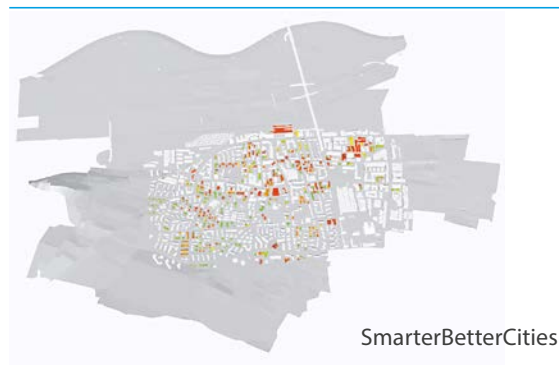## Developing and commercializing visualization and planning tools for urban environment

Smart Urban Adapt revolutionary solutions integrate city data and models with visualization tools and an interactive front end. These tools are to provide city planners and public authorities with the user-friendly software they need to plan smarter, more climate friendly and climate change resilient cities.

The climate change issue

City planners worldwide are struggling to solve the immense challenges arising from both rapid growth and climate change in our cities. These challenges are manifested in an increasing demand for traffic and public transport infrastructure, energy, water facilities, air quality and urban heat island issues affecting human health, to name but a few. Alongside these concerns there is a simultaneous need to minimize GHG emissions, and adapt to the impacts of climate change. Currently avenues for integrating solutions to all of these complex planning problems remain limited, and whilst growing metropolitan areas in Europe such as Zurich or London are evolving more slowly than their Asian or South American counterparts, they nevertheless face increasing pressures.

SmarterBetterCities

in order to provide a platform where multidisciplinary expertise and creativity can join forces for an integrated planning of better cities.

Smart Urban Adapt has contributed to the development of a system, which integrates available data and models with visualization tools and an interactive front end. In the course of the SUA project Jan Halatsch and his team from ETH Zurich and Imperial College London, as well as experts from IBM and ESRI performed the first pilots of software solutions that are now available for purchase in the SmarterBetterCities online store, a start-up company that resulted from the Climate-KIC SUA Project. The core products offered by SmarterBetterCities at the moment are CloudCities Viewer, 3D City Library and a number of smart apps.

The project solution

Tackling complex city planning issues involves multidisciplinary interaction, including architects, urban planners, mobility and traffic managers, ICT experts, energy and water managers, health specialists, climate and environmental scientists, sociologists, economists and policy makers. The Climate-KIC project Smart Urban Adapt has assimilated this know-how into one piece of software,

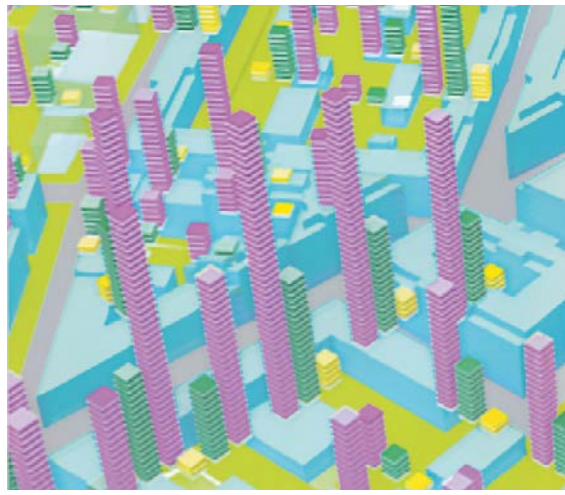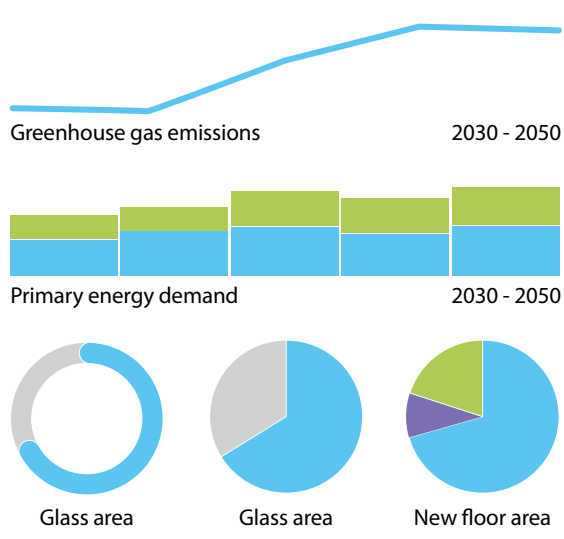**Project Type**:
Innovation

Lead Partner:
ETH Zurich

Project Partners:
• ETH Zurich
• Imperial College London
• ESRI R&D Center Zurich AG
• IBM Research GmbH
• SmarterBetterCities AG

Project Manager:
Jan Halatsch
(now SmarterBetterCities),
halatsch@smarterbettercities.ch

Project Location:
Pan-European, coordinated from Switzerland

Project Duration:
04/2012 - 03/2014

Theme:
Sustainable City Systems

Greenhouse gas emissions   2030 - 2050

Primary energy demand   2030 - 2050

Glass area   Glass area   New floor area

CloudCities Viewer is a cloud-based application with a number of dashboard elements that allow an easy sharing of 3D city models for a better collaboration on climate-friendly city planning. The tool has an advanced reporting function (incl. for example GHG emission estimations, which on the above example are clearly foreseen to be rising), which can be visualized as coloured layers on the 3D buildings, or can be presented in different dashboard modules.

3D City Library is a desktop application which allows an easy and automatic transformation of 2D data into 3D building models. The process starts from a 2D parcel, and can generate a variety of urban structures. The result is a semantic 3D model, with different reporting functions and levels of detail.

Last but not least, **smart apps** generate impressive analytics (with different thematic focus) on the fly. So far the app offer includes SmartZoning (focusing on a 3D demonstration of zoning plans), SmartInvest (visualizing smart investment opportunities within cities), and Energy Count

(supporting city planners with an assessment of energy use on city scale). Each module provides plug-and-play assessment based on 3D models or 2D zone plans.
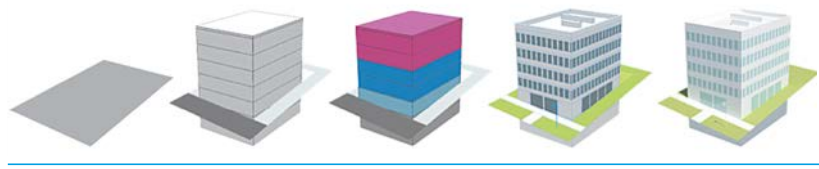
Helping cities plan smarter

The growing interest in the application of the above unique solutions proves their relevance for addressing challenges currently faced by city planners and city public authorities. After a successful pilot carried out during Climate-KIC SUA project in Zurich, three other Swiss cities and customers from Israel have expressed interest in the solutions. In the meantime the tools have been purchased by the State of Oregon, Montgomery County (Washington), and a large international consulting firm from New Zealand.

The quick and easy application of these software solutions is, according to Jan Halatsch, the main reason for their promising scalability potential. His goal would be that the use of the smart city planning solutions is soon be taken up not only by metropolis, but also by smaller cities that would normally not be able to afford smart city planning strategies (performed in the absence of smart planning tools by third party experts).

About Climate-KIC

Climate-KIC is an initiative of the European Institute of Innovation and Technology (EIT) with a mission to create sustainable growth by addressing climate change mitigation and adaptation. As Europe's largest public-private innovation partnership we integrate education, entrepreneurship and innovation. By bringing together communities we help transform knowledge and ideas into economically viable products or services that help to mitigate climate change.

To find out more about this project or about working with Climate-KIC, visit www.climate-kic.org **or** www.sua.ethz.ch **and** www.smarterbettercities.ch