Non Penetrative Roof Mounting Solutions

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Rooftop mounting requires a right blend of customization and standardization. With numerous factors to account for, rooftop mounting becomes a specialized job where meticulous design plays a key role in making the project viable and sustainable. At Nuevosol we have developed a new product line of Non Invasive mounting structures for flat RCC roofs as well as inclined Metallic Roofs. Through this article we present the challenges faced in roof mounting and specific solutions we suggest in mounting perspective.

Flat RCC Roofs:

Reinforced concrete roofs are usually of two types. They are either completely free from any type of obstructions and hence minimal shading or they have projecting column members which cause shading. While a modular low elevation structure suits the roof types without any obstructions, an elevated structure is required to avoid shading losses in roofs with raised obstructions. Both types of structures can be non-invasive or invasive depending on the requirement, each having its own significance.

Low Elevation Ballast Structures

One of the key objective to be met during design of rooftop structures is optimal standardization to address installation ease. As most rooftop installations happen in cities and hugely populated areas, if the installation is labour intensive or time consuming it can cause discomfort and also would increase the cost of installation. Considering these constraints a do-it-yourself kit with minimal components, which can be installed by semi-skilled personnel is ideal for such installations.

Coming to the design aspects the structure has to be optimized to maximise the area usages. This is possible through a modular structure which can be expanded from one module to any scale while maximizing the roof usage. Rooftops experience higher wind loads compared to mounting at ground level. These structures have to be designed to resist wind loads greater than 200kmph.

For maximal area usage , the elevation has to be lower and also the angle. Ideally angles between 5 degrees to 12 degrees would provide optimal area usage and generation while keeping the costs lower. Many MW scale projects supplied for by Nuevosol preferred these low elevation structures even at higher latitudes as it is optimized for costs, timely installation compared to a higher elevation, and higher angle structure.

Elevated Non Invasive Structures

Requirements of higher tilt angle, higher ground clearance to avoid shading and also to make use of the roof space after the installation calls for elevated structures. Elevated structures on roof face heavier wind loads compared to low elevation structures and have to be carefully designed when they are to be non penetrative. Conventionally elevated structures have been installed by anchoring into the roof or using the columns