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**MULTI-STORY ATTACHED HOUSES
IN ZAGREB BETWEEN 1850 AND 1927**

ORIGINAL SCIENTIFIC PAPER
UDC 728.1 (497.5 ZAGREB)"18/19"

**VIŠEKATNE UGRAĐENE KUĆE U ZAGREBU
IZMEĐU 1850. I 1927.**

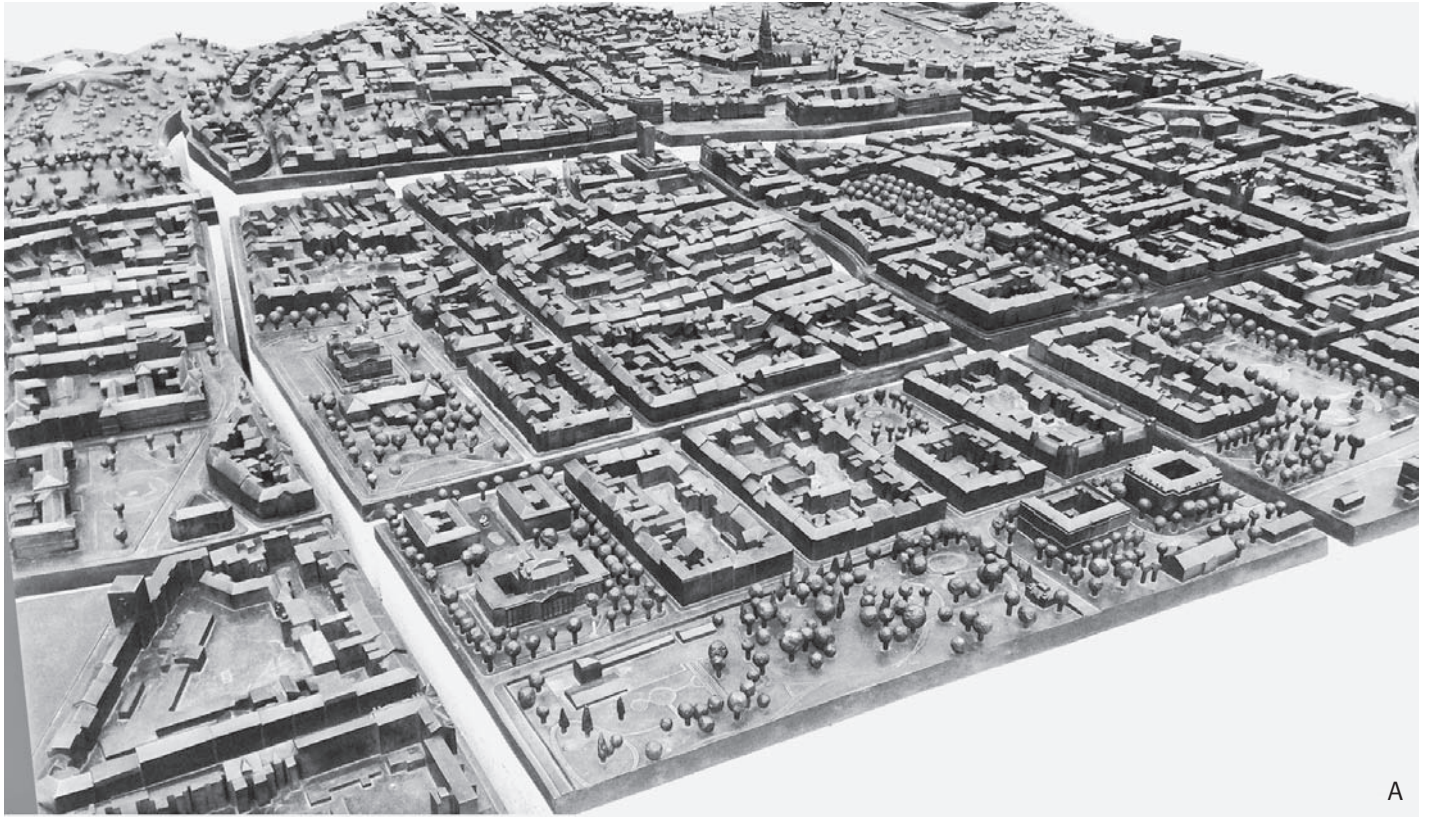
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FIG. 1. A) BRONZE MODEL OF THE LOWER TOWN AREA, DISPLAYED AT THE CORNER OF BAKAČEVA AND CESARČEVA ST, IN THE VICINITY OF BAN JOSIP JELAČIĆ SQ, ZAGREB;
 B) ATTACHED BUILDINGS OF LOWER TOWN AREA BUILT FROM 1848 TO 1918

SL. 1. A) BRONČANI MODEL DONJEGA GRADA POSTAVLJEN NA UGLU BAKAČEVE I CESARČEVE ULICE, U BLIZINI TRGA BANA JOSIPA JELAČIĆA, ZAGREB;
 B) UGRADENE ZGRADE NA PODRUČJU DONJEGA GRADA IZGRADENE U RAZDOBLJU IZMEĐU 1848. I 1918.

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MULTI-STORY ATTACHED HOUSES IN ZAGREB BETWEEN 1850 AND 1927

VIŠEKATNE UGRAĐENE KUĆE U ZAGREBU IZMEĐU 1850. I 1927.

ATTACHED APARTMENT HOUSE
 ATTACHED TENEMENT HOUSE
 AUSTRIA-HUNGARY
 JEWS
 ZAGREB (AGRAM)
 1848-1927

UGRAĐENA NAJAMNA KUĆA
 UGRAĐENA NAJAMNA KASARNA
 AUSTRO-Ugarska
 ŽIDOVİ
 ZAGREB (AGRAM)
 1848.-1927.

Three-and-more story attached houses in Zagreb emerged sequentially after the unification of Gradec and Kaptol in 1850, according to the first modern Building code after its enforcement in 1857 and according to the new Building renewal and improvement plan of 1888 after the devastating earthquake in 1880. From 1892 to the beginning of the First World War a few new types of attached houses finally shaped the Lower Town, an area of rectangular building blocks between the railway lines, planned barracks areas and the northern slopes of the city.

Dvokatne i višekatne ugrađene kuće pojavile su se u Zagrebu odmah nakon ujedinjenja Kaptola i Gradeca 1850. godine, prema novomu Građevinskom redu nakon njegova stupanja na snagu 1857. godine, odnosno prema planu obnove starih i gradnje novih zgrada iz 1888. poslije razornog potresa 1880. godine. Između 1892. i početka Prvoga svjetskog rata nekoliko je novih tipova ugrađenih kuća konačno uobličilo Donji grad, područje pravokutnih građevnih blokova između željezničkih pruga, planiranih sklopova kasarni i sjevernih gradskih obronaka.

INTRODUCTION¹

UVOD

Virtually rectangular area of building blocks in the center of Zagreb, colloquially known as the Lower Town (Fig. 1), has recently been confirmed as a balanced ensemble worth admiring.² However, typologies of contained buildings remained somewhat obscure, in spite of a few excellent research projects carried out in this century.³ To span this gap, a research project was undertaken in the City Archives in Zagreb, where almost all the legal documentation concerning private building entrepreneurship has been preserved.

Average Continental European town house⁴ is analogous to the English terraced house⁵ in terms of its position and the relative orientation of its circumferential walls. They both have a street façade (front), a yard façade, and two sides adjacent to the neighboring houses. The important difference is the shape of the corresponding city block: whereas English city blocks are rows of houses closed with two opposite semidetached members, their Continental European counterparts⁶ have a more rectangular shape, flanked on edges with corner houses⁷ having two fronts in crossed streets. Therefore the term terraced house cannot be used when referring to a common Continental European town house. Instead, the term attached house is appropriate. It is linguistically coherent with a respective term semidetached house, where for the third member (a detached house) the synonym – a free standing house is in frequent

use today. Consequently, in this article the term attached house will be used for a common Continental European town house and subsequently for its Zagreb derivative in the second half of 19th century. For consistency reasons the American definition of a story and its way of counting is used hereinafter.

LITERATURE

LITERATURA

Contemporary nineteenth century literature on the subject started to flourish in professional publications, mostly with articles where particular architects and builders shared their views with other colleagues. In the English speaking world, dictionaries or thesauruses on the subject were issued and reissued frequently. A prominent one was *A Dictionary of Architecture and Building: Biographical, Historical and Descriptive*, a three volume set edited by Russell Sturgis.⁸ Articles on apartment house and tenement house were written by George Hill.

Contemporaneous German approach differentiated in making more conversant monographs, leveled by proficiency of the intended public. Ludwig Klaser's so called *Grundriss-vorbilder* were designated mainly for craftsmen (builders, carpenters, masons), with plain descriptive text approach, provided with plates. Their first volume was *Wohn- u. Geschäftshäuser*.⁹ More elaborated was Albert Geul's twofold monograph, *Die Anlage der Wohngebäude & Die Äussere der Wohngebäude*, again with text (in Fraktur) and plates.¹⁰ Since the author was a professor at the *Technische Hochschule* in Munich¹¹ from its founding in 1868, his text incorporated academic writings with analytical approach.

¹ In memory of Architect Aleksander Laslo (1950-2014).

² I wish to thank the reviewers of this article and other editorial staff for their meticulous work on the improvement of this article, making it more pleasant for the reader. I also wish to thank Prof. Zlatko Juric, PhD, for his continuous encouragements during the long and sometime exhaustive research in the City Archives in Zagreb. Special thank goes to Prof. Dragan Damjanovic, PhD, for supplying me with unique Herman Bolle's plan of its own apartment house in 6 Žerjaviceva Street, a valuable asset for future comparisons. Finally, an overwhelming approach would be unthinkable without generous help of all the members of the Archives staff, headed by the Chairman Prof. Darko Rubčić. Last but not least, it is my duty to remember late Architect Aleksander Laslo, whose pioneering role in the research of both the Austro-Hungarian and the Kingdom of Yugoslavia periods of architectural history of Zagreb, should be inspiring.

³ BLAU, RUPNIK, with contributors, 2007

⁴ STÜBBEN, 1907: 22

⁵ KLASER, 1880: 69-70

⁶ STÜBBEN, 1890: 54-61

⁷ STÜBBEN, 1923: 30

⁸ STURGIS, 1989

⁹ KLASER, 1880

¹⁰ GEUL, 1885; GEUL, 1893

The most scientific subject of its time, self-verified during three consecutive editions¹² in more than thirty years, was Joseph Stübben's first chapter of his seminal¹³ handbook *Der Städtebau* in edition *Handbuch der Architektur*, simply called *Die städtischen Wohnungen*. The author succeeded in contextualizing the position of various European and North American dwelling types inside average city blocks of the time by exercising necessary technical knowledge.¹⁴

Recent insight into history of dwelling types may be demonstrated by three paradigmatic monographs. Stefan Muthesius, a great grandnephew of Herman Muthesius, brilliantly researched and analyzed Great Britain's most characteristic building type in *The English terraced house*.¹⁵ A more international comparative study was made by Robert Olsen, where one can find cultural interactions from three most important world metropolises in the middle of the 19th century: London, Paris and Vienna.¹⁶ Richard Plunz examined residential building types from the 19th century New York City in an exhaustive study, carefully displaying many unknown details of design and execution of these edifices.¹⁷

To my best knowledge, late Aleksander Laslo wrote the first introductory article published in English on the architecture of Zagreb from the second half of the 19th century until the beginning of First World War, as a part of an intercultural art history study of Austro-Hungarian Empire and its immediate successor states.¹⁸ However, a lighthouse of serious interactions into the Zagreb building practices remains the aforementioned *Project Zagreb: Transition as Condition, Strategy, Practice*, where Eve Blau and Ivan Rupnik with their contributors presented a history of urbanization of the Zagreb area from the Revolution in

1848 until today as a synchronized chain of strategically conditioned events. Such an approach is fully acknowledged when looking at the military or political history of Zagreb.

Recently, Mirela Slukan Altić published an article under the title *Morphological and Functional Change in the Zagreb Lower Town (Donji Grad) 1862-1914 Based on Cadastral Sources*.¹⁹ In spite of some errant illustrations²⁰ it succeeded in perceiving morphological alterations of contemporary urban fabrics from cadastral surveys of the Lower Town.

With reference to the literature in Croatian, it might be summarized that there exists a dozen or more formative articles or books, most of them unfortunately not translated into English as a whole. Late Professor Emeritus Ivo Maroević had commenced a scientific revalorization of historic styles in the domestic architecture of the Lower Town in seminal articles *About historicism in Zagreb*²¹ and *A proposal for a typology of Zagreb domestic architecture in the second half of the 19th century*.²² Snješka Knežević researched origins and formation of the *Green Horseshoe of Zagreb*²³, a U-shaped ensemble in the middle of the Lower Town.

The author published a series of articles about Zagreb apartment houses and their legal conditions: *Built-in Apartment Houses in Zagreb between 1928 and 1934*; *Built-in Apartment Houses in Zagreb between 1935 and 1945*; *Corner House in Zagreb between 1928 and 1944*; *Building Code for the City of Zagreb between 1850 and 1918*; *Building Code for Zagreb between 1919 and 1931 and Law on Building from 1931* and finally *Projects and Realizations by Vladimir Šterk in Zagreb between 1923 and 1941*.²⁴

11 Today TU Munich

12 STÜBBEN, 1890; STÜBBEN, 1907; STÜBBEN, 1923

13 BERGDOLL, 2000: 265-266

14 BERGDOLL, 2000: 265-266

15 MUTHESIUS, 1990

16 OLSEN, 1986

17 PLUNZ, 1990

18 LASLO, 1999

19 SLUKAN ALTIĆ, 2006

20 At *Figurae 2-10*, the Südbahnhof and the corresponding complex of Kronprinz Rudolf barracks appears erroneously diminished and posted some 250 meters in the NE direction from its actual position. [SLUKAN ALTIĆ, 2006: 6-11, 13-15]

21 MAROEVIĆ, 1977: 123

22 MAROEVIĆ, 1987: 165

23 KNEŽEVIĆ, 1996: 9

24 KAHLE, 2002: 155; KAHLE, 2003: 33; KAHLE, 2004.a: 77; KAHLE, 2004.b: 203; KAHLE, 2006: 117; KAHLE, 2008: 193

25 STURGIS, et al., 1989: III, 659

26 STURGIS, et al., 1989: II, 907

27 This practice was disrupted as of 1940, when contemporary Building code stipulated counting mezzanines as regular stories.

DEFINITIONS

DEFINICIJE

A story (BE: storey) is a primary vertical level unit in a building. Ordinary building is vertically divided by floors, i.e. it has more stories (BE: storeys).²⁵ Conventionally, a number of stories is given including the ground floor, i.e. four-story building comprises the first story (BE: the ground floor) and three consecutive stories (2nd to 4th story; United Kingdom: 1st to 3rd storey). Therefore, three-and-more story house would designate a house with at least two equal stories used for dwelling.

A mezzanine is the story with a lower ceiling than a regular story and is usually not counted as such.²⁶ However, a common practice in Zagreb in those times was to designate a regular story as a mezzanine, to legally erect a building with one story more than prescribed by the Building code.²⁷ Therefore a

standard mezzanine story is counted here as a regular story.

Attic is usually the space immediate below rafters of a double pitched, mansard or flat roof. If it was used for residential purposes as per an occupancy permit, then it is counted here as a regular story.²⁸

A closed type of construction is a spatial organization where houses are usually built side by side: in the United Kingdom, the Netherlands, in the northern parts of Germany and in the United States in rows, whereas in other parts of Europe which were under substantial German influence, in blocks.²⁹

An attached residential building is an edifice built for predominantly residential purposes in blocks, consisting of at least two stories above ground; subtypes might be: attached house: a residential building with a principal residential area, built mostly for the upper classes, that may contain a few minor apartments; attached apartment house: a residential building with some usually equal residential areas to let (apartments) built mostly for the middle or upper middle classes³⁰, they may contain a few minor tenements in the basement or attic, usually for paid housekeepers; and the attached tenement house: a residential building with a lot of equal substandard residential areas to rent (tenements) built for the lower classes.³¹

Building permit is a license allowing the commencement of a construction of an edifice, usually granted by the City construction office or a City council. Likewise, an occupancy permit is a license allowing the commencement of the use of an edifice. Their data of approval or issuance may enable the synchronization of events in the emergence of a particular building type.

THE METHODOLOGY OF RESEARCH

METODOLOGIJA ISTRAŽIVANJA

A comprehensive research of legal documentation of attached buildings erected in the period between 1857 and 1927 was conducted at the City Archives in Zagreb, 27 Opatička Street, from September 2008 until December 2013. Attached residential buildings erected from 1928 to 1945 were researched and published before in articles in periodical "Prostor" in the Croatian language, where terminus "built-in" instead of "attached" was used.³²

Edifices that were researched were all those with at least two stories above ground³³, whether they were of residential or of some other use, originally mostly public. Semidetached buildings were included, but only as closing members of an area of attached buildings. Therefore all eligible semidetached edi-

fices had to have an entrance from the street.³⁴ Buildings with only basement and first story or less were ineligible. Another important condition was that the edifice had to be erected from the beginning, i.e. no edifices built on existing basements or built connected to preserved yard buildings were eligible.³⁵ Unexecuted projects of above described edifices officially submitted for approval were also taken into a research database as an autonomous class. Finally, edifices present and inventoried on the field but whose projects and/or permits were not present at the City Archives made another class. During the process of data mining, a working copy of a database of attached buildings in Microsoft Access© was made.³⁶

Time boundaries were taken according to occurrences which shaped the emerging and flourishing of the types of attached buildings. Consequently, four time spans were created: from unifying of Gradec and Kaptol into Zagreb in 1850 to the earthquake in 1880 (1851-1880), further from the earthquake to doubling the city territory through annexation eastwards of further municipalities in 1900 (1881-1900), then from doubling city territory to the dissolution of Austro-Hungarian Empire in 1918 (1901-1918) and literally as an aftermath, first years of Kingdom of Serbs, Croats and Slovenes until January 1st, 1928 (1919-1927).³⁷ From the typological point of view one can make new, two time spans, according to the ratio of two story attached houses alone taken as one class and three-and-more story attached houses as the other class. In the time span from 1850 to 1891 the ratio is roughly equal, where in the time span from 1892 to 1927 the ratio is roughly four or five to one in favor of the three-and more-story attached houses.

²⁸ STURGIS, et al., 1989: I, 170

²⁹ STURGIS, et al., 1989: I, 309; Block: D&E

³⁰ STURGIS, et al., 1989: I, 82-89

³¹ STURGIS, et al., 1989: III, 777-781

³² KAHLE, 2002: 155; KAHLE, 2003: 33; KAHLE, 2004.a: 77

³³ A building which has a ground and the principal floor, regardless of the existence of the basement.

³⁴ On the other hand, many two stories semidetached or detached residential buildings in the so called the Villenviertel (villa part) of Zagreb possess same floor plans as their attached counterparts in blocks, except that the entrance is opposite to the street, which enables two identical floor plans on the main stories (ground and principal floor), i.e. they were simply derived from attached buildings.

³⁵ Later it was the reason for not including the seminal Klein's street building in 19 Ilica Street into the database. Contemporary legal documents in German (then the official language of the Agram city officials) mentions the building as an *Anbau* (En: extension).

³⁶ The completed database will be published as a supplement set of tables to the book "Attached Houses in Zagreb from the Revolutions of 1848 to the Cominform Resolution of 1948: Typologies, Morphologies and Meanings".

³⁷ A time boundary of former research see: KAHLE, 2002.

DEVELOPMENT OF THE CITY OF ZAGREB REGARDING THE RAILWAY, BUILDING CODE AND AREAS OF CLOSED TYPE OF CONSTRUCTION

RAZVOJ ZAGREBA U ODNOSU NA ŽELJEZNICU, RED GRADENJA I ZATVORENI NAČIN IZGRADNJE

Railway projects in the Croatian territory in the first half of 19th century were planned in

38 First project, proposed by Army Captain Josip Knežić (Knesich) in 1829, was a cable rail from Sisak (Sissek) to Karlovac (Carlstadt). Another project, proposed by the same author in 1838, was a horse railway from Sisak (Sissek) to Bandino Selo (Bandinoszelo), with a road connection to Josipdol (Josefsthal) and further to Senj (Zengg). [KÖSTER, 1999: 56-67]

39 A project for the horse railway from Sisak (Sissek) to Karlovac (Carlstadt), designed by the Italian Civil Engineer Marcantonio Sanfermo in 1842, was proposed by the citizens of Rijeka (Fiume) and backed up by Karl Ludwig von Bruck, a future Secretary of Finance of the Austrian Empire during the time of Neo-absolutism. [STULLI, 1975: I, 389-425]

40 German language was an official language of communication between dominions and court administration until the creation of Transleithania in 1867, regarding the imperial military matters further until the dissolution of Empire in 1918. Therefore all respective official names of corresponding places and institutions are given.

41 His remarks were made in a letter to the future Hungarian Regent – President Lajos Kossuth in Rijeka (Fiume) on September 18th, 1845 [STULLI, 1975: I, 495-502]. More about Carl Friedrich Zimpel (1801-1879) can be found on German Wikipedia: http://de.wikipedia.org/wiki/Carl-Friedrich_Zimpel.

42 KREUTER, 1848: 17-18. He put a semiofficial term Croatian Railway in circulation (Croatische Bahn, KREUTER, 1848: 27). More about Franz Jakob Kreuter (1813-1889) can be found on German Wikipedia: http://de.wikipedia.org/wiki/Franz_Jakob_Kreuter.

43 Hrv.: *Zagreb Glavni kolodvor* [KREUTER, 1848: 27]

44 STURGIS, et al., 1989: I, 714, Croatia, Architecture of.

45 Hrv.: *Krunovina*. According to this legislation, Croatia became legally equal with Hungary and stayed in this position until the Croatian-Hungarian Settlement in 1868. German language was introduced and used as the official Dominion language until 1860, although some important bills and codes were translated into Croatian, e.g. Ordinance ... on proceedings of Sanitary Police in the State Capital Zagreb, De: Verordnung ... über Handhabung der Reinlichkeitspolizei in der Landeshauptstadt Agram, Hrv.: *Naredba ... o rukovanju redarstva za čistocu u zemaljskom glavnom gradu Zagrebu* (1856).

46 Hrv.: *Zemaljski glavni grad Zagreb*

47 KÖSTER, 1999: 180

48 De: "so weit als möglich" [KÖSTER, 1999: 234]

49 KÖSTER, 1999: 259

50 De: (C)roatische Bahn [HORN, 2007: 195-197]; De: (K)roatische Bahn, in "Concessions-Urkunde" of the "Südbahngesellschaft" from September 23rd, 1858 [*** 1868: 62-91]; no Croatian contemporary terminus existed. They were subjugated to Südbahn with uncompleted double-track banks from Zidani Most to Krsko (De: Gurkfeld), then Dominion of Styria, today a part of modern Slovenia.

51 KÖSTER, 1999: 260. Two years later, 1856, the Chief of Staff of the Austrian Military Feldmarschalleutnant Hess made a strategic evaluation of the projected network for military transportation. He pointed out that the projected network ... is sufficient to the endeavor of thoroughly connecting all important cities and fortresses among each other. (De: "Das genügte dem Bestreben, möglichst flächendeckend alle wichtigen Städte und Fortifikationen untereinander zu verbinden.") [KÖSTER, 1999: 225]

52 Hrv.: *Zagreb Južni kolodvor*, today Hr: *Zagreb Zapadni kolodvor* [KNEŽEVIĆ, 1996: 20]

53 KAHLE, 2007: 68

54 BEDENKO, 2000: 97

areas remote from Zagreb.³⁸ The most elaborated contemporary project amended future railway station about eight kilometers southwards from the cities of Gradec and Kaptol at the opposite bank of the Sava River.³⁹ Subsequently, German railway enthusiast and the United States citizen Carl Friedrich Zimpel pointed out in 1845 that Zagreb (Agram)⁴⁰ with regard to its capital positions is a unique focal point for establishment of water, road and rail communications in Croatia.⁴¹ German architect and a civil engineer Franz Jakob Kreuter⁴² proposed in 1848 a railway node in Zagreb with the railway station near the today's Zagreb Main Railway Station⁴³, as a constitutive part of the project for a railway line from Zemun (Semlin) to Rijeka (Fiume).

Centralization and equalization of the Austrian Empire after the Revolutions of 1848 elevated Zagreb⁴⁴ to a capital city of the Dominion (*Kronland*) of Croatia and Slavonia.⁴⁵ In 1850, the new Emperor Francis Joseph I (born 1830, ruled from 1848, deceased 1916) consequently ordered unification of former cities Gradec and Kaptol and a few surrounding villages into the State capital Zagreb (*Landeshauptstadt Agram*).⁴⁶ Military success at the Italian battlefield in 1849 and successful mobilization against Prussia in 1850-51⁴⁷ assured the imperial administration to reassign the existing railroad network and its expansion plans to the military needs, with demand on double-track railway lines wherever possible.⁴⁸ Zagreb was designated as one of the most important military nodes in Croatian and Hungarian parts of the Empire.⁴⁹ A concession was consecutively laid down for Croatian Railways.⁵⁰

In 1852 military authorities demanded from civil administration a comprehensive plan for completion of the railroad network in the Monarchy, which was technically carried on by Carl Ritter von Ghega and completed next year.⁵¹ Prioritizing the Vienna-Trieste double-track railway line, he projected a connecting double-track line from Zidani Most (Steinbrück) to Sisak (Sissek), with branch lines to Karlovac (Carlstadt) and Nagykanizsa (Kanizsa) respectively. Therefore the new Zagreb railway station (*Bahnhof Agram*, today Zagreb West Railway Station) was finally positioned more westwards, to the embarrassment of contemporary citizens.⁵² Still, the upcoming railway to Zagreb meant two important things. First, new gauge banks made an ideal defense against permanent floods thus enabling a huge possibility for settlement⁵³, and second, the railway transport soon enabled the use of new structural materials like steel beams or decorative front elements like plaster statues or stone slabs⁵⁴, much later Siegart reinforced concrete beams.

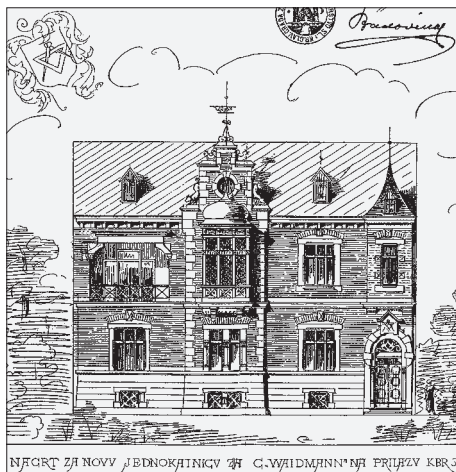


FIG. 2. CUNO WAIDMANN: TWO-STORY ATTACHED HOUSE WAIDMANN, 4 DEZELICEVA ST, 1887, FRONT, TODAY: CANADIAN EMBASSY

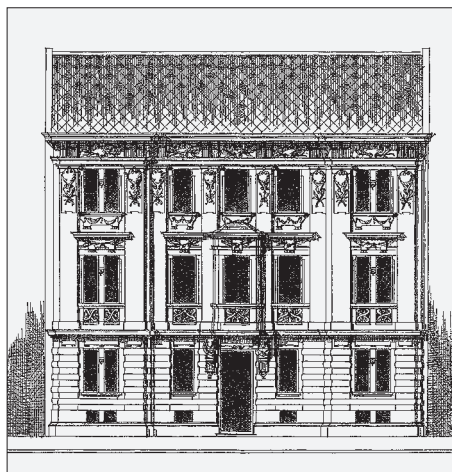
SL. 2. CUNO WAIDMANN: JEDNOKATNA UGRADENA GRADANSKA KUĆA WAIDMANN, DEZELICEV PRILAZ 4, 1887., PROČELJE, DANAS: AMBASADA FEDERALNE KRALJEVINE KANADE

FIG. 3. LEO HÖNIGSBERG & JULIO DEUTSCH: THREE-STORY ATTACHED APARTMENT HOUSE KOOS, 60 PALMOTICEVA ST, 1897, FRONT, APPROVED UNEXECUTED VARIANT

SL. 3. LEO HÖNIGSBERG & JULIO DEUTSCH: DVOKATNA UGRADENA NAJAMNA KUĆA KOOS, PALMOTICEVA 60, 1897., PROČELJE, ODOBRENA NEIZVEDENA INAČICA

FIG. 4. ANON.: FOUR-STORY ATTACHED APARTMENT HOUSE VRBANIĆ, 27 ILICA ST, 1859, THREE-STORY FRONT IN AN APPROVED PROJECT, FOUR-STORY FRONT ADJUSTED TO THE EXECUTED BUILDING BY THE AUTHOR, TORN DOWN IN 1906

SL. 4. ANON.: TROKATNA UGRADENA NAJAMNA KUĆA VRBANIĆ, ILICA 27, 1859., ODOBRENO PROČELJE ZA DVOKATNU KUĆU, A PRILAGODENO TROKATNOJ KUĆI, PREMA IZVEDENOM STANJU, PRILAGODIO: AUTOR, SRUŠENO 1906.



The State government (*Landesregierung*)⁵⁵ issued a Building Code for the Capital City of Zagreb (*Bauordnung für das Landeshauptstadt Agram*)⁵⁶, which was enforced on February 1st, 1857⁵⁷ and was valid until the year 1940. Building code inaugurated principles for laying out rectangular city blocks in a closed type of construction. Two- or more story attached house was put as an element of city regulation. Walls, vaulted cellars, passages and stairways were to be brick made. Floors of upper stories were allowed to be of wooden beams. The first story was to be risen above the pavement for 3/4 m, to enable natural ventilation of the basement. Roofs were prescribed as tiled double-pitched commonly with beaver-tail tile (*Biberschwanz*) roofing. New regulation plan was also demanded from the City Construction and Fire Council (*Bau- und Feuerlösch- Commission*).⁵⁸ This building code, together with a future regulation plan were made and enacted under the enormous influence of the military and the railway.

Parallel position of the new four-story government building (today the Seat of the University of Zagreb), erected from 1856 to 1859⁵⁹ with the new railway station, built from 1861 to 1862, may indicate the existence of the oldest part of Lower Zagreb regulation plan at least in the year 1856, as mutually arranged with the construction authorities. It was a simple rectangular plan with two new longitudinal streets, today Deželicev Prilaz and Klaićeva Street⁶⁰, perpendicular to five new transversal streets, today partially rectified Medulićeva, Kacićeva, Primorska, Krajiška and Reljkovićeve Streets (the last one as a chaussee-like connection with Ilica Street and new Railway Station Square). However, the military reserved a vast area in the close northeastern vicinity of railway station (today Dr. Franjo Tuđman Square) to place future barracks. The final version of this area in the



new regulation plan disrupted Prilaz from Reljkovićeve Street and added a new connector street from Ilica Street to the railway station at the east border of the designated military area (today Republike Austrije Street).

At the middle of the 19th century world markets became obsessed with investments in railways, in the United States as pure market speculations after the Mexican-American War in 1846-48, but in the Neo-absolutist Austrian Empire as an administration-driven military enterprise. In 1857 the American market shock soon became the "Railway crash" and flooded all the markets in Northern America and Europe, and finally Vienna as well.⁶¹ The crash slowed expansion plans, but did not halt them. Consequently, the railway line from Zidani Most to Sisak was finished in 1862 with simple steel Howe truss bridge across the river Sava. One of the first detached apartment houses in Zagreb was the *Südbahn* house, finished together with the railway station in 1862 and placed in its close northeastern proximity as one of two flanked residential buildings to the station, thus making an emerging railway square. A branch line from south embankment of the Sava River to the important military fortress Karlovac was opened in 1865. In the same year a new regulation plan was confirmed⁶² at the Croatian Court Chancellery (*Die kroatische Hofkanzlei*)⁶³ as an amalgam of more rectangular

55 Hrv.: *Visoka zemaljska vlada*

56 Hrv.: *Red gradjenja za Zemaljski glavni grad Zagreb*

57 *** 1914: 1

58 Hrv.: *Gradjevno-vatrogasni odbor*, replaced in 1881 with City Construction Office (Hrv.: *Gradski gradjevni ured*).

59 KNEŽEVIC, 1996: 22

60 It is quite possible that the third longitudinal street in this mutual plan was supposed to be the today's Dalmatinska Street.

61 *** 2014: 1-6

62 KAHLE, 2007: 69



blocks from the railway station, to Frankopanska Street / Savska Street and more adjusted blocks to existing street pattern from the government building (today the Seat of the University building) to the Draškovićeva Street (Fig. 1). The railway station and the government building were flanked with squares (aforementioned railway square as today the French Republic Square resp. government square as today Marshall Tito Square).

Due to the turbulent political and war affairs in the Austrian Empire which were reconciled by the Austro-Hungarian Compromise⁶⁴ in 1867, main decisions concerning town planning and railway networking were resolved as political compromises. Such one was the branch railway line to Nagykanisza, which was supposed to be built as soon as traffic volumes on other Südbahn lines in close neighborhood would allow that.⁶⁵ The aforementioned regulation plan contained at least six variant solutions of this line in the Zagreb area, whereas the most favorable solution regarding the future settlement area was built in 1870. In 1868, the Dominion of Croatia and Slavonia was submerged into the Hungarian part of the Habsburg Monarchy as an internally self-governed dominion called the Triune Kingdom of Croatia, Slavonia and Dalmatia⁶⁶, enlarged by the annexation of the Croatian and Slavonian parts of the former Military Frontier in 1881. Another reserved

land area northeast of the projected main railway station became visible in the second Regulation plan from 1888. The New Hungarian State railway station (today's Zagreb Main Railway Station) was finished in 1892.⁶⁷

ANALYSIS

ANALIZA

Two-story attached residential buildings –

The main reason for including two story attached buildings into the research was the fact that certain parts of the Lower Town were erected with this class of apparently smaller buildings, especially Deželicev Prilaz, parts of Dalmatinska, Medulićeva, Kačićeva, Primorska and Klaićeva Streets in the western part, parts of Gajeva, Masarykova, Preradovićeva, Gundulićeva and Hebrangova Streets in the central part, as well as many streets that were at that time periphery (Podolje, Slovenska, Savska Streets etc.). Reasons were twofold: two story apartment houses were cheaper to build, easier to manage and later simpler to intersect into a reasonably great number of tenements, which would occur permanently after the turn of the century, especially in the consecutively arranged quadrant northeastern of Maksimirska and Domjanićeva Streets (Kuhaćeva, Eisenhutova, Fijanova, Padovćeva Streets etc.). Second, immediately after the earthquake in 1880 many new landlords erected two story houses as their homes, principally in blocks around Hebrangova, Preradovićeva, Berislavićeva and Gundulićeva Streets, but notably fewer in Deželicev Prilaz and its surroundings.

It has to be stated that some residential arrangements were pioneered in this class of houses. Examples are: an unexecuted project from 1873 for a two story tenement building in 8 Medulićeva Street, made by the master builder Luigi Gagliardi, with a gallery where one can enter into the kitchen from the gal-



FIG. 5. FRANZ KLEIN & JANKO NIKOLA GRAHOR SENIOR: THREE-STORY CORNER APARTMENT HOUSE SIEBENSCHN, 2 PRERADOVIĆEVA ST, 1873, FRONT FROM PRERADOVIĆEVA (CVJETNI) SQ, RADICALLY REMODELED

SL. 5. FRANZ KLEIN & JANKO NIKOLA GRAHOR SENIOR: DVOKATNA UGRADENA UGAONA NAJAMNA KUĆA SIEBENSCHN, PRERADOVIĆEVA 2, 1873., PROČELJE S PRERADOVIĆEVA (CVJETNOGA) TRGA, RADIKALNO PROMIJENJENO

FIG. 6. JANKO JAMBRISAK, FRANZ KLEIN & JANKO NIKOLA GRAHOR SENIOR, ET AL.: FRONTS OF THE THREE-STORY ATTACHED HOUSES IN MARIA VALERIA ST, TODAY PRASKA ST, 1868-1876

SL. 6. JANKO JAMBRISAK, FRANZ KLEIN & JANKO NIKOLA GRAHOR SENIOR I DR.: PROČELJA DVOKATNIH UGRADENIH NAJAMNIH KUĆA U ULICI MARIJE VALERIJE, DANAS PRASKA, 1868.-1876.

⁶³ The Chancellor (*Hofkanzler*) was at the time Ivan Mazuranić, later Viceroy from 1873 to 1880. [WILLOWEIT, LEMBERG, 2006: 393]

⁶⁴ By making Austria-Hungary, formally known as the Kingdoms and Lands Represented in the Imperial Council (Cisleithania) and the Lands of the Holy Hungarian Crown of Saint Stephen (Transleithania).

⁶⁵ *** 1868: 63

⁶⁶ A title "Triune Kingdom of Croatia, Slavonia and Dalmatia" was only nominal because in the Austrian part of the Empire the Kingdom of Dalmatia with its capital city Zara, today Zadar existed, from 1867 to 1918.

⁶⁷ Hrv.: *Kolodvor Drzavnih željeznica* [GALJER, 2000: 162]

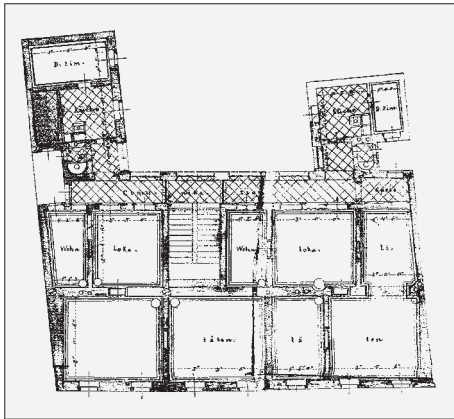
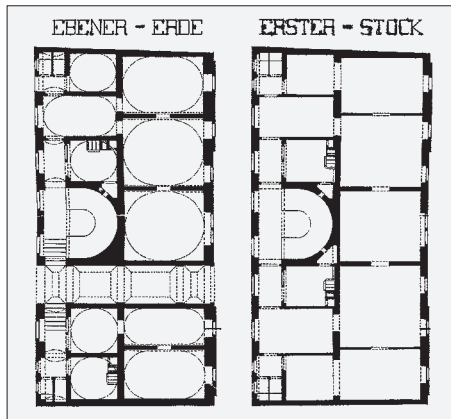
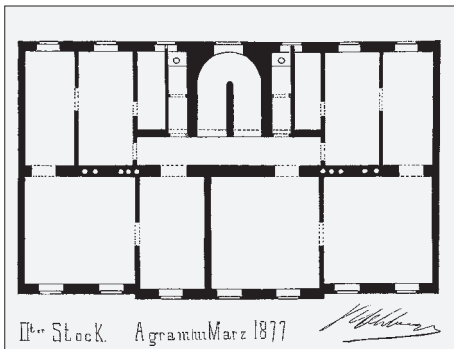


FIG. 7. FRANZ KLEIN & JANKO NIKOLA GRAHOR SENIOR: THREE-STORY ATTACHED APARTMENT HOUSE NEIDHARDT, 8 PRAŠKA ST, 1872, SECOND-STORY FLOOR PLAN
SL. 7. FRANZ KLEIN & JANKO NIKOLA GRAHOR SENIOR: DVOKATNA UGRADENA NAJAMNA KUĆA NEIDHARDT, PRAŠKA 8, 1872., TLOCRT PRVOGA KATA

FIG. 8. JANKO JAMBRISAK: THREE-STORY ATTACHED APARTMENT HOUSE PELLEŠ, 3 TOMICEVA ST, 1868, SECOND-STORY FLOOR PLAN
SL. 8. JANKO JAMBRISAK: DVOKATNA UGRADENA NAJAMNA KUĆA PELLEŠ, TOMICEVA 3, 1868., TLOCRT PRVOGA KATA

FIG. 9. JOHANN (IVAN) PLOCHBERGER SENIOR: THREE-STORY APARTMENT HOUSE PLOCHBERGER, 20 HEBRANGOVA ST, 1877, THIRD-STORY FLOOR PLAN
SL. 9. JOHANN (IVAN) PLOCHBERGER SENIOR: DVOKATNA UGRADENA NAJAMNA KUĆA PLOCHBERGER, HEBRANGOVA 20, 1877., TLOCRT DRUGOGA KATA

FIG. 10. JOHANN SCHNUPAREK & FERDINAND (FERDO) STEJSKAL: THREE-STORY APARTMENT HOUSE STANTZ, 4 HEBRANGOVA ST, 1879, THIRD-STORY FLOOR PLAN
SL. 10. JOHANN SCHNUPAREK & FERDINAND (FERDO) STEJSKAL: DVOKATNA UGRADENA NAJAMNA KUĆA STANTZ, HEBRANGOVA 4, 1879., TLOCRT DRUGOGA KATA



lery and into the room from the kitchen, i.e. only dry closets were common⁶⁸; a tenement house Poppl in 9 Primorska Street, made by Janko Jambrisak, from 1877 with corridors similar to the executed schemes of three-and-more story attached buildings and explained later, arrangement from 1882 of a bathroom with the cast iron bath; a first application of a German neorenaissance⁶⁹ façade in the attached residential building in 1887 by Cuno (Kuno) Waidmann (Fig. 2), close together to a similar façade in 1888 by Leo Hoenigsberg⁷⁰; first light shaft arrangement for a water closet and pantry in 1889 by Ferdo Stejskal, and finally a first documented usage of a water closet in 1890 by Georg (Gjuro) Carnelutti.⁷¹

For the above mentioned reasons this type of house was predominant for first builder and architects in Zagreb (Plochberger senior, Jambrisak, Grahor senior, Heinzel senior, Klein, Stejskal, Bösenbacher senior, Grahor junior, Waidmann, Geher, Carnelutti, Kralik senior, etc.). To the contrary, two-and-more houses (often with additional apartments) were built by as few as Milan Lenuci, Leo Hönigsberg and Herman Bollé.

Preliminary quantities of three-and-more story attached buildings – According to the database for a period between 1851 and 1927, in Zagreb 917 three-and-more story attached

buildings had been built, another 47 buildings of the same class were detected on the field but without any legal documentation in the City Archives. Finally, in the same institution another 93 files with submitted projects of unexecuted buildings of the class are stored as well.

Typologies of three-and-more story attached residential buildings

– After conditioning the issuance of a building permit with explanatory drawings (i.e. project), according to the 1857 Building code, first executed three-and-more story attached residential building was four-story attached apartment house Vrbancić at former address 27 Ilica Street in 1859 (Fig. 4).⁷² The approved project was ambiguous⁷³ and partly against the building regulations.⁷⁴ There was only one apartment per floor, indeed a lavish one. It contained four rooms (*Zimmer*), a salon, a wardrobe (*Garderobe*), a sleeping alcove (*Alkoven*) and an anteroom (*Vorzimmer*). Serving parts of the apartment (a kitchen, a room and two chambers) were physically separated from the living parts through a stairway landing (*Vorplatz*). A stairwell was semicircular, probably supported with one or two cast iron columns.⁷⁵ Cast iron semicircular stairwells were built until the earthquake in 1880. However, the majority of houses at this time had a vaulted staircase with one semicircular or two parallel flights, whose vanishing was obviously conditioned as a consequence of the earthquake. Vaulted staircases remained in two-story houses until the turn of century, probably because of their relative cheapness as compared to the new steel supported staircases with two parallel flights, which in higher buildings became standard until the 1930s. A minor part of three-and-more residential buildings in this time had spatial organization of four apartments per floor, derived from contemporary ordinary Vienna apartment house.

Interestingly enough, there were attempts to apply a new design, not only of fronts (Fig. 5, 6) but of floor plans too. In 1872 Franz Klein & Janko Nikola Grahor senior transformed the aforementioned scheme into two apartments per floor with serving parts separated and

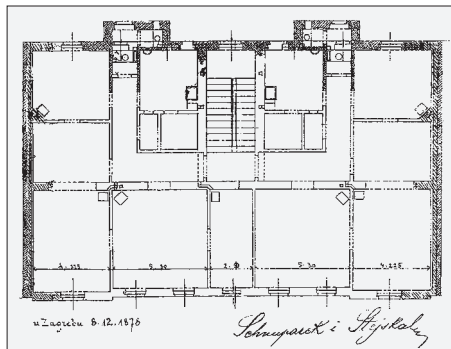
⁶⁸ This arrangement was immensely popular in the 1920s with the so called „houses without approval”, which were built at Trnje and Tresnjevka, southern from the Zaprešić-Dugo Selo railway.

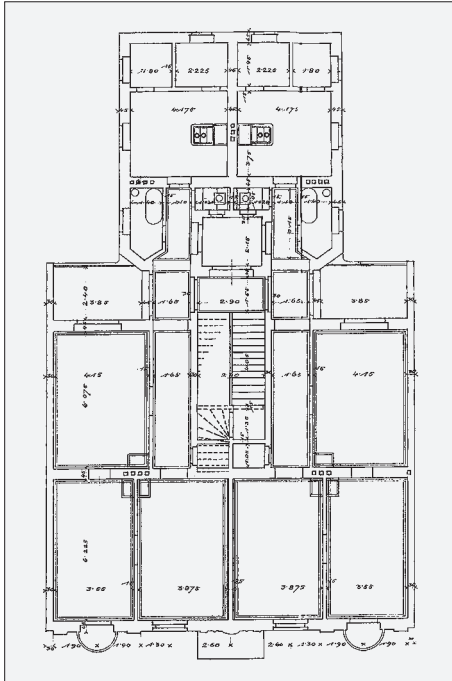
⁶⁹ MENNEKES, 2005

⁷⁰ 22 Meduliceva Street, today Italian Embassy in Croatia. He also, together with his partner Julio Deutsch, designed first Zagreb Jugendstil front in the year 1896 (Fig. 3), but unfortunately the landlord changed it to a neo-baroque.

⁷¹ It was marked on the approval drawings simply as *Tloris englezkih Closeta sa spravom na vodu* (Plan of the English Closets provided with water, i.e. WC).

⁷² It was torn down together with its wall-shared neighbor at 25 Ilica Street in 1906.





placed into yard wings (Fig. 7). This scheme is probably a forerunner of schemes with two parallel yard wings. In 1868 Janko Jambrisak invented clean rectangle scheme of two apartments per floor with entrance galleries (Fig. 8), later in 1877 Johann Plochberger senior converts it to a regular rectangle scheme (Fig. 9). Finally in 1879 Johann Schnuparek and Ferdo Stejskal divided living and serving parts with an L-shaped corridor (Fig. 10). They also cut its own scheme in half for accommodating one apartment per floor at narrow lots. Two apartments per floor will remain the majority spatial organization of Zagreb attached apartment house until the end of the Second World War. On the other hand, a number of dwellings or apartments whose parts were not closed, i.e. the ensembles of usually two rooms were connected with adjoining kitchens only through a common corridor, in which common dry closets were placed as well, was exceptionally high. First scheme emerged in

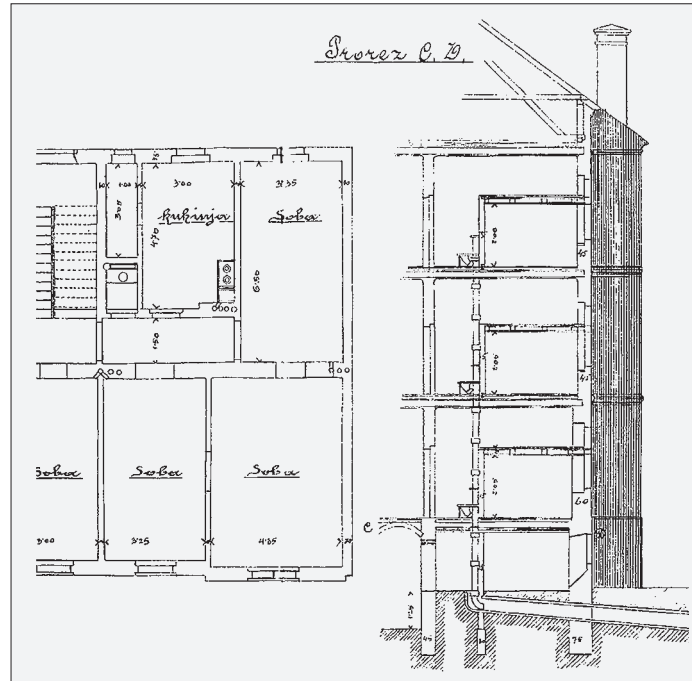
73 Preserved files include floor plan of fourth story (Ill. Stock) and section and elevation for a three-story (*Zwei-stockiges*) building.

74 Building code stipulated that every new building must have its own circumference walls adjacent to the neighbor buildings, where according to approved plans, the Vrbancic house had a common wall with its left neighbor (25 Ilica Street), i.e. it was an extension (*Anbau*) to its left neighbor. Such model was quite usual in the 1870s, obviously tolerated by the city officials.

75 The stairwell of same sort can be seen today in the three-story apartment house Pelleš at 9 Tomiceva Street, erected in the year 1868 (Fig. 7).

76 JURIC, 1994: 153

77 JURIC, 1996.a: 105



1878 (Vetsera attached dwelling house, 61 Tkalciceva Street) but the complete tenement scheme of this kind was used in 1896 (139 Ilica Street, 3 Slovenska Street and surprisingly, a first tenement house with a flat *Holz-zement* roof, 29 Nova Ves Street, designed by Hinko Rieszner).

Derivatives of two apartments per floor became usual after the earthquake, when in year the 1887 Jambrisak applied separate bathroom with the cast iron elliptical bath, oriented to a maid room, i.e. bathroom was ventilated with fresh air via the maid room. This conception was used to the end of Second World War. In the year 1893 architect Grahor junior utilized a water closet with the ventilation arrangement through a common window with pantry (Fig. 12), or both had a common light well (airshaft). Both these arrangements were immensely popular in spite of the attempts of forbidding them by City Construction Office. In the matter of fact, light wells were used from the beginning, but only in year 1893 young architect Martin Pilar⁷⁶ made two arrangement schemes which after the First World War became more prominent in the Zagreb residential architecture (Fig. 11). He soon made a partner enterprise called Pilar, Mally & Bauda. This architectural office and the building firm⁷⁷ became popular for trailblazing buildings with flat roofs and innovative housing schemes designed by Pilar. Together they erected 10 such houses, almost a half of 25 attached buildings with a flat *Holz-zement* roof from the year 1893 to 1927. The seminal one was the Mally apart-

FIG. 11. JANKO HOLJAC, A LICENSED CIVIL ARCHITECT: THREE-STORY APARTMENT HOUSE AMRUS, 5 STROSSMAYEROV SQ, THIRD-STORY FLOOR PLAN
SL. 11. JANKO HOLJAC, OVLAŠTENI CIVILNI ARHITEKT: DVOKATNA UGRADENA NAJAMNA KUĆA AMRUS, STROSSMAYEROV TRG 5, TLOCRT DRUGOGA KATA

FIG. 12. JANKO JOSIP GRAHOR JUNIOR, A LICENSED CIVIL ARCHITECT: SEWAGE WATER-CLOSET FACILITY AT THREE-STORY APARTMENT HOUSE MATICA, 8 ŽERJAVICEVA ST, 1893, PARTIAL SECTION AND FLOOR PLAN
SL. 12. JANKO JOSIP GRAHOR JUNIOR, OVLAŠTENI CIVILNI ARHITEKT: INSTALACIJA ODVODNJE WC-A U DVOKATNOJ UGRADENOJ NAJAMNOJ KUĆI MATICA, ŽERJAVICEVA 8, 1893., DJELOMIČAN PRESJEK I TLOCRT

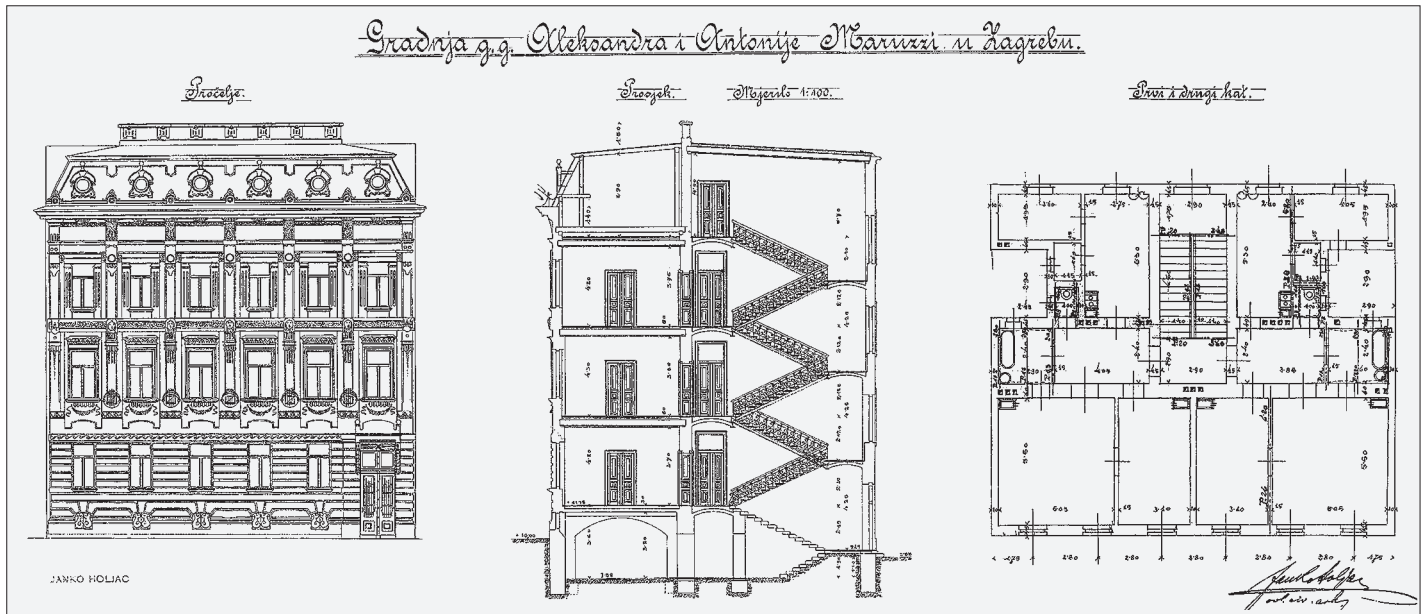
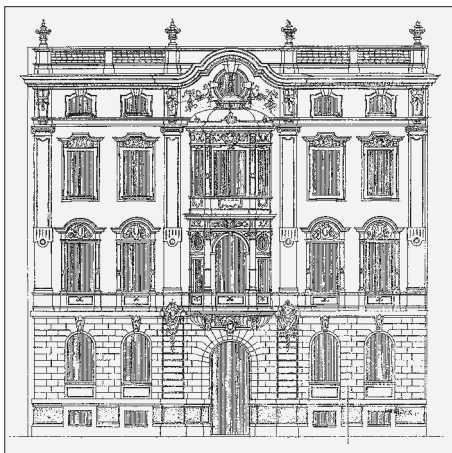


FIG. 13. JANKO HOLJAC, A LICENSED CIVIL ARCHITECT: THREE-STORY APARTMENT HOUSE MARUZZI, 4 VODNIKOVA ST, 1901, ELEVATION, SECTION AND SECOND-/THIRD-STORY FLOOR PLAN

SL. 13. JANKO HOLJAC, OVLAŠTENI CIVILNI ARHITEKT: DVOKATNA UGRADENA NAJAMNA KUĆA MARUZZI, VODNIKOVA 4, 1901., PROČELJE, PRESJEK I TLOCRT PRVOGA/DRUGOGA KATA

FIG. 14. BUILDING FIRM PILAR, MALLY & BAUDA, SIGNED BY JULIUS (JULIO) MALLY: THREE-STORY APARTMENT HOUSE MALLY, 28 MIHANOVICEVA ST, 1898

SL. 14. GRADJEVNO PODUZETNIŠTVO PILAR, MALLY & BAUDA, ARHITEKT, INŽENJER I GRADITELJ, PARAFIRAO JULIUS (JULIO) MALLY: DVOKATNA UGRADENA NAJAMNA KUĆA MALLY, MIHANOVICEVA 28, 1898.



ment house at 28 Mihanovičeva Street of 1898, with the coal burning steam central heating system, steel supporting staircase as a light well, covered with a glass canopy for natural ventilation (Fig. 14). However, the majority decided not to apply the *Holzement* in whole, but only on yard-oriented parts of the roof. Other architectural offices equally implemented similar devices. The architectural firm of Leo (Lav) Hönigsberg and Julius (Julio) Deutsch was famous for their advanced front designs and their young apprentices such as Alois (Vjekoslav) Bastl or Otto (Oton) Goldscheider. The firm was also known as an early bird in design, calculation and application of steel and/or reinforced concrete elements. The first elevator in Zagreb was probably built in 1907 in the four-story corner apartment house Poppović, 4 Ban Josip Jelačić Square, by Benedik&Baranyai. Another pioneer in residential architecture of the time was Janko Holjac. Probably inspired by the Hellmer&Fellner solution for the Croatian Discount Bank (Hr: *Hrvatska Eskomptna banka*) in 3 Ilica Street in 1899, with a semi-pitched mansard roof to the street and a flat roof to the yard, in 1901 he invented a similar section for a common three-story attached apartment building, where residential areas were also yard-oriented, the ground-level-in-yard parts of a basement was used for housekeepers and the yard-oriented and flat-roofed parts of attic were used as studio apartments – in fact all of its five stories were habitable. He also invented a standard rectangular two-apartment per floor scheme with side light wells at same building (Maruzzi apartment house, 4 Vodnikova Street; Fig. 13). This scheme was in wide use for the first Modern attached res-

idential buildings in the 1930s and remained in use until the 1950s. It can be argued that in a less than forty years' time span, from the earthquake to the end of First World War Zagreb grew up exponentially, taking shape as an aesthetically pleasant city built in closed blocks. Front designs were milder than expected, blending the old design procedures with newly emerged architectural styles. Additionally, in the 1900s attached tenement houses were erected in Trnjanska and Paromlinska Streets for migrants from other parts of Croatia, who found their employment in emerging industries at the city periphery.

After the emergence of the Kingdom of Serbs, Croats and Slovenes at the end of the First World War, when the stipulated money conversion became a threat to the old capital institutions, the City construction office simply took the unapproved regulations for the area east from Draškovičeva Street and let the private investors build a lot of attached apartment houses, to save the investments from devaluation.⁷⁸ Being designed in a hurry, those attached houses mostly repeated floor plans and façade patterns from their pre-war counterparts.

CONCLUSION

ZAKLJUČAK

This article is completion of a research started fifteen years ago covering the attached apartment house in the period between the World Wars and perpetuated with articles in Croatian in the periodical "Prostor". It became appar-

ent that the traces of the origin of this building type should be searched for within the period from the end of the Revolution in 1848 and beyond the end of the First World War in 1918, with living ties to the beginning of the Modern Movement in Zagreb. In their seminal book "Project Zagreb" Eve Blau and Ivan Rupnik tackled only briefly the development of the housing types so it seemed that some additional research should be made.

The research was conducted at the State Archives in Zagreb from 2008 to the end of 2013, where practically all legal documentation is preserved, i.e. building and occupancy permits, approved drawings tied to these permits, etc. Therefore it was possible to build a comprehensive database in the electronic form of this particular type, containing chronologically ordered data of owners, builders, plans, fronts, etc. After more than nine tenths of the houses have been researched, one can make an X-ray image through the city structure of the time: chronological diagrams of the city development, structural diagrams

of the façade designs tied to a certain architect, typological diagrams of the styles used in front developments etc.

The emphasized attached apartment houses in this article are substantial in emergence of new or deriving old floor plan schemes, vertical organizations of buildings according to the valid building code, or front compositions, to establish a few prominent examples worth to follow.

Rapid expansion of attached apartment houses in Zagreb after the earthquake in 1880 until the end of the Second World War and beyond was possible due to the combination of political interactions in the Habsburg Empire and in the Kingdom of Serbs, Croats and Slovenes as one of its successor states. Landlords, master builders and architects of various notably Jewish minority origins made a significant contribution. Hence the evolution of this building type converged gradually but inevitably to the Modern Architecture.

[Proofread by GORDANA ČALIĆ, prof.]

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ARCHIVE SOURCES

ARHIVSKI IZVORI

1. City Archives in Zagreb: HR-DAZG-1122 Zagreb City Council / Building Documentation Collection / Microfiches No. 1-565

SOURCES OF ILLUSTRATIONS

IZVORI ILUSTRACIJA

- Fig. 1. Author
- Figs. 2., 3., 7.-14. HR-DAZG-1122, Microfiches No. 1-565
- Fig. 4. HR-DAZG-1122, Signature No. 1525
- Fig. 5. <https://www.facebook.com/media/set/?set=0.331660500284311&type=3>
- Fig. 6. Contemporary postcard, author's collection

ABBREVIATIONS AND SYMBOLS

KRATICE I SIMBOLI

xxxx ^{De,En}	a fully bilingual edition
xxxx ^{En} of xxxx ^{De}	reprinted edition of edition
AmE	American English
Anon.	Anonymous
At	Austria
BE	British English
CT	Connecticut
Če	Czech
De	German, Germany
En	English
Frakt.	Fraktur
Fr	French
Hrv.	Croatian
Hu	Hungarian (Magyar)
It	Italian
MKAV	Magyar Királyi Államvasutak
NY	New York (US State)
prob.	probably
®	registered mark or brand
Sp	Spain

SUMMARY

SAŽETAK

VIŠEKATNE UGRAĐENE KUĆE U ZAGREBU IZMEĐU 1850. I 1927.

Ovaj članak predstavlja završetak istraživanja koje je počelo prije petnaest godina i obuhvatilo ugrađene najamne kuće od početka 1928. godine do kraja Drugoga svjetskog rata, a objavljeno je u nekoliko autorovih članaka u ovom znanstvenom časopisu. Poslije objave navedenih članaka postalo je jasno da treba proširiti istraživanje istoga tipa kuća na cijelo razdoblje – počevši od revolucija 1848. godine, ujedinjenja prethodnih naselja u moderni Zagreb 1850. godine, donošenja Reda građevnja 1855. godine, koji propisuje ugrađenu zgradu kao osnovni element izgradnje, pa sve do nakon Prvoga svjetskog rata, odnosno do kraja 1927. godine. Detaljna obrada ovoga građevinskog tipa i objava rezultata istraživanja slijedi u autorovoj knjizi *Ugrađene zgrade u Zagrebu od revolucija iz 1848. godine do rezolucije Informbira iz 1948. godine: tipologije, morfologije i značenja*.

Istraživanje je provedeno u Državnom arhivu u Zagrebu od sredine 2008. godine do kraja 2013. godine, gdje je pohranjena praktički sva dokumentacija upravnoga postupka povezanog s izgradnjom ugrađenih zgrada, odnosno građevne dozvole, dozvole za uporabu, odluke o odobrenju nacrtu promjene, odobreni nacrti povezani s upravo navedenim od-

lukama, žalbe, službeno dopisivanje i drugo. Time je omogućena izrada sveobuhvatne baze podataka ugrađenih zgrada u elektroničkom obliku, koja sadrži kronološki poredane podatke vlasnika, arhitekata, graditelja, poduzetnika, tlocrtnih rješenja, konstruktivnih sustava, pročelja i drugih relevantnih podataka za taj građevinski tip. Već nakon više od 90% istraženih zgrada, pretraživanjem ove baze podataka moguće je rendgenski skenirati gradsku strukturu Zagreba toga razdoblja: kronoloske dijagrame razvoja grada, strukturalne dijagrame tlocrtnih rješenja vezanih za pojedinog arhitekta ili graditelja, tipoloske dijagrame razvoja stilova koji su bili korišteni na pročeljima i drugo.

Najavom dolaska željeznice u Zagreb, poslije revolucije 1848. godine pokrenuti su procesi modernizacije, među kojima su za nastanak ugrađene zgrade presudna dva: donošenje i implementacija Reda građevnja 1855. odnosno 1857. godine, koji je najmanje jednokatnu ugrađenu zgradu – dakle zgradu s barem dva puna kata iznad tla – normirao kao prevladavajući građevinski tip, te koloplet političkih i ekonomskih odluka koje su dovele do prolaska prvih željezničkih pruga gradskim područjem 1862. i 1870. godine, a time je uspostavljen sustav nasi-

pa koji je buduće blokovsko područje Donjega grada osigurao od poplava i omogućio trajno naseljavanje. Ipak, ubrzana urbanizacija počinje tek nakon potresa 1880. godine.

Istaknuti primjeri ugrađenih najamnih kuća u ovom članku bitni su prema kriterijima pojave novih ili deriviranja starih tlocrtnih shema, komparacije vertikalne organizacije zgrada u odnosu na tada važeće građevinske propise, odnosno kompozicije pročelja prema razvoju stilova, jer su time uspostavljeni istaknuti primjeri koje je nakon toga slijedila većina.

Nadalje, brza ekspanzija ugrađenih najamnih kuća u Zagrebu poslije potresa 1880. godine, koja je trajala sve do početka Prvoga svjetskog rata, a nastavila se odmah nakon toga rata i praktično trajala sve do početka Drugoga svjetskog rata 1941. godine, bila je moguća zahvaljujući političkim interakcijama u Habsburškoj Monarhiji i Kraljevstvu Srba, Hrvata i Slovenaca kao jednoj od država nasljednica. Kućevlasnici, graditelji i arhitekti pripadnici manjina, a posebno židovske, srpske i njemačke manjine, dali su značajan doprinos. Stoga je razvoj toga građevinskog tipa postupno, ali neizbježno, doveo do – moderne arhitekture.

DARKO KAHLE

BIOGRAPHY

BIOGRAFIJA

DARKO KAHLE, PhD, Architect (ARB, United Kingdom), Licensed Architect (HKA, Croatia), Research Fellow (Croatia); 1989 Master of Architecture, 2002 MSc in Architecture and Urban Planning, 2007 PhD in Architecture and Urban Planning (University of Zagreb, School of Architecture, Graduate School of Built Heritage Split). From 2002 onwards: eight published scientific articles, four executed renovation and restoration projects and two competition projects.

Dr.sc. **DARKO KAHLE**, arhitekt (ARB, Ujedinjeno Kraljevstvo), ovlaštani arhitekt (HKA, Hrvatska), znanstveni suradnik (Hrvatska); 1989. diplomirani inženjer arhitekture, 2002. magistar tehničkih znanosti, 2007. doktor tehničkih znanosti (Sveučilište u Zagrebu, Arhitektonski fakultet, Mediteranski centar za graditeljsko naslijeđe Split). Od 2002. godine objavio je osam znanstvenih radova, četiri izvedena projekta obnove i dva natjecajna projekta.

