Energy Efficient and Integrated Urban Development Action
URB Energy
4th Issue – January 2011

NEWSLETTER

Dear Reader,

With the beginning of the New Year also the third and last year of Urb.Energy's project duration has started. After an analysis of the current situation in seven sample residential areas and the assessment of possible technical solutions and financial support possibilities, the project partners are now concretizing tailor-made concepts for the energy related modernization of the target areas. For this reason the main focus of this issue of the Urb.Energy newsletter is on the presentation of the seven sample neighbourhoods.
On the following pages we provide you with a short description of each target area and its specific challenges, potentials and perspectives for an integrated upgrading.

Even though the different neighbourhoods have certain concordances – the majority of them are residential areas and predominately characterized by the typical multi-apartment buildings of the soviet time – each area has to deal with the specific situation on the spot and to develop its own approaches for the general target of the project: **A more efficient use of energy and an enhancement of the overall living quality in the neighbourhoods.**
Based on the experiences in the specific target areas the project partners will jointly develop in the next thirteen months recommendations for the implementation of integrated approaches for neighbourhoods in the Baltic Sea Region.

Enjoy reading

The Urb.Energy Team

Focus of this issue: Challenges and perspectives

Current situation and intended development in the seven Urb.Energy sample neighbourhoods

Part-financed by the European Union (European Regional Development Fund and European Neighbourhood and Partnership Instrument)
Baltic Sea Region Programme 2007-2013

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FEATURES ABOUT THE TARGET AREAS:

Imprint:

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Berlin, January 2011

The newsletter is availble for download at the Urb.Energy website

Upcoming Events:

03- 04 March 2011: WP5 workshop in Piaseczno
During the workshop the project partner assess jointly the project's activities regarding financing tools and develop transnational recommendations

04- 05 April 2011: WP4 workshop in Vilnius
During the workshop the project partner reflect and discuss the common results and experiences gained during the whole transnational cooperation process and compile transferable know-how and good practices to be highlighted in the comprehensive documentation

Pre-announcement:

May/June 2011: Info-Event-Brussels
Urb.Energy presents in Brussels the topic of integrated energetic modernization of residential areas

October/November: Final project conference in Riga
Presentation of the project results by the work package coordinators

Documentation of Urb.Energy events in the last semester:

16-19 November 2010: Lida/Grodno
Workshop on Concepts for Energy Efficient Refurbishment of Buildings and the Modernisation of the Supply Infrastructure in Belarus
Available at: http://www.urbenergy.eu/170.0.html

21-22 October 2010: Berlin
International Conference on "Energy Efficiency and Integrated Urban Development" in Berlin
Available at: http://www.urbenergy.eu/160.0.html

General information:

Piaseczno is with about 67.000 inhabitants a middle-sized municipality, located in the centre of Poland and in the direct neighbourhood of the southern part of Warsaw. It is the seat of the county authorities.

Current situation in the Target Area:

Due to the vicinity to Warsaw the neighbourhood is a typical suburban residential area characterized by middle sized apartment buildings and a high number of open green spaces between the buildings. A significant share of the residents used to work in a nearby factory but due to the reduction of labour force a relatively high number of inhabitants was laid-off. This cause to some extends social tensions. Despite the fact that the Target Area is located in a rapidly developing district of Piaseczno, the development pres-sure on the neigh-bourhood itself is rather low and therefore the em-phasis on future activities lays on the stabilization and enhancement of re-sidential environ-ment.

Apart of four re-furbished building, the energy perfor-mance of the ex-isting building stock is rather poor with an urgent need for improvement. The entire Neighbour-hood is connected to a central heating system that supplies the area with heating energy. However, the warm water supply is organized by apart-ment-related individual boilers and the project targets on the development of new integrated solutions regarding a combined heat, warm water and energy production.

Key figures:	
Size	8.26 ha
Number of inhabitants	2079
Number of buildings	26 apartment buildings
Period of construction	1961 - 1974
Owner structure	30 % housing cooperative 70% individual owners
Current annual energy consumption of multi-apartment buildings*	229.7 kWh/m^2

***** Average annual final energy demand of a typical not modernized building (Space heating + hot water preparation)

Location of the target area

Major challenges regarding the urban structure of the neighbourhood is the improvement of the quality of the open spaces in terms of social use and security. Due to the strong rise of the private car ownership, in com-parison to the construction period, there is a need to develop appropriate solutions for the internal traffic and parking solutions. The residents are showing their strong commitment to take over responsibility for the green areas in between the buildings

by self-organized gardening activities.
The municipal administration considers the development of the integrated development concepts within the frame of the project as driving force to engage both, local owners and the municipality to initiate working, communication and decision patterns for the overall development and in particular for the enhancement of the energy efficiency of the neighbourhood.

Perspectives:

On behalf of the city of Piaseczno the Polish National Conservation Agency (NAPE) develops an integrated concept for the energy efficient upgrading of the neighbourhood.
Parallel to the energy related topics, the concept takes in account as well the aspects for a general improvement of the residential environment in the neighbourhood and will come up with a prioritized package of measures for a general accompanying upgrading of the area. The concept becomes, after the approval by the city council, a local bylaw.

Based on the integrated concept the city implements the prioritized package of measures for the public space.

To enable the self-organized enhancement of the buildings in the neighbourhood, the concept includes as well detailed proposals for the technical upgrading of the 26 buildings in the quarter as well as financial supporting resources for the owner associations and housing cooperative respectively. In the frame of the project work all buildings are the subject to an energy audit in order to provide to the owner a solid basis for tailor-made further refurbishment activities in respect to the special conditions in the neighbourhood.

The focus of the enhancement of energy efficiency is on one hand the modernization of the building shells and on the other hand the development of more adequate solutions for the up to now apartment-related warm water supply. Due to the specific conditions of the district heating system (seasonal heat production only and difficult property rights) the emphasis of the possible solution approaches lies on decentralized building-related co-generation devices.

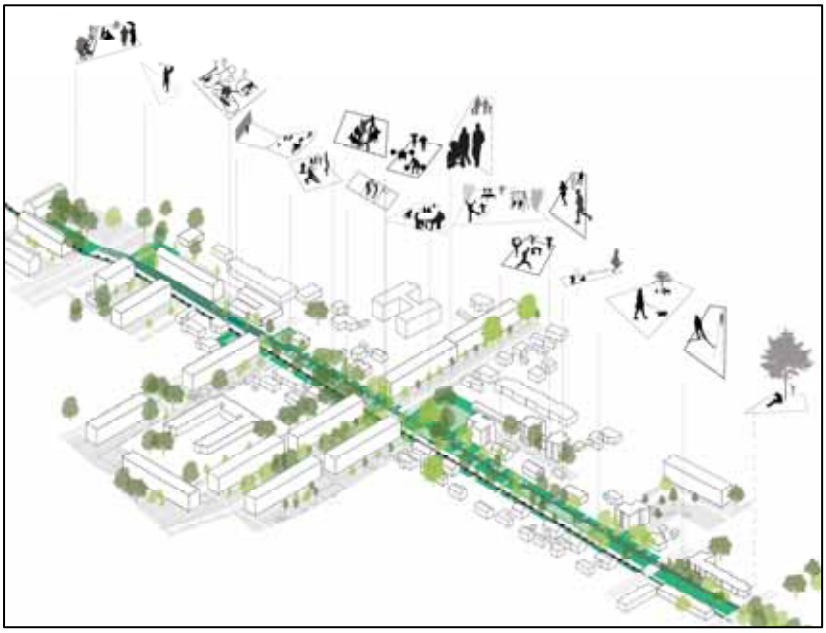
Based on a survey among the residents of the neighbourhood the focus of the upgrading activities of the residential environment is on the

improvement the amenity value in front of the local supermarket and the enhancement of the green areas in between the buildings.

TARGET AREA RAKVERE – Seminari Street — Estonia

General information:

The city of Rakvere is situated in north Estonia and the administrative, economical and cultural centre of the Lääne-Viru County. According to the Estonian settlement system Rakvere is considered as one of the so called old county centres and with about 17.000 inhabitants the 7th largest City in Estonia. The city has joined the Covenant of Mayors as first city in Estonia and wants to become the leading city in energy saving in Estonia.



Contribution the architectural competition at Seminari Street

Current situation in the Target Area:

Seminari Street was founded in 1920ies as a part of a general extension of the historic city. Today the street is bordered by houses originating from different times as well as different architectural styles and sizes. One can see wooden and stone houses from prewar era as well as typical apartment houses from Soviet time. Single-storied houses are rowed up with five-storied panel colossuses.

The multi-apartment buildings bordering the street are the dominating structure in the area. The thermal conditions and the appearance of the apartment buildings do not correspond to contemporary needs or expectations and more and more attention is paid on the reconstruction of the façades of those buildings.

The population has been quite stable in Rakvere over the last years, although there is a tendency to move from the areas with a high density – like the target area – to single-family house areas. In order to encourage a more compact and energy efficient settlement structure, it is of public interest to enhance the living quality in the existing building stock and to improve the overall quality of urban environment in the target area. In compliance with the Master Plan and the Sustainable Energy Action Plan of Rakvere city government the overall upgrading of inner-city areas shall inhibit diffused urbanization and contribute hence to a sustainable settlement structure.

Despite the poor condition of the buildings, residents are rather hesitating towards refurbishing activities. This is due to the fact that the majority of the residents have a very limited financial capacity

Key figures:	
Size	80 ha
Number of inhabitants	800
Number of buildings	18 apartment buildings
Period of construction	1960 - 1989
Owner structure	97 % individual owners 2 % institutional (rental) ownership 1% cooperatives
Current annual energy consumption of multi-apartment buildings*	170 – 180 kWh/m^2

***** Average annual final energy demand of a typical not modernized building (Space heating + hot water preparation)

and little access to information about support possibilities. Therefore, the major challenge of the project lays on the development of proposals for tailor-made solutions for the upgrading of the building stock by the owner associations.

the renovation of the façades of the houses surrounding the area. Both, architectural as well as landscape architectural aspects are combined in the idea competition. The City Government of Rakvere expects architectural solutions for renewing the façades of the typical Soviet-style apartment houses and landscape architecttural solutions for re-designing Seminari Street in order to alter it to an attractive urban landscape and connecting corridor between the heart of the city and city forest in the south. The goal is to get an integral solution where both elements of the task are solved in a mutually complementing manner: forming a united and integral urban environment. The next step of the project is the preparation of specific renovation projects that are carried out on the basis of the attained idea solution in cooperation with the house owner associations of the area.

Those building projects are the basis for future renovation works on apartment houses in order to make the houses energy efficient and adding to the more attractive urban environment. The intention of Rakvere's City Government is, by investing in the compiling of the building project documentation, to inspire the different individual owners of the housing associations to take up the actual renovation works.

Aerial view of Seminari Street

Perspectives:

The goal of the project is energy saving, enhancing the more efficient use of the public space and connecting the central part of the city with the town's green corridor. Also, more attention should be paid on the importance of shaping the living environment and development of good design examples for increased energy efficiency.
In the target area a step-by-step approach is applied. In the first stage, a public idea competition is carried out in order to get the best solution to develop Seminari Street to a linear park and to get ideas for

TARGET AREA LIDA (Grodno Oblast) Belarus

General information:

The Housing Department of Grodno Oblast Executive Committee (administration of the Province Grodno) is responsible for the majority of the existing housing stock in the entire Province of Grodno. The Executive Committee selected the city of Lida as a Target Area within the project Urb.Energy. In Lida an integrated development concept will be developed that covers the entire area of the core city. As a preparatory step, three sample buildings (that are representative for the housing stock in Lida) will be analysed and refurbished.

Lida is the fourteenth largest city in Belarus, situated 110km east of Grodno.

Current situation in the Target Area:

The city of Lida is a very old city with roots back to the 13th century. However, the city suffered serious damages during WWII and nowadays the city is predominately characterized by multi-apartment buildings from the soviet era. The major part of the Target Area is connected to the central heating system.
Recently, large renovation activities has been carried out in order to upgrade the public spaces in the city centre and to improve the general conditions of the buildings.

However, still a major part of the housing stock in the city lacks sufficient insulation. Regarding the district heating system there is an urgent need to install individual meters as well as to modernize generation plants and networks.

Currently the major energy resource is gas and local energy sources (like fire wood, peat and sawdust). There is the intention to increase the share of cogeneration (3-4% at the moment) but currently there are no special financial programmes available to support the extension. At the present time there are no renewable energy sources in use in Lida. This is due in particular to the lack of experiences and certain scepticism about the efficiency of renewable sources.

The buildings 43 Sovetskaya St (type1), 35 Tavlaya St. (type2) and 24 Mitskevicha St. (type3) are typical buildings in Lida. The type1 is a brick building, meanwhile type 2 and

Key figures:	
Number of inhabitants Lida	98.000
Number of buildings in Lida	6250
Owner structure	14,4% state owned 85,6% private owners
Sample buildings	Type 1: Sovetskaya, 43: constructed 1979; 5 stories, 40 flats Type 2: Tavlaya, 35: constructed 1980, 9 stories, 60 flats Type 3: Mitskevicha, 24: constructed 1972, 5 stories, 5 flats
Current annual energy consumption of multi-apartment buildings*	237.7 kWh/m^2

***** Average annual final energy demand of a typical not modernized building (Space heating + hot water preparation)

Tavlaya street 35

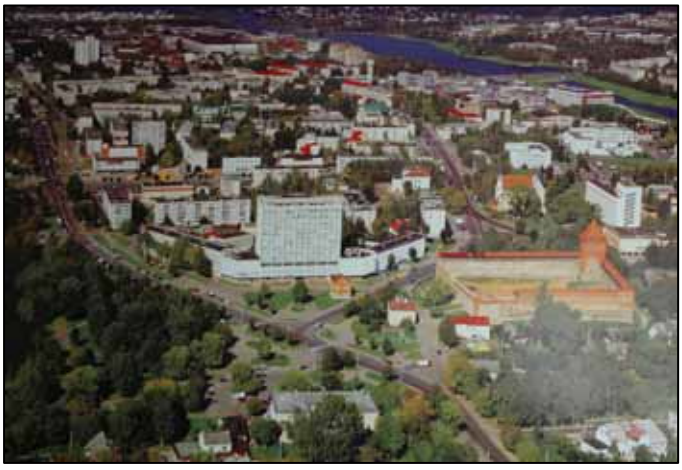
Mitskevicha street 24

3 are concrete slab buildings. Together there are 535 buildings in Lida of the same typology.
Currently they have a very poor overall energy performance, insufficient internal heating systems and they are not embedded into an overall energy concept of the surrounding neighbourhood.

Perspectives:

For the sample buildings the project partner develops and implements a comprehensive refurbishment concept. The so gained experiences are an important part of the awareness rising activities to promote the enhancement of energy efficiency of the existing building stock.
Parallel the Executive Committee elaborates – supported by an consultant – an integrated urban development concept for the city of Lida that consider in an integrated way approaches to refurbish the housing stock, to promote the use of local and renewable energy resources as well as the modernization of the district heat supply system. The concept addresses as well the possibilities to activate financial support for the modernization and to enhance the living environment around the buildings.

Sovetskaya street 43



Lida city centre

Key figures:	
Size	170 ha
Number of inhabitants	20,630
Number of buildings	220 apartment buildings Public buildings and shops
Period of construction	1948 - 1989
Owner structure	94% individual owners
Current annual energy consumption of multi-apartment buildings*	188 kWh/m2

* Average annual final energy demand of a typical not modernized building (Space heating + hot water preparation)

General information:

Jelgava is located in the central part of Latvia, the largest city of Zemgale planning region and, according to territory and population, ranks fourth among the cities in Latvia. Leading industries in Jelgava are food processing, textiles production, metal-working, machinery building and wood-working industries. Most of the active businesses in Jelgava are engaged with trade.

Current situation in the Target Area:

The target area is situated in the city centre of Jelgava and is a mixed type residential and business buildings area. It consist beside shops and public buildings a number of multi-storey residential buildings.

After World War II 90% of buildings in Jelgava were destroyed. The reconstruction started in the central part of the target area in the late 1940ies to the 60ies with mostly individual planned buildings in the common Soviet-style of this time. In the 1970-80ies the area was completed with standardized multy-story apartment buildings. Also located in the target area are some important cultural historic heritage sites as like the museum Academia Petrina and the Tower of St. Trinity Church. Great part of the territory is under protection as historical site of national importance.

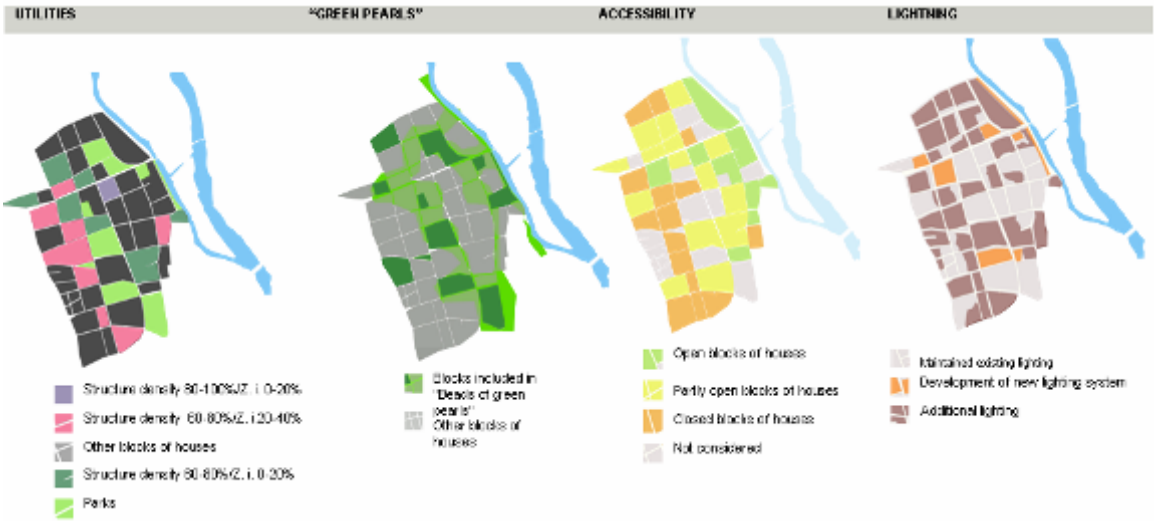
With around 20.630 inhabitants approximately one third of the total population of Jelgava is living in the target area. The neighbourhood is well connected to the public transport network and contains retail, public services and cultural institution. Furthermore the area is well equipped with public and green spaces as well as with educational and health institutions.

The major part of the area is connected to the central heating system. The former pipeline-system from the Soviet period was mostly replaced and two co-generating power stations

Aerial view of the target area

provide heat and feat-in into the electric power grid. Both power stations were re-developed to a modern standard of cogeneration on the basis of natural gas with the option in both systems for a future instalment of biomass as the basis of energy production.

neighbourhood the municipality identified the energy related modernization of the building stock and the enhancement of the living environment.



The technical conditions of the main structures of buildings in the neighbourhood are relatively good. On own initiative of the residents especially windows were replaced to avoid heat losses. However, insulation and the internal utilities remain rather poor.

As the main challenge for the further development of the

Perspectives:

With the integrated urban development concept (IUDC) the city government of Jelgava develops a comprehensive strategy for the enhancement of the neighbourhood. The major emphasis of the upgrading activities lays on the rise of the energy efficiency of the multi-storey residential buildings within the area.

Parallel, approaches are developed to improve the amenity values of the yards of the multi-storey buildings, the development of modern recreation areas and play grounds as well as the modernization of parking lots and access roads.

After the approval of the IUDC by the city council, prioritized activities will be integrated into the municipal Investment Plan.
The city supports the refurbishment of the buildings by providing sample energy audits to for the most common building types to the owner associations.
To promote the idea of energy efficiency, the municipality provides trainings for house managers and organize regular information activities for flat owners and general public.

General information:

Riga is a modern city with 712.000 inhabitants and an area of 304 km². The target area is situated in the Jugla neighbourhood on the eastern outskirts of the city.

Current situation in the Target Area:

Jugla is part of the Vidzeme district (since the year 2010 – centre district) and the second largest neighbourhood throughout Riga. It is divided from the planning perspective in five smaller units with very different characters.

The main development as residential area began in the 1960s when multi-apartment blocks were built in the area. Today, there are major housing estates and one-family house areas, but predominately the neighbourhood is characterized by the Soviet-era high-rise (mainly 5-storey) residential buildings constructed in the 1960s and 70s.

In contrast to the overall development in Riga, where the number of inhabitants is decreasing, the number of inhabitants in Jugla is very stable with slight increase in last few years. Since the neighbourhood itself offers only a little number of employment possibilities, the majority of the residents are commuters or retired persons.

Even though Jugla is predominately a residential area, elements of a centre can be found along the main arterial road and there are sub-centres situated across the entire area for the provision with convenience goods. The location at the eastern edge of the city and close to forests and lakes offers a high potential for recreation and leisure.

The entire area is covered by a central heating system. Like in most parts of Riga the local heating company "Rīgas Siltums" is maintaining the central heating network and provides heat mainly to high-rise apartment housing estates and all kinds of public as well as service buildings. Individual homes – and to some extent – new residential apartment projects use often autonomous heating on a gas or solid fuel basis.

The heating pipeline network is relatively old but it is partially replaced with prefabricated pipes and is still undergoing the renovation process which stabilizes the average

Key figures:	
Size	1400 ha
Number of inhabitants	27250
Number of buildings	182 apartment-buildings; Public buildings and shops
Period of construction	till 1950: 8% 1951-1960: 12% 1961-1970: 67% After 1979: 13%
Owner structure	Almost 100% individual owners
Current annual energy consumption of multi-apartment buildings*	207 kWh/m^2

***** Average annual final energy demand of a typical not modernized building (Space heating + hot water preparation)

technical condition of the heating grid in Jugla.
In particular the Soviet-era multi-apartment buildings, like many other places in Riga and Latvia, are facing large heat losses and a poor internal infrastructure. Installation of energy efficiency measures together with overall renovation and refurbishment of the buildings is the main challenge for future in this field. Energy price increase together with physical poor condition of the buildings will be the catalysts for renovation and refurbishment works.

Major challenges in Jugla are to initiate a refurbishment process of the buildings in the context of a very heterogeneous owner structure and to find solutions for the reduced working load of the two existing central heating plants that supply heat to the neighbourhood. Parallel the share of renewable energy sources (currently 2% in Riga) should be fostered. From the urban planning perspective major challenges are the inner accessibility on foot, by bicycle and public transport as well as the parking situation and the insufficient street lightening. Due to the uniform construction style the neighbourhood lacks a visual identity.

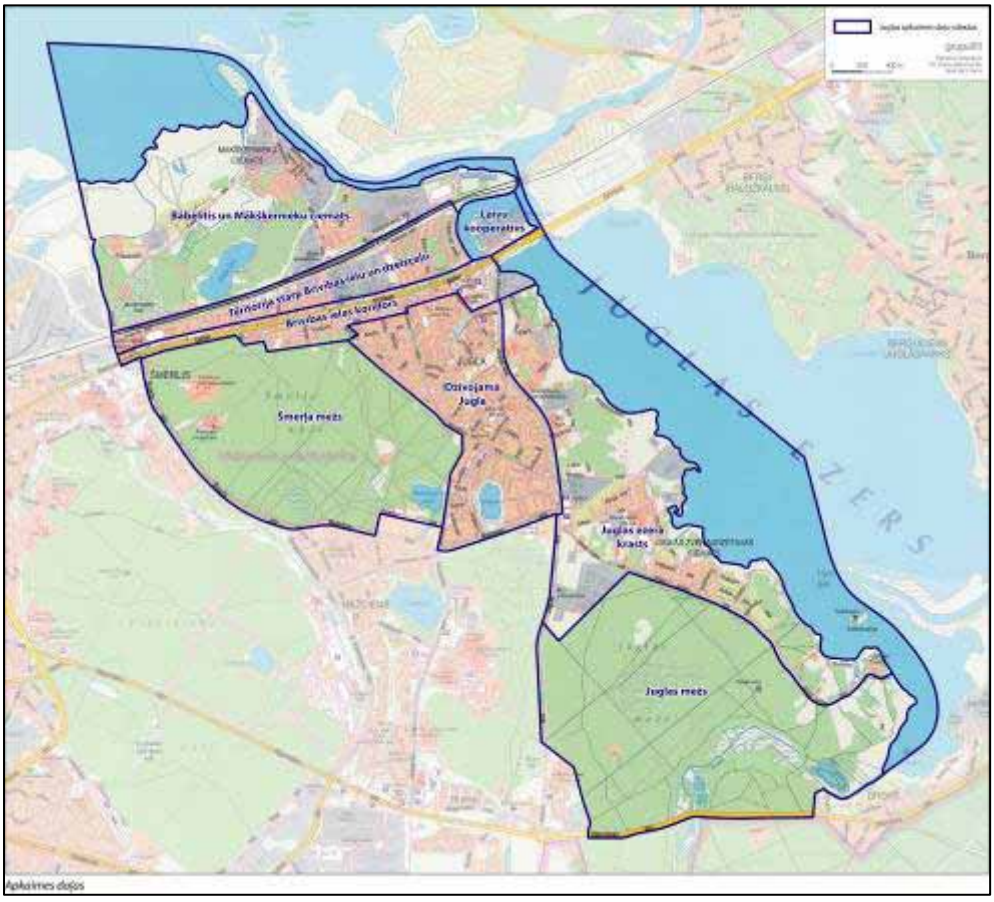
As a prerequisite to start an upgrading process it is very important to identify and communicate financial possibilities for complex approaches, to involve the public and to clarify legal issues about property questions.

Perspectives:

The city of Riga prepares an integrated concept for Jugla for the overall upgrading of the neighbourhood. It addresses local planning issues, architectonic solutions and possibilities to enhance the energy efficiency of the entire area. The public is involved during the entire preparation process.

Since the majority of the apartments in Jugla are owned by individual owners the success of a development concept depends on the activation of them. It is important to enable individual owners by influencing unfavourable framework conditions and providing information. Therefore, the possibility to establish a special municipal building renovation company as well as a municipal revolving fund is assessed.

To provide better information to the end-user, a special internet portal for online monitoring informs about indoor climate and consumption parameters of renovated and not renovated buildings.



TARGET AREAS ŠIAULIAI — Lithuania

General information:

Šiauliai is the fourth largest city in Lithuania with 130,000 inhabitants and covers an area of 81.13 Km^2. Within the project the city administration develops integrated urban development concepts for two target areas they are very typical regarding their structure and the experiences in the target areas can be used as samples for further municipal activities regarding the develop of approaches for the moder-nization of the "soviet planning legacy" in the city. On the other hand there are active communities and NGOs in the target area that could be a favourable factor to promote the modernization process in the area.

For this reason the general refurbishment rate is still very low – as in the entire municipality of Šiauliai – and there is the urgent need to prepare integrated concepts for a holistic overall upgrading of the two neighbourhoods that take into account a common design and an integrated approach. Those concepts are the precondition for the implementation of National Programme of Refurbishment of multi-storey buildings.

Key figures AREA 1 – Lieporiai	
Size	91 ha
Number of inhabitants	11,500
Number of buildings	106 apartment buildings; Public buildings and shops
Period of construction	1968-1982
Owner structure	97% individual private owners 3% institutional (rental) ownership
Current annual energy consumption of multi-apartment buildings*	95-170 kWh/m^2

***** Average annual final energy demand of a typical not modernized building (Space heating + hot water preparation)

Target Area 1 - Lieporiai

Current situation in the Target Areas:

Both target areas, Lieporiai as well as Miglovaros, are predominately characterized by the standardized multi-storey apartment buildings from the soviet time. Meanwhile Lieporiai is a typical major-housing estate with neighbourhood related schools, park area and shops for the local supply, the target area Miglovaros is a smaller pure residential area.

The two target areas were selected on one hand because

The residents of both target areas started with own activities to enhance the energy efficiency of the buildings. However, these activities vary widely in terms of quality and complexity and are mainly focused on apartment-related measures. Activities that require a general structural change or activities of the entire house owner community are rarely applied.

Both areas are connected to the central heating system of the city. However, the heating grids are in poor condition and there are high energy losses up to 40 percent. Due to the losses the price for district heating is very high. Residents as well as the energy supply company are very reluctant about the introduction of renewable energy sources.

A major challenge of the upgrading activities in both neighbourhoods is to enable the different house owner communities to start with own coordinated refurbishment activities. For this reason it is necessary to provide adapted technical and financial solutions.

As a precondition for further upgrading activities as well land property issues are addressed within the project. Solutions are developed to clarify the property rights of the related area in the surrounding of the buildings which has not been so far part of the land titles of the apartment owners.
Special focus of the enhancement of the living environment is the quality of the public space, playing grounds and the Lieporiai park. Additional the supply with public transport, parking space, infrastructure for disabled persons is improved and the cycleway network is extended.

Target Area 2 - Miglovaros

Key figures AREA 2 – Miglovaros	
Size	6.1 ha
Number of inhabitants	998
Number of buildings	18 apartment buildings; 18 single family-homes
Period of construction	1960-1989
Owner structure	98% individual private owners 32% institutional (rental) ownership

Perspectives:

The major objective of the project in Šiauliai is to assure the sustainable and integrated development of the two target areas. For this reason the city supports on one hand the thermo-modernization of the building stock and of the energy supply system. On the other hand it carries out accompanying measures to improve the living environment of the two target areas.
Both activities are coordinated in a holistic way in the two neighbourhood related integrated urban development concepts (IUDC). The IUDC becomes a binding document (approved by the city council) that has to be considered at all public and private construction and renovation activities.

To encourage the enhancement of the energy efficiency the city provides owners with information about financing possibilities and adequate technical approaches for the specific situation in the different building types. For this reason the city organises energy saving days and meetings with the heads of the housing communities.

General information

The area “Frankfurter Allee Süd and Kaskelkiez” is located at the Eastern inner city periphery in the district of “Lichtenberg”. With a number of 260.000 inhabitants Lichtenberg is the seventh biggest of the 12 districts in Berlin.
Since the early 1990ies integrated urban development planning is being executed in the two neighbourhoods. Although the improvement of energy efficiency of buildings and supply infrastructure was not the major focus of the activities from the beginning, both areas have been comprehensively modernized step by step during the last 20 years. .
The Case Study Berlin documents integrated urban development approaches and solutions to implement EU energy/climate measures and elaborates a critical evaluation on retrospective measures and plans for the two very different residential areas.

Key figures AREA 1 – Frankfurter- Alle-Süd	
Size	44,5 ha
Number of inhabitants (1992)	11.000
Number of buildings (1992)	22 prefabricated multi-apartment buildings 37 others (church, schools, etc)
Period of construction	1970-1974
Owner structure	66% owned by one building association (rental ownership) 34% owned by cooperatives Almost 100% tenants
Annual energy consumption of multi-apartment buildings 1991*[1)]	190 kWh/m2 (range 160-340)
Annual energy consumption of multi-apartment buildings 2010*[2)]	87 kWh/m^2 (range 84-220)

Key figures AREA 1 – Kaskelkiez	
Size	21,7 ha
Number of inhabitants (1992)	2.500
Number of buildings (1992)	284 Traditional European urban fabric Predominately attached 4-5 storey brick buildings
Period of construction	1872-1918
Owner structure	Today: 15% building association 85% private owners, ‘fragmented ownership’ (in 1992 about 50% individual ownership, 50% of the buildings were under public control due to unsettled property rights)
Annual energy consumption of multi-apartment buildings 1991*[1)]	340 kWh/m^2
Annual energy consumption of multi-apartment buildings 2010*[2)]	200 kWh/m^2 (range 60-360 kWh/m^2 depend on the refurbishment status)

*[1)] Average annual final energy demand of sample buildings before modernization (Space heating + hot water preparation)
*[2)] Average annual final energy demand of sample buildings after modernization (Space heating + hot water preparation)

Situation in the areas before modernization:

The neighbourhood Frankfurter-Allee-Süd is a large housing estate with prefabricated buildings and a predominantly residential use. Very typical for the urban structure of the neighbourhood are the large green spaces between the buildings. The area is well connected to public transport and in the north it borders on one of the main arterial roads in Berlin. With about 5 km distance to the Eastern City centre of Berlin, the neighbourhood is located at the periphery of the inner city.
In 1992 Frankfurter-Allee-Süd was characterized by a relatively balanced social structure. The area was lacking facilities for youth and elderly and had a high deficit in design of public green space and squares.
The neighbourhood possessed a district heating system that covered the entire area but had an urgent need for modernization. The building stock had a poor energy performance with defects in the façade as well as in the technical equipment.

Kaskelkiez is located south of Frankfurter Allee Süd, separated by railway tracks. The neighbourhood has a traditional European urban fabric, composed of a scheme of roads and blocks. The blocks are predominantly built up with attached 4-5-storey buildings. In World War II the area was marginally destroyed and for this reason the neighbourhood is rich of historic buildings. Kaskelkiez is an area with mixed use, but still holds a large proportion of residential buildings.

In 1992 the area was characterized by a relatively high unemployment rate (19%) and about 15% of the households had an income below the official minimum living vage. Furthermore, there was an unclear ownership situation and a lack of infrastructure facilities. Only few green areas existed and public space as well as the yards were lacking amenity values.
Most of the buildings in the neighbourhood suffered very desolate structural and poor energy conditions. About 76% of the households were using coal-burning stoves.

Integrated planning activities
Urban development of the case study area has been steered in several planning processes throughout the last 20 years. The integrated aspect of energy efficiency had been followed imminently in the 1990ies but was fostered strongly and explicitly only since the past years. In the first planning phase (1990 – 1995) basics for development and first integrated concepts were set up. After having concentrated on constructional qualities and measures in the first years after the fall of the Berlin wall, one started to include social issues more intensively into the urban development planning processes during the second planning phase (1995-2000). The third planning phase (2000 - 2005) is characterized by integrated concepts reacting to population decrease. Only since the forth planning phase (2005 - 2010) energy efficiency explicitly becomes an important issue.

Since 2002 the public sector conducts energy-efficient refurbishment of the social infrastructure and from 2005 onwards specific superior energy-efficient measures are conducted by housing societies on residential buildings. Measures for the energy-efficient improvement of buildings and supply infrastructure by public and private owners now are an integral part of the activities.
Various stakeholders (mainly housing societies, municipal and private supply companies) and residents were involved in legally binding and legally non-binding planning processes. In Kaskelkiez the residents were involved through an institutionalised residents' board (Betroffenenvertretung) between 1993 and 2008, when the neighbourhood was formally designated as redevelopment area.

In addition to that several social, labour market-oriented and educational measures had been realized on the neighbourhood level, such as the "Climate Office Lichtenberg" ("Lichtenberger Klimabüro"), project "energy consultants" (Energieberater) or the opening of a sample “show-flat” by the housing association HOWOGE to demonstrate possibilities for energy saving.

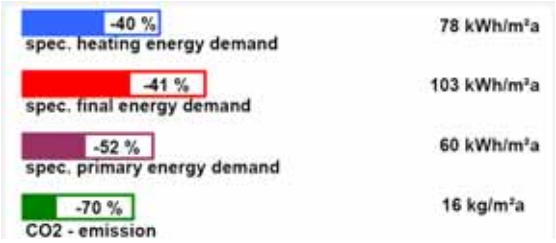
Balance of the achievements until today:

During the last 20 years numerous different measures have been implemented to improve energy efficiency and the living conditions in the two neighbourhoods. In both areas it was possible to halve the total primary energy consumption between 1992 and 2010.

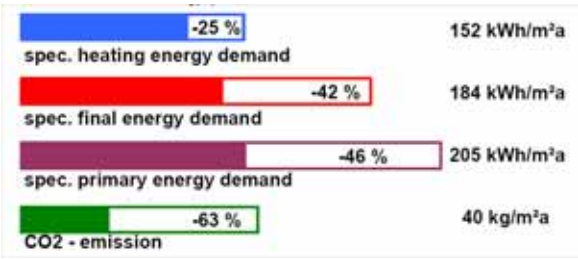
- Reorganization of traffic routeing, traffic calming measures, rearrangement of parking lots as well as the improvement of path network
- Reorganization of the allocation of public and private green, greening of the main streets and construction of a new green corridor in the neighbourhood
- Realization of several buildings and construction of 323 new flats
- Replacement of existing stove heating by decentralized heat generators. For cost reasons at later stage the connection to the central heating system of the neighbouring district was not carried out.
- Installation of several solar heating systems, photovoltaic or biomass furnaces

Surface-related energy parameters 2010 and reduction in comparison to 1992:

Frankfurter-Allee-Süd



Kaskelkiez



Selected measures in Frankfurter Allee Süd:

- Refurbishment of 100% of the residential buildings, includinginsulation of façade and ceilings, replacement of windows and the modernization of the supply equipment
- Partial renovation of schools and kindergartens
- Construction of a new neighbourhood centre
- Reconstruction of a multistorey building as Europe's biggest low-energy building, which is now equipped with a combined heat and power unit.
- Renovation and maintenance of the district heating system
- awareness rising, educational, social and labour market-oriented projects
- Establishing of good cooperation between housing associations and public authorities
- A municipal housing company (HOWOGE) was founded and buildings and land properties were transferred to the company. The juridical constitution of the existing housing company was changed.

Selected measures in Kaskelkiez:

- The existing residential buildings were returned to the former owners (restitution)
- Modernization of more than 60% of the residential
- Establishing of a new neighbourhood centre
- Extension of the kindergarten supply, refurbishment of a school building
- Stepwise increase of the number of shops, cafés, arts and crafts enterprises Reorganization of traffic routeing, traffic calming measures and rearrange--ment of parking lots
- Redesign of all existing and construction of additional green spaces and playgrounds
- Organization and implementation of an intensive communication process during the entire modernisation process by formal committees, informal meetings and publications

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- Center of Competence for Major Housing Estates (Berlin)
- Ministry for Infrastructure and Agriculture, Brandenburg (Potsdam)
- Chamber of Commerce and Industry, Potsdam
- Ministry of Science, Economics and Transport, Schleswig-Holstein (Kiel)

POLAND:

- City and County Piaseczno

LITHUANIA :

- Housing and Urban Development Agency (Vilnius)
- Siauliai City Municipality Administration

LATVIA:

- City of Riga
- City of Jelgava

ESTONIA:

- Credit and Export Guarantee Fund KredEx (Tallinn)
- City of Rakvere
- Baltic Union of Cooperative Housing Associations (Tallinn)

BELARUS:

- Grodno Oblast Executive Committee, Housing Department

Part-financed by the European Union (European Regional Development Fund and European Neighbourhood and Partnership Instrument)