F&S #	2
F&S Project Name	**ARC Solar Thermal**
Topic Area	Energy
Project Leader	Gary Miller
Role	Staff
Amount Requested	**$75,000**
Contact	millerg@illinois.edu
Summary	As part of the Urbana Campus R&R submissions for FY 2012 Campus Recreation placed in consideration a proposal for the construction and installation of solar-thermal panels on the roof of the Activities and Recreation Center with the following scope and purpose: Scope: Install a 24-panel, gravity fed solar-thermal system on the roof of the ARC with associated Storage tanks. Purpose: This is a green project. It is designed to pre-heat domestic cold water prior to its introduction into the steam heat exchanger for the domestic hot water (showers and sinks). This system would significantly reduce our steam usage for domestic hot water during normal operating periods. While each the three areas of hot water usage (domestic, pool and air heating) have potential for use of solar-thermal panels, this project is the most pressing and efficient use of this technology. Engineering and design have already been completed by Solar Services and funded through Campus Recreation. Campus Recreation was awarded $319,500 for this project and the full amount of this money is still available to us. After a thorough review of the documents from Solar Services in September of 2011 it was concluded that while domestic hot water made extensive use of hot water (especially in showers) the demand for hot water was variable and at its highest level when the variable ability of the panels to supply hot water was at its lowest level at the same time and vice versa over the course of the year. In September of 2011 it was decided that the solar thermal panels would be better adapted to the more constant demand of pre-heating water to be used in the two swimming pools at the ARC (approximately 990,000 gallons during the summer months). While the system would be essentially the same the re-design and relocation from the east side of the ARC to the west side of the ARC required some additional funds for architects and engineering of the project. A budget supplement of $9,000 was requested and received from the R&R Committee. The relocation of the system was incorporated into a new set of 50% drawings, reviews were conducted by F&S and estimates for construction were calculated. Changes were made and a bid set of drawings was reviewed for a comparison between the budget and the scope of work. It was at this point that several glaring architectural omissions in the drawings were noted and a budget shortfall was discovered. This shortfall is estimated to be $75,000. Campus Recreation is making a request to the Student Sustainability Committee in the above-listed amount to complete the solar-thermal panel project at the ARC. This project has been listed by the campus as one of its green projects moving toward its sustainability goals and Campus Recreation would like to do everything possible to assist it in becoming a reality for the University of Illinois. Thank you for your time and consideration of this request.
Student Involvement	Campus Recreation facilities are a highly visible on campus and the majority of the users are students. The students will have indirect benefits with these solar thermal panels with the utility savings that this project will have. With this project our hope is to save on utility costs and essentially assist in maintaining student fees at the current level. After the project is complete we will have post education awareness with our marketing explaining how these panels are saving on utility costs. Our plan is also to collaborate with academic units to showcase the work and possibly have their usage/savings analyzed as class projects, in turn educating the campus with these solar thermal panels.
Timeframe	Work would begin on or about March 1, 2013 and should end on or about May 1, 2013
F&S Brainstorming	The drawings didn't really include all that was entailed in putting this in place. If Gary wants his current budget augmented by $75,000, make sure the AE design fees are also accounted for. Where did the $75K figure come from?
F&S Next steps	Morgan will ask Elizabeth to confirm the budget and process is accurate for Project Budget, not just Construction Budget. Including Professional Service Fees.

Solar Thermal
Panels on Roof
R+R project
funded to pre-heat domestic water for sinks + showers
looked at capabilities of system
+ demands for water
Summer vs. Winter
set system to match supply + demand
∴ heat pool water = ~$9K more for A/E
to redesign + move to mech room for pool.
got new drawings → A/E omitted items like
lightening
suppression
plus
now need to redo the drawings
∴ need another $75K
possibly qualifies for a grant or RLF
pool water → must be open to
general public
DCEO grant →
ask Elizabeth...

Revolving Loan Fund