

**Marquette University**  
**Department of Civil, Construction and Environmental Engineering**  
**CEEN 4997 - Civil Engineering Capstone Design**  
**Spring 2016**

**Design Team Definition, Project Selection and Scope of Work Development**

**Date Assigned:** January 26, 2016

**Date Due:** February 12, 2016 (submit within D2L)

The activity of the design teams in this assignment will be focused on development of a scope of work that addresses the seven areas outlined in the final report template and lecture:

- Geotechnical Engineering
- Transportation Engineering
- Structural Engineering
- Environmental Engineering
- Construction Cost Estimate
- Construction Schedule
- Life-Cycle Cost Aspects and Sustainability
- Construction Drawings and/or Model (we are hoping some groups may use the Visualization lab to present their final solution)

Formulating how these seven areas fit into the project and the scope of work for the project that includes these areas is the objective of this assignment. The assignment outcome will be a scope of work that addresses the seven items above coordinated with the project professional and faculty mentors. It should be emphasized that the scope of work should reflect the total number of members on the design team (*i.e.* a scope for a 5-member team should be greater than a 3-member team). The scope of work will be reviewed and modified (as appropriate) by the course coordinators to ensure workload consistency among design teams.

Each project must require the submittal of:

**Update Submission #1 - Initial Submission (Due February 12th) –**

- Proposal for the scope of work (you will review a draft with me on either Feb 2nd or Feb 3<sup>rd</sup> in lab)
- Plan for tracking time and weekly accomplishments
- Anticipated work effort relative to the Team’s expectation for grade (not every team may choose to strive for an “A”, but it would be certainly be great if all did)

**Update Submission #2 - Preliminary design report in which students: (Due 3/15 – 20 minute presentations with all group members in lab):**

- List project goals and constraints
- Discuss three alternative ways of meeting the goals and constraints
- Recommend one of those alternatives as the best alternative
- Listing of anticipated drawings and models to be created

### **Update Submission #3 70%+ Complete Information - (Due 4/14)**

- Update schedule to show work remaining
- Final list of drawings and material specifications

Final design documents and report: (Due on April 28<sup>th</sup>)

- Drawings sufficient to cover meet all aspects included in the Scope of work
- Specifications sufficient to cover all aspects included in the Scope of work
- A Proposed Contract Agreement between you as the Design-Builder and your Client
- More information will be provided relative to the expectations of the final report

**PLEASE BE RESPECTFUL OF MENTOR TIME AND AVAILABILITY.** The professional mentors have volunteered to help with this course and professional courtesy is expected with regard to making appointments for consulting time, conference calls, etc. Also, immediate response to emails should NEVER be an expectation. Office hours of faculty mentors are a perfect time to tap their expertise and meeting requests via Outlook Calendar are a great vehicle for establishing meeting times.

It is recommended that the design teams contact the professional mentor(s) that sponsored and formulated the project as soon as possible to gather information related to the site location and project extents and discuss the seven items above within the context of the project. It is then recommended that the design teams study the project information provided and draft a scope of work for review by the faculty and professional mentors and submission.

#### **The steps to complete this assignment:**

- 1. Upon receiving your project assignment contact the identified mentors and complete a scope of work for review by Drs. Federle and Foley – expect that we will add to your overall scope of work unless you clearly identify a scope of work addressing all 7 areas, regardless of what your mentor specifically expects.**

Project 1 – Spaceco, Inc. – Method Home Manufacturing Facility  
 Project Mentor(s): Robert Anderson, PE ([randerson@spacecoinc.com](mailto:randerson@spacecoinc.com))

Method Home Manufacturing Facility – Pullman Neighborhood, Chicago, IL  
 New construction of a 150,000 SF industrial building located on a brownfield site. Construction of a 2,500 LF private road was required to service development. Extensive Stormwater and Green technology improvements were incorporated into developing a sustainable site to receive LEED Certification.

Team 1A:	Team 1B:
Andre Ghelfi-Thomas	Bobby Adelizzi
Yusi Li	Catie Albrecht
Andres Orrego	Jasskaran Dhillon
David Ostertag	Sam Roti
Luke Zizzo	Joseph Shine

Project 2 – ARCO Design/Build, Inc. – Distribution Building Expansion

The project this year is a 200KSF distribution building expansion on a partially developed site consisting of rock, fat clays, and potential sink holes. The building will have automation put in it (not in this scope of work) that will need to be coordinated with the building design. Although a dock extension is not needed at this time, the building and site will need to incorporate the potential need for this in the future. The facility site design will also need to determine how to get approximately 200 additional car parking spaces on the property.

Project Mentor(s): Jake Stefan - [jstefan@arcodb.com](mailto:jstefan@arcodb.com) and (404) 386-5528

Team 2A:	Team 2B:
Kevin Handler	Wendy Ballent
Michael Kann	Christian Krauspe
Garrick Palay	Megan Maki
Kyle Preissner	Will Sanford
Zi Wang	

Project 3 – J.H. Findorff & Son, Inc. This project consists of an 22,000 SF expansion to the Findorff Construction corporate headquarters in Madison, WI. In addition to the office expansion a 39,000 SF underground parking garage is included as part of the project. Students will be responsible to develop a comprehensive proposal incorporating all the items listed below. Students to assume they are a self-performing General Contractor with abilities to self perform concrete, masonry, and structural steel, and carpentry trades.

Project Mentor(s): Mike Stern, LEED AP BD+C ([mstern@findorff.com](mailto:mstern@findorff.com))

Team 3:
Rod Breen
Shae Duren
John Stumpf
Laura Switzer

**Project 4 – R.A. Smith National - Design And Reconstruction Of Drexel Avenue**

This project includes the design and reconstruction of Drexel Avenue between S. 27th Street and the I-94 interchange from a two-lane rural cross section to a four-lane urban cross section with a median and turn lanes. The roadway is in very poor condition, is annually inundated with floodwaters, is not able to accommodate projected traffic volumes and does not have any provision for bicycle or pedestrian traffic.

**Mentors:**

Joseph Diekfuss, Ph.D.

[joseph.diekfuss@rasmithnational.com](mailto:joseph.diekfuss@rasmithnational.com)

(262) 317-3367

Chris Stamborski, P.E.

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(262) 317-3337

John Bruggeman, P.E., PTOE

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Tim Barbeau, P.E., P.L.S.

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Justin Schueler, P.E.

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(262) 317-3388

Team 4A:	Team 4B:
Bryant Beal	Keith King
Pat Davis	Hui Liu
Bernard Lodyga	Tianna Pitas
Julian Rozwadowski	Frank Weiss

**Project 5: WISDOT: Washington Ave Extension**

WisDOT is soliciting services for the delivery of a preferred alternative for the extension of Washington St. by May 2016. Deliverables will include a well-defined Purpose and Need statement for the extension of Washington St. to be included in a comprehensive Public Information Plan to be used during public and agency coordination. The team will be expected to deliver a range (minimum of 3) of design alternatives for the Washington St. extension including a final presentation of considered alternatives, reasons for screening, and justification for the selection of the extension preferred alternative.

Project Mentor(s): Jason Lynch, P.E.- [jason.lynch@dot.wi.gov](mailto:jason.lynch@dot.wi.gov) Mobile 414-750-1803

Team 5A:	Team 5B:
Erik Carillo	Greg Ballering
Tino Kalayil	Gustavo Gines
Matthew McNamara	Nick Jindra
Colin Trautschold	Matt Marhefke
	AJ Sherman

Project 6: Aurora St. Luke Parking Garage

Aurora St. Luke’s Medical Center is looking to evaluate the current parking layout of its Main Parking Structure to maximize the amount of parking available and to engineer a snow chute to clear the snow from the top deck during the winter.

Project Mentor(s): Mark Herbert, CHFM - [mark.herbert@aurora.org](mailto:mark.herbert@aurora.org) Cell 414.649.7172  
Doug Nass – [doug.nass@aurora.org](mailto:doug.nass@aurora.org), Cell 414 222-0277

Team 6:
Matt Barone
Brendan Brosnan
Michael Clemente
Keegan Lutz
Anton Rice

Project 7: Northwestern Mutual Parking Garage

Modify an existing parking structure to enhance the commute experience for Northwestern Mutual employees who will work in the new Office Tower and Commons, scheduled to open in 2017.

Project Mentor(s): Scott Wollenzien - [scottwollenzien@northwesternmutual.com](mailto:scottwollenzien@northwesternmutual.com); and  
Chad Wright [chadwright@northwesternmutual.com](mailto:chadwright@northwesternmutual.com)

Team 7:
Zane DeBruyn
Andrew Geren
Emma McGowan
Tommy Troemel

Project 8: ReFlo Rain Harvesting Expansion

Project Mentor(s): Dr. Zitomer

Erik Anderson
Mike Farina
Anne Grzywa
David Mullins