Applying Sustainable Principles to Existing Industrial Sites

Avondale
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**Goals**

This project aims to research ways in which to enhance the small industrial section of Avondale which sits next to I-71. Enhancing this area in Avondale, which is already full of viable and functioning businesses, by incorporating sustainability practices could allow it to become more of an asset to the community. By using general guidelines and principles these sustainable practices could become a pilot program to other areas or businesses in Avondale or even other industries in Cincinnati. These guidelines will incorporate all aspects of a sustainable industry; social, economic, and environmental. Through these guidelines, industries will become more energy efficient, lower their waste production processes, create a safe environment for employees, and ways to give back and connect with the community.

This project branches from the framework plan “Roots and Blooms: Making Avondale Sustainable” and then from the revision Stephen Samuels, Samantha Brockfield, and I made to the framework. The original framework plan focused mainly on urban agriculture with a vision “for Avondale (to) involve the community in enhancing economic sustainability, social equity, neighborhood vitality and identity, and environmental health and education through accessible multi-modal transportation, urban food and agricultural design initiatives, (and) commercial revitalization.” From the revision of the framework plan, we wanted to make Avondale sustainable but by further means then just urban agriculture.

**Project Description**

Many of the strategies that will be discussed to create sustainable industries will simultaneously address almost all of the sustainability aspects either directly or indirectly in some way. I have grouped these strategies into two main categories.
Improving the Relationship between Industry and Community

I have proposed three strategies within this section which include deprogramming parking lots, creating a positive image within the community, and a number of ways about how industries can give back and be more involved with the community.

The industrial site in Avondale is almost completely paved with concrete to provide a number of small parking lots for employees and spaces for trucks to dock. Many of the loading docks are necessary for business, but while visiting the site during work hours one day the parking lots were not be fully utilized. These parking lots could incorporate less parking spaces in exchange for small green spaces which would create a space where employees could spend their lunch or break times. Deprogramming these parking lots would mean creating a space that could be utilized all hours of the day instead of just during the typical work hours. A student named Veenu Jayaram wrote her thesis about deprogramming parking lots in downtown Los Angeles, California. Her research “targets the surface parking available in the city to have alternative functional qualities that transform and respond to the other social needs of the space” while also “using ecologically sustainable methods and materials” (Jayaram). She proposed alternative uses such as sports courts, market space, or green space. Deprogramming the parking lots in the industrial area of Avondale would be on a much smaller scale but could create an enjoyable space for both employees and residents after work hours.
Creating a positive image for the Avondale community is also very important which Avondale could economically benefit from as well as socially. Avondale has a higher crime perception then some neighborhoods and while driving into the city along I-71 north you pass right by this industrial area which is not aesthetically pleasing. Simply by cleaning up scraps and making some façade improvements could change the appearance of the industrial site and visually show that these are viable and operating businesses. However, to create a better image for the community as a whole, I am proposing a gateway with signage and landscaping that welcomes you to Cincinnati. The next exit is the Taft exit which can take you to the University of Cincinnati, the Zoo, the hospitals, and many more of Avondale’s largest stakeholders.

Chesapeake, Virginia has created a system of gateways along the interstate which they believe “gateways provide a unique sense of identity, transition, and anticipation” (City of Chesapeake).

Connecting the businesses in the industrial area of Avondale with the rest of the community is another strategy of creating sustainable industries that is beneficial both economically and socially. In an article by Don Sadler, he addresses a variety of ways business owners can give back to the community which also provide tax breaks. Mr. Sadler came up with a list which include serving on an organization’s board of directors, donating your expertise and
services to an organization “pro bono,” participating in fundraisers or sponsorships, establishing matching gift programs for employees and/or customers, donating property or inventory, donating money, and forming a community foundation. “Small business owners can point to many different factors that have played a part in their success: skill, training, education, mentorship or marketing savvy, just to name a few. But almost every owner would acknowledge one common success factor – the support of the local community” (Sadler).

Building Improvements

In today’s world with a goal of being “green” there are tons or ways to make your home more energy efficient, but what about on a larger scale for businesses and industrial buildings? In an article on the website “Building Design and Construction” they take a look at how to create green industrial buildings. “Despite the potential to increase operating efficiencies and reduce costs, downsize their environmental footprint, and improve employee satisfaction and performance, the industrial sector has been slow to catch on to the green building movement” (Barista). So to help industrial buildings head in the direction towards a healthier environment, this article came up with a list of short-term payback, long-term payback, and even no cost payback strategies.

Short-term payback (five years of less)
- High-efficiency light fixtures (T5’s, T8’s, or LEDs)
- Daylight Harvesting with skylights, clerestories, and motion/light controls
- Highly reflective roof membrane
- Natural ventilation
- Peak-saving strategies for building and process equipment
- Increase R-value of building envelope (insulation, enhanced wall assemblies)
- Advanced energy management and control of refrigeration/freezer systems
- Design vestibules for high-traffic exterior doors (not dock doors) to minimize loss of conditioned air (for perishable warehouse applications)

Long-term payback (more than five years)
- Rooftop solar harvesting for power, heat, or domestic hot water
- Rainwater harvesting for irrigation of flush water
- Low-or no-flow plumbing fixtures
- Heat/cold capture process water for use in building HVAC systems
- Geothermal wells to heat/cool water for process applications
- Ice storage system coupled to refrigeration system for office air conditioning (for perishable warehouse applications)

No cost payback, intangible benefits
- Rooftop space leased to local utility for solar installation
- Driver waiting area with amenities to reduce truck idling
- Designated break areas with outdoor access for employees
- Enhanced ventilation/fume collection systems (Barista)

Most of the short-term and no cost payback strategies are easy to implement. In Avondale I propose to use most of the short-term and no cost payback strategies and for long-term payback strategies request using solar panels, creating vegetative roofs, and rainwater systems since almost all of the buildings have large flat roofs that are not being used for anything.

![Concept Diagram](image)

### Rationale

Avondale has a strong group of stakeholders such as the Cincinnati Zoo and Botanical Gardens, Cincinnati Children’s Hospital, Tri-Health, Uptown Consortium, the Avondale Community Pride Center, the Greater Cincinnati Urban League, University of Cincinnati Hospital, and Shriners Hospital along with community assets such as a strong group of schools and churches, recreation spaces, and a business district that is currently undergoing the Burnet Ave. redevelopment plan. After visiting the industrial area in Avondale and looking past the poor aesthetics of the area I saw viable businesses such as Varland Metals, M&M Metals, Profiles in Design: Cabinetry Store, and BP&M Beuke Printing and Mailing. This area could really add to the list of assets to the community due to its proximity to I-71, the strong group of stakeholders surrounding it, and that this area is located within an enterprise zone. This area also has opportunities and potential for daylight harvesting with the large flat roofs and warehouses that weren’t being utilized. Some of the options for the new interchange from the Uptown Transportation Plan cut right through this industrial area in Avondale wiping out all of the
businesses. In the revision of our framework plan we decided to choose the I-71 alternative S-3 which keeps this area in tact which we believed would better benefit the Avondale community.

**Implementation/Funding Strategies**

There are several different federal and state incentives out there for companies that go “green” or become LEED certified. A few federal incentives that I have found include the Production Tax Credit (PTC) which “provides an inflation-adjusted tax credit for electricity produced from renewable energy sources, including wind, biomass, and geothermal.” The Modified Accelerated Cost Recovery System (MARCS) “allows a project to be depreciated over five years for tax purposes.” There is also the Renewable Energy Production Incentive (REPI), Clean Renewable Energy Bonds (CREBs), and the U.S. Department of Agriculture (USDA) provides some programs for funding (“Northwest Community Energy”). The Database of State Incentives for Renewables & Efficiency (DSIRE) also has a good website which provides information about loan, grant, and rebate programs that are offered for each state (“Database of State Incentives for Renewable & Efficiency”).
Works Cited


