NPCA FOUNDATION

August 20, 2019

Beginning at The Precast Show in 2019, the NPCA Foundation has hosted a student competition geared toward engaging students with the precast concrete industry. Each year, a unique problem is presented, and students are asked to team up and come up with a unique solution using precast concrete. Three finalist teams will be invited to The Precast Show in Ft. Worth, TX, to present their final designs and win cash prizes for the team and for the school program.

Attached are the entry form for the competition as well as the outline of the unique project the students will tackle. This real-life project comes from an NPCA member and involves designing a secondary containment system for a chemical storage tank farm.

Important dates to keep in mind are as follows:

Entry Forms Due	October 7, 2019
Initial Design Due	November 8, 2019
Final Design Due	December 6, 2019
Webinar presentations	January 15, 2020
Final Presentations at The Precast Show	March 5, 2020

If you have any questions, please contact Andi Pierce at apierce@precast.org.

We look forward to receiving your students' entry forms and seeing how they approach the project.

Regards,

Aaron Ausen
NPCA Foundation Incoming Board Chairman

2020 NPCA Foundation Student Design Competition Entry Form

Summary

The National Precast Concrete Association (NPCA) Foundation Student Competition provides a unique opportunity to engage students and academia with the precast concrete industry. Under the guidance of an academic advisor/professor, students will compete in teams to solve real-world problems using precast concrete as the solution. Students will submit their entries to a team of judges for review; the top teams will be invited to present their entries to the industry at The Precast Show where a winning team will be chosen.

Overview

The Foundation Student Competition is designed to raise student awareness and experience with precast concrete. Students will solve real-world problems faced by precasters and their customers that will require them to consider myriad of issues, including: production, delivery, budgeting, timelines, engineering, unexpected problems, last minute requests from the customer, and more. The goal of competition is to teach future engineers, specifiers, and construction management personnel about the many uses, benefits, and innovations available from the precast concrete industry

Students are encouraged to build multi-dimensional teams made up of CIM students, engineering students, construction management students, etc. similar to workgroups used every day by the precast industry. Additionally, each team will have industry liaisons (NPCA members) who can help guide the team to resources and other industry experts to assist in their project. The team structure will help familiarize students with the process of involving a precaster in the design/build process so as to make the most of the experience and ingenuity precasters can offer.

Each competition cycle will have a new real-world problem selected by the Foundation's Student Competition Task Force. This problem will require teams to consider real-world applications and situations while incorporating precast concrete into the final solution. Beyond the precast products used in the solution, students will be challenged to consider many other factors that precasters face every day including: engineering, production, delivery, site conditions, unique end-user requests, etc.

Who May Apply

The NPCA Foundation Student Design Competition is open to Concrete Industry Management (CIM) students, architectural students, construction management students, and engineering students.

Application for 2020 NPCA Foundation Student Competition

Date _____

School Name _____

Team Members

Name _____ Email _____

Name _____ Email _____

Name _____ Email _____

Name _____ Email _____

Faculty Advisor _____

Address _____ City_____ State_____ Zip_____

Phone _____

Email _____

Important Dates

October 7, 2019: Entry Forms Due
November 8, 2019: Initial Design due to Foundation
December 6, 2019: Final Design due to Foundation
January 15, 2020: Webinar Presentations from all teams to have been made to judging panel
March 5, 2020: Presentations by top four teams at the Precast Show 2020

Prizes

First place team will win $2,000 (divided equally among the student team members) and $5,000 for the school program.

Second place team will win $1,200 (divided equally among the student team members) and $4,000 for the school program.

Third place team will win $400 (divided equally among the student team members) and $3,000 for the school program.

How to Apply

The completed entry form must be submitted to Andi Pierce by October 7, 2019. Entry forms can be mailed to the Foundation office at 1320 City Center Drive, Suite 200, Carmel, IN 46032 or emailed to apierce@precast.org.

Release

By entering the NPCA Foundation Student Design Competition the Team grants permission to use images and descriptions of the entries for promotional purposes.

Legal

_____ _____

Team Captain Signature **Date**

_____ _____

Faculty Advisor Signature **Date**

NPCA Foundation Student Design Competition Rules

1. Each team must submit their completed and initial design by November 8, 2019. The design must be done in report format and include the following:
    a. Initial design concept drawing
    b. Initial moment and shear capacity for sample piece
    c. Initial cost consideration
    d. Initial timeframe.
2. Each team will be assigned an NPCA member to act as liaison to the team. The team and liaison are responsible for having bi-weekly conference calls.
3. Teams are encouraged to reach out to suppliers, manufacturers and engineers that may be able to provide research, data, and recommendations related to the project.
4. Each team must submit their final design by December 6, 2019. The design must be completed in report format and include the following:
    a. Final design concept drawing
    b. Detailed submittal and production drawings
    c. Moment and shear capacity calculation for sample piece
    d. Final costs
    e. Timeframe
    f. Project concerns/limitations.
5. Each team will be scored out of 100 possible points. The points will be an aggregate from initial and final submittals. The top four highest scoring teams will be invited to The Precast Show 2020 for a final presentation competition.
6. The final presentation will be scored out of 100 points.
7. A travel stipend to attend The Precast Show for the final presentations will be provided by the NPCA Foundation. The stipend is not to exceed $5,000 per team including students and the faculty advisor. Can include roundtrip coach airfare, related travel expenses for meals (not to exceed IRS per diem for Fort Worth), taxi to and from the Fort Worth airport, and lodging. All original receipts for travel expenses, including detailed meal receipts, must be submitted to NPCA within 30 days of expenditure in order to receive reimbursement.
8. An overall winner will be selected based on final score of presentation and combined scores of submittals.

Final Presentation Rules

1. Each team will create a presentation based on their final report and present in front of a panel of NPCA members at The Precast Show 2020 in Fort Worth, TX.
2. Each team shall present a 30-minute presentation and be available for 20 minutes of Q and A from the panel
3. Standard AV equipment (projector, screen, laptop, mics) will be made available by the Foundation for presentations. Team will need to bring their presentations on a flash drive.
4. Final presentation will be based off 100 points.
5. Winners will be announced on Friday, March 6th.

Scoring

Initial report (30 points)

Item	Possible Points
Completeness of Report	_____ of 5
Initial Drawings	_____ of 5
Correctness of Calculation	_____ of 5
Cost considerations	_____ of 5
Time Frame Considerations	_____ of 5
Subjective	_____ of 5

Final Report (70 points)

Item	Possible Points
Completeness of Report	_____ of 15
Concept	_____ of 15
Drawings and Submittals	_____ of 10
Calculations Accuracy	_____ of 5
Cost Consideration Accuracy	_____ of 5
Time Frame Consideration	_____ of 5
Identification of Limitations	_____ of 5
Subjective	_____ of 10

Presentation (100 points)

Item	Possible Points
Team Appearance	_____ of 10
Presentation Layout	_____ of 25
Presentation Content	_____ of 25
Presentation Time	_____ of 15 Start: Stop:
Handouts	_____ of 5
Subjective	_____ of 20

NPCA FOUNDATION

CHEMICAL COMPANY, INC.

Industrial Road,
Port Allen, Louisiana

REQUEST FOR PROPOSAL (RFP)

July 3, 2019

PROJECT: Secondary Containment System for the West Tank Farm at Chemical Company, Inc.

Chemical Company is seeking proposals to design and supply a secondary containment system to contain spills in the event of a tank rupture. The multiple tanks in this section of the facility contain either polyvinyl chloride (PVC) resins or vinyl chloride monomer (VCM), chlorine or caustic potash (potassium hydroxide).

2. Scope of Work
- 2400 Linear Feet of wall system required
- 4' tall exposed above grade containment
- Must embed HDPE stud liner into all concrete surface that face the containment structures. Liner must not have more than a 1" gap between components, so that it can be fuse welded together in the field by lining contractors.
- Manufacturer must submit a fully detailed Quality Assurance/ Quality Control Plan
- Design must include Shop Drawings with:
    - Design calculations
    - Connection details
    - Details of reinforcing for standard and custom pieces
    - Concrete design strength and mix design
    - Product data sheets and installation instructions for lifting and anchoring inserts and devices
    - Liner embedment details.

3. Location of Job – Port Allen, LA

4. Site Restrictions
- Must be able to install the system in close proximity around existing pipes and tanks
- System must conform to the various angles of the site plans (see plans attached)
- System must resist the hydraulic forces of a tank rupture

System designs must take into consideration ease of construction, including but not limited to space to navigate with construction equipment, lifting capabilities of contractor, and installation methods.

Here is some Q and A to help you on your journey.

Plant Location: Holden, LA

Construction Time Frame: 25 days to produce and ship all pieces

How many shifts will my plant operate? 1 (Labor laws prohibit multiple shifts)

How many yards can my plant output per shift? 45

Is outside Redi-mix available? Yes at a cost of $180/yd

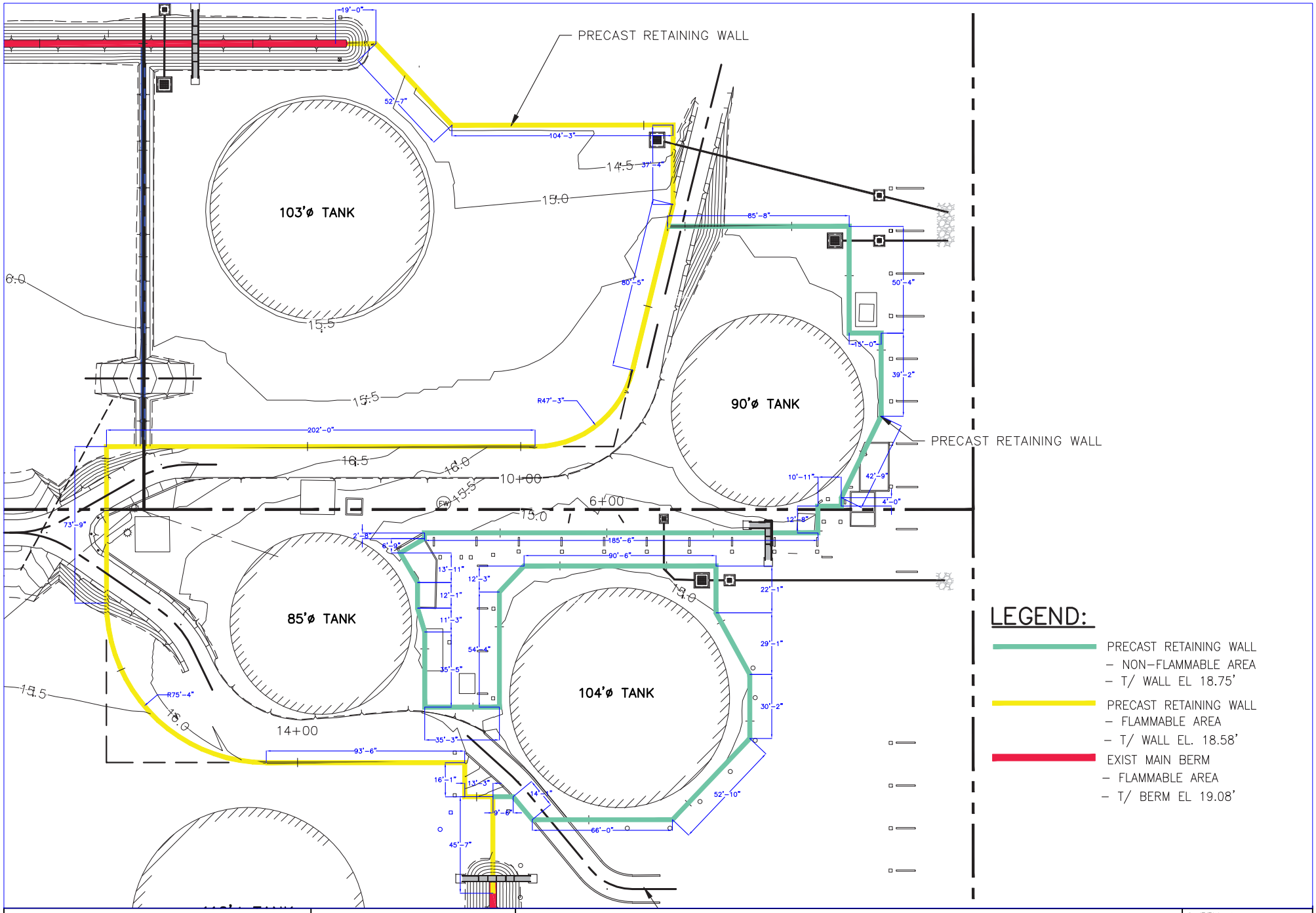
How much floor space can I dedicate to project? 120 sq ft (40' x 30')

What equipment do I have in the plant to handle pieces? 1 – 10 ton crane, 1 – 15 ton crane, 1 – 5 ton crane, 2 forklifts 20,000 and 15,000 lb capacity

Site Considerations – Low power lines in unloading site, travel path from unloading site to final location must mapped and planned as to not disturb existing equipment. Also weather is a consideration, we will not allow any construction during heavy rain and/or thunderstorms. This area is heavily prone to flooding.

What is the site construction window? 15 total days

What equipment is needed onsite? As a team you tell us what we need to move the pieces to the location and set them.



gainey's CONCRETE PRODUCTS

NPCA CERTIFIED PLANT

				SHEET NO.:	
PROJECT:	SCALE:	DATE:	DRAWN BY:	CHECKED BY:	