CHALLENGE
Isaac Newton wrote: "We are dwarfs on the shoulders of giants" meaning that each generation can build up on the spiritual and substantive devices of recent epoch. That is a matter of fact for our cities and villages where less than 1% of all buildings are newly. So we all benefit from this gigantic fund of houses and infrastructure – but have to meet the challenge to adapt it to the requirements of tomorrow.
(Text: D&A Issue 19)

The purpose of the competition is to encourage students to work in the field of the sustainable development of existing city suburban areas. Rethinking the existing use of the plot and the allocation plan. The new concept has to improve life quality in respect of comfort and health. As and when circumstances require it, new space and new possibilities for its use and its users will be created.
VELUX Česká republika, s.r.o., VELUX Austria, VELUX Switzerland and VELUX SLOVENSKO spol. s r.o. announce 1st international competitive exhibition of student works for the ACTIVE HOUSE AWARD 2015/2016 “Rethink Suburbs”.

Inventory
Suburban area around a big city. Many villages and little towns benefit from the nearby metropolis. Industrial areas nearby and economic congested areas offer numerous jobs within easy and quick reach. At the same time many people remove to the country. Homes with gardens close to the nature – that’s what many people are dreaming about being sick of living in big cities. Multi-story buildings and settlements of single-families had been the answer in most cases regardless the grown structure or the townscape.

The requirement for living space changes during life time. Whilst young people get along with smaller living space without garden young families are exactly looking for more living space and outdoor area. Senior generations mostly need less living area but enjoy spending their time outdoors in their own garden.

An inventory showed, that many single family houses and plots have not been used to their full capacity. Attics or upper floors – sometimes because of restricted mobility in the seniority or when children left the house – are vacant.

We want to focus on exactly that “room”!

Project site – Wolkersdorf Austria, a county town in the Weinviertel
Owing to the financial support provided by the municipality as of 1960 to attract businesses, Wolkersdorf has become an important economic centre. During the years 1966 to 1972, Wolkersdorf grew because of its merger with the municipalities of Riedenthal, Münchensthal, Pfösing and Obersdorf. Extensive infrastructural measures were defining for the Seventies and Eighties. In 1978, the provincial government of Lower Austria set up the industrial centre of Lower Austria North/Wolkersdorf (Industriezentrum NÖ-Nord/Wolkersdorf) south of the Ostbahn (northbound railway) and east of the Brünnerstraße. Intensive residential building activities, active youth work and the establishment of a school centre define the town as a “Gate to the Weinviertel”.

Wolkersdorf successfully covers the entire range from urban character to rural structures. A town with 7,001 inhabitants (as of 1 January 2015).

The result is high quality of life, including a high-quality infrastructure, various local recreation areas as well as rest and green areas in and surrounding Wolkersdorf. Its proximity to Vienna and the remarkable cultural landscape of the Weinviertel entice a lot of guests to visit Wolkersdorf.

It is exactly those qualities that have led to an immense influx and the high demand for property has created an increase in prices.
Task / guiding principle of urban infill

It will be the students’ task to create a user-specific building development through urban infill or by creating new buildings and, at the same time, implementing the Active House Standards defined by VELUX.

A new building, which has to meet today's demands and criteria regarding sustainability and energy efficiency, is not the only solution for future-oriented construction; even more so, as its financing becomes more and more challenging. More than 60 % of existing buildings worldwide are more than 30 years old. Handling those buildings and the unused space available within is the challenge that we have to face.

The objective is intelligent urban infill within a typical settlement structure, as can be found in Wolkersdorf in the Weinviertel. The aim is to intervene in functioning established structures, to improve the life quality in respect of comfort and health.

As circumstances require, new space and new possibilities for its use and users are to be created.

Create new room for ...
- Living and working under the same house (e.g. home office; medical practices...)
- “Generation living together” Child comes back with young family; living together with the parents ensuring privacy for both generations
- Extra living rooms to rent or even sell – to create an extra income

The objective of this students’ competition is to find operational and economic solutions regarding urban planning and architecture, which meet the requirements of the future. The concept of sustainability has to be considered. Particular emphasis has to be put on the economical use of land and resources.

The main aspects are:
- Revaluation of the existing ensemble, development of a compelling design solution and an individual identity
- High functionality
- Urban infill and healthy living in the context of the Active House principles represented by VELUX

Active House Principles and criterias

Holistic approach – not architecture exclusively, not energy exclusively but the interaction between:
- HEALTH & COMFORT
- ENERGY
- ENVIRONMENT

All descriptions and requirements on the topic of Active House are available at VELUX and the participants will be given an understanding of this topic through training courses (online and expert lectures). Active House is a visionary building concept that creates healthy and comfortable indoor living for its occupants without impacting negatively on the climate – a step towards a cleaner, healthier and safer world. The Active House concept defines highly ambitious long-term goals for the future building stock.

The purpose of the concept is to unite interested parties based on a balanced and holistic approach to building design and efficiency. The Active House Alliance aims at facilitating cooperation on such activities as building projects, product development, research initiatives and efficiency targets that can move us further towards this concept.

The Active House principles provide the conditions for designing and renovating buildings that contribute positively to human health and well-being by focusing on indoor and outdoor conditions, the environment and the use of renewable energy.

An Active House is evaluated on the basis of the interaction between energy consumption, indoor climate conditions and impact on the environment.
Students students from four European countries will familiarize themselves with the competition personally by entering the Active House Award Kickoff event.

Students of architecture met with the representatives of the international company at the VELUX Active House Award competition. The aim of the event was to inform students about the more detailed requirements of the assignment and explain the principles of active building and theory as well as demonstrate real examples. This year students will design the reconstruction of houses, which are located in the village of Wolkersdorf im Weinviertel. Future professionals have to, for this particular example, show new ways of using the existing settlement structure and their proposals are based on the standards of the active house.

THE ACTIVE HOUSE IN DETAIL

Introduced by a series of lectures from the village mayor, Anne Steindl, welcomed this competition. Heinz Hackl (VELUX Austria) and architect Klára Bukolská (VELUX Czech Republic) then spoke about the basic principles of the competition and of their expectations. Dr. Peter Holzer, from the Institute of Building Research, spoke about the basic assumptions of active home - energy efficiency, comfort and health. Students also become familiar with some case studies. Austrian architect Volker Dienst spoke about the active standards and his speech illustrated with similar example. The project was carried out in the Austrian village of Willendorf and it is known as the Garden of Venus. The winner of last year’s Active House Award competition, Norbert Obršál from the Faculty of Architecture in the Brno University of Technology, spoke about the project Inventory archetype. Heinz Hackl presented another realization – a renovation project in Brussels – RenovActive.

Christina Brunner (VELUX Austria) spoke about daylight - about it being a catalyst for change. After a short discussion, the students moved to the house, of which the proposal for reconstruction is this year’s competition. Students were able to look and ask questions to representatives of the company which were relevant to the development’s assignment.
Jury meeting

15th September 2016
Wolkersdorf

The Jury

DI Dr Peter Holzer (A)
Institute of Building Research & Innovation

Ing. arch. Adam Gebrian (CZ)
Architect, theorist, critic and promoter of architecture

Ing. arch. Klára Bukolská (CZ)
Architect in VELUX

Ing. arch. Štefan Polakovič (SK)
GutGut atelier

Martin Stuber (CH)
dipl. Architekt ETH/SIA REG A
Lukáš Kvaššay
Brno University of Technology, Faculty of Architecture, Czech Republic
The site is located in Wolkersdorf in the Weinviertel. This town is the part of suburban area around the capital city of Vienna. This kind of suburbs generates a lot of existing building structure, which is in good condition but it is not in line with today’s demands on modern, healthy and environmentally friendly living. The proximity of Vienna creates a large number of jobs and tourist interest. Working from home or multigenerational living has also become a phenomenon of our times. The proposal pursues the following opportunities and changes of current requirements or future needs.

The main aim of the project is to create a family house in the active standard which benefits from the existing structure but also follows current terms taking into account special character of the place. The whole building is divided into two parts - the main residential area and the part designed for renting to create an extra income or to multigenerational housing. These two elements of the house can function either as independently or as a single unit together.

Disposition of the original family house reports to its design solution. In the draft there are many original structures used but a clarification of the object from useless constructions was necessary. This step led to the activation of the basement and brought light into the interior spaces. The basic architectural feature of the building becomes segmentation and proportions of the windows. Originally cumbersome mass is added in a solid and compact volume and very sensitive composed by openings whose dimensions and location is based on the internal organization of the house. The roof of the object receives new shape but the house has still the typical character. By the sensitive adding of new factors into the existing object rises the quality of users living.

The private terrace has a large glazing to enable maximum contact of social spaces in the groundfloor with exterior. This newly formed terrace directly extends the living area and opens the house to the garden while the main mass can isolate itself from the street.

The objective of design is creation of a logical disposition that will stands in time. The priority was to create the living part of the house by forming variable space. The central dominant becomes fireplace as a place of meeting place for the whole family. The house provides to its user many spaces and nooks with a unique atmosphere.

The important intention was to preserve the hierarchy of the space to reach a maximum connection and a contact between the individual generations, but also to retain the privacy for each of them. The reconstruction of the house monitors the development of user numbers and the changing demands for the space.

One of the basic principle which has influenced that design is active and passive using of the solar energy. The actual heating is resolved by the heat pump. The surface of the roof is covered with solar collectors and photovoltaic panels to generate electricity. Rainwater and greywater is reused. Shielding and also an increased sense of privacy is ensured by the exterior jalousie.

The whole building combines brick and wood structures using hemp wool for insulation. Structural elements therefore provide a reasonable degree of recyclability of the construction. All major interior spaces are provided with natural light by the creation of new buildings openings, skylights and staircase. This also led to the possibility of the lateral and longitudinal ventilation. The facade is covered with a wooden facing forming a fine component of the decoration. Overall, the interiors are solved with an emphasis on natural character of materials and aesthetic value. Mostly it is the application of traditional plaster and solid wood.
AWARDED PROJECT

Active House Radar

daylight factor of the main living room

sections 1:200

elevations 1:200

attic floor plan 1:200

01 gallery
02 study
03 bedroom (children)
04 master bedroom
05 bathrooms
06 wardrobe

underground floor plan 1:200

01 entrance hall
02 storage
03 laundry
04 WC
05 workroom
06 technical room
07 fitness
08 sauna
09 bathroom
10 covered parking lot
11 garbage

ground floor plan 1:200

main residential part
01 entrance
02 vestible / wardrobe
03 WC
04 pantry
05 kitchen / dining
06 living room
07 terrace

rentable part
08 entrance
09 bathroom
10 room 1
11 room 2

variations of rentable part 1:200

A apartment / generation living
B medical practice
C studio / office
D shop / store
E cafe / winery

living room with connection to the garden

physical model 1:100

daylight factor of the main living room
2nd PRIZE

Jana Zavřelová
Brno University of Technology, Faculty of Architecture, Czech Republic
Today, urbanization has become larger than ever before. Two hundred years ago only 5% of the population lived in cities, today it is more than 50%. United Nations estimate that urban area will more than double in developed countries and more than triple in developing countries by 2030. Expansion of urban area is being led primarily by uncontrolled growth of suburbs.

As a result of economic growth more and more people can afford a house in a suburb. Building sites in the suburbs are financially affordable which leads people to buying larger estates with a larger houses. Large family houses used for living only, standing alone in the middle of estate, bring two major problems to suburbs – low density of population and monofunctionality.

Low density generates large distances which, combined with monofunctionality of suburbs, formed complex often totally dependent on the urban centre.

Therefore, suburbs become depopulated in the daytime and inhabitants return back home after work. Most of them use their cars to get to work, go shopping or to attend cultural events.

This brings us to question of ecology and sustainability. As Leon Krier noted years ago: “Not the car but suburban home is the deadly weapon daily suburban mortarfire against urban centres”.

Most of the people move to suburbs because of its proximity to nature but housing development itself irretrievably destroy her. At the same time, suburban inhabitants do not have much time to spend in nature because they spend a great deal of it sitting behind the steering wheel in a traffic jam on the way to/from work. Uncontrolled growth of car industry is unsustainable in the long term. It is necessary to take advantage of public transport, cycling and walking. High population density is essential to take full advantage of these modes of transport.

Besides the fact that suburbs often disrupt landscape, they also cause both economic and environmental problems. Plenty of new routes, pipes and connections have to be made due to housing development. This shatters the idea of eco-friendly living in the suburb because house construction and all the associated work are so environmentally demanding that any return back to nature is impossible, even though the house operation is low-energy or passive.

CONCEPT
Houses at suburbs are often too large. I’ve split house to housing/living part and to urban infill which could be used as an additional housing (grandmother’s flat, house for adult child coming back from university...), as a space for business or community.

I´m renovating the housing part and at three urban infill examples I´m demonstrating that is possible to reuse excessive garage to good purpose.

ARCHITECTURAL CONCEPT
The goal was to create house where are individual spaces connected and private and intimate as well.

From exccess basement are becoming at least a bit naturally light-filled spaces for offices or workrooms. Basement is also technical base of house.

At first floor there is connected living area wherein center is dining table. Ceiling opening above the table lend a place significance. There are another two spaces – study room and guest room which can be used also as a grandmother’s flat or room for child coming back from university.

Second floor is private. There are children’s room, bedroom with adjacent bathrooms and hall that can be used as a playroom.

CONSTRUCTION
Within the purview of reconstruction of basement and first floor was moved interior walls and all exterior wall were insulated with mineral wool. Long roof slope orientation was change due to potential extension of garage/urban infill. Exterior walls of second floor, roof and floor system were build as a wooden structure with mineral wool insulation.

Major glazing is facing south – east to maximizing the efficiency of the solar hot-water system and passive solar gain.

ENERGY CONCEPT
House is designed at AH standard – emphasis is places on daylight, environment and renewable energy. Most of the energy needed for the household is gained from solar radiation. The house is distinguished by water and energy consumption and low material.

The domestic hot water will be provided by solar thermal collectors with a flow through absorber. Photovoltaic panels obtain generate more than 75 % of energy needed fot the operating od the house. Pleasing interior environment arrange air-condition unit and is automaticly controled by An Intelligent House system. Heat recuperation ensures optimal air exchange and minimizes heat loss. Freshwater consuption and reuse of grey water is solved by construct of wetlands and rain water collection cistern.
3rd PRIZE

Júlia Giláňová
Slovak University of Technology in Bratislava, Slovakia
The aim of the design was to respond to the problems of location and recovery of suburban residential structures. The main task was to rethink the usage of old family house structures that need to respond to the changing demands of the family in time. Therefore, the main idea of the proposal was to divide old house structure into two functional units - private part and part for rent. This solution ensures efficient use of the entire area of the house and the extra income. Such division can also respond to the changing demands of the family during the lifecycle. In the first stage of the family, young couple with children occupies the larger part of the house, while a smaller part of the house is intended for rent. In the second stage, when the family grows, house can serve as a more generational house and the space formerly intended for rent can now serve for grandparents. In the third stage, when the house is occupied just by elderly couple, bigger part of the house can be intended for rent, and smaller for living. This solution also responds to the problem of monofunctional residential structures. By renting space for temporary accommodation or as a workspace, these areas will get more amenities and services. Infiltration of the new functions in residential structures will contribute to the regeneration of residential streets during the day.

Urban Design

The first solution in the context of urban scale was to design a residential street, which would provide residents greenery and space for children’s play. The proposal counts with the inclusion of the front gardens of each house to a public street space. Removing fences there will be a relatively wide space with the possibility of creating green areas. The road has the function of pavement and is used solely as a service road for houses. Parking on the street was canceled, with the possibility to park only on the site of the house or in the garage. There was also designed support parking at the beginning of the street.

However, the proposal also brings a change in the functional use of the gardens. In residential suburb structures people often live “behind the fence”. Therefore there is lack of social contacts between neighbors. The proposal shows the possibility of a transformation of garden space in time, so that relatively large gardens would be divided in to private and semi-private part. Fences between sites will be removed and the privacy will be created only by greenery. Semi-public parts of the site will be accessible to neighbors and the “neighborhood area” serving for meeting, playing, and cultivation will be created.

Architectural Design

Architecture of original building provides many possibilities for reconstruction according to the main idea of the design. The first step was to clean the building from excess and inefficient structures. Entrance volume, roof and whole attic were removed. Removal of garage allows now passage into the garden. To ensure the daylight also in the basement, there was deepening on the northeast side of the house made. It allows use of part of the basement for rent or for work.

In design process existing structures were taken into account and there was an attempt to preserve original constructions as much as possible. The house was divided into two parts. Original middle tract of the first floor serves now as a daily part of the house. The second part of the floor on the northeast was designed as a separate apartment with its own entrance. It consists of a living room and kitchen facing the south and bathroom and bedroom in the northern part. Over the daily part of the house was designed the new attic. Over the rentable apartment was designed green roof. The attic consists of bathroom and three rooms facing the south. Connection between the first floor and second floor is formed by dividing the overall disposition into two parts and creating a sort of “footbridge” that connects them. This whole area is illuminated by the skylights, allowing the daylight income to the middle of the house. The basement is also divided into two parts. The space under the private part is dedicated to the service facility of the house, boiler room, laundry and storage room. The second part, which has the supply of the daylight due to the deepening and creation of an “English backyard”, is designed as a space for rent with a separate entrance from the basement level.

The construction and material solution

The house consists of traditional massive brick walls. Despite the fact that most of the original load-bearing structure is preserved, it was necessary to resolve additional insolation of the object and meet the heat requirements. The material from removed structures and garage was intended for use as a construction material for load-bearing and non-bearing walls of the attic, ensuring material recycling and reducing waste. The new roof structure consists of a wooden framework with the appropriate thickness of insulation between the rafters. Flat roof construction is designed as a green roof with extensive greenery. Concrete staircase is a whole new construction beginning from the basement to the attic. Retaining wall of the English backyard is also newly built.

Designed building is characterized by two materials. The private part of the house is designed with a ventilated facade with wooden cladding, which extends to the roof plane. Rentable part of the house is also designed with a ventilated facade with gray fiber cement facade panels. Yellow-green color is used for exterior shutters and linings of some windows.

Ecological Concept

In the proposal it was necessary to ensure the best possible indoor microclimate and lighting conditions. Part of the conditions is achieved by the orientation of rooms. Light conditions were also optimized by the use of skylights. This gives each room of the house daylight from two sides. To improve the lighting conditions in the middle of the house, it was divided into two parts. The space is formed by roof windows that allow the daylight and sunlight come into the center of the house. It also serves as natural ventilation in the form of the chimney effect.

Thermal comfort in the winter is provided by large windows facing south, which are also protected from the summer sun by the screening structures and external sunblind. Annual heating demand for this family house is 22 kWh/m²a. (according to calculation in program PHVP 2002 SK). Heating in the winter months is supported by floor heating. The heating water and hot water is provided by the ground-source heat pump with vertical collector. Additional source of hot water are solar collectors on roof. The house also produces part of electricity by photovoltaic cells placed on the roof. The annual production of photovoltaic cell is 2,934 kWh/per Year (according to PV Watts Calculator - http://pvwatts.nrel.gov/pvwatts.php). Air quality is controlled by ventilation heat recovery system.

The drinking water saving is designed by collecting rainwater from the roof and its subsequent use for watering garden and flushing in the interior.
Kryštof Foltýn
Brno University of Technology, Faculty of Architecture, Czech Republic
01. RETHING SUBURBS OK

In the beginning we asked ourselves a single question: Is it in the case of this particular family house possible to show a strategy of transforming suburbia?

The main problem of houses in suburbs is the lack of flexibility – the size of a family living in the area is usually changing in time. Many people today do not have to commute to work because they work from home. For older couples it is very hard to maintain the house economically. All this leads to relatively low density of population.

The concept of viable suburbs has to grow from the individual houses. The house that we propose consists of several private small loft apartments that together share the generous grand-scale areas – a kitchen with a living room, a garden, a study room, a library and a workroom. The family uses only those parts of the house that it needs; the rest is for rent. This concept allows high number of combinations – a multi-generation house, house for young singles or older couples, co-living of whole families – and it results in rising of the population density.

To apply this concept, only a radical reconstruction of the house would be needed, and even in the case of extensive constructional changes the spatial concept would never be ideal. The complexity of detail and the attachment to a heatless cellar lead to the fact that the reconstruction would be both ecologically and economically less convenient than the construction of a new building.

We opted for the uncompromising yet profitable solution – a new building. We preserved the concrete floor board with the cellar and the majority of outer walls. Into the torso of the house we inserted a wooden building directly on the existing concrete board.

02. SPATIAL CONCEPT

The distribution of the matter of the new building is based on the torso of the original house. An irregular pentagon creates semi-personal interspaces, particularly the house entrance, cellar entrance, atrium and garden-oriented patio. The matter is also better distributed as to the orientation towards cardinal points and the volume is more compact.

The new building is composed of two floors and the attic. The roof is modelled according to the regulations so that the south part of the roof area with solar panels would be oriented to the south as much as possible. The house contains four loft apartments; all of them are actually single units – bedrooms/rooms, an apartment for singles, an apartment for a couple.

The current cellar is separated fully from the new building. The new entrance was made in the northern corner. The cellar is to be used for parking bicycles, as a work room and a technical room. We turned the opening where the original staircase was situated into a skylight.

03. FUNCTIONAL CONCEPT

The house is to be entered through entrance interspace. What follows is the dressing room and then the shared living room with the kitchen and access to the platform with the garden. From there the visitor continues to the corridor with the staircase and first floor apartment. The first floor loft apartment has a separate bathroom, kitchen and exterior atrium as a part of the interspace. The private part of the apartment (with the bed) can be separated by a sliding door.

On the second floor, exactly above the shared living room, there is a shared study with a library and a gallery, which is opened to the living room. There is another private loft apartment accessible from the corridor there.

In the attic, there are two more loft apartments with separate kitchens, bathrooms and with the possibility to separate their private areas by sliding doors.

In the centre of the house, the technical core with bathrooms, kitchens and the staircase is situated. The southern part of the roof bears solar panels and collectors. In the garden, there is a water tank for rainwater.
HONORABLE MENTION

Anna Šlapáková
Slovak University of Technology in Bratislava, Slovakia
LOCALITY
The proposal is located in Wolkersdorf im Weinviertel near Vienna. The house is located in peaceful part of the town with surrounding single family houses. It is typical for the suburbs that families have their own garden but social life declines. People live in anonymity and don’t know their own neighbour. I’m trying to reduce this phenomenon by designing meeting spaces such as parks, playgrounds, children’s centres, clubs for pensioner...in the plots, which are now unused.

CONCEPT
Main concept is results from family and life changes. In the past several generations lived together under one roof. Today is common that family has only two members – married couple without children or single (maybe divorced) parent with only one child. According to this changes I’m suggesting that existing house should be splitted into several parts, which can be connected but also independent. These parts can have different function – as needed. The ground floor can be commercial nature (coffee shop, office, hairdresser’s, beauty salon, vet, dentist...) or housing. The second floor/attic is just for housing. After opening the basement space to the sunlight, it can be used for a community center or gym. This system of separate units can work for every existing house with just small changes, so that they always meet the requirements of the owner.

ARCHITECTURE
The original house is divided into 4 units – community center, flat 1, flat 2 and flat 3. By extending the original attic, I’ll get another place for living, over which I’ll create a shed roof with a slope to the southwest, due to the potential use of solar energy. Basement is partially uncovered in order to access daylight and it is functionally used as a community center with small cinema. There are two flats in the ground floor – flat 1 and flat 2. Both apartments are modest two-bedroom with a terrace. There are flat 3 on the second floor. It’s possible to connect flat 2 and flat 3 and get one big four-rooms apartment. Flat 1 can be also used as space for studio or office.
The garden is also divided into 4 different parts, with different functions. First part with the swimming pool is for the recreation, following a sports part of the garden where you can play various games. There is only lawn. Another part has a utilitarian function. There is also space for growing vegetables or herbs. In the last part there are fruit trees and fruit bushes, which in summer provide a pleasant shade.

MATERIAL AND CONSTRUCTION
The original building was probably from brick. I add the thermal insulation 200 mm there. I designed the new part on similar principle – massive construction – Calcium silicate brick + thermal insulation. Surface of the central part is white plaster and side parts of the wood paneling.

ECOLOGICAL CONCEPT
The southwest roof is covered with photovoltaic panels and solar data collectors. Energy from sun is used to run a heat pump, that receives temperature from the borehole depth. Heating the house is provided by underfloor heating. Air quality is provided by ventilation with heat recovery. There is also rainwater tank for collecting rain water, which I use for house and garden.
HONORABLE MENTION

Active House Radar
Dominika Gáborová
Slovak University of Technology in Bratislava, Slovakia
SITE AND LOCATION
Location house award 2016 is located in suburbs of the city of Vienna. There is small village Wolkenrsdorf. Site the family house is located on Nussgasse street.

CONCEPT

URBANISM
Concept for urban safety was create islets (cranked road) to slow ride. For better coexistence between peoples in this area, they have been designed the local territory with relaxing part and opportunities for joint cultivation and spending time.

ARCHITECTURE
The aim of the task was to do a reconstruction of a family house in the town of Wolkersdorf. Up to the present, the family house has the basement, the groundfloor and the fist floor.

The basement and partially also the groundfloor was maintained. During the reconstruction, the first floor was added. The proposal emerges mainly from the context of an existing environment (housebuilding) and from the intention to build a multifunctional family house.

The objet has a rectangular shape of 10,6 m x 10,9 m (length x width). The basement is composed of the technical equipment of the building, stores, a cinema room and a playroom. There is a separate entry from the garden. On the groundfloor, there are functions related to the housing needs and a multifunctional area. The living room, dinning room and a kitchen are located here.

The multifunctional area serves as a generation housing for grandparents or adult children. This part of the house can be used as an atelier or an office. The first floor is a night zone. (Bedroom, children’s rooms, office room or a relax zone.)

COSTRUCION AND MATERIALS
Construction consists of brick (original) on groundfloor and wood - first floor and roof (proposal). Bricks were insulated. The materials are natural and recyclable.

DAYLIGHT
On the north of the groundfloor, there is not a lot of windows and on the south, there are big glass windows to brighten. There is just one window on the first floor, almost all the day light is secured by the skylights Velux - advantages of the skylights - they give five times more of the day light then the vertical windows. The skylights are arranged in a way that the light is distributed equally.
...simple HOUSE with maximum use of SKYLIGHTS....

CREATE ACTIVE HOUSE

1) COMPACT SHAPE
- pitched roof
- good sized

2) PHOTOVOLTAICS
- roof covering
- active area 15kW

3) COMFORT
- recirculation
- displacement

4) HEAT PUMP
- earth/water

5) ECOLOGY
- sustainable and eco friendly materials

DAYLIGHT

GROUND FLOOR
- small windows south
- big windows

SHADOW
- movable panels (south)

FIRST FLOOR
The skylights are arranged in a way that the light is distributed equally.

skylights – they give five times more of the day light then the vertical windows.

Active House Radar
CONDITIONS OF THE COMPETITION

VELUX Česká republika, s.r.o., VELUX Austria, VELUX Switzerland and VELUX SLOVENSKO spol. s r.o. announce 1st international annual anonymous double-round competitive exhibition of student works for the ACTIVE HOUSE AWARD “Rethink Suburbs” 2015/2016.

1. COMPETITION ORGANISERS

1.1 Organisers
VELUX Österreich, Velostraße 1, 2120 Wolkersdorf.
website: www.velux.at
VELUX Česká republika, s.r.o., Sokolova 1d, 619 00 Brno
website: www.velux.cz
VELUX Switzerland, Industriestrasse 7, CH-4632 Trimbach
website: www.velux.ch
VELUX SLOVENSKO spol. s r.o., Galvaniho 7/A, 821 04 Bratislava 2
website: www.velux.sk

1.2 Competition Secretariat
VELUX Schweiz, Industriestrasse 7, CH-4632 Trimbach
Walter Brand
e-mail: AHAward@velux.com
website: www.activehouseaward.velux.com

1.3 The compilation of the conditions of the competition
VELUX Česká republika, s.r.o., Ing. arch. Klára Bukoslák

2. THE COMPETITION

2.1 The purpose of the competition
The purpose of the competition is to encourage students to work in the field of the sustainable development of existing city suburban areas. Rethinking the existing use of the plot and the allocation plan. The new concept has to improve life quality in respect of comfort and health. As and when circumstances require it, new space and new possibilities for its use and its users will be created.

2.2 The subject of the competition
The subject of the competition is the redefinition of an existing single family house in 2109 in Wolkersdorf in the Weinviertel (1091/6) in accordance with the active standard, which is defined in terms of: the quality of the indoor environment, environmental friendliness and energy efficiency (this is defined in detail in Article 5.2 of the competition conditions).

The objective is to implement an intelligent urban infill within a typical settlement structure in Wolkersdorf in the Weinviertel. The aim is to intervene in regard to the functionality of already established structures.

All the information about the plot and about the town is provided in Attachment No. 1 to the competition conditions. The Attachment comprises:
1. Brief
2. Drawings of the house and the plot
3. Local building requirements
4. Active house specifications

2.3 The organisation of the competition
The competition is being announced in 4 countries – Austria, the Czech Republic, Switzerland and Slovakia. The competition is defined as comprising two rounds: the 1st round on a national level, from which a maximum of 10 best projects will be selected that will pass-on to the 2nd international round.

3. CONDITIONS OF THE COMPETITION

3.1 The conditions for participation in the competition are that the renovation should be designed in accordance with the active standard (as defined in Article 5.2) whereby the daylight and fresh air entering the building also come through the roof.

In the course of the competition a "kick-off" event will be organised with introductory seminars focusing on the designing of active houses, together with an inspection of the plot and its surrounding area. During the competition the participants will be involved in seminars that will be targeting the technical solution for the building, including the utilisation of renewable energy sources and how to work with tools.

3.2 The organisation of the competition website: www.activehouseaward.velux.com

4. PARTICIPATION IN THE COMPETITION

4.1 Projects can be submitted by an individual and/or by a collective group, undergraduate students or doctoral students in Austria, Switzerland, Czech republic and Slovakia. They may either be a work for a study course or a work carried beside the college learning programme.

5. EVALUATION CRITERIA

5.1 Works submitted to the competition will be assessed by an expert jury appointed by the organiser of the competition in two rounds. Based on the jury’s decision prizes will be awarded for those projects entered in the competition that best match the criteria for the submission of projects to the competition.

5.2 Evaluation criteria for achieving the Active House Standards

- The overall urban, architectural and design solution of the building
- Achieving the Active House Standards – based on the Active House Specification, version 2.0, with an equal focus on maintaining an excellent indoor climate (see the conditions in the Attachment)

5.3 The method of evaluation
The evaluation of the entries will be based on three criteria:

a) The overall urban, architectural and design solution of the renovation – assessed by the jury – 50 % of the aggregate marks awarded
b) Achieving the Active House Standards – assessed in accordance with the Active House Radar – 30 % of the aggregate marks awarded
c) The daylight solution – assessed by the jury – 20 % of the aggregate marks awarded

6. PRIZES

The awarding of prizes will be decided by the jury on the basis of the established criteria.

The National Round:
A maximum of the 10 best projects will be passed-on to the international level without being identified by a position. The authors of these projects will be awarded EUR 200 and will be invited to attend the "Workshop for Winners".

The International Round:

- 1st prize EUR 1,800 + two-days participation at the Daylight Symposium 2017
- 2nd prize EUR 1,000 + two-days participation at the Daylight Symposium 2017
- 3rd prize EUR 800 + two-days participation at the Daylight Symposium 2017

Overall budget for additional prizes: EUR 2,400
The amount of the prizes is defined net of any applicable taxes.

7. THE JURY
The Jury for both rounds will be announced on the competition webpage at least 2 months prior to the date for the submission of the projects.

8. THE BASIC SCHEDULE FOR THE COMPETITION

8.1 The date for the announcement of the competition
The date for the announcement of the competition is set for the 15th January. The competition will be announced on that date on the website www.activehouseaward.velux.com. The "kick-off" event will take place in 7th March 2016. Additional details will be announced in January 2016 on the competition webpage.

8.2 Registration
The participants must give notice of their interest in participating in the competition by registering no later than by the 15th June 2016. Registration can be carried-out either by using the registration form, which must be mailed to the address of the Secretariat of the Competition, or by completing an electronic form on the website www.activehouseaward.velux.com. Participation in the seminars during the course of the competition is possible only subsequent to registering for the competition.

8.3 The Seminars
The ACTIVE HOUSE AWARD seminars will be organised during the competition period. All registered participants will receive an invitation to these seminars. The seminars are free of charge and any expenses that may arise will be covered by the local organisation.

8.4 The date for the submission of projects for the competition
Projects for the competition must be submitted electronically no later than by the 30th June 2016. The method of delivery will be communicated to the participants following their registration.

8.5 The date of the Jury’s evaluation meeting
The so far tentatively scheduled meeting dates of the jury for evaluating the projects for the competition are: in July 2016 for the National Round and in September 2016 for the International Round.

8.6 The announcement of the competition results
The ceremonial announcement of the competition results will take place in October 2016 at Schloss Wolkersdorf, the official castle.

9. PROJECTS FOR THE COMPETITION

9.1 The projects for the competition must be prepared in English.

9.2 The required content of the competition documentation and for the layout of the presentation drawings:

9.2.1. The mandatory (requisite) content of the documentation should include:

a) All overall plan of a appropriate scale, together with crucial drawings of the floor plans of the different sections and of the views.

b) A visualisation taking advantage of the perspective or an axonometric projection of the building.

c) An evaluation of the daylight factor of a building.

d) A daylight design – assessed in accordance with the Active House Radar - beneath the roof (it is possible do this by using the Daylight Visualizer programme, which can be downloaded free-of-charge from the Organiser’s website).

e) A graphic section (Points 10.2.1. a–e): The mandatory (requisite) content of the documentation and for the layout of the presentation drawings:

10. THE CONDITIONS OF THE COMPETITION

10.1 Obtaining the conditions of the competition
The conditions of the competition can be obtained from:
• the office of the Competition Secretariat at the address:
  VELUX Česká republika, s.r.o., Sokolova 1d, 619 00 Brno
• VELUX SLOVENSKO spol. s r.o., Galvaniho 7/A, 821 04 Bratislava 2
• on request from the e-mail address: AHAward@velux.com
• from one of the Organisers’ websites:

10.2 Acceptance of the conditions of the competition

10.2.1. The consent of the Organiser and the competition jury to the conditions of the competition
By participating in the competition, the Organiser and the jury give their assurance that they are acquainted with all the conditions of the competition, and that they agree to respect and to honour these conditions.

10.2.2. The consent of the participants to the conditions of the competition
By submitting a project to the competition the participant expresses his/her consent to all the conditions of the competition and to the decisions of the jury that are made based on and in accordance with them.