for two years from 1987 to 1989 after attending a "factory-style" high school near Pittsburgh, Pennsylvania. In June 2007, I obtained informed consent with limited access from an assistant principal to photograph the school built environment. Owing to

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present safety policies, I was not allowed to photograph students, faculty and administrators on campus. I was allowed access to some interiors due to remodeling and therefore most of the photographs I took were exterior shots. My intent was to shoot photographs with a digital camera of those areas which were not disturbed by revitalization in order to get images which were closer to what I remember when I attended the high school. I also reviewed two yearbooks to look at what spaces I wanted to photograph. I made a list and upon my arrival on campus I assessed which spaces I had access to and which spaces I could not photograph because they had been remodeled. The photographs in this paper are some of the photos I took; these particular photographs offered the most material details regarding the spaces and structures in question.

The theory of built environment discourses

I understood that the visible and material school structures and educational built environments can be read as texts that espouse public symbols of knowledge and the presence of communal practices. Burke and Grosvenor (2008) similarly understood that "schools are the products of social behavior" and "project a system of values" in their materiality (p. 8). Benito (2003) added that school architecture is a "class of discourse" that includes "the appropriation of educational culture and a complete semiology which exhibits different aesthetic, social and ideological symbols" (Benito, 2003, p. 53). Such comments point to a hermeneutic perspective.

Based on the hermeneutic perspective, I assumed that photographs are texts with no meaning other than semantic and semiotic interpretations. Traditional hermeneutics centers on interpretation theories and the process of developing meanings from reading and interacting with texts. Habermas' (1984)definition of interpretation and the process of developing meaning includes a context by which an individual's experiences, the environment in which they exist and the culturally-grounded understandings they obtain influence what meanings they make when experiencing some form of communicative action. The semantics involved refer to the cognitive development of the meanings we make and attach to an action or thing, as a sign, that stands for something else (Jackendoff, 1988, pp. 81-4). Semiotics refers to the understandings we develop during a communicative action where signs are in a process of interacting in a situation. Interpretations exist within a complex signification or communication process wherein school architecture is a collection of features and elements as signs or representations (Eco, 1976). The communication process manifests through the collection of signs in tangible form as a discourse or a visible form of communication. For example, when viewing a magazine advertisement that communicates the importance of consumers buying a product, the viewer is "reading" a discourse from the interaction between the images and words in the advertisement. Discourses or discursive formations are groups of statements, ideas and other forms of knowledge that are united in some way and that are dispersed or disseminated in a particular fashion (Foucault, 1972). This process of dissemination gives significance and prominence to the discourse in a social situation. Discourses are manifestations of ideologies. Through the tangible discourses on and in the school, we can see how their ideologies affect and impose upon the body. What is tangible is understood as an element of a communication process – communicating what ideologies take precedence or are present in a social situation. Architecture contains elements and features that communicate a style and function of the structure

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and the spaces. These elements and features are a part of a discourse and highlight spatial organization and how bodies are to exist within such a spatial organization.

The earliest writings of Plato in *Timaeus* (Bury, 1977[360 BCE]) proposed the first model for architectural theory and the understanding that architecture and its spatial organization disclosed truths about the order of life in various contexts. Heidegger (1971) was the first to introduce the nature of dwelling alluding to how built environments impose by restricting, shaping and guiding the body. Relph (1976) elaborated on Heidegger's discussion on how building, dwelling and thinking are connected in several ways including through the feeling of "place." Foucault (1977) discussion of the essential role of surveillance in the built environment of the school provides insight into how and why the spatial organization of schooling was enacted. Gieryn (2002) offered a way of seeing how built environments and architecture created stability in the social structure of education and in societies by reproducing features of the structures as elements of familiarity.

Overall, research that focuses on architectural and built environment discourses are recent developments (Wellmer, 1998; Heynen, 1999; Senturer and Istek, 2000; Delanty and Jones, 2002; Ahrentzen, 2003; Benito, 2003; Upitis, 2004). For example, Upitis (2004) discussed how school spaces dictate what is learned and how it is learned. She further argued that the spatial organization of the school and the set-up of classrooms promote a preference for specific core subjects over others. The introduction of discussions on the imposition of architectural and dwelling discourses on the body highlighted how discourses influence actions and interactions (Pillow, 1997; Fischer, 2004; Allen, 2005). These discussions further explained how individual and group actions are shaped.

In the late twentieth and early twenty-first centuries several fields of study including architecture and education gave more attention to the sociological significance of school architecture (David and Weinstein, 1987; Bingler, 1995; Taylor, 1995). A number of studies highlighted how the negative effects of a poorly-kept school environment can hinder student performance (Hoyle, 1977; Berner, 1992, 1995; Smith and Bradley, 1994; Hathaway, 1995; Tanner, 2000; Kolleeny, 2003; Peters, 2003; Tanner and Langford, 2003; Uline and Tschannen-Moran, 2008). For example, Smith and Bradley (1994) described how extreme temperature conditions, such as living in a desert environment, directly impacts the physical, emotional and cognitive performance of students. Also, Hathaway (1995) discussed how lighting and color can make or break an environment intended to support learning processes. Overall, these authors point to specific features of a built environment as elements of discourses of learning and teaching. I looked at entire texts as discourses of a particular ideology within the community.

My examination of entire texts as discourses was similar to Hall's (1997) look at architecture as a form of power/knowledge and the discourses articulated through it (p. 47). As Foucault (1977) pointed out, the technologies or mechanisms for wielding power and disseminating knowledge are diffused and made up of pieces that form the discourse (p. 26). In a built environment, the location of open and closed spaces, the visible presence of prevention, and the placement of walkways are some of these elements that make up the discourses I identified.

The method of analyzing photos

After I captured the spaces in photographs, I categorized the photographs to find embedded and emergent patterns that stood out as evidence of discourses. I separated

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photos based on repetitive features and spaces such as open spaces, closed spaces, designated common areas, designated restricted areas, areas filled with signage, landscaping and so on. Also, I re-categorized features and spaces based on their known function on the school grounds. I pieced together the images as a way to recognize elements of social control. For example, soda machines were located near entrances/exits of public spaces; thus, immediately introducing the product to those who just arrived, to those leaving and to those enjoying a break from work or classes. This form of "selling" a perspective was a form of social control. Throughout the analysis I applied Fairclough's (2000) theoretical framework while re-viewing and comparing individual spaces and features for evidence of function and a collection of images for evidence of social control. I compared images to recognize which images to frame together to develop texts. I followed the levels of complexity in the framework, accordingly, to confirm and disconfirm texts, as well as, which texts were or were not connected to a possible discourse.

Fairclough's (2000) theoretical framework helped me to recognize several forms of social control during the analysis process. This theoretical framework consisted of three levels of analysis that helped to identify each of the discourses in and around the school environment. First, I identified the genre-specific function of spaces and features to figure out why the individual spaces and features were grouped together as they were. Looking at each space aided in understanding its various functions and the possible social practices that occurred. Second, I "framed" or "chained" the spaces and features as whole texts to uncover what control of actions and interactions was occurring. For example, the flow from the parking lot to the locker areas, to outdoor seating areas, then, to the indoor spaces highlighted possible ritualized practices and the predictable movements occurring across the campus. Third, I looked for evidence of an emphasis on and a "selling of" a perspective, "asymmetrical relations" and "omitted information" and practices. For example, an area full of signage highlighted an emphasis on a perspective highlighting communal laws. Soda machines strategically placed in certain open and public spaces underscored the selling of a perspective. The separation of and centered location of the administrative spaces from the classrooms highlighted asymmetrical relations and possible surveillance practices. The limited use of restrictive landscape or structural features in open spaces hinted to the multi-use of spaces. When such restrictions were used, they were elements that guided bodies into the spaces. Finally, the omission of outdoor surveillance cameras from view, security guards at post and "hall monitors" pointed towards the need for other forms of surveillance used on the campus. Once I framed the elements and spaces and reorganized the images to see what perspectives and relations were emphasized and what the omitted information pointed to; I was able to recognize the three discourses and identify the community ideology. Early articles on the city planning of the region were referenced afterwards and confirmed the emphasis on a community ideology. My analysis highlighted which discourses mainly supported this particular kind of community ideology.

One high school's built environment discourses

The built environment as having texts reveals various features of spatial organization and the placement of the bodies within the spaces. Through restrictive elements and the size and location of design and landscape features, the bodies move into the flow of the environment. Margolis and Fram (2007) highlighted that "[. . .] schools as "built

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environments' constitute invisible sets of carefully designed constraints and pathways to guide the body" (p. 196). The built environment can be seen as a catalyst for the production of schooling between the actors, on/in their bodies and ideologies of the school.

These dominant discourses that were identified are parts of a "community-centered" ideology at its early stages of development in the 1980s in the USA. The idea for such "community" schools existed within a growing discourse in England among school architects in the 1960s:

> [. . .] schooling at all levels [. . .] projected the vision of a new dynamic relationship between school, community and wider society. School buildings that "fused" with or "exploded into" the community were imagined for older children [. . .] Boundaries would disappear as school became community, while community would become school (Burke and Grosvenor, 2008, p. 121).

This discourse made its way to the USA through development of open-plan schools in California during the 1960s. In 1961, in Palo Alto, California, 13 schools were built under the School Construction Systems Development (SCSD) program by architect Ezra Ehrenkrantz. The "open-plan schools" that spread throughout the USA in the 1970s were influenced by the SCSD (Burke and Grosvenor, 2008, p. 145). Open-plan schools also developed into community schools. Early community schools in the Southwest intended to anchor neighborhoods in urbanized areas, which were originally just empty lots filled with dirt and weeds. In the 1980s in Arizona, many communities were being developed based on an urban village concept. Early collaboration for these areas tried to include the input of the local citizens, as well as political stakeholders. Detailed in the The Rose Institute (1983), Heim (2001) discussed how "[. . .] urban villages, each with a core, gradient, and periphery, were to contain a variety of housing, jobs, stores, and recreational and educational facilities and to be identifiable communities within the larger city [. . .]" (p. 253). The issues then were not about relieving over-crowded schools in other districts, but to develop sustainable communities with schools centrally located within the community. Ornstein *et al.* (2009) highlighted that efforts to integrate the school and community required "creative design solutions" to maintain a "sense of safety and security" (p. 363). Uline and Tschannen-Moran (2008) underscored the positive impact that a "constructive relationship" between the school and the community has on student achievement (p. 61). This relationship maintains the social practices relevant to the community by making sure these practices continue to be instilled within the student through the school. Some of the social practices involve scholastic achievements that lead to access to higher education. These large campus-style high schools were built to adapt to the continued and expected urban sprawl of the area and to promote achievement, which meant gaining access to the well-known university in the metro area.

Early community-school development consisted of following two kinds of models. The Planning Report stated that a typical community school model:

> [. . .] builds on a strong partnership between a school and an anchor institution that also has roots in that neighborhood. That anchor institution might be a community-based agency or a college or university that reflects the cultural characteristics of the community. It could be a public institution like a recreation department or health department (The Planning Report, 2005).

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Another model is the community outreach kind that is centered on revitalizing the neighborhood. In this model, residents are asked about the kinds of local opportunities and facilities they need. Then, the stakeholders redesign the community, the schools and nearby facilities to meet these needs.

The Arizona high school was the typical community school model and was built in the late 1970s. The school built environment is typical of the Southwest with the Spanish and Mexican architectural influences. The construction of new styles of educational built environments was due to the renovation of 1950s and 1960s schools in order to handle the baby boom (Upitis, 2004, p. 20). This particular high school is surrounded by residential areas, no stores or commercial spaces. Commercial spaces are located a mile away in planned shopping centers. This high school was centered in the community and, as such, offers an example of how a community ideology is the context for the school. The central location of the school points to the significance of education to this community. The dominant discourses at this high school manifested as planned diversity of the spaces, natural surveillance, and fostering neighborly interactions.

A discourse of planned diversity of spaces

Evidence of diversity as an element of a community-oriented space is the use of multi-use spaces that can be transformed to meet specific needs and functions of the community and school. Nair (2002) discussed how the use of open seating areas, atriums, and closed project spaces (e.g. media rooms, art rooms, weight rooms, etc.) are evidence of the push for diversity. This school contains all of these kinds of spaces. Nair (2002) discussed how such spaces are "designed with all the amenities needed for school-hours" and for "use by parents and volunteers and after-school use by all community residents." Visitors from the community (parents, relatives, local school administrators, police officers, etc.) are users of the campus at certain times. As is the case for this high school, the stadium, the tennis courts, "[. . .] the auditorium and gymnasium are located near parking, designed for easy public access, have their own restrooms and can be closed off from the rest of the [spaces]" (Ficklen, 1988, para 13). The elements, of the whole text as one discourse, developed during the analysis and included the garden, the atrium, the presence of artwork, a media classroom, the multi-use cafeteria, and an emphasis on natural lighting. The elements, their functions and the flow and connections between them were the parts of a whole text that became known as a "planned diversity of spaces" discourse.

In Plate 1, a small rectangular size garden is a focal point of the built environment of the school. In the context of other multi-use spaces, the garden takes on the multi-use function. In general, the use of gardens as architectural elements is meant to provide a sense of harmony with the natural surroundings. Many of the plants in these elements are not indigenous species, but were deposited here and are now a part of the natural landscape. One can see the typical palm tree and young citrus trees. In a school setting, gardens can be used as learning tools in courses like biology and botany. Other functions of the garden for this high school are to add additional naturalness to the atrium area and to allow natural lighting into the corners of the space. As one of many multi-use spaces, each individual space has a number of functions. By connecting these multi-use spaces together, they highlight the emphasis on such spaces, particular functions and the prominence of a built-environment discourse.

Within a community setting, atriums are versatile spaces that allow for some privacy at times and entertainment at other times (Plate 2). Ficklen (1988) stated that, "these

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Plate 1.
Closed garden

so-called "great spaces" are designed to contrast with classroom areas by making use of high ceilings, comfortable seating and atrium landscaping" (para 8). Nair (2002) stated how these are:

> [. . .] places where [users] can enjoy a moment of solitude, where they will be allowed both the time and space to think or not to think [. . .] given the frenetic pace of modern daily life [. . .]

The temperature in this space is cooler than the shaded spaces. Students can retreat here during the hotter months of the school year in Arizona. The use of concrete assists in keeping this space cool. The use of familiar plants in this space continues a connection with the natural surroundings. The large, circular openings in the ceiling break up the linear elements of the environment while bringing in natural sunlight for the plants, the open space, and the classrooms. This space resembles a modernized version of Spanish and Mexican built environments "[. . .] with interior courtyards that would enjoy shade through most of the day [. . .]" (Cheek, 2008). The natural sunlight reaches the classroom windows thereby pouring into the rooms at certain times of the day (notice the classroom windows and doors in the background in Plate 2). The wideness of the space allows for many students to access their lockers and for large group gatherings during after-school and lunch-time events, such as parent-teacher conferences and science and art exhibits. The close proximity of this multi-use space to the administrative offices, also, highlights the importance of this space for the administrators regarding surveillance of activities. Overall, this is the most important multi-use space and a more common social space on the campus.

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Plate 2.
Atrium space

One of the most important elements of multi-use spaces is the use of lighting to point out and accentuate various functions of the spaces. In Plate 3, the lighting in the hallways is crucial to the sense of security in the space. The white walls contribute to the lighting by adding brightness. Hallways are not multi-use spaces, but they are ways of access or connections to such spaces. These connections highlight a flow or separation of these spaces. Artwork on the walls maintains a focus on diversity in such closed spaces. In Plate 4, the artwork contributes to the space by adding color and character. Such use of the walls is reminiscent of what Robin Tanner, an early London artist and educator in the 1920s, allowed his students to do to the walls of the classroom. Tanner allowed his students to paint "four murals of the seasons" onto the walls (Burke and Grosvenor, 2008, p. 74).

The administrator that directed me around the school environment, at the time, stated that the murals were approved by the administrators, painted by students, and were "images of important people", such as famous singers, "a beloved art teacher" and so on. These images added to the brightness of the space. At the end of every hallway are glass doors for exiting and entering. The glass doors allow natural light into the corners of the building. The fluorescent lights in the lowered ceiling bring the lighting full circle leaving no areas dark. The flow of the hallway spaces in the shape of a square does not allow for bodies to be stationary for too long. The flow is similar to the flow in the open spaces and leads around the building. Classrooms are stops along the way.

In Plate 5, the "media classroom" is an example of a "planned diversity" space emphasizing practices of diversity and offers insight into the culture of some of the

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Plate 3.
South hallway

Plate 4.
East hallway

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Plate 5.
Media classroom

classrooms in this school. Prosser (2007) stated, "A good starting point to understanding the visual culture of present-day classrooms is to view them devoid of teachers and pupils" (p. 22). Students are not confined to individual desks in rows facing the authoritarian at her desk. Instead students are in small groups, which is an example of a learning practice that emphasizes the exchange of the diversity of ideas. Remnants of how the space is used can be clearly seen without the obstruction of bodies in the view. The large tables are an immediate sign of planned interactions. The textbook laying on the black movable table next to the podium shows the viewer that this is an occupied space by the teacher when s/he is not walking around. The blue swivel chair pushed under the podium hints that this chair is rarely use by the teacher, thus confirming the act of walking around. The piling up of the stools onto the work stations is a sign of how the space is organized when no one is using the room. Also, the position of the stools upon the tables could hint to an end-of-class ritual for the students as dictated by the teacher. The wear-and-tear from the placement of the stools upon the tables is an important detail regarding what table materials can withstand this repeated practice. Finally, the chalkboards function more often as a notice board instead of displaying content information for the students to write down. Notice the text on the chalkboard in the back of the room. The text had been left up for a while without being erased. The board next to it has been wiped clean of chalk and chalk dust. Such information highlights what tools have more or less significance in this kind of classroom.

Plate 6 shows the cafeteria, which was designed to be a multi-purpose space underscoring during- and after-school functions. The distance of this multi-use space

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Plate 6.
Cafeteria

from the administrative offices and the close proximity of this space to the parking lot and the community highlight its significance to the community, more so than the administrators. Upon entering one of two glass door entrances, a viewer is immediately drawn to the center of the cafeteria with multiple-use, foldable and movable tables accompanied by light-weight stackable chairs. The closed space includes a permanent stage at the front-center. The cafeteria space is used for dining, student performances, staff meetings, public meetings, and after-school activities. The auditorium is to the left of the cafeteria. The restrooms are towards the back on the side of the stage area and are used by visitors for events in the auditorium and in the cafeteria space. They also function as dressing areas for stage performances. All of these public spaces are easily accessible from the parking lot outside. As Tanner (2009) highlighted, these spaces "foster a sense of community" (p. 383). The location of the auditorium and dining spaces pointed to the need for a specific kind of surveillance to maintain a sense of community. Thus, I looked for elements on campus that highlight what kind of surveillance was prominent on campus.

A natural surveillance discourse

Natural surveillance is encased in the environmental design as seen in Plates 2, 7 and 8. With new principles like Crime Prevention through Environmental Design (CPTED), school, built environments establish the security of the school. Boss (2001) listed the three basic concepts of CPTED as:

> [...] natural surveillance as the ability to see what's going on; natural access control as the ability to control entry into and exit from an environment; and territoriality as the ability of

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Plate 7.
Entering campus from parking lot

Plate 8.
Main mall

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legitimate users to control an area while discouraging illicit users (www.nwrel.org/nwedu/summer01/breakingout.html).

The main element of natural surveillance is the organization of many open spaces. Regarding surveillance, the function of these spaces is the ability to see what is going on in these areas from other spaces. Larger open spaces between closed spaces assist in the users of the space gaining this ability.

An underlying strategy of policing and governability that regulates the movements and practices of the actors who interact within the spaces is included in the planning and design of the educational space (Foucault, 1977, p. 151). Self-policing is typical and expected in larger, open spaces. The parking lot is large, accommodating for over 150 vehicles. The main function of the parking lot is to handle the number of users who drive to the school to use the facilities. In the context of surveillance, the function is the direct reaction to knowing that others can see what is going on in the space. Thus, the openness of the space socially requires actors to police themselves.

The use of gates at various heights indicates a natural access control. In Plates 7 and 9, these are common gates that are open during school hours and for after-school events. When the school is in lock-down, these gates are chained closed; thereby, impeding entrance by illicit users.

The presence of territoriality and the ability of the users to police the space results in establishing and maintaining a certain conduct within spaces. The ability to see what

Plate 9.
Driving into the parking lot

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is going on includes seeing who enters what spaces. The constant presence of the signs advertising what is unacceptable has the direct effect of controlling the area and preventing illicit users from entering the space. The additional placements of the signs in Plate 10 on the taller gates at every entrance into the more private spaces of the school repeat the message to users and trespassers that surveillance on this campus involves prevention. As one of the signs states, this is a "high profile enforcement area." The clearly defined areas for freedom of movement are governed by a sense of a threat to the community of the school. High profile enforcement areas are spaces that cannot be entered by illicit users, especially when police officers are accepted users of the spaces.

Being a community-oriented campus requires a local framework focused on controlling the sense of security for the campus at a local level. The ability to see what is going on, to use the elements of the built environment to control access, and developing a sense of territoriality among the users work, in conjunction, to maintain natural surveillance. A final discourse extends from the use of natural surveillance by defining who the users of the spaces are.

A discourse of neighborly interactions

Neighborly interactions underscore who are the legitimate users in the area. This community setting requires that the actors within the space come into contact with each other. A constant play of interactions lends itself to a constant play of ideas. These neighbor interactions entail various ideas coming into contact with each other

Plate 10.
More signage

and contribute to the learning at the school. Students at all grade levels commonly interact and share information. Even faculty and administrators are among the users in this space. In order to foster neighborly interactions, Crumpacker (1995) argued that buildings should be full of variety regarding the kinds of spaces available to the users, including informal areas to congregate and comfortable areas to think in private. As parts of the next discourse, the location of locker areas, non-teaching spaces, and learning streets, highlight the emphasis on specific kinds of neighborly interactions in open spaces and their strategic locations maintain the structural integrity of the campus.

In Plate 10, this locker area plays a major part in the use of redundancy to establish ritualized practices. Ritualized practices are predictable to the legitimate users of the spaces. They help other users identify legitimate users of the space and confirm assumptions about what will go on in the spaces. Oberman (1997) highlighted that redundancy is built into the environment and physical objects. Redundancy also influences what become ritualized practices. Redundancy refers to the repeated use of specific design structure elements in order to reinforce the integrity and reliability of a space (e.g. use more braces in a brace frame of a structure, use smaller concrete sections instead of larger slabs). Dunlap (2002) pointed out that redundancy plays a major role in minimizing structural damage in high-use areas. Placement of an open space between two closed spaces breaks up the larger area. The linear connections of the concrete sections of the walkway direct the flow of movement among the users and prevent users from walking in grassy areas. The difference in the social spaces which are connected show that more than one type of social practices among the community members is occurring at the same time (chatting, eating, studying, playing games, preparing for classes, etc.). In Plate 11, the focal point is the table area. Such elements as pathways, focal points, and dimensional differences of the built environment are evidence of redundancy. They determine the reliability of high-use areas and influence the flow of movement in the environment by designating to the user where the public spaces are.

High-use spaces such as "non-teaching" (Prosser, 2007) spaces, as seen in Plate 11, are where many social lessons are learned by the actors using the space. "Non-teaching spaces make an important contribution to school culture because they are taken-for-granted and deeply embedded in the teaching and learning behaviors of generations of teachers and pupils" (Prosser, 2007, p. 16). These informal spaces maintain a sense of community and play a main role in shaping the hidden curriculum or a specific kind of socialization process outside of the classroom (Margolis, 2001). These spaces are where students leave the focus of the classroom and become small bodies accumulating in the natural surveillance landscape. These small bodies are recognized as legitimate users because they are employing social practices equating to neighborly interactions. For example, students learn about the power structures, acceptable ways of interacting with their peers, and what to do and not to do to become popular. This contributes to the identity of being a legitimate user. Around lunchtime, the tables contribute to the community setting of the campus much the same as a courtyard does for public buildings. This space, which is reminiscent of a Mexican ramada structure, is covered by canopies connected to steel poles in order to take advantage of shade and allow bodies to stay within the space for longer periods of time (Cheek, 2008). Thus, this shaded space allows users to sustain social interactions for an extended amount of time. Ficklen (1988) discussed how such a space is effective due to the use of "[...] a metal canopy that keeps out rain and sun, while its latticed beams let cooling breezes through"

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Plate 11.
Locker area ONE

(para 9). The closing off of this space by the walls of the locker structures helps to contain the interactions between the users (Plate 12). The openness of the gathering space maintains the flow of movement throughout the space, as if it is a rest stop off of a street. The canvassed cover with its unobtrusive columns, the placement of the tables allowing individuals to walk through the space, and the sectioned cement walkway leading to the space contribute to redundancy in the space.

When looking at the lines of the sectioned cement walkway near the non-teaching space, in Plate 8, this space seems to be an intersection and an area that requires direct interaction among the users as they pass each other from various directions. In England, these spaces were called, "learning streets" and:

> [. . .] function not only as a means of getting from one place to another, but also as an enhancer of social connectivity. Unlike a corridor, the "learning street" resembles a city street, containing a variety of spaces and place from which to choose activities and materials as needed; areas where the material products of learning are displayed and marketed; spaces where learners may practice their skills in providing a service to the community; and regions where various nooks and crannies are conducive to and supportive of social interaction (Burke and Grosvenor, 2008, p. 173, quotes in original).

The learning street on this school campus enhances social connectivity by offering access to various spaces where users can interact based on their needs and the intentions for interacting. This open space allows users to perform community services; hang informational posters or signs, set up booths or tables to highlight important

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Plate 12.
Table/locker area

information to other users, to showcase students' work, and so on. Learning streets are evidence of required neighborly interactions. Neighborly interactions point to planned diversity of spaces as their context, and the need for natural surveillance to maintain such neighborly interactions. All these discourses interact simultaneously to support a community ideology.

Conclusion

School-neighborhood development in the 1970s and 1980s was just starting to emerge nationally in the USA. This community and its high school were centered on adapting to urban development. At present, the school is in the process of revitalizing in order to meet the demands of education today. Current school-neighborhood development has advanced to incorporate predevelopment funding, intermediary organizations (voice for the community), advisory committees, architects, planners, a preliminary research process, institutional partners committee, and so on (e.g. *Green Schools Practitioner Guide*, available at: www.nsbn.org/publications/). This community has grown and the members are more diverse in their interests.

Much has changed because of emerging educational issues and due to the needs of the community. Current issues include relieving over-crowded schools, raising test scores to meet federal mandates, and developing sustainable communities with a global reach. The focus on sustaining a local network has become more complex as a global network must exist within the community. Educational built environments are slowly evolving to meet the demands and solve the issues that challenge our communities at a local, state

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and global level; but it takes more than a village to raise these children and prepare them to take on the responsibilities we require of them to handle from a global standpoint.

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