Logos, Ethos, Pathos, and Ecos: Neighborhood Housing Design Research and Development

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Abstract

This article presents an overview of a community-based teaching and learning project linking sustainability, working family housing, neighborhood social capital, and urban design research and development. The article foregrounds principles and protocols that can be used to measure community effectiveness and it highlights a basis for further research.

Ecological education, in Leopold's (1966) words, is directed toward changing our "intellectual emphasis, loyalties, affections, and convictions" (p. 246). It requires breaking free of old pedagogical assumptions, of the straitjacket of the discipline-centric curriculum, and even of confinement in classrooms and school buildings. Ecological education means changing (a) the substance and process of education contained in curriculum, (b) how educational institutions work, (c) the architecture within which education occurs, and most important, (d) the purposes of learning. (Orr 2004, 33)

Orr's comments entail that ecological education and ecological design education hinge on integrating community reasoning, character, and sentiment. Orr and Leopold call attention to the importance of these relations in linking education and the material framework for education to transformative intellectual activities identified with the "loyalties, affections, and convictions" of institutions. As such, ecological education and design hinge on making linkages to community *logos*, *ethos*, and *pathos*. For Orr and Leopold, logos means reasoning and wisdom integrated with nature and natural systems particularly as a model for human thought and action. Ethos in the context of ecological education is the social character, disposition, and conviction to learn from and to care for the land and atmosphere, and to advance their luminosity. Pathos is the capacity for sympathy, empathy, and passion concerning all living things and their relationships and well-being, and not just humans and human artifacts. In the ecological educational context, focusing narrowly on humans and human artifacts at the expense of other living things is pathological both biologically and psychically.

David Suzuki explained recently that logos, ethos, and pathos are combined in the ancient Greek understanding of *ecos (oikos)*, the artful and reasoned stewardship of the material resources and economy of a community or a household (Suzuki 2008, 42:53). In other words, logos, ethos, and pathos converge in ecos. Ecos integrates community reasoning and development with social character, sentiment, stewardship, and environmental sustainability. This is what Orr means when he writes that Thoreau's

Walden offers "a model of the possible unity between personhood, pedagogy, and place ... a laboratory for observation and experimentation" (Orr 1994, 126).

On the premise that ecological education and ecological design hinge on community-based teaching and learning, two advanced architectural design studios at Washington State University Spokane (spring and fall 2007) worked with neighborhood stakeholders on a pilot study. The project area is the International District in the East Central Neighborhood, Spokane, Washington. The district is adjacent to the University District where WSU Spokane is located. Studios made direct observations of the International District, modeled and assessed neighborhood challenges and potentials, and attempted to augment neighborhood decision-making, particularly with regard to linkages between neighborhood design, ecology, and social justice. There were multiple teaching and learning aims for the East Central Neighborhood Design Research and Development Project (ECN Project). The first concerned bringing into focus a local example of how ecology, social justice, and urban design converge in community development and neighborhood decision-making. Another aim for the project concerned identifying and applying ecological and social principles, methods, and practices to augment community design decision-making capacity.

The evidence that the planet is facing an ecological crisis and that this has social implications for neighborhoods is well known. While the crisis provides the background for the ECN Project and a sense of urgency, literature from environmental sustainability, ecological design, social capital, and community development provide the principles and protocols for the project. Though this is not the place to rehearse the literature linking climate change, environmental ecology, and social well-being, one might briefly consider some milestones. In *Sand County Almanac*, Aldo Leopold (1949) draws crucial distinctions between land use conservation for economic value and ecological ethics, the latter being more inclusive, emphasizing the intrinsic value of species interrelations and diversity. In *Silent Spring,* Rachel Carson (1962) calls attention to the negative effects of modern industrial practices on human health, resulting in toxic chemicals stored in our bodies. In *Natural Capitalism*, Hawken, Lovins, and Lovins (1970) call attention to the idea that environmental carrying capacity has limits. In *An Inconvenient Truth*, Gore (2006) foregrounds the overwhelming scientific evidence of the "real and present danger" of global climate change. In *Blessed Unrest* (2007) Hawken links environmental sustainability to social justice.

The link between environmental sustainability and social justice has been developing in the realm of international politics for over fifty years. In 1948, the World Health Organization defined public health broadly in terms of physical, mental, and social well-being. The 1972 Stockholm Conference established international consensus about the global scale of environmental problems. The 1997 Kyoto Protocol established targets for limiting greenhouse gases contributing to climate change and global warming. Recently, the 2002 Johannesburg Earth Summit leaders recognized the convergence of economic development, social development, and environmental protection. Most recently, in the 2009 Copenhagen Conference of the Parties (COP 15) a nonbinding accord was drafted

by twenty-five countries. The accord upholds the Kyoto Protocols, limits the increase in global warming to 2 degrees Celsius, and generates funds to offset problems associated with global warming in developing countries.

Positively, there is agreement that the unprecedented scale of urbanization around the world contributes to climate change and that these are critical issues. Sprawling cities house neighborhoods, and urban places are the public salons of everyday life. The built environment traces and signposts the local-global crossroads of ecos and neighborhood decision-making. The intersection presents important and daunting challenges to university teaching, scholarship, and service. Perhaps most daunting is the challenge to integrate teaching, learning, research, and service to "calibrate human behavior with ecology, which requires a public that understands the ecological possibilities and limits" where the neighborhood is both a "fabric of everyday life" and a "classroom" (Orr 2002, 31). The challenges are daunting in part because of the complex multidimensional and multiscaled web of relations that make up the neighborhood. The effectiveness of community-based ecological education hinges in part on understanding the web of relations that bear on neighborhood decision-making capacity. Each element of the neighborhood is enmeshed in a web of relations that extend well beyond the neighborhood to include global concerns. Local decisions have global implications and vice versa. The plight of neighborhood working family housing is a case in point. Neighborhood working family housing is, like the miner's canary in a coal mine, an early warning sign of the effects of globalization on the working family. Accessible and livable family housing is central to family well-being and neighborhood ecos.

The term *working family* as it is used here refers to blue-collar working families, which include a wide range of lifestyles and wage earners in a traditional or non-traditional arrangement, although typically a two- to four-person household (Center for Housing Policy 2009). The challenges to working family well-being are found in city neighborhoods throughout the world, including the International District near Washington State University Spokane.

The working family is at risk in the International District, Spokane, though the neighborhood was once home to many working families. Threats come from several sources: few family amenities; abandoned and underutilized properties; crime; limited housing options; I-90 highway expansion, causing the removal of 384 residential units and 80 businesses from the area (Figure 1). The highway itself already isolates the district from the greater neighborhood by dividing one side of the East Central Neighborhood from the other smaller portion in which the International District is located. Hence, the problems so often associated with sprawl, street crime, and the erosion of neighborhood social capital threaten the working family in the International District. What helpful role might ecological design teaching, learning, research, and service play in such a scenario? What is the model for an effective integrative approach? How can the model and its application be measured?

Figure 1. The removal of homes in the International District, Spokane, due to I-90 highway expansion (gray band above).
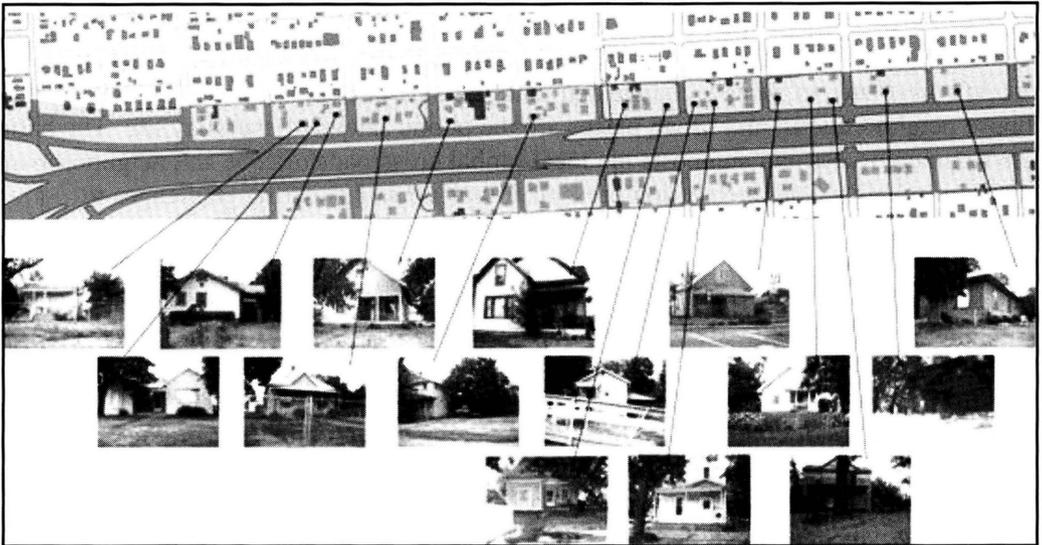

Figure by Derek Smith, WSU M Arch Program, 2008.

Ecos Design: Bridging Challenges and Opportunities

The quality of family livability and the social life of a neighborhood depend on walkability, whether residents can walk safely and conveniently to a variety of shops and services. In contrast, underutilized properties, neglected buildings, and vacant sidewalkscapes are more likely to be places of crime and threatening social behavior. Crime undermines walkability. Signs of neglect contribute to a general perception of crime in neighborhoods, that its sidewalkscapes are unsafe and threatening. This can lead to the abandonment of public areas, leaving the area more available for crime (Kelling 1997). In other words, neglected sidewalkscapes can negatively configure social relationships. While neglected properties have the greatest potential for making immediate improvements in the perception of neighborhood safety, neighborhood neglect is a sign that community solidarity and community agency also need to be built. Hustedde writes that solidarity is an aspect of community social capital based on trust and reciprocity among stakeholders. Agency is the capacity to "understand, create and act, and reflect." Hustedde identifies seven primary concerns in the community development literature for building solidarity and agency: community relationships, structure, power, shared meaning, communication for change, motivations for decision-making, and integration of disparate issues (2009, 21). The ECN Project developed informational models that reflect community development concerns and address major challenges facing the neighborhood. Essentially, the ECN Project sought to highlight relationships between urban form, working family housing, sustainability, and social capital. The specific challenges are explained further below.

However, before turning to specific challenges, some background on neighborhood modeling and communicating for change is needed. Community social capital, solidarity, and agency bear on community decision-making capacity. One of the general aims of the ECN Project is to augment neighborhood capacity to configure social and ecological relationships. Following from the general aim is the need to highlight linkages among working families, neighborhood social capital, and the environment. Likewise, these relationships need to be made spatially explicit. In support of the aims, the ECN Project incorporates modeling strategies to integrate an understanding of the spatial character of neighborhood challenges into community decision-making capacity.

Information modeling can reinforce stakeholder relationships and build into these relationships an understanding of the spatiality of neighborhood challenges and their interconnectedness. Informational models and visual aids serve as vehicles for communication with the public and stakeholder organizations, particularly visual preference techniques and participatory planning, design, and prototype modeling methods (Sanoff 2000). Ultimately, the aim is to motivate thought, reflection, and creative action for positive ecological and social change. Positive change hinges on understanding the convergence of social capital and ecologically sustainable design, particularly as these relate to the spatial character of neighborhood challenges and working family housing needs. For example, a specific aim in visual informational modeling concerns neighborhood density. Neighborhood density is a local and a global issue, ecologically and in terms of family health and neighborhood social capital. Traditional urban neighborhoods have a compact physical form with more households per acre, unlike sprawl. Sprawl spreads out in a lower density with many surface parking lots.

The environmental and social costs of sprawl are widely known (Center for Housing Policy 2009; U.S. EPA 2001). Research highlights the fact that the challenges and potentials of the East Sprague Neighborhood are symptomatic of community development issues that blur distinctions between economic development, working family health, environmental health, social planning, crime prevention, urban design, landscapes and buildings. On a theoretical level of observation, Spokane's International District in the East Central Neighborhood is a poignant reminder of problematic dichotomies that have plagued cities throughout the world. Around the major intersection in the District, the Sprague Street and Napa Street intersection, one sees many under-utilized lots and neglected historic buildings. Police data indicate that crime is a problem in the area (City of Spokane 2008). Limited availability of working family housing contributes to a lack of livability and a general lack of social diversity in the area, even though recently the neighborhood adopted the theme of International District. Across the city, many people are physically and economically marginalized; many are homeless. As a result, Washington State regional growth projections for Spokane call for more affordable housing options (City of Spokane 2000).

Today, globalization threatens to exacerbate rather than correct the marginalization of working families (Castells 1993; Sassen 2001). Many observers of urban form

recognize that historically cities ebb and flow and rise and fall as nodal effects of dynamically intersecting local and global forces. Architectural artifacts (city blocks, buildings, markets, and courtyards) arise as materializations of these enmeshed forces to yield a "concrete" spatial network of public, semipublic, and domestic architectures (De Landa 1997; Hertzberger 1991; Jacobs 1961; Lefebvre 1991). Housing, urban form, and neighborhood quality of life are enmeshed and linked to sustainability in part because buildings account for about forty percent of all U.S. energy consumption (U.S. DOE 2009). Sprawl is problematically linked to housing and urban form because sprawl comes at a high cost to the natural environment, yields low efficiencies in cost/benefit ratios for public infrastructure, and presents challenges to the development of social capital in older and newer neighborhoods.

In terms of theory application, there is a gap between design practices and theories of the social problems outlined above, particularly at the level of the federal government—a major funder for community development grants. Currently the U.S. Department of Housing and Urban Development (HUD) emphasizes a *smart growth* concept for community development. Smart growth programs are based on the idea that well-planned and designed high-density, low- to mid-rise working family housing is central to neighborhood well-being and community development and the city government mission to uphold neighborhood health, safety, and welfare. HUD has generally sought to link housing, smart growth (planning and design decision-making), and neighborhood decision-making. Smart growth programs are based implicitly on the capacity for a neighborhood to make informed choices and decisions about community development. Smart growth programs focus their mission on the idea that thoughtful planning and design research can help neighborhoods plan and design housing and community development to lessen the environmental costs of development and improve social quality (U.S. EPA 2009). To advance their mission, the government publishes guides on the benefits of smart growth principles, case studies, and information on smart growth tools. However, the guides contain little information on design research and development methods or prototyping activities to improve decision-making, to link prototype research and development to neighborhood decision-making, and to measure outcomes in terms of these connections.

Guided by theory or not, local community development efforts influence the neighborhood. Efforts are more effective if integrated to build community solidarity and agency. The ECN Project worked within the neighborhood stakeholder structure and its layered framework of planning regulations, planning models, and principles to build solidarity and agency concerning family well-being, social capital, and sustainability. These concerns go hand in hand with communication for change, motivation for decision-making, and integration of disparate issues (Hustedde 2009). An important observation in working with East Central Neighborhood organizations is that several models for neighborhood development already guide stakeholder decision-making. City of Spokane Planning Services follows the "Centers and Corridors" framework of the City of Spokane Comprehensive Plan. Another model already guiding stakeholders is the National Trust for Historic Preservation Main Street® model for neighborhood revitalization. The District's East Sprague Business

Association (ESBA) follows the Main Street model in its effort to revitalize the district and comply with the Comprehensive Plan. The Main Street approach is based on four points to guide the preservation of traditional main streets in neighborhoods that face sprawl and big-box retail development: Organization, Promotion, Design, and Economic Restructuring. The points are supported by eight principles, which include a comprehensive approach to planning; the "butterfly effect" idea that incremental steps are crucial; partnerships; combining live, work and play uses in developments; and storefront design improvements (National Trust 2009).

East Central Neighborhood leaders see the International District area as part of an important transportation corridor and envision it as a walkable pedestrian-oriented neighborhood center connected to the adjacent University District. A walkable neighborhood center has a variety of shops and services and residential units suitable for a range of income levels, including working families. This vision is shared by the university (Vestal 2007). The city offers zoning incentives for mixed-use residential development, and block grant funds for neighborhood planning have been applied toward streetscape improvements along Sprague Street, the main commercial street in the International District. However, questions remain open on how to build community solidarity and agency around environmentally sustainable design in this neighborhood and others.

Ecological planning and design theory advance the idea that housing and infill development can help reduce the social and environmental costs of sprawl (Raimi 2009, 193–195). The East Central Neighborhood Plan identifies the need for infill development and housing and calls for planning and design research on these (Winchell 2007). The plan also identifies the removal of homes and businesses in the neighborhood due to I-90 highway expansion as a major challenge. These concerns shaped the ECN Project to bridge urban design, social capital, sustainability, and neighborhood challenges and opportunities.

Information Modeling:
Density, Crime, Social Capital

To bridge decision-making challenges and design opportunities, the project team developed informational models to describe, explain, and communicate the major challenges facing the neighborhood. Neighborhood observation indicated that the main challenges are neighborhood density, crime, social capital, working family housing, and sustainability. The International District neighborhood population density is quite low, even when compared to Browne's Addition, a historic single-family neighborhood on the opposite side of the downtown core. The low density is reflected in underutilized properties and surface parking lots, and in neglected buildings and vacant sidewalkscapes. The International District has a sprawling urban form. Such information suggests the East Central Neighborhood could do much more to minimize the environmental and social costs of sprawl. This is partly because a form or pattern of urban development can be seen as a thermal figure. A sprawl pattern is less efficient

than a compact form and thermally contributes more to global warming. A sprawl pattern is also problematic socially if social interaction in public space and access to neighborhood amenities and services are desired. The International District neighborhood could do more to benefit working families, neighborhood social capital, and the environment. However, new contributors to low density are looming.

The East Central Neighborhood anticipates the relocation of 384 residential units and 80 businesses due to the I-90 freeway expansion (Figure 1). The Department of Transportation housing relocation program manages relocation, but not necessarily within the neighborhood. The 2006 East Central Neighborhood Plan calls for further research to respond to these challenges. The city faces a housing predicament as well: Washington State regional growth projections for Spokane call for more affordable housing options. It is simply more affordable and more convenient for working families to live closer to workplace centers, where walking, biking, and public transit are practical options. Sprawl costs time and money and contributes to greenhouse gases and global warming. New working family housing in the neighborhood could help offset I-90 expansion relocations, could respond to the need for working family housing in the area, and could be an attractive alternative to sprawl.

If it is not practical for working families to live, work, and play in a neighborhood, the livability of the neighborhood is called into question, and working families are marginalized. Sixty-three percent of those working in the area commute to work; only about 8% ride public transit. Looking at the issues from the business side, worker recruitment, retention, and productivity suffer when work is far from home. More broadly, many believe that local, socially meaningful connections are needed to sustain social cohesion, as well as voluntary stewardship of public sidewalks and street corners. Limited availability of working family housing undermines neighborhood livability, vitality, and social diversity. Yet, working family housing in the neighborhood is in short supply and the sidewalkscape is not welcoming.

The challenges associated with sidewalkscapes in the ECN Project area are reflected in a crime-pattern map created to visualize the spatial distribution of crime in the district. The map compared well with public perceptions about the main street of the district, East Sprague Street, "a gritty neighborhood business strip long troubled by poverty and crime" (Prager 2007). Surprisingly, mapping research brought to light significant differences between police data on crime and the actual locations where crimes occur. The Spokane Police department reports crime incidents in terms of nearest street corner to the incident rather than the actual location of crime. The police data encourage the impression that street crime happens at intersections along the main commercial street in the district, although crimes may have actually happened elsewhere, in a back alley or side street loading dock. This would certainly contribute to the perception that the sidewalks are unsafe along the main commercial street and that these sidewalks should be avoided. This is one way that information modeling is implicated in raising awareness about spatial relationships: in this case perceptions relating to streetscape safety contribute to the erosion of neighborhood social fabric and this has implications for community development and design efforts.

The erosion of the neighborhood's social fabric is a real and present danger to the neighborhood and the environment. The expansion of I-90 will lower residential and commercial density. Lowering density is likely to diminish the social life of sidewalkscapes, thereby leaving them more available to crime. The potential social costs can be measured in terms of loss to neighborhood social capital. Social capital concerns "the basic idea … that a person's family, friends, and associates constitute an important asset, one that can be called on in a crisis, enjoyed for its own sake, and leveraged for material gain" (Woolcock 2009). As such, social capital is characterized by "social networks" and the "norms of reciprocity" associated with them; and the contours of social capital "affect the health of our democracies, our communities, and ourselves" (Putnam 2002, 6, 8).

If public sidewalkscapes are a material reflection of social capital and can negatively configure social relationships, how might they positively configure social relationships? Indeed, the design of public space must accomplish this if public space is to be valued and design is to support public values. Jan Gehl, an urban design specialist, calls attention to this distinction. Gehl notes that historically main streets and sidewalks were rather utilitarian. Public space supported "necessary work related activities" that governed the life of the streets at the beginning of the twentieth century. Back then, "people had to use the streets and squares of the city regardless of their condition." This is not the case today. Now, "quality is a crucial parameter" because the automobile and personal transportation fosters the abandonment of main street sidewalks and public spaces. Public space has become an optional diversion (Gehl 2006, 8–9).

Neglected sidewalkscapes in the ECN Project area are consistent with Gehl's observations. Auto-dependent sprawl plays a crucial role in environmental degradation and in the erosion of social capital on sidewalks, although connections between the sprawl model of development, the historic main street, and environmental stewardship are less obvious because the relationships are complex and multifaceted. Focusing on neighborhood assets can help make incremental steps through complex community development issues and highlights the benefits of neighborhood asset mapping (Haines 2009, 38).

Mapping physical assets in the neighborhood context can help make incremental steps to advance social capital and environmental sustainability. Applying this theory, students developed diagrammatic maps to visualize spatial relationships among "main street" assets in the study area; sustainability and social justice thus call attention to these relationships. Historic structures represent a great deal of embodied energy, reflecting the traditional human scale and function of main street and the socioeconomic history of the neighborhood. Noteworthy neighborhood architectural assets remain along the district's main street. The buildings are suitable for adaptive reuse and could combine live-work-play occupancies to add social, economic, and residential vitality and diversity to the District. The adaptive reuse of the structures can extend their life and make further use of their embodied energy. However, there are too few of these structures to significantly increase the availability of working family housing.

International District businesses take advantage of the Sprague Street corridor (the District's main street) for sales, marketing, shipping, and receiving. Some also take advantage of the World Wide Web. Commercial strips and digital highways are powerful tools for business. However, global trade, big-box outlets, and large surface parking lots can also present challenges to the human and physical fabric of a neighborhood. Ideally, residential livability and positive social interactions are supported by live, work, and play activities that are knitted together in the architectural landscape. The knitted sidewalkscape is made up of sidewalks, streets, plazas, and courtyards as well as apartments, shops, cafes and offices. Mobile phones and the Internet combine with traditional infrastructure such as roads and rail lines to offer new, mutually beneficial opportunities for working families and businesses. The International District has convenient public transit connections that could support working family residency by reducing dependence on personal transportation trips per day. The International District is between the downtown University District to the west and the City of Spokane Valley to the east. The right balance of live, work, and play can make the difference between livable and profitable or intimidating and inconvenient.

Ecos Design Decision-Making

To link the understanding of neighborhood challenges and opportunities to design decision-making capacity, students identified suitable sites to design working family housing prototypes. The designs incorporate neighborhood assets and introduce new residential, commercial, and recreational developments. Here only samples of their proposals are shown (Figures 2–4). Each design reinforces the existing main street sidewalkscapes and intersections. Each site and building design is located and configured to encourage mixed-use networks of public and semipublic social spaces. Each design has spatial qualities that could foster positive social interaction and offer attractive public space options. The prototypes combine family- and work-oriented occupancies and family neighborhood services, shopping, recreation, and relaxation areas. Also, the prototypes support the aims of the study by emphasizing a "high density–low rise" principle, thereby modeling an ecological footprint much more favorable than the sprawl-based footprint typical of commercial strips or single-family residential developments. Residential density for each prototype would average about 7.5 times that of Spokane's Historic Brown's Addition, which is about ten people per acre. In other words, any one of the prototypes if actually built would raise the residential density of its block in the district from one person per acre to about seventy-five people per acre. Prototype massing ranges from three to four stories above the sidewalk in an attempt to balance the human scale of the historic two- and three-story main street buildings and a housing configuration that would be affordable, livable, and desirable for working families.

While all prototypes (Figure 3), if built, could benefit the district, the idea behind the prototypes is to illustrate various ways of bridging sustainability, social capital, and working family housing in the district. While any one of the prototypes represents a jump in density and scale for the District, each represents much less density and scale of development than new city zoning allows (twelve stories mixed-use with incentives

for low income residential occupancy). Each prototype offers a range of carefully configured occupancy zones from public plazas to semipublic family courtyards and play areas to private family patio areas. The occupancies are configured by design to establish a network of diverse and mutually supportive social areas. Live-work-play zoning and design offers sidewalks, plazas, and courtyards for families, offices, and shops and convenient access to public transit, neighborhood retail, and family recreation (active and passive activities).

Figure 2. Prototype design footprints: prototypes V, Z, and S.
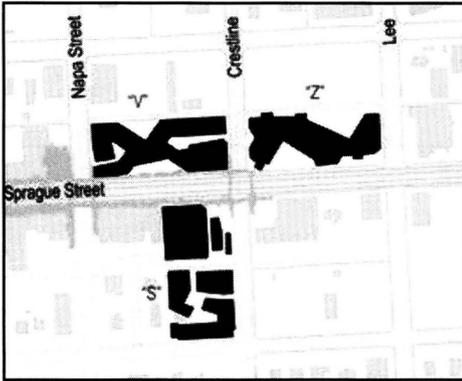
These are hypothetical locations for low-rise, high-density developments reinforcing the main street in the District (Sprague Street). Prototype designs configure their sites largely along the east-west axis for good day lighting and to offer pockets of public space along the sidewalk, and semipublic and family space away from main arterials. The designs combine new working family residential, commercial, and recreational occupancies and convenient access to public transit. Prototype V design by Derek Smith; prototype Z design by Amanda Black; prototype S design by Mike Langston, WSU M Arch Program, 2008.
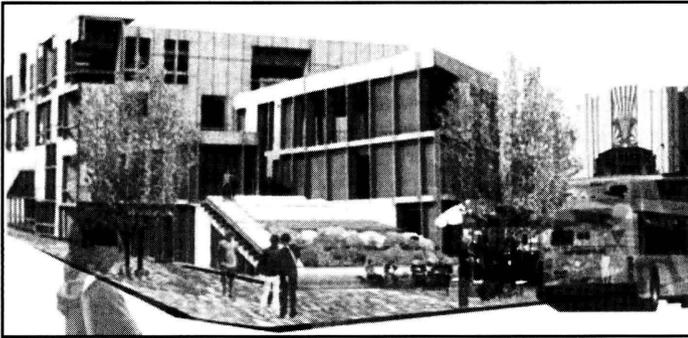
Figure 3. Prototype V (left), prototype Z (middle), and prototype S (right).
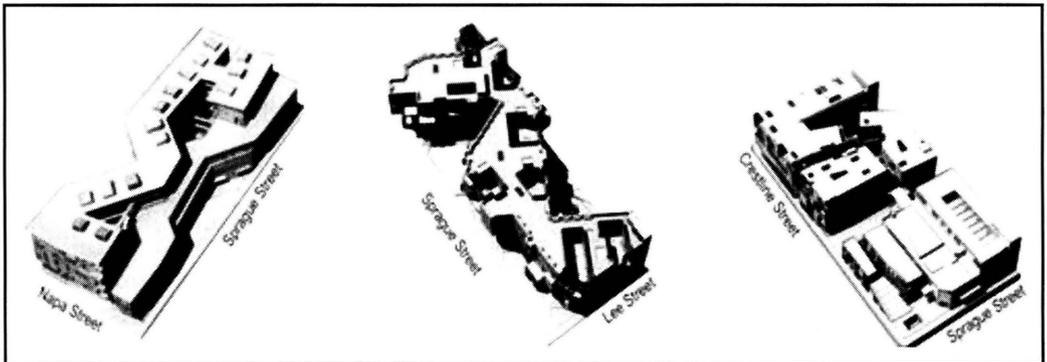
Prototype massing reinforces sidewalkscapes and street corners to establish mixed-use networks with layers of public, semipublic, and working family social spaces to support positive social interaction.

Figure 4. Street corner view of prototype S.

The design includes working family housing (upper left); shops and offices with terracing and sidewalk retail, food and beverage areas; public transit; paving; plants and trees; and an existing historic art deco building (on right). This model for neighborhood improvements helps visually bridge the gap between neighborhood challenges, assets, and potentials. Prototype S design by Mike Langston, WSU M Arch Program.

Communication, Participation, and Stakeholder Benefits

Community development has a lot to do with communication and participation. Though ECN Project research and development was not funded, the project involved key stakeholders and advisors who volunteered assistance in stages throughout the study, providing timely input and feedback to students and faculty. Interactions centered on voluntary focus group sessions that involved students making graphic and verbal presentations of project research and development. The results of the study were exhibited in the East Central Neighborhood Community Center and the East Central Neighborhood Branch of the Spokane Public Library (July–August 2008) for public review and comment. Results were also posted on the neighborhood business association Web site, managed by the City of Spokane, for review and comment. The results of the study were summarized and published in an article in The East Central Neighborhood community newspaper (July 2008). A draft of the article was circulated among stakeholders in the City of Spokane Planning Services department for review and comment. Similarly, results were presented to the director of the 2006 East Central Neighborhood Plan study. The results of the ECN Project were also presented for discussion in a special session of the 2009 Neighborhoods USA Conference (Friday, May 23), at the Spokane Convention Center. Several neighborhood stakeholders attended this presentation.

The ECN Project results suggest that community-based ecological education connecting social capital, community development, and urban design can benefit neighborhood ecos and decision-making. However, strong scientific indicators that the project influenced stakeholder decision-making capacity are lacking. This is due as much to research design limitation as to practical constraints commonly identified with unfunded community-based design teaching and learning projects. The ECN Project research design is mainly qualitative, emphasizing theory application and interpretation, as well as focus group methods for stakeholder interaction. The research

design did not incorporate quantitative-instrumental strategies for measuring influence on stakeholder decision-making capacity. Focus group volunteer input and feedback is a technique perhaps most useful for consensus-building typical of participatory planning, design, and prototype projects. As a result, project outcomes are insufficient to make strong claims about influence on neighborhood stakeholders, or to claim the volunteer stakeholders represent neighborhood demographics.

The impact of the ECN Project on stakeholder decision-making capacity is perhaps reflected in the subtleties of new neighborhood planning policies. For example, the International District (the ECN Project area) was recently designated a "Spokane Vibrant Communities project" area. This is a partnership between Impact Capital (a Seattle based nonprofit community development and financial capital organization), the City of Spokane, and Spokane's Community Action Agency, Spokane Neighborhood Action Programs (SNAP) The Vibrant Communities International District action plan advocates "opportunities for new housing" and "allowing for higher density and mixed use development to take place on underutilized or vacant lots" (Spokane International District 2009, 4).

Taking an even broader view of project effectiveness and influence, the ECN Project raises compelling questions for metropolitan universities concerning whether students and faculty can be neighborhood stakeholders and if so, whether that is warranted. Provisionally, the answers are yes and yes. Clearly, community-based ecos influenced design thinking among students and faculty involved in the ECN Project. Community-development theory suggests that this is warranted because any "volunteer who is taking a lead role in the process" of community development can be a stakeholder and a community developer (Vincent 2009, 59). The influence on design thinking is reflected in the working family housing designs, which respond creatively to theoretical principles and protocols. Design thinking is materially reflected in design decisions regarding location, site configuration, density, building massing, building systems, mixed-use working family occupancy, and sidewalkscape walkability. These attributes of the prototype designs are also consistent with urban design theory holding that to be appreciated and used public space must offer desirable and optional diversions. The design outcomes are also consistent with social theory suggesting that the built environment can negatively and positively configure social relations in public space by influencing perceptions about safety, social behavior, and crime.

Measuring perceptions about public space and the design of public space is difficult. The ECN Project research design, in other words the design of the study itself, limited the ability to measure stakeholder perceptions about the prototypes and how perceptions benefit decision-making capacity. This limitation is largely due to the reliance on the focus group method for input and feedback to gauge the effectiveness of design processes and outcomes. While the focus group method is commonly practiced in conventional design studios, the results are rarely if ever quantified in a rigorous way scientifically. To make strong claims about neighborhood effectiveness and about the effectiveness of the ECN Project design research and development model, the ECN project approach to focus group feedback should be more scientific.

Hypothetically, it might be possible to overcome the limits of the focus group model with a survey instrument to measure change in social capital and decision-making capacity. For a survey, social capital and decision-making capacity could be defined in terms of capacity to positively integrate working family housing, environmental ecology and urban design in community development decision-making. The survey instrument could measure change in stakeholder understanding of linkages among neighborhood working family housing design, neighborhood development, and ecological well-being. Stakeholder social capital linking the issues could be measured before and after project activity and compared with a control group (stakeholders in a similar neighborhood not involved in the study), to provide three or more snapshots of stakeholder cohort social capital over time. The idea is to measure stakeholder understanding of correlations among ecological well-being, social capital and working family housing, sprawl and urban design. A high understanding of correlations would be a positive indicator of decision-making ability. Measures generally thought to be valid, reliable, and positive indicators of environmental sustainability, social capital, community development, and urban design could be used to further define and measure community-based project effectiveness in benefiting neighborhood decision-making capacity. These refinements would be consistent with longitudinal experimental design methods.

Conclusion

This article has outlined a community-based teaching and learning project integrating environmental sustainability, social justice, community development, and urban design to benefit teaching and learning and community decision-making. The discussion of the project highlighted principles and protocols that can be used to measure community project effectiveness. The idea of ecos is discussed as a basis for linking the major threads of the project, the artful and reasoned stewardship of the material resources and economy of a community or a household. Ecos combines logos (reasoning and wisdom), ethos (conviction to care for the biosphere and its luminosity), and pathos (sympathy for all living things, all walks of life, and diversity). A genealogy of the basis for project aims to link ecological education with social justice is presented and related to technical challenges in community development. Information modeling techniques for raising awareness and building a shared understanding of the spatial dimensions of the challenges are discussed as well. While project teaching and learning aims and strategies are warranted on theoretical grounds and by neighborhood sidewalkscapes and stakeholders, the ECN Project aim to benefit community decision-making was perhaps too ambitious, given limited resources. The difficulty is in quantitatively verifying positive change in decision-making capacity. A basis for further research to develop, test, and validate a transferable model for integrating community-based teaching and learning, environmental ecology, social capital, community development, and urban design was also outlined. This could perhaps raise the stakes of community-based teaching and learning ecos. This is not to suggest the ECN Project results are insignificant or did not positively contribute to neighborhood decision-making; it is simply to call attention to the challenges and

potentials in linking ecos with community-based teaching, learning, and urban design research and development.

References

Castells, M. 2000. European cities, the information society, and the global economy. In *The City Reader*, 2nd ed., edited by R. LeGates and F. Stout, 557–567. New York: Routledge. Originally published in the *Journal of Economic and Social Geography* 84, no. 4 (1993).

Center for Housing Policy. 2009. A heavy load: The combined housing and transportation burdens of working families. www.cnt.org/repository /heavy_load_10_06.pdf (accessed November 1, 2009).

City of Spokane. 2000. *Housing affordability report.* http://www.spokanecitycd.org /housing/ReportRevised2a.pdf (accessed May 1, 2008).

———. 2008. *GIS crime map viewer.* http://www.spokanegis.org/crimemap/default.asp (accessed May 1, 2008).

De Landa, M. 1997. Geological history. In *A thousand years of nonlinear history.* New York: Zone Books.

Gehl, J., L. Gemzoe, S. Kirknaes, and B. Sondergaard. 2006. *New city life.* Copenhagen: The Danish Press.

Haines, A. 2009. Asset based community development. In *An introduction to community development*, edited by R. Phillips and R. Pittman. New York: Routledge.

Hertzberger, H. 1991. *Lessons for students in architecture.* Rotterdam: 010 Publishers.

Hustedde, R. 2009. Seven theories for community developers. In *An introduction to community development*, edited by R. Phillips and R. Pittman. New York: Routledge.

Jacobs, J. 1961. The uses of sidewalks: Safety. In *The death and life of great American cities*. New York: Vintage Books.

Kelling, G., and C. Coles. 1997. *Fixing broken windows*. New York: Touchstone.

Lefebvre, H. 1991. *The production of space*. Cambridge, MA: Blackwell.

National Trust for Historic Preservation. 2009. Main street. http://www.preservationnation.org/main-street/about-main-street/the-approach (accessed November 1, 2009).

Orr, D. 1994. *Ecological literacy*. Albany: State University of New York Press.

———. 2002. *The nature of design*. Oxford: Oxford University Press.

———. 2004. *Earth in mind*. Washington, DC: Island Press.

Prager, M. 2007. East Sprague vision: Many hope for business growth east of downtown. *The Spokesman-Review*, January 4.

Putnam, R., and K. Goss. 2002. Introduction. In *Democracies in Flux*, edited by R. Putnam. Oxford: Oxford University Press.

Raimi, M., A. Welch, and S. Patrick. 2009. Sustainable neighborhoods and communities. In *Fundamentals of integrated design for sustainable building*, edited by M. Keeler and B. Burke. Hoboken: Wiley.

Sanoff, H. 2000. *Community participation methods in design and planning*. New York: John Wiley and Sons.

Sassen, S. 2001. The impact of the new technologies and globalization on cities. In *Cities in transition*, edited by D. Hauptmann. Rotterdam: 010 Publishers.

Spokane International District. 2009. Vibrant Communities Project "Action Plan." Unpublished draft, September 10, 2009.

Suzuki, D. 2008. Environment and economy. In *National Roundtable on the Environment and Economy: Securing Canada's future in a climate changing world*. October 30, 2008. Aired November 7, 2008. Video, 32:30 / 42:53 minutes.

U.S. Department of Energy (DOE). 2009. National laboratory operated by the University of California, Berkeley. http://newscenter.lbl.gov/feature-stories/2009/06/02/working-toward-the-very-low-energy-consumption-building-of-the-future/ (accessed November 1, 2009).

U.S. Environmental Protection Agency (EPA). 2001. Our built and natural environments: A technical review of the interactions between land use, transportation, and environmental quality. http://www.epa.gov/dced/built.htm (accessed November 1, 2009).

————. 2009. Smart growth and affordable housing. http://www.epa.gov/dced/topics/ah.htm (accessed November 1, 2009).

Vestal, S. 2007. Campus connection: Spokane's Riverpoint area is moving forward to spread the wealth beyond an educational district. *The Spokesman-Review*, September 9.

Vincent, J., II. 2009. Community development practice. In *An introduction to community development*, edited by R. Phillips and R. Pittman. New York: Routledge.

Winchell, D. 2007. East central neighborhood plan, in collaboration with the City of Spokane and neighborhood stakeholders. Spokane, WA: City of Spokane.

Woolcock, M., and D. Narayan. 2000. Social capital: Implications for theory, research and policy. *The World Bank Research Observer* 15:225–249. http://wbro.oxfordjournals.org/cgi/content/abstract/15/2/225 (accessed November 1, 2009).

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