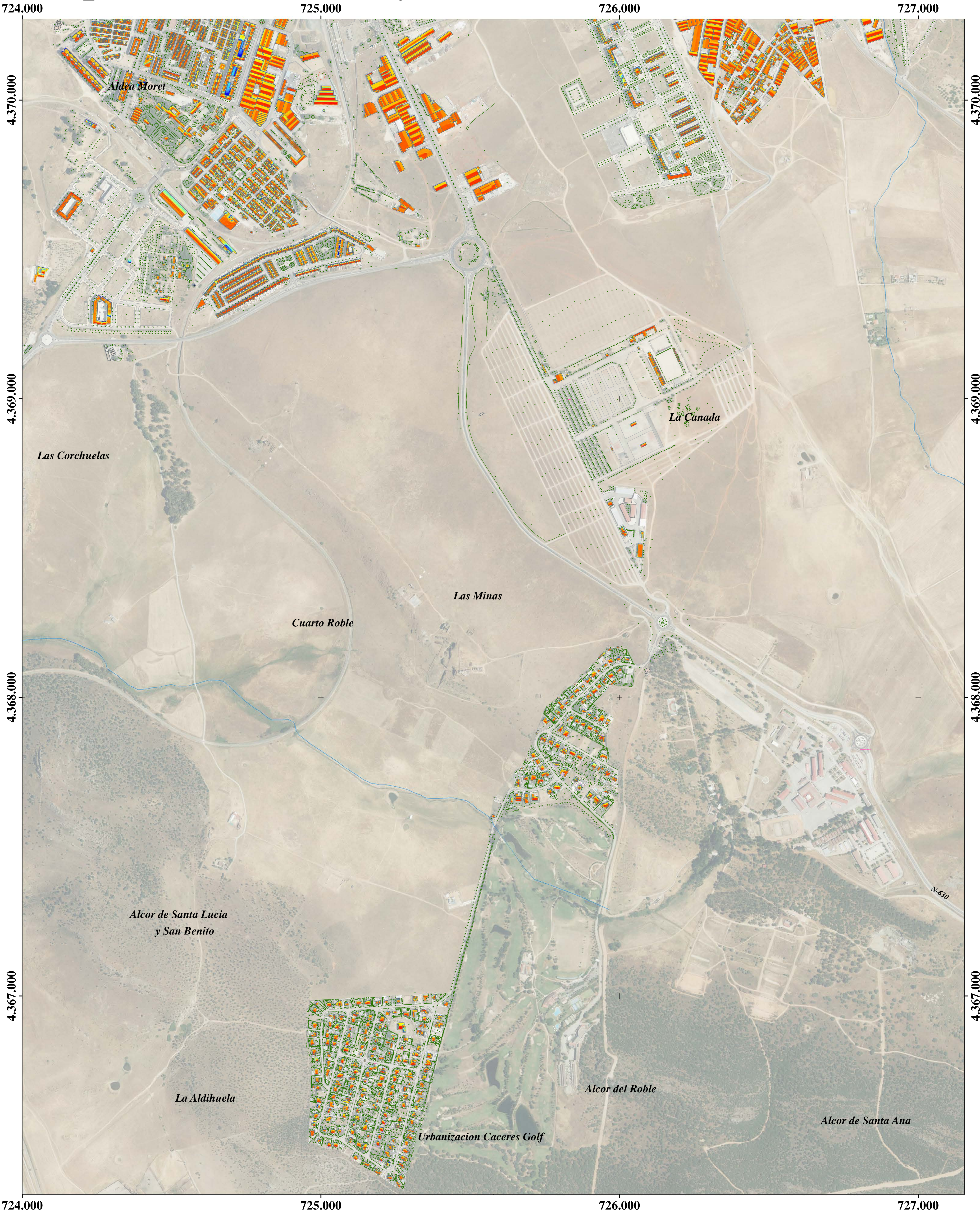
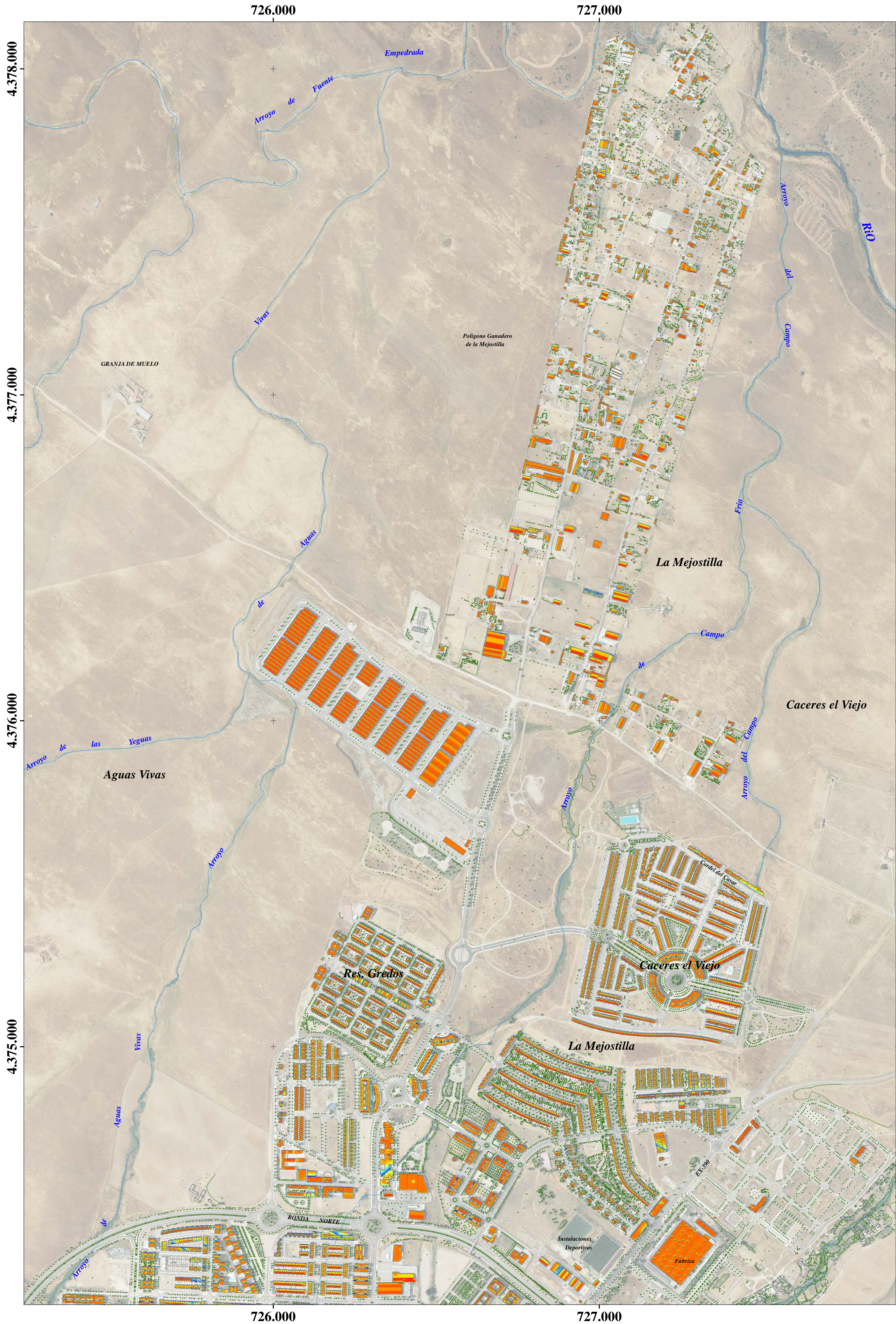


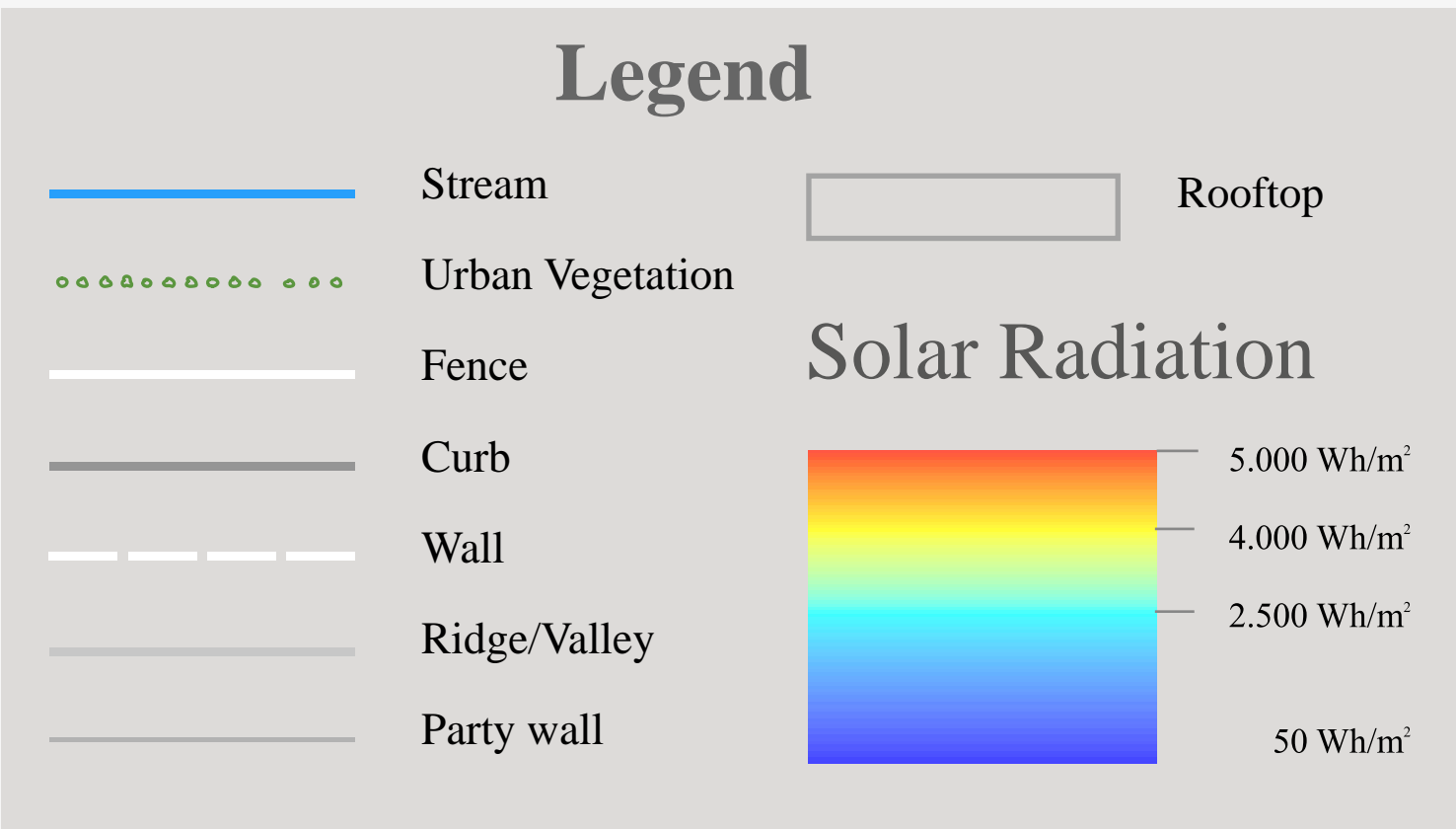
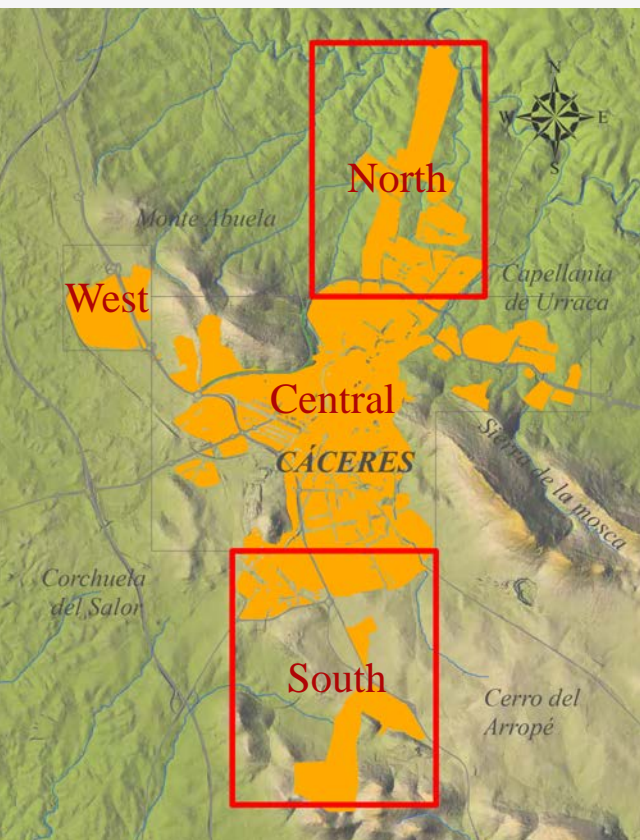
North

Solar Potential of Rooftops in Cáceres City

South



The studied area is located in western Spain. It is a small city of 36 km² with a population of around 100,000. It has a Mediterranean climate with smooth winters and warm summers, in which the average maximum temperature is 34°C. Rainfall is abundant in the months of October, November, March, April and May, but very intermittent.



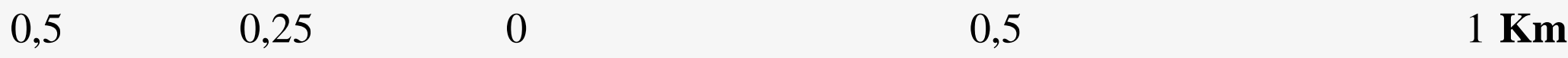
Climate change is one of the challenges our society has to deal with nowadays. Photovoltaic is one of the main renewable energies and it is gaining ground all around the world. The prediction of solar radiation is crucial for this kind of energy. In this work the methodology for producing a solar potential map of rooftops in Cáceres city (Spain) is described.

The estimation of global radiation is based on LiDAR data of high density. Historical radiation records have been also employed to define the calculation parameters.

The representation of the estimated global radiation on each building provides a wide range of new possibilities in the use of renewable energies and changes the conception of rooftops to a potential source of photovoltaic energy Solar Potential of Rooftops in Cáceres city, Spain.

The monthly radiation results in some of the buildings, in months like May, June and July, amounts to more than 7 kWh/m². These results support that the city has a great potential to commence significant changes towards renewable energy. Changing the conception of rooftops to a potential PV source, would have huge consequences in policy renewable energies, not only at a local scale, but also at national level.

Coordinate System:
ETRS 1989 UTM Zone 29N
Projection: Transverse Mercator
False Easting: 500,000,000
Central Meridian: -9,0000
Latitude of Origin: 0,0000
False Northing: 0,0000
Scale Factor: 0,9996
Datum: ETRS1989
Units: Meter



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