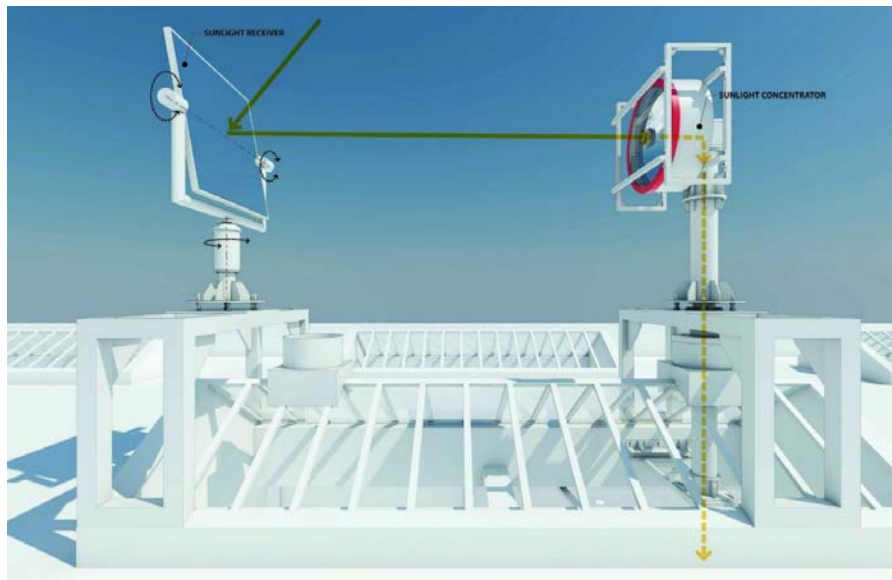
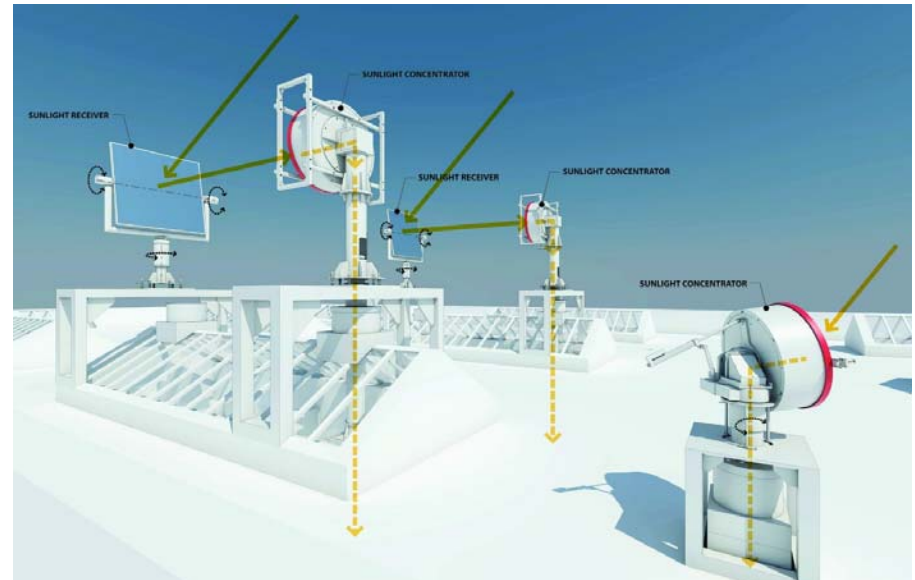


# CRITIQUE OF THE LOWLINE'S SUNLIGHT COLLECTION SYSTEM and a RECOMMENDATION FOR SOLARMERSION™

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

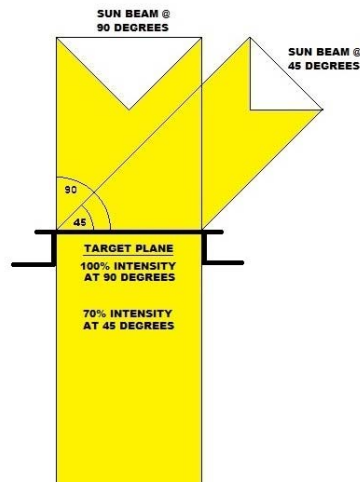


THE DRAWING BELOW IS FROM AN ARTICLE IN *ARCHDAILY*:  
<http://www.archdaily.com/778856/the-landscape-architecture-behind-the-lowline>

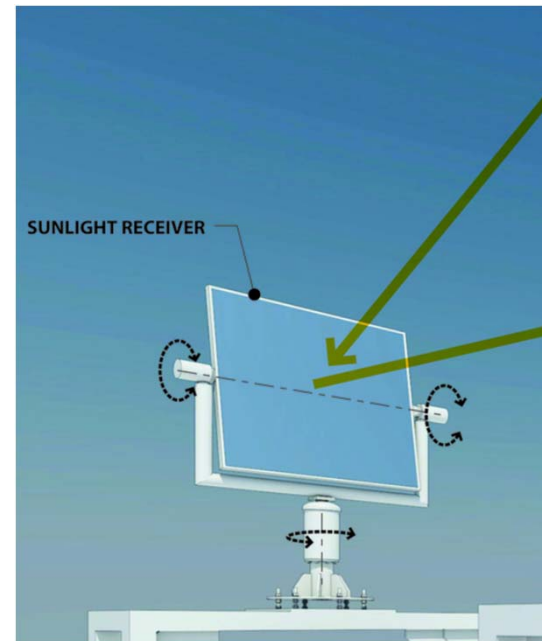


# THE LOWLINE *SUNLIGHT RECEIVER* IS 100% EFFICIENT *ONLY WHEN REFLECTING LIGHT BACK TO THE SUN*

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



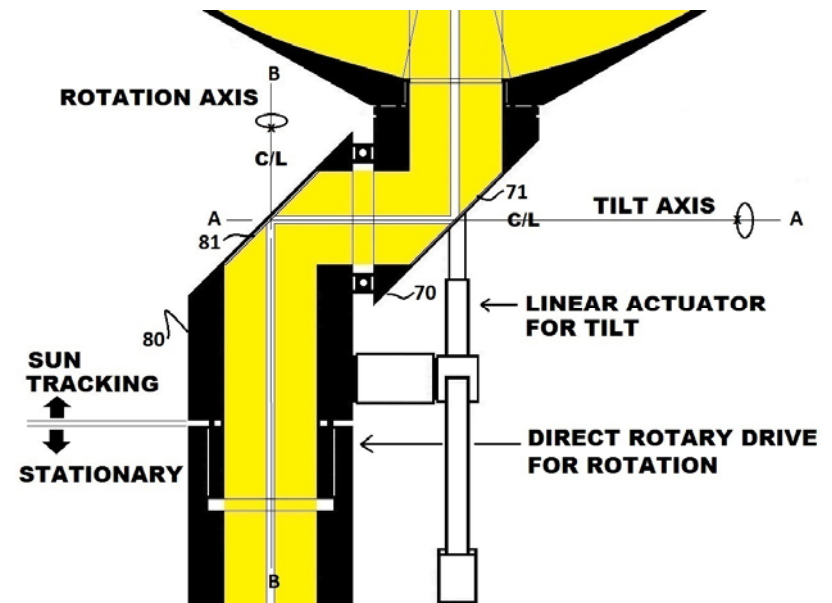
# WHY AN EFFICIENT SOLAR COLLECTION SYSTEM NEEDS *ELBOWS*

(see [www.solarmersion.com](http://www.solarmersion.com) for more information)

## DESCRIPTION OF ELBOW OPERATION

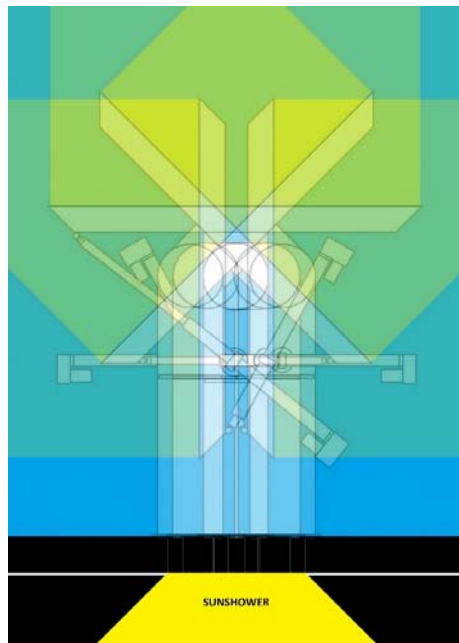
- A double parabolic sunlight concentrator (partially shown) is connected to two *elbows* (70 and 80) each comprising a mirror (71 and 81 respectively) set 45 degrees to the collimated beam of light. These elbows tilt about axis A-A and rotate about axis B-B.
- The combined effect of tilt and rotation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

## DETAIL OF SOLARMERSION ELBOWS

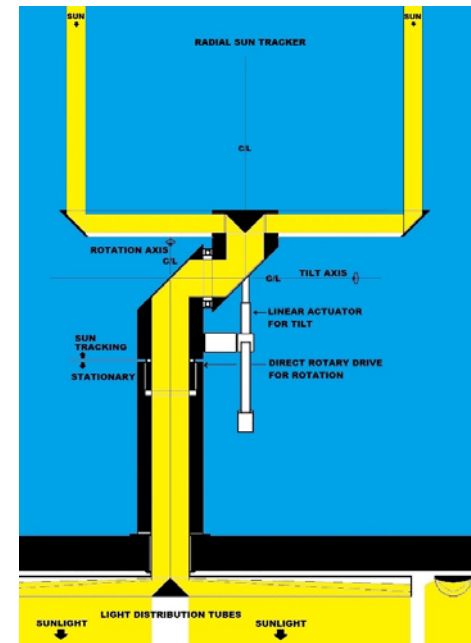


# THE SOLARMERSION™ SYSTEM IS 100% EFFICIENT AT COLLECTING LIGHT FROM THE SUN ALL DAY LONG

## COLLAGE OF RADIAL SOLARMERSION HELIOSTATS



## DIAGRAM SECTION OF RADIAL SOLARMERSION HELIOSTAT

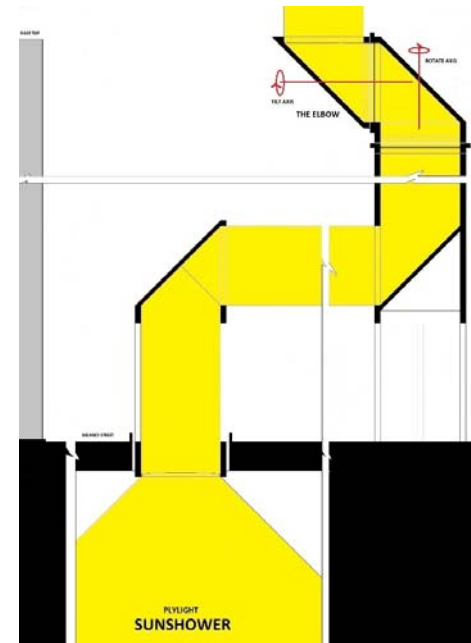


# OFFSET SOLARMERSION™ SUNSHOWER SYSTEM FOR THE LOWLINE

**SOLARMERSION CONCEPT MODEL 1  
FOR THE LOWLINE – OFFSET HELIOSTAT**

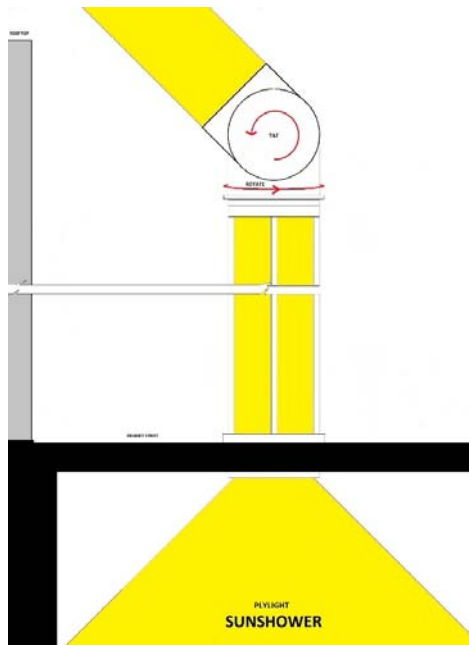


**SOLARMERSION CONCEPT DIAGRAM 1  
FOR THE LOWLINE – OFFSET HELIOSTAT**

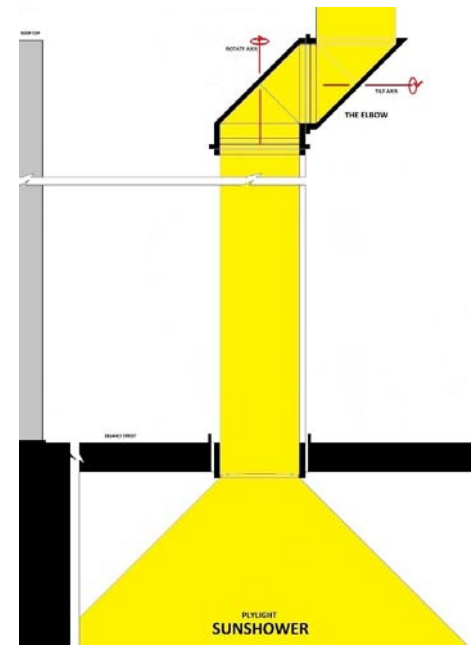


# TOWER SOLARMERSION™ SUNSHOWER SYSTEM FOR THE LOWLINE

**SOLARMERSION CONCEPT DIAGRAM 2A  
FOR THE LOWLINE – INLINE HELIOSTAT**

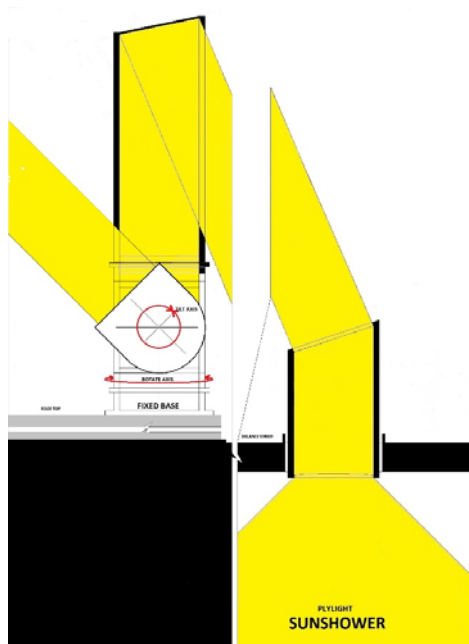


**SOLARMERSION CONCEPT DIAGRAM 2B  
FOR THE LOWLINE – INLINE HELIOSTAT**

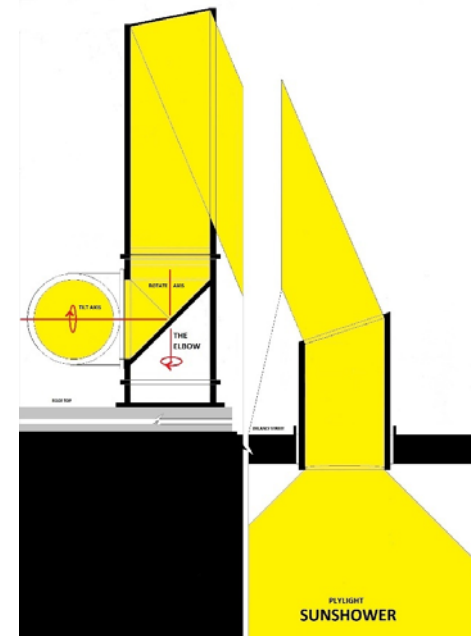


# ROOFTOP SOLARMERSION™ SUNSHOWER SYSTEM FOR THE LOWLINE

**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?

Contact: Walter A. Johanson, SOLARMERSION™, Camarillo, CA, (805) 419-4458  
[wajohanson@plylight.com](mailto:wajohanson@plylight.com)