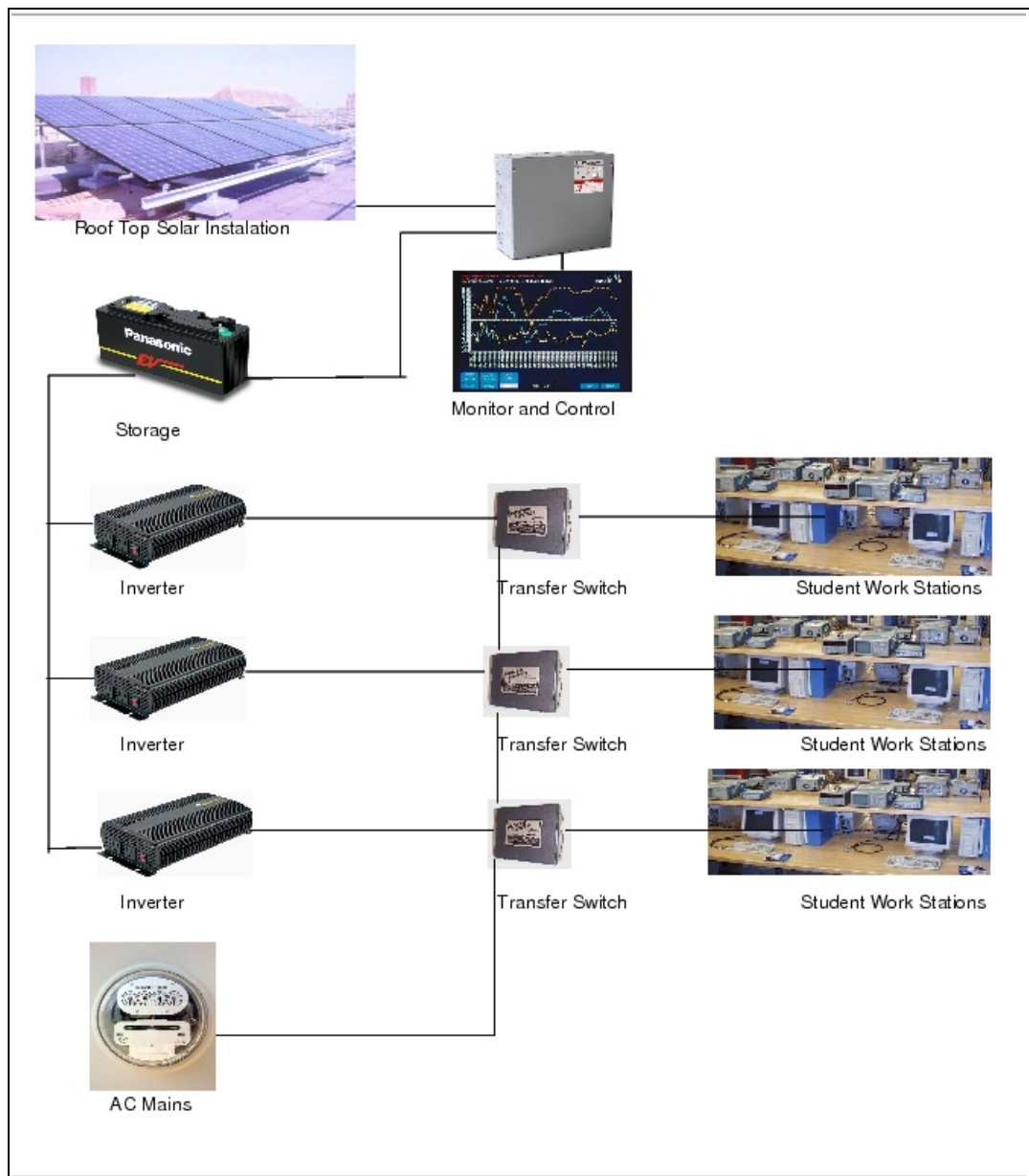


Mesa Electronics Solar Array

A proposal to ASU Polytechnic.

The Mesa Community College (MCC) Electronics Program proposes installing an array of photovoltaic (PV) solar panels on the roof of the Technology Center building (TC50) on the MCC campus. This array will supply power to the Electronics Lab equipment in either TC-415, TC-414, or TC-407 depending on building wiring issues to be determined by the MCC Facilities Department.

The panels output will be inverted and regulated to supply power to traditional student electronic lab stations including oscilloscopes, digital multi-meters, function generators, frequency counters, microprocessor development boards, and PCs. (The inverter/regulator equipment will be procured using the MCC Capital Equipment process.) The ASU-supplied PV panels will not be used at any voltage exceeding 50 V.



An internal

Building and Grounds proposal here at MCC will be submitted to rewire the affected room to add separate, off-grid AC line distribution. This separate AC line wiring will be manually switched

between the PV panel source and the standard power grid. It is anticipated that daytime classes will use the Solar power, and night classes will switch to the standard power grid. Using multiple smaller inverter/regulators will be investigated to allow individual lab station rows to be switched in or out based on available solar power.

Power requirements are as follows.

Lab Instrument	Power (W)
Oscilloscope	40
Freq Ctr/Gen	40
PC	300
Monitor	75
DMM	4
Student Circuit, typ	1
Lab Station Total Power:	460
Lab Stations per room:	12
Room Total Power:	5,520
Inverter/Regulator Eff:	0.70
Raw PV Power Req:	7,886
Power output per panel:	150
Number of Panels Req:	53

Sincerely,

JD Neglia, PE

MCC Electronics Program Director

Dennis Blum

MCC Electronics Instructor