Panels are still somewhat open in the "closed position" to leave room for the LEDS and PTFE/hinge attachments. This version is shown with fold giving more clearance room for attachments without creating a larger angle of opening in the "closed position." Triangles are not right angled in plan so that they look flush in elevation in the "closed position." This may change the way the multi-hinge works, although it may be okay because the horizontal and vertical axes of motion are maintained in section. Frame shown as having 2" width.

Springs to allow LED suspension to stretch
Rough LED suspension area
Rough LED housing location
High ductility sheet metal spot welded to frame and metal stiffer (piece to resist funny bending motions)
PTFE folded over frame and attached
Metal stiffener
Multi-hinge connection piece

Metal frame cut back at corner to allow for multi-hinge connection piece
Corners cut back to allow for multi-hinge connection
Multi-hinge
SMA

Change in panel geometry when actuated
ACTUATED OPENING

PLAN (TOP) VIEW
SMA ACTUATION GATHERS STRUCTURE
TOWARDS RIGID CONNECTION CREATING OPENING

NON-ACTUAUTED OPENING

PLAN (TOP) VIEW
MANUAL OPENING AT RIGID CONNECTION CREATED
BY SCALE CHANGE OF PANELS
ENERGY REQUIREMENTS

Energy required to actuate 24 inches of SMA once = .01wH
Energy required light 12 LEDs for 1 hour = 12wH
Energy required to continuously power microcontrollers = ?

* 10 times per hour = .1 wH

Per panel energy hourly requirement estimate: 12.1 wH

ENERGY INPUT OPTIONS

Ideal: solar cells

Next best: solar cells + batteries

Least appealing: long extension cord

3 in. diameter silicon solar cell: 4.5 watts per hour max