Engineering Student Technology Committee

http://www.engr.colostate.edu/ESTC

College of Engineering

Colorado State University

1. Title of Proposal: Emergency Exhaust Fan System for Scott Data Room.

2. Proposal Participants:

Primary Contact for Proposal

Name: CJ Keist _____E-Mail: cj.keist@colostate.edu _____

Department/Major: Dean of Engineering _____

Circle One: **Faculty** **Staff(X)** **Student**

3. Proposal Abstract (limit to 100 words):

ENS proposes to invest in an emergency exhaust fan system, for the Scott data room, in order to help maintain adequate cooling in the event the central AC system fails.

4. Proposal Budget

Note: This is a one time funding allocation request.

Emergency exhaust fan system: $56,081.13

Total: $56,081.13

Dollar or percentage amount requested from ESTC: $28,040.56 in one-time funding.

5. Full description of proposal:

With the newly constructed Scott Bioengineering Building, the college was very fortunate to be able to carve out a bit of space for a new state of the art data center room. The Engineering data room, located on the 4th floor of the Scott building, is 1,646 sq. ft. with the capacity to hold 60 full size server racks. The data room has a dedicated central air conditioning unit with a cooling capacity of ~65 tons at 38,000 CFM. There is also a centralized back up for power with a UPS fly wheel at 275 kVA along with a diesel backup generator with 1.25MW power output that also provides power to the entire building.

Even with this impressive supporting infrastructure in place for the data center room, there have been several instances of the central AC unit failing which causes the room to heat up very quickly. If the room gets too hot, many servers will start to shut down automatically in order to prevent damage to internal components which put the college and students at risk for unexpected loss of central network services.

With the several instances of the AC system going down, it has taken facilities several hours before they have responded, in that time the room temperature continues to rise. So far we

have been lucky in that these outages have occurred during business hours or late evenings when our staff was still on call and were able to come in and prop doors open to the room to help evacuate the excess heat. The danger occurs if this AC outage were to happen in the middle of the night. Not only do we risk central network services going down, but also are at risk of permanent hardware failures due to the high temperatures.

In order to protect against unexpected AC downtimes, and to give more time for facilities to respond and fix the issue with the AC system, ENS would like to install an emergency exhaust fan system that would automatically turn on when the room starts to get too hot. This exhaust fan system would then suck out the hot air from the hot aisles of the server room which should help keep the room temperature stable until the AC system can be brought back online. The college is willing to match ESTC funding for this new exhaust fan system, which will mean only a one-time 50% funding of the total exhaust fan system price.

Thank you for your time and consideration for this request of ESTC funding.

CJ Keist
ENS, System Group Manager