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# Green-Smart Technologies for a sustainable use of the water resource at urban and building level

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**Abstract:** The underlying ideas, aims and expected results of a recently started project named “Green-Smart Technologies for a sustainable use of the water resource at urban and building level (GST4W)” are presented. The project, founded by the European Community through the Regione Emilia Romagna POR-FESR action, is aimed at developing hardware and software solutions for an aware use of the water resource at user level, and for the reuse of the rainwater and greywater within the buildings. More in details, the project is based on four workpackages; WP1 and WP2 are aimed at the development of a real time monitoring system of the water consumptions at user level, considering both the total amount of water consumed by the user (i.e. by monitoring the flow entering each house) and the amount of water consumed within the house at each device (tap, shower, dishwasher etc.). A hardware kit to be installed in each house capable of collecting via wireless M-Bus protocol the data coming from each measuring instrument is a deliverable of these WPs. WP3 is aimed at developing models and strategies for optimal reuse of the grey and rain water within a building by using as input the information obtained by the first two workpackages. Finally, WP4 is aimed at characterizing the sustainability of the proposed actions through the use of urban metabolism and life cost analysis approaches. Field laboratories featuring a district where the total consumption of each user is real time monitored and some users are monitored at level of single devices, have been set up and are going to provide a valuable amount of field data.

**Keywords:** Water demands; ICT; grey water; LCA.