NEW YORK CITY
COLLEGE OF TECHNOLOGY
THE CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF ARCHITECTURAL TECHNOLOGY

**ARCH 2430** **BUILDING TECHNOLOGY IV** **January 2014**

**Concrete research assignment**
Each student team will select on one of the following (numbered 1-9) concrete systems to research:

Site cast
1. Two way: Flat plate & Flat slab*
2. Two way: Slab with beams*
3. Two way: Waffle slabs (Two-way joist)
4. One way: Banded-beam
5. One way: Slab with beams*
6. One way: Wide-module joist & Joist*
7. Thin shell structures*

Precast
8. Solid slab and hollow core*
9. Structural shapes (double tee, single tee)*

*these systems should be included in the selected research systems

**Research topics**
Each team will select one team member to research the following topics (two topics per team member):

1. System spans and effective spans
2. Construction time and cost
3. Flexibility of the system diversity of forms available
4. Architectural finishes available
5. Connection details
6. Systems strengths and weaknesses

Each member will select one building that is constructed with that type of concrete system as a case study and show the building and its properties

System spans and effective spans:
Research minimum and maximum distance the systems can support. Most importantly investigate the the optimal efficient distance system can span

Construction time and cost:
Investigate the following issues how quickly can the system be built in the field. What are the elements that contribute to the cost of the system? Does the system require a specialized labor force?

Flexibility:
What kind of structures can be built with the system? Describe the type of shapes can the system be created. What are massing implications of these shapes?

Architectural finishes:
Be sure to include the following information what kind of surface treatment what kind of precision what kind of colors and textures are available

Connection details:
Document and show the typical connection details between the supporting floors and their vertical structure. You should have sketches, diagrams and pictures describing these details.

Systems strengths and weaknesses:
Create a list of outlying the system's strengths and its typical applications. You should describe which types of structures the system is typically used for and why. We should also describe which types of structures the system will not be the most effective system and why.

Case study (all team members must do one case study):
Select the building of architecture note to document. Document the building and show where and how the concrete system was used. Describe why you think that particular system was selected for this project. Consider using your case study to help describe your particular research topics.

**Submittals**
Each team member must present a quality and in-depth examination of the topics. Quality and depth of it in information is more important than quantity. Each team member should create at least four slides explaining in text and graphics what they have researched. The each team will present their work together to describe the advantages and disadvantages of system they are investigating. The team as a whole needs to create at least one conclusion sheet, that sheet needs to outline the most interesting and useful aspects of that particular system.

The research project must be posted up to the Openlab site before the presentation due date of the project. You will be asked to present your research from the posted team project on the open lab. Gteam site. The project will be evaluated both as a team effort and per the individuals work. (30% of the grade from teamwork 70% for individual achievement)

This project is due in approximately 2 weeks. You may have a rough draft due before the final.