PROJECT COORDINATION, PLANNING, AND PROGRAM MANAGEMENT
Project ID: CEEn-2017CPST-005

by

Team MKA
Mitchell Smith/ Project Manager
Megan Peffer,
Austin Fox, and
Kaela Nichol

A Capstone project submitted to

Bob Tandler
Fritzi Realty

Department of Civil and Environmental Engineering
Brigham Young University

October 30, 2017

Introduction

PROJECT TITLE: PROJECT COORDINATION, PLANNING, AND PROGRAM MANAGEMENT
PROJECT ID: CEEn-2017CPST-005
PROJECT SPONSOR: Fritzi Realty
TEAM NAME: Project Coordination, Planning & Program Management
CONTACT: Kaela Nichol (kaelanordlin@gmail.com), Megan Peffer (meganelizabeth300@gmail.com), Austin Fox (austinmfox92@gmail.com)

As the project coordination team, our goal is to retrieve the necessary information from the other teams working on the geotechnical, structural, environmental, water, and urban planning for the Arrowhead Center that will allow us to determine which project will be the most feasible. With these ideas gathered, we will carefully analyze what we believe will be the "best fit" for this development and present it to Fritzi Realty. In addition, we will be gathering possible land use plans from the Sustainable Infrastructures class (CE EN 201) at Brigham Young University.We will act as liaisons with the city of Spanish Fork and Atlas engineering to gather any information they may need as they develop their projects. As a team we will coordinate with each of the teams asking them about their findings and working together to come up with a solution of what to do with the Arrowhead Center which will later be approved by a licensed professional engineer.

By the end of December, we will have an idea of what plan we would like to go forward with and then work with the other teams to complete the determined project. We will contact each team monthly to go over their progress and talk about any issues or potential issues that may come up. We will also consult our project manager to make sure we are completing each task in an efficient manner.

Proposed Work Plan

Several fields of engineering are required for a complete analysis of this project. As other teams within the BYU Capstone program collect research, we will organize their findings. We plan on working several ideas for the land use such as housing developments, a community center or even a startup building for new businesses. We will contact the Nebo School District about the possibility of adding an elementary school and the conditions needed in order to build one. We will also contact Atlas Engineering to ask them about their report on the Arrowhead property. As a team we will work together with Spanish Fork city, a professional engineer (PE), and the Sustainable Infrastructures class at BYU to determine the best solutions for this development. Teams will report their inspections and the information received will be evaluated. In monthly reports, possible land use ideas will be evaluated and several options will be presented. By March of 2018, the best decision based on land use, cost and feasibility will be presented.

Schedule

As a team, from now until December we will meet biweekly to discuss our project and discuss potential ideas for the project. Also, each member will correspond with each team working on the structural/geotechnical, the environmental/water, and the transportation/urban planning aspects and discuss findings and potential ideas they have obtained from research.

Starting in January and up until the end of March, our team will continue to meet biweekly, and will meet with our project manager once a month to go over the plans for the project. On February 20, 2018 we will have a Arrowhead Groups Meeting. We will notify Fritzi Realty once a month to discuss our progress and deliver status reports.

Facilities, Tools, Data and Equipment

The tools that will be used are the Arrowhead Center Project Documents that were obtained as they will allow us to view previous plans for the development as well as the data obtained on the development itself. These documents include scanned drawings of the proposed residential plan, water rights, Environmental Site Assessments, and a geotechnical report.

With the help of the project manager, our team will go through these documents and the conclusions from the other teams regarding this project to determine what we should do with the Arrowhead Center.

Project Budget

We will not be receiving any monetary compensations for our work. Therefore, we have not budget. A proposed amount for the construction project will be included in our report however the labor and costs will be done by other firms of their choice. We require no money for our work. Each team member will work 8 hours per week.

Deliverables

The deliverables of this capstone project include:
(1) short monthly status reports documenting challenges, solutions, progress, and adherence to schedule
(2) a final report with design alternatives for the project that includes economic and environmental considerations, and summary of progress made towards the project through the semester
(3) a poster reflecting a summary of the project which will be presented to students, faculty and other interested individuals in the final undergraduate seminar
(4) a presentation summarizing the project to be presented to Bob Tandler.

Performance Standards

Team will provide work for this Capstone project “as is” using best practices and with best effort. Project results cannot be construed as work performed by licensed professionals and cannot be used as “stamped deliverables” without first being reviewed, approved and stamped by a qualified and relevant license professional engineer.

Statement of Qualification

Team five is prepared and willing to complete the project as stated in the work plan in a timely and professional manner. This behavior is exemplified in their diligence in engineering coursework and previous work experience. The team has completed relevant civil engineering coursework, including Structural Analysis, Soil Mechanics, Hydraulics and Fluid Flow Theory, Transportation Engineering, Structural Steel Design, Reinforced Concrete Design, Geometric Design of Highways, Hydrology, Environmental Engineering, and Civil Engineering Materials. Kaela Nichol's work experience has focused in structural engineering, which will be an asset to the team especially while liaising with the structures team. Megan Peffer has relevant work experience in transportation engineering, and will be a liaison to the transportation team. The team has experience with relevant software, including Revit, AutoCAD, Civil 3D, HCS, Synchro, MathCAD, ArcGIS, and the Adobe suite. For further statements of qualifications, please see Appendix A for the resumes of the teams.

Appendix A

Megan Peffer
948 N 50 E #302 Provo, Utah 84604 | 425-530-6315 | meganelizabeth300@gmail.com

Education

Bachelors | August 2018 | Brigham Young University
- Major: Civil Engineering Minor: Mathematics
- GPA: 3.28

Skills & Abilities

Technology & Programs

Microsoft office (especially in Word, Excel and PowerPoint)
- Revit & AutoCAD design software
- Visual Basic programming in Excel: Working spreadsheets, data organization.
- Surveying Basics through Coursework

Involvement

Clubs

- Society of Women Engineers & Women in Engineering @ BYU member and mentor
- Global Engineering Outreach Club Leadership: Design equipment to take to the Navajo nations and assist them.
- American Society of Civil Engineers (local and national member)

Service

- Global Engineering Outreach service trip to Navajo Nation: Traveled to Southern Utah for 3 days to assist the Navajo in building solar powered water pumps, rain catchers and playgrounds for the reservation.
- Habitat For Humanity: 50+ hours building homes for those who cannot afford them.
- Global Engineering Outreach Study abroad: Peru. Multi-Disciplinary Engineering, student designed products were built in Peru
- ORCA Research Grant recipient.
- Boy Scouts of America Merit Badge classes, volunteer and teacher

Work Experience

Lab Attendant | BYU Civil Engineering Department | January 2017-Present

As a Lab Attendant, I oversee all our labs for the department including structures, soils, materials etc. Each day I check each lab to make sure it is stocked and clean. I work with faculty to make sure each lab is kept how they would like it to be. I am also available to help in any way I am needed whether that is making up CAD drawings or helping our techs to build a system for research as a few examples. It takes self-management and decision making. I do ask the advice of the Lab and Safety managers as a larger oversight. I interact with students and faculty of all disciplines and levels of study.

Peer Mentor | Byu first year mentoring | April 2015-December 2016

As a peer mentor, I work with first year students at BYU. It is my job to meet and talk with them about various resources on campus as well as encourage them to develop their college experience. I encourage my students to get involved with their studies as well as service and job opportunities. This job has broadened my perspective and taught me a lot about how to work with others. Each person has different needs and ways of communicating that are important to understand in order to build relationships with them.

Lab Tech | Transportation engineering alliance | may 2016-august 2016

I had the opportunity to participate in a full-time internship for TEA Group the summer of 2016. I ran the material tests in the lab each morning, including concrete cylinder strength, asphalt density, compaction and oil content and a few soil compaction tests. Then I would assist in the office or out on job sites with our inspectors. I learned a lot about materials used in roadway construction and became exposed site plans, AASHTO/UDOT specifications and administrative work.

KAELA NORDLIN NICHOL

1336 N 900 E | Provo, UT 84604 | 1(714) 243-7217 | kaelanordlin@gmail.com

OBJECTIVE

Seeking an opportunity in product design which will enable me to leverage the problem solving and technical skills I have developed through engineering coursework and my work experience.

EDUCATION

Brigham Young University — Provo, UT
Bachelor of Science in Civil Engineering, April 2018

Zurich International School — Zurich, Switzerland
High School Diploma, June 2014

EMPLOYMENT HISTORY

Product Design Intern — September 2017 - Present
San Diablo Artisan Churros, Draper, UT

- Analyzes best practices, material use, production time, and costs for brand-focused product design.
- Develops full line of To-Go packaging for 1, 3, 6, 12, and 24 Churros.
- Establishes interior experience design for Pop-Up events, catering events, and complete concept restaurant.
- Prepares detailed drawings and schematics for new products.

Structural Engineering Intern — June 2016 - September 2016
Focus Engineering and Surveying, Midvale, UT

- Assisted in structural evaluation, analysis, and design of structural elements of existing or new architectural and industrial buildings.
- Performed construction observation of building projects, including extensive communication with Architects and Contractors throughout the building process.
- Developed project scopes, budgets, and proposals for future work to Focus Clients.
- Developed departmental strategic initiatives for both marketing and technical growth.

Structural Engineering Research Assistant — August 2014 - August 2015
Brigham Young University, Civil Engineering Department

- Collected data for 'Greenplex' structures, focusing in behavioral research and environmentally conscious building processes and materials for an environmentally conscious, dense community for 100,000 people in a small area.
- Established criteria for the costs, constraints, and structural engineering requirements, then analyzed data to design a greenplex suited to the criteria, and created both physical models and graphic models through Revit.

Architecture Intern — June 2013 – July 2013
SteigerConcept, Zurich, Switzerland

- Assisted in commercial building projects through drafting, utilizing both ArchiCad and AutoCad.

SKILLS

Technology

- Microsoft Excel and Visual Basic for Applications (VBA)
- Adobe Photoshop, Adobe InDesign, Adobe Illustrator
- CAD software including Revit, Solidworks, AutoCAD, and ArcGIS

Austin M. Fox

13871 S 1950 W, Bluffdale, UT 84065 • (916) 690-6162 (mobile) • austinmfox92@gmail.com

Summary of Skills: Involved with many large and complex building construction projects, working continuously through high school and college. Worked with all kinds of tools and machinery. Fast learner, hard working, dependable, efficient, trustworthy, and good sense of humor.

EXPERIENCE

FOX CONSTRUCTION - Sacramento, CA 2004 - 2014
Construction Worker
- Experienced with electrical, framing, concrete, foundation, plumbing projects
- Operating machinery: forklift, bobcat
- Responsible for $20,000 project that was completed on time with high customer satisfaction
- Became trusted supervisor for general contractor

BYU VENDING - Provo, UT 2014 - 2017
Lead Student
- Supervising a group of 3 workers
- Lifting, stacking, and organizing detail shipments on tight schedule
- Promoted to Lead Student after only 2 months of work

RESEARCH ASSISTANT/LAB TECH – Provo, UT 2017 – Present
- Maintain labs at BYU Civil Engineering department
- Assisting on various research projects
- Testing materials and equipment

EDUCATION

BYU - Provo, UT 2014 - Present
- Current Senior Student, majoring in Civil Engineering
- Maintaining a 3.0 GPA
- Active Member of BYU ASCE and member of Concrete Canoe team
- Working on Bachelor's degree
- Expected Graduation Date: June 2018

Elk Grove High School - Elk Grove, CA
- Graduated with a 3.8 GPA
- Varsity Soccer Team (2 years)
- Marching Band Drum line (2 years)

PERSONAL

Working to fund my own education
Married in December 2015
Hobbies include all team sports (BYU Intramurals), camping, hiking with friends
Salta Argentina Mission; Missionary for the LDS church