### **Concept OnTop**





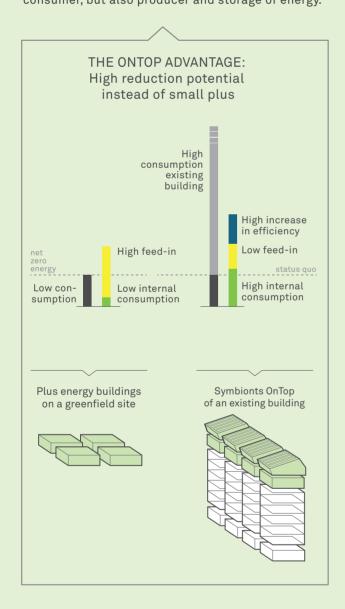
### **ARCHITECTURE** Creating an identity for the site

New living space is created by adding living units on top of an existing building, the so called symbionts. The roof of the symbionts is used to produce solar energy with building integrated solar systems. OnTop is not a modular construction system, but a concept. According to the very situation the symbionts can vary in size, shape or appearance. OnTop has to be adapted to every specific building project. The economical, technical and social characteristics of the city, the neighborhood, the site, the existing building, the owner and the residents have to be taken into account.



### **ENERGY EFFICIENCY** •-Minimizing demand, maximizing use of renewable energies on-site

New and highly energy efficient living space is created with the symbionts. The existing building is refurbished, thus minimizing its energy demand. The remaining energy demand is covered mostly by renewable energies on-site: Heat is generated with solar collectors, but also with a heat pump that uses exhaust air from the existing building and ambient air as heat sources. The existing condensing boiler is used to cover peak loads. In the medium to long term it can be run with power to gas. Electricity is generated with photovoltaic. A high share of internal consumption reduces the network load. The building no longer is only consumer, but also producer and storage of energy.





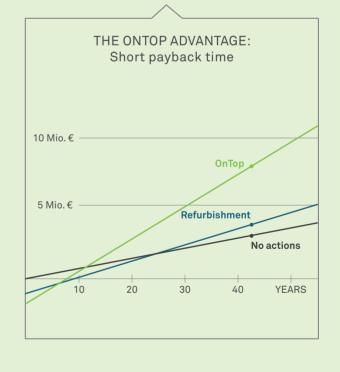
### **ENGINEERING AND** CONSTRUCTION Transferring and enhancing know-how

Wood panel construction has a long tradition and is well-developed in Germany's prefabricated housing industry. OnTop makes use of the existing know-how and the advantages of this construction method: Prefabrication in the plant ensures high quality of the elements and a high degree of cost certainty. Just-in-time delivery and a short construction time on-site reduce the disturbance of residents and city life. And the lightweight structure does not overload the existing building structure.



### **MARKET VIABILITY** Take where it is possible and give to where it is needed

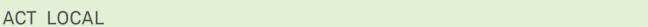
By building new living units on existing buildings, concept OnTop opens up new financial resources. A profound refurbishment of the existing building can be financed without raising the rent excessively, thus avoiding gentrification. The new residents of the symbionts enjoy living in a sound and grown urban neighborhood, while the local residents enjoy the amenities of the refurbished existing building. The concept is suitable for municipal and co-operative housing associations as well as for condominium owners' associations, since it allows developing further the existing building in an economically, ecologically and socially attractive way.



### **SUSTAINABILITY Developing the existing further**

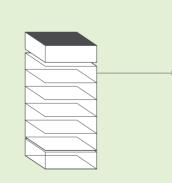
Of course the symbionts are built of ecological and recyclable materials and constructions that can be dismantled. But OnTop is more. It brings together the three dimension of sustainability – economy, ecology and social issues – in a holistic approach: By creating new living space where it is needed, it opens up new financial resources that are used to enhance the existing buildings; so they get more energy efficient, produce renewable energy on-site and get more age-appropriate; without having to raise the rent excessively, which would cause gentrification. Doing so, concept OnTop contributes to the sustainable development of cities - and it can be applied now!

### THINK GLOBAL

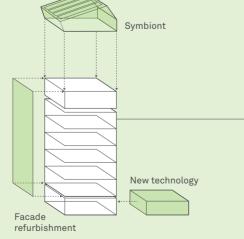




Urbanization is a mega trend - To cope with the two big but it is not the same everywhere. In Frankfurt, like in other German and European cities the population is growing and new living space is needed. But it is crucial not efficient and more age-approto forget about the existing building stock and the residents either.



challenges ahead - energy transition and demographic change – the existing buidling stock has to be refurbished in order to get more energy priate. But refurbishment often leads to higher rent, thus causing gentrification.



enhancing existing buildings:

them symbionts – are created

on the market. The financial

benefit from selling or renting

them is used to refurbish the

existing building.

New living units – we call

creating more living space and further land sealing. They are built where many people want to live and where technical and social infrastructure is already on an existing building and put available. The existing building is getting much more energy-efficient and age-appropriate – and renewable energy is produced on-site.

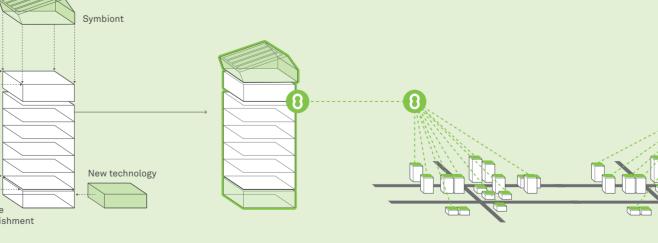
Concept OnTop is a solution for The symbionts are built without OnTop can be adapted to different situations. The economical, technical and social characteristics of the existing building, the site, the neighborhood, the owner and the residents have to be taken into account. According to the very situation the symbionts can vary in size, shape or appearance.

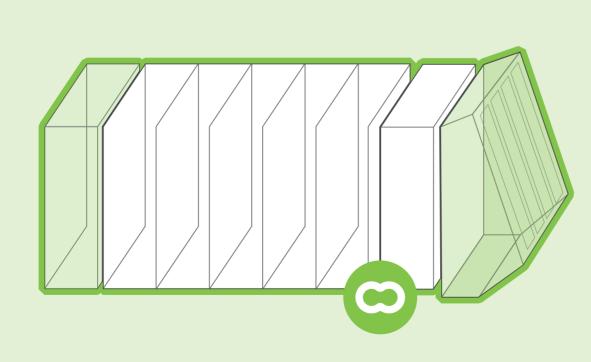
The renewable energy produced on-site changes the buildings' role in the energy network: from consumer only, to an intelligent node which produces and stores energy also. It can also balance the temporal mismatch between production and consumption by shifting from electricity to

able development of the city. And since all the technology and knowledge is already available on the market: It can be applied now – and not only in Frankfurt, but in every city under settlement pressure.

OnTop contributes to a sustain- Please find more information under www.ontop2014.de

SYMBIONIZE NOW!





† OnTop

SOLAR DECATHLON EUROPE 2014

### CONCEPT ONTOP

The basic idea is to use settlement pressure on urban agglomerations in order to are built where many people want to live structure is already available. When put on the market and sold or rent the symearnings are used to refurbish the exisdings and to increase decentralized reting buildings making them much more symbionts, changing the buildings' role built without further land sealing. They newable energy production. New living and in a symbiosis the full potential of in the energy network: from consumer space is created on existing buildings Renewable energy is produced on the only, to an intelligent node which probionts create financial benefit. These foster refurbishment of existing builand where technical and social infraunits – we call them symbionts – are energy efficient and age appropriate. old and new unfolds: The new living duces and stores energy also.

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ROTRETTING FÜR DIE IMMOBILIENWERTSCHAFT ARTS ARTS Parisfect AlexanderBürkle DEKRA Layher. M DEPAR MAAS DB SNCF **\*\*\***KAISER EXPERIENCE EnOB

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SYNERGY: RENEWABLE ENERGIES

### SYNERGY: REFURBISHMENT

SUPPORTER & SPONSORS

UNTERNEHMENSGRUPPE

MASTER ARCHITECTURE

In Germany the goal is to have a climate neutral building stock in

20%

SYNERGY: SETTLEMENT PRESSURE

TEAM MEMBERS

To reach this goal the refurbishment rate in Germany has to be doubled

# from 1% to 2% per year

# ---------------

20% of the multifamily houses in Frankfurt are very well appropriat for concept OnTop

Mio m<sup>2</sup> new living

space is needed

until 2020 in

Frankfurt

Thermal Insulation Act. For this type of buildings concept OnTop is even better than a conventional refurbishment: More than 50% of all apartments in Frankfurt are being built after the Second World War and before the First



realizing only 20% of

could be created by needed until 2020

the OnTop potential.

60316 Frankfurt Mousonstraße 35 The implementation starts! Visit the first realization of concept OnTop! n Germany the goal is to the electricity network renewable energies in have a share of 80% in 2050

Concept OnTop fosters this goal more than plus-energy-single-familiy-houses:



reduction potential instead of providing a small energy ...by realizing high energy

surplus.

consumption, thus reducing ... by increasing the internal the network load.