CRITIQUE OF THE LOWLINE’S SUNLIGHT COLLECTION SYSTEM
and a
RECOMMENDATION FOR SOLARMERSION™

THE DRAWING BELOW IS FROM AN ARTICLE IN ARCHDAILY:  
http://www.archdaily.com/778856/the-landscape-architecture-behind-the-lowline

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THE LOWLINE SUNLIGHT RECEIVER IS 100% EFFICIENT ONLY WHEN REFLECTING LIGHT BACK TO THE SUN

THE INHERENT INEFFICIENCY OF A FLAT MIRROR SUNLIGHT RECEIVER BASED ON SUN ANGLES (LAMBERTIAN REFLECTANCE)

THE LOWLINE SUNLIGHT RECEIVER - AS SHOWN IN ARCHDAILY – “SEES” THE SUN AT CONSTANTLY CHANGING ANGLES
WHY AN EFFICIENT SOLAR COLLECTION SYSTEM NEEDS **ELBOWS**
(see [www.solarmersion.com](http://www.solarmersion.com) for more information)

**DESCRIPTION OF ELBOW OPERATION**

- A double parabolic sunlight concentrator (partially shown) is connected to two **elbows** (70 and 80) each comprising a mirror (71 and 81 respectively) set 45 degrees to the collimated beam of light. These elbows tilt about axis A-A and rotate about axis B-B.

- The combined effect of tilt and rotation of the **elbows** permits the sunlight concentrator to track the sun through any position in the sky while always directing concentrated and collimated sunlight down tube (axis B-B).
THE SOLARMERSION™ SYSTEM IS 100% EFFICIENT AT COLLECTING LIGHT FROM THE SUN ALL DAY LONG

COLLAGE OF RADIAL SOLARMERSION HELIOSTATS

DIAGRAM SECTION OF RADIAL SOLARMERSION HELIOSTAT
OFFSET SOLARMERSION™ SUNSHOWER SYSTEM FOR THE LOWLINE

SOLARMERSION CONCEPT MODEL 1 FOR THE LOWLINE – OFFSET HELIOSTAT

SOLARMERSION CONCEPT DIAGRAM 1 FOR THE LOWLINE – OFFSET HELIOSTAT
TOWER SOLARMERSON™ SUNSHOWER SYSTEM FOR THE LOWLINE

SOLARMERSON CONCEPT DIAGRAM 2A
FOR THE LOWLINE – INLINE HELIOSTAT

SOLARMERSON CONCEPT DIAGRAM 2B
FOR THE LOWLINE – INLINE HELIOSTAT
**ROOFTOP SOLARMERSION™ SUNSHOWER SYSTEM FOR THE LOWLINE**

SOLARMERSION CONCEPT DIAGRAM 3A
FOR THE LOWLINE – ROOFTOP HELIOSTAT

SOLARMERSION CONCEPT DIAGRAM 3B
FOR THE LOWLINE – ROOFTOP HELIOSTAT
CONCLUSIONS AND RECOMMENDATIONS

• THE LOWLINE IS AN EXCITING AND WORTHWHILE PROJECT TO PROVIDE A PARK IN NYC
• SITE CONSTRAINTS WILL MAKE IT DIFFICULT TO REDIRECT SUNLIGHT DOWN INTO THE LOWLINE - ROOFTOP SUNLIGHT RECEIVERS MAY BE REQUIRED
• SPILL LIGHT (LIGHT THAT MISSES THE TARGET) FROM A PRIMARY MIRROR RECEIVER SHOULD BE A CONCERN AND MAY BE A DETRACTOR WHEN DESIGNING ANY SUNLIGHT COLLECTION SYSTEM
• AT THE SCALE OF THE LOWLINE, IT MAY BE PROBLEMATIC TO DISTRIBUTE SUNLIGHT VIA FIBER OPTIC CABLES AND BE ABLE TO PROVIDE ENOUGH LIGHT TO GROW PLANTS
• BECAUSE OF THE AMOUNT OF SUNLIGHT NEEDED TO GROW PLANTS THE BEST WAY MAY BE TO SIMPLY TRACK THE SUN, COLLECT THE LIGHT, AND “DUMP” IT INTO THE SPACE AS A SUNSHOWER FROM A SOLARMERSION™ SYSTEM

• May I help?
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