



Coastal Land Design, PLLC

Civil Engineering/Landscape Architecture

[Cape Fear Soccer Park /](#)

[Flemington Landfill](#)

Client:

Cape Fear Soccer Association
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Began: Oct. 2004

Completed: Nov. 2009

The Cape Fear Soccer Association needed a large soccer facility to accommodate a growing population of soccer players. With the high price of land in the Wilmington area, the cost for enough land for 15 soccer fields and 850 parking spaces was prohibitive. The old Flemington Landfill provided an excellent location despite the planning and environmental hurdles.

Coastal Land Design, PLLC (CLD) provided the design, permitting, construction plans and construction administration to utilize the North Carolina Brownfields program to turn the Flemington Landfill into the Cape Fear Regional Soccer Park. The North Carolina Brownfields Program, authorized by the state statute known as the Brownfields Property Reuse Act, provides a mechanism to treat prospective developers of brownfield sites differently than the parties responsible for contaminating them. Prospective developers negotiate a brownfields agreement with the program that defines activities needed to make the site suitable for reuse.

The Flemington Landfill is an unlined industrial waste landfill with minimal top cover. The site was targeted as a groundwater contamination site and legal action was taken by the US-EPA and the US Dept. of Justice. The final decree limited the future usage of the property and prohibited the extraction of groundwater for potable use.



After considerable effort, a design and development agreement was set in-place to allow the redevelopment. Due to the undulating waste layer, an additional cap layer was required that substantially reduced the infiltration rate of the soils. Additionally, no subsurface drainage systems were allowed and all drainage was required to drain towards the outer perimeter. All impervious areas required special attention to avoid methane capture while supporting vehicular traffic. The final product is a successful re-use of a contaminated site that is safe for the user and protects the developer for past actions.

As an on-going monitoring plan, CLD formulated a methane, groundwater and irrigation water balance plan. This plan will track the potential movement of the contaminated plume and allow for the micro analysis of the irrigation impact on the cap saturation. The monitoring results must be submitted to the regulatory agencies annually.

Jurisdictional permits included US Department of Justice, US Environmental Protection Agency, US Army Corps of Engineers, NC Brownfields Agreement, NC Department of Environment and Natural Resources, NC Department of Health Services, NC Division of Environmental Management and local agencies.

