



## *Piles ensure reliable solar energy*



### ***The Lebrija solar energy park – TRM piles safeguard the foundation soil***

Near the Andalusian town of Lebrija on the fruitful plain of the Guadalquivir, one of Spain's biggest solar energy parks, which will occupy an area of 20,000 square metres and will produce an output of 6,500 MWh, is being built.

What was selected as the system used for implementation was the „Mover“ system developed by Solon Hilber Technologie GmbH. These are finished modular units for generating solar electricity which track the sun as it moves. Because of this tracking movement by the modules, it is possible to obtain up to 40 % more electricity than is the case with modules mounted in a fixed position. The Mover stands on a small pedestal and because of this the

ground below it can continue to be used for other purposes, e.g. for raising cattle. Also, because the large modular panels move, there is no fear either of the soil being eroded below the edges from which rain drips off or of its drying out below the movers. The structural design and the control system of the Movers are such that the panels will pivot to a position in which their aerodynamics are good if the wind speed rises to more than about 80 km/h and they will survive winds speeds of up to 150 km/h without suffering any damage. To stop any irregular settlement of the solar panels and hence to prevent any adverse effects on the pivoting mechanism, the pedestals were designed to be

carried on pressure grouted TRM piles as their foundations. Skin friction distributed over the optimised length of the piles allows the loads which occur to be transmitted without any problems into the soft soil present, as a result of which the use of these piles forms the least expensive way of obtaining a foundation. By the use of lightweight equipment, any adverse effects on the environment have been minimised because of the small areas for access and for doing the work which have needed to be surfaced. Hence, to allow an environment-friendly energy generating system to be produced, what has also been done is to install the deep foundation which is kindest to the environment.

