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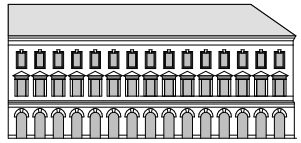

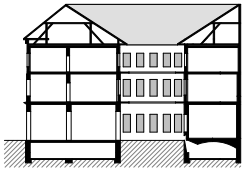

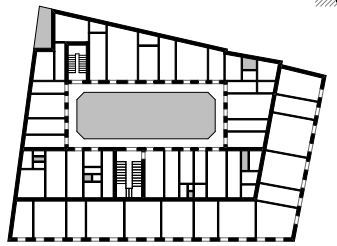

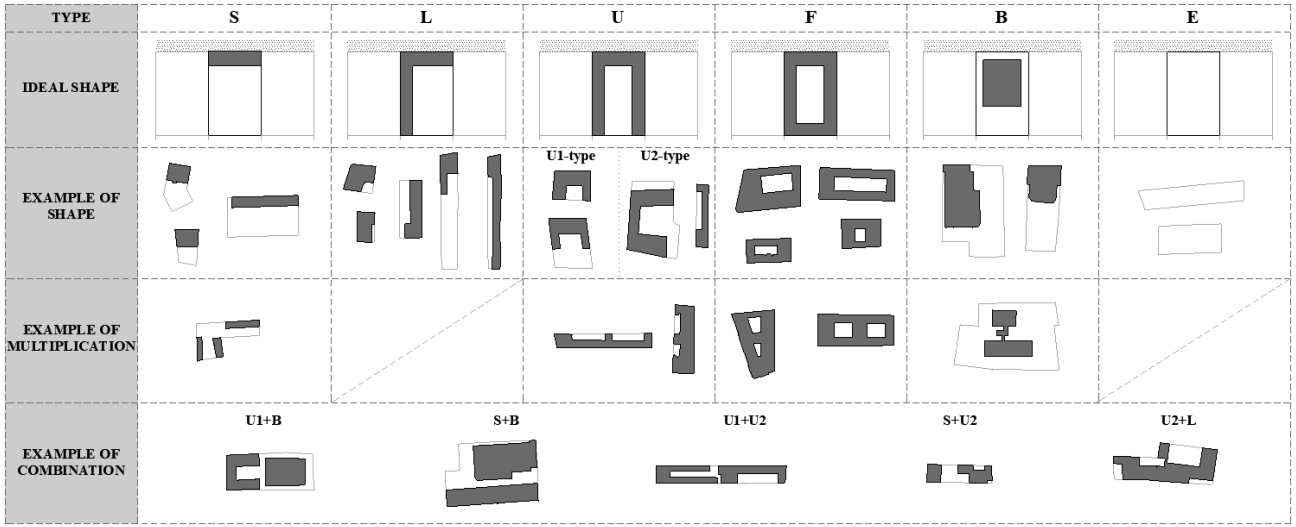

BÉRHÁZ FELMÉRÉSEK
INFORMÁCIÓ Munkaterv

Assessment of Rehabilitation Possibilities in Case of Budapest Jewish Quarter Building Stock

Viktória Sugár, Attila Talamon, András Horkai, Michihiro Kita

***Abstract*—**The dense urban fabric of the Budapest 7th district is known as the former Jewish Quarter. The majority of the historical building stock contains multi-story tenement houses with courtyards, built around the end of the 19th century. Various rehabilitation and urban planning attempt occurred until today, mostly left unfinished. Present paper collects the past rehabilitation plans, actions and their effect which took place in the former Jewish District of Budapest. The authors aim to assess the boundaries of a complex building stock rehabilitation, by taking into account the monument protection guidelines. As a main focus of the research, structural as well as energetic rehabilitation possibilities are analyzed in case of each building by using Geographic Information System (GIS) methods.

***Keywords*—**Geographic information system, Hungary, Jewish quarter, monument, protection, rehabilitation.

I. Introduction

THERE had been multiple "Jewish Quarters" in Budapest during the previous centuries. On the Buda side of the River Danube, Jewish residents occupied a part of the Buda Castle Hill, and they also lived a little northern, in Óbuda. On the Pest side, the so-called Old Pest Jewish Quarter is situated in the neighborhood of the present District 7; the new Jewish Quarter of Budapest later became Újlipótváros, todays' District 13 [1]. Present study focuses on the Old Pest Jewish Quarter (Fig. 1). This part of Budapest, known as Belső-Erzsébetváros (or Inner-Elizabethtown, named after the beloved Queen Elizabeth of Austro-Hungarian Empire) was still completely unbuilt in the 17th century. The development of the district began spontaneously in the 18th century, as the population of Pest started to outgrow the city walls of the middle age. The area in that time mainly consisted of manors and fields. The first craftsmen and merchants coming from the city started to build here, bringing the urban characteristics to the agricultural neighborhood. The emerging suburbs offered settling opportunities for the laborers working on the citizens' gardens [2].

The development started in the 18th century lasted nearly for a hundred years. The narrow, rectilinear streets, the organic network, the frequent T-shaped intersections, as well as the diverse width of the streets can be originated from the agricultural past of the area. This kind of organic fabric can rarely be found in todays' regulated Budapest [2].

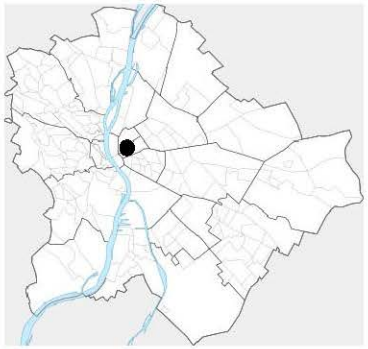

Fig. 1 The Old Jewish Quarter of Pest, in today's District 7 of Budapest [3]

The Great Flood of the River Danube in March 1838 destroyed significant ratio of the buildings of the district, which this time had been the densest and most populated area of Pest. As replacement for the demolished one-story buildings, urbanized, two- or three-story, L or U shaped houses were built in an unbroken row along the streets. The builders were prosperous citizens with often newly established citizenship, as well as immigrant craftsmen and masters from e.g. Austria, Moravia, or Jewish traders [2].

Until Joseph II, Emperor and King of Austro-Hungarian Empire, legislated the Patent of Toleration in 1783, Jews were prohibited to enter the walled Pest, and were also not allowed to settle until 1786. A law of 1840 at last permitted them to own real estate, until then, their praying rooms and apartments were also in rented houses. Naturally, the establishment started around the Jewish Market outside the city wall, alongside the main street of the area: Király Street (King Street, King of England Street at the time, Fig. 2) [2].

At the same time, the first passage houses (Fig. 3) and pedestrian crossings have developed through the deep blocks, later grown into a full system. The passage houses and crossings expanded the commercial life, at the same time

Viktória Sugár, Attila Talamon, Ph. D., are with the Centre for Energy Research, Hungarian Academy of Sciences, and lecturers in Szent István University, Ybl Miklós Faculty of Architecture and Civil Engineering, Budapest, Hungary (e-mail: sugar.viktoria@ energia.mta.hu, talamon.attila@ energia.mta.hu).

András Horkai is lecturer in Szent István University, Ybl Miklós Faculty of Architecture and Civil Engineering, Budapest, Hungary (e-mail: horkai.andras.laszlo@ ybl.szie.hu).

Michihiro Kita, Prof. Ph. D., is with the Division of Global Architecture, Graduate School of Engineering, Osaka University, Osaka, Japan (e-mail: kita@arch.eng.osaka-u.ac.jp).

Energy Saving, Heritage Conserving Renovation Methods in Case of Historical Building Stock

Viktória Sugár, Zoltán Laczó, András Horkai, Gyula Kiss, Attila Talamon

***Abstract*—**The majority of the building stock of Budapest inner districts was built around the turn of the 19th and 20th century. Although the structural stability of the buildings is not questioned, as the load bearing structures are in sufficient state, the secondary structures are aged, resulting unsatisfactory energetic state. The renovation of these historical buildings requires special methodology and technology: their ornamented facades and custom-made fenestration cannot be insulated or exchanged with conventional solutions without damaging the heritage values. The present paper aims to introduce and systematize the possible technological solutions for heritage respecting energy retrofit in case of a historical residential building stock. Through case study, the possible energy saving potential is also calculated using multiple renovation scenarios.

***Keywords*—**Energy efficiency, heritage, historical building, renovation, technical solutions.

I. Introduction

THE buildings are responsible for more than 40% of the primary energy usage of the European Union. The energy usage of the buildings has been increasing constantly in the last 20 years [1]. Although the newly designed buildings must comply to very strict regulations concerning energy usage, the ratio of these modern structures is insignificant compared to the vast majority of ineffective buildings. As in Hungary, the exchange rate of the buildings (including demolitions and new constructions) is only 1.7% [2], the existing building stock should also be taken into account when considering energy efficiency of buildings.

Similar to other downtown areas in Europe, Budapest has an outstanding city center with historical buildings. The most characteristic building types of the inner districts were built around the turn of the 19th and 20th century [3].

Especially on the eastern side of River Danube, the so-called Pest, the significant part of the downtown building stock is in a run-down condition, causing unsatisfactory energy intake and insufficient life quality conditions for the residents. Also, as these districts are some of the most populated areas of Budapest [4], the problems affect extensive number of people.

To protect the historical values, these buildings should be sustained instead of demolition, which complicates the question of energy efficiency retrofit: the historical buildings of Budapest have distinctive, sculptural façade and other architectural elements, which cannot be modernized by using the most common insulation technologies, also the renewable energy utilization has its own boundaries in case of dense urban fabric [5].

As part of a complex study concerning the building stock of Budapest, capital city of Hungary, the authors survey the energy saving possibilities in case of historical buildings by using heritage respecting modernization technologies.

II. Previous Studies

There have been studies dealing with rehabilitation possibilities in case of the turn of the century building stock. Pattantyús [6] in his collective study introduces the characteristic structures and their renovation methods in case of tenement houses of Hungary.

Szalay et al. [7] as well as Hunyadi and Becker [8] surveyed the energetics of the historical fenestration and offered solutions for heritage protecting renovations.

Csoknyai et al. [9] in the boundaries of Tabula Epsicope project [10] created a residential building typology for the Hungarian building stock, as well as offered solutions for energy saving renovation. The National Building Energetics Strategy also introduces a typology for the building stock and declares country level aims for energy saving [11].

The authors' previous paper [5] collected and assessed the rehabilitation limitations in detail in case of this particular building type.

III. Characteristic Heritage Building Type of Budapest

A. Building Stock Typology of Hungary

There had been attempts before to survey and create a typology of the Hungarian Building Stock. The National Building Energetics Strategy [11] defines 15 different residential building types. The downtown area buildings mainly belong to the type Nr. 10 of the typology.

The statistical characteristics of the group are the following: "built before 1945, brick or stone walls, more than ten flats in an apartment house. 15.3% of the buildings are in a run-down condition, 50.1% is satisfactory. Vast majority of them is situated in urban areas, 88.3% in Budapest" [11].

Viktória Sugár is lecturer in Szent István University, Ybl Miklós Faculty of Architecture and Civil Engineering, and with the Centre for Energy Research, Hungarian Academy of Sciences, Budapest, Hungary (e-mail: sugar.viktoria@ ybl.szie.hu).

Zoltán Laczó, András Horkai, and Gyula Kiss (DLA.) are lecturers in Szent István University, Ybl Miklós Faculty of Architecture and Civil Engineering, Budapest, Hungary (e-mail: laczo.zoltan@ybl.szie.hu, horkai.andras.laszlo@ybl.szie.hu, kiss.gyula@ ybl.szie.hu).

Attila Talamon (Ph. D.) is lecturer in Szent István University, Ybl Miklós Faculty of Architecture and Civil Engineering, and with the Centre for Energy Research, Hungarian Academy of Sciences, Budapest, Hungary (e-mail: talamon.attila@ ybl.szie.hu).




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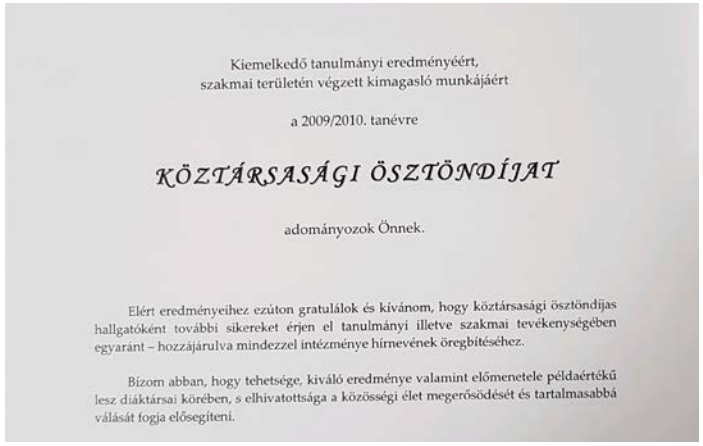

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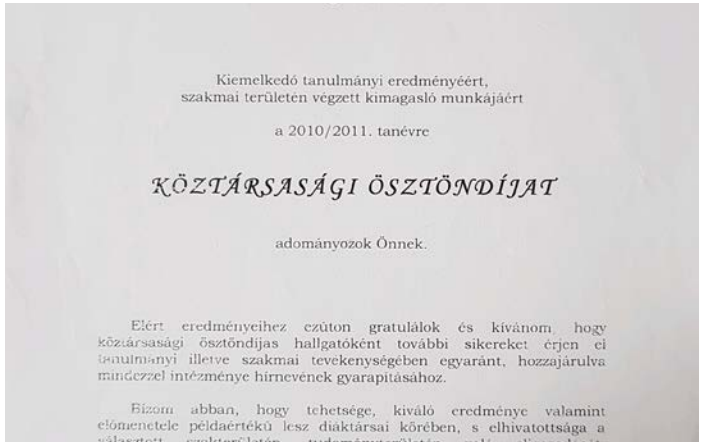
Elért eredményeihez ezúton gratulálok és kívánom, hogy köztársasági ösztöndíjas hallgatóként további sikereket érjen el tanulmányi illetve szakmai tevékenységében egyaránt – hozzájárulva mindezzel intézménye hírnevének öregbítéséhez.

Bízom abban, hogy tehetsége, kiváló eredménye valamint előmenetele példaértékű lesz diáktársai körében, s elhivatottsága a közösségi élet megerősödését és tartalmasabbá válását fogja elősegíteni.



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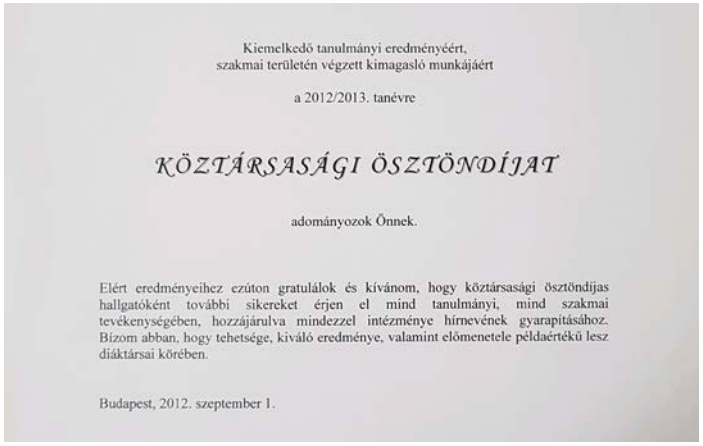
Elért eredményeihez ezúton gratulálok és kívánom, hogy köztársasági ösztöndíjas hallgatóként további sikereket érjen el tanulmányi illetve szakmai tevékenységében egyaránt, hozzájárulva mindezzel intézménye hírnevének gyarapításához.

Bízom abban, hogy tehetsége, kiváló eredménye valamint előmenetele példaértékű lesz diáktársai körében, s elhivatottsága a



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adományozok Önnek.

Elért eredményeihez ezúton gratulálok és kívánom, hogy köztársasági ösztöndíjas hallgatóként további sikereket érjen el mind tanulmányi, mind szakmai tevékenységében, hozzájárulva mindezzel intézménye hírnevének gyarapításához. Bízom abban, hogy tehetsége, kiváló eredménye, valamint előmenetele példaértékű lesz diáktársai körében.

Budapest, 2012. szeptember 1.

AMELY TANÚSÍTJA, HOGY

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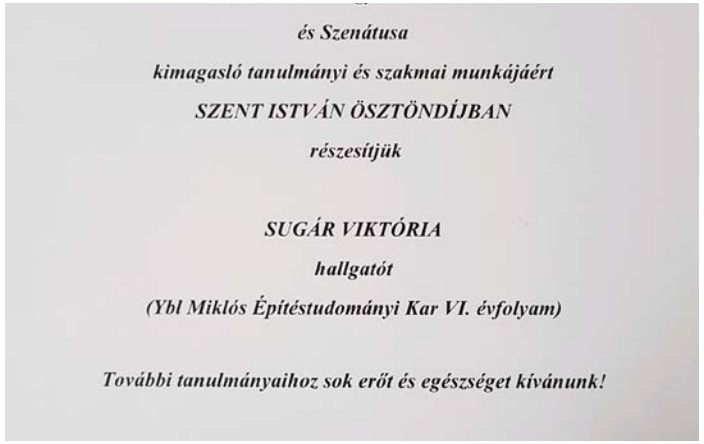

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hallgatót

(Ybl Miklós Építéstudományi Kar VI. évfolyam)

További tanulmányaihoz sok erőt és egészséget kívánunk!

Tisztelt Pályázó,

Ezúton értesítem, hogy a 2017/18. tanévre beadott ÚNKP pályázatát 10 hónapos ösztöndíjas kutatási időszakra a SZIE támogatta az EMMI pedig jóváhagyta.
Az ösztöndíj elnyeréséhez szeretettel gratulálok!

Üdvözlettel:

Törökné Hajdú Mónika
hivatalvezető
Doktori, Habilitációs és Tudományszervezési Hivatal

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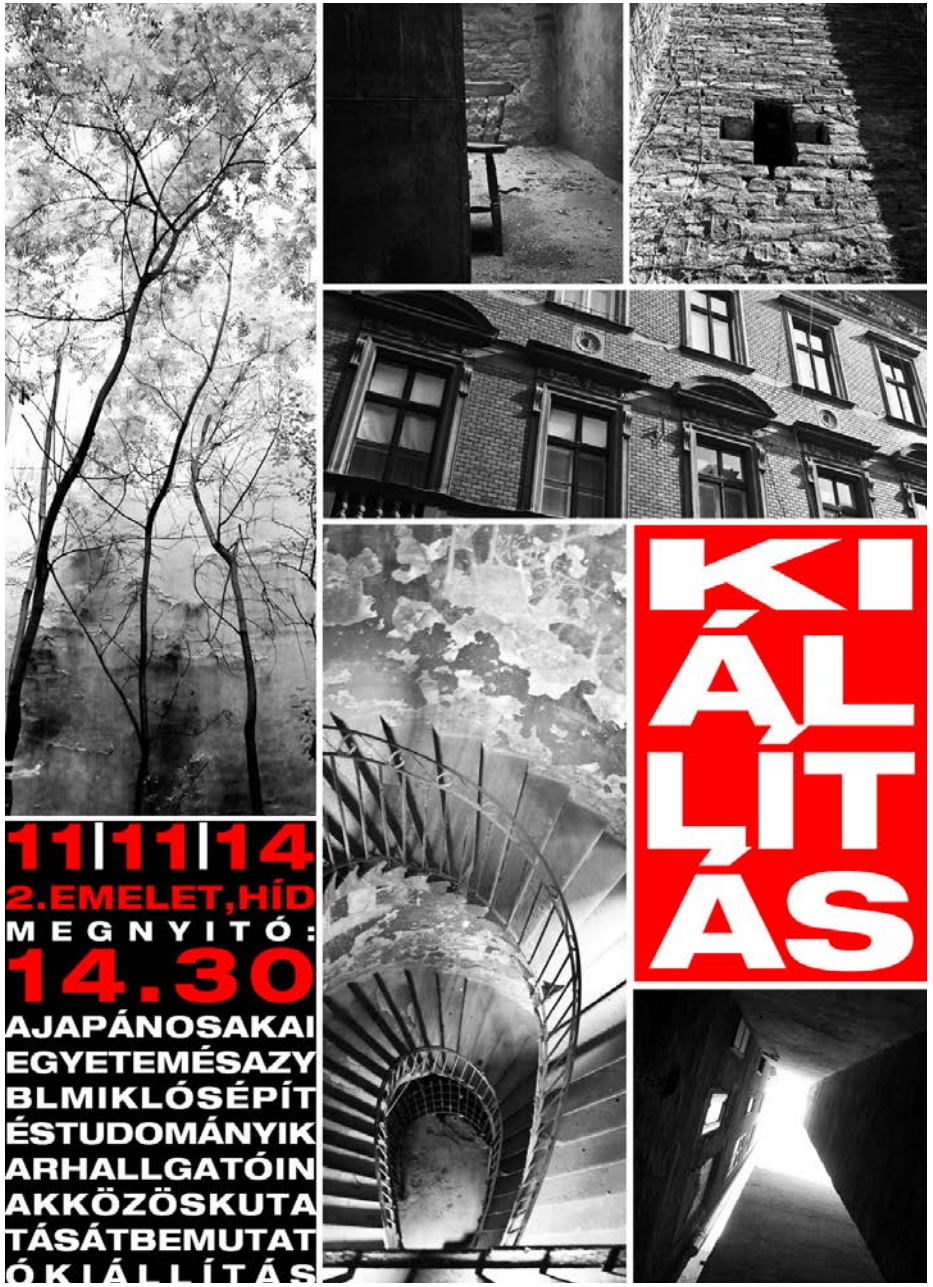

Kiállítás

Címe	Osaka University - SZIE Ybl Miklós Építéstudományi Kar közös kutatása
Helye	SZIE Ybl Miklós Építéstudományi Kar
Ideje	2011.11.14.-12.14.
Munkatárs	Mikula Csaba

Kiállítás

Címe	YBL MSC Diploma kiállítás
Helye	FUGA Budapesti Építészeti Központ
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Munkatárs	Markó Balázs, Ungvári Mihály, Sugár Viktória
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Kiállítás

Címe	Ybl Bicentenáriumi Emlékév, Ybl Miklós szakrális épületei
Helye	Szent István Bazilika
Ideje	2014.07.23.-10.01.
Munkatárs	Markó Balázs, Ungvári Mihály, Sugár Viktória
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Kiállítás

Címe	Ybl Bicentenáriumi Emlékév, Ybl Miklós épületeit bemutató makettkiállítás
Helye	Magyar Nemzeti Múzeum
Ideje	2014.10.28.-11.30.
Munkatárs	Markó Balázs, Anthony Gall, Ritoók Pál, Ungvári Mihály, Mizsei Anett, Mucsi Zsuzsanna, Sugár Viktória
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