

Draft Project Title	Simulation and modelling tool for water efficiency in buildings, districts and communities
Short Description of the project idea and expected outcomes	<p>The proposed idea is to develop a simulation and modelling tool for water efficiency in buildings/districts/communities. The tool will be developed adapting an existing back end technology from IES, which provides a high level design tool for energy and heat networks that can be adapted/modified for water. The tool could support urban planners, architects, designers and engineers in analysing and improving the use of water from building level to district/urban scale and could therefore fit in many proposals depending on the specific scope.</p>
Main Objectives	<p>IES have developed in the framework of other research projects a backend simulation technology that can</p> <ul style="list-style-type: none"> • aggregate real time and simulated data together for energy demand and generation • model different networks (energy, heat but also water) networks at various levels of granularity dependent on the data available • model networks at various scales, e.g. from the building to the district to the community • simulate ‘what if’ scenarios to assess the impact of different strategies to improve network efficiency and their impact over time • enable local balancing of the network • display the information to the user in an easy to understand manner via a dashboard of indicators <p>The main objective will be to improve/extend the capabilities of our current prototype to be able to support water related analyses.</p>
Specific Objectives	<p>The specific objective will be to implement specific functionalities in the tool that could support the the planner/user in :</p> <ol style="list-style-type: none"> 1. Calculating water consumption of water efficient fixtures versus relevant standards/benchmarks 2. Generating water-use balancing diagram at building at also district/community level 3. Assessing/simulating scenarios for a more efficient water use 4. Selecting and stipulating water efficient cooling towers 5. Supporting water efficient landscaping through planting of local and adapted plants 6. Supporting the design of water efficient irrigation system 7. Include recycling of waste water 8. Simulating rainwater harvesting tank 9. Assessing the Return of Investment for specific water related design options <p>Additionally, at network level, Green infrastructures and low impact developments can be applied as interventions as for example: Infiltration basins, Vegetated swales, Porous pavement, Rain gardens, bio-retention, and infiltration planters, Porous pavements, Pocket wetlands / wet retention ponds.</p> <p>An additional objective will be the development of an appealing, intuitive and easy to use interface providing a visual representation of the holistic overall water balance including for example an animated network schematic or animated Sankey diagrams</p>
List of potential activities	<p>Activities will include analysis of specific use cases for the specific case under analysis, drafting of the requirement specifications for the tool development and software development activities. Specific indicators could be calculated from the tool outputs so a definition of the most appropriate KPIs is also part of the work.</p> <p>All the above will be supported by ad hoc side activities depending on the specific context where the tool is to be applied (i.e. could be a support for nature based solutions planning, for water management in industrial areas, for water analysis in building design and retrofit).</p>
Expected impact on European level	<p>The tool can have a positive impact and support a more efficient design and planning at different levels: at district/community scale, the user would be a city/local planner and the tool will provide results with a low resolution, showing big impacts, large scale interventions (i.e. storm storage, surface mitigation, community-wide reduction measures, city operational plans) and the outcomes would be input to district/city strategic plans, development guidelines, monitoring progress.</p> <p>At a smaller scale, i.e. a portfolio of buildings/building scale, the resolution will be medium, with estimation of local impacts and local scale interventions as building appliance performance, roofs, recycling, rating compliance, storm storage, surface mitigation, boundary-peak flow control measures etc. The main outcomes will input to design plans & planning applications, rating compliance.</p>

Call identifier	SCC-02-2016-2017, SCC-1-2016-2017, SPIRE-07-2017:
	I am looking for a project leader/coordinator
Which kind of partner are you searching for?	SME
Expertise or specific role of partners sought	interested in joining existing proposals and we will probably lead/co-lead one in SCC2 call
Title	Dr
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Organisation	Integrated Environmental Solutions Ltd
Description of the organisation	IES is a UK SME focused on integrated performance analysis at building, district and city level. IES develops the world's leading integrated building-performance modelling software system that is now being expanded at urban scale and has unparalleled experience in the application of advanced design tools to enhance sustainability and energy performance of built environment and communities in general. IES invest over 1/4 of their turnover in R&D and are currently involved in 10 funded projects from FP7 and H2020 (2 H2020 as coordinator).