

Structural Engineering Students for Haiti

A Student - Run, Student-Initiated, Organization for the Benefit of the Haitian People



A Special Project presented to
the Faculty of the Architectural Engineering Department
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Bachelor of Science in Architectural Engineering

by

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Table of Contents

Executive Summary	4
Introduction.....	5
Trip Planning	8
Membership Generation.....	8
Early General Meetings - April 13th through April 30th.....	8
Late General Meetings- May 1st through June 7th.....	9
Finding Advice.....	11
Correspondence.....	11
April	12
May	12
June - August 2nd	12
Finalization - June 7th - August 2nd.....	13
Project Development.....	14
Trip Funding	20
Budget	21
Funding	22
SESH Summer Trip Documentation – 2012.....	24
Overall Itinerary.....	24
Figure 7 – Map of Haiti	25
Daily Reports	26
August 2 nd	26
August 3 rd	26
August 4 th	28
August 5 th	30
August 6 th	31
August 7 th	33
August 8 th	34
August 9 th	36
August 10 th	38
August 11 th	39
Post Trip.....	39

Analysis of As Built Bell Structure.....	40
Computer Modeling	41
Summary of Calculations.....	42
Trip Comments: What Went Well and Should Be Repeated.....	46
Fundraising	46
Communication with Haiti Engineering	46
Working with the Locals.....	47
SESH Teamwork	47
Ken O'Dell's Contributions	47
The Experience	48
Everything Else.....	48
The Future of SESH.....	49
Possibility of Adding Other Majors to the Trip	49
Changing Structural Engineering Students for <i>Haiti to Humanity</i>	49
Possibility of Making SESH a Multi-College Program	49
Appendices.....	50
Appendix A – SESH Educational Package.....	50
Appendix B – SESH Applications	62
Appendix C – Correspondence	67
Appendix D – Contributor Email.....	115
Appendix E – Original Powerpoint.....	116
Appendix F – Daily Recap Record	139
Appendix G – Calculation Package	158

Executive Summary

On August 2nd 2012, a group of 10 students from Cal Poly, San Luis Obispo traveled to Léogâne, Haiti to construct a bell tower for the Saint Rose de Lima Parish. The trip consisted of four days of construction, and three days of touring. The seven days in Haiti were a result of three months of planning by a student-run, student-initiated group called Structural Engineering Students for Haiti, or SESH. The following report documents the planning, execution and lessons learned from this trip. The planning included everything from fund raising to disease prevention. The trip was successful because the bell tower was construction on time and the students gained a cultural experience they will never forget. This report includes source documents such as email traffic, structural calculations and personal reflections of the participants. It will hopefully serve as a useful guide for future SESH students planning a follow-on trip in the future.

Introduction

On Tuesday the 12th of January 2010 a magnitude 7.0 earthquake occurred with its epicenter 16 miles west of Port-au-Prince near Léogâne, Haiti. Haiti is a country of approximately 9.7 million people, located on the island of Hispaniola west of the Dominican Republic. The Capital of Haiti is Port-Au-Prince (pop. 1.23 million) Haiti is located south of the United States and East of Cuba in the Caribbean Sea. The official languages of Haiti are Haitian Creole and French. The United States Geologic Survey states 316,000 people had died and 1,000,000 were displaced from their homes. The government of Haiti estimated 250,000 residences and 30,000 commercial buildings were rendered useless. The damages were extensive due to the magnitude of the quake and poor construction practices. The main structural system in Haiti is under-reinforced concrete masonry units. This type of construction works well in a windy environment like Haiti but has too large of a mass and not enough ductility in an earthquake..

This devastation motivated a few Architectural Engineering (ARCE) students at the Cal Poly San Luis Obispo campus to take action. Caelen Ball, Joseph Rice, and Kim Bowen were the leaders who started the student-managed organization of Structural Engineering Students for Haiti (SESH). The organization's mission is to help Haiti's rebuilding process through a holistic and adaptive application of the structural engineering practice. The vision of the organization is to improve the Haitian construction techniques by working collaboratively on projects and demonstrating effective and important structural improvements. In conjunction with the main vision of SESH the students outlined a series of goals:

1. Social/ Service Goals:

- To develop a holistic viewpoint of engineering education that considers the humanitarian aspect of building.
- To recognize the complexity of issues such as poverty and their effects on buildings.
- To gain knowledge of culture, geography, economy, history, and peoples of a new region of the world.

2. Engineering Goals:

- To experience first-hand the effects of poorly designed buildings in seismically active areas.
- Gain a sense of practicality and constructability in design.
- To gain knowledge of building methods and building materials of a new region of the world.
- To encourage ethical choices when engineering future structures.

3. Leadership Goals:

- To develop interactive teaching skills by presenting information in a clear, instructive, and understandable manner.
- To expand teamwork abilities.
- To encourage students to take initiative.
- To plan and execute numerous trips by communicating with non-governmental organizations, stakeholders, and peers.

4. Haitian Community Goals:

- To positively affect a community for an extended period of time that outlasts the time spent on the ground.
- To use native materials in more effective ways.
- To assist an established, native non-governmental organization.

SESH 2011 planned the organization's first project which involved a trip to Haiti. SESH 2011 looked for a non-government official (NGO) to partner with. After considering other NGOs including the Mennonite Central Committee, SESH 2011 eventually found Haiti Engineering (HE). Haiti Engineering is a NGO based in Sacramento and run by Herby Lissade. SESH 2011's project was to be to help rebuild the Carol house located in Port-au-Prince, Haiti. This house was home to fifteen people and served as a community center. SESH 2011 was comprised of ten students who traveled to Haiti in the summer of 2011 and completed their project. They rebuilt the main wall on Carol's house, but did not have enough time to properly attach the roof diaphragm to the wall. As the SESH 2011 team departed they left sufficient funds behind with Carol so she could finish the work on the roof.

Upon return from Haiti, SESH 2011 created a PowerPoint presentation and presented their trip experience at a Cal Poly Structural Engineering Association of California (CP SEAOC) chapter meeting. This generated interest amongst the ARCE student body to plan a SESH 2012 trip. In the spring quarter of 2012 at Cal Poly a group of Cal Poly ARCE students decided to continue the SESH mission and formed the SESH 2012 team. The purpose of the report is to document the SESH 2012 team's accomplishments and through the planning and execution of their trip to Haiti in summer 2012.

Trip Planning

SESH 2012 had to generate membership and get organized in order to function; this was coordinated by Alex Daddow. Several Go2meetings (web conferences) were conducted between the membership, Ken O'Dell, and Haiti Engineering. Ken O'Dell is a partner at the engineering firm MHP who attended the SESH 2011 trip. These initial meetings helped formulate issues such as budget, fundraising, trip dates, and agenda. Section "Correspondence" summarizes the proceedings of these web conferences and all emails sent between Haiti Engineering and SESH.

Membership Generation

In September, the SESH 2011 group gave a presentation on their trip to the Cal Poly Structural Engineer's Association of California Chapter meeting on the Cal Poly campus, San Luis Obispo. At this meeting SESH 2011 described their experience and generated a list of interested candidates. Using this list, the SESH 2012 coordinator sent an email educating the students on the dangers of the trip and asked those interested in the trip to reply. As a result, fifteen students attended the first SESH 2012 meeting.

Early General Meetings - April 13th through April 30th

The early SESH 2012 meetings educated the team about the dangers involved with the trip. An educational package was distributed (**Appendix A**) at the first meeting which contained information on:

- Safety
- Creole
- Logistics
- Packing
- Immunizations

Attached to the back of this package were two fundraising letters; one meant for industry partners and one meant for friends and family. These were sample fundraising letters. Members could then draft their own letters and send them out to generate funding for the trip.

The SESH members were asked to review all the materials and decide whether they wanted to officially commit to the trip. Those interested were asked to complete a membership application (**Appendix B**), and return it to the coordinator. These applications included an application portion, a series of short response questions, and a liability release. Fourteen applications were received and the SESH 2012 Membership was formed. All students who completed the application were selected to attend SESH 2012.

Late General Meetings- May 1st through June 7th

Several mandatory meetings were held to cover numerous topics. These meetings were used to decide:

- Trip Dates - Trip dates were decided through the Doodle Webpage. Doodle allowed polling of the membership for open dates. Once a range of dates had been extracted, the dates were forwarded to Haiti Engineering to decide the best time for the trip. Haiti Engineering recommended August 2nd through August 11th. A copy of the itinerary can be found in subsection "Overall Itinerary."
- Flight times - Once the trip dates were known, the next meeting focused on flight availabilities and purchasing tickets. Members were to schedule their arrival in Haiti on the morning of August 2nd. All members were also required to depart from Haiti on August 11th.
- Project development - See section "Project Development."

While logistics and design were being planned, the meetings were utilized to train the members for the trip itself. Members volunteered to take on specific roles:

- Communicator
- Security
- Medic
- Culture
- Team Leader
- Design Chair
- Fundraising Chair

Each volunteer agreed to give a PowerPoint presentation on his or her role to educate the other members. **Table 1** shows the responsibilities and knowledge requirements for each role.

Table 1 - SESH Group Roles

Communicator:	<i>Trait:</i>	- Group member most fluent in French or Creole
	<i>Role:</i>	- In charge of translating
	<i>Prep:</i>	- Studying/Reviewing French or Creole - Bring translation book
Security:	<i>Trait:</i>	- Group member most aware of associated risks/dangers
	<i>Role:</i>	- In charge of making sure group is safe at all times (in tandem with Leader)
	<i>Prep:</i>	- Studying/Reviewing Associated Risks/Dangers
		- Review street smart skills - Remain aware of women's security
Medic:	<i>Trait:</i>	- Group member most capable of providing medical assistance
	<i>Role:</i>	- In charge of delegating medical tasks in an aid situation
		- In charge of providing medical assistance
	<i>Prep:</i>	- review first aid training - familiarize self with first aid backpack contents
Culture:	<i>Trait:</i>	- Group member most aware of Haitian Culture
	<i>Role:</i>	- Be familiar with Léogâne area
	<i>Prep:</i>	- Read Books (see list) - Research Websites
Team Leader:	<i>Trait:</i>	- Group member most comfortable with SESH communications
	<i>Role:</i>	- To provide direction to group
		- Makes final decisions for group
		- Keeps track of group members
		- Oversees Malaria Pill Schedule
		- Holds Phone
Design Chair		- Perform design calculations of the structure
		- Make suggestions for detailing of structure
		- Compile required materials for Haiti Engineering
Fundraising Chair		- Keep a record of all fundraising transactions
		- Report record of fundraising to Haiti Engineering and general membership

It was recommended all members be current on their immunizations including vaccines for measles/mumps/rubella, diphtheria/pertussis/tetanus, Hepatitis A&B, and Typhoid. There was also a risk of contracting malaria in Haiti, so all members brought a prescription of malaria pills, and bug spray. First-Aid kits were brought to treat minor injuries.

Finding Advice

Good advice was needed to help field any questions students may have. Among people contacted:

1. Abe Lynn - An ARCE professor who was currently working for Degenkolb Engineers on site in Haiti. He offered advice on trip planning such as having group organization and safety officers.
2. James Mwangi - An ARCE professor who has worked with the Mennonite Central Committee in Haiti. He was able to offer advice on available materials and construction methods.
3. Ken O'Dell - An industry partner with Cal Poly ARCE and also the industry advisor brought along on the SESH 2011 trip. He agreed to attend the 2012 trip and advise as the project was being constructed
4. Kim Bowen, Joe Rice, and Caelen Ball - SESH 2011 Coordinators. Kim Bowen and Joe Rice were helpful through the planning phases of the trip to offer their experience. Caelen Ball stressed the importance of a NGO to trip success.

Correspondence

There was a constant stream of correspondence between SESH and Haiti Engineering. An open line of communication with the NGO was crucial to the success of the project. The NGO acted as:

- Guide to Haiti - Responsible for the transportation of SESH members, providing a translator and running tours of Port-au-Prince.
- Trip Security Personnel - Responsible for accountability of all members of SESH, SESH property such as tools and materials, and keeping unwanted individuals away from SESH activities.
- Facilitators - Responsible for procuring construction materials, heavy equipment and hiring laborers needed to complete the project.
- Caregivers - Responsible for hiring the cooking staff, purchasing food, hiring maids, housing and providing proper hydration to the SESH members.

The series of correspondence summarized below occurred in the form of emails, phone calls, Go2meetings, and in-person meetings starting April 13th, 2012 through September 17th, 2012. A complete record of emails can be found in **Appendix C**.

April

Contact with the NGO, Haiti Engineering, was made April 13th, and Haiti Engineering agreed to work with SESH. The focus of the trip would be raising the bells at St. Rose De Lima church in Léogâne. The NGO asked for information on trip funding, length, housing, and scope. A Go2meeting web conference between SESH and the NGO was conducted in order to become acquainted. Haiti engineering was represented by Herby Lissade. Herby stressed the importance of SESH creating a webpage to support fundraising.

May

SESH notifies Haiti Engineering the webpage is up and running complete with a Razoo web applet. The Razoo applet accepted donations on behalf of SESH and transferred the funds into Haiti Engineering's account. All donors received a receipt of donation including a tax credit. SESH developed the initial budget for the trip and discussed dates for the trip. Dates were agreed upon and another Go2meeting took place. A rough agenda for the trip was prepared.

June - August 2nd

The possibility of adding a mural to the project was discussed and agreed upon. Alex Daddow (SESH) and Herby Lissade (Haiti Engineering) met in person to discuss a more detailed itinerary for the trip. Paperwork was needed to ensure safety of all members:

- Passport
- Travel Insurance
- Health Insurance
- Biographies

The coordinator collected copies of this paperwork which he brought on the trip. The members were each responsible to bring the originals on the trip; these copies were in case they lost their paperwork. All fundraising transactions were recorded and sent to Haiti Engineering for

documentation. Haiti Engineering arrived in Haiti a week early to generate a list of supplies on hand, and purchase materials.

Finalization - June 7th - August 2nd

The time period of June 7th through August 2nd was used to finalize all details of the trip. During this time, membership dropped from fourteen to ten for various reasons such as finances and safety concerns. Alex Daddow's parents offered to send a 250 pound donation of rice along with the SESH 2012 trip. Each member packed 25 pounds of rice in their personal baggage to transport the donation. The design coordinator (Andrew Jimenez) sent Haiti Engineering a list of materials needed from their estimation. Haiti Engineering sent a picture of the tools they keep in Haiti, and the SESH team used the picture in conjunction with project plans to create a list of tools and construction materials needed to bring to Haiti. From this list each member was told what tools they would need to bring in their bags. Several metal connectors were to be dispersed into members' bags as well. SESH was able to receive these metal connectors from Simpson Strong-Tie in the form of a donation. Simpson Strong-Tie donated:

- 4ct.- PB44 (Post Bases)
- 8ct.- LCE24 (Column caps, 2 per column)
- 2ct.-2U24 (Joist Hangers)

Project Development

Based on feedback from previous SESH trip members, a contingency plan was needed for any overlooked budgetary issues and construction delays. A project was needed that could be realistically accomplished in a week. Industry Partner on the trip, Ken O'Dell, suggested to build a bell tower for the Parish of Saint Rose De Lima whose church had collapsed in 2010. The church's bell tower also collapsed during the earthquake and the Parish had not heard the bells since that time. The Parish's 502nd anniversary was scheduled to be celebrated at the end of August and having a bell ring would boost local morale. Though other projects were considered, this seemed to be the most feasible, and affordable project for SESH to attempt. SESH members each submitted an idea for the bell tower design. The designs were reviewed by all members and a vote was taken. The sketch of the winning design can be seen in **Figure 1** below. Other designs were overly complicated. The members liked the symbolism of the cross shaped bench this design possessed. A mural was added to the project to commemorate those who died during the earthquake. **Figures 2, 3 and 4** show plan views of the design, and **Figures 5 and 6** show SESH's path for construction. The path shows the need to complete each concrete or masonry with enough time for curing. It also shows the need for the team to split into groups to complete construction.

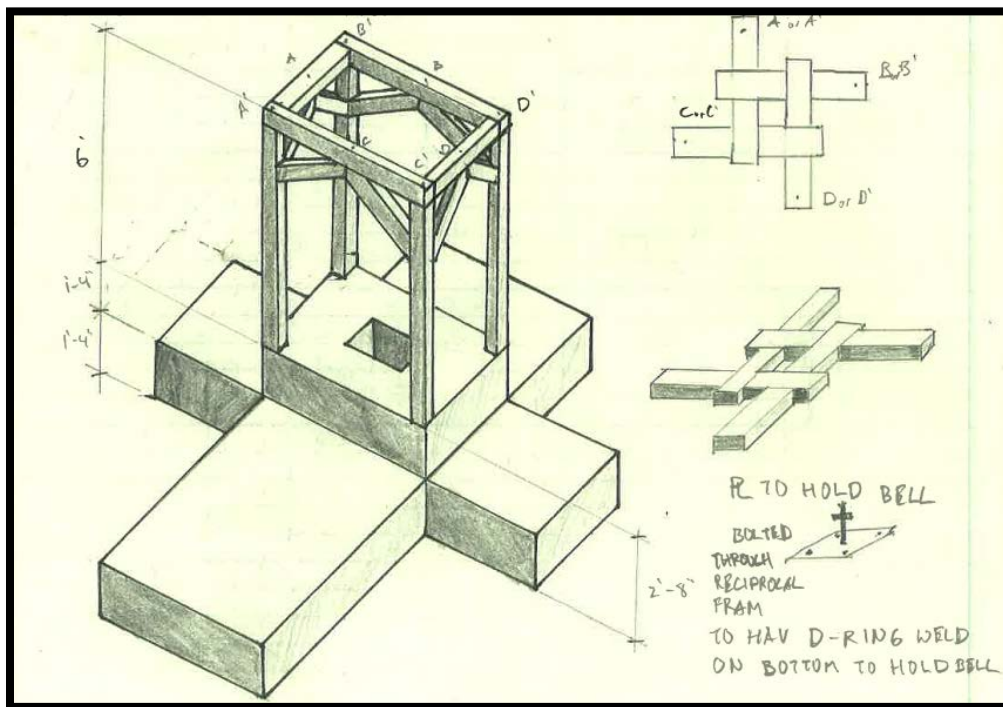


Figure 1 – The winning design sketch for the bell tower project

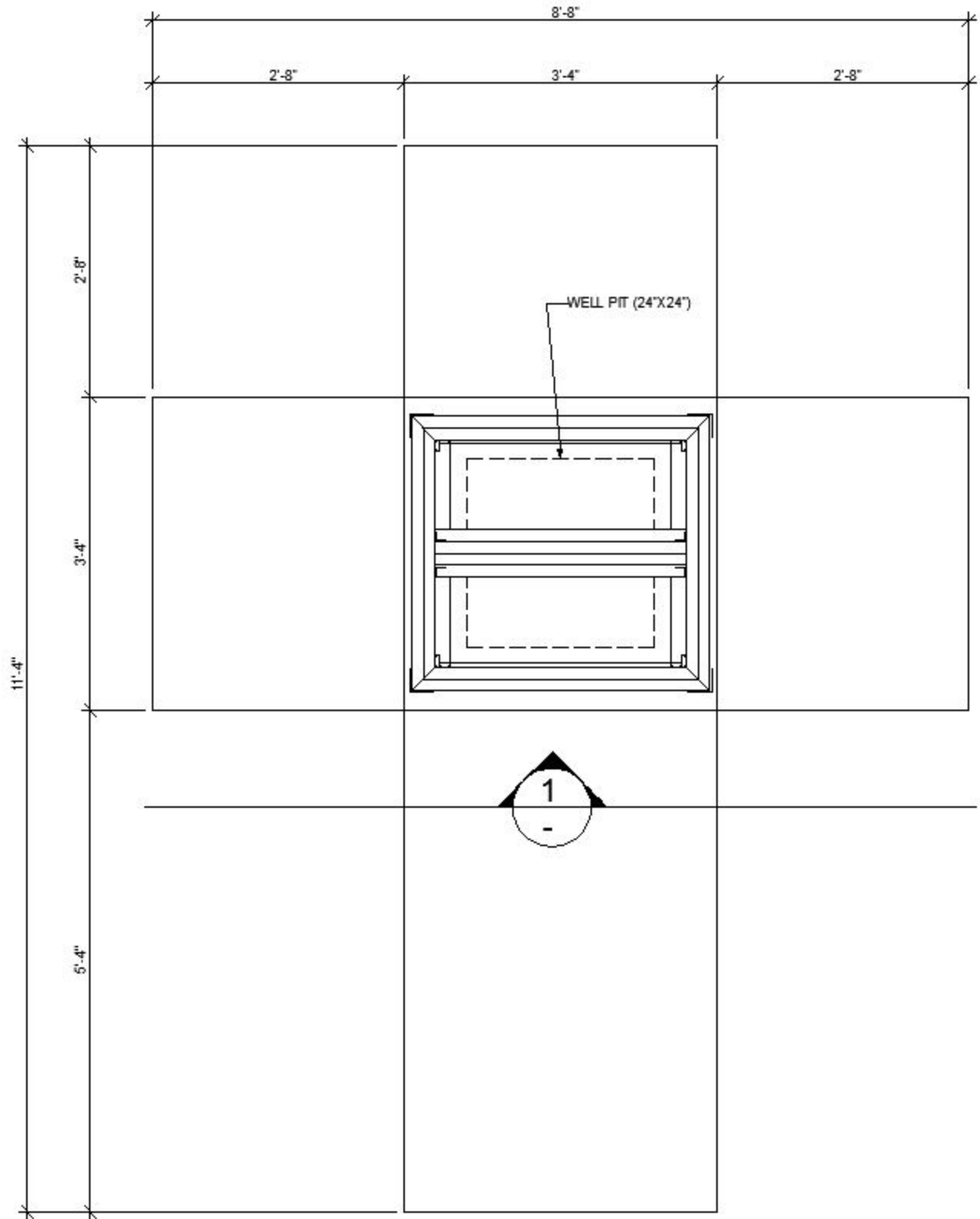


Figure 2 – Plan view of the bell tower design

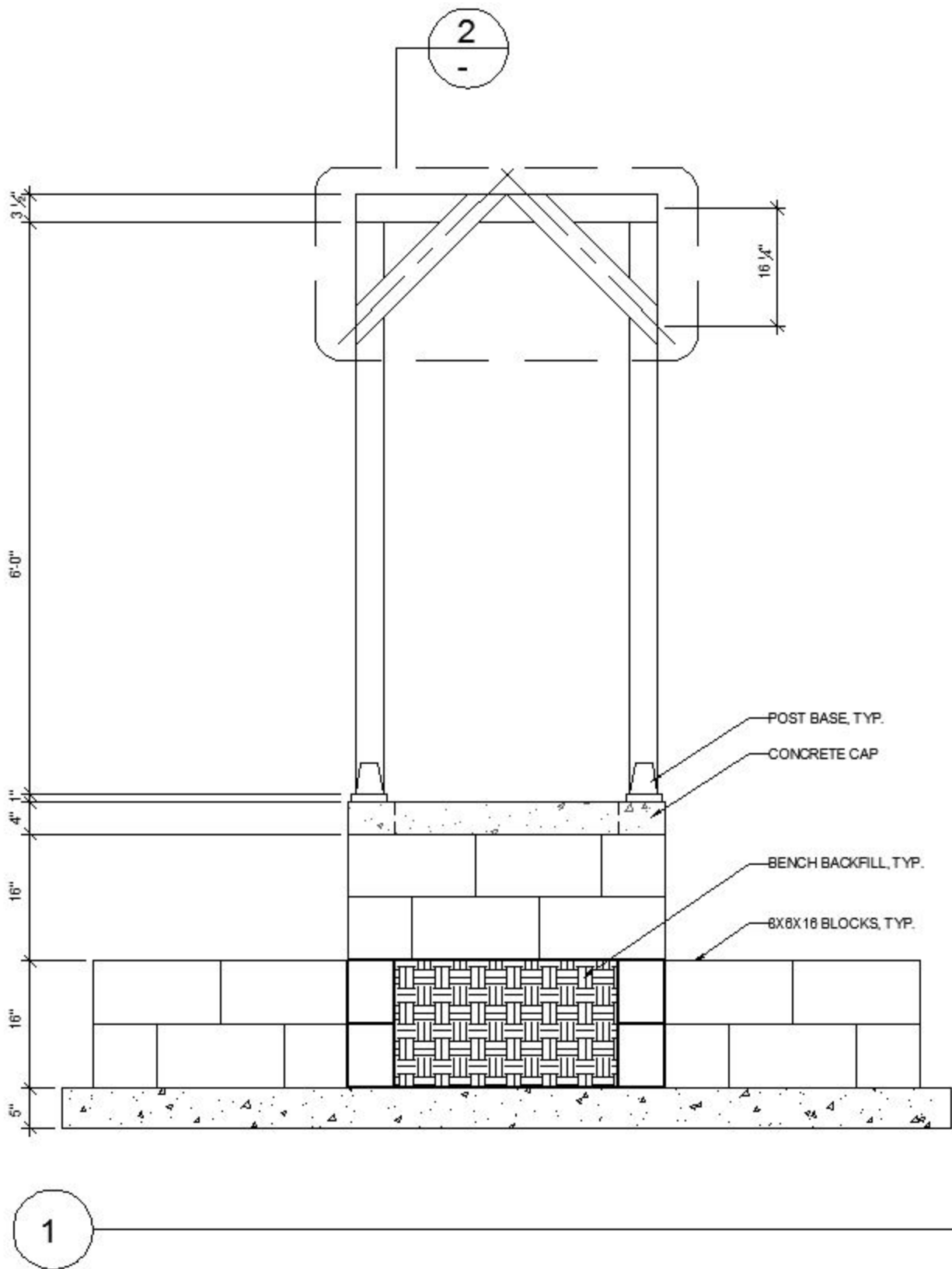
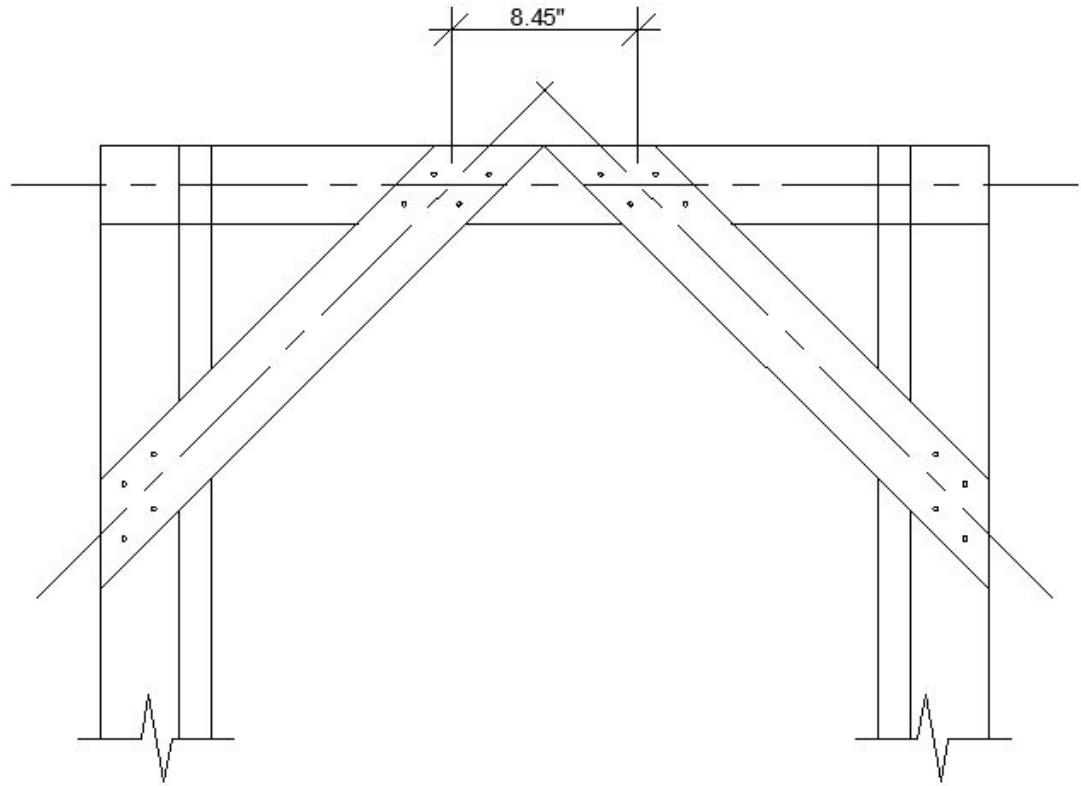


Figure 3 – Section of bell tower



2

Figure 4 – *Detail of bracing connection*

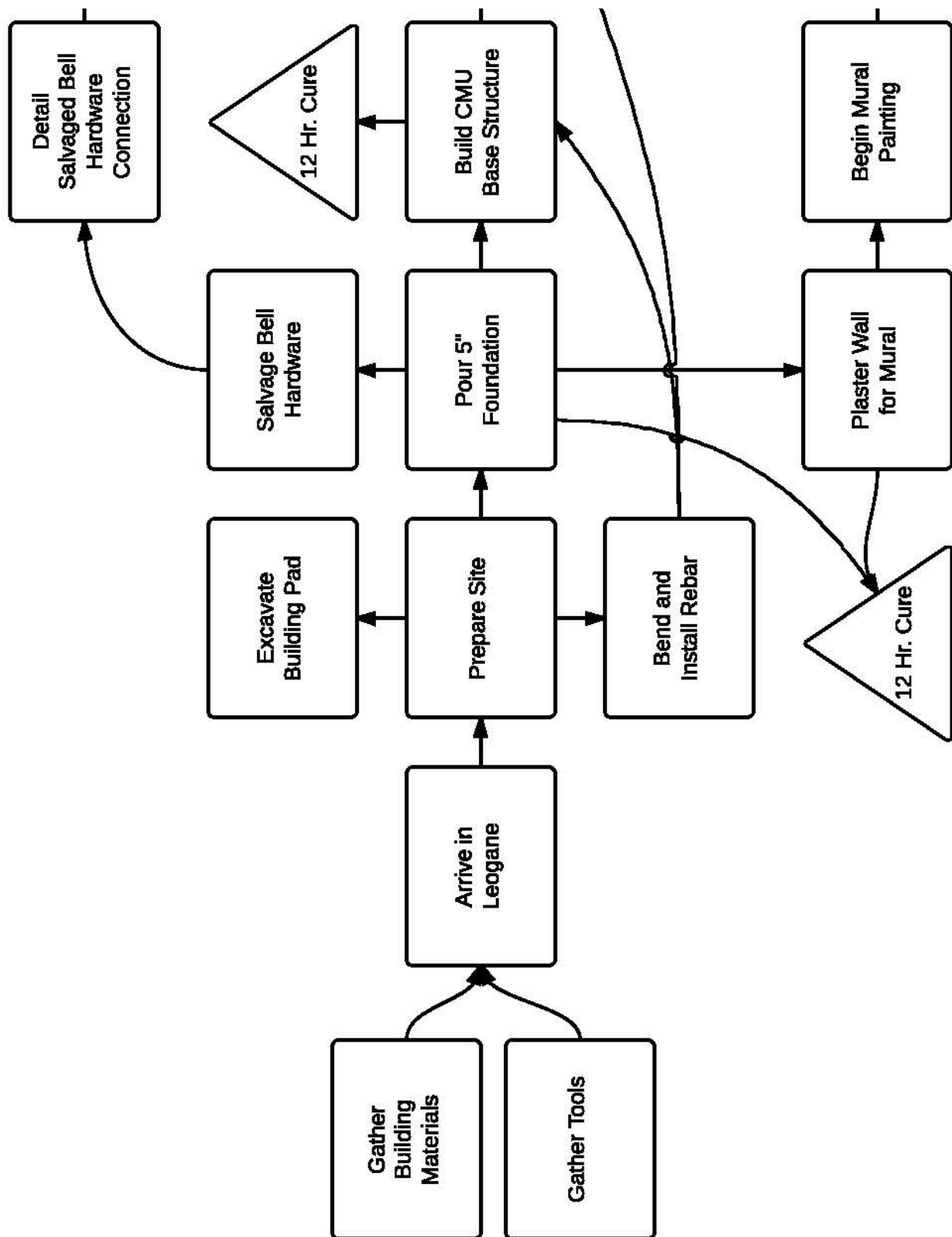


Figure 5 – SESH construction path 1

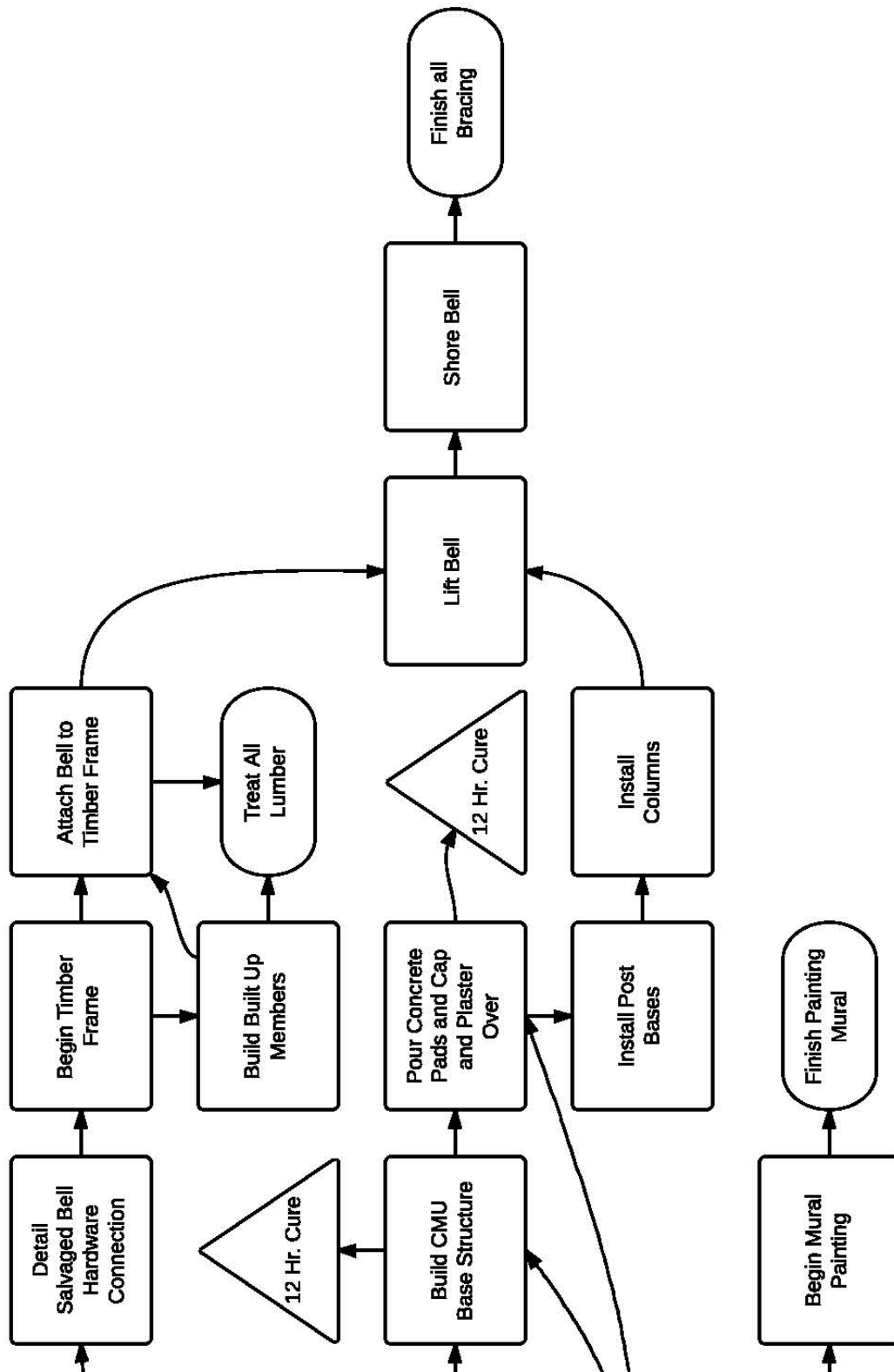


Figure 6 – SESH construction path 2

Trip Funding

Funding was important to the success of the SESH 2012 project. This SESH team saw funding as a two part problem to tackle: 1) budget, and 2) fundraising. In order to fund the project SESH needed to set a budget and generate enough funds to satisfy the budget. A review of the SESH 2011 records was conducted as a starting point.

Budget

The 2011 team set an initial budget of \$600 per participant to fundraise towards the project itself. This did not include the lodging fees charged by Haiti Engineering (HE), plane tickets, bus rentals, etc... The SESH 2011 team and HE brought up three main budget issues:

- Travel Expenses – Expenses associated with traveling to Haiti.
- Costs of Living – Expenses associated with living in Haiti for a week (including travel on the island).
- Project Costs – Expenses associated with constructing the bell tower.

Table 2 shows the 2012 SESH budget. The % Total Budget column shows the cost to each individual was divided into 50% travel, 26% cost of living and 24% project cost. The % of Section Budget shows that plane tickets comprised 80% of the travel cost. The overall budget for the trip was \$20,000.

Table 2 - SESH 2012 Budget

Budget Section	Budget Item	Dollar Amount Per Member	% of Total Budget Per member	% of Section Budget Per Member
Travel Expenses	Travel Insurance	\$50	2.5%	5.0%
	Immunizations	\$50	2.5%	5.0%
	Flight Insurance	\$50	2.5%	5.0%
	Plane Tickets	\$850	42.5%	85.0%
	Section Total	\$1,000	50.0%	100.0%
Cost of Living	Room & Board	\$420	21.0%	80.8%
	Bus Fee	\$100	5.0%	19.2%
	Section Total	\$520	26.0%	100.0%
Project Costs	Materials	\$400	20.0%	83.3%
	Contingency	\$80	4.0%	16.7%
	Section Total	\$480	24.0%	100%
	Overall Total	\$2,000	100.0%	
		Project Overall Trip Budget (10 Members)	Total	\$20,000

Funding

Each of the students in SESH was responsible to raise funds for their own \$2000 budget.

Fundraising strategies included:

- California Pizza Kitchen Fundraiser – Organizing a fundraiser through California Pizza Kitchen where SESH would receive a percentage of all products sold for an evening.
- Personal Fundraising – SESH members petitioned people from their personal lives.
- Industry Fundraising – SESH members petitioned industry companies.

A web applet was set up on the SESH webpage at <http://www.seshaiti.org/>. A record of each SESH member's fundraising is located in **Table 3**. A record of all donations (other than direct member donations) is located in **Table 4**.

Table 3 - SESH Fundraising Record

#	Name of Member	Amount Needed ₁	Personal Raised ₂	Industry Raised ₃	Total Spent on Travel ₄	Funds Disbursed ₅	Total Funds Owed ₆	Total Funds Donated ₇	Total Funds ₈
1	Alex Daddow	\$2,000	\$300	\$578	\$1,122.70	\$89	\$488	\$488	\$2,000
2	Andrew Jimenez	\$2,000	\$0	\$200	\$1,172.71	\$89	\$738	\$738	\$2,000
3	Hannah Pauling	\$2,000	\$0	\$0	\$1,250.00	\$89	\$661	\$661	\$2,000
4	Andrew Stephens	\$2,000	\$2,114	\$0	\$1,182.30	\$89	\$0	\$0	\$2,000
5	Caleb Dunne	\$2,000	\$0	\$0	\$814.70	\$89	\$1,096	\$1,096	\$2,000
6	Stephanie Rea	\$2,000	\$0	\$0	\$922.70	\$89	\$988	\$988	\$2,000
7	Robert Norton	\$2,000	\$0	\$0	\$922.70	\$89	\$988	\$988	\$2,000
8	Robyn Schmidt	\$2,000	\$0	\$0	\$1,197.70	\$89	\$713	\$713	\$2,000
9	Paul Kim	\$2,000	\$0	\$0	\$922.70	\$89	\$988	\$988	\$2,000
10	Jared Parker	\$2,000	\$0	\$0	\$1,172.91	\$89	\$738	\$738	\$2,000
	Subtotals:	\$20,000	\$2,414	\$778	\$10,681.12	\$778	\$7,399	\$7,399	
							TOTAL:	\$7,399	\$20,000

1 – Total amount member was responsible to fundraise

2 – The amount of funds each member raised from personal donor

3 – The amount of funds each member raised from industry donor

4 – The total amount of funds each member spent on travel expenses as shown in **Table 2**

5 – A disbursement of industry fundraising and any funding a member raised over \$2000

6 – The amount of funds due after travel expenses and disbursement

7 – The amount of funds directly donated by each member

8 – The total amount of funds raised by each member

Table 4 - SESH Donations^{3,4}

#	SESH Member	Amount	Industry ₁	Personal ₁	Date	Razoo ₂	Cash/ Check ₂
1	Alex Daddow	50		X	5/14/2012	X	
2	Alex Daddow	50		X	5/14/2012	X	
3	Alex Daddow	100		X	5/13/2012		X
4	Andrew Jimenez	200	X		5/14/2012	X	
5	Andrew S.	25		X	5/13/2012		X
6	Andrew S.	457.5		X	5/11/2012		cash
7	Andrew S.	91.5		X	5/12/2012		cash
8	Andrew S.	91.5		X	5/18/2012		cash
9	Andrew S.	22.88		X	5/24/2012		cash
10	Andrew S.	250		X	5/31/2012		X
11	Andrew S.	1,372.50		X	6/2/2012		cash
12	Alex Daddow	500	X		6/5/2012	X	
13	Alex Daddow	50		X	6/6/2012	X	
14	Alex Daddow	50		X	6/7/2012	X	
15	Alex Daddow	78		X	6/8/2012		X

1 – Delineation of personal or industry donation

2 – Method of collection.

3 – SESH 2012 members contributed \$16,808 of own money to the trip.

4 – SESH 2012 members contributed \$7,399 of own money to the project.

SESH Summer Trip Documentation – 2012

Project: Bell/memorial @ St. Rose De Lima Church

Locations: Port-au-Prince, Léogâne, Kaliko Beach

SESH Members: *ARCE*- Alex Daddow, Andrew Jimenez, Robyn Schmidt, Caleb Dunne,
Robert Norton, Yong Kim, Andrew Stephens, Jarred Parker
ARCH- Hannah Pauling
Alumni- Stephanie Rea Arazibal (SESH Alum and ARCE Alum)

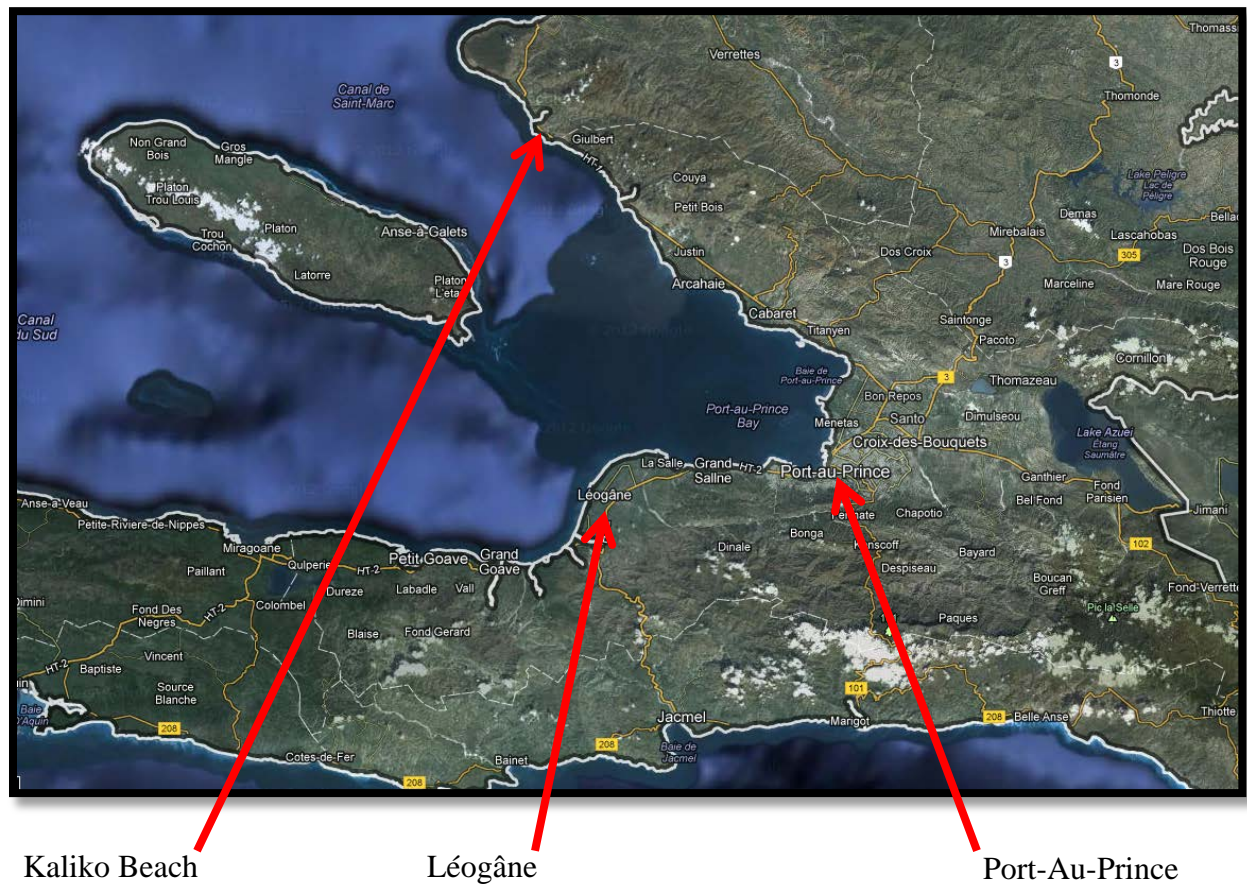
NGO: Herby Lissade, Steve Price, Pierre Auza

Industry Partner: Ken O'Dell

Overall Itinerary

- 2nd - Leave origins and meet up in groups in Florida
- 3rd - Arrive in Port-au-Prince before 9:00 am, Tour Port-au-Prince, get to Léogâne before sundown, visit project site, and settle in. (For location of Port-au-Prince and Léogâne see **Figure 7**)
- 4th - Pour a concrete foundation. Allow to cure overnight, and spend the rest of the 4th exploring Léogâne, hire painters for the mural, hire masonry workers and pass out donations of rice.
- 5th - Take a day to adjust to the climate. Go to beach house.
- 6th - Build a CMU base structure. Allow to cure overnight, and spend the rest of the 6th exploring Léogâne.
- 7th - Build wooden structure, install post bases and finish masonry work.
- 8th - Raise the bell, and treat wood.
- 9th - Present bell structure, eat lunch with the Nuncio, and travel to Kaliko. (**Figure 7**)
- 10th - Enjoy Kaliko.
- 11th - Leave Kaliko and go home.

Figure 7 – Map of Haiti



Daily Reports

August 2nd

SESH boarded flights from individual origins to meet up in Florida for the morning flights. Half of the group flew into Ft. Lauderdale and the other half to Miami. Herby was already on location in Léogâne.

Miami Group: Yong Kim, Ken O'Dell, Pierre Azua, Caleb Dunne, Jarred Parker, Robert Norton, Andrew Stephens, Stephanie Rea Arazibal, Hannah Pauling

Ft. Lauderdale Group: Alex Daddow, Andrew Jimenez, Robyn Schmidt

August 3rd

The group met up in Port-Au-Prince and toured the city via a bus Haiti Engineering chartered for SESH to use throughout the trip. The first stop was at the capitol building (**Figure 8**) and SESH saw the existing building conditions throughout the city. As the group drove through Port-Au-Prince, they saw failed structures, creeks filled with trash, and people lining the streets. Some people walked alongside the bus asking for water or food. The group stopped at Jillianne Theodore's house and saw an old structure she hoped to turn into a community center/school. SESH advised her on the renovation work she wanted to have done to this CMU block structure.



Figure 8 – *Collapsed capitol of Haiti*

The group drove to Léogâne and got settled into the Haiti Engineering house. The house is owned by Herby Lissade and it is used as a base of operations for Haiti Engineering while in Haiti. At night the building site was visited for the first time (**Figure 9**). It was decided to clear and level the site in preparation for construction. It was noted the bell was larger than expected for the proposed design. The project was revised that night to account for the larger bell size. The plans were redrafted to accommodate the wider bell.



Figure 9 – *SESH 2012 at the building site*

August 4th

Work started on the site by digging the foundation. Foundations were five inches below grade to provide a solid base for the structure. Ken O'Dell took a group of students to help remove the existing mounting hardware from the bell and decide the best orientation of the U-bolts for the connection of the bell to the wood assembly. The remaining students mixed concrete and poured the foundation (**Figure 10**). The foundation was a continuous footing 5"x12" with two #3 rebar along its length.



Figure 10 – *Members mixing concrete in dirt*



Figure 11 – *Andrew Stephens using improvised gate hinge* was found which worked well for bending rebar (**Figure 11**). The group hired a man named Wilson through Haiti Engineering to help with various construction tasks for the remainder of the trip.

After leaving the construction site to let the concrete cure overnight, SESH went to St. Rose de Lima parish. The group found children singing various songs (**Figure 12**). Alex gave a brief introduction and proceeded to measure out the rice into individual bags to be distributed to each student in the room. At Saint Rose De Lima each child (fifty total), received 2 lbs. of rice.



Figure 12 – *The children of Saint Rose De Lima Parish*

August 5th

The group was not allowed to work on Sunday by request of the church and spent the day exploring other parts of the island. They took the native Haitian transportation, a “Tap-Tap” (**Figure 13**) to visit Father Jasmine at St. Michel, and left the rest of the rice with him to distribute. The church at St. Michel parish had failed during the 2010 earthquake. The roof had collapsed due to poor diaphragm connection to the lateral system (**Figure 14**). SESH members observed the damage. SESH drove to a private beach house, had lunch, explored, climbed trees for coconuts, and enjoyed the scenery. After lunch, SESH walked on the beach and took advantage of their day off, relaxing in the ocean.



Figure 13 – SESH 2012 in the Tap-Tap



Figure 14 – The church building at Saint Michel's Parish

August 6th

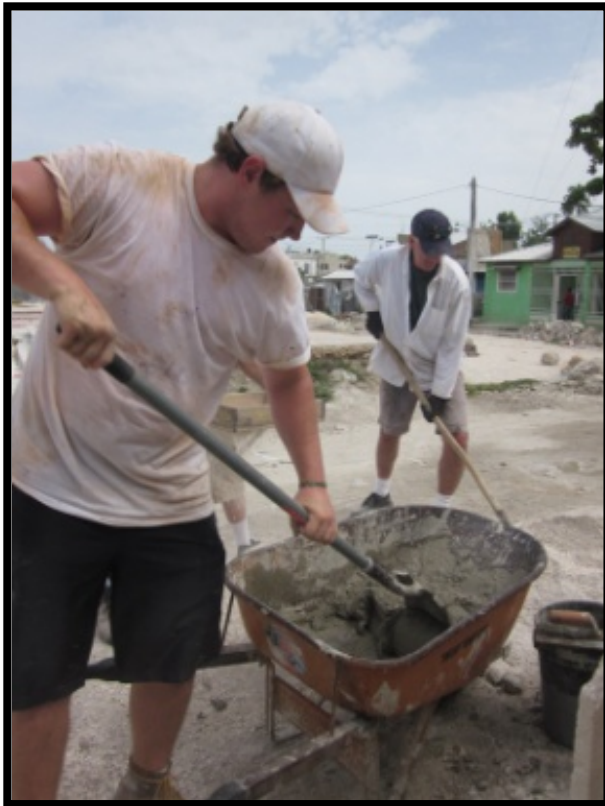


Figure 15– *Alex mixing concrete*



Figure 16 – *Setting the first course of CMU*

grout. This time the mixing occurred in a wheelbarrow with shovels (**Figure 15**). The group used leveling line to set the first course masonry block (**Figure 16**). Rebar dowels were cut for vertical reinforcing (**Figure 17**). Grout was poured within the cells to achieve the desired bond. The grout provided a bond between subsequent courses. Considering all of the inexperience in working with these materials, SESH members did well with the masonry work. Halfway through the day, Alex realized that the task laid out for the day was too great for just SESH to complete. SESH then hired some local masons and learned how to quickly adjust the amount of mortar to level the courses. The bell was thoroughly cleaned.



Figure 17 – *Robyn and Hannah cutting rebar*

With the help of the hired masons, the block was completed by the end of the day. The Haitian contractors were paid in United States Dollars and their wages differed from \$2.00/day to \$10.00/day based of type of labor provided. Haiti Engineering handled the negotiations of wage. Communicating with the workers was difficult since they did not speak English. Pierre Azua knew basic Creole and some of the students were able to speak Spanish to the workers. Most of the communication was conducted using visual examples. A member would show a worker how SESH wanted the work done and the worker would mimic that behavior.

August 7th

On the third day of construction rebar dowels were cut and U-ties were bent for the horizontal reinforcing steel. The rebar was laid atop the benches (**Figure 18**) before the hired masons poured the concrete bench slabs. Formwork was built for the concrete cap and the concrete cap



Figure 19 – Robert, Caleb and Ken work on the wood framing



Figure 18 – Rebar layout and concrete cap with accent

was poured. The hired masons also started placing rock décor in the center of each bench (**Figure 18**). The lumber was cut to desired lengths and screwed together to form built up 4Xs for the posts of the structure. Constructing the wood assembly to hold the bell was also started (**Figure 19**). Hired Haitian painters, Nesly and Mass, painted a mural behind the project. The group worked as long as possible, stopping only when a thunderstorm hit. The group ran back to the house, and took full advantage of the nice change in weather. This long day set SESH up well for the final day of construction on the 8th.

August 8th

The main task for the last day of construction was connecting the wood assembly to the bell and raising the bell to the top of the posts. The group first dry-fit the wood assembly to the posts and proceeded to fix the bell to the wood assembly with U-bolts. The wood was treated to help with swelling, termite infestation, and warping. The group tried lifting the bell slowly using CMU block steps to gradually raise the bell/wood assembly by hand (**Figure 20**). While this was happening, confirmation was received that the



Figure 20 – SESH 2012 attempting to raise the bell by hand



Figure 21 – Alex crafting rigging for the bell equipment to raise the bell was coming. SESH was told the equipment would arrive without rigging. SESH improvised a sling out of some leveling line (**Figure 21**). The equipment (excavator) arrived on site and raised the bell. Once in place, the team began working to attach temporary braces before removing the bell from the excavator (**Figure 22**). SESH quickly placed the



Figure 22 – The bell structure held up by temporary bracing and an excavator

screws and connected the final braces before the project deadline, 7:00 pm. The last screw attached at 6:55 pm and Ken O'Dell immediately rang the bell for the first time.

August 9th

SESH attended mass at St. Rose de Lima in the morning, where the father officially thanked the group for the contribution to the church. At two separate times during the service, he turned and translated what he were saying into English so that the group knew he and his congregation was thankful. A dedication ceremony followed the service where the father talked again about the project and how



Figure 23 – *The completed SESH project*



Figure 24 – *SESH member's sitting down to eat at the Nuncio's House*

23 shows the SESH 2012 group in front of their completed project. The group received many thanks from the local community. The Nuncio of Haiti invited SESH to lunch at his house to thank the group for their work (**Figure 24**). The group spent the afternoon enjoying the Nuncio's company with a fantastic meal before driving to

meaningful it was to the community of Léogâne. Pierre Auza and Betina (one of the Haiti engineering house maids) sang “How Great Thou Art”, starting off in English and finishing in Creole. The church community joined in to finish the song, and the bell was rung for 35 seconds (the duration of the 2010 earthquake). After the ceremony, each SESH member walked up and rang the bell. **Figure**



Figure 25 – *SESH looking over all of Port-Au-Prince from the Nuncio's house*

Kaliko beach. The Nuncio served SESH lobster pasta, salad, lamb chops and ice cream. This was a large improvement on the rice, beans, plantains, and soups the group had been eating all week. Going from the tight living of the Haiti Engineering house (where members slept four to a room) to the spacious luxury of the Nuncio's house showed the vast class separation present in Haiti.

Figure 25 shows the view from the Nuncio's house.



Figure 26 – *SESH in front of the Kaliko beach house*

cooling down at the beach was well earned since the group had suffered through four days of hard labor in the Haitian August heat. **Figure 27** shows the view of Kaliko beach. The temperature throughout the trip stayed above ninety degrees Fahrenheit during the day with seventy percent humidity. A final trip recap was held that night and all members couldn't stop talking about the structure and the appreciation that was shown for it.

SESH spent the last day in Haiti relaxing at the beach in Kaliko; enjoying swimming, snorkeling, relaxing, bonding, appreciating the island, and reflecting on all aspects of the trip (**Figure 26**). The time spent



Figure 27 – *Kaliko beach view*

August 11th

The group woke up early to drive back to Port-au-Prince to catch flights to each individual destination.

Post Trip

Several emails were sent to conclude the trip reporting, share photography, and thank Haiti Engineering for making another SESH trip possible. SESH provided all trip documentation to Haiti Engineering. At the end of each day SESH ran a nightly recap to discuss what had happened. These recaps were run by various members of SESH. The SESH coordinator wrote three questions for each person to answer each night. Some of the questions asked were:

- What was your favorite part of the day?
 - Hearing the kids singing to us and praying.
- What was your most challenging part of the day?
 - Trying to salvage the U-bolts from the old bell.
- Name one thing you learned about one of your fellow SESH members while working with them?
 - Everyone contributes their own unique background.
- How do you think today's work will help you in your chosen field?
 - Help a lot in handling curveballs in projects.
- If you have suggestions for making the trip better what would they be?
 - Having the right tools for the job.

After each member answered the questions they could add any additional comments they would like. A record of these recaps can be seen in **Appendix F**. Pierre Auza (a representative of Haiti Engineering who attended the trip) took extensive notes of these nightly recaps and sent them to SESH. A thank you email was sent to all contributors which included a PowerPoint presentation of the trip and a rough-draft trip report. The email can be found in **Appendix D**, the power point in **Appendix E**, and the report can be found in the section titled, "SESH Summer Trip Documentation - 2012."

Analysis of As Built Bell Structure

Because there were changes made to the design of the structure during construction, SESH completed a simple structural analysis on the new configurations. Since the structure is not occupied it did not merit a complete Load and Resistance Factored Design analysis. Seismic and wind loads were determined using the American Society of Civil Engineers Minimum Design Loads for Buildings and Other Structures (ASCE 7-05). Seismic loading was found to govern the design. The loads were then applied to an Extended Three-Dimensional Analysis of Building Systems (ETABS) model from which design stresses were extracted. The wood members were then checked using Allowable Stress Design based on the American Wood Council National Design Specifications for Wood Construction (NDS). The masonry walls and foundations were checked using the Masonry Standards Joint Committee Masonry Code (MSJC) and the American Concrete Institute Building Code requirements for Structural Concrete (ACI) and Commentary respectively. The completed calculation package can be found in **Appendix G**.

Computer Modeling

An ETABS computer model was made of the as-built structure (**Figure 28**). See **Appendix G**, “Calculation Package,” for explanation of what was modeled and connectivity.

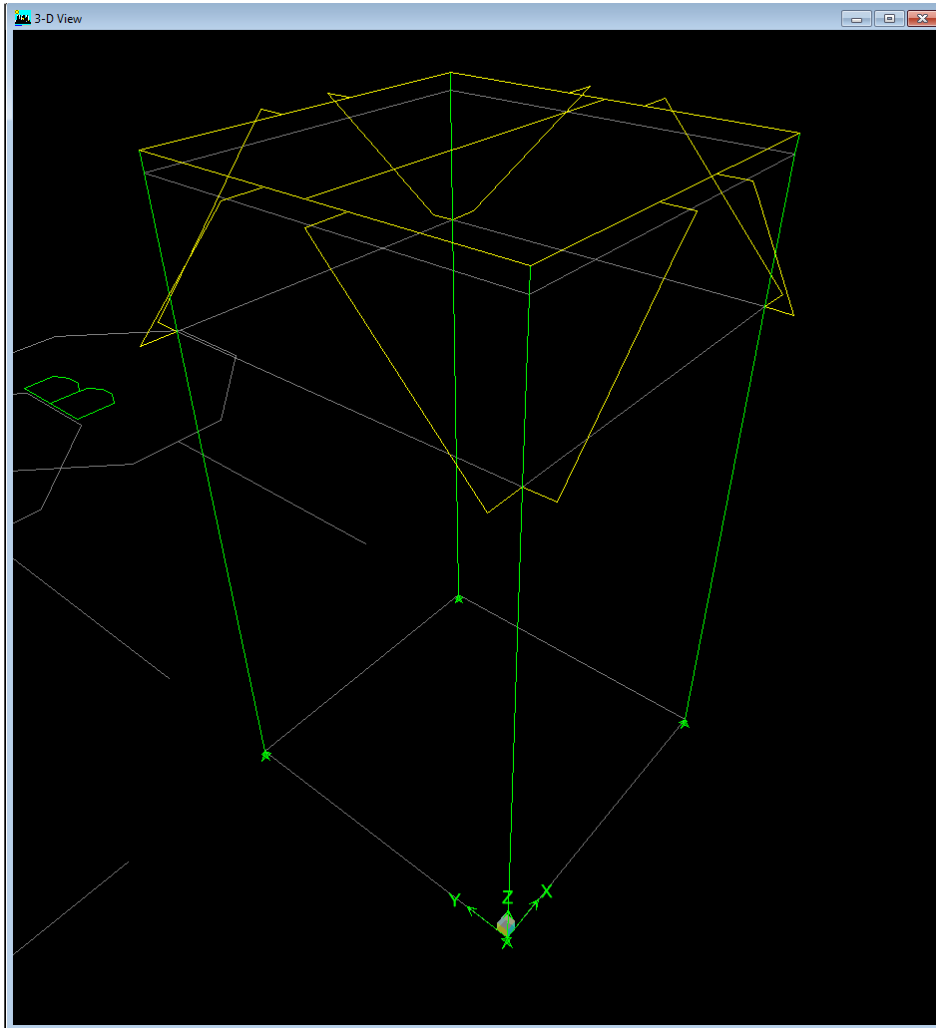
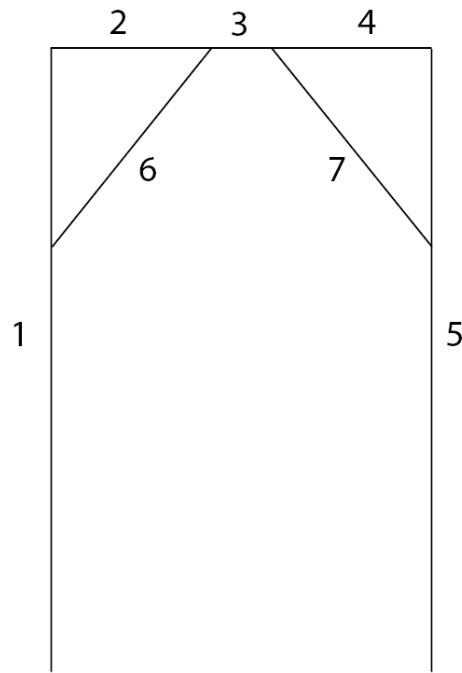


Figure 28 - *ETABS model setup*

Summary of Calculations

Since the maximum seismic load at the base of the wood structure was found to be 4.33 times larger than the maximum wind loading, wind loading was deemed negligible. After extracting forces from the ETABS model, a summary of the forces was drawn and members of concern were identified. These members were then checked against the NDS using a spreadsheet. Each member of a typical frame elevation was given a number designation as shown in **Figure 29**. Results of this check can be seen below in **Table 5**.



TYPICAL MEMBERS IN A FRAME ELEVATION

Figure29 – *Member designations for analysis*

Table 5 – *Summary of Wood Member Checks*

Demands - Member 1					Demands - Member 2					Demands - Member 3 (left end)				
$f_{b1} =$	413.10	psi	$\leq F_b'$	✓	$f_{b1} =$	24.49	psi	$\leq F_b'$	✓	$f_{b1} =$	875.10	psi	$\leq F_b'$	✓
$f_v =$	8.57	psi	$\leq F_v'$	✓	$f_v =$	4.29	psi	$\leq F_v'$	✓	$f_v =$	4.29	psi	$\leq F_v'$	✓
$f_c =$	10.48	psi	$\leq F_c'$	✓	$f_c =$	79.05	psi	$\leq F_c'$	✓	$f_c =$	20.00	psi	$\leq F_c'$	✓
$f_t =$	10.48	psi	$\leq F_t'$	✓	$f_t =$	79.05	psi	$\leq F_t'$	✓	$f_t =$	20.00	psi	$\leq F_t'$	✓
$f_{b2} =$	0.00	psi			$f_{b2} =$	N/A	psi			$f_{b2} =$	N/A	psi		
$f_{b \text{ tot}} =$	413.10	psi	$\leq F_b'$	✓	$f_{b \text{ tot}} =$	N/A	psi	$\leq F_b'$	✓	$f_{b \text{ tot}} =$	N/A	psi	$\leq F_b'$	✓
Bending +Compression					Bending +Compression					Bending +Compression				
0.28	≤ 1.0	✓			0.02	≤ 1.0	✓			0.58	≤ 1.0	✓		
Bending + Tension					Bending + Tension					Bending + Tension				
0.28	≤ 1.0	✓			0.09	≤ 1.0	✓			0.60	≤ 1.0	✓		
0.27	≤ 1.0	✓			-0.04	≤ 1.0	✓			0.57	≤ 1.0	✓		

Demands - Member 3 (right end)	Demands - Member 4	Demands - Member 5
$f_{b1} = 0.00 \text{ psi} \leq F_b' \checkmark$ $f_v = 145.71 \text{ psi} \leq F_v' \checkmark$ $f_c = 17.14 \text{ psi} \leq F_c' \checkmark$ $f_t = 17.14 \text{ psi} \leq F_t' \checkmark$ $f_{b2} = \text{N/A} \text{ psi}$ f_b $f_{b \text{ tot}} = \text{N/A} \text{ psi} \leq F_b' \checkmark$	$\leq F_b'$ $f_{b1} = 928.98 \text{ psi} \checkmark$ $f_v = 61.43 \text{ psi} \leq F_v' \checkmark$ $f_c = 40.95 \text{ psi} \leq F_c' \checkmark$ $f_t = 40.95 \text{ psi} \leq F_t' \checkmark$ $f_{b2} = \text{N/A} \text{ psi}$ f_b $f_{b \text{ tot}} = \text{N/A} \text{ psi} \leq F_b' \checkmark$	$f_{b1} = 815.19 \text{ psi} \leq F_b' \checkmark$ $f_v = 15.00 \text{ psi} \leq F_v' \checkmark$ $f_c = 48.57 \text{ psi} \leq F_c' \checkmark$ $f_t = 48.57 \text{ psi} \leq F_t' \checkmark$ $f_{b2} = 0.00 \text{ psi}$ $f_{b \text{ tot}} = 815.19 \text{ psi} \leq F_b' \checkmark$
Bending +Compression	Bending +Compression	Bending +Compression
0.00 $\leq 1.0 \checkmark$	0.62 $\leq 1.0 \checkmark$	≤ 1.0 0.60 \checkmark
Bending + Tension	Bending + Tension	Bending + Tension
0.02 $\leq 1.0 \checkmark$	0.65 $\leq 1.0 \checkmark$	≤ 1.0 0.58 \checkmark
-		≤ 1.0
0.01 $\leq 1.0 \checkmark$	0.59 $\leq 1.0 \checkmark$	0.51 \checkmark

Demands - Member 6	Demands - Member 7	Demands - Bell Beam
$f_{b1} = 0.00 \text{ psi} \leq F_b' \checkmark$ $f_v = 0.00 \text{ psi} \leq F_v' \checkmark$ $f_c = 55.24 \text{ psi} \leq F_c' \checkmark$ $f_t = 55.24 \text{ psi} \leq F_t' \checkmark$ $f_{b2} = \text{N/A} \text{ psi}$ f_b $f_{b \text{ tot}} = \text{N/A} \text{ psi} \leq F_b' \checkmark$	$\leq F_b'$ $f_{b1} = 0.00 \text{ psi} \checkmark$ $f_v = 0.00 \text{ psi} \leq F_v' \checkmark$ $f_c = 123.81 \text{ psi} \leq F_c' \checkmark$ $f_t = 123.81 \text{ psi} \leq F_t' \checkmark$ $f_{b2} = \text{N/A} \text{ psi}$ f_b $f_{b \text{ tot}} = \text{N/A} \text{ psi} \leq F_b' \checkmark$	$f_{b1} = 610.20 \text{ psi} \leq F_b' \checkmark$ $f_v = 30.71 \text{ psi} \leq F_v' \checkmark$ $f_c = 0.00 \text{ psi} \leq F_c' \checkmark$ $f_t = 0.00 \text{ psi} \leq F_t' \checkmark$ $f_{b2} = 355.95 \text{ psi}$ $f_{b \text{ tot}} = 966.16 \text{ psi} \leq F_b' \checkmark$
Bending +Compression	Bending +Compression	Bending +Compression
0.00 $\leq 1.0 \checkmark$	0.01 $\leq 1.0 \checkmark$	≤ 1.0 0.40 \checkmark
Bending + Tension	Bending + Tension	Bending + Tension
0.05 $\leq 1.0 \checkmark$	0.11 $\leq 1.0 \checkmark$	≤ 1.0 0.40 \checkmark
-	-	≤ 1.0
0.04 $\leq 1.0 \checkmark$	0.08 $\leq 1.0 \checkmark$	0.40 \checkmark

Demands - Bell Beam 2				
$f_{b1} =$	470.95	psi	$\leq F_b'$	✓
$f_v =$	30.71	psi	$\leq F_v'$	✓
$f_c =$	15.71	psi	$\leq F_c'$	✓
$f_t =$	15.71	psi	$\leq F_t'$	✓
$f_{b2} =$	0.00	psi		
f_b $f_{tot} =$	470.95	psi	$\leq F_b'$	✓
Bending + Compression				
0.32	≤ 1.0			✓
Bending + Tension				
0.33	≤ 1.0			✓
0.30	≤ 1.0			✓

All member connections were then checked using the NDS and the Simpson Strong Tie Catalog. All Simpson ties were found to be within the catalog design limits. The dowel type connections were acceptable by a safety factor of 1.23. The compressive strength of the masonry was assumed lower than referenced values from the MSJC to compensate for poor quality material and joint work. This check showed the walls to be adequate by a safety factor of 22. The foundation was checked for slip and bearing using the text, Soils and Foundations, by Cheng Liu and Jack Evett. The foundation was deemed adequate for slip, with a safety factor 1.47, and for bearing, with a safety factor 1.39.

The new design configuration was found to be adequate. All aspects of the design met minimum code strength requirements. With the assumption that all construction details were built correctly and no major damage has occurred, the structure can be expected to withstand a fifty year earthquake or wind event.

Trip Comments: What Went Well and Should Be Repeated

Fundraising

As a group, fundraising could have been executed more effectively. Given the short timeframe, it is understandable that trip preparation was emphasized more than fundraising. Industry donations were few and many SESH members paid their own way. Because of this, several members dropped out of the trip for financial reasons. Lowering the cost of the trip would allow for more students to attend. Future trips should start fundraising early in the year and diversify the industry contacts. Construction Management firms typically have more money to donate and should be contacted. SESH should send letters signed by all members with an information brochure to possible donors. If SESH was to become recognized as an official non-profit and Associated Students Incorporated recognized club, the trip fundraising and expenses could be subsidized. Though industry fundraising was not as effective as it could be, some of the SESH members were successful at gaining donations from personal donors. Most notably Andrew Stephens was able to exceed his budget in donations allowing him to attend the SESH trip for free.

Communication with Haiti Engineering

Meetings and communication with Haiti Engineering went well but could have been more efficient. SESH conducted weekly web-conferences via Go2meeting. Though meetings were frequent, they were not efficient. Meeting topics and meetings ran longer than expected. Nevertheless, the Go2meetings provided effective communication between the entire SESH membership and Haiti Engineering.

Communication with Haiti Engineering in Haiti could be improved. SESH did not explicitly tell Haiti Engineering of the need for a generator on a daily basis or for lifting equipment with proper rigging. This lack of communication became a source of stress and created significant challenge. Future SESH groups should compile a complete list of necessary items, and provide this list to the NGO well in advance of the trip.

Working with the Locals

Working with and teaching the local contractors was difficult. Employing a Haitian translator who was familiar with the local dialect and common construction terms would have been very beneficial. If the contractors were not constructing properly, SESH could communicate more effectively with a properly trained translator. Haiti Engineering supplied Pierre Auza, a translator. Pierre knew some basic Creole, however he was not always available and was not familiar with construction practices or terminology. One of SESH's goals is to help educate the local contractors with better construction practices. Exposing the local contractors to good construction practices could be better achieved with an open line of communication between the contractors and SESH. However, SESH helped introduce capital into the Haitian Economy by employing locals. While in Haiti SESH kept three cooks, three maids, three masons, one laborer, and two painters employed for five days.

SESH Teamwork

Bringing ten SESH members was appropriate. There was enough work to keep everyone occupied throughout. All members showed exemplary teamwork. When more work was identified, members took initiative to complete the task. Construction experience among SESH members varied, which allowed for teaching and learning among the group. The group showed its inexperience when attempting to lay block on the second day of construction, but was able to recognize and fix the problem by hiring help. Bringing more members could allow working in shifts; leaving time for members to experience more of the Haitian culture while still completing the project. Construction efficiency and safety may also increase due to members being well rested.

Ken O'Dell's Contributions

Having an industry partner on the SESH 2012 trip was invaluable. Having an experienced professional to answer questions gave SESH members confidence and helped with brainstorming. It is important to note that Ken did not take control of the project; he was simply there to assist in any way he could. Ken O'Dell was able to manage a small group of members dedicated to salvaging bell hardware from the fallen bells. He helped this group detach the hardware and reconfigure the parts to mount the bell to SESH's structure. He was able to use his

engineering experience to help SESH distinguish the important details of the project and discount unrealistic intentions. It would be wise for future SESH group's to bring an industry partner to guide their projects.

The Experience

The social service goals of SESH were all accomplished. The SESH team was able to experience the devastation created by poor building practices in Haiti while touring the country. They also experienced the Haitian culture from the squalor in Port-au-Prince to the prestige of Kaliko. The rice donation and project allowed the members participate in humanitarian aid.

SESH was also able to accomplish their engineering goals. The members learned the difference in detailing between two cell blocks and three cell blocks. They learned the importance of construction materials when the blocks arrived in an unexpected size, and the project had to be redesigned. The members saw how a set of plans transforms into a tangible structure and the sequencing of a construction project.

SESH's leadership goals were also accomplished. Members communicated proper construction practices across a language barrier by physical demonstrations. Members learned the importance of teamwork during a construction project. Initiative was required of all members to ensure the completion of the project; there were many unanticipated challenges that needed to be addressed. And, finally, SESH ensured this mission would continue by electing a new SESH Coordinator, Caleb Dunne.

Everything Else

The Haiti engineering house provided SESH with satisfactory accommodations compared to the norm in Haiti. Each room housed at least three members; beds and cots were provided. Breakfast and dinner were provided by cooks hired by Haiti Engineering, which allowed the group to experience authentic Haitian food. Transportation in Haiti was provided in the form of a chartered bus or Tap-Tap.

Future groups should bring at least \$200 for spending money, which converts to 8000 Haitian Gourdes. This money would be for purchasing food at the airport, buying any Haitian

souvenirs and providing tips for locals that provide assistance. It should be noted that bartering is accepted and even expected in street markets. Any unwanted clothing would also be useful for trading with locals for goods.

The Future of SESH

Possibility of Adding Other Majors to the Trip

Although an Architecture student did join the trip, she was obtaining information for her thesis, rather than assisting SESH. She contributed to the architectural aspects of the project such as the mural and accent rocks. It may have been beneficial to have a construction management student on site to help coordinate construction in an efficient manner. Because SESH projects will actually be built, they're a great opportunity for construction management students to gain practical experience. Also, it enhances the interdisciplinary focus of Cal Poly, San Luis Obispo.

Changing Structural Engineering Students for *Haiti to Humanity*

SESH is expected to continue for years to come, and hopefully reach out to other underdeveloped countries as well. Because of this, SESH has changed from Structural Engineering Students for Haiti to Structural Engineering Students for Humanity. This change may facilitate formal sponsorship from Associated Students Incorporated and recognition from the College of Architectural and Environmental Design on the Cal Poly San Luis Obispo campus. The group sees this as a positive step towards expanding the organization to other campuses.

Possibility of Making SESH a Multi-College Program

Herby Lissade identified a group of students from Sacramento State University interested in pursuing something similar to the SESH trip. If SESH members were able to collaborate with other colleges across the nation, the impact of SESH on underdeveloped countries could grow. SESH has the potential to influence the engineering careers of students on a national scale.

Appendices

Appendix A – SESH Educational Package

Preparation

Although there are many risks associated with traveling to Haiti, SESH is trying to consider all possible health and safety concerns and plan for them accordingly. By interviewing professionals who have traveled to Haiti, researching the culture, history, and current economic and political climate in Haiti, holding training sessions to prepare students for the conditions we will face during the trip, traveling through MCC, a reputable NGO and staying within their compound, coordinating with ARCE professor James Mwangi, who has been working with MCC in Haiti since August 2010 and will be in Port-au-Prince during our visit, and traveling with Ken O'Dell, a structural engineering professional who has previously visited Haiti, we hope to mitigate the risks associated with traveling to a developing country.

Trip Logistics

You should be aware of the uncertain security situation when traveling in Haiti. The security situation remains fragile, and a UN peacekeeping force (MINUSTAH) has been deployed in Haiti since 2004. Those traveling to Haiti should exercise a high degree of caution. You should take the following precautions:

- You should travel with a knowledgeable and reliable guide
- You should avoid all public transportation
- Ensure you have all supplies you might need for your stay, as fuel, food and water shortages are likely
- You should be aware that the security situation in Haiti can change at short notice

Money

The official currency is the gourde, although US dollars are also largely accepted for large purchases. The gourde rate of exchange to the US dollar is one to five. Traveler's checks are not necessary and are nearly impossible to change, and there are ATMs in Port-au-Prince, but they can be unreliable, so students should carry some US dollars as backup.

Medical Services

You should take out comprehensive travel and medical insurance and check any exclusions before traveling. This should cover medical evacuation by air ambulance. Port-au-Prince has a few international-standard hospitals, and there are decent pharmacies across the country.

Visas

No visa is needed to visit Haiti, just a passport valid for six months and a return ticket. Each traveler will be given a green entry card to be produced on departure from Haiti that must not be lost during the trip.

Food / Lodging / Transportation

Most of the logistical travel arrangements during our stay will be coordinated through the NGO we are traveling with, the Mennonite Central Committee (MCC). For the duration of our trip, we will be staying in MCC's guarded compound, and they will provide our group with food and safe transportation.

Communication

Communication back to the US will not necessarily be reliable during our trip, but students should have access to internet and international telephones, which can be used with international calling cards. However, SESH will be continually updating our Facebook page during the trip so that family and friends will be informed of our progress and safety during the week.

U.S. Embassy

The American Citizen Services Unit in the Consular Section of the U.S. Embassy in Haiti is located in Port-au-Prince. In case of an emergency, the main Embassy phone number is (509) 2-229-8000, and the email address is acspap@state.gov.

Dangers & Annoyances

Haiti has rarely enjoyed a good media image abroad. Poverty and regular political turmoil play their part, and many governments currently advise against travel to the country. The presence of UN soldiers has done much to bring stability to Haiti, especially in dealing with gangs and kidnapping. But travelers should stay up-to-date on current developments.

While taking care to be sensible, it's important not to get too hung up on Haiti's bad reputation. Many travelers fear the worst and avoid the country, but those who do make it are likely to come away with positive impressions and a rewarding experience.

COMMON CREOLE WORDS AND PHRASES

CREOLE - ENGLISH * * * * *

Bonjou! - Good morning!
Bonswa! - Good afternoon!/Evening! (used after 11 AM)
Komon ou ye? - How are you?
N'ap boule! (most common greeting and response) - Good!
Wi - Yes
yo - they, them
Non - No
Mesi - Thanks
Anmwe! - Help!
Non, mesi - No, thanks
Souple - Please
Merite - You're welcome
Pa gen pwoblem - No problem
Oke - OK
Eskize mwen - Excuse me
Mwen regret sa - I'm sorry
Gen... - There is/are...
Pa genyen! - There is/are not any!
Mwen pa genyen! - I don't have any!
Sekonsa! - That's right!
Piti piti - A little bit
Anpil - A lot
Gen anpil... - There are a lot of...
Isit - Here
La - There
Tout bagay anfon? - Is everything OK?
Pa kounye-a - Not now
Toupatou - Everywhere
Anyen - Nothing
Preske - Almost
Atansyon! - Attention!/Watch out!
Prese prese! - Hurry!
Dife! - Fire!
Rete! - Stop!
Kounye-a - Now
Nou ap chache... - We are looking for...
Souple, ban mwen... - Please give me...
Separe sa ant nou - Divide this among you
Ye - Yesterday
Jodia - Today
Demen - Tomorrow

Maten an - This morning
Apremidi a - This afternoon
Aswe a - This evening
lendi - Monday
madi - Tuesday
mekredi - Wednesday
jedi - Thursday
vandredi - Friday
samdi - Saturday
dimanch - Sunday
Ou byen? - You OK?
Mwen pa twò byen - I'm not too well
Mwen malad - I'm sick
Te gen yon aksidan - There was an accident
Nou bezwen yon dokte/yon mis touswit - We need a doctor/a nurse right now
Kote lopital la? - Where is the hospital?
Kote li ou fe mal? - Where does it hurt you?
Li ansent - She's pregnant
Mwen pa ka manje/domi - I cannot eat/sleep
Mwengendjare - I have diarrhea
Mwen anvi vonmi - I feel nauseated
Tout ko mwen cho - My whole body is hot
Mwen toudi - I'm dizzy
Nou bezwen pansman/koton - We need bandages/cotton
Mwen bezwen yon bagay pi blese sa a - I need something for this cut
Ou gen SIDA - You have AIDS
Mwen grangou - I'm hungry
Mwen swaf anpil - I'm very thirsty
Nou ta vle manje - We would like to eat
Konben - How much?/How many?
Poukisa? - Why?
Kote? - Where?
Kisa? - What?
Kile? - When?
Ki moun? - Who?
Kijan? - How?
Kiles? - Which?
Eske gen...? - Is/Are there...?
Eske ou gen...? - Do you have...?
Eske ou ka ede nou, souple? - Can you help

us please?
 Kote nou ka achte...? - Where can we buy...?
 Eske ou ka di mwen...? - Can you tell me...?
 montre - show
 ban - give
 Ki moun ki la? - Who is there?
 Kisa ou vle? - What do you want?
 Kisa ou ta vle? - What would you like?
 Kisa ou ap fe la? - What are you doing there?
 Kisa sa a ye? - What is that?
 Sa k'genyen? - What's the matter?
 Kisa pi nou fe? - What must we do?
 Eske ou te we...? - Have you seen...?
 Eske ou pale angle/franse? - Do you speak English/French?
 Ki moun isit ki pale angle? - Who speaks English here?
 Ou konprann? - You understand?
 Kij an yo rele sa an kreyol? - What do they call that in Creole?
 Kij an yo di...an kreyol? - How do they say... in Creole?
 Kisa ou bezouen? - What do you need?
 Kisa ki rive ou? - What happened to you?
 Ki kote li ale? - Where did he go?
 Kilaj ou? - How old are you?
 Kote ou rete? - Where do you live?
 Eske ou gen petit? - Do you have any children?
 Kote nou ye? - Where are we?
 genyen - to have
 chita - to sit
 manje - to eat
 rete - to stop
 kouri - to run
 kouche - to lie down
 vini - to come
 ale/prale - to go
 ban - to give
 rete trankil - to be quiet
 pran - to get, receive
 leve - to get up
 sede - to give up
 touye - to kill
 frape - to hit

kache - to hide
 konnen - to know
 manti - to lie (not truth)
 gade - to look
 koupe - to cut
 kwit-manje, fe-manje - to cook
 fimen - to smoke
 atake - to attack
 ban pemi - to authorize
 kri - to shout, yell, scream
 achte - to buy
 fe-apel - to call, name
 netwaye - to clean
 femen - to close
 fose - to coerce, force
 fini - to finish
 obeyi - to obey
 fe - konfyans - to trust
 console - to comfort
 pati - to leave, depart
 mouri - to die
 fe-desen - to draw, sketch
 bwe - to drink
 tonbe - to drop, fall
 mete abo - embark, load, board
 atoure - to surround
 ranfose - to enforce
 ou - you, your
 mwen - I, me, my, mine
 nou - us, our, you (plural)
 li - him, her, his, hers

* * * * *

PRONUNCIATION GUIDE

Creole is written phonetically. Each letter is pronounced, and each word is spelled as it is pronounced. Creole has only been recognized as the official language of Haiti in the last few years. Therefore, there are many different ways in which the Haitians write and spell Creole words. There is an official standard that has been set, and this standard will be maintained in this publication. The following is a pronunciation guide using this standard; most of the sounds are French.

ch-share chache-to look for
o-claw fo-strong
e-aim ede-to aid, help
ou-you ou-you
e-leg mesi-thank you
r-(not rolled) respire-to breathe
g-go gen-to have
I-see isit-here
s-(always s) prese-in a hurry
j-(avoid the d sound) jou-day
y=yes pye-foot
o-toe zo-bone

There are nasal sounds in Creole just as there are nasal sounds in French, which are pronounced partially through the nose, but without the "n" itself pronounced (a rare exception to the general pronunciation rule of pronouncing every letter). Some English equivalents which come close to the nasal sounds are as follows:

an-alms dan-tooth
en-chopin pen-bread
on-don't bon-good

A. When a nasal sound is followed by another "n", or "m," the nasal sound is pronounced, then the "n" or "m" is pronounced separately.

B. If an accent is placed over the vowel, there is no nasal sound.

C. In never indicates a nasal sound.

The letter c is only used in the ch combination.

The letter k is used for the hard sound.

The letter s is used for the soft sound.

Please = Sil vous plais
Are you hurt? = Eske ou Frape/blese?
Where are you hurt? = Ki Kote ou Frape/blese?
Please make line here for water = Fè yon lign la a pou dlo
Please make line here for food = Fè yon lign la pou mange
This food is safe = mange sa bon pou mange- li pa "Expire"
This water is safe = Dlo sa bon, li pwòp
This food is not safe to eat = Mange sa a pa bon pou manje
This water is not safe to drink = Dlo sa pa bon pou bwè
Please stay back = Pa avanse
Please be quiet we need to hear victim = Tanpri – Sispann pale , nou bezwen tande victim yo
Please go here for medical help = Tanpri ale lòt bò la a pou èd medical
You can find a doctor at _____ = Ou ka jwenn yon doktè nan _____
You can find a hospital at _____ = Ou ka join yon lopital nan _____
Thank you = Merci/Mèsi
What is your name= Kijan ou Rele?
How old are you = Ki laj ou
What is his name = Kijan l rele
How old is he = Ki laj li
What is her name = Kijan li rele
How old is she = ki laj li day Jou week Semèn year ane
list of numbers 1-10, 10-100, 100-1000 same as french – un deu troi...

CREOLE GREETERS LIST

Welcome to _____ = Bienvenu nan _____
Wait here please / Tann isit sil vou plè
I don't speak Creole, Please follow me /Mpa pale kreyol, vinn avèm sil vous plè
I'll get a translator / Mpral chache yon traducteu
Can someone translate / Eske on moun ka tradui pou mwen
We have a family room where you can rest, while you wait for your flight or family
Nou gen on sal kote ou ka reposew pandan wap tann pou avyonw ou byen fanmi'w
You can / Ou ka
Is someone meeting you here? / Ou gon moun kap vinn jwenn ou isit?
Do you need help. Please point to what you need below | Eske ou bezwen èd? Montre sa ou bezwen nan list sa

HAITI

Travel Health Online

https://www.tripprep.com/scripts/main/topframeset.asp?DocID=destina_full

GENERAL INFORMATION

Haiti is a developing nation in the lowest 25% of the world's economies. Located in the Caribbean Sea, it occupies the western third of the island of Hispaniola. Its climate is tropical but varies with geography.

WHERE: SLO COUNTY HEALTH CALL AHEAD

San Luis Obispo Office

2191 Johnson Ave.

805-781-5500; Fax: 805-781-5543

IMMUNIZATIONS

- Yellow fever: Although yellow fever does not occur in Haiti, an official yellow fever vaccination certificate may be required depending on your itinerary.
 - o Requirement: A yellow fever vaccination certificate is required for travelers coming from countries with risk of yellow fever transmission.
- Other vaccines: Depending on your itinerary, your personal risk factors, and the length of your visit, your health care provider may offer you vaccination against cholera, hepatitis A, hepatitis B, influenza, rabies, or typhoid. Routine immunizations, such as those that prevent tetanus/diphtheria or "childhood" diseases, should be reviewed and updated as needed.

MALARIA

The following is current information as reported by the World Health Organization (WHO) and the U.S. Centers for Disease Control (CDC):

- WHO—International Travel and Health, 2010 (online edition)

Malaria risk due exclusively to *P. falciparum* exists throughout the year in the whole country, including coastal and border zones. Risk in the main urban areas of Port-au-Prince is considered to be very low. No *P. falciparum* resistance to chloroquine reported.

 - o Recommended prevention in risk areas: II – Risk of *P. vivax* malaria or fully chloroquine-sensitive *P. falciparum* only. Mosquito bite prevention plus chloroquine chemoprophylaxis.
- CDC—Health Information for International Travel, 2010 (online edition)

Areas with malaria: All (including Port Labadee)

 - o Drug resistance (refers to *P. falciparum* malaria): None
 - o Malaria species: *P. falciparum* 100%
 - o Recommended chemoprophylaxis: Atovaquone/proguanil, chloroquine, doxycycline, or mefloquine

OTHER CONCERNS

- Current Health Concern - posted October 22, 2010 Cholera: According to the Haitian Ministry of Health, more than 4,700 cases of cholera and 300 deaths have been reported, primarily in Artibonite and Central departments (99% of total cases). Cases have also been confirmed in Nord-Est, Nord, and Ouest departments. Cholera has been absent from Haiti for more than 100 years. All travelers should practice extreme care in hygiene and food habits, and oral rehydration salts are important in case of severe diarrhea. Usual diarrhea self-treatment antibiotics, including ciprofloxacin and azithromycin, are fully effective against *Vibrio cholera* if

used for returned travelers with diarrhea. Cholera vaccine (Dukoral), available in Canada and many European countries but not in the U.S., is recommended for aid and refugee workers. Shoreland is closely following the situation.

- Food- and water-borne diseases: Quite a few diseases, including hepatitis A and typhoid fever, are transmitted by unsanitary food handling procedures and contaminated water. Food and beverage precautions are essential in order to reduce chance of illness. Travelers should carry loperamide and/or a quinolone antibiotic for presumptive self-treatment of diarrhea if it occurs.
- Insect-borne diseases: Mosquitoes transmit a variety of diseases in this country, including malaria and dengue fever. Personal protective measures are extremely important since insects cannot be avoided.
- HIV: 5% of sex workers in the capital city are estimated to be HIV positive. Travelers should clearly understand STD concepts and risks for HIV transmission.
- Tuberculosis is common in all developing countries. However, this country has an incidence of over 100 cases per 100,000 population, the highest risk category. Travelers planning to stay more than 1 month should have pre-departure PPD skin test status documented. Travelers should avoid crowded public places and public transportation whenever possible. Domestic help should be screened for TB.
- Ciguatera poisoning is prevalent and results from eating reef fish such as grouper, snapper, amberjack, and barracuda. The toxin remains even when fish is well cooked.
- Marine hazards may include jellyfish (often causing sea bather's eruption), coral, and sea urchins. Dangerous (potentially deadly) jellyfish are present year-round, but particularly during the rainy season. Children are especially at risk, and adults wading, launching boats, or fishing.
- Rabies the local animals may have rabies therefore it is advised not to interact with them.

PACKING LIST:

Essentials:

- Passport, Copy of Passport
- Credit Card, ATM Number, Copy of Card
- Hat
- Hard Hat
- Work safety glasses
- Sleeping mat
- Mosquito Net

Clothing:

- Worn-in work boots
- Work gloves
- Underwear for a week
- Socks for a week
- Cotton long-sleeved shirt
- Short-Sleeved Shirts
- Lightweight pants/belt
- Pair of shorts
- Sleeping clothes

Toiletries:

- Toothbrush/toothpaste
- Glasses/contacts
- Contact lens solution
- Hand sanitizer
- Mosquito repellent
- Shaving cream/razor
- Sunscreen Deodorant

Food/Drink:

- Water bottle
- Gatorade packets
- Granola bars/ other snacks
- Water purifying tablets
- Rice/canned beans

- Air Mattress
- Pens/Pencil
- Watch/ alarm clock
- Camera
- Backpack
- Flashlight

Note:

- Carry a change of clothes & medications in carry-on in case checked luggage is delayed.
- Bring a list of allergies with you.
- Small first aid items are suggested.

- Journal/Sketchpad
- Sunglasses

- Swimsuit
- Sandals
- Tennis shoes
- 2-3 rolls of toilet paper
- Towels

(DATE)



Dear (Engineer's Name) of (Engineering Firm),

I am writing on behalf of Structural Engineering Students for Haiti (SESH) to ask for your support. We are an independent group of students striving to make a difference in the structural engineering field. This upcoming summer, our group has a unique opportunity to expand student involvement into the global community through an earthquake recovery trip to Haiti.

After the magnitude 7.0 earthquake that ravaged Port-au-Prince in January 2010, Haiti is struggling to rebuild its community; focusing on the social and humanitarian aspects of our profession, SESH is planning a one-week trip to Haiti in March 2011 in order to positively and lastingly affect the impoverished area. This summer's trip is planned to take place in Léogâne, Haiti to help Father Marat and the rest of the Parish at Saint Rose de Lima Church. This Church will be Celebrating its 502nd year of faith this summer on August 23rd, 2012. Our plan is to build a temporary bell structure to lift the spirits of the local Haitians. The Parish will be having a week-long celebration of this anniversary in the week prior to the 23rd. We are looking to go to Haiti the week prior to their week of celebration and work with the local people to construct the bell tower. The design firm in charge of rebuilding the church is MHP, we have partnered with them, specifically Ken O'Dell their VP, and Haiti Engineering, specifically Herby Lissade, to assist with the planning of this project, design and logistics. This project could not be a better fit for SESH's goals. We have been assured that the impact of the bells being raise on the local moral will be monumental.

Through our service trip, SESH hopes to develop a holistic viewpoint of our education that recognizes the complexity of issues such as poverty, geography, culture, and economy and how they relate to building design. This is an amazing opportunity to develop interactive communication skills that transcend cultural differences and spread the knowledge that we've learned in a way that can effect a positive global change.

In recognizing the challenges we will face when traveling to a developing country, we plan on taking the necessary safety precautions and preparing for the shock of the economic and cultural disparities that we will face. Traveling with knowledgeable professionals and an experienced NGO will ensure that our efforts in Haiti are focused, productive, targeted toward the needs of the local community, and above all, safe.

Our goal to expand the role students can take within our profession isn't possible without the necessary funding. We project the cost of sending 12 students to Haiti for one week to be about \$35,000. This budget includes airfare, travel insurance, vaccinations, food, lodging, and transportation for one week, labor costs and material costs. Any amount that you or your firm can donate toward that amount would be tremendously helpful. There is a donation portal set up on our webpage <http://seshaiti.org>. Your support is tax-deductible and will help promote the design and construction of earthquake-safe buildings worldwide, emphasize the importance of

professionals with a global perspective, and encourage the socially responsible rebuilding of Haiti.

Thank you again for your support. We really appreciate your help in this endeavor!

Sincerely,

(Your name)
SESH Member

Haiti Engineering has their webpage here: <http://haitiengineering.org/index.html>

SESH has a webpage located here: <http://www.seshaiti.org/index.html>

MHP has a webpage located

here: http://www.mhpse.com/company/partners/kenneth_odell.php

(DATE)

Dear Family and Friends,



This upcoming spring break, I have the unique opportunity to expand my involvement as a structural engineering student in the global community through an earthquake recovery trip to Haiti. I am traveling in early August with Structural Engineering Students for Haiti (SESH), an independent group of students striving to contribute to the long-term rebuilding of Haiti.

After the magnitude 7.0 earthquake that ravaged the areas surrounding Port-au-Prince in January 2010, Haiti is struggling to rebuild its community; focusing on the social and humanitarian aspects of our structural engineering, SESH is planning a one-week trip to positively and lastingly affect the impoverished area. This summer's trip is planned to take place in Léogâne, Haiti to help Father Marat and the rest of the Parish at Saint Rose de Lima Church. This Church will be Celebrating its 502nd year of faith this summer on August 23rd, 2012. Our plan is to build a temporary bell structure to lift the spirits of the local Haitians. The Parish will be having a week-long celebration of this anniversary in the week prior to the 23rd. We are looking to go to Haiti the week prior to their week of celebration and work with the local people to construct the bell tower. The design firm in charge of rebuilding the church is MHP, we have partnered with them, specifically Ken O'Dell their VP, and Haiti Engineering, specifically Herby Lissade, to assist with the planning of this project, design and logistics. This project could not be a better fit for SESH's goals. We have been assured that the impact of the bells being raise on the local moral will be monumental.

Through this service trip, I hope to develop a holistic viewpoint of my education that recognizes the complexity of issues such as poverty, geography, culture, and economy and how they relate to building design. This is an amazing opportunity to interact with individuals from a different region of the world and spread the knowledge that I've learned at Cal Poly in a way that can effect a positive global change.

In recognizing the challenges we will face when traveling to a developing country, SESH plans on taking the necessary safety precautions and preparing for the shock of the economic and cultural disparities that we will face. Traveling with knowledgeable professionals and an established NGO will ensure that our efforts in Haiti are focused, productive, targeted toward the needs of the local community, and above all, safe.

Our goal to expand the role students can take within our profession is not possible without the necessary funding. I project the cost of traveling to Haiti for one week to be about \$3,000. This budget includes airfare, travel insurance, vaccinations, food, lodging, and transportation for one week, labor costs and materials. Your donation would be tax-deductible and tremendously helpful. There is a donation portal set up on our webpage <http://seshaiti.org>.

Thank you again for your help. I really appreciate your support in this endeavor!

Sincerely,

(Your name)

Haiti Engineering has their webpage here: <http://haitiengineering.org/index.html>

SESH has a webpage located here: <http://www.seshaiti.org/index.html>

MHP has a webpage located here:

http://www.mhpse.com/company/partners/kenneth_odell.php

Appendix B – SESH Applications

Haiti Service Trip Application

APPLICATION NO. _____

NAME: _____

Please detach this cover page and keep for your records.

WHAT IS SESH?

The STRUCTURAL ENGINEERING STUDENTS FOR HAITI (SESH) is an unaffiliated student-initiated group devoted to the rebuilding efforts in Haiti following the January 2010 earthquake.

This service trip will provide a memorable learning experience by exposing social and cultural issues firsthand. The service trip presents a unique opportunity to apply the skills and knowledge learned inside the classroom to a real situation and to positively affect a real community.

OUR GOALS

SESH is striving to experience and observe the effects of poor structural design in seismic areas while developing holistic views of our education and, ultimately, encouraging initiative and social responsibility as structural engineers.

THE APPLICATION

Please keep in mind that there are a limited number of spots available. We ask that you put in the required time and effort while completing this application.

All responses must be typed in a separate document and attached to this application. Please put your application number in the header and do not include any personal information on this additional document.

Applications are due 5/5/2012 by 2:00 PM to Alex Daddow. After all applications have been submitted, the panel will review them – you will be notified by e-mail in December.

Following the application process and in preparation for this trip, you will be required to attend mandatory training sessions, group meetings, and fundraising events. Failure to do so can result in losing your spot on this service trip.

We thank you for taking the time to complete this application.

Haiti Service Trip Application

APPLICATION NO. _____

PERSONAL INFORMATION

NAME: _____

DATE OF BIRTH: _____ MAJOR / YEAR: _____

PASSPORT #: _____ EXPIRATION DATE: _____

CONTACT INFORMATION

E-MAIL ADDRESS: _____

PHONE NUMBER: _____

PERMANENT ADDRESS: _____

ASSOCIATED RISKS DISCLAIMER

This trip is NOT affiliated with the California Polytechnic State University, the College of Architecture and Environmental Design, the Architectural Engineering Department, or the Structural Engineers Association of California (SEAOC).

I, _____, hereby acknowledge that I have voluntarily applied to potentially participate in the service trip described in this application. I am aware of certain risks and dangers that may occur during the trip, including, but not limited to:

1. Low availability of resources
 - Food
 - Clean drinking water
 - Adequate shelter
2. Exposure to disease
 - Malaria
 - Dengue Fever
 - Tuberculosis
 - Cholera
 - HIV
 - Leptospirosis
 - Diarrhea
3. Vulnerability to the environment
 - Falling debris
 - Uneven/unpaved roads
 - Dangerous driving
 - Earthquake aftershocks
4. Violent or hostile activity
 - Petty theft
 - Homicide
 - Kidnapping
 - Death

ASSUMPTION OF LIABILITY

I acknowledge that I have been informed of the possible risks and hereby agree to be solely responsible for my own personal welfare and assume any and all risks of illness, injury or death. I release and discharge the STRUCTURAL ENGINEERING STUDENTS FOR HAITI (SESH) from all claims or demands for damages resulting from my participation in the trip.

I state that I am physically and mentally prepared for the rigors of the trip. I agree to attend all mandatory training sessions, receive and provide documentation of all necessary vaccinations, complete any additional required documents or forms, and follow all rules, regulations, and expectations set forth by SESH, Ken O'Dell, and the affiliated non-governmental organization that we will be travelling with.

I am fully aware that this is a release of liability and sign it on my own free will. I have read it in its entirety and agree to all the stated conditions mentioned within. I recognize that SESH will not be liable to me, directly or indirectly, under any circumstances, for any costs, expenses, losses or damages to person or property, incurred as a result of my actions.

Applicant Print Name: _____

Applicant Signature: _____

Date: _____

Witness Print Name: _____

Witness Signature: _____

Date: _____

COMPLETED COURSEWORK

<u>Course</u>	<u>Completed</u>	<u>Currently Taking</u>
ARCE 211	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 212	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 227	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 223/351	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 302/352	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 306/353	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 412	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 483	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 371	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 303	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 304	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 305	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 372	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 451	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 444	<input type="checkbox"/>	<input type="checkbox"/>
ARCE 452	<input type="checkbox"/>	<input type="checkbox"/>
Advanced Structural Electives (list in additional document)		

Please list any other courses that you feel are relevant to this application.

PERSONAL STATEMENTS

All responses must be typed.

1. Have you travelled outside the U.S.? If so, where and what was the purpose of the trip?
2. How do you hope to grow academically and personally if selected for this trip?
3. How will you contribute to and enhance a group experience?
4. What skill(s) or experience(s) do you have that will help the Haitian community?
5. Describe an experience when you had to adapt to or cope with a sudden change in environment.

Appendix C – Correspondence

Ken O'Dell <kodell@mhpse.com> 4/23/12

to herby.lissade, Herby, me, Doug, Dan

Herby-

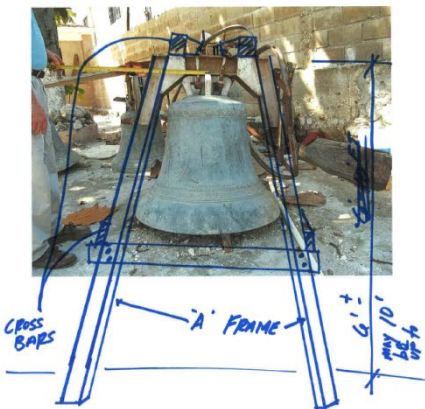
It has been a while...I think some students are starting to talk about a SESH trip to Haiti/Léogâne for this summer...

I'm anxious to get going on St. Rose....I fear we are not going to make a August date with the continued slow response on the proposal...So I toss out another option.

In trading emails with Alex, the new SESH guy on campus, I suggested that this summer's trip be focused on getting the bells into the "Air" so they can be rung. I don't think they have to be too high off the ground to ring. So perhaps we can create a small 6-10 feet high platform/frame to support them. See very rough sketch.

If we have the students develop concepts before we go, we could spend the week doing the actual construction. The bells don't have to rock...we can use the hammer/mallet idea that Dan was thinking for the new bell tower concept.

What do you think??



Create an 'A' FOR EACH BELL
USE CROSS BARS TO JOIN/STABILIZE
all the Frames. Put THIS Somewhere
on church grounds so they can Ring
the bells.

KENNETH D. O'DELL, S.E.

Partner

[562.985.3200](tel:562.985.3200) P

kodell@mhpse.com

MHP

Structural Engineers
4500 E. Pacific Coast Hwy.
Suite 100
Long Beach, CA 90804
www.mhpse.com

Herby Lissade<herby_lissade@dot.ca.gov> 4/23/12

to Ken, me, Doug, Dan, herby.lissade

Ken,

Nice talking to you. This sounds great and I will let you work on something with the students. As we discussed, it would be nice to incorporate some architectural details/thoughts behind the design .. not necessarily a shrine .. although you could include a statue of the St. Rose de Lima.. I will get some feedback from Father Marat..

Thanks !

~HGL~

Herby G. Lissade, PE
Supervising Transportation Engineer
Chief, Office of Emergency Management
California Department of Transportation
1120 N Street
Sacramento, Ca 94274
[1-916-417-6994](tel:1-916-417-6994)



Alexander Daddow<alex.daddow@gmail.com> 4/13/12

to herby.lissade

Mr. Lissade,

My name is Alex Daddow. I am a fourth year ARCE major at Cal Poly San Luis Obispo. I am interested in putting together another SESH trip for this upcoming summer. From the small amount of people I have contacted around campus there has been a large amount of interest in another trip. I have been told you were our contact for the last successful trip, and I just wanted to see if a trip this summer would be a possibility with your company. If you are at all interested in being a part of another trip to Haiti please let me know your feelings/ ideas/ ect. We were hoping to go sometime in July.

Thank you for your time.

Alex Daddow

ARCE Undergrad Cal Poly San Luis Obispo
CAED Student Council Secretary
CAED Representative For SEAOC
SEAOC Student Chapter President Elect
CAED Ambassador
[530-713-4118](tel:530-713-4118)
alex.daddow@gmail.com
adaddow@calpoly.edu

herby.lissade@haitiengineering.org^{4/13/12}

to Fallieres, Dana, me

Hello Alex,

You can call me Herby or Herb. Please tell me the following:

- How many students?
- Are you interested in working on a project?
- Will you be able to fund raise to do a small project?
- Will the trip be officially sponsored by the school?
- What is the scope of the trip .. what is it you want to get out of it?

Some questions to start our dialogue ..

Kind regards,

~Herby~

Herby G. Lissade, PE
President
Haiti Engineering, Inc.

A Non Profit Architectural/Engineering Service
to the People and Government of Haiti

Herby.Lissade@HaitiEngineering.org
[1-916-296-8586](tel:1-916-296-8586)

Alexander Daddow<alex.daddow@gmail.com> 4/15/12

to herby.lissade

Herb,

Thank you for expressing interest in this trip.

- I would like to bring a group of up to ten of the most committed and qualified students interested in the trip this summer. All of my peers I have spoken with, and I am all very interested in working on a project.
- We all want to see some of our work put into practice in the real world and see it help people.
- From everything we talked about with last years group we assumed fundraising would come side by side with the trip so we will all be willing to fund-raise for both the trip and a small project.
- I do not know if the trip be sanctioned by the school or even the ARCE department. I will be speaking with our department head Al Estes sometime this week about the universities feelings toward a trip since the last one ran so smoothly.
- As for what I am looking for out of this trip. After speaking with last years participants in SESH I decided that this was an experience worth pursuing. Putting my education to work in a real life situation to help people is a very attractive idea. I made this trip my sole commitment to career development over the summer instead of taking an internship, so I am looking forward to working on a real project with real engineers to build something tangible. I have never personally seen the devastation left behind an earthquake so I think going out to Haiti and seeing first hand why we do what we do will be a great experience for me and all other the other students involved. I saw this as the best way to see the impact my work can have on real people that actually care about our work as engineers.

I am very passionate about putting this trip together and making an impact in Haiti. Last years students came back from the SESH trip with such a greater passion for their chosen career path and they were all glowing with pride of their accomplishments in Haiti. It has made an impressive impact on me from the outside and I would really love for both myself and any students willing to make the trip this summer to get the chance to make a difference.

Feel free to ask me anything else you might want to know. I have been trying to gather up information from last years SESH members for sometime to get a grasp around what need to be done to make this trip possible. Please let me know anything I can do to help the process.

Thank you again for your time,

-Alex Daddow

Alexander Daddow<alex.daddow@gmail.com> 4/20/12

to herby.lissade

Herb,

I just wanted to check back in to see if you were still interested in a SESH trip this summer. I have spent the week generating interest. Right now I have a list of thirteen students that are

interested in taking the trip this summer. I have asked the entire department to go over some SESH info presentations and I will be handing out applications to people that remain interested after being versed in the risks/rewards. Just thought I would keep you updated on what is happening.

-Alex

herby.lissade@haitiengineering.org 4/20/12

to me

Alex,

My apologies for not getting back to you sooner. I think what we should do is set up a GoToMeeting, in the next week or so, and discuss the trip. Haiti Engineering is a part time effort for me, really full time since I work on it 40 hours a week or more, and I have to tend to work/family issues.

Please send me some dates/times that you are available to discuss the trip and I will set the meeting up. I was at Sac State last night giving a presentation on Haiti and those students are setting up a trip as well, but for December.

I've been coordinating with several non-profit organizations to send food to Father Marat in Léogâne Haiti. Since many NGO's are moving out of Haiti, since it has been over two years since the quake, kids are starting to starve, So, besides engineering there's a need to help the community in other ways if we can, by using what ever network we have. I found 16,000 meals for the kids of Léogâne, sitting in Indianapolis - now how do i get it there? So, Ive been a little distracted .. But, again ..send me a few dates .. and we'll get our first meeting going..

Meanwhile, please friend Haiti Engineering on Facebook, if you haven't already done so, and read about us. Ask the other SESH students to do the same.

Thanks !

~Herby~

Herby G. Lissade, PE
President
Haiti Engineering, Inc.

A Non Profit Architectural/Engineering Service
to the People and Government of Haiti

Herby.Lissade@HaitiEngineering.org
[1-916-296-8586](tel:1-916-296-8586)



Alexander Daddow<alex.daddow@gmail.com> 4/21/12

to herby.lissade

Herby,

No worries we are very happy with any time you are able to give us, and I have no friended Haiti Engineering on Facebook. I will be asking all our members to do so as well. Thank you again.

I have a meeting scheduled with my planning team this Sunday. I will be sure to put finding times to have a go to meeting with you at the top of the list for this meeting.

Knowing you are a busy man I have begun correspondence with Ken O'dell, James Mwangi, and Abe Lynn to help spread the load out. James will be advising us heavily as he did last year. We may be able to work with you on sending food to Father Marat. This trip for us is not just about the engineering side, anything we can do to help; we will do. Ken suggested we organize a small project with Father Marat to build a temporary support to get the bells at MHP's church project in Léogâne up and ringing to boost local moral. I cant imagine a better way to compliment this project then bringing food as well. I will try and brainstorm way to get that food out there.

Thanks again,

Alex Daddow

herby.lissade@haitiengineering.org [via srs.bis6.us.blackberry.com](http://srs.bis6.us.blackberry.com) 4/21/12

to me

Alex,

Send me your phone number.

Hey, I didn't mean to imply I'm to busy for you guys, so I hope it didn't come across that way. But, engineers do a lot, so any help is welcome.

I like Ken's idea so let's start working on it. I will shoot Ken an email and see what other ideas he has .. Also, the last trip was about a week, is this the time frame you wanted?

Jimenez/Daddow - 72

Before we invite the entire group to a meeting, let's meet.. First by phone .. And then I will take a trip down to the Campus .. Say in the next two weeks are so .. Will you be available ?

Kind regards !



Alexander Daddow<alex.daddow@gmail.com> 4/21/12

to herby.lissade

Herby,

My number is [530-713-4118](tel:530-713-4118). We understand. We just thought it would be best to spread everything out so the trip isn't a crunch on anyone's time.

A week long trip is exactly what we had in mind it seemed to work very well for last year's team.

I will be available by phone all day tomorrow or the rest of the week, and most anytime in the next two weeks I should be available as well to meet. Week days are always better then weekends since we run alot of SEAOC trips and activities on the weekends, but I can accommodate pretty well. Just let me know and I'll move things around this trip is a high priority for me. May 5th I will be busy running the Simpsons strong tie symposium on campus and I have family coming into town for the 28th and 29th in April but that weekend will still be flexible.

Thanks again,
Alex Daddow

Alexander Daddow<alex.daddow@gmail.com> 4/25/12

to herby.lissade

Herby,

Just another quick update. We have nine students officially on board at this point and interest is still growing. I have sent out applications and asked people to begin preparing themselves to participate in both fundraising and training sessions. SESH has been offered a contract to run a BBQ on campus as a small fundraiser towards then end of the year. As soon as all the applications are in, I will have my group of interested students meet up and we will start delegating planning, fundraising and training work. After speaking with Emily and Joe more they both thought it might be better to try and keep the group of student down to six or seven. They said this might help keep logistical costs down a little more and leave more money for the projects themselves. Just wondering what your thoughts on this would be?

I was cc'd on the email between you and Ken about the bell project and I think this would be a great project for us still. Also Joe Rice and I brainstormed during our Sunday night meeting on the possibility of our SESH group possibly partnering with him on his Master's thesis that I believe Ken is the industry adviser on. In the mean time I was directed towards Gordon Goodall of build change. He is looking for an ARCE intern this summer in Haiti. I pushed the information on to Laura Rice so hopefully she will be out there this summer and be able to find us another project as well.

Thanks again,

-Alex

herby.lissade@haitiengineering.org 4/25/12

to me

Alex,

The group we had was pretty large. Besides the students I think we had 6 other people plus Ken O'Dell... so about 16. I don't think the cost would be any cheaper ..for 6 students versus 10 .. we will have to rent a Van that will hold about 10 people .. plus the driver and luggage.. the problem comes down to space at the house .. I would hate to cut anyone out ..let me write some stuff out and get back to you ..

on projects .. 1 week is not a lot of time .. I would keep the project simple ..also ..it is very difficult to get around .. we are HQ in Léogâne .. Port au Prince (PAP) is a very busy and dangerous place .. I would highly recommend that if the internship is there ..that the company has security for the interns .. also commuting from PAP to Léogâne is not really an option - on a daily basis ..

I like Ken's Project ..although small .. high impact .. I can also try and get you guys involved on some design work for Samuel Dalemberbert ..check our website .. the project may not be ready by then .. it is in the Central Plateau .. a community center ..

Anyway .. I Will try and set up a meeting this weekend with you .

Thanks!

Alexander Daddow<alex.daddow@gmail.com> 4/27/12

to herby.lissade

Herby,

I had some time today to look at the Samuel Dalember project via your webpage. That is definitely something we would be interested in helping out with.. As for a meeting this weekend just let me know when and where so I can make myself available. My family will be leaving Sunday morning @ 10:00 so anytime after that would work best for me but I can be available, if need be, all weekend.

Thanks again,

-Alex



herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 4/27/12

to me

Is Sunday evening good for you .. Maybe after 6pm ?



herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 4/27/12

to me

GoToMeeting for now .. You are about 6 hours away ... And I have to plan for that visit..
I will send you an invite shortly ..

herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 4/29/12

to Fallieres, me, Fallieres

Alex,

I will call you tonight.. There's no need to do a GoToMeeting since it will be the two of us ,,and maybe Fallieres.. My VP ..Landline will work ..

Thanks

Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org> 4/29/12

to me, Dan, Fallieres, Fallieres, Dana, Pierre, Pierre, Stephan, Steve

Alex,

Nice talking to you today. The Architect on the Saint Rose de Lima project is Dan Young and I've cc'd him.

To fill everyone else in. Alex is the President of SESH at CalPoly SLO. We're trying to arrange a trip to Haiti in August, second or third week, with SESH. There's a tentative project, see attachment, to raise the bells. The students are starting a fund raiser to cover the cost of their trip and the project.

@ Alex .. Dan was sent the details in a prior email where you and I were included – from Ken O'dell..so Dan is aware of the "Raise the Bells" conceptual project and hopefully can comment on design .. and give some guidance ..

@Pierre ..feel free to share with the Nuncio

@Fallieres ..let Father Marat know .. we need his buy in .. I cc'd Stephan Destin

@ Dana and Steve ..any comments .. or input?

Thanks everyone ..

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Alexander Daddow<alex.daddow@gmail.com> 4/29/12

to Herby, bcc: Kimberly

Herby,

Here is the link to the webpage Joe Set up for SESH: <http://www.seshaiti.org/index.html> It is pretty basic at this point and it has last years Razoo donation applet.

Also I looked into Razoo and applied to become an admin they said there is a two day waiting period to verify my status as an admin. Was the Razoo account something you set up last year or did one of the students handle it?

I wanted to begin speaking with my dad about getting the rice together for the trip. How much rice would we be looking at? I can pack pretty light so I was thinking I could just fill one of my checked bags with rice.

-Alex

Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org> 4/29/12

to me

Alex..

Enough Rice to feed the Island !

:)

No..no .. j/k ..what kind of rice is it? Haitians like the “Uncle Ben’s” type Rice .. If you like it ..bring it .. My mom donated some of the food for SESH last time and will do the same this year again ..so let me ask her what she is sending .. she usually ships a barrel full of stuff ..

People are starting to starve in Haiti, now that the NGO’s are moving out .. can your parents donate enough rice so each student brings maybe 10 or 20 pounds each ? SESH, actually your parents, will help feed kids at the St. Rose de Lima Parish and we can donate some to the St. Michel parish as well.. we can take pictures of the students making the food donation.. but I’m asking for a lot here .. do what you think is appropriate .. and willing to do .. for our own needs .., probably 20 pounds of rice will probably be enough ...

I think we are allowed two 50 pound bags ? But I have to check that ..

The house we are going to stay in is my grandfathers .. It looks like a modern house ..no one lives there now .. so we will have to bring everything in .. from toilet paper .. to soap .. so I’m going to ask each person to bring as much toilet paper as they can .. the house is used once a month for a few days, by a Father, that is stationed in New York .. and I hear he’s been using Haiti Engineering’s toilet paper the past 4 months ..

Since you are packing light, please let me know if you want someone to do your laundry, or the other students laundry. We usually staff the house with two or more workers ..e.g.. cooks, yard guy, and laundry lady if needed.. ..

As for Razoo .. If you plan to use Haiti Engineering’s non-profit number for donations ..just create a project under our Razoo account .. call it SESH 2012 .. or Something like that .. keep track of who donates .. etc ..Razoo takes a 1.5% to

3% commission ?? So I'm not sure what kind of Razoo account you are opening .. Let me set something up quick for you ..and we can delete it if it doesn't work for you .. one of the bullets for our meeting will be for SESH to have someone a finance person to track all of the donations.. etc ..

Anyway .. stay in touch !

~HGL~

Alexander Daddow<alex.daddow@gmail.com> 4/29/12

to Herby

Herby,

The rice we grow is called CalRose variety. It is short grain rice usually used for sushi. We have it both milled to brown and milled to white. I will have to talk to my dad about how much we can get but the twenty pound minimum is no issue at all. I will call him at some point tomorrow to see what his thoughts are.

-Alex

Pierre Auza<pmauza@yahoo.com> 4/30/12

to Herby, me, Dan, Fallieres, Fallieres, Dana, Pierre, Pierre, Stephan, Steve

Hi Alex,

Welcome! I look forward to meeting you!

Hi Herby,

I will let the Nuncio know in my next update to him.

- Pierre



Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org> 4/30/12

to me

I haven't had the time to get into Razoo ..let me know if you need assistance there and I will make it a priority ..

also the website is very nice .. Rae ..aka Stephanie .. is the fourth woman going left to right .. keep adding to it ..

Herby G. Lissade, P.E.
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Alex Daddow<alex.daddow@gmail.com> 4/30/12

to Herby

Herby,

I will should have admin for razor by tomorrow if I did everything right. At the very least we can use last yearsrazoo applet if it still functions. I will talk to joe about updating these page tomorrow.

Also, I spoke with my dad. He said that we can't quite handle fifty pounds per student but ten or twenty should be doable. I will try to get a head count by the end of the week and let him know how much to get. I will be going home the weekend of may 12th to pick up the rice once I let him know so I can pass it out to the students before summer breaks. That was suppose to be our go to meeting weekend as well though so I will need a time to deal with my travel on that Sunday. Also if you are located in Sacramento I could meet with you that weekend in person if you have some time. If not I will be attending the Cal EMA meeting on the seventeenth.

Just my thoughts for the day,

-Alex

herby.lissade@haitiengineering.org [via](mailto:herby.lissade@haitiengineering.org) srs.bis6.us.blackberry.com 4/30/12

to me

Okay ..

Let me know if you plan to give your donors our 501C3 number for tax purposes .. Unless you have your own .. If you use ours .. We need to make sure we track everything .. And give our controller copies of all transactions ..Etc ..so we can file our taxes next year ... But we can discuss furthur ..

I talked to my mom and she said "The hungry poor will eat anything" .. So there goes my statement on Haitians being picky about rice .. So bring what you can .. Give your dad our 501c3 number if he wants.. And give the donation of rice a value .. I would like to recognize him ..some how .. That may motivate others to help ..

I will be in Sacrilege that day and you can meet me at HE headquarters .. I will send you the address ..

I will set up the GoToMeeting time shortly ..

Thanks !

Alexander Daddow<alex.daddow@gmail.com> 5/1/12

to herby.lissade

Herby,

I have finished up creating a new fundraiser on Razoo. <http://www.seshaiti.org/> has been updated to add our new donation applet and include our current project. I will be sending it out to as many people as I can to get the fundraising ball gunning. i gave the designation of SESH 2012 to donations that come through our applet. I was hoping you could have the HE webpage updated to use the up-to-date SESH info. Thats all I have for today. I shoudl have all the applications from students in and read through by the end of the weekend. Let me know anything else I can do/ your thoughts on our page ect..

Thanks again,
-Alex



Alexander Daddow<alex.daddow@gmail.com> 5/6/12

to Herby

Herby,

I will be going through the applications for SESH today with Joe Rice. I received ten applications, so if you add in Joe and I that brings the total count up to twelve people. Joe will probably only go on the trip if he can swing some work on his master's thesis during the trip so that leaves our trip at eleven people assuming no one drops out. Is eleven possible? I think if we let them all in the chances are we will loose a couple along the way. What are your thoughts?



herby.lissade@haitiengineering.org [via](http://srs.bis6.us.blackberry.com) srs.bis6.us.blackberry.com 5/6/12

to me

What time is your meeting with Joe ? .. Maybe we can do a quick call? In any case, tell Joe I said hello.

I think we can accommodate 11 people. Just ask Joe for his feedback on the amount of students he thinks we can accommodate.

I am struggling a little bit with the project for you guys. The one suggested by Ken is okay, but how about something lasting?

One of the reasons I went with Ken to help rebuild the St. Rose de Lima Church was to use Students. I haven't seen any effort in this area from him.

Anyway, I have another thought. How about helping us in the design of another church, Either the St. Michel or a small Chapel ?

We can discuss later today or during the week.

I will send you the file for St. Michel and a few pics of the Chapel, St. Perpetua ..

Joe's These can be on the St. Michel Church design. An all Hazards design ??

Oh .. There's the Dalember project as well .. I have a meeting tonight with them ..only problem is the project is in Hinche and there's no easy way to get there..

Let me know if you can talk later ...

Alexander Daddow<alex.daddow@gmail.com> 5/6/12

to herby.lissade

I believe we will be meeting around five pm tonight. I think we could do both actually. From what I've heard the other students say they are all very excited about the bell project, and getting it ready for the church's celebration, but I don't really see an issue with taking on another project. The bell project is pretty simple and straight forward and, like you said, only temporary. I think we could handle the design of a chapel or church easily along with the bell tower. Especially if we have eleven students working on the projects.

As for Joe's thesis I believe he already has it all worked out. Something about retrofitting masonry infills in pre-engineered steel buildings. I don't know what his thoughts would be.

Also what is the legality on student work for design? Whose stamp would go on drawings and ect?

Anyways I am free for a call anytime from now until ten pm or so. Also I will be securing the

rice donation from my parents this afternoon as well.

-Alex

Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org> 5/6/12

to me

I've got daddy duties ..but will call you around 5 pm ..

Herby G. Lissade, P.E.
President
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Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org> 5/6/12

to me

BTW ..there's no liability issues for you guys .. as long as you are working under us .. which raises another issue about insurance for the trip .. which we'll discuss ..

Thanks ..

~HGL~



Alexander Daddow<alex.daddow@gmail.com> 5/6/12

to herby.lissade

Herby,

I called my dad. He will be working on getting us 20lbs of brown rice, and 5 pounds of white rice per student. What information does he need to have/ provide for the tax code? If it is all ready this weekend I will be picking it all up but if not my mom will bring it down the one of the weekends before school is out.

-Alex



5/10/12

Alexander Daddow<alex.daddow@gmail.com>

to asteph01, jesselhoye, rbrtnrtn, robynaschmidt, ygkim, Andrew, Caleb, Christopher, Elizabeth, Heather, Joe

SESH,

Last update of the day. Here is my correspondence with Herby after our meeting last night. It looks like there are a couple things we need to get started on.

1- CPK Fundraiser. I am willing to head this project if someone is willing to help, Andrew J. this probably wouldn't be a bad one for us to head together since were on the SEAOC board.

2- Checks can be written to Haiti Engineering with the memo SESH- [Member Name]

3- We should organize a ticket fund next meeting. I will handle this and keep track of who has paid.

4- I will be scheduling an in person meeting with Herby in the next couple weeks based of off the Doodle poll. Hopefully I can get the meeting on the weekend so we can all make it. 5/18th-20th sometime in there seems to fit best.

5- Be extremely vigilant while documenting donations we want to be sure credits are given out.

Feel free to email, call, text me with any questions or concerns. Please read through the emails between Herby and I below.

-Alex

Herby,

We all met up last night and everyone seems to be on board at this point. A few questions did come up:

1- When we ask for donations besides going through the portal who do we have people write checks too? Haiti engineering with SESH in the memo? This is real important, someone needs to track all of the SESH funds:

- Which donation goes to which student
- In Razoo have donors spell out the students name or say general SESH funds .. etc ..
- If students plan to buy their tickets and have the parents take the donation I will need copies of the ticket payment ..the right way to do

it would be to have a ticket fund .. write the check to HE, then we pay American Airlines .. etc ..

- Have someone call American Airlines and get a group discount number for the Haiti trip .. Kim or Rae did this last year and it saved 10% or so
- I will provide you with our HE Wells Fargo account number to desposit checks to HE ..but please .. take a picture of the check .. keep a receipt of deposit .. who the money is funding .. etc ..etc ..

2- They wanted to know if you would be willing to partner with us on a California pizza kitchen fundraiser. In order for us to run a cpk fundraiser we have to have proof of a non-profit and we thought HE might be able to help us with the paperwork.

Ask them what kind of proof they want and we will provide it .. If they want a letter, have someone draft one for me with all the details and I will finalize..

3- Everyone wants to buy their plane tickets as soon as possible. I told them we should wait till after the meeting with you'd next week. Does a go2meetjng Wednesday night at nine work? That's is the only time ALL of our SESH members are available.

We have time to buy the tickets. We should all meet wither in Florida ..or Haiti at the same time .. It will be very difficult to get anyone that is late into Haiti ..and other challenges involved in going to Haiti .. so please discuss getting some sort of insurance on the tickets ..

I will make Wednesday work ..give me some other dates so I can plan a face to face meeting during the week ... for the next few weeks ..

Anyway, I am very happy to see you all motivated.. I'm off to NYC then D.C. on Monday .. My mom is donating a barrel full of stuff for the trip .. food ..etc .. I will see her tomorrow night ..she did the same thing last trip .. so I will take inventory and see what else we may need ..

I will make a list for our GoTo Meeting for next week ..unless I have to Coach Baseball .. the meeting time should work ..

Herby G. Lissade, PE
Supervising Transportation Engineer
Chief, Office of Emergency Management
California Department of Transportation

1120 N Street
Sacramento, Ca 94274
[1-916-417-6994](tel:1-916-417-6994)

- Plan - Respond - Recover - Mitigate -

Herby,

We all met up last night and everyone seems to be on board at this point. A few questions did come up:

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Alex Daddow
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adaddow@calpoly.edu

Alex Daddow<alex.daddow@gmail.com> 5/10/12

to Herby

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That's is all for now I believe. Also I still haven't heard from Ken. I'm beginning to think he might be out of the country or busy with his personal life.

Herby Lissade<herby_lissade@dot.ca.gov> 5/10/12

to herby.lissade, me

Herby,

We all met up last night and everyone seems to be on board at this point. A few questions did come up:

1- When we ask for donations besides going through the portal who do we have people write checks too? Haiti engineering with SESH in the memo? This is real important, someone needs to track all of the SESH funds:

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I will make Wednesday work ..give me some other dates so I can plan a face to face meeting during the week ... for the next few weeks ..

That's is all for now I believe. Also I still haven't heard from Ken. I'm beginning to think he might be out of the country or busy with his personal life.

Knowing Ken he is busy chasing the almighty dollar. I am assisting with contract negotiations between the Architect and PROCHE in Haiti, I hope Ken will be able to deliver his end of the of project. I will give try and PIN him and send an email as well ..

Anyway, I am very happy to see you all motivated.. I'm off to NYC then D.C. on Monday .. My mom is donating a barrel full of stuff for the trip .. food ..etc .. I will see her tomorrow night ..she did the same thing last trip .. so I will take inventory and see what else we may need ..

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Alexander Daddow<alex.daddow@gmail.com> 5/15/12

to Herby

Herby,

I just wanted to check in and see if we were still on for tomorrow night @ 9pm?

-Alex

Herby Lissade<herby_lissade@dot.ca.gov> 5/15/12

to me

Yes .. Let's keep the Date .. I've been traveling .. I'm in Dallas on my way home .. I will try and send an invite out tonight..

Thanks

Herby G. Lissade, PE
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Herby G. Lissade, P.E. 5/15/12
<Herby.Lissade@haitiengineering.org>

to me, Steve, Fallieres, Fallieres, Dana, Dana, Ron, Pierre, Pierre, Josh

Title: GoToMeeting Invitation - SESH trip nu...

When: Wed May 16 9pm – 10pm (PDT)

Where: Virtual

Pierre M Auza (PAuza@UCI.EDU), Dana
Hendrix

Who: (dana.hendrix@haitiengineering.org),
Fallieres Abdallah
(Fallieres.Abdallah@HaitiEngineering.org)...

Your Agenda for Wed May 16, 2012

9am [ARCE 452](#)

1pm [ARCE 304](#)

9pm GoToMeeting Invitation - SESH trip
nu...

No later events

[view my calendar »](#)

[more details »](#)

Going? Yes - Maybe - No

 invite.ics
6K [Download](#)



Alexander Daddow<alex.daddow@gmail.com> 5/15/12

to Herby

Herby,

Should I wait until tomorrow night to send out the invitations? How many should I limit the invites too? Also I turned in paper work for a CPK fundraiser today so they may contact Haiti Engineering. I am hoping to have the fundraiser happen sometime before school ends.

-Alex

2012/5/15 Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org>

Alexander Daddow<alex.daddow@gmail.com> 5/15/12

to asteph01, jesselhoye, rbtrntrn, robynaschmidt, Andrew, Caleb, Christopher, Elizabeth, Heather, Joe, Yong, Shawna

Title: GoToMeeting Invitation - SESH trip nu...

When: Wed May 16 9pm – 10pm (PDT)

Where: Virtual

Pierre M Auza (PAuza@UCI.EDU), Dana Hendrix

Who: (dana.hendrix@haitiengineering.org), Fallieres Abdallah (Fallieres.Abdallah@HaitiEngineering.org)...

[more details »](#)

Going? Yes - Maybe - No

Your Agenda for Wed May 16, 2012

9am [ARCE 452](#)

1pm [ARCE 304](#)

9pm GoToMeeting Invitation - SESH trip nu...

No later events

[view my calendar »](#)

Hello everyone,

Last email of today hopefully. Our Go2Meeting with Herby is tomorrow at 9 pm in C-lab Try and get there a little early so we can get the computers set up and such. I have attached the invitation to the meeting.

Alexander Daddow<alex.daddow@gmail.com> 5/16/12

to Herby

Herby,

We talked a little bit more about the dates after our meeting. We are hoping to have august eighth as travel the ninth thought the fifteenth as work and then stay in kaliko until we go home the eighteenth. Hopefully all of that is possible. Also I think the group is very excited about the idea of incorporating the temporary bell structure into a chapel as well. I think that will help serve the community a little better and accomplish our goals for this trip a little better as well. I am very pleased with how things are shaping up though thank you for helping us organize this.



herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 5/16/12

to me

It was a good meeting. I wanted to hear why the students wanted to go and I'm pleased. I'm a little concerned about the amount of time needed for the additional work on the project and the budget, but I think we can manage.

Let me think about this some more .. Take care ..



Alexander Daddow<alex.daddow@gmail.com> 5/17/12

to herby.lissade

Herby,

Sorry for putting your email on blast but I had one last question. Should we send you fundraising checks as we receive them? Also where should we send them?

-Alex

SEAOOC Cal Poly President Elect 2012-2013

herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 5/17/12

to me

Email me anytime..

I will send you our Wells Fargo Checking Account Routing Number. You can deposit them at a Wells Fargo near your school.

Please:

- take a picture of the check

- Get a copy of the deposit slip and a take a pic of it as well
- who the funding is for
- develop a spreadsheet with running totals for all of the students

Send that all to me by email ..

As you make the deposits with the updated spreadsheet .. Keep in Mind Razoo charges * percentage . I don't remember how much .. Can't be more than 3 percent ..

Also we have a Google account on YouTube.. Create a Video.. If you can .. And I can load it .. I think Google doesn't charge a thing .. It can be of just pics .. Or use an existing video ..

The funds tracking would help me a lot..

Thanks..



Alexander Daddow<alex.daddow@gmail.com> 5/17/12

to herby.lissade

Herby,

I have a spread sheet of funds tracking already I will send it to you and forward this message to everyone so they have your pointers for keeping track of checks. The spreadsheet is available to every via the drop-box folder I invited you too last night, but I will attach it as well to this email let me know if we need anymore information in it. I will make a folder in there for scans and pictures of checks.

-Alex



Copy of Fundraising Records-1.xls
81K [View](#) [Open as a Google spreadsheet](#) [Download](#)

Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org> 5/17/12

to me

Alex,

This is nice .. I will check out the drop box this weekend.. I really think this spread sheet should be managed by 1 person..the financial portion anyway .. and send out PDF's for status .. I know you all trust each other ..but it can get confusing really fast ..

Thanks ..

~herby~



Alexander Daddow<alex.daddow@gmail.com> 5/24/12

to Herby

Herby,

We had a training meeting last night so now all of the students planning on going on the trip are very well versed in what to expect when we get to Haiti. Joe and I sat down after the meeting to go over the budget more. We have the initial estimation of \$2000 a person and that is what we have set the goal as still. We wanted to hash out a more detailed budget to be sure we did not over look anything. Also the group elected to push the trip back due to Ken's comments. We are now hoping to leave Saturday the 11th and return home Monday the 20th.

Here is the list the list of things we wanted to include in the budget: Please weigh in on what you think all of these would cost as well.

1. Immunizations: \$50
2. Travel insurance: \$50
3. Flight insurance: \$50
4. Flights round-trip: \$800
5. Bus rentals: \$800 (four trips once to PaP>Léogâne, Léogâne>Kalico, Kalico>Pap)
6. 6 nights in in the Léogâne house: ?????
7. Food: ?????
8. Kalico house costs: ??????

If there is anything else you know of that should be included in our budget please let me know.
Thank you,

herby.lissade@haitiengineering.org [via](mailto:srs.bis6.us.blackberry.com) srs.bis6.us.blackberry.com 5/24/12

to me

I don't remember what we charged per student last year .. But the cost per student will not exceed that number. .

I think that cost included .. The food, water, maid, cooks, general house help, Kaliko Beach cost and other general cost related to the trip .. I'm not sure if the transportation cost was included in that or not.. There will be no out of pocket cost .. Unless the students want to buy spirits or gifts.. Or some specialityfood .. I would ask each student to tip the maids and help, as a group, 2 dollars each.. I think we'll have 3 workers .. So 6 dollars a student .. For 3 people .. For a total of 20 dollars each .. They can tip more .. But not more than 5 dollars a person .. We can talk about this

later .. But it helps carry the relationship over for the next group of SESH students ..Etc ..

The project cost was seperate.. Is there a target for that ? The students raised some of the cost last year. I am not budgeting for that and expect that to be part of your fund raising. If that is an issue, please let me know asap..

I talked to Ken and he said he talked to you. He had some good points for picking a project:

- Don't bite off more than you can chew .. A chapel project may be to expensive and not enough time to construct
- pick a project you can complete in a week
- there's no Home Depot .. So I will need a material list weeks In advance ..

I'm at my kids baseball game, so I will stop here for now ..

I will look for last yearsfiles ..



herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 5/26/12

to me

Alex,

Would August 9th to August 18 th work ? Or any group of dates before August 18 th .. I have a conference in Orange County that starts on August 19 th ..

The original date was August 6th to the August 15 th ..

Let me know what the issues are ..

Thanks ..

Alexander Daddow<alex.daddow@gmail.com> 5/29/12

to herby.lissade


Herby,

Our 2000\$ estimate was including the cost of our project. We figured out to the \$2000 around \$500 would probably end up going towards our project. That would put us around \$5000-\$6000 dollars to build with. I wanted to be sure we were still on for our Go2meeting tomorrow night @ 9pm. As for the dates this is something we need to get hashed out hopefully tomorrow night we can figure it all out. Possibly we can move the trip up to late July? Maybe flying out the 28th and

returning august 4th or 5th? We really want to avoid landing mid work week so we can have to chance to employ some Haitians as much as possible.

-Alex

Herby G. Lissade, P.E. 5/29/12
<Herby.Lissade@haitiengineering.org>
to me, Ken, Pierre, Pierre, Pierre, Dana, Dana, Josh, Steve

Title: GoToMeeting Invitation - SESH Haiti t...
When: Wed May 30 9pm – 10pm (PDT) Your Agenda for Wed May 30, 2012
Where: Virtual 9am [ARCE 452](#)
Pierre M Auza (PAuza@UCI.EDU), 1pm [ARCE 304](#)
Who: Dana Hendrix 9pm GoToMeeting Invitation - SESH Haiti t...
(dana.hendrix@haitiengineering.org), *No later events*
'Ken O'Dell' (kodell@mhpse.com)... [view my calendar »](#)
[more details »](#)
Going? Yes - Maybe - No
 invite.ics
7K [Download](#)

Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org> 5/29/12
to Pierre, Pierre, Pierre, Dana, Dana, Ken, me, Josh, Dan, Fallieres, Fallieres, Jennifer, Daniel, Daniel, Steve

Please find attached a proposed project for the SESH group that will have a lasting impact on the Town of Léogâne Haiti. I believe the students can do this project in a week, with some help from Masons and other semi-skilled labor. I also believe it will be within their budget. We need Father Maret's buy off ..

The pics are in the document as examples of bell towers only ..we'll need an Architect to design the small structure for us to blend in with the new church ..

@Alex – this is a suggestion only ..but I think it will become a permanent feature if done well ..

Comments ?

Herby G. Lissade, P.E.
President
Haiti Engineering, Inc.
www.HaitiEngineering.org

A Non Profit Architectural/Engineering Service
to the People and Government of Haiti

Herby.Lissade@HaitiEngineering.org
[1-916-296-8586](tel:1-916-296-8586)

Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org>

5/31/12

to Fallieres, Fallieres, Pierre, Pierre, Pierre, Steve, Dana, Dana, me, Ken, Dan, Josh, Rene,
Jennifer, Herby

Agenda

Key parts of trip

- Tour of Port au Prince day of arrival
- Tour of Léogâne day of arrival
- Work on Raise the Bells project
- Review St. Michel Ruins with Father Jasmin
- Tentative Beach Party in Léogâne at Abdallah beach property
- Tentative Reception at Nunciature
- Kaliko Beach – Gary Lissade may join us

August 2nd - Fly to Florida

August 3rd – Fly to Haiti – Morning tour of Port au Prince .. Get situated in Léogâne, tour of Léogâne(11 am)

August 4th – SESH Project

August 5th - SESH Project

August 6th - SESH Project

August 7th - SESH Project

August 8th – SESH Project and Food distribution for the children and elderly

August 9th - Drive to Kaliko Beach and possible stop at Nunciature for reception

August 10th – Kaliko Beach

August 11th – Fly home (1 pm or before)

her

Herby G. Lissade, P.E.
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Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org>

6/1/12

to me, Fallieres, Fallieres, Ken, Dan, Dana, Dana, Ron, Daniel, Daniel, HASchmieder, Steve, Pierre, Pierre, Pierre, kcaneta, Josh, Roy, Roy.Shaver, Angela, Angela, florence, florence, Ferdinand, Ferdinand

Alex and all,

Here's some stuff to get you thinking .. I'm including some rough sketches I made .. Also, I found some pics of well and bell combo's on the web ..

The hand and the cross is for an idea that Anton had. I discussed it tonight with Pierre tonight. we can place the well near the block wall to the rectory on the outside .. creating a courtyard between the new church and the exterior Rectory wall .. create some custom park benches to go around the structure ..

Father Marat gave his approval ..and we can raise the small bell ..

With proper planning, I believe SESH can build this in the time they have ..and everyone seems excited for such a project ..

The mural will be painted on the exterior block wall ..adjacent to the well .. The idea is a hand coming out of the rubble holding a cross ..signifying having faith at all times .. another option is

a hand coming out of the gravel reaching towards the heavens .. with the hand of god coming down to the hand in the gravel .. or some combination of the two ..

Anyway .. Alex and I will talk this weekend ..

Everyone else please chime in ..

Thanks ..

~hgl~



Alexander Daddow<alex.daddow@gmail.com> 6/7/12

to Herby, Herby

Herby,

I am hoping to have full updated copies of everything you asked for by the end of the day. As soon as everyone uploads them to the drop box I will forward them along to you. Also we decided on the project design we would like to do. I have attached my drawing. Our goal is to complete this project and with anytime/ money left over work on benches and landscaping around the project. The design has begun on this project.



Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org> 6/13/12

to me

Alex,

I hope you can use this .. I will update the itinerary map .. I used the names you provided..

Feel free to share ..etc ..

Thanks

Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org> 6/13/12

to me

Alex,

How's everything? Please find attached some information for the group .. It's been updated ..but still draft ..

I counted 11 students on your list ..is one missing ? Also is Ken O'Dell going ?

I think we should have another meeting ..maybe next week ?

Oh please make sure each student has a flashlight and plenty of batteries for the occasional power outage..

Talk to you soon,,

Alex Daddow<alex.daddow@gmail.com> 6/13/12

to Herby

Herby,

Everything is well. I am back home for summer now if you would like to meet in person I am around the Sacramento area for the rest of summer. It would be most convenient for me if we met next monday I will be in Sacramento for an interview with BPA at two on Monday.

Alex Daddow
Cal Poly San Luis Obispo ARCE
Alex.daddow@gmail.com
Adaddow@calpoly.edu
[530-713-4118](tel:530-713-4118)



Alex Daddow<alex.daddow@gmail.com> 6/25/12

to P.E.

Herby,

Ken is planning on making our trip. He said if he can't swing it as a St. Rose trip he will make it a business trip or vacation.

herby.lissade@haitiengineering.org [via](http://srs.bis6.us.blackberry.com) srs.bis6.us.blackberry.com 6/25/12

to me

Okay .. Will he be paying you guys direct ? I'd rather he go as a SESH member and not a business trip .. But how he justifies the trip is up to him.. He usually gets his own room and on this trip we need to share all the rooms.. This is sort of a special trip for all of us.

I have to order the transportation soon .. How's the trip funding looking ?

Oh, Caleb emailed me about leaving early with me.. I can't do that anymore .. I'm locked on transportation and other logistics .. I will email him ..

Alex Daddow<alex.daddow@gmail.com> 6/25/12

to herby.lissade

I did not receive any complaints about getting the money in by the end of the month so hopefully everything comes into you smoothly. I'll talk to Ken about the room situation more when he lets me know who he is representing for the trip. I'm sure he will understand.



herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 6/25/12

to me

Okay .. I'm sure he'll understand as well .. I want to get as many students into a room as possible .. Mostly for mosquito control .. I plan to stay outside in a tent ..

Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org> 6/29/12

to me

Alex,

Please send me the final list of travelers by the end of next week. I got an email from Stephanie, "Rae", and she is still waiting for approval. So, after July 4th:

- Name of all persons in the SESH group
- Materials list, plans etc ..for the project .. Steve price is donating a submersible pump and plastic membrane for the well ..so I would need the dimensions of the well so we can size the membrane for travel ..
- Funding for the trip should be finalized this week .. I have to order the bus for travel ..etc ..so I would need the funds transferred to the "HE" account as soon as possible ..

While I don't anticipate any major problems in Haiti, all planned events are subject to change ..because of weather .. schedules ..or other factors .. but again .. I don't anticipate any problems outside of the weather ..

Are you working in Sac ? I will stop by and see you ..

~hgl~

Alex Daddow<alex.daddow@gmail.com> 6/29/12

to Herby

Herby,

I will send out an email to everyone tomorrow telling them we need everything finalized. I will be working at BPA starting Monday. I'll let you know when everyone gets back to me.

Alex Daddow
Cal Poly San Luis Obispo ARCE
Alex.daddow@gmail.com
Adaddow@calpoly.edu
[530-713-4118](tel:530-713-4118)

On Jun 29, 2012, at 8:24 PM, "Herby G. Lissade, P.E. "<Herby.Lissade@HaitiEngineering.org>

wrote:

<image001.jpg>

Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org> 7/12/12

to me, Steve, Fallieres, Dana

Alex,

Here's our checking account activity for the last 6 months ..please reconcile with the spreadsheet you have.

As we discussed I would like our SESH Architect to design a mural ..and possibly the Billboard .. Let's discuss this by next meeting again ..by email is fine .. please send me her, Paula Hannah's, email address..

Thanks !

~hgl~

Herby G. Lissade, P.E.
President
Haiti Engineering, Inc.
www.HaitiEngineering.org

A Non Profit Architectural/Engineering Service
to the People and Government of Haiti

Herby.Lissade@HaitiEngineering.org



Alexander Daddow<alex.daddow@gmail.com> 7/12/12

to Herby

Herby,

I will look over the account activity over lunch today. Hannah's email is hpauling@calpoly.edu she is on the east coast so she may not reply speedily.. I'll let you know which donations are from us. At first glance I can see the direct contributions from students its just going to be a little more difficult location the fundraising money since it trickled in over the last few months.

-Alex

Alexander Daddow<alex.daddow@gmail.com> 7/12/12

to Herby

Herby,

From my count SESH is responsible for everything above 6/6/2012. There may have been a few donations made from us before that but no one has given me records of them. I do not know of a SESH member that lives near elk grove so I will assume the 52.52 on 7/3/2012 is not from us (It may be but will have to ask around.). This all adds up to a little under \$5150. There are still five SESH members left to make their direct contributions. One of them has promised \$1000 and the other four are expected to bring in \$750 a piece. That puts us a little over to \$9000 total for the trip. W/o any contribution from Ken. \$9000 makes plenty of sense to me since the initial \$2000 a person was estimated and people are spending an average of \$1100 on tickets, immunizations, and travel insurance. I think we are looking pretty solid at this point assuming the rest of the money flows in. I will also be gathering a few more donations from around my community so we should be pretty set financially. I will continue to gather fundraising documentation for after the trip. Thank you Herby.



Herby G. Lissade, P.E.

7/15/12

<Herby.Lissade@haitiengineering.org>

to me, Pierre, Pierre, Pierre, Steve

Title: GoToMeeting Invitation - 2012 Haiti E...[details](#) This invitation is out of date. This event
When: Mon Jul 16 8pm – 8:45pm (PDT), Virtual has been updated.

 invite.ics
4K [Download](#)



Alexander Daddow<alex.daddow@gmail.com>

7/15/12

to arizabal23, asteph01, rbrtnrtn, robynaschmidt, Andrew, Caleb, Hannah, Shawna, Yong

Title: GoToMeeting Invitation - 2012 Haiti E...[details](#) This invitation is out of date. This
When: Mon Jul 16 8pm – 8:45pm (PDT), Virtual event has been updated.

Here the invite to the go2meeting tomorrow night at 7 pm pacific. Hope to see everyone there!

----- Forwarded message -----

From: Herby G. Lissade, P.E.<Herby.Lissade@haitiengineering.org>

Date: 2012/7/15

Subject: GoToMeeting Invitation - 2012 Haiti Engineering and SESH trip

To: Alex Daddow<alex.daddow@gmail.com>, Pierre M

Auza<Pierre.Auza@haitiengineering.org>, Pierre M Auza<PAuza@uci.edu>, Pierre M

Auza<pmauza@yahoo.com>, Steve Price <steve@chamisa.net>



Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org> 7/20/12

to me

Alex,

We have \$7967.75 deposited so far. Which is great ...

So I think it was 60 dollars a day x 12 people x 8 days = \$5760 for Haiti Engineering expenses
.. ?

For the project .. I think you said 40 dollars a day x 12 people x 8 days =\$ 3840

So expected deposits = \$ 9600 ..we're short \$1632

$\$7967.75 - 5760 = \$2,200.75$ for the project ..which is doable .. but cutting it very close .. In fact for me .. I think I will be breaking even ..

So check the attached statement ..and let me know if anyone dropped out .. I will leave the enforcement to you ..

All the supplies have arrived to the house as of today ..so we are good to go !

By the way Father Marat has an earthquake damaged building he wants some help with .. He has an estimate for repair .with 12 structural engineers .. I'd like you guys to take a look at the building with me and make a recommendation for repair ..don't worry .. I will make sure it doesn't interfere with the project ..the building is a library .. preliminary estimate is around \$3,500 .. but who knows what the engineer is telling him .. I told Father Marat that I will try and help him with funding in August from the Golf Tournament ..

Thanks !



Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org> 7/21/12

to me

fyi

Herby G. Lissade, P.E.

President

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to the People and Government of Haiti

Herby.Lissade@HaitiEngineering.org

[1-916-296-8586](tel:1-916-296-8586)

-----Original Message-----

From: Joan Dunne [mailto:dunne@netpipeline.net]

Sent: Monday, July 16, 2012 5:01 AM

To: Herby.Lissade@HaitiEngineering.org

Subject: Money Transfer from JOAN DUNNE\n

Hi,

\$1108 is being transferred electronically to your account at Wells Fargo Bank.

Contact me directly if you have any questions. I've chosen to have this message sent from my bank to confirm that the transfer is scheduled.

Regards,

JOAN



Alexander Daddow<alex.daddow@gmail.com> 7/22/12

to Herby

Thank you,

All of the donations should be in by now assuming Rea made her donation. That should have boosted us up to the expected amount for fundraising. I will be reviewing the final plans for the project tonight and hopefully doing a material take off at that point as well. Also one of the students donated his money before he received his immunizations, and was wondering if there is a possibility of getting reimbursed at some point?

-Alex

herby.lissade@haitiengineering.org [via](http://srs.bis6.us.blackberry.com) srs.bis6.us.blackberry.com 7/22/12

to me

Hey Alex,

I would suggest sending an updated spread sheet out to everyone, me included for our taxes .. Etc .. I will send you a bank statement later on tonight.

There's the Haiti Engineering trip budget and the project budget. The Haiti Engineering budget is pretty tight .. Not sure what the total project budget per student was ? But yes I can refund

money to whom ever you wish .. Just have them send me an email with a pdf copy of the Bill and stating the reason why - "Reimbursement for trip incurred cost" .. Or something like that .. I would wait on reimbursing others until after the trip .. Making sure we have enough cash for the project and any incidentals ..

I want to see you, phone call is okay, before I take off.

We'll go over the budget and other small details. The house currently has no electricity. The town is being rewired and we hope that the power is on by the time we get there. Otherwise we will be spending a little more on ice.

I'm in Utah until Tuesday. Steve Price and I will be carrying most of the in country needed cash with us.. Mostly for the food, water, servants, and project materials cost .. I want to give you some cash to carry in as well for the project.. I just have to figure out how much .. I will pay up front for materials ..Anyway .. I want you to have some cash on you for emergencies as well .. Please do not tell anyone that you are carrying cash ..

I really hope we have power .. It will make things go easier .. Otherwise we will make due with the generator .. To power cell phones .. Lap tops ..Etc ..

I hope you are excited!!

Bye ...



Alex Daddow<alex.daddow@gmail.com> 7/22/12

to herby.lissade

I will review it and tell the kids that haven't donated to bring all of their money discretely along. As soon as I get back to a computer I can sort all this out better.

Alex Daddow
Cal Poly San Luis Obispo ARCE
Alex.daddow@gmail.com
Adaddow@calpoly.edu
[530-713-4118](tel:530-713-4118)



herby.lissade@haitiengineering.org [via srs.bis6.us.blackberry.com](mailto:srs.bis6.us.blackberry.com) 7/22/12

to me

No worries .. I've got what I need for the trip .. My mother shipped two containers of supplies .. She's offered to donate what she shipped if we fall short of funds ..

Anyway .. Let's just make sure it is a shared lift .. So to speak .. If there's a hardship we can figure something out ..
Especially if the ticket has been bought..

With no electricity .. This will be a more difficult trip .. But the original SESH group had no power as well .. Cross your fingers ..

Night.



Alexander Daddow<alex.daddow@gmail.com> 7/22/12

to herby.lissade

Herby,

I believe I have tracked the last two members to donate down. I will try and have them get their money in asap. Should be around another 1500\$ hopefully. Ill know more tomorrow.

-Alex

Alexander Daddow<alex.daddow@gmail.com> 7/23/12

to Herby

Herby,

Here is my material list as it stands right now. I'm not sure what exactly is available over there but I think I'll just go ahead and get the Simpson ties out here and bring them along or ship them. We designed the whole thing with 2X's. If they have 4X's it would be tons easier to construct.



SESH Stuffs.docx

13K [View](#) [Download](#)

herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 7/24/12

to arizabal23, me, Steve, Ken

Stefanie and Alex,

I would like to suggest that SESH give Gary Lissade a thank you card signed by all the SESH members, for his continued support of SESH, by opening up his vacation home to SESH, this year and last.

We want to keep using his property on future SESH trips.

Last year the students left him a note .. I wanted to mention this earlier, but kept forgetting.

I will eventually get him some sort of memento for his office when I get back.

Thanks !



Alexander Daddow<alex.daddow@gmail.com> 7/23/12

to Herby

Herby,

Would Wednesday around noon be a good time for me to swing by your office and discuss everything? I will have the materials list and updated spread sheet ready.

-Alex



herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 7/23/12

to me

Yes .. I will make sure to be there .. Any issues ?

Stephanie emailed .. She's still fund raising ..

herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 7/30/12

to me

2 drills .. 1 hammer drill ..

Fyi ..

Alexander Daddow<alex.daddow@gmail.com> 7/30/12

to herby.lissade

Perfect this will help me lighten the load a little bit. My bags will be cutting it extremely close but we will make it work.

herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 7/30/12

to me

They have a bell raised in the courtyard .. I will take pics and send it .. We were going to take it down .. But thought not .. There is a similar size bell on thground ..

- You are allowed 1 bag .. The other is 40 dollars .. So heads up

- many new stores are now open as there are many construction projects .. So bring some cash to spend

- I have a project lined up for Hannah, and SESH, PAP ... On the way out from PAP we will stop and discuss the project, a school for poor kids, with the Director ..really for Hannah's Thesis.. But an op. For SESH to do some design work, if you can..

- Bring your ATC-20 stuff

- gottacrash .. Have a premeeting with the Nuncio tomorrow ..



herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 8/1/12

to me

Need 4 - 3 quarter inch by 1 foot long .. Including washer



Alex Daddow<alex.daddow@gmail.com> 8/1/12

to herby.lissade

Ok I will try and put something together for that.



herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 8/1/12

to me

Okay ..

Hey when you guys get to Florida and about to board the plane txt, email or call me..

When you get to Haiti call me after you get your bags and assemble ..

- Don't let anyone touch your stuff .. Don't leave customs until we are out side .. Call me ..
- they have push carts for 2 dollars on your right
- Pierre has been through this before
- have pens ready to use on plane for customs paper work ..
- don't drink the water !

Alexander Daddow<alex.daddow@gmail.com> 8/1/12

to herby.lissade

Herby,

Our steel plate design turned out to be too heavy for me to get into my bags so I have redesigned the bell-structre connection. My plan right now is to just hang the bell off of the wooden members with a few simple U bolts as I saw in the bell pictures. This is a much lighter option for the bags and almost exactly how the bell pic you sent me is hung as well.

The first half of SESH will be landing at 9:25am and the second half will be landing at 9:55am Hopefully we can sit in customs long enough to all come out at once.

I will be sure to call you in florida. My phone will not be operable in HAiti from what I know but Rea said she would have a phone so we will call you as soon as we land in Haiti.

-Alex

herby.lissade@haitiengineering.org [via srs.bis6.us.blackberry.com](mailto:srs.bis6.us.blackberry.com) 8/1/12

to me

Okay .. Wait in the baggage area .." DO NOT " go out side ..

Watch your bags and your passport ..Etc .. We will be waiting for you ..Outside .. Only go out side once we talk .. My us number and Haiti phone are working .. You have the numbers ..

Also, I will need you to be the clear leader of the group ..

We will have a meeting in Léogâne and discuss house rules for safety ..Etc



Alex Daddow<alex.daddow@gmail.com> 8/1/12

to herby.lissade

No problem at all Herby I will take care of everything.

herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 8/1/12
to me

Cool ! This trip will be better than last years ,, trust me !

herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 8/11/12
to me, Pierre, Fallieres, Dana, Daniel

Alex,

I appreciate the thank you note from SESH.

We had a few scares.. Bumps.. Maybe a couple lows .. Some miscommunications.. Understand that we, Haiti Engineering, had nothing but the best of intentions for the groups safety which was more important than the success of the project...

At the end of the day we all accomplished something incredible. You should be proud of your team.

Experience comes with time, but more importantly seasoning .. Making decisions under difficult circumstances .. Knowing when to ask for help .. All of that .. All the stuff we discussed in Haiti.. The town of Léogâne is in a buzz over the project.

You all have different reasons you came to Haiti. I hope at the end of the day it was more than just a paragraph on your resume .. It was more than a business oppurtunity.. I hope the experience enriched your hearts.. That even in a place where there seems to be nothing but despair, the human spirit will always triumph over all..

Haiti Engineering is an organization that is made up of extended family and friends. People may say that they know Haiti to you and others, but we are Haiti.

We welcomed you all into our homes and getting to know you all has also enriched our hearts.

A big thanks to Nuncio Auza and Gary Lissade for their hospitality. Also, a big thanks to Sam Dalember and Cora Maclean, of the Dalember Foundation for sharing some time with us.

I wish you all the best in your lives and careers...

Please share this note with the other SESH members.

Herby

BCC:

Gary Lissade
Cora Maclean
Nuncio Auza
Steve Price

Abe Lynn <alynn@degenkolb.com> 8/10/12

to me

Images are not displayed. Display images below - Always display images from
alynn@degenkolb.com
[Hi Alex,](#)

You've probably gotten the updates – Rae is doing fine and has spent the afternoon resting at the apartment. Ken, who spent an uncomfortable night on the hospital waiting bench, is currently passed out in one of the bedrooms. We're going out to dinner locally tonight and then I'll drop them off at the airport tomorrow.

It was really great seeing you all yesterday. As with last year, I am so impressed by the dedication and hard work that you all put in to this to make it such a successful experience. Part of the reason I am here this year is from advising last year's SESH group – I couldn't help but be inspired to contribute in whatever way I could, as well. I hope at least a few of you consider coming back, either as interns or employees of Build Change, Miyamoto, maybe even Degenkolb or any number of the NGO's here. I'd be more than happy to try to help make connections if any of you are interested.

Best of luck and keep in touch. Please pass on my greetings to the rest of the group, as well as Herbie, Steve and Pierre.

Abe

Abe Lynn, PhD
Structural Consultant

Herby G. Lissade, P.E. <Herby.Lissade@haitiengineering.org> 8/12/12

to me

Alex,

Hope you got some rest last night. Just wanted to let you know that I will have "SESH" placed on the lower left of the mural before the anniversary and get the pics back to you. I wanted to get some feedback on the project and the appropriateness of doing so. Some wanted SESH on the block structure ..others wanted nothing .. We're going to move forward with the lower let of the mural.

I'm also going to try and build an enclosure around it, following our golf tournament fund raiser.

Thanks,

~HGL~

Herby G. Lissade, P.E.

Alexander Daddow<alex.daddow@gmail.com> 8/12/12

to Herby

Herby,

I think that would be perfectly appropriate. I doubt anyone would have an issue. Just a simple SESH would be perfect. No names just a reminder of where it all came from and why we do what we do.

An enclosure would be great. If there are any funds left over from SESH I am sure we could put them towards that and no one would complain. Thanks again Herby!

-Alex

herby.lissade@haitiengineering.org [via](#) srs.bis6.us.blackberry.com 8/12/12

to me

Alright ..we'll take care of it .. I'll burn that DVD for you ..

And let's do lunch this week .. if at all possible ..Steve Price is up here for two days .. Let me know what your schedule is and we'll try and match it ..

Thanks



Alexander Daddow<alex.daddow@gmail.com> 8/12/12

to herby.lissade

Herby,

I am available anyday from Monday to wednesday from noon to one I believe.

-Alex



Pierre Auza<pmauza@yahoo.com> 8/15/12

to me

Hi Alex,

I have caught up with life since returning from Haiti, and I hope you have readjusted as well. I hope you are doing well, so I wanted to touch base with you. It was a privilege to work with SESH, and I'm sure we can all say that it was a rewarding and unforgettable experience that goes to the heart of why we become engineers in the first place.

Here's what I want to touch base about.

1) Debriefs

I've got the notes from each day's debriefs, they are attached.

2) Dropbox to Pictures and Video

Do you have the link to Dropbox for the trip's pictures and video that you collected? I would like to use them in the Haiti Engrreport, and in presentations to church groups and companies in order to increase awareness and support for our efforts. These presentations will be a boon to fundraising both for Haiti Engr (to support project teams such as SESH in the future), and to raise money for Fr Marat's church.

3) Plans

May I have a copy of the AutoCAD files of the plans for the structure? I saw some of the drawings while in Haiti, but I would like to show them to the senior design projects professor for whom I TA-ed. I've told him more about what we did in Léogâne, and he's become interested in SESH's work.

Again, it was a privilege to work with you, and I wish you all the best for the future. You are a bright young man with a pragmatic approach to problem-solving and a sense of initiative that inspires others to follow. You have a promising future ahead of you in the field, and I am truly honored to have made your acquaintance.

Have a great week.



herby.lissade@haitiengineering.org [via srs.bis6.us.blackberry.com](http://srs.bis6.us.blackberry.com) 8/17/12

to me

Very Nice.. I like it very much .. I will display your powerpoint at the National Academies Event at the Beckman Center at UC Irvine next week.. Make sure to mention that to everyone .. A pretty big deal .. Ask Pierre..

:)

I will be gone next week at that event .. Than DC for a week .. Than Shanghai China for another .. Than DC again ..

So .. I didn't get to meet with you this week ..Slammed .. I loaded the pics and will send you a link shortly .. Not as many as yours .. But some nice pics .. Only Caveate .. Please no commercial use .. Of mines anyway .. And respect privacy .. Having said that .. Send me you link for yours ..

Again .. Well done ..and ...

Many Thanks !

Appendix D – Contributor Email

Hello,

SESH would like to take this moment to thank all of our SESH supporters! If you are receiving this email you helped this year's SESH team successfully finish our project! This has been a life changing experience for ten students and we are all very appreciative of all of your contributions! SESH would like to give a special thanks to Jeff Crosier of Miyamoto International, for his large contribution, Alan Hanson of SST, for contributing materials for the project along with a financial contribution, and Ken O'Dell of MHP for giving up nine days of work and family time to come along on another SESH trip to advise. We would also like to thank Haiti Engineering for making these trip to Haiti possible. We had several large hurdles to jump getting this trip together and all of you helped in some way!

This email contains a copy of SESH's trip report, and the power point SESH will be using to report to Cal Poly SEAOC this coming fall. Please take the time to look through these two files and witness what you made happen for ten lucky students. The week we spent in Haiti will never be forgotten. I can say that I personally cannot express my gratitude to each of you enough for your help along the way.

If you would like a link to all 2300 pictures from the trip please feel free to email me directly and I will send that out to you asap.

To SESH MEMBERS: Please forward this message along to anyone and everyone you feel helped you along the way.

On behalf of all SESH members. Thank you,

Alex Daddow
Cal Poly San Luis Obispo ARCE Undergrad
SEAOC Cal Poly President 2013
SESH 2012 Coordinator
[530-713-4118](tel:530-713-4118)
alex.daddow@gmail.com
adaddow@calpoly.edu

WHAT IS SESH?



SESH stands for Structural Engineering Students for Humanity (Formerly Structural Engineering Students for Haiti). SESH is a student run/student initiated organization that began in 2010 after the earthquake that struck Haiti. SESH's goal is to give its members opportunity to develop a holistic view of their chosen profession, gain practical experience on a project that will help people, and broaden each member's view of the structural engineers role in the world.

WHAT IS SESH TO ITS MEMBERS?

Robert : "The experience. Life-changing"

Stephanie: "Trip is a huge learning experience"

Caleb: "S!@T like this is possible?"

Andy: "I've never been on a team so dedicated"

Pierre: "Witness to something incredible happening, total strangers coming together to create something that will have an impact on people's lives, ringing to commemorate every Jan. 12th"



Helping to Rebuild Haiti Together !

Ede Rebati Ayiti Ansanm!

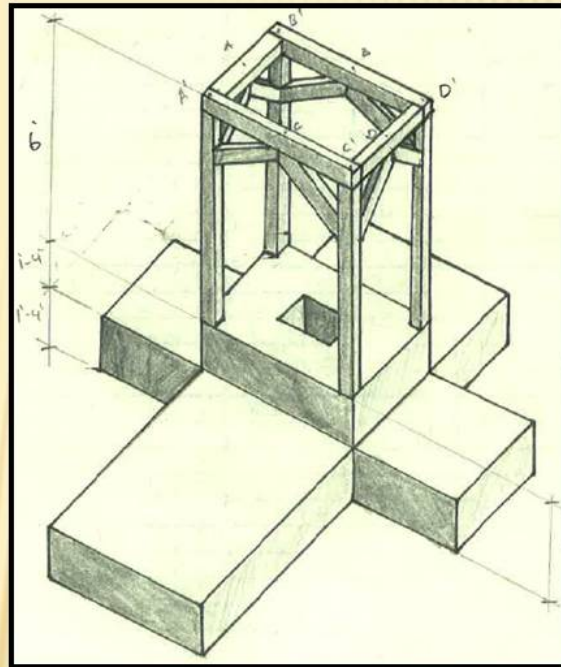


SESH
Structural Engineering Students for Haiti

St. Rosa de Lima Bell Project / August 2nd – August 11th

SESH SUMMER TRIP - 2012

- Apply our engineering knowledge to a project that is tangible.
- Develop a holistic view of structural engineering.
- Become immersed in the Haitian culture.
- Provide some sort of relief to the community of Leogane.
- Raise one of the bells at Saint Rose de Lima
- Experience first hand the devastation left in the wake of an earthquake.
- Have fun!



TRIP GOALS

TRIP ITINERARY

2nd- Leave origins, meet in Florida

3rd - Arrive in PaP, and tour PaP, visit site, settle in

4th - Pour concrete footing

5th- Day of rest at the beach

6th - Build masonry well, explore

7th -Build wooden structure and hang bell, treat for termites

8th - Wrap up project, present project, and pass out rice donations

9th - Pack up the Leogane house and meet the Nuncio in PaP for lunch on the way to Kaliko

10th - Enjoy Kaliko

11th- Leave Kaliko and fly home



- ✖ We departed from all over the country including LA, Denver, Sacramento, and Washington DC, and San Francisco.
- ✖ Half of our group met up at Ft. Lauderdale, Florida, and the other half met up in Miami, Florida.

AUGUST 2ND – LEAVE OUR ORIGINS, MEET IN FLORIDA



- ✘ We spent the first half of our first day in Haiti traveling through PaP taking in our surroundings.
- ✘ We met with Gigi to advise her on some renovation work she wanted to make on an existing CMU building.

AUGUST 3RD – TOUR PORT-AU-PRINCE



- ✘ We spent the first half of our first day in Haiti traveling through PaP taking in our surroundings.
- ✘ We met with Gigi to advise her on some renovation work she wanted to make on an existing CMU building.

AUGUST 3RD – TOUR PORT-AU-PRINCE



- ✘ We visited the site and decided we needed to resize our entire project.
- ✘ We then opted to level out the site for our cement pour the next day and cap the night off with a few local brews.

AUGUST 3RD - VISIT SITE, SETTLE IN



- ✂ We started by digging the foundation to approximately 5 inches down to give us a solid base.
- ✂ We proceeded to bend the rebar using an old gate hinge we found since we realized we had no proper tools to do so.
- ✂ We then started mixing concrete by hand and poured it with shovels on top of the rebar.
- ✂ While one group was pouring the pad, another group disassembled the bell's previous mounting hardware.

AUGUST 4TH – EXCAVATE AND POUR PAD



- ✖ We each took 25 lbs of rice with us to Haiti.
- ✖ We donated all of the rice to St. Rose de Lima and St. Michel



AUGUST 4TH – DONATING RICE



- ✘ Our means of transportation for the day was the "tap tap".
- ✘ Our first stop was to visit Father Jasmine at St. Michel
- ✘ We then stopped for lunch at a private beach house
- ✘ We finished the day relaxing in the ocean near the club scene

AUGUST 5TH – DAY OFF, EXPLORE HAITI



- ✂ We started by hand-mixing mortar so that we could lay our first course of block.
- ✂ We also cut rebar dowels.
- ✂ After laying the first course, we decided that we would bring in additional help in order to stay on schedule.
- ✂ The artists also started the mural on the freshly plastered wall.

AUGUST 6TH - BUILD MASONRY WELL, PAINT MURAL



- ✘ We built the formwork for the top concrete cap.
- ✘ We bent the rebar U-ties.
- ✘ We had our hired masons pour the concrete bench slabs and start the rock décor.
- ✘ We started the framing for the wood structure that would support the bell.
- ✘ Haitian shower!!

AUGUST 7TH - BUILD WOODEN STRUCTURE AND FINISH BLOCK BASE



- ✂ We treated the lumber for termites.
- ✂ We affixed the bell to the wood assembly with U-bolts obtained from the existing mounting hardware.
- ✂ We improvised a strap out of twine to lift the bell.
- ✂ We attempted to lift the bell by hand while waiting to see if we could get an excavator to lift it.
- ✂ Finally, the equipment arrived and raised the bell for us.

AUGUST 8TH – ATTACH BELL TO WOOD ASSEMBLY, RAISE BELL, FINISH



AUGUST 8TH – COMPLETED PROJECT



✘ Father Marat dedicated the bell following the daily mass on Thursday.

✘ The Nuncio invited us over for lunch to thank us.

AUGUST 9TH – DEDICATION CEREMONY, LUNCH AT THE NUNCIO'S HOUSE



✕ We enjoyed
our last day in
Haiti at Kaliko
Beach



AUGUST 10TH - ENJOY KALIKO



HAITIAN FOOD



MISCELLANEOUS



✕ We all flew from Port Au Prince to either Miami or Ft. Lauderdale and caught connecting flights to our individual destinations.

AUGUST 11TH – LEAVE KALIHO AND FLY HOME

Hannah: Haiti is Awesome!

Jared: Had never assembled construction materials in the field. Greater appreciation for the workers who do the work.

Andy: Be prepared to adapt.

Alex: Couldn't be happier with the group.

Andrew: Having knowledge of actually building something, will help with design.

Herby: Can't get this kind of experience from any other type of group.

Ken: Overall experience of what a team of people can do. A team with a common purpose.

Alex: "Cholera, bro"

MORE SELECT QUOTES!!!!!!!

For more information contact Caleb
Dunne our new SESH Coordinator or
Andrew Stephens!

- ✕ Any Questions?
- ✕ Suggestions?
- ✕ Comments?
- ✕ Ect?

IF YOU'RE INTERESTED!!!!!!!!!!!!!!!!!!!!

Appendix F – Daily Recap Record

(These recaps are unedited, there may be inaccuracies of spelling and crude language.)

8/4/12

-
- Favorite part of day
 - Least favorite
 - Most challenging part of day/biggest challenge
 - Add'l Note

Ken's idea for next time Ask question: What do you think you learned that is impactful for your career?

e.g. how to hang the bells? went through different ideas, and it comes together. this is the process of designing in a team.

1 Paul

- Favorite part of day
- Seeing the progress we're making.

- Least favorite

The sun

- Most challenging part of day

The headache

- Add'l

Alex's idea of bringing rice making the children happy

2 Hannah

- Favorite part of day

Hearing the kids singing to us and praying

- Least favorite

When she felt like she was going to pass out from heat

- Most challenging part of day/biggest challenge

Talking to the three boys monopolizing her time while she kept an eye on rebar & CMU.

Difficult to communicate/language barrier

- Add'l Note

Haiti is awesome, thanks for inviting me along

3 Andrew (Andy)

- Favorite part of day

Little kid took shovel, and smiled while shoveling

- Least favorite

The sun

- Most challenging part of day/biggest challenge

First time working with concrete, and in the sun

Flatwork was challenging

- Add'l Note

N/A

4 Robert

- Favorite part of day

Finishing the concrete foundation

- Least favorite

The bolt-removal took so much time

In CA, we could have just bought the necessary tools at Home Depot.

- Most challenging part of day/biggest challenge

Trying to belt the U-bolts free from the bell

- Add'l Note

Enjoys the Haitian people

5 Andrew

- Favorite part of day

Right now, having a beer, less hot

- Least favorite

Mixing the concrete

- Most challenging part of day/biggest challenge

Finishing the last part of the foundation after the break

Brutal to get back to the work

- Add'l Note

Fascinated and charmed by the people here

Thank God for Wilson!

6 Jared

- Favorite part of day

Finishing the polishing of the bell

- Least favorite

Waking up, still realizing that we had to finish pouring

- Most challenging part of day/biggest challenge

Knowing what to do (never poured pad footing, mixed concrete before)

- Add'l Note

N/A

7 Robin

- Favorite part of day

Seeing the kids and bringing the rice

- Least favorite

Trying to keep working in the heat all day

- Most challenging part of day/biggest challenge

Working with the concrete

- Add'l Note

The kid that got the water from the wheel

Technique: Drop bucket upside down to put some water in, then use weight of water to drop the rim below the water line.

cf. Caleb has video

8 Caleb

- Favorite part of day

Seeing the poured foundation

- Least favorite

Getting the concrete out, during the hottest part of the day.

Learning as he did it (figuring it all out along the way).

Robert: In America, you just add water. Here it's harder, sifting yourself, and mixing it yourself, and getting out the trash and debris.

- Most challenging part of day/biggest challenge

Not so much the sun or heat or sweat, but you feel it afterwards

- Add'l Note

Really happy to be here

9 Stephanie Rae

- Favorite part of day

Working on the job site, knowing people whom she was just emailing before

- Least favorite

Spider in the bells (hopped, body size of quarter)

- Most challenging part of day/biggest challenge

Working in the heat. Seemed worse this year than last year. Going into the shade a lot more.

- Add'l Note

Commending the current team, this year's group more prepared.

Taking on proj with scope that's appropriate, and we have a schedule.

10 Alex

- Favorite part of day

1) Seeing everyone work on the project even though they wanted to stop

2) Rae saying we were more prepared than last year

- Least favorite

About 2PM, when we were worried about finishing.

1) Didn't think we'd get the foundation done today, but the rest of it took only 30 min.

2) Finding out bell pretty much weighs 500 pounds.

- Most challenging part of day/biggest challenge

Getting the rebar all done (mentally taxing)

Used a gate hinge and the loop of the crescent wrench

- Add'l Note

We're doing pretty well, we're handling the heat well.

Everyone took enough water

Paul & Andy: Rest big chunk of ice on back of head = regenerating!

11 Pierre

- Favorite part of day

1) The kids

2) Seeing completed foundation with dowels sticking out

- Least favorite

Having to deal with the politics (Pere Marat & I not simpatico)

- Most challenging part of day/biggest challenge
Resupply/fulfilling equipment requests without working Haitian phone

- Add'l Note

I feel blessed to be here

12 Ken

- Favorite part of day

Getting to know each of us a little better

On past trip, he was more engaged beforehand, but now he is getting to know each of us during the trip than before

Ask question: What do you think you learned that is impactful for your career?

e.g. how to hang the bells? went through different ideas, and it comes together. this is the process of designing in a team.

- Least favorite

Didn't have one really

- Most challenging part of day/biggest challenge

Challenging to keep his mouth shut

Wanted to add advice or suggestions

Checking if surfaces are level

Working with the rebar

- Add'l Note

N/A (all woven in)

8/5/2012

- What made you most thankful for your life in America on Sunday 8/5?

- What made you happiest to be here on our SESH trip?

- What did you see on Sunday 8/5 that was a surprise/of note?

Reminder: Messed up on checking the block... There WERE 30 there.

Paul

- What made you most thankful for your life in America on Sunday 8/5?

We don't have sticky humidity back in CA

- What made you happiest to be here on our SESH trip?

Riding the tap tap, on the roof

- What did you see on Sunday 8/5 that was a surprise?

The party scene. Not so much surprising but interesting.

Rae

- What made you most thankful for your life in America on Sunday 8/5?

Not having to worry about how sanitary the water and food is

- What made you happiest to be here on our SESH trip?

Getting to see a nicer side of Haiti aside from poverty

- What did you see on Sunday 8/5 that was a surprise?

The people that we ran into for vacation

Andy

- What made you most thankful for your life in America on Sunday 8/5?

Being in one's own bed, under some covers

- What made you happiest to be here on our SESH trip?

When we're out here hanging out

- What did you see on Sunday 8/5 that was a surprise?

Seeing tarp as people's houses on the way to and from the beach

Andrew

- What made you most thankful for your life in America on Sunday 8/5?

- What made you happiest to be here on our SESH trip?

The tap tap.

Wouldn't be able to handle on day-to-day basis.

At the same time, really fun part of SESH trip

- What did you see on Sunday 8/5 that was a surprise?

The party scene down by the beach

Beside extreme poverty, people want to party

Robin

- What made you most thankful for your life in America on Sunday 8/5?

People walk very far to church every day.

- What made you happiest to be here on our SESH trip?

When we got to go swimming in the warm water and hang out

- What did you see on Sunday 8/5 that was a surprise?

When Paul went chasing after a pig

Caleb

- What made you most thankful for your life in America on Sunday 8/5?

Little risk of disease from water & environment in US

- What made you happiest to be here on our SESH trip?

Seeing Haiti up close from the tap tap

- What did you see on Sunday 8/5 that was a surprise?

Same as Andy, seeing the poverty

Alex

- What made you most thankful for your life in America on Sunday 8/5?

No need to worry about cholera on the beach

- What made you happiest to be here on our SESH trip?

Getting to know everybody

- What did you see on Sunday 8/5 that was a surprise/of note?

When we were driving home, and the driver got food at the beach, and then gave the rest of his food to his kid on the way home.

Robert

- What made you most thankful for your life in America on Sunday 8/5?

Bumpers and seatbelts, traffic safety.

No fear of cholera

One is safe in one's own country in America

- What made you happiest to be here on our SESH trip?

First riding on the tap tap with the rice and the people, and getting to know people by proximity

- What did you see on Sunday 8/5 that was a surprise/of note?

Nina's property and how nice it was

Jared

- What made you most thankful for your life in America on Sunday 8/5?

Inexpensive access to clean water

Easy to communicate with people (e.g. wireless & internet)

- What made you happiest to be here on our SESH trip?

Happy he's doing something with the ArchE program, networking, getting to know people in the program

- What did you see on Sunday 8/5 that was a surprise/of note?

How far people traveled to visit religious services, and how long people go to get to services.

How important their religion is in their lives.

Hannah

- What made you most thankful for your life in America on Sunday 8/5?

Plenty of food and water at one's disposal in America

- What made you happiest to be here on our SESH trip?

Went to go see the church/St Michel

Found what she's doing for her thesis proj

- What did you see on Sunday 8/5 that was a surprise/of note?

The little kid on the beach who played frisbee with us. He was willing to interact with foreign people.

Ken

- What made you most thankful for your life in America on Sunday 8/5?

The ability to communicate, electronically, linguistically

- What made you happiest to be here on our SESH trip?

Getting to know people, share ideas

- What did you see on Sunday 8/5 that was a surprise/of note?

At the beach, watching the guys out fishing with no poles

Pierre

- What made you most thankful for your life in America on Sunday 8/5?

1) Worshipping in a clean, dry building

2) Ability to communicate, esp with Diana

- What made you happiest to be here on our SESH trip?

Tap tap ride, and seeing people's reactions

"Inverting expectations"

- What did you see on Sunday 8/5 that was a surprise/of note?

Seeing trashy Western culture be the premium, upper class product in Haiti

8/6/2012

- Name one thing you learned about one of your fellow SESH members while working with them?

- How do you think Monday 8/6's work will help you in your chosen field?

- If you have suggestions for making the trip better what would they be?

Pierre

- Name one thing you learned about one of your fellow SESH members while working with them?

Andy was a truck driver

Wilson's work experience

- How do you think Monday 8/6's work will help you in your chosen field?

International diplomacy, advocacy (report and grant writing), engineering, construction practices & management, all mixed together

- If you have suggestions for making the trip better what would they be?

Depend on the cell phone network for talk, text, communication

Ken

- Name one thing you learned about one of your fellow SESH members while working with them?

As a group, everybody was doing something, everybody found a role, and we took initiative and worked hard

- How do you think Monday 8/6's work will help you in your chosen field?

23 years out of school, he still learns something every single day. E.g. to set corners and use string to set up the control lines

- If you have suggestions for making the trip better what would they be?

Don't overplan

Concentrate on communication (e.g. miscommunication with Nina)

Jared

- Name one thing you learned about one of your fellow SESH members while working with them?

Alex's work ethic (willing to get "disgustingly filthy")

- How do you think Monday 8/6's work will help you in your chosen field?

Had never assembled construction materials in the field. Greater appreciation for the workers who do the work.

- If you have suggestions for making the trip better what would they be?

Hasn't experienced enough of trip yet to add

Robert

- Name one thing you learned about one of your fellow SESH members while working with them?

Robin's initiative on working the grinder for the dowels

- How do you think Monday 8/6's work will help you in your chosen field?

Need for clear communication b/w what we plan and what we do. E.g. the details of how the first layer is laid/comes together

- If you have suggestions for making the trip better what would they be?

Having the right tools for the job. Plan better next time.

(e.g. pointed trowel is much better for here, having to split block with concrete saw rather than hammer & scoring)

Paul

- Name one thing you learned about one of your fellow SESH members while working with them?

Everyone contributes their own unique background

- How do you think Monday 8/6's work will help you in your chosen field?

With the knowledge he has, to help others

- If you have suggestions for making the trip better what would they be?

Diversity of roles/disciplines (Arch, ArchE, Language)

Ken: Diversity of experience (under & upperclassmen)

Caleb

- Name one thing you learned about one of your fellow SESH members while working with them?

Andrew's passion for the job

- How do you think Monday 8/6's work will help you in your chosen field?

Looking forward to taking the classes

Building off the trip as experience

- If you have suggestions for making the trip better what would they be?

More time to prepare:

Making sure the steps are proper (e.g. same distances from wall to corners)

Having the proper tools

Robin

- Name one thing you learned about one of your fellow SESH members while working with them?

Everyone is really funny

- How do you think Monday 8/6's work will help you in your chosen field?

The masonry work, having this experience before the design labs

- If you have suggestions for making the trip better what would they be?

Communication, time to plan, nothing new to add

Andrew

- Name one thing you learned about one of your fellow SESH members while working with them?

Wilson's freakin' awesome!

- How do you think Monday 8/6's work will help you in your chosen field?

Never going to design anything masonry, because it's annoying to deal with

- If you have suggestions for making the trip better what would they be?

None

Alex

- Name one thing you learned about one of your fellow SESH members while working with them?

How bilingual Robert was

- How do you think Monday 8/6's work will help you in your chosen field?

Help a lot in handling curveballs in projects

2-cell v 3-cell modular design

- If you have suggestions for making the trip better what would they be?

More accurate report, e.g. what's available, how big was the bell

Ken: You need to learn how to move forward and adjust (e.g. bell weight is an easy adjustment)

Rae

- Name one thing you learned about one of your fellow SESH members while working with them?

This group has a good team chemistry.

- How do you think Monday 8/6's work will help you in your chosen field?

Helped her in interdisciplinary work. Just be passionate.

- If you have suggestions for making the trip better what would they be?

Things ARE going to come up on this trip unanticipated. Just expect it.

Beforehand, for next year's leadership, try to go to the materials labs.

Ken: Throw away all dual-system measurement tapes and sticks

Andy

- Name one thing you learned about one of your fellow SESH members while working with them?

Ken's effort today

Alex made the call to get help, the best call made, to keep us on schedule

- How do you think Monday 8/6's work will help you in your chosen field?

He had never done anything in concrete or CMU.

But, "Shit changes", be prepared to adapt.

- If you have suggestions for making the trip better what would they be?

A masseuse

Hannah

- Name one thing you learned about one of your fellow SESH members while working with them?

People here have so much stamina.

Jared really appreciates the little things in life.

- How do you think Monday 8/6's work will help you in your chosen field?

Among all the construction experience (e.g. Holly Habitat), she has not done masonry before.

Important to know what materials work well for certain functions, since Architects often choose the materials.

- If you have suggestions for making the trip better what would they be?

Warning students next year to keep an open mind. Designs will change.

8/7/2012

- Funniest moment of the day
- What do you hope to carry home with you after today?
- What to do with our afternoon tomorrow after we finish
- Addl comments

Paul

- Funniest moment of the day
- When Alex and he trying to make the square
- What do you hope to carry home with you after today?
- If he can deal with the Haitian heat, he can deal with anything
- What do you want to do with our afternoon tomorrow after we finish?
- Sit outside on the porch and do what we do every night
- Addl comments

The mural is amazing

Andrew

- Funniest moment of the day
- Weird sounds Robin was making
- What do you hope to carry home with you after today?
- Knowledge of having built something, will help with design better
- What to do with our afternoon tomorrow after we finish
- Play frisbee, go to store
- Addl comments
- "Lightning is fucking amazing"

Jared

- Funniest moment of the day
- Had a rough day
- What do you hope to carry home with you after today?
- First hand experience on manual labor on design proj
- What to do with our afternoon tomorrow after we finish
- Would like to venture around and see what's around town
- Addl comments

Nope

Caleb

- Funniest moment of the day
- Someone snoring when they went to sleep following dinner
- What do you hope to carry home with you after today?
- The relationships that are formed here
- The experience lifting one's confidence
- What to do with our afternoon tomorrow after we finish
- Admire the project, look at the people who came by
- Addl comments

Robert

- Funniest moment of the day

Little kids touching Ken, who spoke pretty good English

- What do you hope to carry home with you after today?

The experience, crash course for everyone

- What to do with our afternoon tomorrow after we finish

Sit there and look at the project, and drink beer

- Addl comments

Raining and packing up was exhilarating

Alex

- Funniest moment of the day

Watching Samuel check out a Haitian woman

- What do you hope to carry home with you after today?

Pictures of a completed project for everyone at home

- What to do with our afternoon tomorrow after we finish

Go around the town, e.g. rum distillery

- Addl comments

None

Rae

- Funniest moment of the day

Everyone irritable after dinner

- What do you hope to carry home with you after today?

Wants to see the project finished

- What to do with our afternoon tomorrow after we finish

Hang out, admiring everyone's reactions

- Addl comments

We just got a lot done today

Hannah

- Funniest moment of the day

Watching people go out in the rain

- What do you hope to carry home with you after today?

An appreciation for life in the United States

And a passion to come back

- What to do with our afternoon tomorrow after we finish

Go around, shop for products

- Addl comments

None

Robin

- Funniest moment of the day

Laughing with Hannah after everyone got back and got irritable

- What do you hope to carry home with you after today?

Construction experience

Appreciation for things back home

- What to do with our afternoon tomorrow after we finish

Walk around the town

- Addl comments

None

Andy

- Funniest moment of the day

One word: Ken

- What do you hope to carry home with you after today?

The hinge, literally. Turned out to be really useful.

- What to do with our afternoon tomorrow after we finish

Wants to admire our work with beers

- Addl comments

He hates car horns

Pierre

- Funniest moment of the day

1) Bell starting up during Dieu Tout Puissant

2) Singing with Wilson the Kreyol Kyrie

- What do you hope to carry home with you after today?

"Witness" to something incredible happening, total strangers coming together to create something that will have an impact on people's lives, ringing to commemorate every 12 Janvier.

- What to do with our afternoon tomorrow after we finish

Eavesdrop on people admiring the project

- Addl comments

Just glad that between the storm starting and the crook in the morning, everyone is back safe and sound.

Ken

- Funniest moment of the day

Watching inexperienced people lurching towards completion.

- What do you hope to carry home with you after today?

Continued appreciation for his ability, the privilege, the opportunity to work with SESH and Cal Poly

- What to do with our afternoon tomorrow after we finish

He wants to ring the bell, in frustration for the delays in rebuilding the church

- Addl comments

Wants to see more of Léogâne

8/9/2012

- What do you think was most valuable thing learned on project?

- Most frustrating part of proj for you?

- What feelings about proj, aka feedback?

- Add'l comments

Hannah

- What do you think was most valuable thing learned on project?

1) patience

2) we work well as a team

- Most frustrating part of proj for you?

communication b/w Haiti Engr and SESH, incl Haiti Eng in recaps so that we're on the same page

- What feelings about proj, aka feedback?

took on just enough for the time we spent here

if we wanted to do a bigger project, we should spend more time and money here

- Add'l comments

pleasure getting to know everybody

Paul

- What do you think was most valuable thing learned on project?

communication, e.g. feedback on designs. design plans not enough

- Most frustrating part of proj for you?

mosquitos

- What feelings about proj, aka feedback?

it was a new experience, and a good one

we were here for the hands on experience, not just a vacation

- Add'l comments

Rae

- What do you think was most valuable thing learned on project?

the better the team cooperates, the better the proj is

- Most frustrating part of proj for you?

the heat

- What feelings about proj, aka feedback?

just the fact that the project was finished, it was great to see it
sense of accomplishment

- Add'l comments

Robert

- What do you think was most valuable thing learned on project?

human impact of what we do

- Most frustrating part of proj for you?

lack of proper tools and lack of access to electricity

- What feelings about proj, aka feedback?

we chose project of appropriate scope

we have experience now

- Add'l comments

overall, proj very well done, esp to work with Haitians

Wilson so excited to work

and the crowd we attracted when we raised the bell

Andy

- What do you think was most valuable thing learned on project?
you can have a team work together, never been on a team so dedicated
- Most frustrating part of proj for you?
lack of proper tools
rae: emphasize proper safety on the worksite, e.g. safety goggles, hard hats
- What feelings about proj, aka feedback?
it surprisingly well given our timeline, weather, and lack of equipment
---> Note to self: Need to read how to use power tools
- Add'l comments

Robin

- What do you think was most valuable thing learned on project?
Also the teamwork and communication
- Most frustrating part of proj for you?
communication, difficulties in understanding or expressing (e.g. gratitude)
- What feelings about proj, aka feedback?
took on just the right amount, esp with amount of times we had to improvise
- Add'l comments

Andrew

- What do you think was most valuable thing learned on project?
that this project was actually possible to finish!
- Most frustrating part of proj for you?
how quickly he felt he lost his stamina
- What feelings about proj, aka feedback?
good amount of work to be done with the time we had here
good to have that Sunday break (suggested doing that in future)
- Add'l comments

you guys are amazing

Caleb

- What do you think was most valuable thing learned on project?
"shit like this is possible"
experience that will help with design classes
- Most frustrating part of proj for you?
felt like he should've worked, but couldn't
time spent figuring things out
- What feelings about proj, aka feedback?
liked how project impacted community
perfect amount of time to take
- Add'l comments
super great group, no problems bonding or working together
Andrew: group should think to take 1.5 times longer than they think it should

Jared

- What do you think was most valuable thing learned on project?
appreciation for how much work it takes to erect even a relatively simple proj
- Most frustrating part of proj for you?
missing a lot of the 2nd day
- What feelings about proj, aka feedback?
nice in the future to plan for a few more days for contingency
time frame and proj scope were realistic, e.g. rain
- Add'l comments

Alex

- What do you think was most valuable thing learned on project?
deeper understanding of what CMs have to do
e.g. figuring out blocks on 3-cell, or Plan B on bell
- Most frustrating part of proj for you?
lack of proper planning on his own part, but able to figure it out
- What feelings about proj, aka feedback?
great project, influenced the community, and that it will be permanent
- Add'l comments

next proj: we did a structure here, but later we should do a building

Pierre

- What do you think was most valuable thing learned on project?
1) actual experience of seeing people build a structure. how tools are used or should not be used, for example
2) communication tools important (e.g. cell phones speeding up resupply and equipment requests)
- Most frustrating part of proj for you?
my primitive Kreyol, easy for me to communicate what we wanted, but difficult for me to request information
- What feelings about proj, aka feedback?
right for the level of experience and uncertainties in differing expectations
- Add'l comments
I will miss the food

Negative feedback?

- Steve
Cultural biases
Minority of anti-Americans
- Herby
Can't get this kind of experience from any other type of group
Be careful regarding security
Incorporated Haitians into work
- Alex
Make sure next year's group follows the rules and roles set by first group. e.g. people in charge of security, first aid, language

Ken

- What do you think was most valuable thing learned on project?

Overall experience of what a team of people can do, even one that comes together at the end. A team with a common purpose.

Important to have one leader

- Most frustrating part of proj for you?

230pm heat that instantly saps energy

- What feelings about proj, aka feedback?

scope was good and realistic

understood before we got here

opportunity missed: ability to work more in depth with more Haitians, in a more meaningful way. we need a long term project in order to be engaged.

- Add'l comments

more satisfying this year to ring the bell

loved doing the round table at end of night

8/10/2012

- Most memorable part of trip?

- Favorite part of Haitian culture?

- Did you get what you came here for? What was it?

- Add'l Comments

Andy

- Most memorable part of trip?

When little kid took a shovel full of dirt and smiled at him

- Favorite part of Haitian culture?

The food is "pretty damn good"

- Did you get what you came here for? What was it?

Goal: Impact Haitians positively.

Yes, Group as a whole definitely impacted them. They saw how we put in rebar, which the Haitians may not be used to seeing.

- Add'l Comments

Couldn't have been a better group

Paul

- Most memorable part of trip?

1) The dedication, esp when the entire community sang

2) Able to give Wilson the hat he was wearing

- Favorite part of Haitian culture?

"Sa'k pase"

The transportation system. Honking norms different.

- Did you get what you came here for? What was it?

Yes. Goal: To help out

- Add'l Comments

Caleb is the next coordinator.

Caleb

- Most memorable part of trip?

1) First tropical storm (group shower)

2) Last screw in the tower

- Favorite part of Haitian culture?

The food!

They are super-hard workers. Impressed with work ethic.

- Did you get what you came here for? What was it?

Yes. Trip as a huge learning experience.

- Add'l Comments

He is coordinator for next year

Andy is selected as vice-coordinator

"Cholera, bro"

Robin

- Most memorable part of trip?

1) Got to see how community reacted to the bell.

2) The storm

3) Kaliko

4) Lunch w/ the Nuncio

- Favorite part of Haitian culture?

Their coffee

- Did you get what you came here for? What was it?

1) More appreciation for Haitian culture. She got to see how many people appreciated our work.

2) Construction experience, which she got.

- Add'l Comments

Group is awesome

Andrew

- Most memorable part of trip?

1) Thunderstorm

2) Meal at the Nuncio's

- Favorite part of Haitian culture?

Their curiosity at our work site

- Did you get what you came here for? What was it?

Got design experience for the structure.

We raised the bell and we did it.

- Add'l Comments

"Cholera, bro"

Hannah

- Most memorable part of trip?

3 little boys playing with her camera, how mesmerized they were by it

- Favorite part of Haitian culture?

Their passion. Dedicated to church, community. Their thirst to learn.

- Did you get what you came here for? What was it?

Got a thesis project.

- Add'l Comments

She hopes we all hang out after this.

Jared

- Most memorable part of trip?

Trading and bartering

- Favorite part of Haitian culture?

Their resourcefulness

- Did you get what you came here for? What was it?

Got a lot out of this experience, although he wasn't expecting anything

- Add'l Comments

Robert

- Most memorable part of trip?

1) An old woman grabbing his hand and saying "mesi" over and over again after the dedication

2) The Nuncio's and Kaliko. "Fucking great"

- Favorite part of Haitian culture?

The people

People received us in a warm way

- Did you get what you came here for? What was it?

Yes, the experience. Life-changing.

- Add'l Comments

Working with Haiti Engineering, despite the communication breakdowns

Alex

- Most memorable part of trip?

1) Fri: Pulled up to house, and saw how nice the Abdallah house was

2) Sat: Doing the concrete pour, the feeling of accomplishment

3) Sun: Seeing Yves come up to us, a world citizen who ended up in Haiti

4) Mon: Masonry, 1230p, deciding that we needed to get help

5) Tue: How willing we all were to work, until the rain came

6) Wed: Putting the last screws in

7) Thu: Entire span of dedication ceremony, and when Fr Marat moved us up to the front and thanked us in Eng

8) Fri: This recap

- Favorite part of Haitian culture?

The food!

The vibrancy of the culture. Activity and color and passion. They seem a lot more alive.

- Did you get what you came here for? What was it?

Yes. The bell is in the air.

- Add'l Comments

"Cholera, bro"

Couldn't be happier with the group

Pierre

- Most memorable part of trip?

1) Funerals. Saw THREE this week. The high point (most surreal): When the funeral band started playing as the backhoe shot the smallest gap between the house and the radio station.

3) Singing at the dedication, and compelled by a little voice to add a little speech:

Si lekip nou ki se moun ozetazuni pa te blie w

Si yon mere pap janm blie timoun li

Kombien pi

Kombien pi le Bondye le Seignieur du ciel pap janm blie Ayiti ak Ayisien yo

- Favorite part of Haitian culture?

They are comfortable with the reality of death and failure.

This makes them more able to survive, and even to thrive in the conditions they find themselves in.

- Did you get what you came here for? What was it?

Respect. I now feel that Fr Marat respects what I am about, that I am not here to screw him. I feel that I got this.

- Add'l Comments

Haiti Engr will work on report.

Suggested to SESH to work on their report as a means to build institutional memory.

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SESH BELL STRUCTURE

PROJECT NUMBER: 002

OWNER: ST. ROSE DE LIMA PARISH

ENGINEER: ANDREW JIMENZ AND ALEX DADDOW

STAMP:



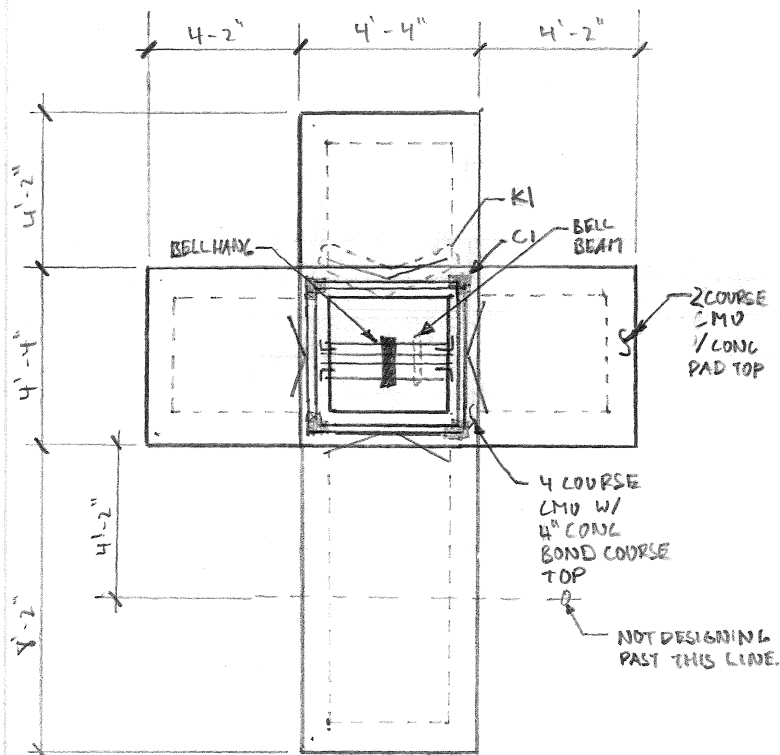
DATE: 6/12/2013

REVISION #: 1

LOCATION: CAL POLY SAN LUIS OBISPO

Table of Contents

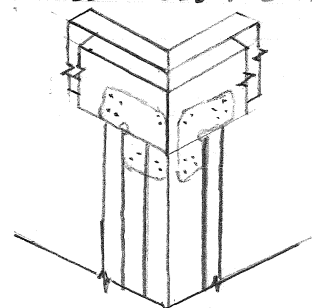
KEY PLAN & AS BUILT INFO	1-2
DETERMINATION OF SEIMIC SHEAR	3
DETERMINATION OF WIND SHEAR	4
COMPARISON OF WIND & SEISMIC	4
SUMMARY OF ETABS OUTPUT	5
SCREWED CONNECTION ADEQUACY	6
CMU STRENGTH ROUGH CHECK	7
FOUNDATION BEARING AND SLIP	8
WOODEN MEMBER CHECKS EXAMPLE	9-11
ETABS MODEL	12-28

KEY PLAN SCALE: $1/8" = 1'-0"$ C1 LAYOUT

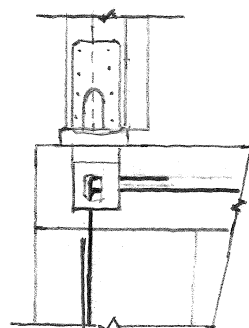
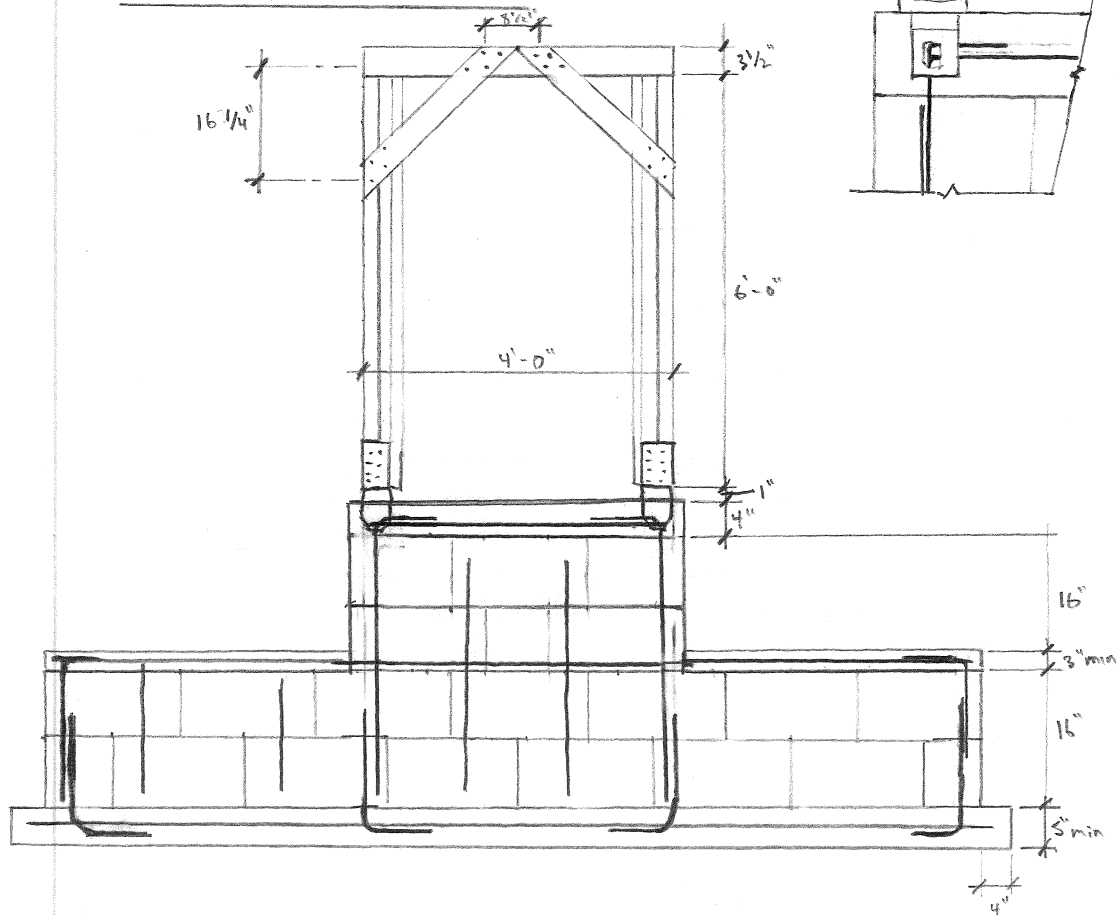
- COLUMNS BUILT UP USING 2X4 SECTIONS
- ALL COLUMNS BUILT IN THE SAME FASHION

BEAM BEARING CONDITION B → C

- ALL BEAMS BEAR IN SAME FASHION
- LCE 4 SST USED TO CONNECT.

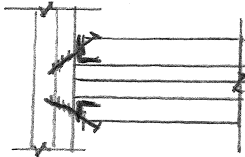
COLUMN BEARING CONDITION

- ALL COLUMNS BEAR IN SAME FASHION
- PB 44 SST USED TO CONNECT.
- ELBOWS ARE IN BOTH DIRECTIONS
- HORIZONTAL REBAR IS CONT. LOOPS.

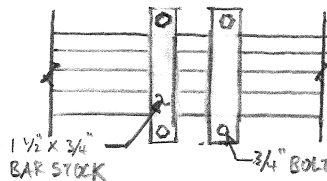
TYPICAL KNEE BRACE LINE NTS

BELL BEAM CONDITION

- BOTH SIDES ARE CONNECTED IN SAME FASHION
- 4 2X4 HUNG ON SINGLE U-24SS7

BELL HANG CONDITION

- EXISTING HARDWARE TAKEN AS SUFFICIENT
- TO BE TAKEN A POINT LOAD

BELL STATISTICS - ESTIMATED BY STAN CHRISTOPH OF CHRISTOPH PILLARD BELL FOUNDRY

- MENEELY BELL
- ϕ 34"
- HEIGHT OF 48"
- WEIGHT OF 880 - 860 #

MASONRY + CONK SPEC.

- 8X6X16 CMU UNITS W/ 3 CELLS
- MSJC STATES 1,900 PSI AS MINIMUM f'_m FOR CMU + TYPE N MORTAR
- FOR DESIGN WE WILL USE 75% OF 1900 PSI TO ACCOUNT FOR POORER QUALITY MATERIAL
- A LOW END $f'_c = 2500$ PSI + A $f'_c = 2250$ PSI WILL BE USED FOR DESIGN.

WOOD SPEC.

- VERY GOOD QUALITY LUMBER WAS ACQUIRED FOR THE STRUCTURE.
- SOUTHERN PINE
- 2X4 No. 2

$$F_b = 1500 \quad F_t = 825 \quad F_{vll} = 175 \quad F_{cl} = 565 \quad F_c = 1650 \quad E = 16 \text{ mil} \quad E_{min} = 580,000$$

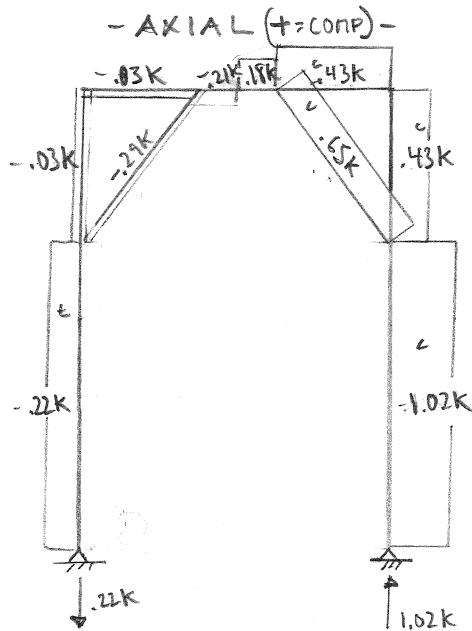
SS7 TIE RATING SUMMARY

U-24-2	UPLIFT = 370#	EQ (FLOOR) = 575#	(ANY DIRECTION)
PB44	UPLIFT = 1365#	F1 (W) = 765#	F2 (W) = 1325# (ALL LOWER REQ'S MET)
LCE4	UPLIFT = 985#	LATERAL = 1425#	

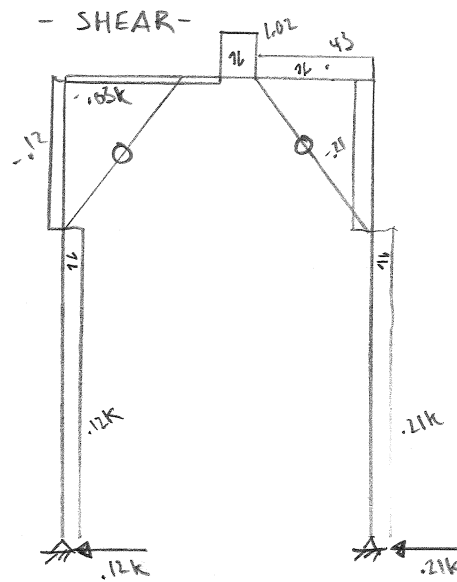
* WITH EQ MODIFIER + WEIGHT OF BELL @ 860# EACH CONNECTION EASILY PASSES A 16 TEST.

REF.	CALCULATION OF V_E - ASCE 7-05	ANSWER
TABLES 11.4-1 11.4-2 EQ 11.4-1 EQ 11.4-2 EQ 11.4-3 EQ 11.4-4	<p>USGS OFR $\rightarrow S_s = 1.42$ $S_1 = .49$ (AS OF 2013)</p> <p>$F_a = 1.0$ (SITE CLASS "D") - STIFF SOIL</p> <p>$F_v = 1.5$</p> <p>$S_{MS} = F_a S_s = 1(1.42) = 1.42$</p> <p>$S_{M1} = F_v S_1 = 1.5(.49) = .735$</p> <p>$S_{DS} = \frac{2}{3} S_{MS} = \frac{2}{3}(1.42) = .94667$</p> <p>$S_{D1} = \frac{2}{3} S_{M1} = \frac{2}{3}(.735) = .49$</p>	<p>$S_{DS} = .95$</p> <p>$S_{D1} = .49$</p>
EQ 12.8-1 EQ 12.8-2 EQ 12.8-3 EQ 12.8-4	<p>$V = C_s W$</p> <p>$T \approx .02(10)^{.75}$ (EQ 12.8-7)</p> <p>$C_s = \frac{S_{DS}}{(R/I)} < \frac{S_{D1}}{T(R/I)} < \frac{S_{D1I}}{T^2(R/I)}$ $T \approx .112s$</p> <p>$T_L = .8s$ (BEST GUESS OFF FIGURE 22-15)</p> <p>$R = 1.5$ (A LOW R IS TAKEN SINCE UNKNOWN DUCTILITY OF KNEE BRACED SYSTEM BUT SINCE THE WOOD & MASONRY SHOULD HAVE SOME DUCTILITY)</p> <p>$I = 1$ (NON-OCCUPIED)</p> <p>$C_s = .65 < 2.92 < 7864.37$</p> <p>$C_s = .65$</p> <p>$V = .65 W$</p> <p>$W_{WOOD+BELL} = 1000 \#$ (CONSERVATIVELY)</p> <p>$V_{WOOD+BELL} = 650 \#$</p> <p>$W_{MCL} = W_{MASONRY} (135 \text{ pcs}) + W_{CONC} (150 \text{ pcs}) + 1000 \#$</p> <p>$W_{MASONRY} = [2 \times 6" \times 8" \times 50'8" + 4 \times 4 \times 4'4"] / 1728 = 34.26 \text{ cfs}$</p> <p>$W_{CONC} = \{5" \times 6" \times 4 \times 4'4" + [(4'4")^2 \times 4] \times 8\} / 1728 = 53.69 \text{ cfs}$</p> <p>$W_{MCL} = 34.26(135) + 53.69(150) + 1000 = 13.7 \text{ kips}$</p> <p>$V_{MCL} = 8.91 \text{ K @ BASE}$</p>	<p>$C_s = .65$</p> <p>$V_{WOOD+BELL} = 650 \#$</p> <p>$V_{TOT} = 13.7 \text{ K}$</p> <p>$V_{MCL} = 8.91 \text{ K}$</p>

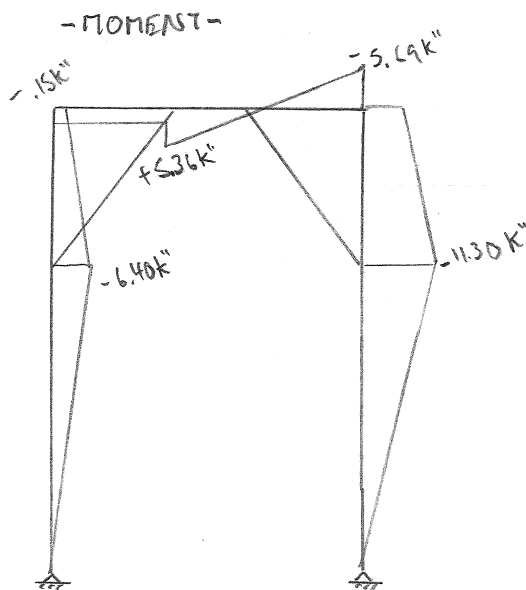
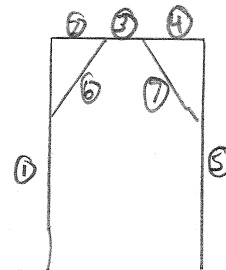
REF	CALCULATION OF V_w - ASCE 7-05	ANSWER
6.5.3	BASIC WIND SPEED OF 110 MPH (LIAM O'HANLON ENGINEERING liam.ohannonfoundation.org) $V = 110$ $I = 1.77$ SURFACE ROUGHNESS 'B'	
6.5.8.1	$G = .85$	
EQ 6-8	$q_z = .00256 K_z K_{zt} K_d V^2 I$	
TABLE 6-3	$K_z = .7 \quad K_{zt} = 1 \quad K_d = .85$	
6-4	$q_z = .00256 (.7)(.85)(.77) 110^2 = 14.19 \text{ Psf} \leftarrow$	$q_z = 14.19 \text{ Psf}$
FIGURE 6-21	$D \sqrt{q_z} = 2.83 > 2.5 \checkmark$ $h/D = 1.4 \therefore C_s = .523$	
EQ 6-28	$p = q_z G C_s = 14.19 (.85) (.523) = 6.31 \text{ Psf} < 10 \therefore \text{USE } 10 \text{ Psf} \leftarrow$	$p = 10 \text{ Psf}$
	$V_{\text{WOOD + BELL}} = \left(\overset{\text{(BELL)}}{10 \text{ SF}} + \overset{\text{(WOOD)}}{5 \text{ SF}} \right) \times 10 \text{ Psf} = 150 \# < \text{SEISMIC (650 \#)} \leftarrow$	$V_{\text{WB}} = 150 \#$
	$V_{\text{ML}} = 30 \text{ SF} \times 10 \text{ Psf} = 300 \# < \text{SEISMIC (8,91K)} \leftarrow$	$V_{\text{ML}} = 300 \#$
COMPARISON OF WIND + SEISMIC		
WITH SEISMIC LOADING BEING CONSIDERABLY HIGHER, NO MORE TIME WILL BE SPENT ON WIND LOADING. SEISMIC GOVERNS BY AT LEAST 400% ALSO SINCE $C_s = .65$ ALL SST CONNECTIONS ARE SATISFACTORY AND NEED NO MORE CALCULATIONS TO PROVE VIABILITY.		
ITEMS NEEDED TO BE PROVEN		
1. ALL WOOD MEMBERS 2. KNEE BRACE CONNECTION 3. BELL HANG BEARING + FRICTION 4. LAP DISTANCES 5. CMU WALLS 6. FOUNDATION		

TYPICAL FRAME LINE

$$\sum F_y = -.22k + 1.02k - .8k = 0 \checkmark$$

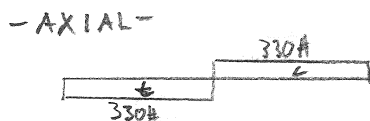
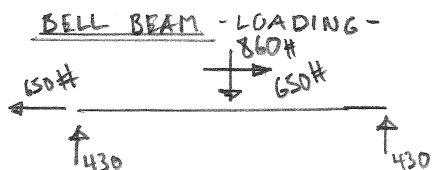


$$\sum F_x = .330k - .12k - .21k = 0 \checkmark$$

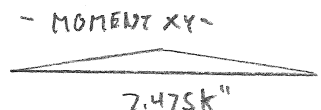
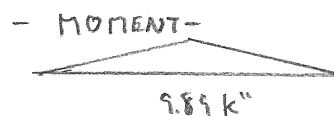
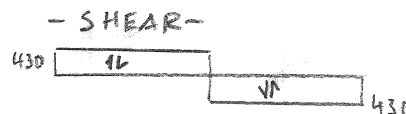
MEMBERS OF CONCERN

LIST:

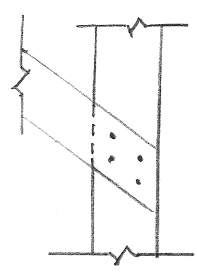
- #1 - CHECK COMBINED A/V/M
- #3 - CHECK COMBINED A/V/M
- #5 - CHECK COMBINED A/V/M
- #6 - CHECK A
- #7 - CHECK A



(ONLY APPLIES WHEN LOADED
ALONG BEAM)



(ONLY APPLIES WHEN LOADED
PERPENDICULAR TO BEAM)

REF	CALCULATION OF Z - NDS 2005	ANSWER
EQ 11.3-11	$F_{c\theta} = \frac{F_{c\parallel} F_{c\perp}}{F_{c\parallel} \sin^2 \theta + F_{c\perp} \cos^2 \theta}$ $D < 1/4" \therefore F_c = 5550 \text{ PSI}$ $F_{c\theta} = \frac{(5550)^2}{5550(.5) + 5550(.5)}$ $F_{c\theta} = 5550$ $R_D = K_D K_{\theta}$ $= 2.2(1.125)$ $R_D = 2.475$ $F_{em} = 5550$ $F_{cs} = 5550$ $R_c = 1$ $R_{te} = 1$ $D = .190$ $F_{yb} = 45,000 \text{ psi}$ $d_m = 1.5"$ $d_s = 1.5"$	$\theta = 45^\circ$ $S_b = .55$
TABLE 11.3.1B		
EQ 11.3-1	<p>YIELD MODE</p> <p>I_m</p> <p>EQUATION</p> $Z = \frac{D d_m F_{em}}{R_D} = 1581.75 \#$	
11.3-2	<p>I_s</p> $Z = \frac{D d_s F_{cs}}{R_D} = 1581.75 \#$	
11.3-3	<p>II_m</p> $Z = \frac{k_1 D d_m F_{em}}{R_D} = 1937.64 \#$	
11.3-4	<p>III_m</p> $Z = \frac{k_2 D d_m F_{em}}{(1+2R_c) R_D} = 560.99 \#$	
11.3-5	<p>III_s</p> $Z = \frac{k_3 D d_s F_{cs}}{(2+R_c) R_D} = 560.99 \#$	
11.3-6	<p>IV</p> $Z = \frac{D^2}{R_D} \sqrt{\frac{2 F_{em} F_{yb}}{3(1+R_c)}} = 329.38 \#$	$Z = 329.38 \#$
TABLE 10.3.6A	<p>CALCULATION OF TOTAL CONN. CAPACITY</p> <p>$C_b = .91$ $C_D = 1.6$ $C_H = .7$ $C_L = .7$ $C_A = .85$</p> <p>329.38 1.6 $.7$ $.7$ $.85$ 1 1</p> <p>$Z_{tot} = 4 \times 329.38 \times 1.6 \times .7 \times .7 \times .85 \times 1 \times 1$</p> <p>$Z_{tot} = 800 \#$</p> <p>* CONSIDERED AS "WET" IN-SERVICE & $100^\circ F < T < 125^\circ F$ TO BE CONSERVATIVE.</p>	$Z_{tot} = 800 \#$
COMMENTS: $800 \# > 650 \#$ ✓ $650 \#$ IS THE GREATEST LOAD EXPECTED FOR THIS JOINT.		

REF

ROUGH CHECK

ANSWER

MSJC
2.3.5.2.1→ IF $f_v < \sqrt{f'_m}$ THEN NO INVESTIGATION MERITED
 $< 50 \text{ psi}$

$$f_v = \left[(4' \cdot 12''/1) \cdot 8'' \right]^{-1} \cdot 650 \# = 1.69 \text{ psi} < 50 \text{ psi} \checkmark$$

$$F_v = \sqrt{f'_m} = \sqrt{1425} = 37.75 \text{ psi} > 1.69 \text{ psi} \checkmark$$

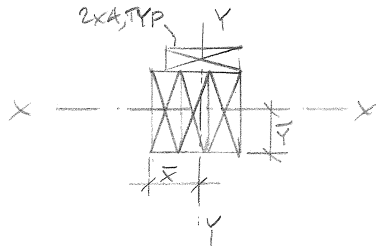
PASS

∴ ALL LOAD IS EASILY
TAKEN IN SHEAR

REF	FND. SLIP	ANSWER
Pg. 3	<p>TOTAL WEIGHT OF STRUCTURE $13.7 \text{ K} = W_{\text{STR}}$</p> <p><u>TOTAL WEIGHT OF SOIL IN STRUCTURE</u> $= W_{\text{SOIL}}$</p> $W_{\text{SOIL}} = \underbrace{3' \cdot 3.5' \cdot 1.33'}_{\text{VOLUME UNDER BENCH}} \cdot \underbrace{5}_{\text{\# OF VOLUMES}} \cdot \underbrace{100 \text{ pcf}}_{\text{CONSERVATIVE SOIL WEIGHT}} = 7 \text{ K}$	
Pg. 3	<p>TOTAL SLIP FORCE $F_{\text{SLIP}} = 8.91 \text{ K}$ (V_{mc})</p> <p><u>TOTAL FRICTION OPPOSING SLIP</u></p> <p>$F_{\text{FRICT}} = \text{COF}_{\text{CONC} \rightarrow \text{SOIL}} \cdot W_{\text{STR}} + \text{COF}_{\text{SOIL} \rightarrow \text{SOIL}} \cdot W_{\text{SOIL}}$</p> <p>$\text{COF}_{\text{CONC} \rightarrow \text{SOIL}} = .60$ (FOR GRAVEL/SAND)</p> <p>$\text{COF}_{\text{SOIL} \rightarrow \text{SOIL}} = .70$ (MEDIUM DENSITY SAND W/ GRAVEL)</p> <p>$F_{\text{FRICT}} = .6(13.7 \text{ K}) + .7(7 \text{ K}) = 13.12 \text{ K} > 8.91 \text{ K} \checkmark$ F.O.S. = 1.47</p>	PASS
	FND. BEARING	
Pg. 3	<p>$W_{\text{STR}} = 13.7 \text{ K}$</p> <p><u>AREA OF BEARING</u> (IGNORE SOIL WEIGHT - SOIL BEARS ON SOIL)</p> <p>$A = 12" \cdot \underbrace{[4'-4" (8) + 4'-2" (6) + 8'-2" (2)]}_{\text{FOUNDATION LENGTH}} = 912 \text{ in}^2 \text{ or } 6.33 \text{ SF}$</p> <p><u>BEARING STRESS</u></p> <p>$\sigma_b = W_{\text{STR}} / A = 13.7 \text{ K} / 6.33 \text{ SF} = 2164 \text{ pcf} < 3000 \text{ pcf} \checkmark$</p>	PASS

MEMBER 5 [COLUMN]

SECTION PROPERTIES:



$$A = 1.5" \times 3.5" \times 4 = \underline{21 \text{ in}^2}$$

$$\bar{X} = \frac{2.25"(15.25 \text{ in}^2) + 2.75"(5.25 \text{ in}^2)}{21 \text{ in}^2} = \underline{2.375"} \quad \bar{Y} = \frac{1.75"(15.25 \text{ in}^2) + 4.25"(5.25 \text{ in}^2)}{21 \text{ in}^2} = \underline{2.333"} \quad I_x = \frac{4.5"(3.5")^3}{12} + 15.25 \text{ in}^2(1.75 - 2.333)^2 + \frac{3.5"(1.5")^3}{12} + 5.25 \text{ in}^2(4.25 - 2.333)^2 = \underline{41.71 \text{ in}^4}$$

$$I_y = \frac{3.5"(4.5")^3}{12} + 15.25 \text{ in}^2(2.25 - 2.375)^2 + \frac{1.5"(3.5")^3}{12} + 5.25 \text{ in}^2(2.75 - 2.375)^2 = \underline{32.92 \text{ in}^4}$$

$$I_y = \frac{3.5"(4.5")^3}{12} + 15.25 \text{ in}^2(2.25 - 2.375)^2 + \frac{1.5"(3.5")^3}{12} + 5.25 \text{ in}^2(2.75 - 2.375)^2 = \underline{32.92 \text{ in}^4}$$

DEMANDS [FROM ETABS ANALYSIS]

$$M_u = 11,300 \text{ #-in}$$

$$V_u = 210 \text{ \#}$$

$$P_u = 1020 \text{ \#}$$

→ FIND LARGEST $\frac{d}{I}$ FOR WORST-CASE BENDING STRESS, f_b .

$$\frac{dx}{I_x} = \frac{2.375}{32.92} = 0.0721 \quad \frac{dy}{I_y} = \frac{2.667}{41.21} = 0.0639$$

→ BENDING ABOUT Y-Y AXIS GIVES WORST CASE

$$f_b = \frac{M_d}{I} = \frac{(11300 \text{ #-in})(2.375")}{32.92 \text{ in}^4} = \underline{815.23 \text{ psi}}$$

→ APPROXIMATE $f_v = 1.5 \frac{V}{A} = 1.5 \left(\frac{210 \text{ \#}}{21 \text{ in}^2} \right) = \underline{15 \text{ psi}}$

→ $f_c = \frac{P}{A} = \frac{1020 \text{ \#}}{21 \text{ in}^2} = \underline{48.57 \text{ psi}}$ CONSERVATIVELY $f_t = f_c = \underline{48.57 \text{ psi}}$

NDS REFERENCE VALUES [NDS-S, T.4B, No. 2 NON-DENSE, 2"-4" WIDE]

$$F_b = 1350 \text{ psi}$$

$$F_v = 175 \text{ psi}$$

$$F_t = 775 \text{ psi}$$

$$F_c = 1600 \text{ psi}$$

$$E_{min} = 510,000 \text{ psi}$$

ADJUSTMENT VALUES [PER NDS T. 4.3.1]

$$C_D = 1.6 \text{ (EARTHQUAKE DURATION)}$$

$$C_M = 1.0$$

$$C_L = 0.9 \text{ FOR } E_{mn} \text{ \& } F_{t1}, 0.7 \text{ FOR } F_b, F_v, F_c \text{ [T. 2.3.3]}$$

$$C_L = \text{CALC. SHOWN BELOW} \rightarrow 0.94$$

$$C_F = 1.0$$

$$C_i = 1.0$$

$$C_r = 1.0$$

$$C_P = \text{CALC. SHOWN BELOW} \rightarrow 0.312$$

FIND C_L

$$l_u \approx 56" \quad d \approx 4.5 \rightarrow l_e = 106" \text{ in}$$

$$R_B = \sqrt{\frac{l_e d}{b^2}} = \sqrt{\frac{106(4.5)}{4.5^2}} = 4.83 \text{ in}$$

$$F_{bE} = \frac{1.2 E'_{mn}}{R_B^2} = \frac{1.2(510000 \times 0.9 \times 1.0)}{4.83^2} = 29,562.14 \text{ psi}$$

$$F_b^* = 1350 \times 1.6 \times 0.2 \times 1.0 = 1612 \text{ psi}$$

$$C_L = \frac{1 + (F_{bE}/F_b^*)}{1.9} - \sqrt{\left[\frac{1 + (F_{bE}/F_b^*)}{1.9} \right]^2 - \frac{F_{bE}/F_b^*}{0.95}} = 0.94$$

FIND C_P

$$l_e = 2 \times l_u = 112 \text{ in} \quad F_{cE} = \frac{0.822 E'_{mn}}{(l_e/d)^2} = 609.08 \text{ psi}$$

$$F_c^* = 1600 \times 1.6 \times 0.7 = 1792 \text{ psi} \quad C = 0.8 \text{ (SAWN LUMBER)}$$

$$C_P = \frac{1 + (F_{cE}/F_c^*)}{2C} - \sqrt{\left[\frac{1 + (F_{cE}/F_c^*)}{2C} \right]^2 - \frac{F_{cE}/F_c^*}{C}} = 0.312$$

ADJUSTED VALUES

$$F_b' = 1350 \text{ psi} (1.6)(1.0)(0.7)(0.94)(1.0)(1.0)(1.0) = 1421.3 \text{ psi} > F_b = 815 \text{ psi} \checkmark$$

$$F_v' = 175 \text{ psi} (1.6)(1.0)(0.7)(1.0) = 196 \text{ psi} > F_v = 15 \text{ psi} \checkmark$$

$$F_t' = 775 \text{ psi} (1.6)(1.0)(0.9)(1.0) = 1116 \text{ psi} > F_t = 48.57 \text{ psi} \checkmark$$

$$F_c' = 1600 \text{ psi} (1.6)(1.0)(0.7)(1.0)(1.0)(0.312) = 559.1 \text{ psi} > F_c = 48.57 \text{ psi} \checkmark$$

CHECK COMBINED EFFECTS

→ FLEXURE + COMPRESSION

$$\left(\frac{f_c}{F'_c}\right)^2 + \frac{f_b}{F'_b[1 - (f_c/F_{CE})]} = 0.0675 + 0.623 = \underline{0.63} \leq 1.0 \checkmark$$

→ FLEXURE + TENSION

$$\frac{f_c}{F'_c} + \frac{f_t}{F'_b} = 0.043 + 0.539 = \underline{0.582} \leq 1.0 \checkmark$$

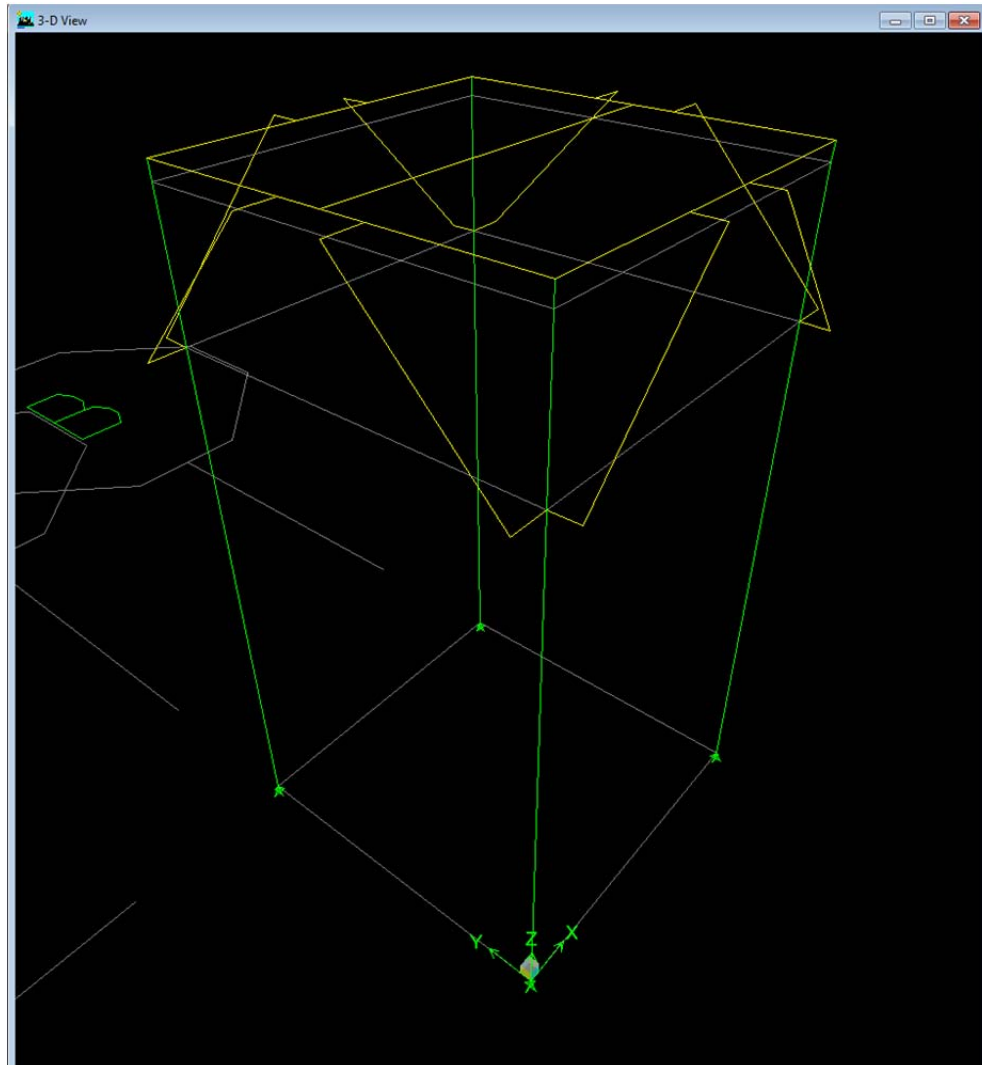
ALSO,

$$\frac{f_b - f_t}{F'_b} = \underline{0.54} \leq 1.0 \checkmark$$

∴ COLUMNS WILL BE OKAY

NOTE: ALL OTHER MEMBERS WILL BE CHECKED IN EXCEL

SESH ETABS DOCUMENTATION



Modeling Phase Documentation

1. Expected Behavior of Structure:

- a. Based on building conditions and conservative assumptions, the SESH bell structure is modeled with a pinned base as shown above. Because of the depth of analysis that is desired, member eccentricities were modeled between the main frame and the knee braces. It should be noted that only the wood members were modeled and a separate analysis will be performed on the shear strength of the masonry and sliding of the entire structure.
- b. Because of all of the factors of safety built into the NDS Specifications, I expect the real structure to be robust enough to withstand another earthquake.

2. Computer Model Input:

a. Geometric Configuration/Grids:

Define Grid Data

X Grid Data

	Grid ID	Ordinate	Line Type	Visibility	Bubble Loc.	Grid Color
1	A	0.	Primary	Show	Top	
2	A.1	14.9	Primary	Hide	Bottom	
3	A.2	23.35	Primary	Hide	Bottom	
4	B	38.25	Primary	Show	Top	
5						
6						
7						
8						
9						
10						

Y Grid Data

	Grid ID	Ordinate	Line Type	Visibility	Bubble Loc.	Grid Color
1	2	0.	Primary	Show	Left	
2	1.2	15.15	Primary	Hide	Right	
3	1.1	23.6	Primary	Hide	Right	
4	1	38.75	Primary	Show	Left	
5						
6						
7						
8						
9						
10						

Units:

Display Grids as:
☒ Ordinates ☐ Spacing

☐ Hide All Grid Lines
☐ Glue to Grid Lines

Bubble Size:

Gridlines A.1, A.2, 1.1, and 1.2 denote where eccentric knee braces connect the exterior beams of the structure

[illegible]

Story data from ETABS

b. Material Properties:

Material Property Data

Material Name JODFRAMING

Type of Material
☒ Isotropic ☐ Orthotropic

Analysis Property Data

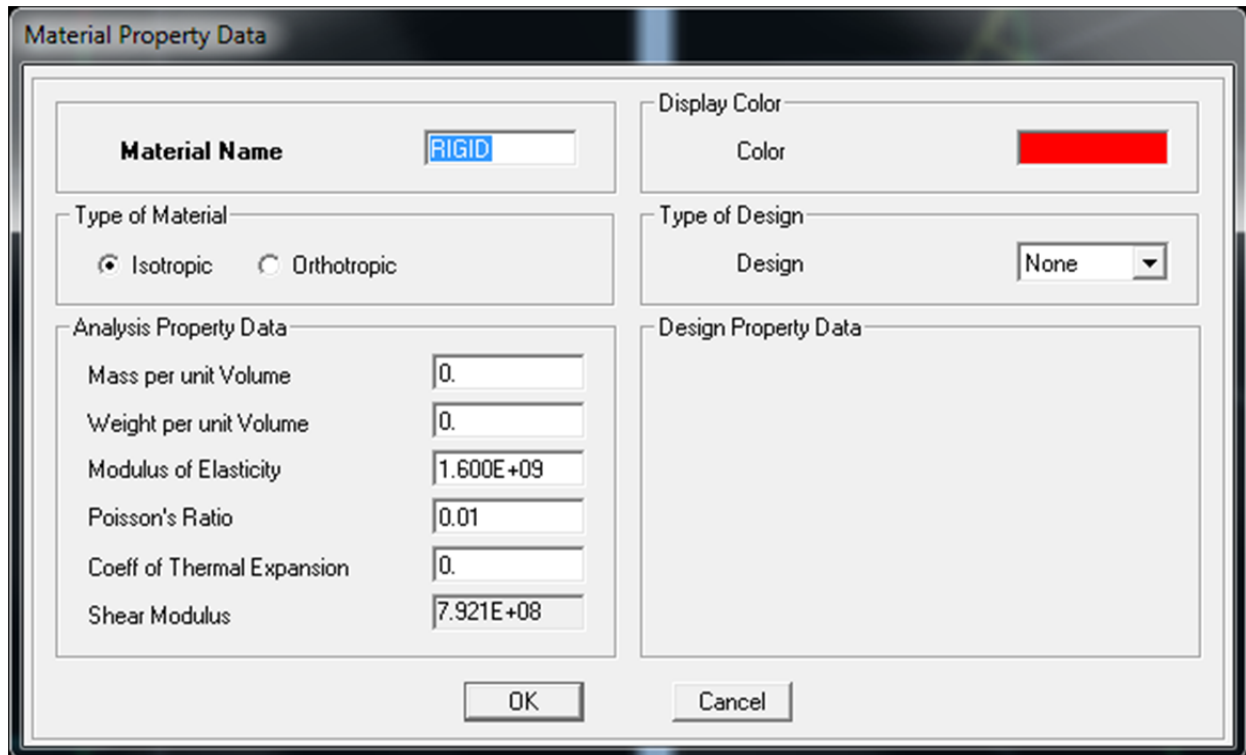
Mass per unit Volume	0.
Weight per unit Volume	0.
Modulus of Elasticity	1600000.
Poisson's Ratio	0.3
Coeff of Thermal Expansion	6.500E-06
Shear Modulus	615384.62

Display Color
Color

Type of Design
Design None

Design Property Data

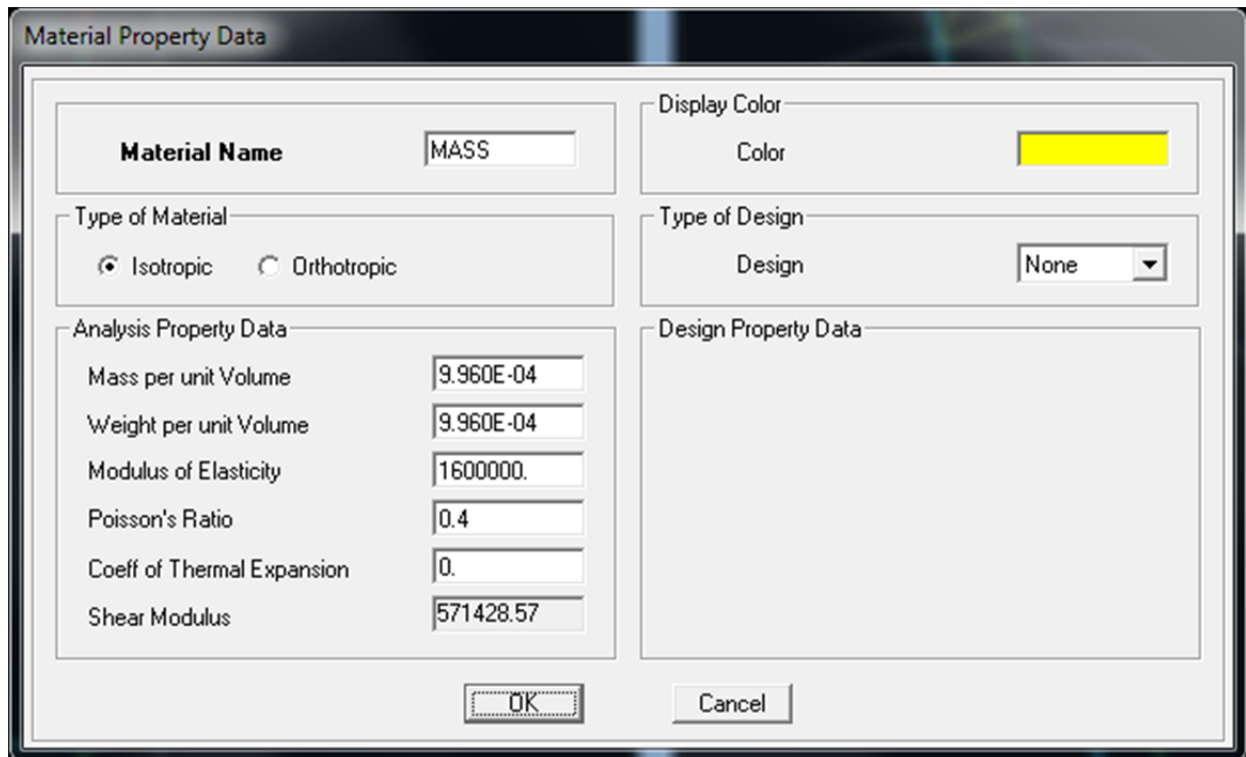
OK Cancel



The dialog box is titled "Material Property Data". It contains several sections for defining material properties. The "Material Name" field is set to "RIGID". The "Type of Material" section has "Isotropic" selected. The "Analysis Property Data" section contains input fields for Mass per unit Volume (0.), Weight per unit Volume (0.), Modulus of Elasticity (1.600E+09), Poisson's Ratio (0.01), Coeff of Thermal Expansion (0.), and Shear Modulus (7.921E+08). The "Design Property Data" section is empty. The "Display Color" section shows a red color swatch. The "Type of Design" section has "None" selected in the dropdown. "OK" and "Cancel" buttons are at the bottom.

Property	Value
Material Name	RIGID
Type of Material	Isotropic
Mass per unit Volume	0.
Weight per unit Volume	0.
Modulus of Elasticity	1.600E+09
Poisson's Ratio	0.01
Coeff of Thermal Expansion	0.
Shear Modulus	7.921E+08
Design Property Data	
Display Color	Red
Type of Design	None

Rigid link properties: small Poisson's Ratio and Modulus of Elasticity=1000x WOODFRAMING Modulus of Elasticity. It was not made 100% rigid to avoid singularity errors in the analysis.



The dialog box is titled "Material Property Data". It contains several sections for defining material properties. The "Material Name" field is set to "MASS". The "Type of Material" section has "Isotropic" selected. The "Analysis Property Data" section contains input fields for Mass per unit Volume (9.960E-04), Weight per unit Volume (9.960E-04), Modulus of Elasticity (1600000.), Poisson's Ratio (0.4), Coeff of Thermal Expansion (0.), and Shear Modulus (571428.57). The "Design Property Data" section is empty. The "Display Color" section shows a yellow color swatch. The "Type of Design" section has "None" selected in the dropdown. "OK" and "Cancel" buttons are at the bottom.

Property	Value
Material Name	MASS
Type of Material	Isotropic
Mass per unit Volume	9.960E-04
Weight per unit Volume	9.960E-04
Modulus of Elasticity	1600000.
Poisson's Ratio	0.4
Coeff of Thermal Expansion	0.
Shear Modulus	571428.57
Design Property Data	
Display Color	Yellow
Type of Design	None

This material property is applied to the bell beam only to account for the self-weight of the bell. Units in kips and inches.

c. Member Properties:

Property Data

Section Name A-A-COL

Properties

Cross-section (axial) area	21.	Section modulus about 3 axis	1.
Torsional constant	1.	Section modulus about 2 axis	1.
Moment of Inertia about 3 axis	32.9219	Plastic modulus about 3 axis	1.
Moment of Inertia about 2 axis	41.6719	Plastic modulus about 2 axis	1.
Shear area in 2 direction	21.	Radius of Gyration about 3 axis	1.
Shear area in 3 direction	21.	Radius of Gyration about 2 axis	1.

OK Cancel

Column Members

Rectangular Section

Section Name A-A-PERIMETER


Properties Section Properties...

Property Modifiers Set Modifiers...

Material WOODFRA

Dimensions

Depth (t3)	3.5
Width (t2)	3.

Display Color 

OK Cancel

Perimeter Framing

Rectangular Section

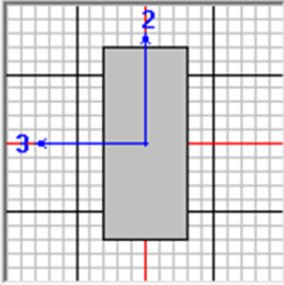
Section Name A-A-BRACE

Properties **Property Modifiers** **Material** WOODFRA

Dimensions

Depth (t3) 3.5

Width (t2) 1.5



Display Color ☒

Brace

Rectangular Section

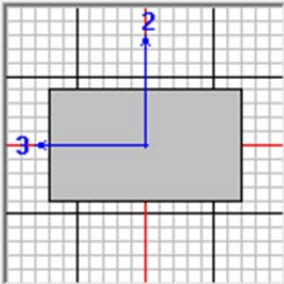
Section Name A-A-BELLBEAM

Properties **Property Modifiers** **Material** MASS

Dimensions

Depth (t3) 3.5

Width (t2) 6.



Display Color ☐

Bell Beam

Rectangular Section

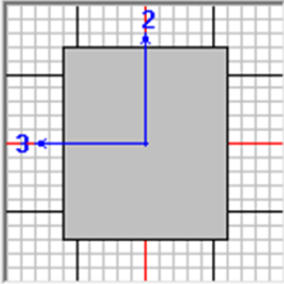
Section Name A-A-COL-BEAM-LINK


Properties **Property Modifiers** **Material** RIGID

Dimensions

Depth (t3) 3.5

Width (t2) 3.



Display Color 

Link Between Top of Column and Perimeter Framing

Rectangular Section

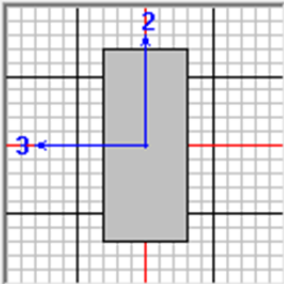
Section Name A-A-RIGIDBRACE


Properties **Property Modifiers** **Material** RIGID

Dimensions

Depth (t3) 3.5

Width (t2) 1.5



Display Color 

Link Between Knee Brace and Column/Perimeter Framing

d. Connectivity:

All members are given a “fixed” connection between each other.

e. Restraints:

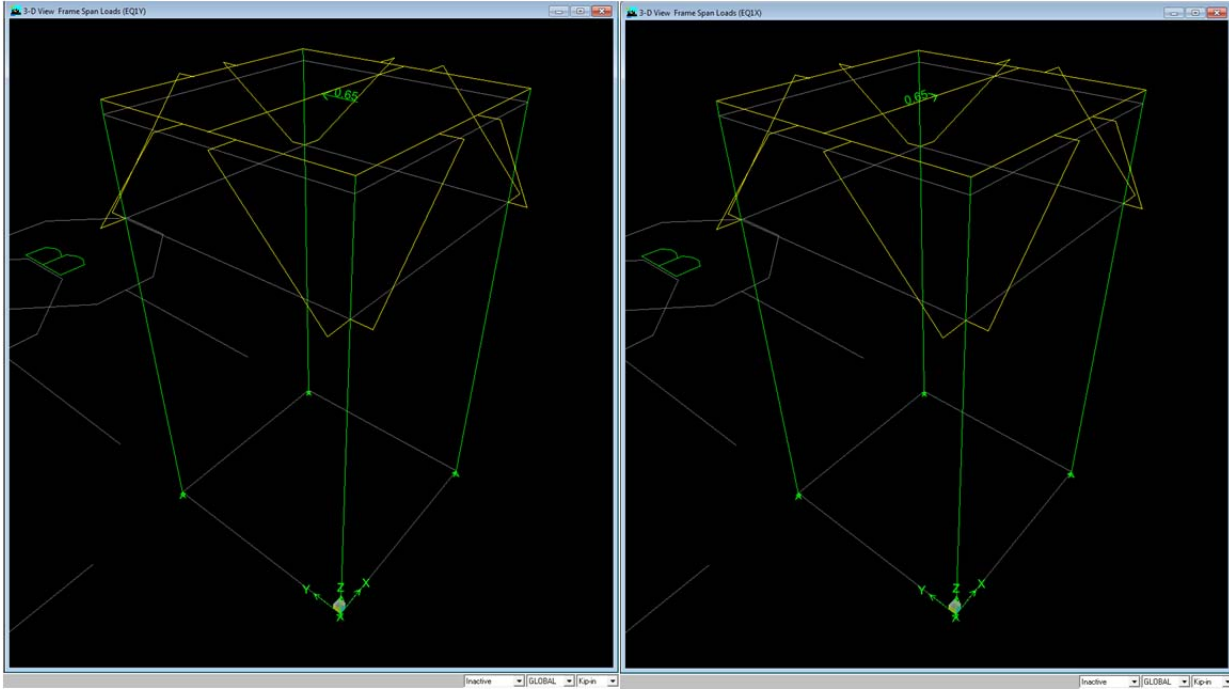
The left end of the beam is fixed



f. Constraints:

There are no joint constraints provided in the model. This was done so ETABS would compute all member forces (when two joints move the same distance, ETABS reports no internal forces).

g. Loading:



650 pounds loaded in the "Y" Direction

650 pounds loaded in the "X" direction

Self-Weight was applied to the bell beam totaling 1000 pounds for the entire span

h. Masses:

Because there will not be a dynamic analysis performed on the structure, no masses were applied.

3. Interpretation Phase Documentation:

a. Reactions:

Support Reactions								
Story	Point	Load	FX (k)	FY (k)	FZ (k)	MX (k-in)	MY (k-in)	MZ (k-in)
BASE	1	COMB2	0	-0.21	1.02	0	0	0
BASE	1	COMB1	-0.15	-0.06	-0.15	0	0	0
BASE	2	COMB2	0	-0.21	1.02	0	0	0
BASE	2	COMB1	-0.15	-0.04	0.95	0	0	0
BASE	3	COMB2	0	-0.12	-0.22	0	0	0
BASE	3	COMB1	-0.17	0.03	-0.3	0	0	0
BASE	4	COMB2	0	-0.12	-0.22	0	0	0
BASE	4	COMB1	-0.17	0.06	1.1	0	0	0

b. Deformations:

Not being analyzed, aka not important

c. Internal Member Forces:

Column Forces									
Story	Column	Load	Loc	P	V2	V3	T	M2	M3
CL FRAMING	C1	COMB2	0	0.03	-0.05	-0.13	0.002	-4.003	-0.145
CL FRAMING	C1	COMB2	0.1	0.03	-0.05	-0.13	0.002	-3.991	-0.141
CL FRAMING	C1	COMB2	0.2	0.03	-0.05	-0.13	0.002	-3.978	-0.136
CL FRAMING	C1	COMB1	0	-0.16	-0.21	0.05	-0.001	0.715	-1.546
CL FRAMING	C1	COMB1	0.1	-0.16	-0.21	0.05	-0.001	0.709	-1.524
CL FRAMING	C1	COMB1	0.2	-0.16	-0.21	0.05	-0.001	0.704	-1.503
T.O. COL	C1	COMB2	0	0.03	-0.13	0.05	0.002	0.818	-5.791
T.O. COL	C1	COMB2	7.013	0.03	-0.13	0.05	0.002	0.482	-4.897
T.O. COL	C1	COMB2	14.025	0.03	-0.13	0.05	0.002	0.145	-4.003
T.O. COL	C1	COMB1	0	-0.16	0.05	0.21	-0.001	4.559	1.466
T.O. COL	C1	COMB1	7.013	-0.16	0.05	0.21	-0.001	3.053	1.09
T.O. COL	C1	COMB1	14.025	-0.16	0.05	0.21	-0.001	1.546	0.715
KNEE BRACE	C1	COMB2	0	0.22	0.12	0	0	0	0
KNEE BRACE	C1	COMB2	27.237	0.22	0.12	0	0	-0.037	-3.201
KNEE BRACE	C1	COMB2	54.475	0.22	0.12	0	0	-0.074	-6.402
KNEE BRACE	C1	COMB1	0	0.3	-0.03	-0.17	0	0	0
KNEE BRACE	C1	COMB1	27.237	0.3	-0.03	-0.17	0	4.746	0.946
KNEE BRACE	C1	COMB1	54.475	0.3	-0.03	-0.17	0	9.493	1.893

CL FRAMING	C2	COMB2	0	0.03	0.05	-0.13	-0.002	-4.003	0.145
CL FRAMING	C2	COMB2	0.1	0.03	0.05	-0.13	-0.002	-3.991	0.141
CL FRAMING	C2	COMB2	0.2	0.03	0.05	-0.13	-0.002	-3.978	0.136
CL FRAMING	C2	COMB1	0	-0.28	-0.29	0.15	0.001	1.726	-1.843
CL FRAMING	C2	COMB1	0.1	-0.28	-0.29	0.15	0.001	1.711	-1.813
CL FRAMING	C2	COMB1	0.2	-0.28	-0.29	0.15	0.001	1.695	-1.784
T.O. COL	C2	COMB2	0	0.03	-0.13	-0.05	-0.002	-0.818	-5.791
T.O. COL	C2	COMB2	7.013	0.03	-0.13	-0.05	-0.002	-0.482	-4.897
T.O. COL	C2	COMB2	14.025	0.03	-0.13	-0.05	-0.002	-0.145	-4.003
T.O. COL	C2	COMB1	0	-0.28	0.15	0.29	0.001	5.96	3.852
T.O. COL	C2	COMB1	7.013	-0.28	0.15	0.29	0.001	3.901	2.789
T.O. COL	C2	COMB1	14.025	-0.28	0.15	0.29	0.001	1.843	1.726
KNEE BRACE	C2	COMB2	0	0.22	0.12	0	0	0	0
KNEE BRACE	C2	COMB2	27.237	0.22	0.12	0	0	0.037	-3.201
KNEE BRACE	C2	COMB2	54.475	0.22	0.12	0	0	0.074	-6.402
KNEE BRACE	C2	COMB1	0	-1.1	-0.06	-0.17	0	0	0
KNEE BRACE	C2	COMB1	27.237	-1.1	-0.06	-0.17	0	4.711	1.59
KNEE BRACE	C2	COMB1	54.475	-1.1	-0.06	-0.17	0	9.422	3.18
CL FRAMING	C3	COMB2	0	-0.43	0.15	-0.22	0.008	-6.811	-0.168
CL FRAMING	C3	COMB2	0.1	-0.43	0.15	-0.22	0.008	-6.789	-0.183
CL FRAMING	C3	COMB2	0.2	-0.43	0.15	-0.22	0.008	-6.766	-0.198
CL FRAMING	C3	COMB1	0	-0.07	-0.18	0.02	0.007	-1.872	-4.342
CL FRAMING	C3	COMB1	0.1	-0.07	-0.18	0.02	0.007	-1.874	-4.324
CL FRAMING	C3	COMB1	0.2	-0.07	-0.18	0.02	0.007	-1.875	-4.306
T.O. COL	C3	COMB2	0	-0.43	-0.22	-0.15	0.008	-1.94	-9.953
T.O. COL	C3	COMB2	7.013	-0.43	-0.22	-0.15	0.008	-0.886	-8.382
T.O. COL	C3	COMB2	14.025	-0.43	-0.22	-0.15	0.008	0.168	-6.811
T.O. COL	C3	COMB1	0	-0.07	0.02	0.18	0.007	6.872	-1.65
T.O. COL	C3	COMB1	7.013	-0.07	0.02	0.18	0.007	5.607	-1.761
T.O. COL	C3	COMB1	14.025	-0.07	0.02	0.18	0.007	4.342	-1.872
KNEE BRACE	C3	COMB2	0	-1.02	0.21	0	0	0	0
KNEE BRACE	C3	COMB2	27.237	-1.02	0.21	0	0	-0.022	-5.651
KNEE BRACE	C3	COMB2	54.475	-1.02	0.21	0	0	-0.044	-11.302
KNEE BRACE	C3	COMB1	0	0.15	0.06	-0.15	0	0	0
KNEE BRACE	C3	COMB1	27.237	0.15	0.06	-0.15	0	4.112	-1.559
KNEE BRACE	C3	COMB1	54.475	0.15	0.06	-0.15	0	8.224	-3.119
CL FRAMING	C4	COMB2	0	-0.43	-0.15	-0.22	-0.008	-6.811	0.168
CL FRAMING	C4	COMB2	0.1	-0.43	-0.15	-0.22	-0.008	-6.789	0.183
CL FRAMING	C4	COMB2	0.2	-0.43	-0.15	-0.22	-0.008	-6.766	0.198
CL FRAMING	C4	COMB1	0	-0.34	-0.28	-0.16	0.002	-0.85	-4.291
CL FRAMING	C4	COMB1	0.1	-0.34	-0.28	-0.16	0.002	-0.834	-4.263

CL FRAMING	C4	COMB1	0.2	-0.34	-0.28	-0.16	0.002	-0.818	-4.235
T.O. COL	C4	COMB2	0	-0.43	-0.22	0.15	-0.008	1.94	-9.953
T.O. COL	C4	COMB2	7.013	-0.43	-0.22	0.15	-0.008	0.886	-8.382
T.O. COL	C4	COMB2	14.025	-0.43	-0.22	0.15	-0.008	-0.168	-6.811
T.O. COL	C4	COMB1	0	-0.34	-0.16	0.28	0.002	8.206	-3.065
T.O. COL	C4	COMB1	7.013	-0.34	-0.16	0.28	0.002	6.248	-1.957
T.O. COL	C4	COMB1	14.025	-0.34	-0.16	0.28	0.002	4.291	-0.85
KNEE BRACE	C4	COMB2	0	-1.02	0.21	0	0	0	0
KNEE BRACE	C4	COMB2	27.237	-1.02	0.21	0	0	0.022	-5.651
KNEE BRACE	C4	COMB2	54.475	-1.02	0.21	0	0	0.044	-11.302
KNEE BRACE	C4	COMB1	0	-0.95	0.04	-0.15	0	0	0
KNEE BRACE	C4	COMB1	27.237	-0.95	0.04	-0.15	0	4.135	-0.977
KNEE BRACE	C4	COMB1	54.475	-0.95	0.04	-0.15	0	8.27	-1.954

Beam Forces									
Story	Beam	Load	Loc	P	V2	V3	T	M2	M3
CL FRAMING	B1	COMB2	1.75	0.15	0.05	0.05	0.003	0.292	0.521
CL FRAMING	B1	COMB2	14.9	0.15	0.05	0.05	0.003	-0.348	-0.169
CL FRAMING	B1	COMB2	14.9	0.05	0	0	0	-0.525	-0.595
CL FRAMING	B1	COMB2	23.35	0.05	0	0	0	-0.525	-0.595
CL FRAMING	B1	COMB2	23.35	0.15	-0.05	-0.05	-0.003	-0.348	-0.169
CL FRAMING	B1	COMB2	36.5	0.15	-0.05	-0.05	-0.003	0.292	0.521
CL FRAMING	B1	COMB1	1.75	-0.29	0.18	0.05	-0.093	0.562	3.772
CL FRAMING	B1	COMB1	14.9	-0.29	0.18	0.05	-0.093	-0.136	1.36
CL FRAMING	B1	COMB1	14.9	0.01	0.57	0.06	0.358	0.112	2.277
CL FRAMING	B1	COMB1	23.35	0.01	0.57	0.06	0.358	-0.437	-2.581
CL FRAMING	B1	COMB1	23.35	0.38	0.15	0.02	-0.097	-0.095	-1.438
CL FRAMING	B1	COMB1	36.5	0.38	0.15	0.02	-0.097	-0.424	-3.465
CL FRAMING	B2	COMB2	1.75	-0.06	0.01	0.04	0.006	0.237	-0.012
CL FRAMING	B2	COMB2	14.9	-0.06	0.01	0.04	0.006	-0.259	-0.183
CL FRAMING	B2	COMB2	14.9	-0.03	0	0	0	-0.382	0.202
CL FRAMING	B2	COMB2	23.35	-0.03	0	0	0	-0.382	0.202
CL FRAMING	B2	COMB2	23.35	-0.06	-0.01	-0.04	-0.006	-0.259	-0.183
CL FRAMING	B2	COMB2	36.5	-0.06	-0.01	-0.04	-0.006	0.237	-0.012
CL FRAMING	B2	COMB1	1.75	-0.38	0.04	-0.04	0.006	-1.068	1.168
CL FRAMING	B2	COMB1	14.9	-0.38	0.04	-0.04	0.006	-0.483	0.669
CL FRAMING	B2	COMB1	14.9	0.02	0.66	-0.06	-0.026	0.027	2.733
CL FRAMING	B2	COMB1	23.35	0.02	0.66	-0.06	-0.026	0.534	-2.885
CL FRAMING	B2	COMB1	23.35	0.44	0.06	0.01	0.019	0.94	-0.403
CL FRAMING	B2	COMB1	36.5	0.44	0.06	0.01	0.019	0.814	-1.158

CL FRAMING	B3	COMB2	1.5	-0.09	0.02	0.01	-0.05	-0.327	3.743
CL FRAMING	B3	COMB2	15.15	-0.09	0.02	0.01	-0.05	-0.52	3.457
CL FRAMING	B3	COMB2	15.15	0.12	0.22	0.03	0.301	-0.112	5.357
CL FRAMING	B3	COMB2	19.375	0.12	0.22	0.03	0.301	-0.25	4.434
CL FRAMING	B3	COMB2	19.375	-0.21	1.02	0.05	0.536	0.459	4.434
CL FRAMING	B3	COMB2	23.6	-0.21	1.02	0.05	0.536	0.244	0.13
CL FRAMING	B3	COMB2	23.6	0.18	0.48	0	-0.182	0.44	0.929
CL FRAMING	B3	COMB2	37.25	0.18	0.48	0	-0.182	0.391	-5.689
CL FRAMING	B3	COMB1	1.5	0.01	-0.2	0.17	0.064	0.894	-0.333
CL FRAMING	B3	COMB1	15.15	0.01	-0.2	0.17	0.064	-1.407	2.341
CL FRAMING	B3	COMB1	15.15	-0.09	-0.36	0.15	-0.212	-1.453	2.979
CL FRAMING	B3	COMB1	19.375	-0.09	-0.36	0.15	-0.212	-2.1	4.517
CL FRAMING	B3	COMB1	19.375	-0.12	0.42	-0.14	0.292	-1.582	4.319
CL FRAMING	B3	COMB1	23.6	-0.12	0.42	-0.14	0.292	-1.002	2.534
CL FRAMING	B3	COMB1	23.6	-0.07	0.26	-0.11	-0.067	-1.07	1.902
CL FRAMING	B3	COMB1	37.25	-0.07	0.26	-0.11	-0.067	0.49	-1.607
CL FRAMING	B4	COMB2	1.5	-0.09	0.02	-0.01	0.05	0.327	3.743
CL FRAMING	B4	COMB2	15.15	-0.09	0.02	-0.01	0.05	0.52	3.457
CL FRAMING	B4	COMB2	15.15	0.12	0.22	-0.03	-0.301	0.112	5.357
CL FRAMING	B4	COMB2	19.375	0.12	0.22	-0.03	-0.301	0.25	4.434
CL FRAMING	B4	COMB2	19.375	-0.21	1.02	-0.05	-0.536	-0.459	4.434
CL FRAMING	B4	COMB2	23.6	-0.21	1.02	-0.05	-0.536	-0.244	0.13
CL FRAMING	B4	COMB2	23.6	0.18	0.48	0	0.182	-0.44	0.929
CL FRAMING	B4	COMB2	37.25	0.18	0.48	0	0.182	-0.391	-5.689
CL FRAMING	B4	COMB1	1.5	0.14	-0.23	0.14	-0.071	0.58	-1.101
CL FRAMING	B4	COMB1	15.15	0.14	-0.23	0.14	-0.071	-1.389	1.99
CL FRAMING	B4	COMB1	15.15	0	-0.44	0.19	0.035	-1.514	2.273
CL FRAMING	B4	COMB1	19.375	0	-0.44	0.19	0.035	-2.334	4.115
CL FRAMING	B4	COMB1	19.375	0.03	0.38	-0.17	0.05	-1.799	4.314
CL FRAMING	B4	COMB1	23.6	0.03	0.38	-0.17	0.05	-1.1	2.718
CL FRAMING	B4	COMB1	23.6	0.18	0.19	-0.1	0.067	-1.021	2.371
CL FRAMING	B4	COMB1	37.25	0.18	0.19	-0.1	0.067	0.322	-0.195
CL FRAMING	B5	COMB2	0	-0.02	-0.8	-0.33	0	-0.709	0.234
CL FRAMING	B5	COMB2	19.125	-0.02	0	-0.33	0	5.507	7.885
CL FRAMING	B5	COMB2	19.125	-0.02	0	0.32	0	5.507	7.885
CL FRAMING	B5	COMB2	38.25	-0.02	0.8	0.32	0	-0.709	0.234
CL FRAMING	B5	COMB1	0	0.29	-0.79	-0.03	0.198	-0.518	0.504
CL FRAMING	B5	COMB1	19.125	0.29	0.01	-0.03	0.198	0.009	7.895
CL FRAMING	B5	COMB1	19.125	-0.36	0.01	-0.03	0.198	0.009	7.895
CL FRAMING	B5	COMB1	38.25	-0.36	0.81	-0.03	0.198	0.535	-0.015
CL FRAMING	B6	COMB2	0	-0.05	-0.53	-0.38	0.799	-1.288	-1.35

CL FRAMING	B6	COMB2	3.875	-0.05	-0.53	-0.38	0.799	0.195	0.718
CL FRAMING	B6	COMB1	0	0.02	-0.17	-0.05	-0.633	-0.275	-0.281
CL FRAMING	B6	COMB1	3.875	0.02	-0.17	-0.05	-0.633	-0.069	0.359
CL FRAMING	B7	COMB2	0	-0.05	0.53	0.38	-0.799	0.195	0.718
CL FRAMING	B7	COMB2	3.875	-0.05	0.53	0.38	-0.799	-1.288	-1.35
CL FRAMING	B7	COMB1	0	-0.07	0.19	0.15	0.347	-0.08	0.017
CL FRAMING	B7	COMB1	3.875	-0.07	0.19	0.15	0.347	-0.676	-0.718
CL FRAMING	B8	COMB2	0	0.02	0.2	-0.21	1.899	-0.395	0.414
CL FRAMING	B8	COMB2	3.875	0.02	0.2	-0.21	1.899	0.408	-0.352
CL FRAMING	B8	COMB1	0	-0.02	-0.17	0.1	0.638	0.356	-0.376
CL FRAMING	B8	COMB1	3.875	-0.02	-0.17	0.1	0.638	-0.046	0.276
CL FRAMING	B9	COMB2	0	0.02	-0.2	0.21	-1.899	0.408	-0.352
CL FRAMING	B9	COMB2	3.875	0.02	-0.2	0.21	-1.899	-0.395	0.414
CL FRAMING	B9	COMB1	0	-0.05	0.21	-0.14	-0.283	0.125	0.106
CL FRAMING	B9	COMB1	3.875	-0.05	0.21	-0.14	-0.283	0.669	-0.706
KNEE BRACE	B10	COMB2	0	0.05	0.53	0.38	-2.847	0.573	0.606
KNEE BRACE	B10	COMB2	1.375	0.05	0.53	0.38	-2.847	0.047	-0.128
KNEE BRACE	B10	COMB1	0	-0.02	0.17	0.05	-1.031	0.625	0.646
KNEE BRACE	B10	COMB1	1.375	-0.02	0.17	0.05	-1.031	0.552	0.418
KNEE BRACE	B11	COMB2	2.5	0.05	-0.53	-0.38	2.847	0.047	-0.128
KNEE BRACE	B11	COMB2	3.875	0.05	-0.53	-0.38	2.847	0.573	0.606
KNEE BRACE	B11	COMB1	2.5	0.07	-0.19	-0.15	0.1	-0.551	-0.6
KNEE BRACE	B11	COMB1	3.875	0.07	-0.19	-0.15	0.1	-0.34	-0.339
KNEE BRACE	B12	COMB2	0	-0.02	-0.2	0.21	-1.623	0.115	-0.123
KNEE BRACE	B12	COMB2	1.375	-0.02	-0.2	0.21	-1.623	-0.169	0.149
KNEE BRACE	B12	COMB1	0	0.02	0.17	-0.1	0.273	-0.122	0.132
KNEE BRACE	B12	COMB1	1.375	0.02	0.17	-0.1	0.273	0.021	-0.1
KNEE BRACE	B13	COMB2	2.5	-0.02	0.2	-0.21	1.623	-0.169	0.149
KNEE BRACE	B13	COMB2	3.875	-0.02	0.2	-0.21	1.623	0.115	-0.123
KNEE BRACE	B13	COMB1	2.5	0.05	-0.21	0.14	-0.675	0.279	-0.369
KNEE BRACE	B13	COMB1	3.875	0.05	-0.21	0.14	-0.675	0.086	-0.081
KNEE BRACE	B14	COMB2	0	-0.04	0.01	-0.03	-0.254	0.605	0.638
KNEE BRACE	B14	COMB2	0.625	-0.04	0.01	-0.03	-0.254	0.622	0.63
KNEE BRACE	B14	COMB1	0	-0.02	-0.63	-0.4	5.023	-1.442	-1.527
KNEE BRACE	B14	COMB1	0.625	-0.02	-0.63	-0.4	5.023	-1.189	-1.135
KNEE BRACE	B15	COMB2	2.25	0.05	-0.05	-0.1	-0.431	-0.669	-0.654
KNEE BRACE	B15	COMB2	2.875	0.05	-0.05	-0.1	-0.431	-0.604	-0.621
KNEE BRACE	B15	COMB1	2.25	-0.01	0.39	0.31	-1.885	-0.269	-0.243
KNEE BRACE	B15	COMB1	2.875	-0.01	0.39	0.31	-1.885	-0.461	-0.487
CL FRAMING	B16	COMB2	0	0.04	-0.01	0.03	-0.384	-0.043	-0.043
CL FRAMING	B16	COMB2	2.875	0.04	-0.01	0.03	-0.384	-0.124	-0.006

CL FRAMING	B16	COMB1	0	0.02	0.63	0.4	-2.064	1.673	1.771
CL FRAMING	B16	COMB1	2.875	0.02	0.63	0.4	-2.064	0.51	-0.032
CL FRAMING	B17	COMB2	0	-0.05	0.05	0.1	-0.426	0.177	0.003
CL FRAMING	B17	COMB2	2.875	-0.05	0.05	0.1	-0.426	-0.122	-0.148
CL FRAMING	B17	COMB1	0	0.01	-0.39	-0.31	0.917	-0.248	-0.451
CL FRAMING	B17	COMB1	2.875	0.01	-0.39	-0.31	0.917	0.638	0.675
CL FRAMING	B18	COMB2	0	0.04	-0.01	-0.03	0.384	0.043	-0.043
CL FRAMING	B18	COMB2	2.875	0.04	-0.01	-0.03	0.384	0.124	-0.006
CL FRAMING	B18	COMB1	0	-0.07	-0.61	0.42	-2.482	1.605	-1.701
CL FRAMING	B18	COMB1	2.875	-0.07	-0.61	0.42	-2.482	0.407	0.045
CL FRAMING	B19	COMB2	0	-0.05	0.05	-0.1	0.426	-0.177	0.003
CL FRAMING	B19	COMB2	2.875	-0.05	0.05	-0.1	0.426	0.122	-0.148
CL FRAMING	B19	COMB1	0	-0.04	0.42	-0.36	1.143	-0.342	0.454
CL FRAMING	B19	COMB1	2.875	-0.04	0.42	-0.36	1.143	0.704	-0.755
KNEE BRACE	B20	COMB2	0	-0.04	0.01	0.03	0.254	-0.605	0.638
KNEE BRACE	B20	COMB2	0.625	-0.04	0.01	0.03	0.254	-0.622	0.63
KNEE BRACE	B20	COMB1	0	0.07	0.61	-0.42	4.96	-0.569	0.604
KNEE BRACE	B20	COMB1	0.625	0.07	0.61	-0.42	4.96	-0.308	0.225
KNEE BRACE	B21	COMB2	2.25	0.05	-0.05	0.1	0.431	0.669	-0.654
KNEE BRACE	B21	COMB2	2.875	0.05	-0.05	0.1	0.431	0.604	-0.621
KNEE BRACE	B21	COMB1	2.25	0.04	-0.42	0.36	-1.67	0.119	-0.139
KNEE BRACE	B21	COMB1	2.875	0.04	-0.42	0.36	-1.67	-0.108	0.124

Brace Forces									
Story	Brace	Load	Loc (in)	P (k)	V2 (k)	V3 (k)	T (k-in)	M2 (k-in)	M3 (k-in)
T.O. COL	D7	COMB2	0	0.01	-0.03	-0.04	0.001	-0.879	-0.254
T.O. COL	D7	COMB2	9.646	0.01	-0.03	-0.04	0.001	-0.515	0.03
T.O. COL	D7	COMB2	19.292	0.01	-0.03	-0.04	0.001	-0.151	0.313
T.O. COL	D7	COMB1	0	0.73	0.14	-0.02	0	2.1	5.023
T.O. COL	D7	COMB1	9.646	0.73	0.14	-0.02	0	2.249	3.708
T.O. COL	D7	COMB1	19.292	0.73	0.14	-0.02	0	2.399	2.393
CL FRAMING	D8	COMB2	0	0.01	-0.03	-0.04	0.001	-0.151	0.313
CL FRAMING	D8	COMB2	1.204	0.01	-0.03	-0.04	0.001	-0.106	0.349
CL FRAMING	D8	COMB2	2.407	0.01	-0.03	-0.04	0.001	-0.06	0.384
CL FRAMING	D8	COMB1	0	0.73	0.14	-0.02	0	2.399	2.393
CL FRAMING	D8	COMB1	1.204	0.73	0.14	-0.02	0	2.417	2.229
CL FRAMING	D8	COMB1	2.407	0.73	0.14	-0.02	0	2.436	2.064
T.O. COL	D9	COMB2	0	0.01	-0.03	0.04	-0.001	0.879	-0.254
T.O. COL	D9	COMB2	9.646	0.01	-0.03	0.04	-0.001	0.515	0.03
T.O. COL	D9	COMB2	19.292	0.01	-0.03	0.04	-0.001	0.151	0.313

T.O. COL	D9	COMB1	0	-0.73	-0.11	-0.07	0.002	0.83	-4.96
T.O. COL	D9	COMB1	9.646	-0.73	-0.11	-0.07	0.002	1.5	-3.859
T.O. COL	D9	COMB1	19.292	-0.73	-0.11	-0.07	0.002	2.171	-2.757
CL FRAMING	D10	COMB2	0	0.01	-0.03	0.04	-0.001	0.151	0.313
CL FRAMING	D10	COMB2	1.204	0.01	-0.03	0.04	-0.001	0.106	0.349
CL FRAMING	D10	COMB2	2.407	0.01	-0.03	0.04	-0.001	0.06	0.384
CL FRAMING	D10	COMB1	0	-0.73	-0.11	-0.07	0.002	2.171	-2.757
CL FRAMING	D10	COMB1	1.204	-0.73	-0.11	-0.07	0.002	2.255	-2.62
CL FRAMING	D10	COMB1	2.407	-0.73	-0.11	-0.07	0.002	2.338	-2.482
T.O. COL	D17	COMB2	0	-0.11	0.04	-0.05	0.013	-0.866	0.431
T.O. COL	D17	COMB2	9.646	-0.11	0.04	-0.05	0.013	-0.396	0.05
T.O. COL	D17	COMB2	19.292	-0.11	0.04	-0.05	0.013	0.074	-0.331
T.O. COL	D17	COMB1	0	0.5	0.04	0.01	0.001	-0.671	1.885
T.O. COL	D17	COMB1	9.646	0.5	0.04	0.01	0.001	-0.786	1.455
T.O. COL	D17	COMB1	19.292	0.5	0.04	0.01	0.001	-0.9	1.024
CL FRAMING	D18	COMB2	0	-0.11	0.04	-0.05	0.013	0.074	-0.331
CL FRAMING	D18	COMB2	1.204	-0.11	0.04	-0.05	0.013	0.132	-0.378
CL FRAMING	D18	COMB2	2.407	-0.11	0.04	-0.05	0.013	0.191	-0.426
CL FRAMING	D18	COMB1	0	0.5	0.04	0.01	0.001	-0.9	1.024
CL FRAMING	D18	COMB1	1.204	0.5	0.04	0.01	0.001	-0.914	0.97
CL FRAMING	D18	COMB1	2.407	0.5	0.04	0.01	0.001	-0.929	0.917
T.O. COL	D19	COMB2	0	-0.11	0.04	0.05	-0.013	0.866	0.431
T.O. COL	D19	COMB2	9.646	-0.11	0.04	0.05	-0.013	0.396	0.05
T.O. COL	D19	COMB2	19.292	-0.11	0.04	0.05	-0.013	-0.074	-0.331
T.O. COL	D19	COMB1	0	-0.56	-0.02	0.04	-0.006	-0.165	-1.67
T.O. COL	D19	COMB1	9.646	-0.56	-0.02	0.04	-0.006	-0.551	-1.435
T.O. COL	D19	COMB1	19.292	-0.56	-0.02	0.04	-0.006	-0.936	-1.201
CL FRAMING	D20	COMB2	0	-0.11	0.04	0.05	-0.013	-0.074	-0.331
CL FRAMING	D20	COMB2	1.204	-0.11	0.04	0.05	-0.013	-0.132	-0.378
CL FRAMING	D20	COMB2	2.407	-0.11	0.04	0.05	-0.013	-0.191	-0.426
CL FRAMING	D20	COMB1	0	-0.56	-0.02	0.04	-0.006	-0.936	-1.201
CL FRAMING	D20	COMB1	1.204	-0.56	-0.02	0.04	-0.006	-0.985	-1.172
CL FRAMING	D20	COMB1	2.407	-0.56	-0.02	0.04	-0.006	-1.033	-1.143
T.O. COL	D27	COMB2	0	0.29	-0.01	0.02	-0.002	-0.169	1.623
T.O. COL	D27	COMB2	9.723	0.29	-0.01	0.02	-0.002	-0.348	1.746
T.O. COL	D27	COMB2	19.445	0.29	-0.01	0.02	-0.002	-0.527	1.869
T.O. COL	D27	COMB1	0	-0.19	-0.04	-0.02	0.003	0.179	-0.273
T.O. COL	D27	COMB1	9.723	-0.19	-0.04	-0.02	0.003	0.33	0.132
T.O. COL	D27	COMB1	19.445	-0.19	-0.04	-0.02	0.003	0.48	0.537
CL FRAMING	D28	COMB2	0	0.29	-0.01	0.02	-0.002	-0.527	1.869
CL FRAMING	D28	COMB2	1.213	0.29	-0.01	0.02	-0.002	-0.55	1.884

CL FRAMING	D28	COMB2	2.426	0.29	-0.01	0.02	-0.002	-0.572	1.899
CL FRAMING	D28	COMB1	0	-0.19	-0.04	-0.02	0.003	0.48	0.537
CL FRAMING	D28	COMB1	1.213	-0.19	-0.04	-0.02	0.003	0.499	0.588
CL FRAMING	D28	COMB1	2.426	-0.19	-0.04	-0.02	0.003	0.517	0.638
T.O. COL	D29	COMB2	0	-0.65	-0.09	0.05	-0.006	-0.834	-2.847
T.O. COL	D29	COMB2	9.723	-0.65	-0.09	0.05	-0.006	-1.293	-1.937
T.O. COL	D29	COMB2	19.445	-0.65	-0.09	0.05	-0.006	-1.751	-1.026
T.O. COL	D29	COMB1	0	-0.16	-0.08	-0.02	0.004	-0.899	-1.031
T.O. COL	D29	COMB1	9.723	-0.16	-0.08	-0.02	0.004	-0.674	-0.292
T.O. COL	D29	COMB1	19.445	-0.16	-0.08	-0.02	0.004	-0.45	0.448
CL FRAMING	D30	COMB2	0	-0.65	-0.09	0.05	-0.006	-1.751	-1.026
CL FRAMING	D30	COMB2	1.213	-0.65	-0.09	0.05	-0.006	-1.809	-0.913
CL FRAMING	D30	COMB2	2.426	-0.65	-0.09	0.05	-0.006	-1.866	-0.799
CL FRAMING	D30	COMB1	0	-0.16	-0.08	-0.02	0.004	-0.45	0.448
CL FRAMING	D30	COMB1	1.213	-0.16	-0.08	-0.02	0.004	-0.422	0.54
CL FRAMING	D30	COMB1	2.426	-0.16	-0.08	-0.02	0.004	-0.394	0.633
T.O. COL	D37	COMB2	0	0.29	-0.01	-0.02	0.002	0.169	1.623
T.O. COL	D37	COMB2	9.723	0.29	-0.01	-0.02	0.002	0.348	1.746
T.O. COL	D37	COMB2	19.445	0.29	-0.01	-0.02	0.002	0.527	1.869
T.O. COL	D37	COMB1	0	-0.25	-0.04	0.05	-0.006	0.118	-0.675
T.O. COL	D37	COMB1	9.723	-0.25	-0.04	0.05	-0.006	-0.367	-0.249
T.O. COL	D37	COMB1	19.445	-0.25	-0.04	0.05	-0.006	-0.852	0.177
CL FRAMING	D38	COMB2	0	0.29	-0.01	-0.02	0.002	0.527	1.869
CL FRAMING	D38	COMB2	1.213	0.29	-0.01	-0.02	0.002	0.55	1.884
CL FRAMING	D38	COMB2	2.426	0.29	-0.01	-0.02	0.002	0.572	1.899
CL FRAMING	D38	COMB1	0	-0.25	-0.04	0.05	-0.006	-0.852	0.177
CL FRAMING	D38	COMB1	1.213	-0.25	-0.04	0.05	-0.006	-0.912	0.23
CL FRAMING	D38	COMB1	2.426	-0.25	-0.04	0.05	-0.006	-0.973	0.283
T.O. COL	D39	COMB2	0	-0.65	-0.09	-0.05	0.006	0.834	-2.847
T.O. COL	D39	COMB2	9.723	-0.65	-0.09	-0.05	0.006	1.293	-1.937
T.O. COL	D39	COMB2	19.445	-0.65	-0.09	-0.05	0.006	1.751	-1.026
T.O. COL	D39	COMB1	0	-0.24	-0.02	-0.07	0.01	-0.48	-0.1
T.O. COL	D39	COMB1	9.723	-0.24	-0.02	-0.07	0.01	0.172	0.099
T.O. COL	D39	COMB1	19.445	-0.24	-0.02	-0.07	0.01	0.824	0.298
CL FRAMING	D40	COMB2	0	-0.65	-0.09	-0.05	0.006	1.751	-1.026
CL FRAMING	D40	COMB2	1.213	-0.65	-0.09	-0.05	0.006	1.809	-0.913
CL FRAMING	D40	COMB2	2.426	-0.65	-0.09	-0.05	0.006	1.866	-0.799
CL FRAMING	D40	COMB1	0	-0.24	-0.02	-0.07	0.01	0.824	0.298
CL FRAMING	D40	COMB1	1.213	-0.24	-0.02	-0.07	0.01	0.905	0.322
CL FRAMING	D40	COMB1	2.426	-0.24	-0.02	-0.07	0.01	0.986	0.347