A Case Study of Brownfields Redevelopment
Recycling Old Contaminated Sites

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Main Factors Affecting Brownfield and Landfill Redevelopment

- Size of site
- Degree of contamination
- Type of waste
- Depth of waste
- Location
- Wetlands and open water bodies
- Land value
- Use of recyclable materials for remediation and development
- Willing developer
- Regulatory agency policy/rules
- Engineering solutions
- Financial initiatives
Location of Projects

1. Elizabeth
2. Bayonne
3. Wanaque
4. North Wildwood
5. Ashbrook Farms, Edison
6. Federal Business Centers, Woodbridge
7. South Bound Brook
8. Keyport
9. Wildwood
10. Allied Signal, Elizabeth
11. Bordentown
## Summary of Completed Redevelopment Projects

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Location</th>
<th>Owner/Developer</th>
<th>Acres</th>
<th>End Use Type</th>
<th>Remediation Technique</th>
<th>Value of Development</th>
<th>Use of Recyclables/Dredge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jersey Gardens Mall</td>
<td>Elizabeth, NJ</td>
<td>OENJ Corp.</td>
<td>166</td>
<td>Mall, Hotels, Commercial, Ferry Service</td>
<td>L,V,C,H,G</td>
<td>$700M Constructed $300M Planned</td>
<td>2.5 MCY</td>
</tr>
<tr>
<td>Bayonne Golf Course</td>
<td>Bayonne, NJ</td>
<td>OENJ-Cherokee Corp.</td>
<td>120</td>
<td>Golf Course</td>
<td>L,S,C,H,G</td>
<td>$10M Planned</td>
<td>5.5 MCY+</td>
</tr>
<tr>
<td>Seaboard Point Resort</td>
<td>North Wildwood, NJ</td>
<td>Seaboard Development</td>
<td>12</td>
<td>Residential Condominiums</td>
<td>C, G</td>
<td>$50M+</td>
<td>50,000 CY</td>
</tr>
<tr>
<td>Passaic County Comm. College</td>
<td>Wanaque, NJ</td>
<td>Passaic County Community College</td>
<td>12</td>
<td>Community College</td>
<td>L,C,W,G</td>
<td>$10M</td>
<td>--</td>
</tr>
<tr>
<td>Ashbrook Farms</td>
<td>Edison, NJ</td>
<td>W&amp;F Developers</td>
<td>30</td>
<td>Residential</td>
<td>W,C,L,G</td>
<td>$3M</td>
<td>--</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td></td>
<td>378</td>
<td></td>
<td></td>
<td><strong>$1 Billion+</strong></td>
<td><strong>8 MCY+</strong></td>
</tr>
</tbody>
</table>

L = Leachate Collection & Treatment  
C = Capping  
S = Slurry Wall  
H = Hazardous Waste Removal  
V = Vertical Membrane Wall  
W = Waste Relocation  
G = Landfill Gas Controls  

April 3, 2004
## Summary of Ongoing & Early Stage Redevelopment Projects

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Location</th>
<th>Owner/Developer</th>
<th>Acres</th>
<th>End Use Type</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Former GAF Factory Site</td>
<td>South Bound Brook, NJ</td>
<td>Borough of South Bound Brook</td>
<td>11+</td>
<td>Residential</td>
<td>Demolition and remediation (mid-April)</td>
</tr>
<tr>
<td>Keypoint Landfill</td>
<td>Keyport, NJ</td>
<td>Confidential</td>
<td>63</td>
<td>Residential</td>
<td>Design stage</td>
</tr>
<tr>
<td>Wildwood Landfill</td>
<td>Wildwood, NJ</td>
<td>Confidential</td>
<td>30+</td>
<td>Residential</td>
<td>Preliminary evaluation completed for feasibility study</td>
</tr>
<tr>
<td>Allied Signal Site</td>
<td>Elizabeth, NJ</td>
<td>Confidential</td>
<td>60+</td>
<td>Retail, warehousing, distribution</td>
<td>Conceptual feasibility assessment ongoing</td>
</tr>
<tr>
<td>Bordentown Landfill</td>
<td>Bordentown, NJ</td>
<td>Confidential</td>
<td>98</td>
<td>Commercial, Retail</td>
<td>Conceptual feasibility assessment ongoing</td>
</tr>
<tr>
<td>Syncon Resins Site, 15 acres, Kearny, NJ</td>
<td></td>
<td></td>
<td>262+</td>
<td></td>
<td>FAILED</td>
</tr>
</tbody>
</table>
From Landfill to Regional Mall

OENJ-Elizabeth Project History
The OENJ-Elizabeth site (formerly known as The Orion Project) is strategically located near Newark International Airport, is close to the New Jersey Turnpike, and fronts on Newark Bay.
The OENJ site in Elizabeth, N.J. — the 166-acre property was deemed to be unusable and undevelopable since it was a former garbage dump.
Our studies included monitoring well installation and geohydrologic analyses.
We conducted extensive testing to identify contaminants associated with solid waste on the site.
PCB Distribution at the site was mapped
A tidal ditch ran along the entire length of the site
Remediation required piping the entire ditch
Massive 10-foot pipes were required to handle the large upstream flow
Special geotechnical design was required for support of the large diameter pipes.
Installation of the cutoff wall for the main landfill area
Installing the connection between the leachate collection line and the leachate main
A special PCB containment area was designed using an innovative vertical barrier installation technique (1-1/2 acres)
A 12-acre wetlands mitigation area was constructed along the waterfront area of the property to compensate for the loss of wetlands from piping the ditch.
A gas venting system was installed prior to pouring the slab for construction of a hotel.
2.5 million cubic yards of fill material (all consisting of recycled material) was used to surcharge the site for the massive 30-acre building and 7,000-car parking area.
Site activity involved covering old solid waste and surcharging waste with soil and recyclable materials.

Mid-ground: dredge being applied to the site.
Surcharge approximately 15 feet high was placed and moved throughout the site
In addition to the surcharge of the fill to consolidate waste, dynamic compaction was used around buildings.
Processing of dredge spoils to be used as a cap and fill for old solid waste
The mall was developed on 100 acres of the site.
A portion of the site has been redeveloped into a 200-store shopping mall, the largest in the New York City region
The remainder of the site includes 40 acres of developable waterfront property.

A demonstration project using dredge material for road construction was conducted, while the final design is under development for a hotel and commercial complex.
The remaining waterfront portion of the property will be developed for offices, a marina, and ferry services to New York City, shown in this rendering.
Former Gov. Whitman, and former U.S. EPA administrator, signing special legislation to provide funding for highway access to the property.