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### **The Cleveland EcoVillage: a Model for Sustainable Redevelopment**

The city of Cleveland is in a stage of redevelopment. During the 1970s and '80s, a recession hit the local economy, which was primarily based on industry and manufacturing. The city has since switched to a more service-based economy, but given the infrastructure and local workforce, there is still a strong manufacturing potential. Thus, one of the main goals of city officials over the past two decades has been to bring industry and manufacturing jobs back to Cleveland. The environmental movement sweeping the country has added to this goal – perhaps Cleveland can become a national leader in the new movement. Lake Erie has a huge potential for wind power, and wind turbine manufacturing would fit very well with Cleveland's industrial background and infrastructure. Furthermore, aging residential communities in the city are prime targets for redevelopment, giving city planners the opportunity to create shining examples of ecological design using the New Urbanism approach. One such example would be a neighborhood surrounding a rapid transit station on Cleveland's West Side and is known as the Cleveland EcoVillage project.

Early in Cleveland's redevelopment, in the late '80s and early '90s, big steps were made to boost the economy and redesign the city's image. The Gateway Sports and Entertainment Complex was built, giving a new home to the Cleveland Indians baseball team and bringing the Cleveland Cavaliers basketball franchise back downtown. On the Lake Erie coast, the Rock and Roll Hall of Fame and Museum and the Great Lakes Science Center were built side-by-side. These new features were highly successful, annually bringing millions of people downtown and attracting many new restaurants, stores, and hotels to the area (Garvin, 2002). While these additions certainly helped revitalize downtown Cleveland, it was mostly conventional development and construction with little attention to the city's environment and ecology. Rather than continue to rely on conventional methods, city planners were looking to combine all of the available green design ideas into one place. It did not take long for them to realize that various neighborhood development groups would be interested in the incorporation of ecological design into their areas. Thus, the foundation for the Cleveland EcoVillage project had been established. Such a project could “show the world how older, industrial cities could become more sustainable. It could become a model for urban regeneration” (EcoCity, 2003a).

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EcoCity Cleveland, an environmental and urban-planning think tank, led by Executive Director David Beach, piloted the project. Beach was actually responsible for both the concept and name, “ecovillage,” which was borrowed from a land-based, agrarian movement taking place in communities in Europe, Australia, and Tennessee. These communities developed as a shift away from urban life, building on the idea that people can live with nature without destroying and polluting it. Beach envisioned these same sustainable principles being put to use in mainstream urban society, not just in rural areas (Nichols, 1999). With the project idea in mind, and with funding from the George Gund Foundation, EcoCity Cleveland set out to find the neighborhood that would be transformed into the Cleveland EcoVillage. The site selection was based on a variety of criteria from presence of vacant land to diversity of population, with the most important factor being proximity to transit. After multiple interviews, site visits, and statistical analyses, a location was chosen – the Detroit Shoreway neighborhood, an area around the W. 65<sup>th</sup> Street Rapid station (EcoCity, 2003a). The Cleveland Rapid Transit Authority (RTA) station would be the cornerstone of the project, because it encouraged a more pedestrian-friendly area with less reliability on automobiles. The EcoVillage would, therefore, be developed within walking distance (about ¼-mile) from the station.

After the site selection, EcoCity Cleveland joined forces with the Detroit Shoreway Community Development Organization (DSCDO), the neighborhood’s nonprofit development group, to ensure that the local residents had a voice in the project. In 1997, over 60 neighborhood residents met with design professionals for a full day to discuss what they wanted in their community, resulting in ideas that clearly reflect New Urbanism principles. First, the RTA station would be the main transportation hub, but it must be interconnected with the neighborhood using walking paths, bikeways, and a bus route. Housing density should be increased, and new developments should mix residential and commercial uses to create centers of activity. Also, traffic calming designs and green space should be used to create a pedestrian-friendly neighborhood (EcoCity, 2003b). Under David Beach’s guidance, new buildings should also be energy-efficient, using the latest in green design. Architects then created conceptual drawings for the EcoVillage, including more than 250 units of new housing, mixed-use commercial space, habitat restoration, and community gardens. These would only be the

physical features of the neighborhood, as the project would also involve more intangible programs, such as environmental education and job creation (EcoCity, 2003a).

As the cornerstone to the whole project, the W. 65<sup>th</sup> Street Rapid station was in desperate need of renovation. Before EcoCity Cleveland came along, RTA was about to close down the station because it was run down and dangerous, only a handful of passengers actually used it, and it was barely visible from the two main streets in the area (Lorain Ave. and Madison Ave.). With the EcoVillage being planned, RTA officials reversed their plans to abandon the neighborhood and set to work on a brand new \$3.5 million station. Excited RTA officials, spurred on by the ambitious plans of EcoCity and DSCDO, anticipated that a new station would bring a flood of new development, from offices and shops to a day-care center and a new post office. One RTA official was quoted as saying, “We’ll build the station, then development will follow. It will happen – there’s no question in my mind” (Nichols, 1999). Construction started on the new station on November 2, 2000.

The new W. 65<sup>th</sup> Street Rapid station opened in 2004 and is clearly visible and accessible from Lorain Avenue, giving it a strong presence in the neighborhood. A pedestrian bridge was also rebuilt above the tracks to link the station to Madison Avenue and the majority of the Detroit Shoreway community. The building itself is two-and-a-half stories with a 1,200 square foot passenger waiting area with room for concessions. Unlike the old station, there is now an elevator, a security system, and a RTA Transit Police mini-station. Architecturally, the building is designed to fit in with the surrounding neighborhood. Area residents chose the color scheme, and the roof shape was created to imitate that of a nearby church (see Figure 1; Masek, 2004). The green design features of the building include a passive solar system, use of recycled materials, and outdoor green space (Green Energy Ohio, 2007).

More than half of the materials used in the building were manufactured locally and were primarily composed of recycled materials, including parts of the original Rapid station. The building is not air conditioned, but instead relies on highly efficient insulation as well as a passive solar design which uses south-facing windows and deciduous trees to regulate indoor temperatures in both winter and summer months (Masek, 2004). Since the construction was done over a ravine and a brownfield, native vegetation was carefully planted to prevent erosion and control storm water. In an effort to reduce reliance on automobiles, the station offers bicycle

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stands and only 20 parking spaces as opposed to the usual 250 provided at similar stations. RTA also added a community garden in the adjacent lot featuring native plants and specially designed benches that contain bits and pieces of old tires and scrap metal gathered from the neighborhood (Cleveland GBC, 2006a). Due to the successful design of the new station, RTA has decided to make sure all of its future construction projects meet green standards.

As the new RTA station was being built, other projects were underway in the Detroit Shoreway neighborhood. Two green houses were built on W. 54<sup>th</sup> Street through the Building America Program and carry the Energy Star logo. They were designated “Healthy Houses” by the American Lung Association, and are expected to have heating costs of only \$600 per year (EcoCity, 2003c). Cleveland Magazine got involved in the EcoVillage project by retrofitting a house built in 1916 with some of the latest green technology. Some of the environmentally-friendly products, which included Energy Star appliances, compact fluorescent lighting, and VOC-free paints, were donated by a number of companies. The house, which was named the “EcoVation Home,” is located a few blocks north of the Rapid station and sold for \$135,000 (Cleveland Magazine, 2004; EcoCity, 2003d).

With grants and support from the Gund and Cleveland Foundations, as well as the Building Science Corporation and the Solar Electric Power Association, the DSCDO built 20 townhomes using green building techniques (Cleveland GBC, 2006b). Located a few blocks from the Rapid station on W. 58<sup>th</sup> Street, the townhomes feature energy efficient design, daylighting, use of local green and recycled materials, and native landscaping. Many of the townhomes even include photovoltaics on the roof of the garages (see Figure 2; Green Energy Ohio, 2007). The project was built in place of ten single family houses that had fallen into disrepair, so increased population density is achieved and green space is not taken up. To conserve energy, high efficiency furnaces, water heaters, and HVAC systems were installed. Also, highly insulated windows were used to maintain indoor temperatures and allow plenty of daylight. Water consumption was addressed by installing low flow appliances throughout the homes and using salvaged brick and pervious concrete for outdoor walkways (Cleveland GBC, 2006b). Furthermore, the 1,600 square foot (average) townhomes range in price from \$170,000 to \$190,000 and include a 15-year tax abatement along with other financial incentives. At about the same cost to construct similar buildings, \$80 per square foot, the townhomes use less than

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50% of the energy for heating, cooling, and hot water. With the PV, an additional 25% is taken off of the electric bill. After completing the townhomes in 2004, DSCDO acquired more land on W. 58<sup>th</sup> Street and began plans to build another set of green townhomes (Paxton, 2003).

With the success of the townhomes and the other green buildings, more development is being planned in the Cleveland EcoVillage (see Figure 3 for area developments). In partnership with the Cuyahoga Community Land Trust (CCLT), DSCDO will soon begin construction on Green Cottages, a project of five single-family affordable homes on W. 58<sup>th</sup> Street. While none of the earlier projects have been LEED certified (the townhomes predate LEED for homes), planners may go after LEED certification for the Green Cottages, according to Mandy Metcalf, the current EcoVillage Project Director (Metcalf interview, 2007). The cottages will be either two or three bedroom and will be affordable for families with a minimum yearly income of \$25,000. Since the project is being done through the CCLT, the homes can be purchased for \$105,000 for the 2 bedroom and \$125,000 for the 3 bedroom. Using green building techniques to reduce energy consumption, heating bills are expected to be as low as \$432 per year for the 3-bedroom model, providing further affordability (see Figure 4; CC Land Trust, 2007).

Along with the residential development and the new RTA station, a variety of other projects have been completed or are currently being planned. Immediately south of the W. 65<sup>th</sup> RTA station is the Michael Zone Recreation Center. The existing Center includes 22 acres of green space and is being redesigned based on comments and suggestions from the community residents. In addition to the existing building, there will be new athletic fields and courts, a community garden, a children's play area, a skate park, and several acres of open space (see Figure 5; GCBL, 2007). At the nearby Gallagher School, a one-kilowatt solar panel was installed. An old gas station on W. 58<sup>th</sup> Street was transformed into a community greenspace. Also, the EcoVillage Walking Trail was recently completed, connecting many of the EcoVillage's points of interest (DSCDO, 2007). According to Metcalf, local residents are offered low-interest loans to retrofit their own homes with energy efficient products, and a number of residents have already taken advantage of free energy audits as part of a study (Metcalf interview, 2007).

The Cleveland EcoVillage seems to be an overwhelming success story, but not everything has turned out as planned. Although local residents and businesses have been highly

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supportive of the project, the predicted commercial development around the Rapid station has not yet taken place. Slightly disappointed, Metcalf explains, “It is going to take a catalyst project to inspire development on Lorain Avenue” (Metcalf interview, 2007). RTA had bought and set aside land near the station for commercial purposes, but it has not drawn new businesses to the area. Metcalf says that the DSCDO is working with RTA on plans for mixed-use development that might lead to a cluster of sustainable businesses – an “EcoMart” (Metcalf interview, 2007).

In the next few years, if significant business development takes place in the neighborhood, then the Cleveland EcoVillage project would certainly be an outstanding model of sustainable city planning. Green design is being used to build healthy, affordable, energy-efficient buildings, and New Urbanism concepts are being used to create pedestrian-friendly streets, mixed-use areas, and access to public transit and urban green space. All of this leads to a highly sustainable community, and the most important factor may be that it is taking place in an older, urban neighborhood, so it does not contribute to urban sprawl. The EcoVillage project even received national attention from the U.S. Environmental Protection Agency in the form of a Sustainable Development Challenge Grant (only 45 were given out across the country; U.S. EPA, 1998). Unlike other ecovillage projects, which are either more rural or in booming, economic cities like Los Angeles, the Cleveland EcoVillage demonstrates an excellent way to redevelop older, industrial cities. The project also creates a model for other Cleveland neighborhoods. With the help of the EcoVillage along with other forms of sustainable redevelopment, Cleveland, a city known for its de-industrialization, unemployment, and pollution, may soon gain a reputation as one of the nation’s leaders in the environmental movement.

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**Figure 1:** The new W. 65<sup>th</sup> Street RTA station



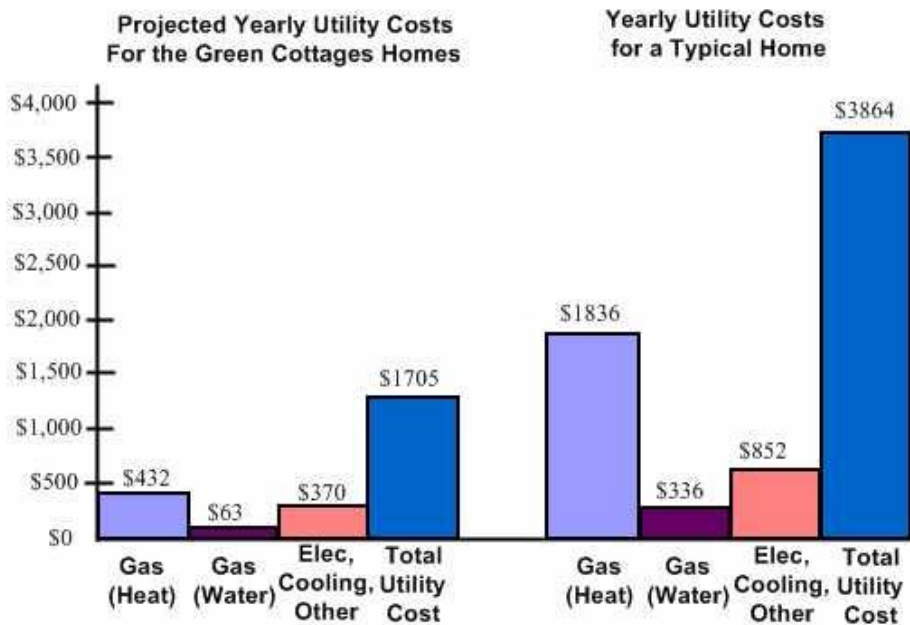
**Figure 2:** W. 58<sup>th</sup> Street Townhomes and PV-covered garage



**Figure 3:** Satellite photo of the Cleveland EcoVillage. Lorain Avenue is the main diagonal road running from the bottom left to the top right of the picture.



**Figure 4:** Comparison of energy-usage of the Green Cottages with a typical home



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**Figure 5:** Site plan for the Michael Zone Recreation Center. The red box represents the existing building.

