Re_home

The University of Illinois at Urbana-Champaign
2011 Solar Decathlon Competition Entry

As Built Contract Document Submission
Submission Date: August 11, 2011

Lead Contact: Xinlei Wang
email: xwang2@illinois.edu
phone: (217) 333-4446
address: 332C ASEB
1304 W. Pennsylvania Ave.
Urbana, IL 61801

Architecture Contact: Mark Taylor
email: mstaylor@illinois.edu
phone: (217) 244-3425
address: 117 Temple Hoyne Buell Hall
611 E. Loredo Taft
Urbana, IL 61801

Architecture Student Contact: Michael Hines
email: mhhines2@illinois.edu

Engineering Student Contact: Chris Cirone
email: ccirone2@illinois.edu

www.solardecathlon.illinois.edu
www.solardecathlon.gov
ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO PREVENT CORROSION.


THE OWNER WILL NOT ACCEPT REQUESTS FOR EXTRA WORK CONDITIONS WHICH ARE NOT STATED IN THE DESIGN DOCUMENTS.

DOOR OPENINGS ARE GENERALLY DIMENSIONED TO CENTERLINE OF OPENING.

U.N.O. PROVIDE EXTERIOR WALL COMPONENTS SUCH AS WINDOWS, DOORS, TO BE ARRANGED AND ORGANIZED TO MEET THE APPLICABLE CODES. ENGINEERING SHALL CONFIRM WITH ALL APPLICABLE CODES AND AS-CONSTRUCTED DRAWINGS TO MEET THE REQUIREMENTS.

REFERENCE NOTE NUMBER A02.01 ASBESTOS - CONTAINING MATERIALS MAY NOT BE USED ON THIS PROJECT.

PROVIDE ACCESS PANELS AS REQUIRED BY APPLICABLE CODES AND AS CONSTRUCTED.

ALL BASE BUILDING INTERIOR PARTITIONS SHALL WITHSTAND MINIMUM INWARD PRESSURE DIFFERENTIAL OF 1.5 TIMES THE DESIGN WIND LOAD.

ALL RATINGS ARE TO COMPLY WITH UNDERWRITERS LABORATORIES (UL) TEST STANDARDS. IN THE ABSENCE OF TESTED ASSEMBLY, PROVIDE CERTIFICATE OF COMPLIANCE.

ALL SEALANT JOINTS SHALL BE SIDED SUCH THAT THEY WILL BE WITHIN THE SIZE RANGE RECOMMENDED BY THE SEALANT MANUFACTURER.

WHETHER OR NOT EXPLICITLY INDICATED, ALL GLAZING SHALL BE SAFETY GLAZED.

A) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) REQUIREMENTS, LOCAL BUILDING CODES, AND MUNICIPAL, STATE, AND FEDERAL REGULATIONS. WORKING SUBCONTRACTORS INCLUDING ACCESSIBILITY STANDARDS AND LAWS ACCOMPANYING REQUIREMENTS.

B) ENGINEERING: CONSTRUCTION SHALL COMPLY WITH THE APPLICABLE CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) REQUIREMENTS, LOCAL BUILDING CODES, AND MUNICIPAL, STATE, AND FEDERAL REGULATIONS. WORKING SUBCONTRACTORS INCLUDING ACCESSIBILITY STANDARDS AND LAWS ACCOMPANYING REQUIREMENTS.


D) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURATE PLACEMENT OF ALL DETAILS, AND FOR THE PRESENTATION AND PREPARATION OF THE COMPLETE CONTRACT DOCUMENTS.

E) THE CONSTRUCTORS SHALL COMPARE THE CONTRACT DOCUMENTS WITH THE DRAWINGS AND SPECIFICATIONS TO ENSURE THAT THEY CORRESPOND.

F) THE CONTRACTOR SHALL NOT ACCEPT REQUESTS FOR EXTRA WORK CONDITIONS WHICH ARE NOT STATED IN THE DESIGN DOCUMENTS.

G) THE CONTRACTOR SHALL VISIT THE SITE AND BE KNOWLEDGEABLE OF THE WORK AND THE CONDITIONS THEREON. PRIOR TO SUBMITTING A BID HE SHALL INVESTIGATE, VERIFY AND BE RESPONSIBLE FOR ALL CONDITIONS OF THE PROJECT AND SHALL NOTIFY THE OWNER OF ANY CONDITIONS REQUIRING MODIFICATION BEFORE PROCEEDING.

H) THE CONTRACTOR shall NOT ACCEPT REQUESTS FOR EXTRA WORK CONDITIONS WHICH ARE NOT STATED IN THE DESIGN DOCUMENTS.

I) THE CONTRACTOR shall NOT ACCEPT REQUESTS FOR EXTRA WORK CONDITIONS WHICH ARE NOT STATED IN THE DESIGN DOCUMENTS.

J) THE CONTRACTOR shall NOT ACCEPT REQUESTS FOR EXTRA WORK CONDITIONS WHICH ARE NOT STATED IN THE DESIGN DOCUMENTS.
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GENERAL SHEET NOTES

1. SQUARE FOOTAGE IS DEFINED AS CIRCUMSCRIBED BY THE OUTER LIMITS OF THE HOUSE AS BUILT.
2. FINISHED SQUARE FOOTAGE WAS DETERMINED FROM THE MEASURED SQUARE FOOTAGE OF THE HOUSE AS BUILT.
3. FINISHED SQUARE FOOTAGE CALCULATIONS FOR THIS HOUSE WERE MADE BASED ON PLAN DIMENSIONS ONLY AND MAY VARY SLIGHTLY FROM THE FINISHED SQUARE FOOTAGE OF THE HOUSE AS BUILT.

FINISHED SQUARE FOOTAGE PLAN

FINISHED SQUARE FOOTAGE PLAN

G-101
GENERAL SHEET NOTES
1. EXIT ROUTES AS PER SOLAR DECATHLON RULE 3-3-3

EGRESS PLAN

1.) EXIT ROUTES AS PER SOLAR DECATHLON RULE 3-3-3

NOTE: 1/4" = 1'-0"
GENERAL SHEET NOTES

1. ALL HOME ELEMENTS MUST BE PLACED WITHIN THE SOLAR ENVELOPE DEFINED BY THE DEPARTMENT OF ENERGY DURING THE DESIGNATED COMPETITION PERIOD.

SHEET KEYNOTES

1. ORGANIZER DEFINED SOLAR ENVELOPE
2. WATER TANK ENCLOSURE
3. PASSIVE SOLAR WAINSCOT
4. STEEL PERGOLA STRUCTURE

GENERAL SHEET NOTES

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4. STEEL PERGOLA STRUCTURE

A1 SOLAR ENVELOPE COMPLIANCE SOUTH ELEVATION

A2 SOLAR ENVELOPE COMPLIANCE EAST ELEVATION

A3 SOLAR ENVELOPE COMPLIANCE SOUTH ELEVATION

A4 SOLAR ENVELOPE COMPLIANCE EAST ELEVATION
Re_act

Showing the ability to Re_act to local disasters.

Between 1990 and 2007 approximately 54,000 tornadoes have impacted communities across 50 states (check these numbers based on the figure). In Illinois alone, there are 8 strong to violent (F2-F5) tornadoes on average per year, demolishing homes and neighborhoods. By finding a balance between good design and smart planning, the Re_home responds to the physical and emotional needs of those affected.

Distribution Hubs in Central Illinois, San Angelo, Texas, Tallahassee, Florida, and Rapid City, South Dakota would provide full coverage over the nation's tornado affected region. Each hub would provide a 24 hour response within a 500 mile radius utilizing the interstate highways that span the country, into the smallest of village communities.

Re_spond

Prepared to Re_spond to the immediate and long term needs of a community.

When disaster strikes a rapid response is critical. The Re_home is designed with optimum dimensions to allow rapid deployment into any community. Assembled, the Re_home accommodates families of varying size with different preferences for room arrangements. The two pre-constructed modules can be set in place and occupied the same day of delivery, providing shelter for disaster victims or temporary accommodation for first responders.

Pre-installed adjustable solar panels provide a potential stand-alone renewable energy source. Modular decks, added as normality returns, offer unique places for private reflection or community celebration. Landscape features constructed from salvaged material gathered in the region link the house to the past, while the plants themselves provide hope and nourishment for the homes inhabitants.
Re_consider
Allowing disaster victims to Re_consider their personal personal living environment.

Previous disaster relief housing has often proven inflexible to the various lifestyles of disaster victims. An efficient open floor plan accommodates the various needs of many users. Designed around two triangular organizations, one open for public interaction, and one enclosed for intimacy. Minimizing wasted circulation spaces, the spatial arrangements in the house encourage a close interaction between both interior and exterior spaces.

The "Flex space" allows the house to transition from one to two bedroom homes. Allowing the occupants to customize their living space to their personal needs, embracing the individual homeowner will bring to the Re_home.

Re_build
Creating a high performance, prototype to Re_build communities for the future.

Following the devastation of a community, it is important to rebuild a stronger and smarter. The Re_home accomplishes both goals through thoughtful design, efficient construction and careful monitoring. A super insulated, double-layered envelope minimizes thermal transfer between the interior and exterior of the building, drastically reducing the energy needs of the home.

Core replacing glass reduces cost and preserves the integrity of the building envelope. Desired views from the house are maintained and shading devices control solar gains while permitting comfortable levels of daylighting. Built to comply with the stringent structural components of the Illinois Building Code the house is built significantly stronger than the homes it would replace.
**Re_newable**

Cutting edge technology is used to sustain a Re_newable future.

When disasters strike there is an opportunity to depart with the technologies of the past and take control of the resources of the future. The Re_home will demonstrate harnessing the power of the sun and the recovery of energy typically wasted in current residences. With a super insulated air tight building envelope the energy demands for heating or cooling the Re_home are reduced.

With demand reduced, through passive features, active systems in the house can be down sized. A stand-alone CERV conditioning communicates with an iPad application, allowing the homeowner to track and modify the performance of the home in real time. The combination of highly efficient roof mounted photovoltaic (PV) panels with integrated HT PV panels ensures a Net Zero energy balance for the home.

**PUBLIC EXHIBIT DISPLAY BOARD 5**

**Re_invest**

Re_investing in local communities, our country, and the future of our planet.

Sustainability and cost effectiveness are at the heart of the design of the Re_home. In selecting the materials for the interior and exterior of the Re_home a balance was achieved between affordability and environmental impact. Materials with reused or recycled content can be found throughout the Re_home, reflecting a consideration for our planet's dwindling resources. Windows and doors provide performance that reduces heating and cooling demands at a price that keeps the house affordable. The use of reclaimed wood around the house preserves old growth lumber, while all natural flooring inside helps maintain a desirable indoor air-quality.

Minimal operational expenses and quality construction makes the Re_home a smart investment for its occupants. At $275,000 the house provides an adaptable living environment.

**PUBLIC EXHIBIT DISPLAY BOARD 6**

**Affordable Windows**

Thick pane vinyl windows from Building America define an optimum window to wall ratio which will keep the home cool in the summers and warm in the winters.

**Recycled Steel Canopies**

Polycarbonate shade canopies made with recycled steel from McWane provide a durable exterior shading solution.

**Center Biking**

One of the most stable and durable wood materials, the cedars will reduce maintenance costs over time.

**Building Integrated Solar Panels**

Photovoltaic panels incorporated into awnings double as shading devices for the front porch.

**Edible Plantings**

Attractive vegetation around the house is edible, providing a healthy sustainable food source for the home occupants and a diverse habitat for birds and butterflies.

**Reclaimed Docking and Planters**

The dock and planters are reclaimed wood from 19th century grain elevator in Wisconsin and a fence in Champaign, giving new life to the material and saving significant labor.

**LED Lighting**

LED lighting from Juno greatly decreases the electricity demands of the home and provides excellent light over standard and CFL bulbs.

**Energy Efficient Appliances**

Energy-efficient appliances from Blenko and Whirlpool provide utility savings for the homeowners.

**Water Saving Fixtures**

For this project, the team selected the C-400 and new fixtures that provide a water saving 60%.

**Embankment’s Flooring**

For this project, the team selected the C-400 and new fixtures that provide a water saving 60%.

**Rezola Siding**

Made of recycled rain rolls and asphalt, this siding features a shake design and is white and weather resistant siding solutions.
The University of Illinois at Urbana-Champaign and the Re home team would like to thank all of our partners. Without your generous support, the competition would have been impossible.

College of Agricultural, Consumer, and Environmental Sciences
College of Engineering
College of Fine and Applied Arts
College of Business

| 12" = 1'-0" | A1 | PUBLIC EXHIBIT DISPLAY TITLE |
| 12" = 1'-0" | A2 | PUBLIC EXHIBIT DISPLAY TITLE REAR |

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<td>A1</td>
<td>UNIVERSITY OF ILLINOIS</td>
<td><a href="mailto:SOLARDECATHLON@UIUC.EDU">SOLARDECATHLON@UIUC.EDU</a></td>
<td>611 LORADO TAFT DR. CHAMPAIGN, IL 61820</td>
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<td>A2</td>
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PUBLIC EXHIBIT
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BOARDS

SOLAR DECATHLON 2011
WWW.SOLARDECATHLON.ILLINOIS.EDU

© 2011 UNIVERSITY OF ILLINOIS FACILITIES AND SERVICES

MARK DATE DESCRIPTION

12/18/2011

PUBLIC EXHIBIT DISPLAY TITLE

PUBLIC EXHIBIT DISPLAY TITLE REAR

PRODUCED BY AN AUTODESK STUDENT PRODUCT

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SOLAR DECATHLON 2011
WWW.SOLARDECATHLON.GOV

U.S. DEPARTMENT OF ENERGY

SOLAR DECATHLON 2011
WWW.SOLARDECATHLON.GOV
LIQUID LOCATION AND SPILL CONTAINMENT PLAN

**GENERAL SHEET NOTES**

1. ALL EQUIPMENT, TANKS AND TANKS THAT WILL CONTAIN FLUIDS AT ANY POINT DURING THE COMPETITION ARE OUTLINED ON THIS DRAWING. THE ILLINOIS SOLAR DECATHLON TEAM IS NOT UTILIZING SOLAR HOT WATER OR THERMAL WATER STORAGE DURING THE COMPETITION.

2. ALL PRESSURIZED WATER SYSTEMS SHALL HAVE A DEVICES AND COMPONENTS AS REQUIRED TO PREVENT THE SYSTEM FROM OVERPRESSURIZING AND LEAKING.

3. A CONDENSATION PAN WITH DRAIN TUBING HAS BEEN PROVIDED FOR EACH HEAT EXCHANGER LOCATED WITHIN THE HOUSE.

4. THE TOILET, WHILE SHOWN, WILL NOT BE PLUMBED OR FUNCTIONAL FOR THE EVENT AND WILL BE MARKED AS SUCH WITH SIGNAGE TO PREVENT ACCIDENTAL USE.

5. IN THE EVENT OF ANY SPILL, THE TEAM SHALL CONSULT THE SAFETY PLAN AND CONTACT THE EVENT ORGANIZERS.

6. IN ALL CASES THIS DOCUMENT IS SUPERCEDED BY THE REQUIREMENTS SET FORTH BY THE NATIONAL PARK SERVICE. THIS DOCUMENT SERVES AS A SUPPLEMENT TO THESE REQUIREMENTS.

**SHEET KEYNOTES**

- 17: KITCHEN SINK
- 18: DISHWASHER
- 19: GREYWATER STORAGE
- 20: SHOWER
- 21: SINK
- 22: TOILET
- 23: HOTWATER TANK WITH DRIP PAN
- 24: CLOTHES WASHER
- 25: BLACK WATER TANK
- 26: SUPPLY WATER TANK
- 28: GAS GENERATOR DRIP PAN
- 31: RAIN BARREL
- 74: PRESSURE TANK

**GENERAL SHEET NOTES**

1. ALL EQUIPMENT, TANKS AND TANKS THAT WILL CONTAIN FLUIDS AT ANY POINT DURING THE COMPETITION ARE OUTLINED ON THIS DRAWING. THE ILLINOIS SOLAR DECATHLON TEAM IS NOT UTILIZING SOLAR HOT WATER OR THERMAL WATER STORAGE DURING THE COMPETITION.

2. ALL PRESSURIZED WATER SYSTEMS SHALL HAVE A DEVICES AND COMPONENTS AS REQUIRED TO PREVENT THE SYSTEM FROM OVERPRESSURIZING AND LEAKING.

3. A CONDENSATION PAN WITH DRAIN TUBING HAS BEEN PROVIDED FOR EACH HEAT EXCHANGER LOCATED WITHIN THE HOUSE.

4. THE TOILET, WHILE SHOWN, WILL NOT BE PLUMBED OR FUNCTIONAL FOR THE EVENT AND WILL BE MARKED AS SUCH WITH SIGNAGE TO PREVENT ACCIDENTAL USE.

5. IN THE EVENT OF ANY SPILL, THE TEAM SHALL CONSULT THE SAFETY PLAN AND CONTACT THE EVENT ORGANIZERS.

6. IN ALL CASES THIS DOCUMENT IS SUPERCEDED BY THE REQUIREMENTS SET FORTH BY THE NATIONAL PARK SERVICE. THIS DOCUMENT SERVES AS A SUPPLEMENT TO THESE REQUIREMENTS.
GENERAL CIVIL NOTES

1.) THE LOCATION OF EXISTING UNDERGROUND UTILITIES, SUCH AS WATER MAINS, SEWERS, GAS LINES, ETC. HAS NOT BEEN DETERMINED AND HAS NOT BEEN SHOWN ON THE PLANS. BEFORE CONSTRUCTION, OWNER SHOULD HIRE A LICENSED CIVIL ENGINEER TO DETERMINE LOCATION BASED ON THE BEST AVAILABLE INFORMATION. ALL INFORMATION SHOWN IS GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE OWNER AND THE ENGINEER DO NOT ASSUME RESPONSIBILITY IN THE EVENT THAT DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED AND THAT THE ACTUAL LOCATION OF THOSE WHICH EXIST MAY BE DIFFERENT FROM THE LOCATION ASSUMED.

2.) CONTRACTOR SHALL NOTIFY THE OWNER, ENGINEER AND THE LOCAL PRESEDIUM MUNICIPALITY AT LEAST 48 HOURS IN ADVANCE OF PERFORMING ANY WORK.

3.) ALL AREAS, ON OR OFF SITE, DISTURBED DURING CONSTRUCTION OPERATIONS AND NOT PART OF THE WORK AS SHOWN HEREON SHALL BE RESTORED TO ORIGINAL CONDITION TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER. IT IS INCUMBENT UPON CONTRACTOR TO SHOW THAT DAMAGED AREAS WERE NOT DISTURBED BY CONSTRUCTION OPERATIONS.

4.) THESE DRAWINGS ASSUME THAT THE CONTRACTOR WILL UTILIZE AN ELECTRONIC DRAWING FILE AND STAKE ALL SITE IMPROVEMENTS USING COORDINATES TIED INTO THE CONTROL POINTS. THE DIMENSIONS INDICATED ON THE DRAWINGS ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY.


6.) OWNER TO COORDINATE THE EXACT LOCATIONS OF ALL UTILITY SERVICE LINES WITH PLUMBING DRAWINGS. REFER TO PLUMBING DRAWINGS FOR CONTINUATION OF ALL UTILITIES WITHIN 5 FEET OF BUILDING AREA.

7.) CONTRACTOR SHALL FIELD VERIFY INVERT & LOCATIONS OF EXISTING UTILITY MAINS PRIOR TO INSTALLING ANY ON-SITE UTILITIES OR STRUCTURES.

8.) SEPARATION OF WATER AND SEWER LINES SHALL BE 10' MINIMUM HORIZONTALLY. IF 10' IS NOT POSSIBLE, SEWER SHALL BE OF WATER MAIN QUALITY MATERIAL AND CONSTRUCTION.

9.) CLEAN OUT ALL EXISTING AND PROPOSED STORM INLETS AND CATCH BASINS AT THE COMPLETION OF CONSTRUCTION.

10.) THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS" CURRENT EDITION SHALL GOVERN WORK WHERE APPLICABLE.
1. Each dwelling shall be provided with grounding electrodes in accordance with IRC E3608.1. Rod and pipe electrodes. The length of the ground rod shall be exactly 8 feet in length.

2. Please refer to the stamped structural calculations in the project manual for further clarification on ground loading conditions.

Electrical Meter Housing

72 8' Grounding Rod
GENERAL SHEET NOTES

1. 1/2" STEEL SHIM PLATES ARE TO BE ADDED TO WOOD FOUNDATIONS TO ACCOMMODATE POSSIBLE VARIATION IN SITE CONDITIONS.

REFERENCE KEYNOTES

- **05 05 23.H6**: 1" SHEAR CONNECTORS
- **05 05 23.I1**: 1/2" STEEL PLATE
- **05 12 77.N99**: WT8X18
- **06 16 00.D14**: 1" PLYWOOD

GENERAL SHEET NOTES

1. 1/2" STEEL SHIM PLATES ARE TO BE ADDED TO WOOD FOUNDATIONS TO ACCOMMODATE POSSIBLE VARIATION IN SITE CONDITIONS.

ADJUSTMENT DETAILS

A1 FOUNDATION FOOTING FOR SITE ADJUSTMENT
1. All vegetation types shown occupying the planter boxes are subject to change due to availability during the construction period.

**GENERAL SHEET NOTES**

**SHEET KEYNOTES**

- 1 ORGANIZER SUPPLIED MAT
- 2 WATER TANK ENCLOSURE
- 3 PLANTER WITH SEATING
- 4 BENCH DISPLAY SPACE

**GENERAL SHEET NOTES**

1. All vegetation types shown occupying the planter boxes are subject to change due to availability during the construction period.
GENERAL SHEET NOTES

1. GREYWATER ACCESS AND DISTRIBUTION FOR IRRIGATION PURPOSES SHALL BE DONE MANUALLY ON SITE BY ILLINOIS SOLAR DECATHLON TEAM MEMBERS. NO PIPING OR AUTOMATIC DISTRIBUTION IS EMPLOYED IN THE IRRIGATION PROCESS.

2. ONLY GREYWATER AND RAINWATER TANKS SHOULD BE ACCESSED DURING THE HOURS OF 9AM-5PM. AT NO POINT IN THE REMOVAL OF GREYWATER SHOULD THE MAIN SUPPLY TANK BE EXPOSED TO DIRECT SUNLIGHT.

3. ALL TANKS USED TO TRANSFER GREYWATER FOR IRRIGATION PURPOSES SHALL BE CLEARLY LABELED FOR THEIR INTENDED PURPOSE. THESE CONTAINERS WILL AT NO TIME CONTAIN WATER MEANT FOR POTABLE USE.

4. PLEASE REFER TO THE PROJECT MANUAL FOR FULL DETAILS ON WATER CONTAINMENT DEVICES.

SHEET KEYNOTES

5. WATER TANK ENCLOSURE

19. GREYWATER STORAGE

31. RAIN BARREL

83. GUZZLER 400H HAND PUMP FOR IRRIGATION

PUBLIC DOMAIN: PROJECT IS PUBLIC DOMAIN
GENERAL SHEET NOTES

1. PLEASE REFER TO THE PROJECT MANUAL FOR FULL DETAILS ON WATER CONTAINMENT DEVICES.

2. RAINWATER COLLECTED ON SITE IS TO BE USED FOR EXTERIOR IRRIGATION ONLY. AT NO TIME SHALL THIS WATER BE USED FOR POTABLE PURPOSES.

REFERENCE KEYNOTES

- WATER TANK ENCLOSURE
- DOWNSPOUT
- RAIN BARREL
- PLANTER WITH SEATING

A1

RAINWATER COLLECTION PLAN
GENERAL SHEET NOTES

1. PLANTING ON TOP OF THE WATER TANK ENCLOSURE IS TO BE INSTALLED ON AFTER THE NECESSARY WATER HAS BEEN DISTRIBUTED TO THE ENCLOSED TANKS.

2. DURING THE COMPETITION PERIOD THE PLANTINGS ABOVE THE TANKS ARE TO REMAIN IN PLACE BETWEEN 9 AM AND 5PM TO ENSURE WATER TANKS REMAIN FULLY SHADED PER SD RULE 9-1.

REFERENCE KEYNOTES

06 11 00.B5 1X4
06 11 00.D1 2X4
06 11 00.L1 4X4
28 SUPPLY WATER TANK
32 93 23 PLANTS AND BULBS

A1 WATER TANK ENCLOSURE SECTION
SS  STRUCTURAL STEEL
   A.  CONNECTIONS:
      1.  WELDS:  ALL WELDS SHALL BE MADE IN CONFORMITY WITH THE FOLLOWING CODES AND STANDARDS:
         a)  ASME CODE CASE 13500
         b)  AISC'S "CODE OF PRACTICE FOR STEEL BUILDINGS AND BRIDGES"

   B.  MATERIALS:
      1.  STEEL:
           a)  ALLOY STEEL:
                i)  4140 - 4340
           b)  STRUCTURAL STEEL:
                i)  ASTM A36
                ii)  ASTM A572
                iii)  ASTM A573
           c)  ROLLED SHAPES:
                i)  ASTM A992, GRADE 50
       2.  TABLES AND DRAWINGS:
            a)  FOR STRUCTURAL CONSTRUCTION, PROVIDE SIZED DRAWINGS AND TABLES:
                i)  FOR DESIGN:
                    A101
                ii)  FOR CONSTRUCTION:
                    WD-1

   C.  DETAILING:
      1.  STRUCTURAL STEEL:
           a)  CONNECTIONS:
                i)  WELDS:
                     i)  FAC TORS:
                          a)  ALL STEEL STRUCTURAL WELDS SHALL COMPLY WITH THE REQUIREMENTS OF TABLE 1.4.6.
                          b)  FOR THE DESIGN OF NON-BOLTED STRUCTURAL CONNECTIONS, USE THE FOLLOWING FORMULA:
                              \[ \text{Fw} = \frac{2}{3} \times \text{Fct} \]
                              WHERE:
                              \[ \text{Fw} \] = ALLOWABLE STEEL WELD STRESS
                              \[ \text{Fct} \] = ALLOWABLE STEEL TENSION STRESS
           b)  MATERIALS:
                i)  STEEL:
                     i)  FOR DESIGN:
                          a)  A36 OR EQUIVALENT
                          b)  A572 OR A573
                          c)  A992 OR EQUIVALENT
                     ii)  FOR CONSTRUCTION:
                          a)  A36 OR EQUIVALENT
                          b)  A572 OR A573
                          c)  A992 OR EQUIVALENT
           c)  FASTENERS:
                i)  BOLTS:
                     i)  ASTM A325 OR EQUIVALENT
                     ii)  ASTM A490 OR EQUIVALENT
                ii)  NAILS:
                     i)  ASTM D1761
                     ii)  ACI-225.4
                     iii)  AISC 360-05
      2.  EQUIPMENT:
           a)  STEEL STRUCTURE:
                i)  LOADS:
                     i)  BUILDING LOADS:
                          a)  10.0 PSF
                          b)  20.0 PSF
                          c)  30.0 PSF
                          d)  40.0 PSF
                     ii)  RAIN LOAD:
                          a)  ALL ROOF MEMBERS:
                               i)  50.0 PSF
 다양한 내용이 포함된 자료입니다. 주요 내용은 다음과 같습니다:

1. STRUCTURAL STEEL: 모든 연결은 ASME 코드 13500과 AISC 'Steel Buildings and Bridges Practice Code'에 따라 이루어져야 합니다.
2. MATERIALS:
   - TABLES AND DRAWINGS: 설계용 및 구축용 도면이 포함됩니다.
3. DETAILING:
   - STRUCTURAL STEEL: 연결은 설계에 따라 Fw = \( \frac{2}{3} \times Fct \)의 공식을 사용하여 계산되며, 구성용은 같은 식을 사용하여 계산합니다.
   - MATERIALS: 구조용강은 디자인용과 구축용으로 A36 또는 A572 또는 A992 등이 사용되며, 보라드 및 장비는 A36 또는 A572 또는 A992 등이 사용됩니다.
4. EQUIPMENT: 구조물은 다음과 같은 부하를 부여받습니다:建築용 부하 10.0 PSF, 20.0 PSF, 30.0 PSF, 40.0 PSF, 그리고 기상 요인로는 모든 구조물에 대해 50.0 PSF의 부하를 부여합니다.
GENERAL SHEET NOTES

1.) Dimensions are to center line of the footing pads.
2.) Max 1500PSF loading condition on entire site.
3.) Refer to Sheet C-101 for foundation loading in PSF.
4.) Drawing stamped by structural engineer.

REFERENCE KEYNOTES

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FOUNDATIONS PLAN

- Dimensions are to center line of the footing pads.
- Max 1500PSF loading condition on entire site.
- Refer to Sheet C-101 for foundation loading in PSF.
- Drawing stamped by structural engineer.
FIRST FLOOR FRAMING PLAN

GENERAL SHEET NOTES

1. U.S. DEPARTMENT OF ENERGY TO LOCATE EDGES OF SOLAR ENVELOPE. IF NECESSARY, OWNER TO TRIM VEGETATION TO REMAIN WITHIN ENVELOPE AT ALL TIMES.

2. SHEATHING (STUDS 11-18) TO BE INSTALLED BY UIUC SOLAR DEC. TEAM. CONFIRM DIMENSION PLAN.

3. MAX 16" O.C. FOR NOMINAL 10" FLOOR JOIST

4. 7" MINIMUM SPACING O.C. FOR TOILET AND CLOSET ADJACENT BEAM.

5. PANEL GRADE - APA STRUCTURAL 1
- 16 GA. STAPLES - 2 LG UNBLOCKED STAPLES SPACED 3" O.C. @ PERIPHERAL EDGES, 6" O.C. @ EVERYWHERE ELSE
- TV = 165 PLF CASE
- TV = 125 PLF OTHER CASE

6. MODULAR HOME MANUFACTURER TO ADJUST BATHROOM FLOOR FRAMING AS REQUIRED TO ACCOMMODATE BATHROOM FIXTURES

7. DRAWING STAMPED BY STRUCTURAL ENGINEER

REFERENCE KEYNOTES

05 12 36.A57 L5X3.5X0.375x9"LG
06 05 23.R2 SIMPSON HRS8 10-10D22 13 16.A2 FLOOR DRAIN
DECK FRAMING PLAN

GENERAL SHEET NOTES
1. DECK SLOPED WALKING SURFACE TO BE EXTENDED TO ACCOMODATE 18" POSSIBLE SITE DIFFERENTIATION. MAINTAINING 1:20 SLOPE.
2. DRAWING STAMPED BY STRUCTURAL ENGINEER.

1. Deck framed to accommodate sloped walking surface.
2. Drawing stamped by structural engineer.

[Diagram of deck framing plan]
GENERAL SHEET NOTES

1. Foundation shim plate design is to accommodate possible 18" vertical slope on site.

2. 30"x30"x2" foamular insulation vertical to accommodate vertical foundation adjustment on site. Cut as required on site, up to 18" of vertical change is to be expected.

3. Drawing stamped by structural engineer.

REFERENCE KEYNOTES

- 05 23.01 1/2" steel plate
- 06 23.01 16 penny nail
- 06 23.01 1/2" x 3" x 6" lag screw
- 06 23.01 1/2" x 5" lag bolt type
- 07 21.00 plywood

SHEET TITLE

LOT NUMBER: S-501

ADDRESS: 611 LORADO TAFT DR.
CHAMPAIGN, IL 61820

CONTACT: SOLARDECATHLON@UIUC.EDU
WWW.SOLARDECATHLON.ILLINOIS.EDU

TEAM NAME:

UNIVERSITY OF ILLINOIS

FOUNDATION DETAILS

LOT #305

MEGAN ROBERTSON
MICHAEL HINES

UNIVERSITY OF ILLINOIS

SOLARDECATHLON@UIUC.EDU
WWW.SOLARDECATHLON.ILLINOIS.EDU

EXPLANATION

1.) Foundation shim plate design is to accommodate possible 18" vertical slope on site.

2.) 30"x30"x2" foamular insulation vertical to accommodate vertical foundation adjustment on site. Cut as required on site, up to 18" of vertical change is to be expected.

3.) Drawing stamped by structural engineer.

MARK DATE DESCRIPTION

- 05 05 23.I1 1/2" steel plate
- 05 12 77.N99 WT8X1806 05 23.A11 16 penny nail
- 06 05 23.B10 1/2" x 3" x 6" lag screw
- 06 05 23.B21 1/2" x 5" lag bolt type
- 06 11 00.F1 2x6
- 06 16 00.D11 3/4" plywood
- 07 21.00 plywood

PRODUCED BY AN AUTODESK STUDENT PRODUCT
1. Place shim plate under column plate where needed.
2. Foundation shim plate designed to accommodate possible 18" vertical slope on site.
3. All exterior steel members are to be galvanized.
4. Drawing stamped by structural engineer.

REFERENCE KEYNOTES:

03 41 16 Precast concrete slabs
05 05 23.I1 1/2" steel plate
05 05 23.J1 11x5x" 1/2" steel plate
05 12 73.L70 HSS 2x2x3/16
05 12 73.L72 HSS 4x2x1/8

GENERAL SHEET NOTES:

1. Place shim plate under column plate where needed.
2. Foundation shim plate designed to accommodate possible 18" vertical slope on site.
3. All exterior steel members are to be galvanized.
4. Drawing stamped by structural engineer.
GENERAL SHEET NOTES

1.) PROVIDE PROTECTO TAPE AT ALL JOINT OF EXTERIOR 7/16" OSB, AT THE INTERSECTION OF WALL/FLOOR AND WALL/ROOF JOINTS, AND AT ALL CORNERS.

2.) 18" SIMPSON STRAP TIE TO CONNECT ROOF WITH 2X4 STUD WALL OVER OSB JOINTING. STRAP TIE MUST CONNECT WITH 2X10 LVL AND WITH 2X4 VERTICAL STRUCTURAL MEMBER.

3.) STRAP CONNECTION TO LVL MUST OCCUR WITHIN 12" OF ROOF JOIST CENTER.

4.) DRAWING STAMPED BY STRUCTURAL ENGINEER

REFERENCE KEYNOTES

- 05 12 77.N99 WT8X18
- 06 05 23.A9 10 PENNY NAIL
- 06 05 23.A14 40 PENNY NAIL
- 06 05 23.B2 1/2" LAG SCREW
- 06 05 23.R3 SIMPSON LSTA18
- 06 05 23.R4 3/4" PLYWOOD
- 06 16 00.D17 7/16" PLYWOOD
- 06 16 00.D18 7/16" PLYWOOD
- 06 17 00.B1 9 1/2" WOOD CHORD JOIST
- 06 17 13.L1 2x10" LVL
- 06 17 53 SHOP-FABRICATED WOOD TRUSSES
- 07 21 13.13 FOAM BOARD INSULATION
- 07 21 13.B1 1/2" RIGID INSULATION
- 07 21 19 FOAMED-IN PLACE INSULATION
- 07 26 13 ABOVE-GRADE VAPOR RETARDERS
- 07 46 23 1X6 KILN DRIED CEDAR SIDING
- 07 53 23 ETHYLENE-PROPYLENE-DIENE-MONOMER ROOFING
- 07 62 00.D1 2 PIECE CAP & RECEIVER FLASHING
- 07 62 00.H35 4" X 5" RECTANGULAR GUTTER
- 07 95 13.B1 1/4" EXPANSION JOINT
- 09 29 00.D11 5/8" TYPE "X" GYPSUM WALLBOARD
- 09 65 19 MARMOLEUM CLICK PANEL FLOORING

SECTION DETAILS

- WALL SECTION
- SHEAR FASTENING DETAIL @ EACH TRUSS

MARK DATE DESCRIPTION

- 3/18/2011 DOE CD Submission
- 8/11/2011 As Built Drawing Submission
GENERAL SHEET NOTES
1.) ALL EXTERIOR STRUCTURAL STEEL AND CONNECTORS ARE TO BE GALVANIZED
2.) DRAWINGS STAMPED BY STRUCTURAL ENGINEER

REFERENCE KEYNOTES

05 05 23.I1 1/2" STEEL PLATE
05 12 73.L69 HSS2X2X1/806 05 23.B11 (6) 3/8" TIMBERLOK WOOD SCREW06 05 23.J0 SIMPSON HANGERS06 11 00.D1 2X406 11 00.F1 ... 2X22" LVL06 17 53 SHOP-FABRICATED WOOD TRUSSES07 21 13.B1 1/2" RIGID INSULATION07 53 23 ETHYLENE-PROPYLENE-DIENE-MONOMER ROOFING

07 62 00.B4 10" PEAKED COPING
09 29 00.D1 5/8" GYPSUM WALLBOARD09 29 00.D11 5/8" TYPE "X" GYPSUM WALLBOARD

GENERAL SHEET NOTES
1.) ALL EXTERIOR STRUCTURAL STEEL AND CONNECTORS ARE TO BE GALVANIZED
2.) DRAWING STAMPED BY STRUCTURAL ENGINEER

REFERENCE KEYNOTES

05 05 23.I1 1/2" STEEL PLATE
05 12 73.L69 HSS2X2X1/806 05 23.B11 (6) 3/8" TIMBERLOK WOOD SCREW06 05 23.J0 SIMPSON HANGERS06 11 00.D1 2X406 11 00.F1 ... 2X22" LVL06 17 53 SHOP-FABRICATED WOOD TRUSSES07 21 13.B1 1/2" RIGID INSULATION07 53 23 ETHYLENE-PROPYLENE-DIENE-MONOMER ROOFING

07 62 00.B4 10" PEAKED COPING
09 29 00.D1 5/8" GYPSUM WALLBOARD09 29 00.D11 5/8" TYPE "X" GYPSUM WALLBOARD
**GENERAL SHEET NOTES**

1. All exterior steel members are to be galvanized.
2. Drawing A4 South East canopy will use similar details to those described in drawing A1 and related drawings.
3. Drawing stamped by structural engineer.

**REFERENCE KEYNOTES**

- 05 05 23.B1 1/2" A325 Bolt
- 05 05 23.B2 5/8" A325 Bolt
- 05 05 23.I1 1/2" Steel Plate
- 05 05 23.I10 3/8" Steel Plate
- 05 11 01 1/2" Threaded Steel Rod
- 06 11 00.H1 2" x 10" Tapered Washer
- 05 12 73.L70 HSS 2" x 2" x 3/16"
- 05 12 73.L71 HSS 4" x 2" x 3/16"
- 05 12 73.L72 HSS 4" x 2" x 1/8"
- 06 05 23.C13 Simpson A340
- 05 11 00.H1 2" x 10" Tapered Washer
- 05 11 00.H1 2" x 10" Washer

**MARK DATE DESCRIPTION**

- 05 05 23.B1 1/2" A325 Bolt
- 05 05 23.B2 5/8" A325 Bolt
- 05 05 23.I1 1/2" Steel Plate
- 05 05 23.I10 3/8" Steel Plate
- 05 11 01 1/2" Threaded Steel Rod
- 06 11 00.H1 2" x 10" Tapered Washer
- 05 12 73.L70 HSS 2" x 2" x 3/16"
- 05 12 73.L71 HSS 4" x 2" x 3/16"
- 05 12 73.L72 HSS 4" x 2" x 1/8"
- 06 05 23.C13 Simpson A340
- 05 11 00.H1 2" x 10" Tapered Washer
- 05 11 00.H1 2" x 10" Washer

**CANOPY PLANS**

- S-514

**SOUTH SHADING CANOPY PLAN**

- A1

**NORTHWEST SHADING CANOPY PLAN**

- C1

**SOUTHEAST SHADING CANOPY PLAN**

- C4

**JOINT ELEV**

- C7

**COL ELEV**

- B6

**COL DETAIL**

- A6

**SPlice DETAIL**

- B7

**DETAIL**

- A7
GENERAL SHEET NOTES

1. DRAWING STAMPED BY STRUCTURAL ENGINEER

REFERENCE KEYNOTES

- WT8X18
- 1/2" LAG SCREW
- 2X4
- 7/16" PLYWOOD
- 7/16" PLYWOOD
- 9 1/2" WOOD ACACIA
- FOAMED-IN PLACE INSULATION
- 5/8" TYPE "X" GYPSUM WALLBOARD
- MARMOLEUM CLICK PANEL FLOORING

FLOOR TO FLOOR AT WALL CONNECTION

FLOOR TO FLOOR CONNECTION
1. Reference structural calculations for metal substructures regarding solar panel submount requirements. Details on structural design of solar panel submount regarding fall prevention capability and compensation for uplift from solar panels.

2. Inner line of roof plan is referenced as the interior of the roof parapet. Please confirm locations of subroof mounting on site to ensure correct mounting locations.

3. Drawing stamped by structural engineer.

GENERAL SHEET NOTES
GENERAL SHEET NOTES

1. 10' TALL, VERTICAL ORIENTED PLYWOOD TO BE INSTALLED AT ALL WALLS FOR FULL HEIGHT OF WALL.

2. DRAWING STAMPED BY STRUCTURAL ENGINEER.

REFERENCE KEYNOTES

06 05 23.R2    SIMPSON HRS8 10-10D
06 11 00.D1    2X4
06 11 00.H1    2X10
06 16 00.D17   7/16" PLYWOOD
06 16 00.D18   7/16" PLYWOOD
09 29 00.D11   5/8" TYPE "X" GYPSUM WALLBOARD

SHEAR WALL TO FLOOR DETAIL AT CORNERS

TYPICAL SHEAR WALL EXTERIOR FRAMING ELEVATION

TYPICAL EXTERIOR FRAMING ELEVATION
SHOP NOTE:
ALL WELDS ON TOP & BOTTOM OF STEEL TO BE GROUND FLUSH
ALL WELDS AT END CAPS TO BE SMOOTH AND GROUND FLUSH CLIP ALL CORNERS @ END CAPS
ALL PIECES TO BE TAGGED DUE TO POWDER COATING PROCESS.

ONE - CANOPY PANEL #5 - 1T51

ONE - CANOPY PANEL #6 - 1T62

2 - CANOPY PANEL #25 - 1T63

FOR FRONT CANOPY

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KURLAND STEEL CO

KURLAND STEEL CO

SOUTH CANOPY SHOP

DRAWINGS

S-902
SHOP NOTE:
ALL WELDS ON TOP & BOTTOM OF STEEL TO BE GROUND FLUSH
ALL WELDS AT END CAPS TO BE SMOOTH AND GROUND FLUSH
CLIP ALL CORNERS AT END CAPS
ALL PIECES TO BE TAGGED DUE TO POWDER COATING PROCESS.
SHARP NOTE:
ALL WELDS ON TOP & BOTTOM
OF STEEL TO BE GROUND FLUSH
ALL WELDS AT END CAPS
TO BE SMOOTH AND GROUND FLUSH
CLIP ALL CORNERS & END CAPS
ALL PIECES TO BE TAGGED DUE
TO POWDER COATING PROCESS
SHOP NOTE:

ALL WELDS ON TOP & BOTTOM OF STEEL TO BE GROUND FLUSH
ALL WELDS AT END CAPS
TO BE SMOOTH AND GROUND FLUSH
CLIP ALL CORNERS @ END CAPS
ALL PIECES TO BE TAGGED DUE
TO POWDER COATING PROCESS

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ONE - TUBE - TTS1

FOR EAST CANOPY

ONE - TUBE - TTS2

S-906
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**SHOP NOTE:**

All welds on top & bottom of steel to be ground flush. All welds at end caps to be smooth and ground flush. Clip all corners @ end caps. All pieces to be tagged due to powder coating process.

---

**FOR EAST CANOPY**

---

**S-907**
ONE: TUBE 3T51

ONE: TUBE 3T52

SHOP NOTE:
ALL WELDS ON TOP & BOTTOM OF STEEL TO BE GROUND FLUSH.
ALL WELDS AT END CAPS TO BE SMOOTH AND GROUND FLUSH. CLIP ALL CORNERS @ END CAPS.
ALL PIECES TO BE TAGGED DUE TO POWDER COATING PROCESS.

ONE: TUBE 3T53

FOR WEST CANOPY

BILL OF MATERIAL

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</table>
SHOP NOTE:

ALL WELDS ON TOP & BOTTOM OF STEEL TO BE GROUND FLUSH

ALL WELDS AT END CAPS TO BE SMOOTH AND GROUND FLUSH

CLIP ALL CORNERS @ END CAPS

ALL PIECES TO BE TAGGED DUE TO POWDER COATING PROCESS

ONE TUBE 4TS1

ONE TUBE 4TS2

FOR WEST CANOPY

2 - TUBES 4TS3

2 - TUBES 4TS4
SHOP NOTE:
ALL WELDS ON TOP & BOTTOM OF STEEL TO BE GROUND FLUSH
ALL WELDS AT END CAPS TO BE SMOOTH AND GROUND FLUSH
CLIP ALL CORNERS @ END CAPS
ALL PIECES TO BE TAGGED DUE TO POWDER COATING PROCESS
ARCHITECTURAL

A-001

ARCHITECTURAL SYMBOLS AND NOTES

B. DIMENSIONING

1. ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD BEFORE PROCEEDING WITH THE WORK. THE ARCHITECTURAL DRAWING IS THE ONLY ESSENTIAL MEANS OF APPRECIATING THE WORK OF ALL CONTRACTORS.

2. ALL DIMENSIONS SHALL BE SHOWN IN THE FASHION TO BE CONSISTENT WITH THE METHOD OF MEASUREMENT USED IN THE INDUSTRY. ARROWS SHALL BE SHOWN TO INDICATE THE RETENTION OF DIMENSIONS SHOWN ON THE ARCHITECTURAL DRAWING.

C. MATERIALS

1. ALL MATERIALS USED ARE TO BE IN ACCORDANCE WITH THE AVAILABLE MATERIAL AVAILABLE ON THE MARKET. THE ARCHITECT IS NOT RESPONSIBLE FOR THE SELECTION OF MATERIALS.

D. MISCELLANEOUS NOTES

1. ALL JOINTS AND PENETRATIONS IN INSULATION BARRIER SHALL BE FULLY INSULATED AND SECURED TO THE SUPPORTING STRUCTURE.

E. INSULATION

1. ALL INSULATION MATERIALS SHALL BE Installed IN CONFORMITY WITH THE MANUFACTURER'S INSTRUCTIONS AND THE APPLICABLE BUILDING CODES.

F. MISCELLANEOUS NOTES

1. ALL EXTERIOR METALS SHALL BE PROVIDED TO THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ALL EXTERIOR METALS.

G. GENERAL


2. ALL CONSTRUCTION WORK IS TO BE PERFORMED IN A MANNER THAT WILL PERMIT THE EASY MAINTENANCE AND ACCESSIBILITY OF THE STRUCTURAL FRAMING AND ACCESS PANELS AS REQUIRED BY APPLICABLE CODES AND AS BUILT DRAWING SUBMISSION.

3. ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID MOLECULAR BREAKDOWN.

4. ALL PIPING, DUCTS, ETC. THAT PENETRATE FLOOR SLABS SHALL BE INSTALLED IN A MANNER THAT WILL PERMIT THE EASY MAINTENANCE AND ACCESSIBILITY OF THE STRUCTURAL FRAMING AND ACCESS PANELS AS REQUIRED BY APPLICABLE CODES AND AS BUILT DRAWING SUBMISSION.

5. LEAD-CONTAINING PAINT MAY NOT BE USED ON THIS PROJECT. THE OWNER WILL NOT ACCEPT REQUESTS FOR EXTRA WORK CONDITIONS WHICH CONTRIBUTE TO THE USE OF LEAD CONTAINING PAINT.

6. ALL BASE BUILDING INTERIOR PARTITIONS SHALL WITHSTAND MINIMUM INWARD PRESSURE OF 0.15psf AND 0.05psf FOR 1 HOUR AS REQUIRED BY APPLICABLE CODES AND AS BUILT DRAWING SUBMISSION.

7. DO ALL JOINTS AND PENETRATIONS IN INSULATION BARRIER SHALL BE FULLY INSULATED AND SECURED TO THE SUPPORTING STRUCTURE.

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G. GENERAL


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GENERAL SHEET NOTES

1.) Maximum pressure on soil to be <1500 PSF
2.) Owner shall repair/replacement to be coordinated by Facilities to be approved by the college in advance.
3.) Site to be marked and shall remain ASA ADA compliant at all times once complete
4.) All existing utilities, fixtures, & property to remain without modification

SHEET KEYNOTES

4.) Entry from Decathlete Way
5.) Water Tank Enclosure
6.) 1:20 ADA Accessibility Slope/Accessing Surface
7.) Photovoltaic Array

A-101 SITE PLAN
GENERAL SHEET NOTES

1.) PLEASE COORDINATE ROOF OPENINGS WITH MECHANICAL, ELECTRICAL, AND PLUMBING TEAMS PRIOR TO DATE OF DRAWING TO ACCURATELY CONFIRM THEORY WITH FIXTURES TO BE INSTALLED.

2.) THE WALLS ARE TREATED AS EXTERIOR WALLS WITHIN THE WALL THICKNESS - THE 2' WALLS ARE TREATED AS EXTERIOR WALLS WITHIN THE WALL THICKNESS.

REFERENCE KEYNOTES

22 13 16.A5 PLUMBING VENT EXHAUST
23 34 34 HVAC EXHAUST VENT

REFERENCE SHEET NOTES

1.) PLEASE COORDINATE ROOF OPENINGS WITH MECHANICAL ENGINEERING AND PLUMBING TEAMS IN ORDER TO ENSURE ACCURACY WITH FIXTURES TO BE INSTALLED.

2.) THE ENTIRE WALL THICKNESS IS SHOWN IN THESE DRAWINGS. INTERIOR DIMENSION OF EXTERIOR WALL IS TO BE TAKEN AS INSIDE OF STRUCTURAL WOOD STUDS.

MARK DATE DESCRIPTION

PRODUCED BY AN AUTODESK STUDENT PRODUCT
GENERAL SHEET NOTES
1.) REFER TO STRUCTURAL DRAWINGS FOR ALL INFORMATION REGARDING STRUCTURAL MEMBERS, CONNECTIONS AND DETAILS.

REFERENCE KEYNOTES
5 WATER TANK ENCLOSURE
7 PHOTOVOLTAIC ARRAY
54 STEEL PERGOLA STRUCTURE

SHEET KEYNOTES
5 WATER TANK ENCLOSURE
7 PHOTOVOLTAIC ARRAY
54 STEEL PERGOLA STRUCTURE

TOP OF PARAPET 12'-6"
BOTTOM OF CEILING 10'-6"
TOP OF FLOOR 1'-6"

SOUTH ELEVATION
NORTH ELEVATION

A-201

A-201 ELEVATIONS

U.S. DEPARTMENT OF ENERGY
SOLAR DECATHLON 2011
WWW.SOLARDECATHLON.GOV

TEAM NAME:
ADDRESS:
CONTACT:

VAMANROB ENBELA
611 LORADO TAFT DR.
CHAMPAIGN, IL 61820

UNIVERSITY OF ILLINOIS FACILITIES AND SERVICES
SOLARDECATHLON@UIUC.EDU
WWW.SOLARDECATHLON.ILLINOIS.EDU

CONFIDENTIAL
NONE: PROJECT IS PUBLIC DOMAIN

MR 3/18/2011
DOE CD Submission

MH 8/11/2011
As Built Drawing Submission

A-201 ELEVATIONS

PRODUCED BY AN AUTODESK STUDENT PRODUCT
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REFERENCE KEYNOTES
5 WATER TANK ENCLOSURE
7 PHOTOVOLTAIC ARRAY
54 STEEL PERGOLA STRUCTURE

SHEET KEYNOTES
5 WATER TANK ENCLOSURE
7 PHOTOVOLTAIC ARRAY
54 STEEL PERGOLA STRUCTURE

TOP OF PARAPET: 12'-6"
BOTTOM OF CEILING: 10'-6"
TOP OF FLOOR: 1'-6"

D1 EAST ELEVATION

A1 WEST ELEVATION
GENERAL SHEET NOTES

1.) REFERENCe STRUCTURAL DRAWINGS FOR ALL INFORMATION REGARDING STRUCTURAL CONNECTIONS AND NAILING SCHEDULES.

2.) VAPOR BARRIER TO BE INSTALLED BEFORE INSTALLATION OF MARMOLEUM CLICK FLOORING OR CORK TILE FLOORING.

3.) ALL FLOOR PENETRATIONS ARE TO BE SEALED WITH EXPANDING SPRAY FOAM INSULATION BEFORE INSTALLATION OF FINISH FLOOR.

REFERENCE KEYNOTES

05 12 77.N99 WT8X18
06 05 23.B2 1/2" LAG SCREW
06 11 00.D1 2X4
06 16 00.B3 1/4" HARDBOARD
06 16 00.D18 7/16" PLYWOOD
06 17 00.B1 9 1/2" WOOD STUDS
07 21 13.L1 FORM BOARD LAGGATION
09 29 00.D11 5/8" TYPE "X" GYPSUM WALLBOARD
09 65 19 MARMOLEUM CLICK PANEL FLOORING

MARK DATE DESCRIPTION

D1 WALL TO FLOOR CONNECTION

B1 FLOOR TO FLOOR CONECTION

A1 FLOOR TO FLOOR WALL CONNECTION

1 1/2" = 1'-0"
GENERAL SHEET NOTES
1.) CONFIRM ALL EXISTING DIMENSIONS BEFORE INSTALLING PLUMBING AND MECHANICAL FIXTURES.

REFERENCE KEYNOTES
11 31 23.B1 COMBINATION WASHER DRYER
22 33 30.26 RESIDENTIAL, COLLECTOR-TO-TANK, HEAT-EXCHANGER-COIL, SOLAR-ELECTRIC DOMESTIC WATER HEATERS
22 41 13.A1 WATER CLOSET
22 41 16.A7 WALL MOUNT SINK

A1 BATHROOM AND MECHANICAL SPACE DETAIL
GENERAL SHEET NOTES

1.) INSULATIONS AND SEAMS AT NORTHWEST AND SOUTHEAST CORNER CONNECTIONS TO BE INSTALLED 06/16/10.

REFERENCE KEYNOTES

06 11 00.B2 1 X FURRING STRIPS @ 16" O.C.
06 11 00.D6 1/2" PLYWOOD
07 21 00.B3 3" COMPRESSIBLE ROCK WOOL
07 21 13.13 FOAM BOARD INSULATION
07 46 23 1X6 KILN DRIED CEDAR SIDING
07 46 24 RESYSTA ALL NATURAL SIDING
09 22 13.13 METAL CHANNEL FURRING
09 29 00.D1 5/8" GYPSUM WALLBOARD

A-501 ENVELOPE AND FACADE DETAILS

Cedar Facade Detail

Resysta Siding Detail

Structural Wall Corner Connection

Unit to Unit Connection at Door
GENERAL SHEET NOTES

1. Ensure that rigid insulation between units does not move during installation to maintain insulated air tight seal.
2. All penetrations into EPDM membrane must be sealed with Butyl sealant to prevent leakage.
3. Confirm location of roof blocking on site before installation of solar panel mounting rack.

REFERENCE KEYNOTES

05 41 00 STRUCTURAL METAL STUD FRAMING
06 05 23.A14 40 PENNY NAIL
06 05 23.B11 (6) 3/8" TIMBERLOK WOOD SCREW
06 11 00.D1 SIMPSON HANGERS
06 11 00.F1 2X4
06 11 00.G1 2X4 COMMON MOULDING
06 16 00.D6 2X4 COMMON MOULDING
06 17 53 2X4 COMMON MOULDING
07 21 13.B1 1/2" RIGID INSULATION
07 62 00.B4 10" PEAKED COPING
07 62 00.D1 2 PIECE CAP & RECEIVER FLASHING
07 62 00.H35 4" X 5" RECTANGULAR GUTTER
07 95 13.B1 1/4" EXPANSION JOINT
09 22 13.13 METAL CHANNEL FURRING
09 29 00.D11 5/8" TYPE "X" GYPSUM WALLBOARD

1. Ensure that rigid insulation between units does not move during installation to maintain insulated air tight seal.
2. All penetrations into EPDM membrane must be sealed with Butyl sealant to prevent leakage.
3. Confirm location of roof blocking on site before installation of solar panel mounting rack.
**GENERAL SHEET NOTES**

1.) All window and door dimensions must be confirmed on site before installation.
2.) Instructions in this drawing represent manufacturer's directions which are intended to avoid a breach of product warranty.
3.) Apply expanding spray foam insulation around all openings before installing window trim.

**OPENING SCHEDULE AND DETAILS**

**A-601**
## ROOM FINISH SCHEDULE

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<th>ROOM NAME</th>
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SEE INTERIOR ELEVATIONS FOR TILE LOCATIONS

## GENERAL SHEET NOTES

1. REFER TO PROJECT MANUAL FOR FURTHER INFORMATION ON FLOORING TYPES AND INSTALLATION TECHNIQUES.
2. FLOORING IS TO BE INSTALLED PER THE MANUFACTURER’S RECOMMENDATIONS.
3. FLOORING BETWEEN UNITS IS TO BE INSTALLED ON SITE AND IS TO BE INSTALLED FLUSH BETWEEN BOTH UNITS.

## REFERENCE KEYNOTES

1. 09 30 13.A3 FLOOR TILE
2. 09 62 29 CORK FLOORING PANELS
3. 09 65 19 MARMOLEUM CLICK PANEL FLOORING
REFERENCE KEYNOTES

06 25 16  PREFINISHED PLYWOOD PANELING
08 35 13.13  ACCORDION FOLDING DOORS
09 29 00.D1  5/8" GYPSUM WALLBOARD
11 31 23.B1  COMBINATION WASHER DRYER
12 32 16  MANUFACTURED PLASTIC-LAMINATE-CLAD CASEWORK FROM IKEA
22 33 30.26  RESIDENTIAL, COLLECTOR-TO-TANK, HEAT-EXCHANGER-COIL, SOLAR-ELECTRIC DOMESTIC WATER HEATERS

REFERENCE SHEET NOTES

1.) REFER TO PROJECT MANUAL FOR FURTHER INFORMATION ON FINISH TYPES AND INSTALLATION TECHNIQUES.
2.) INSTALLATION OF ALL PLUMBING FIXTURES SHOULD BE COMPLETED PER MANUFACTURER INSTRUCTIONS.
3.) ALL GROUT IS TO MATCH TILE.

GENERAL SHEET NOTES

3/4" = 1'-0"
SPRINKLER SCHEDULE

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GENERAL SHEET NOTES

1.) All wall sprinklers fixtures in the living space must be located 4" below the finished ceiling.
2.) Wall sprinkler fixture located in the bedroom will be 1' 4" below the finished ceiling.
3.) All interior piping shall be CPVC with approved CPVC fixtures.
4.) CPVC piping shall be listed for fire protection and installed in accordance with the manufacturer's instructions.
5.) Please refer to fire protection engineer for further information.

FIRE SUPPRESSION PLAN

Sheet Keynotes:

1. Electrical meter socket
2. Magnetic sensor
3. Organized provided electrical metering enclosure
4. PV AC combiner panel
5. Organized supplied datalogger
6. Data router
7. Electrical panel

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Sheet Title: FIRE SUPPRESSION PLAN

Lot #305

Megan Robertson
Michael Hines
University of Illinois

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- Please refer to fire protection engineer for further information.
1. PLEASE REFER TO THE PROJECT MANUAL FOR FULL DETAILS ON WATER CONTAINMENT DEVICES.
2. PLEASE REFER TO DRAWING L-103 FOR DETAILS ON WATER ENCLOSURE AND FOUNDATION SUPPORT.

SHEET KEYNOTES:

- 3 ELECTRIC METER SOCKET
- 71 MAGNETIC SENSOR
- 73 ORGANIZER PROVIDED ELECTRICAL METERING ENCLOSURE
- 74 WATER STORAGE TANK
- 75 ORGANIZER PROVIDED WATER ENCLOSURE
- 76 ORGANIZER PROVIDED DATALOGGER
- 79 PV AC COMBINER PANEL
- 81 ORGANIZER SUPPLIED DATALOGGER
- 82 DATA ROUTER

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- 74 WATER STORAGE TANK
- 75 ORGANIZER PROVIDED WATER ENCLOSURE
- 76 ORGANIZER PROVIDED DATALOGGER
- 79 PV AC COMBINER PANEL
- 81 ORGANIZER SUPPLIED DATALOGGER
- 82 DATA ROUTER
GENERAL SHEET NOTES

1. BLACK WATER STORAGE TANK (76) IS TO BE USED AS A OVERFLOW CONTAINER FOR THE GREYWATER STORAGE TANK (19) AND THE HOLD TANK (75).

SHEET KEYNOTES

3 ELECTRIC METER SOCKET
13 MAGNETIC SENSOR
73 ORGANIZER PROVIDED ELECTRICAL METERING ENCLOSURE
75 ORGANIZER PROVIDED GREYWATER ENCLOSURE
81 ORGANIZER SUPPLIED DATALOGGER
82 DATA ROUTER

RETURN PLUMBING PLAN

DOMESTIC RETURN

DESCRIPTION
GENERAL SHEET NOTES

1. TOTAL WATER REQUESTED EQUALS 700 GALLONS SPLIT BETWEEN TWO TANKS.
2. INFORMATION ON THE WATER TANK ENCLOSURE CAN BE FOUND ON SHEET L-201.

REFERENCE KEYNOTES

06 11 00.D1 2X4
06 11 00.L1 4X4
27 WATER TANK FILL/REMOVAL LOCATION
31 RAIN BARREL

SHEET KEYNOTES

3 ELECTRIC METER SOCKET
13 MAGNETIC SENSOR
71 ORGANIZER PROVIDED ELECTRICAL METERING ENCLOSURE
79 PV AC COMBINER PANEL
81 ORGANIZER SUPPLIED DATALOGGER
82 DATA ROUTER

WATER DELIVERY PLAN

500 GALLON WATER TANKS DIMENSIONS

200 GALLON WATER TANK DIMENSIONS

FILL LOCATION ELEVATION
GENERAL SHEET NOTES
1. TOTAL WATER REMOVAL WILL EQUAL 700 GALLONS
   SPLIT BETWEEN TWO TANKS.
2. INFORMATION ON THE WATER TANK ENCLOSURE
   CAN BE FOUND ON SHEET L-201.

REFERENCE KEYNOTES
- WATER REMOVAL SEQUENCE
- WATER REMOVAL Plan

SHEET KEYNOTES
- ELECTRIC METER SOCKET
- MAGNETIC SENSOR
- ORGANIZER PROVIDED ELECTRICAL METERING ENCLOSURE
- PV AC COMBINER PANEL
- ORGANIZER SUPPLIED DATALOGGER
- DATA ROUTER
- PVC COMBINATION PANEL
- DESIGNER LAYOUT AND SPECIFICATIONS
- DATA FILTER

WATER REMOVAL PLAN
- WATER TANK ENCLOSURE
- WATER TANK FILL/REMOVAL LOCATION
- RAIN BARREL
- GREYWATER STORAGE
- BLACK WATER TANK

500 GALLON WATER TANK DIMENSIONS
200 GALLON WATER TANK DIMENSIONS
REMOVAL LOCATION ELEVATION

P-105
1. The water closet will not be connected during the competition period. All connections between the WC and the plumbing system will be disconnected for the entirety of the competition period.
1. THE WATER CLOSET WILL NOT BE CONNECTED DURING THE COMPETITION PERIOD. PIPE CONNECTIONS BETWEEN THE WC AND THE PLUMBING SYSTEM WILL BE DISCONNECTED FOR THE ENTIRETY OF THE COMPETITION PERIOD.
1. THE WATER CLOSET WILL NOT BE CONNECTED DURING THE COMPETITION PERIOD. PIPE CONNECTIONS BETWEEN THE WC AND THE PLUMBING SYSTEM WILL BE DISCONNECTED FOR THE ENTIRETY OF THE COMPETITION PERIOD.

2. ISOMETRIC DRAWINGS ARE NTS.
GENERAL MECHANICAL NOTES

1.) THESE GENERAL NOTES APPLY TO ALL WORK IN THIS PROJECT

2.) DO NOT SCALE DRAWINGS, USE FILED MEASUREMENTS

3.) NOTES ON DRAWINGS SHALL APPLY TO ALL, SIMILAR CONDITIONS WHETHER THEY ARE REPEATED OR NOT

4.) ALL EXPOSED DUCTWORK, PIPING, ELECTRICAL CONDUIT, TEMPERATURE CONDUIT AND ASSOCIATED COMPONENTS SHALL BE STAINLESS STEEL OR COLOR AS SELECTED BY THE ARCHITECT

5.) THE WORK HAS BEEN DESIGNED FOR THE EQUIPMENT INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE AND PROVIDE ANY MODIFICATIONS TO THE WORK INCLUDING BUT NOT NECESSARILY LIMITED TO DUCTWORK, PIPING, ELECTRICAL, PLUMBING, PIPE PROTECTION, STRUCTURAL, LIGHTING, OUTLETS AND ARCHITECTURAL FEATURES SUCH AS CEILINGS, DOORS AND FRAMES, CASEWORK, ETC. REQUIRED TO PROPERLY PROVIDE EQUIPMENT OTHER THAN THAT INDICATED ON THE DRAWINGS.

6.) THE DRAWINGS AND DETAILS SHOWN SHALL BE TAKEN AS A DIAGNOSTIC MEANS OF PROVIDING PIPING AND DUCTWORK. THEY DO NOT SHOW EVERY FITTING AND OFFSET, NOR EVERY STRUCTURAL, ELECTRICAL, PIPING OR DUCTWORK DIFFICULTY THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THE WORK.
GENERAL SHEET NOTES

1) ALL METAL HVAC DUCTING IS TO BE INSULATED.

2) ROUTE AND CONNECT ALL HVAC DUCTWORK PER MANUFACTURER INSTRUCTIONS.

REFERENCE KEYNOTES

1. CANTILEVER STORAGE RACKS

2. COMBINATION WASHER DRYER

3. DOMESTIC WATER PIPING

4. RESIDENTIAL, COLLECTOR-TO-TANK HEAT-EXCHANGER-COIL, SOLAR-ELECTRIC DOMESTIC WATER HEATERS

5. HVAC PIPING INSULATION

6. HIGH-EFFICIENCY PARTICULATE FILTRATION

7. CONDITIONING ENERGY RECOVERY VENTILATOR (CERV)

8. DISTRIBUTION VALVE BOX

9. MIXING BOX

10. SUPPLY VENT

11. MAIN RETURN

12. AIR FILTER

13. BATHROOM EXHAUST

SHEET KEYNOTES

1. ELECTRIC METER SOCKET

2. MAGNETIC SENSOR

3. ORGANIZER PROVIDED ELECTRICAL METERING ENCLOSURE

4. ORGANIZER SUPPLIED DATALOGGER

5. DATA ROUTER

6. PV AC COMBINER PANEL

7. DISTRIBUTION SOLAR BOX

8. CONDITIONING ENERGY RECOVERY GENERATOR (CERV)

9. METER BOX

10. SUPPLY VENT

11. MAIN RETURN

12. AIR FILTER

13. BATHROOM EXHAUST

14. ALL METAL HVAC DUCTING IS TO BE INSULATED.

15. INSTALL AND CONNECT ALL HVAC MEMBERS PER MANUFACTURER INSTRUCTIONS.
**GENERAL ELECTRICAL NOTES**

1. THESE GENERAL NOTES APPLY TO ALL WORK IN THIS PROJECT
2. REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ADDITIONAL GENERAL NOTES WHICH WILL APPLY
3. DO NOT SCALE DRAWINGS, USE FILED MEASUREMENTS
4. VERIFY ALL LIGHTING FIXTURE LOCATIONS, FINISHES, AND CEILING TYPES WITH
5. THE PRIMARY BUILDING CONTRACTOR SHALL VERIFY TOTAL CONNECTED LOAD / IIP AND
6. THE ELECTRICAL CONTRACTOR SHALL VERIFY TOTAL CONNECTED LOAD / IIP AND
7. THE CONTRACTOR SHALL VERIFY TOTAL CONNECTED LOAD / IIP AND
8. ALL CEILING FIXTURES SHALL BE RATED FOR BUILDING VOLTAGE
9. THE ELECTRICAL CONTRACTOR SHALL VERIFY TOTAL CONNECTED LOAD / IIP AND
10. ALL FIXTURES TO BE "U.L." LABELED, ALL LIGHTING FIXTURES EXPOSED TO WEATHER
11. VERIFY TO APPLIED SECTION OF THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR CUSTOM FIXTURES

**ELECTRICAL CALCULATIONS**

The PV system design consists of two arrays which together produce 6.9kW under standard temperature and conditions (STC). The primary PV array will have 24 SunPower E18 230W panels, while the secondary array will have 14 Sanyo HIT panels. The SunPower inverter will output a maximum 20.8A and the Kaco inverter will output a maximum 15A. The inverters are connected to the main load center through a combiner box.

### SunPower Inverter
- Maximum output: 20.8A
- Overcurrent protection: 30A double pole breaker
- Maximum temperature: 41°C
- Ampacity at 90°C: 30A
- Derated ampacity: 26.1A

### Sanyo HIT Inverter
- Overcurrent protection: 15A double pole breaker
- Maximum output: 4.92A
- Overcurrent protection: 15A double pole breaker
- Maximum temperature: 65°C

The wiring for the inverters and combiner box should be suitable for outdoor conditions. The wires will be run through 1/2" PVC conduit. The ampacity of the wires must be greater than or equal to the breaker. These wires will also run through 1/2" PVC conduit.

### AC Grounding
- NEC 250.122 states that an additional 1.25 multiplier must be added to the traditional 80% factor. For these calculations, the total wire resistance will be calculated.

### Wire Selection
- The grounding conductor between the DC and AC systems should be sized as the larger of the DC or AC system. In this case, the larger system is the AC system.
- Based on NEC 250.122, we will employ a 6 AWG Cu conductor to realize the ground bonding and AC Grounding.

### Electrical Calculations Con.

Inverter to Combiner Box
- The inverter to combiner box will be sized based on the inverters and combiner box. The SunPower inverter will be sized for 20.8A, while the Kaco inverter will be sized for 15A. The combiner box will also need to be sized for the maximum amperage of 30A. This will be determined based on NEC 690.47(C)(4).
- The grounding conductor between the DC and AC systems should be sized as the larger of the DC or AC system. In this case, the larger system is the DC system.
- Based on NEC 250.122, we will employ a 6 AWG Cu conductor to realize the ground bonding and AC Grounding.
1.) ELECTRIC METER HOUSING AT 50-65" ABOVE
GRADE (48" A.F.F.) TO ACCEPT A STANDARD,
4-JAW, RINGLESS ROUND, UTILITY GRADE
SOCKET METER FOR USE WITH 240/120 V
SERVICE.

2.) AC DISCONNECT AT 65" ABOVE GRADE
(48" A.F.F.)

3. EACH DWELLING SHALL BE PROVIDED WITH
GROUNDING ELECTRODES IN ACCORDANCE
WITH IRC E3608.1.4 ROD AND PIP ELECTRODES.
THE LENGTH OF THE GROUND ROD SHALL BE
EXACTLY 8 FEET IN LENGTH.
PV WIRING PLAN

REFERENCE KEYNOTES

26 05 33.A1 1/2" SCH 40 PVC
26 05 33.A2 3/4" SCH 40 PVC
26 05 33.A5 3/4" LFNC
26 30 00.D1 JUNCTION BOX
26 31 00.A1 SUNPOWER E18/230 SOLAR PANEL
26 31 00.A2 SANYO HIT DOUBLE 195

GENERAL SHEET NOTES

1.) ALL CONDUIT AND J-BOXES ARE ATTACHED TO
PV SUBMOUNT.

2.) ALL WIRES FOR SANYO PANELS WILL BE
MOUNTED TO TOPSIDE OF METAL CANOPY
FRAME.
**AC CIRCUIT PLAN**

### CIRCUIT DESIGNS & ELECTRICAL LOADS

<table>
<thead>
<tr>
<th>CIRCUIT</th>
<th>DESCRIPTION</th>
<th>BREAKER SIZE</th>
<th>PANEL LOCATION</th>
<th>NOTES</th>
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<td>3</td>
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### GENERAL SHEET NOTES

1. **ELECTRIC METER HOUSING AT 65 DEGREES ABOVE GRADE (48 DEGREES A.F.F)** TO ACCEPT A STANDARD 4-JAW, RINGLESS, ROUND, UTILITY GRADE SOCKET METER FOR USE WITH 240/120V SERVICE.

2. **COOKING EQUIPMENT DEMAND LOAD (NEC 220.55)**:
   - **COOKTOP**: 9600 VA
   - **WALL OVEN**: 1500 VA
   - **MICROWAVE/OVEN**: 2000 VA
   - **TOTAL COOKING EQUIPMENT DEMAND LOAD**: 9500 VA

3. **GENERAL LIGHTING, SMALL APPLIANCE & LAUNDRY DEMAND LOAD (NEC 220.42)**:
   - **GENERAL LIGHTING**: 4426 VA
   - **APPLIANCES**: 3750 VA
   - **DRYER**: 3500 VA
   - **TOTAL GENERAL LIGHT & SMALL APPLIANCE DEMAND LOAD**: 7074 VA

4. **LARGER OF HEATING OR COOLING DEMAND LOADS (Equal) (NEC 220.60)**:
   - **HEATING/Cooling**: 700 VA

5. **NET COMPUTED LOAD**: 27776 VA

6. **LARGEST MOTOR LOAD (NEC 220.14)**:
   - **Largest Motor**: 450 VA

7. **NEUTRAL LOAD (NEC 220.61)**:
   - **Heating**: 35% = 1426 VA
   - **Larger of heating or cooling**: 700 VA

8. **COOKING EQUIPMENT DEMAND LOAD (NEC 220.55)**:
   - **Cooktop**: 9600 VA
   - **Wall Oven**: 1500 VA
   - **Microwave/Oven**: 2000 VA
   - **Total Cooking Equipment Demand Load**: 7000 VA

9. **Largest Motor Load (NEC 220.14)**:
   - **Largest Motor**: 450 VA

10. **The First 3000 VA @ 100% = 3000 VA**

11. **Remaining 4074 VA @ 35% = 1426 VA**

### LOAD CALCULATIONS

1. **Largest Motor**: Spin Extractor @ 1800 VA
2. **25% of Largest Motor Load (NEC 220.14)**: 450 VA
3. **GENERAL SHEET NOTES**
   - **ELECTRIC METER HOUSING AT 65 DEGREES ABOVE GRADE (48 DEGREES A.F.F)** TO ACCEPT A STANDARD 4-JAW, RINGLESS, ROUND, UTILITY GRADE SOCKET METER FOR USE WITH 240/120V SERVICE.
   - **COOKING EQUIPMENT DEMAND LOAD (NEC 220.41)**:
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   - **The First 3000 VA @ 100% = 3000 VA**
   - **Remaining 4074 VA @ 35% = 1426 VA**

### PROJECT MANAGER

**TEAM NAME:** TEAM NAME 1

**ADDRESS:** 10 DISTRIBUTION PANEL

**CONTACT:** CONSULTANTS

**CONSULTANTS:** MSA PROFESSIONAL SERVICES

**CLIENT:** UNIVERSITY OF ILLINOIS FACILITIES AND SERVICES

**U.S. DEPARTMENT OF ENERGY**

**SUN VALLEY PROFESSIONAL SERVICES**

**SOLAR DECATHLON 2011**

**SOLAR DECATHLON 2011**

**SOLAR DECATHLON 2011**
### GENERAL SHEET NOTES

1. Always follow manufacturer’s installation instructions.
2. Architect to confirm light temperatures on site for final approval.

### LIGHTING SCHEDULE

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<th>MANUFACTURER</th>
<th>LIGHTING</th>
<th>LAMP &amp; WATTAGE</th>
<th>MOUNTING</th>
<th>MISCELLANEOUS</th>
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### MARK DATE DESCRIPTION

- 3/18/2011 DOE CD Submission
- 8/11/2011 As Built Drawing Submission
- 8/13/2011 11:24:04 AM
- 4/06/2011 Ext. Lights Moved lighting over the 2 tables
- 4/13/2011 Changed Schedule

### ADDRESS

611 LORADO TAFT DR.
CHAMPAIGN, IL 61820

### CONTACT

UNIVERSITY OF ILLINOIS
SOLARDECATHLON@UIUC.EDU
WWW.SOLARDECATHLON.ILLINOIS.EDU
GENERAL SHEET NOTES

1.) INSTALL SENSORS ON UNDERSIDE OF STRIKESIDE TOP CORNER.

2.) LOW VOLTAGE WIRE 18/2 CONDUCTOR

SHEET KEYNOTES

13 MAGNETIC SENSOR

56 MODULE ELECTRICAL CONNECTION

WINDOW AND DOOR SENSOR PLAN

1/2" = 1'-0"
GENERAL SHEET NOTES

1.) ALL PERMANENT DATA WIRE RUNS ARE TO BE COMBINATION CATEGORY 5 E / RG-6 COAX WIRE.

2.) DATA WIRE RUN BETWEEN THE ELECTRIC METER HOUSING (3) AND THE ORGANIZER PROVIDED DATALOGGER (81) ARE TO BE CHOSEN BY THE SOLAR DECATHLON COMPETITION ORGANIZERS.

3.) CONDUIT THROUGHOUT THE KITCHEN IS TO BE INSTALLED IN THE FLOOR PRIOR TO THE INSTALLATION OF SPRAY FOAM INSULATION. THE CONDUIT WILL COME UP THROUGH THE FLOOR UNDER THE DESIGNATED CABINETRY AND ALONGSIDE THE ORGANIZER PROVIDED DATALOGGER.

SHEET KEYNOTES

3 ELECTRIC METER SOCKET
13 MAGNETIC SENSOR
73 ORGANIZER PROVIDED ELECTRICAL METERING ENCLOSURE
79 PV AC COMBINER PANEL
81 ORGANIZER SUPPLIED DATALOGGER
82 DATA ROUTER

T-101
TELECOMMUNICATIONS DISTRIBUTION PLAN

1/2" = 1'-0"