Sustainable Industry

Case Studies

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What is Sustainable Industry

- Business that has ecological innovation as a core part of their business model whose products come from a ‘green’ manufacturing facility.

- May be defined as companies that provide a product or service whose use results in greater resource efficiency and/or a reduced negative impact on the environment.

- Perhaps the best definition is a combination of the two.
Why use Sustainable Industry

- Industries can still operate and manufacture at the same rate while having smaller environmental and social impacts.
- Old manufacturing facilities have left many cities with brown fields.
- Revitalize older cities.
- More attractive to residents.

Fosters social equity
Builds Economic Resilience
Supports the economy
Propels Innovation

Industrial Sector
Sustainable industry CREATES NETWORKS

- From the local scale all the way up to the global scale
- Through resources, to the distribution of the product

Maintaining sustainable practices with efforts that include:

- industry-wide cooperation
- governmental openness
- and education reform
<table>
<thead>
<tr>
<th>Green Facility</th>
<th>Green Products</th>
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<tbody>
<tr>
<td>• Generate energy through, photo voltaic cells, solar, wind</td>
<td>• Green building products/design</td>
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<td>• Skylights to reduce electricity</td>
<td>• Recycled products</td>
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<td>• Lights are energy efficient and dimmable</td>
<td>• Sustainable agriculture</td>
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<td>• Rainwater collected for toilet flushing and irrigation</td>
<td>• Environmental remediation</td>
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<tr>
<td>• Building materials (regional)</td>
<td>• Energy industries</td>
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<td>• Water efficiency</td>
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<td>• Building Reuse</td>
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<td>• Construction and Waste Management</td>
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<td>• Recycled Content</td>
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<tr>
<td>• Air quality</td>
<td></td>
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<td>• Daylight and views</td>
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* These are not complete lists, just examples
The Ford River Rouge plant

Dearborn, Michigan

- Originally Built 1917
- Cost of Redevelopment $2 billion
- Complex of 1,100 acres will have a 20 year build out
- Upcoming improvement include ‘smart tools’, and a storage and retrieval systems building


**Manufacturing 2003** - lead Architect William McDonough + Partners collaborated with Arcadis Giffels, Architect of Record, Civil MEP and Structural Engineers, and Construction Manager, Walbridge Aldinger

Photo Source: Nelson, Byrd, Woltz Landscape Architects

Dearborn, Michigan

- Hedgerows lined with swales provide filtration for rainwater

10 acre green roof

- Covered with sedum, a low maintenance perennial

- Provides insulation

- Absorbs large amounts of carbon dioxide

- Catches rainfall runoff

Photo Source: William McDonough + Partners
http://www.mcdonoughpartners.com/projects/view/ford_rouge_center_landscape_master_plan
Manufacturing, Administration, Employee Amenities
Phase 1 completed in 2003 – Ford’s 100th anniversary

Dearborn, Michigan

- Pollution reducing practices
- Natural lighting, skylights
- Energy efficient heating, cooling, and ventilation
- Increased recycling by 37%
- Wood flooring to reduce stress on workers’ feet and legs

Photo Source: William McDonough + Partners
http://www.mcdonoughpartners.com/projects/view/ford_rouge_center_landscape_master_plan
Dearborn, Michigan

The facility is becoming more sustainable but the product has yet to catch up

Sustainable Redevelopment So Far

Photo Source: William McDonough + Partners
http://www.mcdonoughpartners.com/projects/view/ford_rouge_center_landscape_master_planl
Melink Corporation

Milford, Ohio

• Founded in 1987

• 2004 Founder, Steve Melink transformed the company into an ultra sustainable corporation

• Headquarters is LEED Gold Certified

• 25% of energy used on-site is generated with wind and solar power

Renewable Solutions
Solar
Wind
GeoThermal Heat Pumps

Ventilation Solutions
Energy Consulting

Photo Source: Melink Corporation
http://www.melinkcorp.com/index.php
Melink Corporation

Milford, Ohio
- Leases a fleet of hybrid cars
- Offers incentives for employees to live green
- 5% of profits go towards development in renewable energy technologies

Triple Bottom Line
- Environmental Health
- Economic Growth
- Energy Independence

“walks –the-talk” with their business model and everyday actions
- Green facility AND green products
- Small business

Energy solutions for a brighter tomorrow™
Bonilla, Silvia, and Biagio Giannetti, Donald Huisingh Cecilia Almeida. "The roles of cleaner production in the sustainable development of modern societies: an introduction to this special issue." Journal of Cleaner Production, 2009: 1-5.


