THE SUSTAINABILITY OF CONCRETE

Current Case Studies

Lanie Baudouin

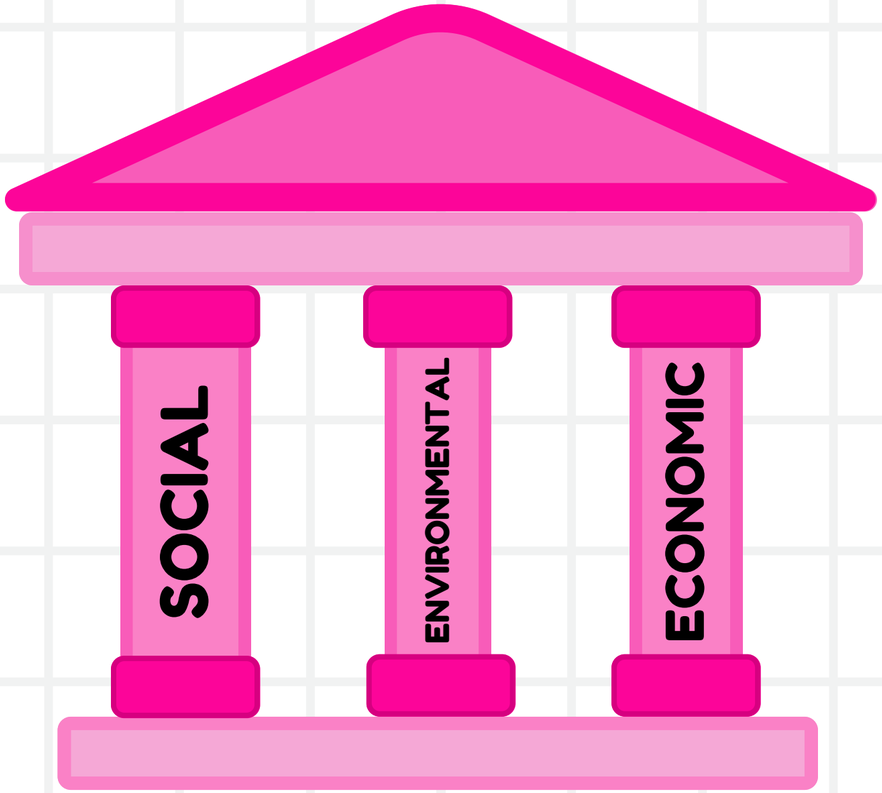
gainey's

SUSTAINABILITY RECAP

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

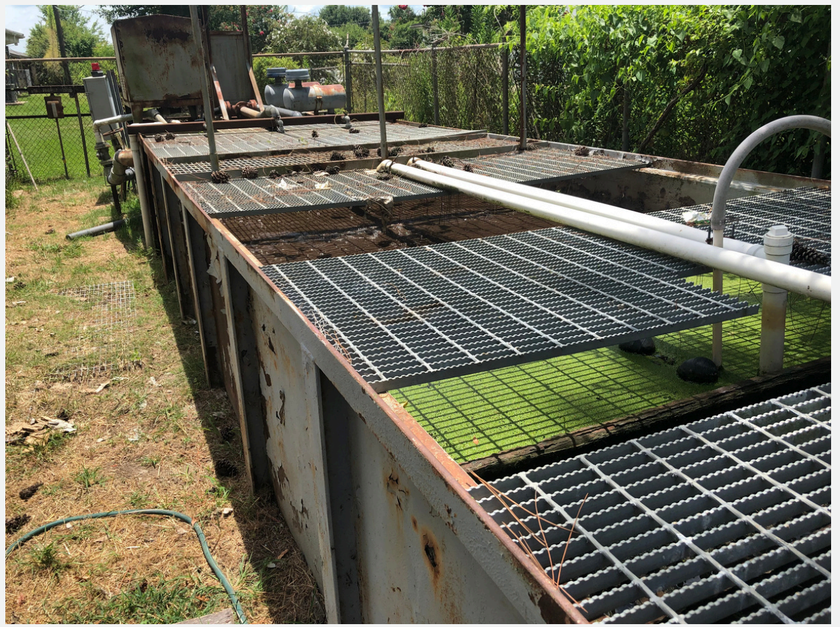
- Brundtland Report 1987 -

SUSTAINABILITY RECAP



CASE STUDY:
AGING STEEL PLANTS

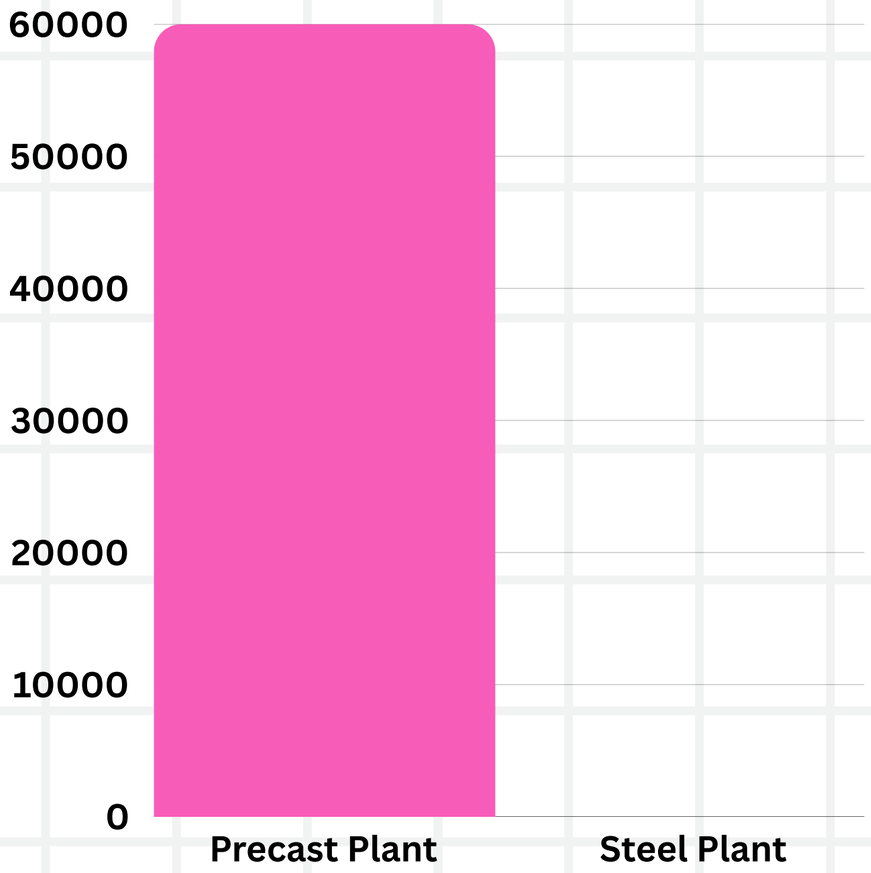
CASE STUDY:
AGING STEEL PLANTS



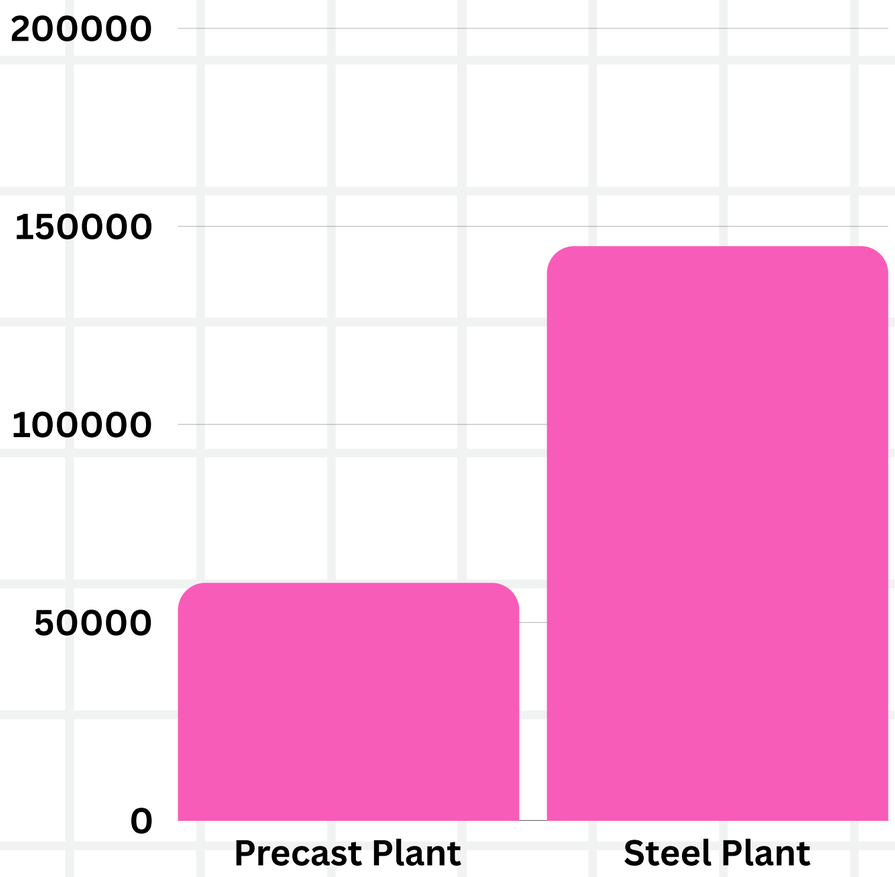
gainey's

CASE STUDY:
AGING STEEL PLANTS

COST COMPARISON



COST COMPARISON



COST COMPARISON

142%

INCREASE

AGING STEEL PLANTS

GEORGETOWN

GEORGETOWN

FACILITY

The Village of Georgetown

LOCATION

Rapides Parish

SIZE

75,000 GPD with 15,000 EQ

GEORGETOWN

GEORGETOWN

GEORGETOWN

GEORGETOWN

GEORGETOWN

GEORGETOWN


HIGH QUALITY H2O
imgflip.com

AGING STEEL PLANTS

ASSUMPTION PARISH SCHOOLS

ASSUMPTION HIGH SCHOOL

FACILITY	LOCATION	SIZE
High School	Northeast Assumption Parish	40,000 GPD

ASSUMPTION HIGH SCHOOL

ASSUMPTION HIGH SCHOOL

ASSUMPTION HIGH SCHOOL

gainey's

ASSUMPTION HIGH SCHOOL

ASSUMPTION HIGH SCHOOL

ASSUMPTION HIGH SCHOOL

ASSUMPTION HIGH SCHOOL

PIERRE PART SCHOOL

FACILITY	LOCATION	SIZE
Primary and Middle Schools	Northwest Assumption Parish	25,000 GPD

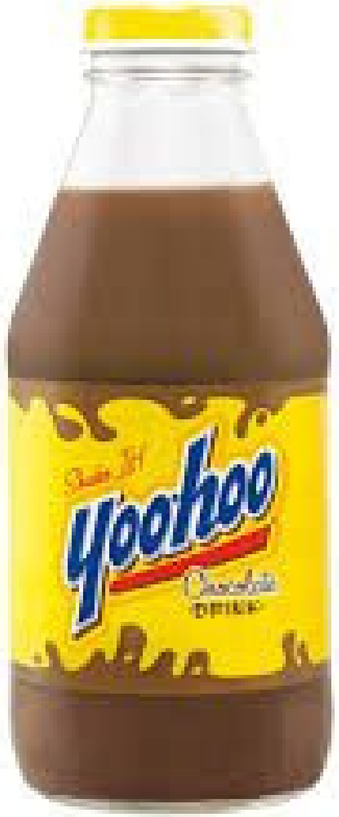
PIERRE PART SCHOOL

PIERRE PART SCHOOL

PIERRE PART SCHOOL

gainey's

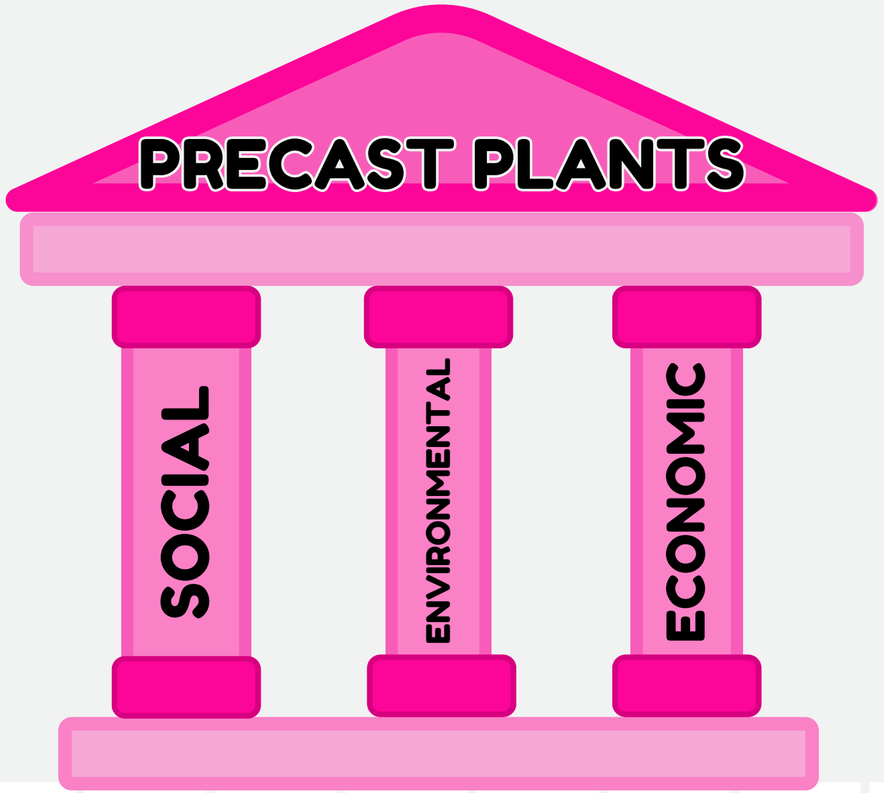
PIERRE PART SCHOOL



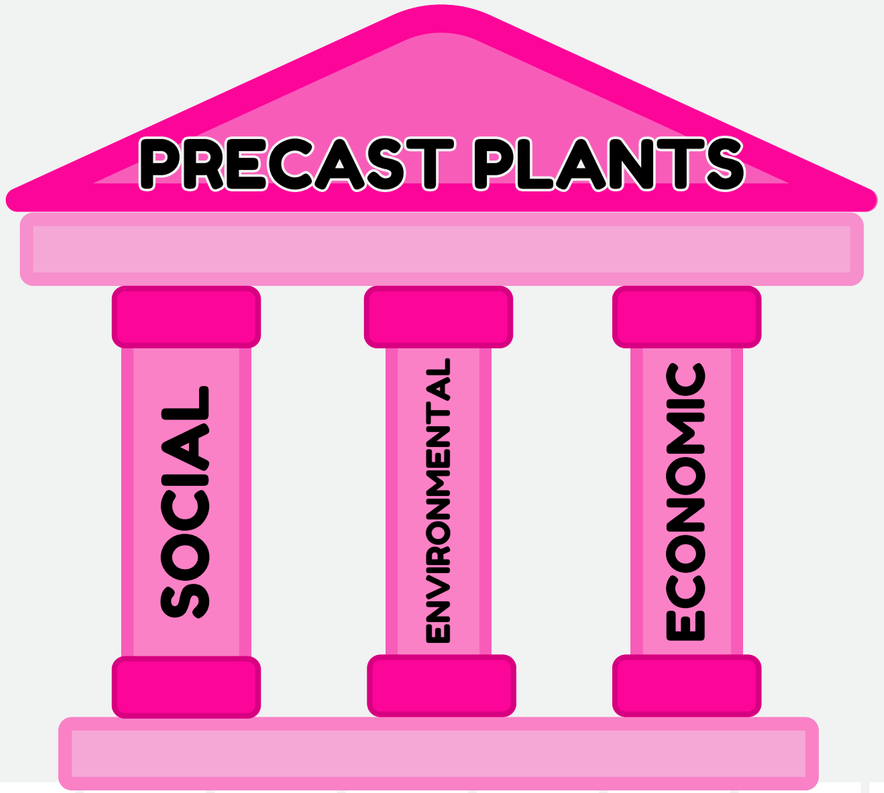
PIERRE PART SCHOOL

PIERRE PART SCHOOL

CASE STUDY:
AGING STEEL PLANTS

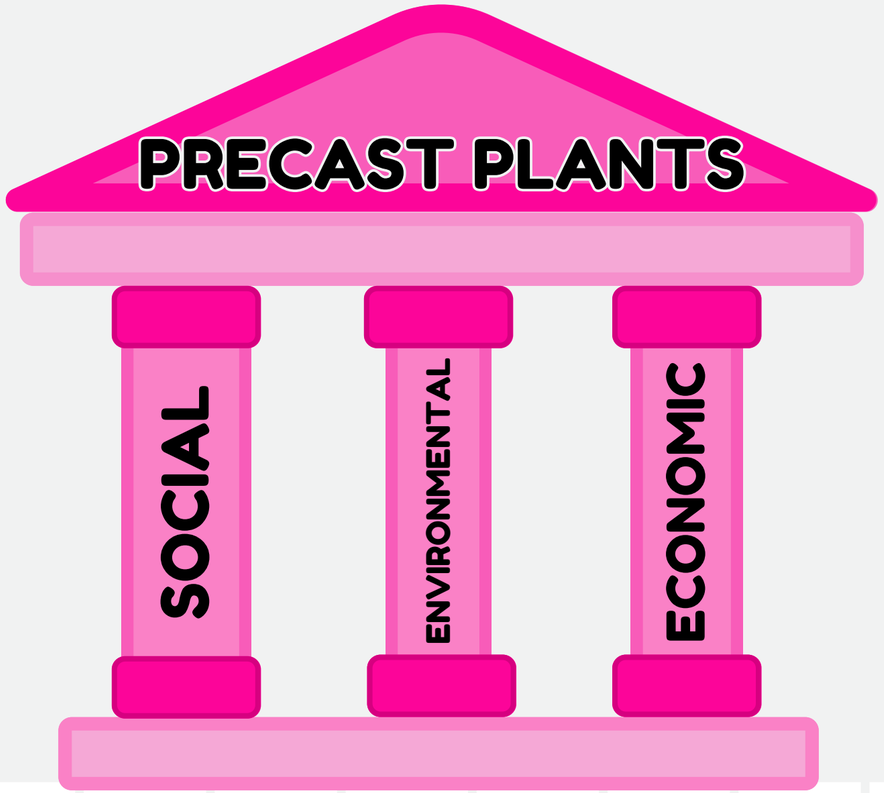


CASE STUDY:
AGING STEEL PLANTS

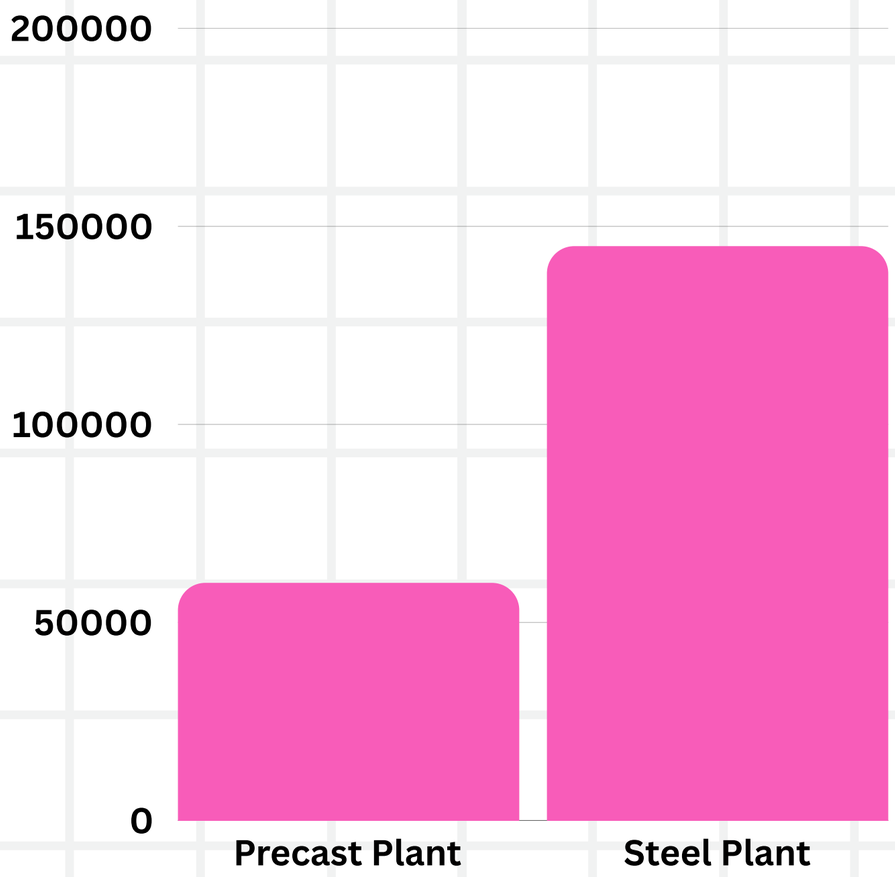


ASSUMPTION HIGH SCHOOL

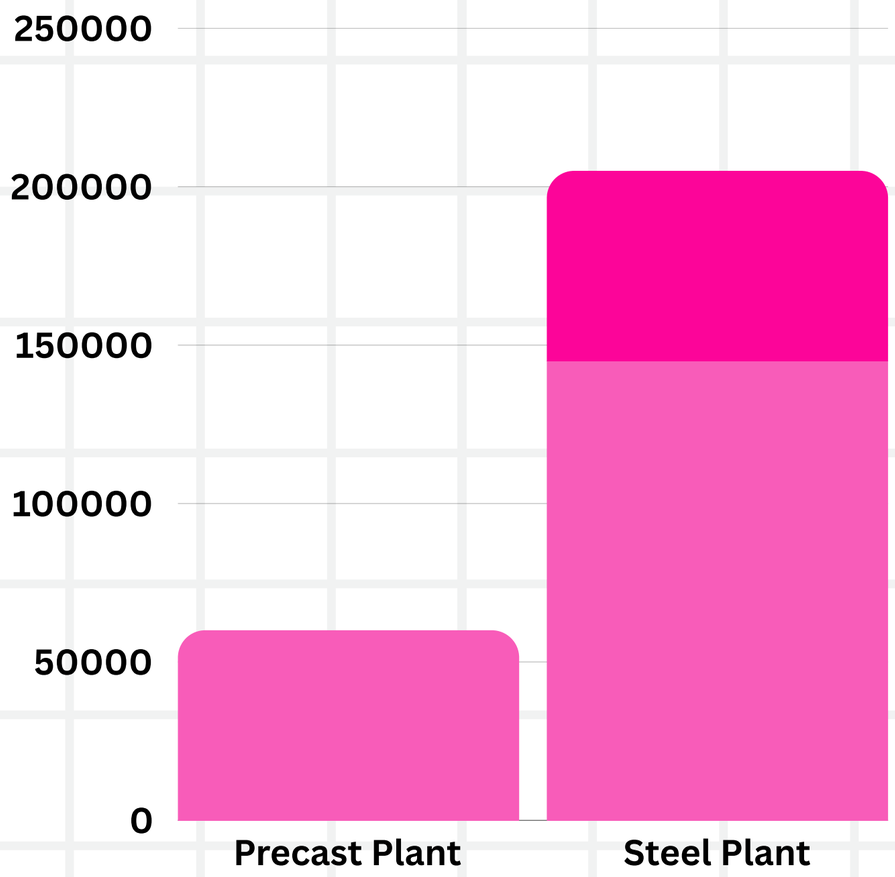
CASE STUDY:
AGING STEEL PLANTS



COST COMPARISON



COST COMPARISON

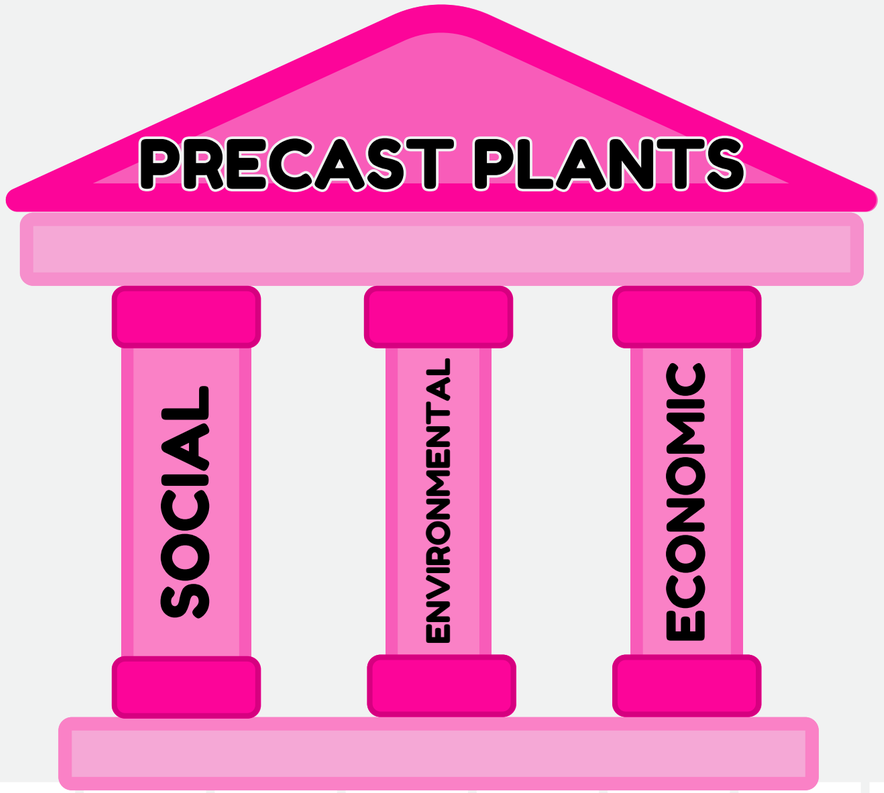


COST COMPARISON

242%

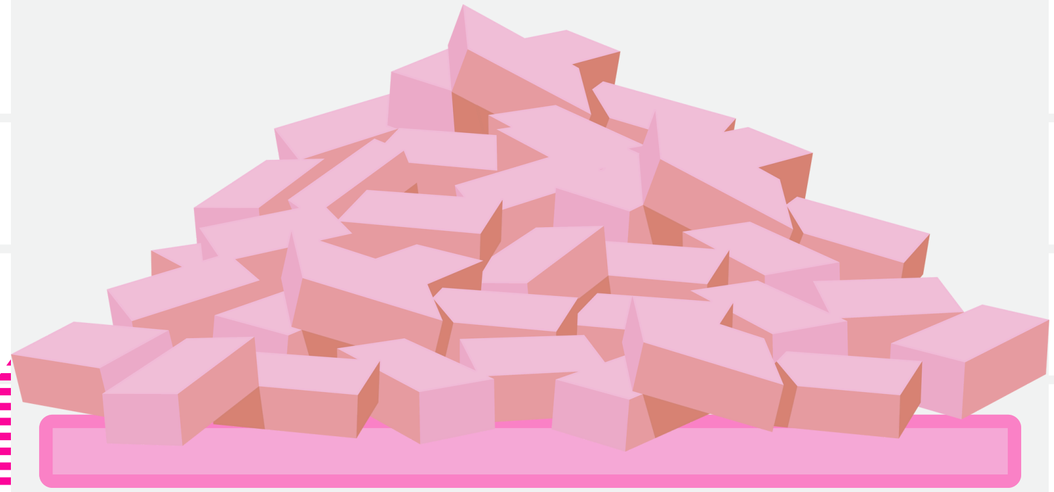
INCREASE

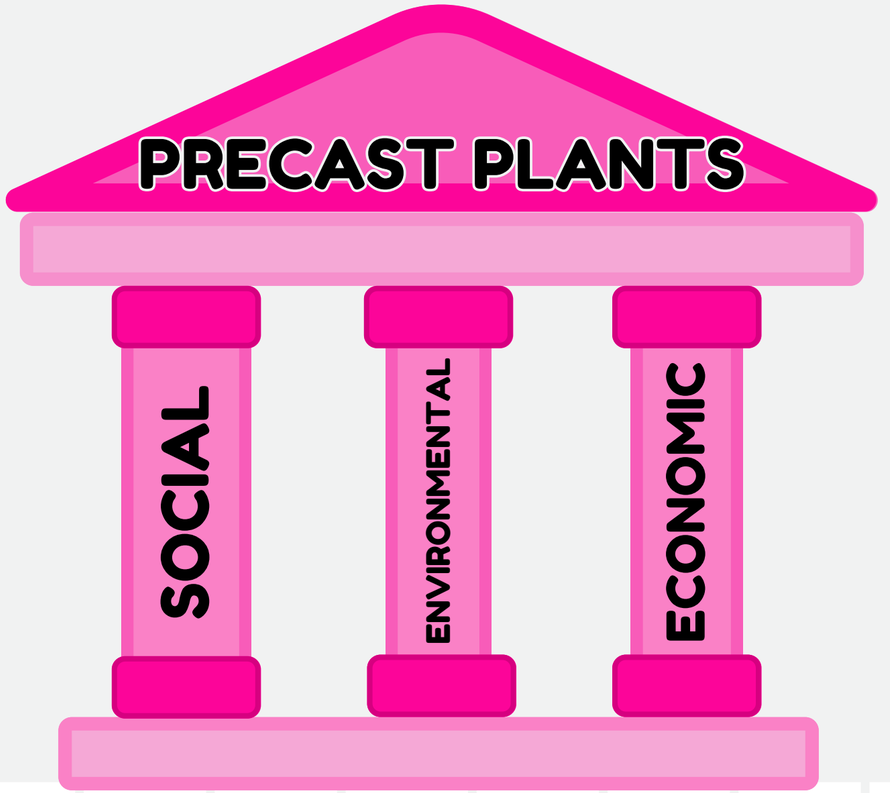
CASE STUDY:
AGING STEEL PLANTS



CASE STUDY:
AGING STEEL PLANTS

STEEL PLANTS





gainey's

AGING STEEL PLANTS

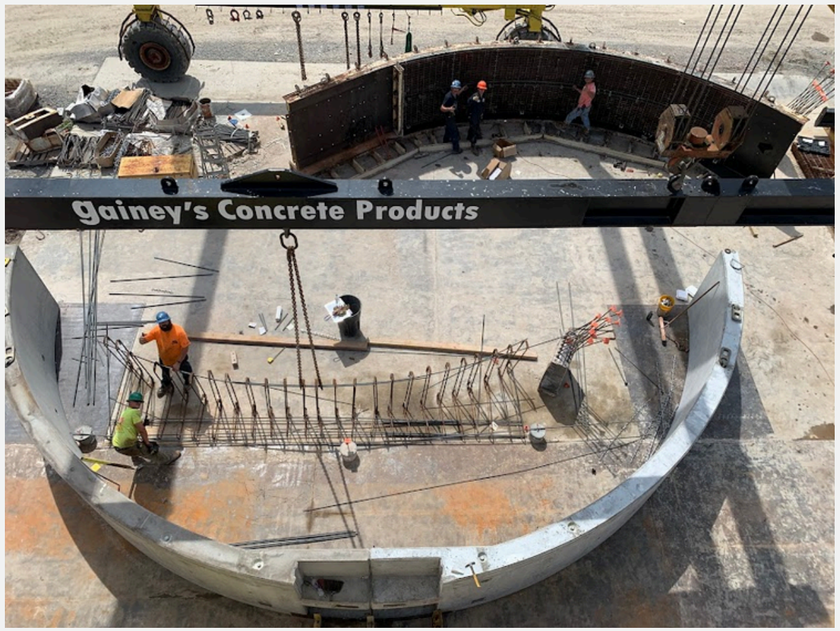
Why should I use Gainey's Precast Concrete over other concrete alternatives?

AGING STEEL PLANTS

AGING STEEL PLANTS

CAST-IN-PLACE	8"-12" Thick Walls
PRECAST CONCRETE	4" Thick Walls

CASE STUDY:
BRIDGE REPLACEMENTS AND PRECAST



BRIDGE REPLACEMENTS AND PRECAST

STRUCTURALLY DEFICIENT BRIDGES IN LOUISIANA

HOW MANY BRIDGES ARE IN LOUISIANA?

STRUCTURALLY DEFICIENT BRIDGES IN LOUISIANA

HOW MANY BRIDGES ARE IN LOUISIANA?	12,717

STRUCTURALLY DEFICIENT BRIDGES IN LOUISIANA

HOW MANY BRIDGES ARE IN LOUISIANA?	12,717
HOW MANY HAVE BEEN INSPECTED AND FLAGGED FOR NEEDED REPAIRS?	

STRUCTURALLY DEFICIENT BRIDGES IN LOUISIANA

HOW MANY BRIDGES ARE IN LOUISIANA?	12,717
HOW MANY HAVE BEEN INSPECTED AND FLAGGED FOR NEEDED REPAIRS?	3,149

STRUCTURALLY DEFICIENT BRIDGES IN LOUISIANA

HOW MANY BRIDGES ARE IN LOUISIANA?	12,717
HOW MANY HAVE BEEN INSPECTED AND FLAGGED FOR NEEDED REPAIRS?	3,149
HOW MANY HAVE ONE OR MORE KEY ELEMENTS IN POOR OR WORSE CONDITION?	

STRUCTURALLY DEFICIENT BRIDGES IN LOUISIANA

HOW MANY BRIDGES ARE IN LOUISIANA?	12,717
HOW MANY HAVE BEEN INSPECTED AND FLAGGED FOR NEEDED REPAIRS?	3,149
HOW MANY HAVE ONE OR MORE KEY ELEMENTS IN POOR OR WORSE CONDITION?	1,545

STRUCTURALLY DEFICIENT BRIDGES IN LOUISIANA

$79 MILLION

to 97 projects

BRIDGE REPLACEMENTS AND PRECAST

FINANCIAL SAVINGS

SAVE TIME

LONG LIFE CYCLE

BRIDGE REPLACEMENTS AND PRECAST

I-64 OVERPASS

BRIDGE REPLACEMENTS AND PRECAST

Interstate 64 Overpass
Huntington, WV

Before

gainey's

BRIDGE REPLACEMENTS AND PRECAST

Interstate 64 Overpass
Huntington, WV

Before

During

gainey's

BRIDGE REPLACEMENTS AND PRECAST

Interstate 64 Overpass
Huntington, WV

Before

During

After

gainey's

BRIDGE REPLACEMENTS AND PRECAST

	CONVENTIONAL	PRECAST
Traffic Disruption*	2 YEARS	5 MONTHS
Construction Time*	2 YEARS	1 YEAR
Initial Cost*	$8M	$5.5M
Typical Maintenance*	Deck Overlay every 15-18 years. Total Deck Replacement every 30-35 years.	Periodic Asphalt replacement

gainey's

CASE STUDY:
BR SSO PROGRAM

BATON ROUGE SSO Program

BATON ROUGE SSO PROGRAM

WHAT IS SSO?

Sanitary Sewer Overflow

WHAT WAS THE SSO PROGRAM?

The purpose of the SSO Program was to address the failure of the sewer infrastructure and create a more affordable, constructible, and sustainable infrastructure for the city of Baton Rouge.

BATON ROUGE SSO PROGRAM

The Advocate

"Rain caused a Baton Rouge sewer plant to overflow into homes. Here's the plan to fix it." - The Advocate

"When it rains in Baton Rouge, residential sewage backups spike: 'It's just disgusting.'" - The Advocate

The Advocate

The Advocate

"When it rains, it can pour sewage in Baton Rouge. These residents bear the brunt of it." - The Advocate

gainey's

FINES & PENALTIES

$945,000

+

$500 – $15,000 PER DAY PER VIOLATION

BATON ROUGE SSO PROGRAM

1,200 MILES OF PIPE

180 miles of sewer pipe

160 PUMP STATIONS

were inspected or replaced

29,000 MANHOLES

were inspected or replaced

BATON ROUGE SSO PROGRAM

Why was precast the best option for the SSO Program?

BATON ROUGE SSO PROGRAM

Because Precast Concrete is RESILIENT!

THE RESILIENCE OF PRECAST

Precast has the ability to RESIST, ABSORB, RECOVER from, or successfully ADAPT to adversity or change in conditions.

RESILIENT ATTRIBUTES OF CONCRETE

- Versatile and Customized Design Options

RESILIENT ATTRIBUTES OF CONCRETE

- Versatile and Customized Design Options
- Inorganic Composition
- Non-Combustible
- Water Resistance
- Insect and Decay Resistant

RESILIENT ATTRIBUTES OF CONCRETE

- Versatile and Customized Design Options
- Inorganic Composition
- Non-Combustible
- Water Resistance
- Insect and Decay Resistant
- Strength and Stiffness

gainey's

RECAP

ANY QUESTIONS?

Thank You!