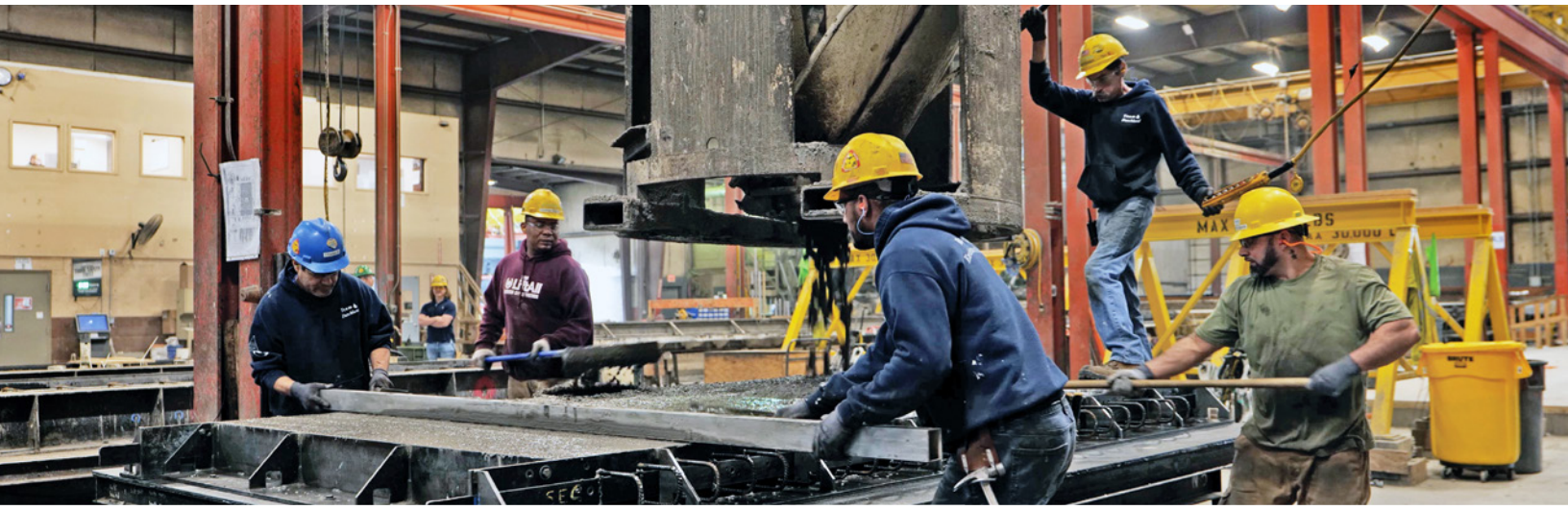
Dutchland LLC

Innovation. Experience. Eco-friendly.



Dutchland is committed to ensuring its products are *designed*, *manufactured* and *constructed* in the most responsible manner.

We create designs and use materials and construction techniques that give the optimal return on what is best for the tank structure, its occupants, and the *entire community* it is placed within.

CONSIDER THE SUSTAINABILITY BENEFITS FROM DUTCHLAND PRECAST CONCRETE:

DESIGN:

- Precast structural pieces use less material than products built on site which results in less material harvested from the environment and less to dispose of when the structure's lifecycle is over.
- Dutchland precast tanks, both rectangular and circular, do not transfer moment into the base slab which allows for a thinner base slab as compared to cast-in-place designs.
- Dutchland utilizes self-consolidating concrete with a very low water-to-cement ratio (0.38) and contains recycled materials, such as fly ash.
- 24% fly-ash substitution to produce dense, impermeable concrete.

MANUFACTURING:

- Precast manufacturing holds tighter tolerances and precise mixture proportions. Additionally, being manufactured in a factory greatly reduces waste, including waste from excessive concrete, formwork and bracing, packaging and debris that accumulates on cast-in-place sites.
- Precast manufacturing creates less dust which is healthier for workers.
- Dutchland's precast manufacturing plant recycles waste material to reduce the material sent to landfills or dumped into the environment.
- The workplace environment is much healthier and safer for employees in a precast manufacturing plant than on a construction site. Dutchland's precast shop has controlled conditions where air quality, noise and safety hazards are monitored.

CONSTRUCTION:

- Precast concrete reaches the construction site ready for installation, reducing the amount of land needed for construction activities and storage. The smaller footprint also allows projects for more flexibility in choosing a sustainable site.
- Since the precast components are manufactured in the factory, there is significantly less truck traffic, equipment and material suppliers around the final construction site. This limits the disruption of traditional jobsites that suffer from noise, pollution, waste and other common irritants. This streamlined approach to construction provides a far more efficient atmosphere for productivity, and eliminates unnecessary distractions and interference that are typical of construction sites.

Project Examples of How Dutchland Precast Contributes to Sustainability

DID YOU KNOW

The energy required to produce cement is the largest source of CO_2 emissions in concrete. About 0.9 pounds of CO_2 gas is released into the atmosphere for each pound of cement produced.

CONCRETE ACCOUNTS FOR 8% OF ALL CO_2 RELEASED INTO THE ATMOSPHERE.

FOR THE EXETER WWTP PROJECT

in Exeter, New Hampshire,
utilizing Dutchland precast concrete
saves 20% in CO2 emissions from concrete
over cast-in-place concrete.

	Dutchland Precast Concrete	Cast-in-Place Concrete
Amount of Concrete (cu. yd.)	2,399.23[1]	3,153.68
Amount of Cement in Concrete (#/cu. yd.)	552	494[2]
Cement Content (#)	1,250,019.55	1,557,919.82
# of CO_2 released/# of cement	1,125,017.59	1,402,127.84
SAVINGS IN CO_2 EMMISSIONS	20%	

FOR THE MOOREFIELD WWTP PROJECT

in Moorefield, West Virginia,
utilizing Dutchland precast concrete
saves 46% in CO2 emissions from concrete
over cast-in-place concrete.

	Dutchland Precast Concrete	Cast-in-Place Concrete
Amount of Concrete (cu. yd.)	3,276.76[1]	6,977.91
Amount of Cement in Concrete (#/cu. yd.)	552	435[2]
Cement Content (#)	1,642,149.17	3,035,390.34
# of CO_2 released/# of cement	1,477,934.25	2,731,851.31
SAVINGS IN CO_2 EMMISSIONS	46%	

FOR THE SOUTH COASTAL WWTP PROJECT

in Frankfort, Delaware,
utilizing Dutchland precast concrete
saves 43% in CO2 emissions from concrete
over cast-in-place concrete.

	Dutchland Precast Concrete	Cast-in-Place Concrete
Amount of Concrete (cu. yd.)	1,638.59[1]	2,681.26
Amount of Cement in Concrete (#/cu. yd.)	552	640[2]
Cement Content (#)	973,109.51	1,716,006.40
# of CO_2 released/# of cement	875,798.56	1,544,405.76
SAVINGS IN CO_2 EMMISSIONS	43%	

[1] The amount of concrete used for Dutchland precast inclues ready-mix for the base slab. [2] The cement content of ready-mix varies widely. The base slab mix design, from local ready-mix suppliers, was used for this analysis.

Project Examples of How Dutchland Precast Contributes to Sustainability

FOR THE GAMBLES MILL WWTP PROJECT

in Henrico County, Virginia,
utilizing Dutchland precast concrete would
save 23.5% in CO2 emissions from concrete
over cast-in-place concrete.

	Dutchland Precast Concrete	Cast-in-Place Concrete
Amount of Concrete (cu. yd.)	4,388[1]	5,600
Amount of Cement in Concrete (#/cu. yd.)	552	570[2]
Cement Content (#)	2,441,976	3,192,000
# of CO_2 released/# of cement	2,197,778	2,872,800
SAVINGS IN CO_2 EMMISSIONS	23.50%	

FOR THE ALLEGHENY VALLEY WWTP PROJECT

in Pittsburgh, Pennsylvania,
utilizing Dutchland precast concrete would
save 23% in CO2 emissions from concrete
over cast-in-place concrete.

	Dutchland Precast Concrete	Cast-in-Place Concrete
Amount of Concrete (cu. yd.)	5,334.89[1]	6,932.55
Amount of Cement in Concrete (#/cu. yd.)	552	552[2]
Cement Content (#)	2,944,858.40	3,826,766.17
# of CO_2 released/# of cement	2,650,372.56	3,444,089.55
SAVINGS IN CO_2 EMMISSIONS	23%	

[1] The amount of concrete used for Dutchland precast inclues ready-mix for the base slab. [2] The cement content of ready-mix varies widely. The base slab mix design, from local ready-mix suppliers, was used for this analysis.

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