

ISTANBUL TECHNICAL UNIVERSITY ★ GRADUATE SCHOOL OF SCIENCE
ENGINEERING AND TECHNOLOGY

**HOUSING ARCHITECTURE IN SOVIET AND POST-SOVIET CAPITAL OF
KYRGYZSTAN: FROM FRUNZE TO BISHKEK**

M.Sc. THESIS

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Department of Architecture
Architectural Design Programme

JANUARY 2014

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İSTANBUL TEKNİK ÜNİVERSİTESİ ★ FEN BİLİMLERİ ENSTİTÜSÜ

**KIRGIZİSTAN BAŞKENTİ BİŞKEK: SOVYET VE POST-SOVYET
DÖNEMLERİNDE KONUT MİMARİSİ**

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To my city,

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January 2014

Salia BOSTERIEVA
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HOUSING ARCHITECTURE IN SOVIET AND POST-SOVIET CAPITAL OF KYRGYZSTAN: FROM FRUNZE TO BISHKEK

SUMMARY

Housing architecture in capital of Kyrgyzstan has changed together with the name of the city. Frunze was a city of large panel houses, green alleys and strong belief in socialism and the Party. Soviet past vanished together with its name. Frunze became Bishkek. Nothing of Soviet but architectural heritage remained. Today Bishkek is still a city of “stalinkas”¹ and “khrushchevkas”². They stand still as immortal monuments of the past rulers. While visiting Bishkek, some might wonder whether it is possible not to get lost among houses that are so identical, and claim that the capital looks like yet another Soviet city. This image derives from a central planning system which defined the development and mechanism of all Soviet cities. Besides, the city architecture was in a big way affected by an after-war mass housing construction when the Party started an all-union campaign with a goal to provide a separate apartment to every family within a decade. In this case, standardized construction was the best possible tool to achieve it.

That was yesterday. Do the same housing principles apply today?

This study will lead you through changes Bishkek went through; the way history has affected housing habits of its citizens. In contrast to Soviet Frunze, contemporary Bishkek offers chaotically built but diverse housing – apartments of better comfort and higher value. In order to understand housing preferences of the citizens, a survey was conducted among the residents of Bishkek. The results of the survey showed that there were people who enjoyed living in Soviet apartments; however, the majority were planning to move into new apartments as soon as they could afford it or build a single house on the outskirts of the city far from polluted center, close to snowy mountains and fresh air.

To give a better picture of how housing sector was and how it currently is in Bishkek, the study provides samples of both Soviet and Post-Soviet periods comparing them according to general housing architecture criteria, underlining pros and cons specific to each period. Information about the investigated objects was collected from the interviews with the architects of the projects, site investigation, photograph and literature collection at national archive and state libraries. Gathered information is analyzed and presented in graphical and written form.

¹ “Stalinka” is a slang word used for housing blocks built in the Soviet Union during the reign of Joseph Stalin. The buildings were constructed in neoclassicism in the period from 1930s to 1950s.

² “Khrushchevka” is a slang word used for housing blocks built in the Soviet Union during the reign of Nikita Khrushchev. Brick and panel houses were used in mass construction campaign held by Khrushchev after war.

KIRGIZİSTAN BAŞKENTİ BİŞKEK: SOVYET VE POST-SOVYET DÖNEMLERİNDE KONUT MİMARİSİ

ÖZET

Kırgızistan başkenti konut mimarisi, şehrin ismi ile beraber değişikliğe uğradı. Frunze, prefabrike panel binalardan ve yeşil sokaklardan oluşan, sosyalizm ve Parti'ye güveni güçlü olan bir şehirdi. Sovyet geçmişi, ismi ile beraber ortadan kayboldu. Frunze ise Bişkek oldu. Sovyet döneminden geriye kalan sadece mimarlık mirası idi. Bugünkü Bişkek hala “stalinka” ve “khrushchevka” şehridir. Kimi insan bu kadar bir birine benzer binalar arasında nasıl kaybolmadan yol bulmak mümkün olduğunu sorgularken, Bişkek'in tipik Sovyet şehirlerine benzediğini iddia edebilirler. Bu durum bütün Sovyet şehirler için geçerlidir, zira her biri tek bir mekanizma ve genel planlama sistemine uygun olarak tasarlanmıştır. Ayrıca, İkinci Dünya Savaşından sonra Parti, her Sovyet vatandaşın on sene içinde bir ev sahibi olabilmesini sağlamak amacıyla büyük ölçekli toplu konut inşaatı kampanyasını organize etmişti. Standardize tasarım konut inşaatı en uygun çözüm olarak görülmüş ve tüm Sovyet şehirlerinde uygulanmıştır. Adı geçen kampanya tarihi şehirlerin imajlarını değiştirerek, Bişkek gibi yeni şehirlerin imajlarını oluşturmaya katkı sağlamıştır.

Bunlar geçmişte olanlardır. Ya şu anda olan konut tasarım prensipleri aynen uygulanmakta mı?

Bu çalışma, bu toprakta yaşayanların tarih boyunca barınma alışkanlıklarını ne şekilde değiştiğini göstermektedir. Çağdaş Bişkek çeşitli ancak kaotik gelişen konut mimarisini sergilemektedir. Yeni konutlar daha konforlu olmakla beraber daha pahalıdır. Bişkek'te yaşayanların konut tercihlerini öğrenmek amacıyla anket çalışması gerçekleştirildi. Sonuçlara göre, Bişkek sakinlerinin bir kısmı Sovyet dönemi konutlarında yaşamayı sever, durumlarından memnundur. Ancak, çoğunluk bir an önce yeni konutlara ya da şehir dışına dağ eteklerinde müstakil eve taşınmak için para biriktirdiklerini bildirdiler.

Çalışmada, Bişkek'teki konut geçmişini ve güncel durumunu daha iyi anlatabilmek ve aradaki farkı gösterebilmek amacıyla Sovyet ve Post-Sovyet dönemlerinden örnekler üzerinde karşılaştırma sunulmaktadır. Karşılaştırma, incelenen örneklerin döneme ait avantaj ve dezavantajlarının altını çizerek, temel konut mimarisini oluşturan değerler üzerinden yapılmaktadır.

Araştırılan örnekler ile ilgili bilgi, mimarları ile birebir görüşmeler, alan değerlendirmesi, fotoğraflanması, Devlet arşiv ve Ulusal kütüphanelerde kaynak araştırması sonucu elde edildi.

Çalışmanın biçimsel kurgusu beş bölüm altında oluşturulmuştur. Birinci bölümde, çalışmanın araştırma soruları ortaya konulması ile beraber cevaplanması için izlenen

yol açıklanmaktadır. Bölüm, çalışmanın amacını, uygulanan metodolojisi ve strüktürü hakkında bilgi vermektedir.

Çalışmanın temelini oluşturan araştırma sorularında:

- Bişkek şehrinde Sovyet ve Post-Sovyet konut mimarisi arasındaki fark;
 - Sovyet Sosyalist Cumhuriyetler Birliği kapsamında büyük ölçekli toplu konut inşaatının gelişim süreci ve nedenleri;
 - Bişkek şehri sakinlerin barınma tercihleri
- konularını açıklayan veri ve değerlendirmesi yer almaktadır.

Çalışmada izlenen yol:

- Bişkek şehrin konut alan değerlendirmesi. Her iki döneme ait örneklerini tespit edilerek, dış ve iç mekanlarının yerinde incelenmesi, fotoğraflanması ve her bir örnek için detaylı bilgi dosyası oluşturulması;
- Örnekler ile ilgili veri arayışında ulusal kütüphanelerde kaynak araştırması;
- Sovyet dönemine ait binaların orijinal ve mevcut hallerini karşılaştırabilme amacıyla Devlet arşivinde eski fotoğraflarının incelenmesi;
- Post-Sovyet örnekler ile ilgili bilgi toplamak amacıyla mimarlarına başvurulması ve projelerin mimari çizimlerin ve süreç detaylarını gösteren belgelerin temin edilmesi;
- Konut mimarisinin şehir sakinlerine bıraktığı izlenimi öğrenmek amacıyla anket çalışmasının yapılması.

İkinci bölümde Bişkek konut mimarisini oluşturan tarihi altyapısı kronolojik sıra ile anlatılmaktadır. Kırgız halkın göçebe hayatını kapsayan dönemi, İpek Yolu, Rus İmparatorluk ve Sovyet dönemlerinden söz edilerek, her dönemi temsil eden konut tipine örnek verilmektedir.

Çalışmanın ana konusu üçüncü bölümde açıklanmaktadır: ***Kırgızistan başkentinde Sovyet ve Post-Sovyet dönemlerinde konut mimarisi.*** Bu bölüm altında Sovyet Frunze şehrinde oluşan konut mimarisine ait standardize tasarım, deneysel ve özel tasarım konut projeleri üzerinde bilgi sunulmaktadır. Standardize tasarımın ilkeleri açıklanmaktadır: tek plan bazında toplu konut inşaatı hızlı ve ekonomik sonuçlar getirmektedir. Büyük ölçekli toplu konut inşaatının süreç ve nedenleri de bu bölümde açıklanmaktadır. Ülkedeki tüm mimari projelerden sorumlu olan “Kirghizgiprostroy” Devlet Planlama Enstitüsü, başkentte devam eden konut projelerinin tasarım, yönetim ve inşaatını sürdürür ve kontrol ederdi. Endüstrileşmenin getirdiği yenilikler Enstitü tarafından projelerde uygulanır, tüm Sovyet Birliği ülkelerin inşaat sektöründe kullanıma açılmasını önerilirdi.

Bölümün devamı Post-Sovyet Bişkek konut mimarisinin son yirmi sene içinde gelişimi ile ilgili bilgi içerir. Konut sektörü genel olarak apartman blok binalardan ve müstakil ev projelerinden oluşmaktadır. Tüm apartman daireler bireysel proje düzeyinde tasarlanır ve tek sefer uygulanır. Sovyet sonrası yeniliklerin biri olan, konut projelerin özel sektör tarafından tasarlanmaya başlamasıdır. Bundan sonra projeler sadece “Kirghizgiprostroy” Devlet Planlama Enstitüsü tarafından tasarlanmıyor. Özel sektörde çalışan mimarlar, Sovyet standartlarının dışında tasarımlar sunmaya çalışmaktadır. Post-Sovyet konut mimarisi konfor ve kaostan oluşur. Her ne kadar zıt olsa da, bu terimler dönemi en iyi şekilde anlatmaktadır. Ekonomik ve bir birine benzer konutlardan sıkılmış olan Bişkek sakinleri yeni konfor

řart arayışına başvururken, deęiřik ancak pahalı konut kategorisi ile karşı karşıya gelmektedir.

Çalışmanın araştırma sorularına cevap arama doğrultusunda ilerlerken, dördüncü bölüm kapsamında Biřkek řehrinde Sovyet ve Post-Sovyet konut mimarisi karşılaştırılmaktadır. Karşılaştırma, döneme ait örnekler üzerinde yapılarak beř ana kriterlere göre deęerlendirmektedir: vaziyet planı, konut blok tipolojisi, konut tipolojisi, yapım sistemi ve bina imgesi.

Son bölümde, araştırma sorularına bulunan cevap ve açıklamaların özeti sunulurken, çalışmanın deęerlendirmesi yapılmaktadır. Elde edilen bilgiler çalışmanın alanında katkı sağlayarak, bilgi boşlukları doldurarak, gelecek çalışmalara alt yapı oluřturmasını hedeflemektedir.

1. INTRODUCTION

The fall of the Soviet Union has drawn a bold line in politics, economy and social life of its citizens in all fifteen republics. This historical event has captured attention of critics and observers, who wanted to see how members of a grand state known for its planned economy, socialistic structure and mass construction, would manage to adapt to independent life after the crash of the Soviet system.

The Soviet Union has left its footprints all over its wide territory. Mass housing construction made all Soviet cities look alike. After the fall, every Post-Soviet city entered a race trying to develop new strategies in architecture free of standardization and monotony. Bishkek joined the caravan and started creating a new image of its own. Like any other Post-Soviet city, it was composed of residential districts with identical standardized buildings.

Housing architecture in Kyrgyzstan and its capital Bishkek forms a pattern of Soviet and Post-Soviet architecture. With its pros and cons, each period played a role in evolution of the city. Analyzing and comparing housing samples of both periods will give a good picture of how housing architecture in Bishkek has changed and developed through time.

Definition of Post-Soviet: Post-Soviet is a period that followed the Soviet period, which is after 1991. Names of most Soviet cities and countries have changed with the beginning of Post-Soviet era. In current case, Kirghizia became Kyrgyzstan, and Frunze changed its name to Bishkek.

1.1 Purpose of the Thesis

The purpose of this study is to show the difference in housing during Soviet and Post-Soviet periods in capital city of Kyrgyzstan Bishkek by comparing housing samples typical to each period. The goal is to find significant characteristics that define housing of these two periods, see how housing architecture has changed in Bishkek since the fall of the Soviet Union, and discover housing preferences of its

citizens. The study also aims to fill in the gap in theoretical literature on architecture of Post-Soviet Kyrgyzstan. After the country gained independency, there have been insufficient number of studies done in the field of architecture; therefore, there is a demand for investigation and research especially covering the time scope of last two decades. The fact that the researcher is a contemporary and a citizen of Bishkek promises reliability and up-to-date information. The research aims to shed light on first years of Post-Soviet architecture and provide information that can serve as a database for future research in the area.

The research questions are:

- What is the difference between housing architecture in Soviet and Post-Soviet Bishkek?
- How and why did mass housing construction start in the Soviet Union?
- What are the housing preferences of citizens of Bishkek?

1.2 Background

Fifteen republics came together under one roof of Soviet Union, won the Great Fatherland War and became world's largest socialistic power. Huge geographical scope of Soviet lands was inhabited by nations different from each other – people of various nationalities, cultures and traditions. Mass construction, which contributed to economy and architecture of the country, gave Soviet people one strong thing in common – standardized housing. Afterwards, Soviet cities in every state resemble each other. Following the fall of the Soviet Union in 1991, new independent countries took their way into developing Post-Soviet architecture, free of standardization and monotony.

During the Soviet Union, housing was an important tool to form a socialistic society. Each five-year economic plan had a special stress on housing construction, which was rapidly growing and forming large residential microdistricts. However, political ambitions would sometimes get far beyond the actual needs of citizens, putting quantity over quality. It is a big question mark whether quality has changed in housing of sovereign Kyrgyzstan. This study will investigate Bishkek's housing architecture based on current state of housing sector, the evolution it went through in

last two decades since the fall of the Soviet Union, revise history and come to conclusions taking in consideration opinion of citizens of the capital.

1.3 Methodology

The data for this study is collected through site observation, interviews with the architects of the projects, national archive and state library resources, survey among tenants – citizens of Bishkek.

1.4 Structure of the Thesis

The study consists of five chapters. The first one is an introductory chapter that reveals main research questions and explains the path the researcher takes in order to find the answers. It describes purposes and methodology applied in the research. First chapter also introduces historical circumstances of the topic and describes the structure of the thesis.

Second chapter provides a wider historical background of Bishkek's housing architecture. In chronological order, it tells about formation of housing on the territory of modern Bishkek, covering the Great Silk Road period, nomadic past, Russian Empire, Soviet Union and present days.

The main topic of the study opens up in the third chapter. It provides detailed information on housing architecture in Soviet Frunze, focusing on standard design series, as well as experimental and individual design construction. Here, the research provides an answer to one of the research questions about mass construction, discovering roots and flow of the mass housing construction campaign. Further, the chapter sheds light on Post-Soviet housing architecture – the way it has been developing for the last two decades.

In order to give answers to another research question on what are the main differences between housing architecture in Soviet and Post-Soviet Bishkek, chapter four provides a detailed comparison that is made among housing samples of two periods. The comparison underlines pros and cons of Soviet and Post-Soviet housing architecture based on typical housing samples of each period. Five criteria define the distinction and similarities between housing of the periods.

Last chapter concludes the results of the study. It will summarize the answers to the research questions that have been asked in the first chapter. The answers have been provided in the chapters accordingly throughout the study. Taking in consideration the obtained data and survey results, the study will try to figure out the significance of the research and its contribution to future investigation in the field.

2. HISTORY OF HOUSING IN BISHKEK

Location of today's capital of modern Kyrgyzstan has been a strategically important point due to its location on the intersection of two main routes of the Silk Road coming from China. Archeological expeditions keep finding new proofs of the ancient settlements in the valley within and around territory of Bishkek (Muksinov, Khramova, 2010, p. 5-13). Those are remains from Neolithic and Bronze periods, traces of great nomads – Saks, Usuns, Huns, and Turks. There had been more than a hundred cities in Chui valley³ during the Middle Age. Bishkek's Middle Age predecessor was a city called Djul. Since the cities laid on a path of the Silk Road, the majority of people who had been living on these territories were traders of different nationalities and religions. With discovery of seaways in Europe, the Silk Road's strategical role had weakened. Therefore, the cities on its path had started losing their significance and the traders left the territory. After series of Mongolian invasions, the cities disappeared completely leaving behind nomadic settlements by the river (Petrov, 2005, p. 6-7).

In 1825, the Kokand Khanate⁴ built a fortress on occupied Kyrgyz lands in Chui valley, and named it Pishpek. It was the largest fortress in the valley. Located on the intersection of the trade and caravan routes, Pishpek was politically and economically attractive territory for the Khanate. To weaken the power of the Kokand Khanate on Kyrgyz people, Russian Empire attacked Pishpek fortress twice until they finally ruined it in 1862. Taking away the power of the Khanate over Chui valley, the Russian Empire established its reign in the region (Muksinov, Khramova, 2010, p. 13-14). Since forces of two armies were not equal, Kyrgyz people realized uselessness of resistance and surrendered to the army of Russian Empire, thus, opening a new page in Kyrgyz history.

³ Chui valley is a large valley located in northern Kyrgyzstan.

⁴ Kokand Khanate was a state in Central Asia that existed from 1709–1876 within the territory of modern Kyrgyzstan, eastern Uzbekistan and Tajikistan, and southeastern Kazakhstan.

First immigrants arrived from Russia to Chui valley in 1866 and established a settlement by the ruins naming it after the fortress – Pishpek. Pishpek was a primitive immigrant settlement and formed a picture of typical Russian suburban town (Muksinov, Khramova, 2010, p. 14-15).

Apart from Russian and Ukrainian, there were immigrants from north-west China - Dungans⁵. Unlike Russian houses, which were accurately built parallel to the street, typical Dungan settlements were randomly spread on the valley with vegetable fields around each house (Petrov, V., 2005, p. 22-23).

2.1 Nomadic Past

Some Kyrgyz families continued to live in «boz ui» around Pishpek (Muksinov, Khramova, 2010, p.16-17).

«Boz ui» is a nomadic portable housing. It has a skeleton made of wood and a cover made of wool. «Boz ui» is round in plan. It is divided into several zones: sleeping, eating, guest hosting, food storage, horseman equipment storage (Nusov, V., 1971, p. 49).

Below is a plan of a typical «boz ui» indicating zones according to their functions. Even though the zones can be seen on a plan, inside «boz ui» there is no wall separation.

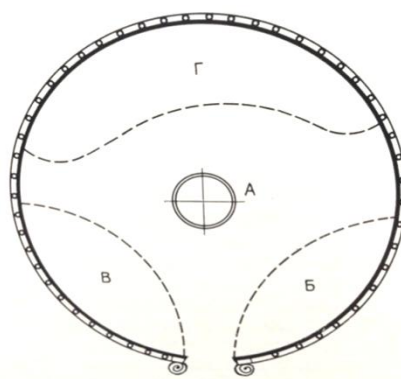


Figure 2.1 : Plan of «boz ui»

⁵ “Dungan” is a term used in territories of the former Soviet Union to refer to a Muslim people of Chinese origin who immigrated to Central Asia.

A – hearth; Б – place for kitchen utensils; В – place for harness, cattle servicing implements; Г – place for sleeping, storage of valuables, hosting guests of honour.

Size and decoration of «boz ui» defined social and financial status of the owner (Nusov, 1971, p. 49-50). On the left image you can see a «boz ui» of a poor Kyrgyz man. Its cover is traditionally made of wool and skeleton of wood. It is typically round in plan and does not have any decoration or extra equipments neither outside nor inside. Meanwhile, a «boz ui» on the right belongs to a rich Kyrgyz family. National ornaments and detailed decoration of the «boz ui» is a sign of wealth and prosperity. There are bright rugs, animal fur and leather on the floor of the «boz ui».

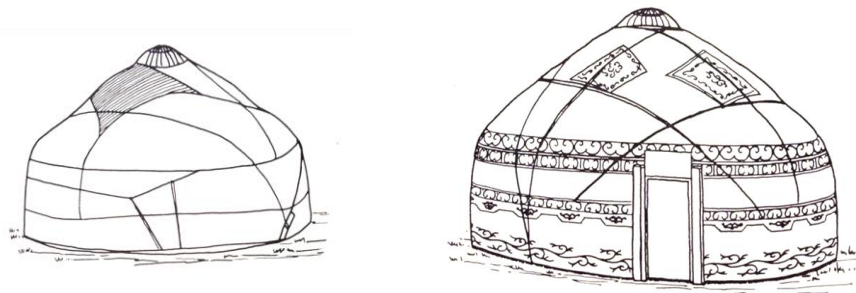


Figure 2.2 : View of fairly well-off «boz ui»; View of rich «boz ui»

«Boz ui» is a nomadic housing and it remains in history of modern Kyrgyz people like a traditional attribute. In contemporary Bishkek, «boz ui» is used during ritual events and cultural celebrations. Whilst, in the suburbs cattle breeders who keep on nomadic life in a valley use «boz ui» for its original housing functions.

2.2 Russian Empire. Pishpek

After Kyrgyz folk joined the Russian Empire, they changed their housing habits. Russian and Ukrainian peasants brought their housing traditions to the Kyrgyz land. They built their houses by the rivers and roads, whereas Kyrgyz people preferred spreading their «boz ui» all over the valley. Starting from the second half of XIX century new lifestyle of Kyrgyz people switched to agriculture, which caused them to give up nomadic cattle breeding and settle (Nusov, 1971, p. 48).

With Russian expansion, Kyrgyz people had to follow the rules that the Russian Empire dictated and forget about the traditional lifestyle they used to have. This included the housing preferences as well. Switching from nomadic life to settled,

from feudalistic system to communism, Kyrgyz people started establishing their routine in industrialized environment.

Pishpek was one of the first towns formed on the North of Kirghizia in 1860s. It became an administrative center of the region; therefore, it required a development plan to manage further growth of the town (Nusov, 1971, p. 48-91; Muksinov, Khramova, 2010, p. 15). First plan of 1872 was a well-structured grid system connected to the existing settlements of the first immigrants (Fig. 2.3)

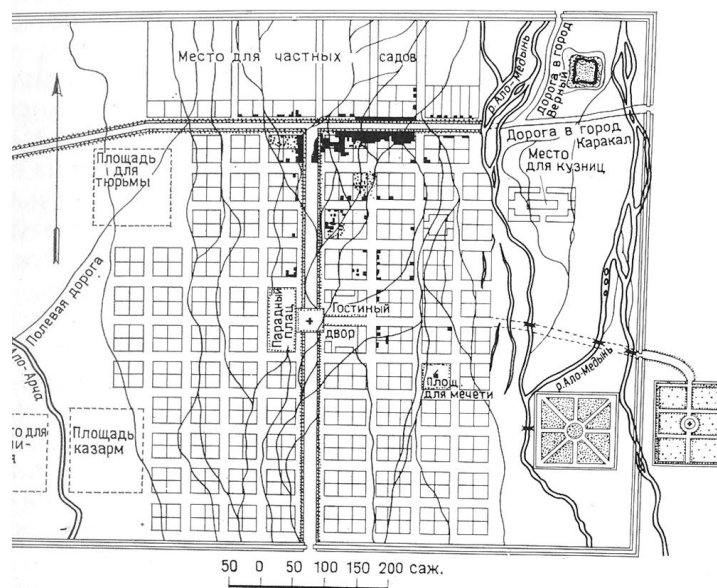


Figure 2.3 : Pishpek masterplan, 1872 (Pisarskoy, Kurbatov, 1986, p. 50).

The population of Pishpek grew. Its geographical location and economical position opened wide trade and agriculture possibilities, thus attracting more immigrants from Russia and in-migrants from the South. Pishpek development plan was revised in 1881 establishing a city center, a mosque and a church, trade and housing areas (Muksinov, Khramova, 2010, p. 16-17).

There was a great difference between housing of North and South of Kyrgyz lands. Located on northern territories and influenced by Russian and Ukrainian traditions, Pishpek houses were single or double storey; they front windows and doors faced the street, which allowed full visibility from outside. The houses had simple design both on interior and on exterior: saman⁶ or clay walls painted in white chalk, reed roofs and wooden window frames. Housing of that period was as plain as the lifestyle that

⁶ Saman – a Turkic word for “straw”. Saman is a construction material made of clay and straw.

citizens of Pishpek were carrying on. Wealthy merchants lived in brick houses with generously decorated wood window frames (Nusov, 1971, p. 54; Muksinov, Khramova, 2010, p. 16-19). However, those houses carried a suburban character, reminding once again that Pishpek was yet a town, not a city.



Figure 2.4 : A house with reed roof, middle of XIX century, Pishpek (photo by V. Petrov, 1950).



Figure 2.5 : A house of wealthy bourgeois (photo from archive of V. Galitsky).

The population of Pishpek grew reaching 22 000 by 1916, which was at least 4 times more than the population before the Russian occupation. There were 1688 housing units by 1914 (Muksinov, Khramova, 2010, p. 21).

The plans below show the growth and grid system development of Frunze in 1916-1917 (Fig. 2.6 – 2.8).

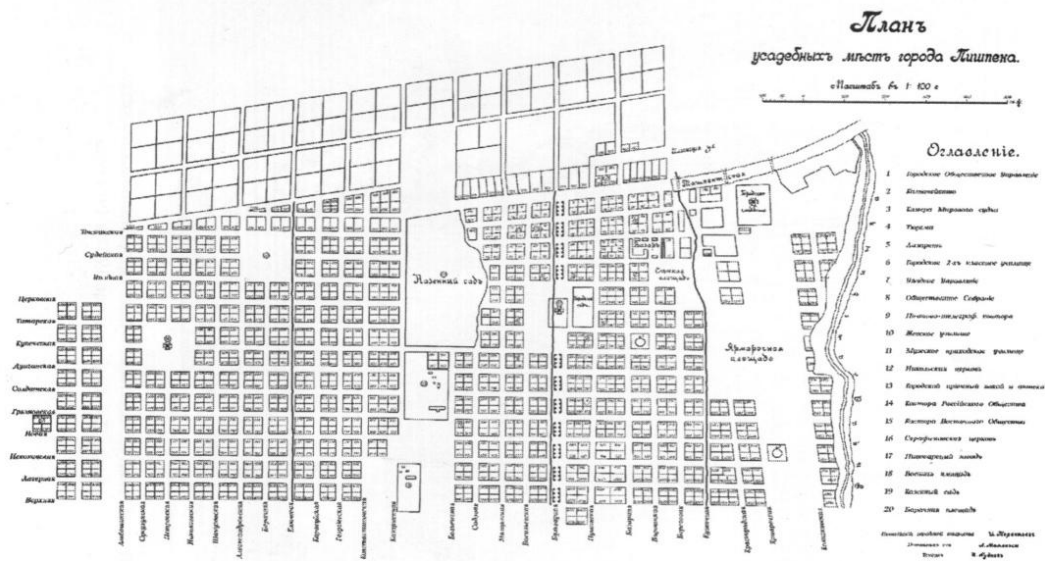


Рис. 4 План усадьбныхъ местъ города Пишпекъ. 1916 г.

Figure 2.6 : Plan of single-storey residential settlement, Pishpek, 1916.

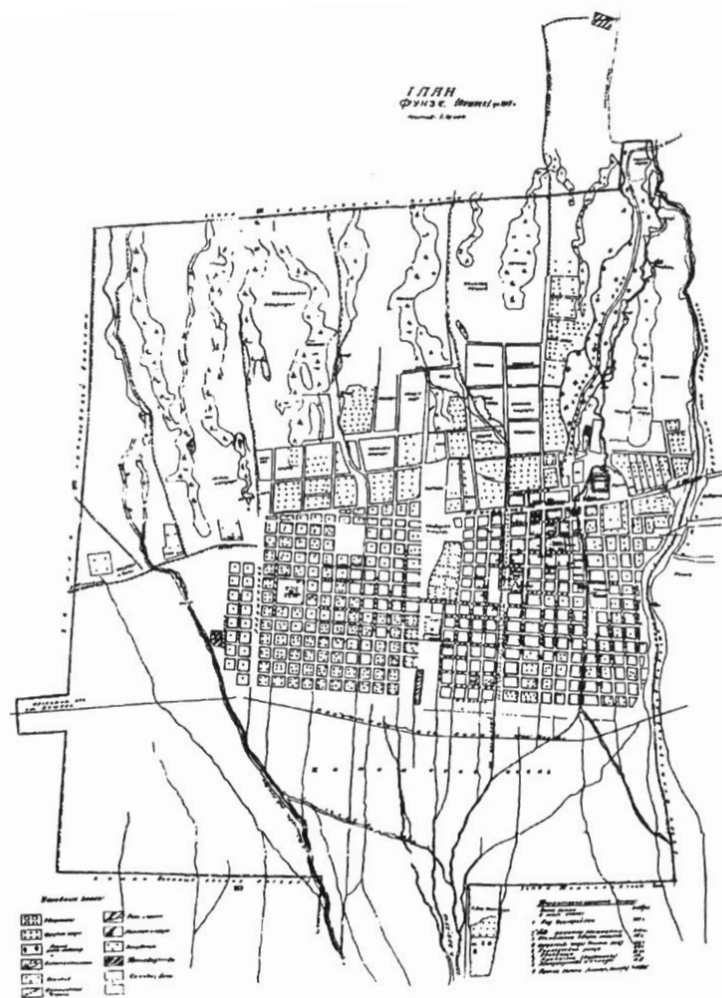


Figure 2.7 : Plan of Pishpek – grid system with low-rise settlement, 1917.

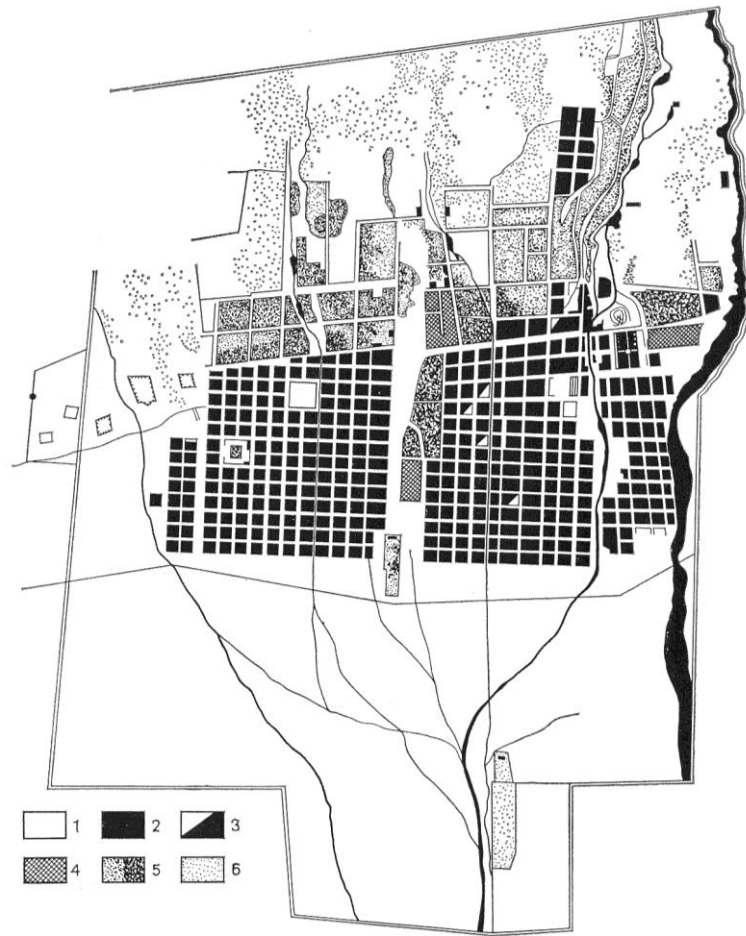


Figure 2.8 : Pishpek plan layout, 1917 (Pisarskoy, Kurbatov, 1986, p. 51).

1 – town lands; 2 – single-storey houses; 3 – multi-storey buildings; 4 – industry; 5 – gardens and parks; 6 – non-usable lands

Completely different idea of housing occurred in Pishpek when Bolsheviks⁷ occupied it in 1918. Private property of local bourgeois was confiscated and delivered for a common use. Taking away from the rich and giving to the poor was an idea strongly pursued by the Bolsheviks. A confiscated house was arranged for a residence of several families – each family in a room. This was far beyond the idea of perfect housing for tenants. Unfortunately, living conditions were the last things

⁷ Bolsheviks (literally meaning "one of the majorities") were a faction of the Marxist Russian Social Democratic Labour Party. The Bolsheviks became the Communist Party of the Soviet Union. They came to power in Russia during the October Revolution phase of the Russian Revolution of 1917, and founded the Russian Soviet Federative Socialist Republic, which would later become the chief constituent of the Soviet Union in 1922.

Bolsheviks considered caring about. They were concerned with providing a place to live for everyone in the country, splitting all the good evenly.

2.3 Soviet Period. Frunze

First years within the Soviet Union were crucial for Frunze. Gaining authority of a capital city, it had to go through political, economical and cultural reforms. Soviet Kirghizia became a socialistic, industrialized country with focus on Soviet ideology “kolkhoz”⁸ and economy based on five-year-plans. Housing and architecture in general were a major tool in building a new society (Muksinov, Khramova, 2010, p. 22; Pisarskoy, Kurbatov, 1986, p. 72-73).

Architecture of Soviet Kirghizia changed in respect to the socialistic changes in lifestyle of Kyrgyz people when they went through dramatic transformation from nomadic to settled lifestyle. Switching from a portable “boz ui” to a clay house, evolution of housing in Frunze slowly reached to a multiple-storey apartment block. Housing construction was government-operated and carried on in a larger scale (Pisarskoy, Kurbatov, 1986, p. 72-73). However, comfort was still not a topic of discussion in first Soviet housing. There were mainly dormitory type units that hosted several families in a single apartment: one room for one family and all the service rooms such as kitchen and bathroom for common use.

The best possible solution for this housing drama was in building new housing units. To do so, single-storey houses had to be replaced with multiple-storey apartment blocks. Thus, a team of architects led by academician I. Zholtofsky created a long-term plan for the development of the capital city that worked on the idea of building a new standard of housing for the citizens of Frunze. First apartment blocks of two and three-storey were constructed using available local materials such as brick and wood, and later projects applied reinforced concrete core structure (Muksinov, Khramova, 2010, p. 28-35).

Even though the masterplan in a way managed to solve housing lack of 1930s, Zholtofsky could never predict an upcoming disastrous event. In June of 1941, the

⁸ Kolkhoz – a communal household in the Soviet Union.

Soviet Union entered the Great Fatherland War⁹. A number of factories were moved to Frunze from the hotspots of war – from western part of the Soviet Union to Central Asia that was on the east. Construction had to switch from housing to industrial. In addition, there were a huge number of evacuated people. To provide them with shelter, government ordered to organize communal apartments (Pisarskoy, Kurbatov, 1986, p. 70-99). Those who did not get a place helped themselves by building temporary houses and barracks, thus forming new districts with uncontrolled and unsanitary construction. A wave of chaotic housing flooded the city.

The Soviet Union won the Fatherland War. However, Soviet cities were in tragical condition. They were bombed, destroyed, abandoned and needed serious reconstruction; some had to be rebuilt from blank. Luckily, due to its geographical location far from the battleship, Frunze was not attacked by the enemy. However, the city did suffer from the global effect of the war.

Rebuilding the economy of the city was not an easy task. Clearly, after the war housing lack was even a greater issue for Frunze. In order to solve pending housing shortage, “Kirgosproekt”¹⁰ developed first standard design series. Construction increased in speed and became more economical. There were several typologies developed by different architects. Some were built out of brick, others – using prefabricated concrete structures (Muksinov, Khramova, 2010, p. 36-37).

The after-war period was dedicated to solving issues regarding uncontrolled during-the-war housing and population growth. A 20-year master plan was developed in 1950 by a team of architects led by A. Smolitsk. According to the plan, city was divided into functional zones: administrative and cultural, industrial, and residential. The master plan clearly defined a city center with all necessary institutions and facilities: municipal and governmental administrative units, theaters, city parks, educational and medical institutions. During this period the House of Government, the Opera and Ballet Theater, central square and main parks were built (Pisarskoy, Kurbatov, 1986, p. 82-83). The city expanded its borders, forming new residential

⁹ The Great Fatherland War – the World War II (1941-1945).

¹⁰ Kirgosproekt – a state planning institution responsible for architectural projects in Soviet Kirghizia.

settlements on the south, north and west. Housing strategies switched from individual housing to mass construction. Industrial reforms positively affected housing construction speed after a major large panel factory started functioning in Frunze in 1960s (Muksinov, Khramova, 2010, p. 38-51).

The Masterplan:

Masterplans carried a big importance for major Soviet cities, mainly capitals and those exceeding 500 thousands in population. Even though the capitals of the fifteen Soviet republics were different in size, geographical location and cultural background, their masterplans were developed according to a similar scheme, which focused on functional zoning, public space proportions, infrastructure and housing development. The masterplan resolution had to take into consideration possible demographical changes and therefore territorial growth of the city within next 25-30 years. Every five years a careful revision with necessary modifications had to be done (Shaw, 1982, p. 394).

The masterplan of Frunze was developed several times: once in 1939 (N. Smirnov and G. Babad), second time in 1950 (I. Gohblit, A. Smolitskiy and G. Babad), and last time in 1970 (I. Sokolov-Dobrov, V. Nenarokov, I. Saveliev, I. Nizovoi and G. Babad) (Fig. B.1-B.5). The plan of 1950 defined the dominant squares and main arterial streets, major city ensembles and cultural meeting points. It put the most important facilities on the map of the city to let it fully function as a capital. The plan had serious wrong predictions though. Frunze reached its size and population long before predicted date of 1970. Planning a city with low-rise buildings was a misleading tactic.

The case is not unique to Frunze. Unfortunately, most of the masterplans designed for major Soviet cities failed to predict economical changes and demographical growth for the set date. One fourth of the investigated long-term Soviet city master plans had to be renewed within first years (Ivanova, 1973, p. 26-28). In fact, failure to follow the masterplan and fully implement it happened not only due to wrong demographical and economical predictions, but it was also because of the delays and bad timing, poor cooperation among the institutions, insufficient technology and machinery (Shaw, 1982, p. 396).

Developers of master plan of 1970 took into consideration mistakes of the previous one and tried to improve the new plan for Frunze. Architects and urban planners used mass construction that started in 1960s by Nikita Khrushchev as a main tool to solve everlasting housing lack. The construction speed increased dramatically with large panel housing. It became the most preferred technique of that time and was applied in construction of residential microdistricts (Nusov, 1971, p. 74).

Systematically transforming the urban scene of the city, Soviet architecture thoroughly established in Frunze. Established as a small suburban town, Frunze grew into a capital city of industrialized Soviet Socialistic Republic Kirghizia. Above are the development schemes of the city dated from 1878 to 1959 (Fig. 2.9). Unfortunately, there is no available graphical information on masterplan past these dates.

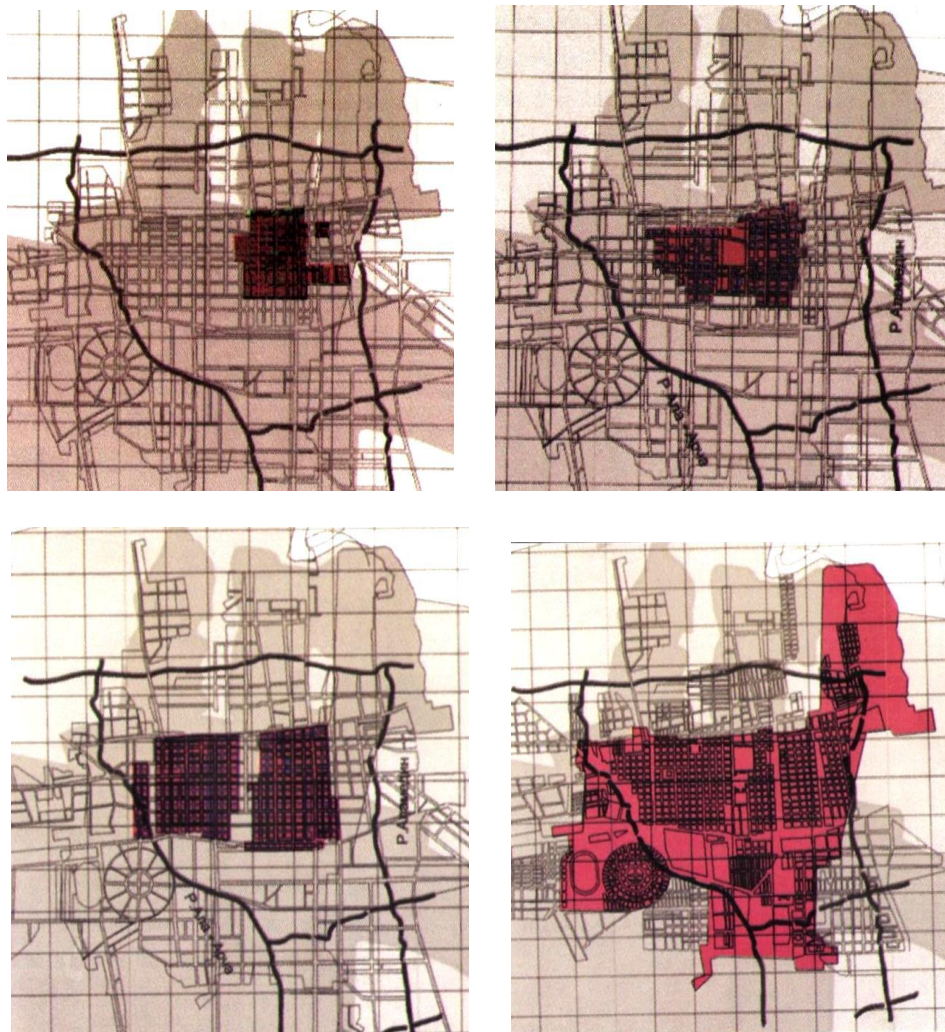


Figure 2.9 : City development schemes: 1878, 1905, 1927, 1959.

2.4 Post-Soviet Period. Bishkek

The fall of the Soviet Union brought radical political and economical changes to all of its former republics. Kyrgyzstan stepped onto the road of sovereignty gaining its independency in August 1991. The same year Frunze was renamed Bishkek. A capital city, Bishkek is a political, social, and financial center of the country. Trade became main operating principle of economy and society. The government was not in charge of providing housing any longer. The initiative was expected from the private institutions. New economical system dictated own regulations on housing ownership. According to the new organization scheme, the right to form the architecture of a building belonged to a private customer. It affected everything: general design, engineering, and plastics of a building (Khramova, 2011, p. 85-104). The new planning approach might have diversified the city appearance, but it rather caused chaos and lack of style. The period was a starting point for a change in appearance of Bishkek.

The major problem of the city planning was and still is the unplanned “novostroyka” that takes place all around the city. Those are major construction areas built without official permission of municipality but later accepted and granted approval (Khramova, 2011, p. 88). This type of low-storey settlement blocks the city development and growth, since it grows like a barricade around the city borders. “Novostroyka” boom happened due to a big number of in-migrants to the capital from the suburbs.

The housing pattern of Bishkek is composed of single-family houses and multi-storey apartment blocks, major part of which were constructed in Soviet Union during mass housing campaign held after the Fatherland War. Housing units take place mainly in the central, southeast and southwest parts of the city.

Housing of XXI century provides conditions that are more comfortable. Architects design projects in respect to preferences and budget of the customer. Multi-storey apartment blocks up to nine storeys high are the most general housing type of the period. They provide larger living spaces and extra utilities. Living area of the apartments grew and it provided opportunity for each family member to own a

separate room. For citizens with communal household background this characteristic is a very important matter. Privacy and personal space matters are finally solved.

Conclusion: Even though Bishkek is considered young being a capital city of modern Kyrgyzstan for 22 years only, it had always been a political and economical center of the region through history. Kyrgyz people have gone through major switch in their housing habits. They lived in Pishpek fortress being under power of the Kokand Khanate. Later in the second half of XIX century Kyrgyz lands got occupied by Russian Tsar. Joining Russian Empire, Kyrgyz nomads had to give up their portable «boz ui» housing that they carried up to mountains in summer and down to valley in winter for centuries. Following Russian housing customs, Kyrgyz people settled in clay and stone houses. During Soviets, Pishpek renamed Frunze. Not only the name but also the whole image of the city went through major change with new industrial methods of construction. Master plan was a core element of economy, politics and urban planning of the Soviet cities. Mass housing construction that started after the Great Fatherland War managed to solve big part of housing lack. It was not before the XXI century that new construction era began in the capital city. After the crash of the Soviet Union Kyrgyzstan gained independency in 1991. Housing architecture developed according to economical changes in the country. Preferences and budget of a customer became the main criteria in the design of the buildings. New construction materials and techniques were introduced to the local market. Further development of Bishkek appears to be rather chaotic. However, it is a matter of time until the young nation develops a new strategy for the next stage of history in architecture.

3. HOUSING ARCHITECTURE IN THE CAPITAL CITY. FRUNZE BECOMES BISHKEK

3.1 Housing Architecture in Soviet Kirghiz Capital Frunze

The capital of Soviet Kirghizia, Frunze was an economical, political and cultural center of the republic since 1926. From its predecessor Pishpek, Frunze inherited a modest suburban architecture with one and two-storey buildings.

Nearly flat and surrounded by snowy mountains of Ala-Too, Frunze was located in a seismic zone with a magnitude of 8 to 10 by Richter scale. Frunze was called “garden city” for being the greenest city of the Soviet Union.

Industrialization came to Frunze together with the Soviet regime. Housing started developing around factories. Industrial zone “Intergel’po” was first of a kind in organizing residential settlement for factory workers around the work site area. Residing close to factories was time and effort saving factor for workers. The housing consisted of single and two-storey houses. They were dormitory type communal apartments generally shared by two or three families (Nusov, 1971, p. 92). Clearly, living conditions could be hardly called comfortable. Despite the number of members, a family had to squeeze in one room. Besides, they also had to share kitchen and bathroom with other families and it was a reason for social conflicts on a routine base, such as scheduling, hygiene and noise.

Housing of 1920s was poor and chaotic. The plan of apartments consisted of a minimum room number and a minimum comfort. The construction materials were mainly local: brick, saman, wood, and clay. Even though the housing construction was vigorous, it was not enough to solve the housing problem for all the citizens of Frunze (Nusov, 1971, p. 93).

In 1961, the city increased in territory as a result of massive construction campaign that initiated on all-union level. Living conditions significantly improved.

The main categories of housing architecture were standard design series, individual design and experimental construction. The housing market concentrated on multi-storey structures. Single house construction was rare; most of the existing low-storey settlements were from pre-Soviet period when the city was called Pishpek. In late 1950s, State Planning Institute “Kirghizgiprostroy” developed projects for standard design series. The majority of construction was conducted according to standard design series projects. It was a revolutionary period of planning and construction in terms of technology and architectural design principles (Nusov, 1971, p. 123; Kurbatov, Pisarskoy, 1978, p. 58).

3.1.1 Standard design series

What is a standard design and what are the advantages of it? According to one of the architects of the projects Evgeniy Pisarskoy and his colleague Valentin Kurbatov (1978, p. 59), the standard design’s main principle was to create various kinds of housing units based on a single scheme but different in type, size, number of storeys and number of flats, design of façade and other configurations. Standard design served as a foundation for several new projects. Implementation of standard design series in a large scale led to formation of housing complexes and microdistricts. Series were well integrated into social and natural environment. The greatest advantage of the standard design was the factory manufacturing method of production, which fastened the construction process (Kurbatov, Pisarskoy, 1978, p. 59). Each apartment was designed for a single family. After communal apartments, the idea of having a personal apartment was sensational for citizens of Frunze despite the small area of the apartments, which varied in respect to six – eight square meters per person (Nusov, 1971, p. 123).

First housing series in Frunze was developed in “Kirgosproekt” Planning Institute by architect Albansky who carefully approached to material selection and composition of the project. The houses were two or three storey-high and perfectly fitted the city silhouette. They took place on the central streets of the city - Soviet, Toktogul, Tynystanov, Erkindik, and Moscow. Apartments turned out to be too costly for after-war Frunze construction sector due to big area and high ceilings. Thus, application of this series did not proceed (Kurbatov, Pisarskoy, 1986, p. 99).

Later in 1955 in order to solve acute housing shortage, architects and engineers of “Kirghizgiprostroy” State Planning Institute started working on revolutionary standard design series. «213» and «113» series were the first ones to be launched. The houses were made of brick up to four storeys in height; apartments were designed in respect to six – eight square meters per person. First standard design series pursued a goal to provide each family with modest but personal housing. Reducing ceiling height to 2.5 m and living areas by 30%, combining bathroom and toilet, let «213» design series apartments be very cost-efficient (Anistratov, Petrov, 1982, p. 5; Pisarskoy, Kurbatov, 1986, p. 201).

The variety of standard design housing projects kept growing. Most of standard design series served as a bridge for a development of the next series. And in fact, each new series became more improved than the previous one. Here they are in a chronological order. The «1k-308» series was developed after Kazakhstani series type and recognized as a better version of «213». The five-storey large panel «1-73» series was recognized to have improved features than the previous «1-464AC» series. Moreover, the same «1-73» served as a platform for a design of phenomenal «105» series which was an award winning project in 1978. The five and nine – storey buildings of the «105» series were rational in plan and practical in construction. Further the project of «105» series was applied in Kazakhstan. Series «98» was the next step in multi-storey housing construction. It was a substitute for the «1k-308» brick series (Anistratov, Petrov, 1982, p. 5; Pisarskoy, Kurbatov, 1986, p. 212-213).

3.1.1.1 «1k-308» series

The «1k-308» series was originally a project developed by Kazakhstani architects and further edited to fit local conditions by “Kirghizgiprostroy” State Planning Institution in 1963 (architects S. Kurbangalieva, V. Konovalov, E. Pisarskoy, eng. G. Savvateev) (Pisarskoy, Kurbatov, 1986, p. 205). Cooperation and project sharing among planning institution of Soviet republics was a common practice, especially among cities with similar climate and seismic characteristics such as Frunze, Almaty, and Taraz.

Construction of the «1k-308» series initiated with brick structure and later changed to monolithic reinforced concrete frame with brick fillings. The series showed

variety in housing block typology – from 32 to 99 apartments in a block and from one to four rooms in an apartment. The architects of the project considered separate bathroom and toilet, because they realized it was an important feature for a citizen of Frunze in stating comfort level of one's housing. The height of the rooms rose to standard 2.7 m, whereas room height in previous «213» series was 2.5 m. Exclusiveness of the project was in placing department store facilities on the ground floor of the housing blocks. However, the series had structural and design disadvantages such as small room size, lack of flexibility in façade orientation and extremely plain exterior design (Kurbatov, Pisarskoy, 1978, p. 61-62).

3.1.1.2 «98» series

In 1970, “Kirghizgiprostroy” developed seismically resistant series «98» (architects E. Pisarskoy, engineers V. Smirnov, M. Kovaleva, G. Borodulin). It replaced the production of the «1k-308». The «98» series had a large nomenclature that consisted of 18 block-sections, gallery-access and system-access types. Length and shape of the buildings easily changed, providing construction flexibility within the urban scale. Thanks to several block-section possibilities, the buildings could consist of one or more sections. Different apartment typologies were designed for all types of families: the number of rooms in an apartment varied from one to five, each having an “a” and a “b” variation as an extra. The double orientation of the apartments provided perfect ventilation, natural lighting and heating. Bathrooms in the «98» received natural light and natural ventilation, which was a rare feature in housing conditions of the period. Zoning within the apartment was well organized, separating the living area from the sleeping rooms (Pisarskoy, E., Kurbatov, V., 1986, p. 211-12). The «98» series did not completely solve housing shortage of Frunze, however, it brought housing industry on a higher level and provided better housing conditions to the citizens.



Figure 3.1 : Plan of «98» standard design series (Pisarskoy, Kurbatov, 1986).



Figure 3.2 : «98» standard design series (Pisarskoy, Kurbatov, 1986).

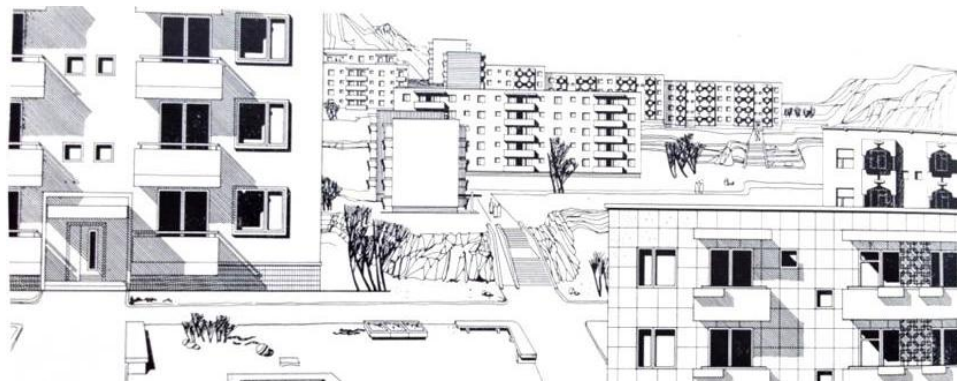


Figure 3.3 : Residential microdistrict (Pisarskoy, Kurbatov, 1986).

3.1.1.3 «1-464AC» series

Construction speed rapidly increased with large panel construction that launched in the capital in 1961 after opening of Frunze's large panel factory with annual production of 8.1 thousand square meters of living space (Kurbatov, Pisarskoy, 1978, p. 62-63). All load bearing and non-load bearing elements such as inner and exterior walls, ceiling of the buildings consisted of large panels, which were produced at the factories and applied on site with minimum labor force, and time costs. This industrial advantage made large panel production very popular.

The «1-464AC» was an all-union level series applied in most of the cities all over the Soviet Union. The buildings consisted of 32, 48 and 64 apartment blocks (architects E. Pisarskoy, O. Danevich, eng. P. Rentel). The four storey-high buildings composed of three types of apartments with one to three rooms in each. The areas of the rooms were rather petite: living room 17, bedroom 10.7-13.8, kitchen 6, bathroom 2.8, and

hall 4-6 square meters. In interior design of the apartments, architects applied the most economical materials: floor was covered with linoleum, walls with wallpaper and ceiling with paint. Every apartment looked nearly the same. The exterior: façade was decorated with marble chips or paint. Despite its narrow and pass-through rooms, the «1-464AC» had important structural advantage - it showed high seismic resistance up to magnitude of nine (Kurbatov, Pisarskoy, 1978, p. 60-64). Since location of Frunze is in high seismic risk zone varying from eight to ten by Richter scale, development and implementation of earthquake resistant structures was highly important. Having some structural advantages over other materials made large panel construction attractive. Large panel buildings were twice as light as the brick ones and they had proved themselves more seismically resistant than stone buildings in the earthquake of 1966 in Tashkent (Kurbatov, Pisarskoy, 1978, p. 63).

“Kirghizgiprostroy” State Planning Institution was in charge of designing residential projects for the capital in 1970s. In order to have a good picture of housing construction dynamics in Frunze of the period, it is enough to look at the statistics: annual housing area growth went up to 40% and varied from 170 000 to 250 000 square meters, which was more than total housing area during first years of establishment of Frunze (Kurbatov, Pisarskoy, 1978, p. 58).

3.1.1.4 «105 » series

New «105» series was developed especially for Frunze by “Kirghizgiprostroy” architects (E. Pisarskoy, V. Sedov, V. Mozgovoy, A. Afonin, A. Kokorin, A. Tevs) in 1970s overpassing the production of the «1-464AC». Large panel buildings offered housing block variations. There were five types that varied according to number of apartments - from one to five, number of storeys - from five to nine, and use of ground floor - some were occupied with department stores, others with apartments. Development of the «105» series played a great role in mass construction and industrialization of 1970s; it was a progressive design series with good planning characteristics. The apartments had an advantage of double orientation that positively affected their insulation and ventilation. Zoning and space proportions in the «105» series were well solved: living room, kitchen and toilet were grouped in a “day-use zone”, while bedrooms and bathroom formed a “sleeping zone”. Balconies were usually connected to the first zone. The areas of the rooms were larger than in

previous series: living room 18, bedrooms 8 – 13, kitchen 5 – 7.8 square meters depending on number of rooms in the apartment. Only single-room apartments had joint bathroom and toilet; bigger ones were designed with separate bathrooms (Kurbatov, Pisarskoy, 1978, p. 65-66). For citizens of Frunze it was very important to have bathroom separate from toilet, as well as not to have pass-through rooms in the apartment. Taking in consideration the listed criteria, the «105» was nearly a perfect housing for a Frunze citizen.

Living in the «105» series was very comfortable. Even the smallest of the type – the single-room apartment was rationally planned. There were a large living room, a square-shaped kitchen and a storage room. Single-room apartments had big balconies five square meters each, two in the nine-storey buildings and one balcony in the five-storey ones. This particular apartment typology was convenient for small families with limited budget.

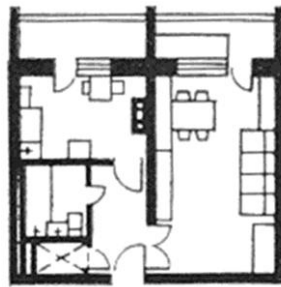


Figure 3.4 : Plan of one-room «105» series apartment (Pisarskoy, Kurbatov, 1986).

All of the bigger apartments of the «105» series had two balconies: one from the kitchen, another from the living room. Depending on the nomenclature of a block typology, the balconies varied in size but the number remained – two balconies maximum even for the five-room apartments.



Figure 3.5 : Plan of 2-5 room«105» series apartments (Pisarskoy, Kurbatov, 1986).

A continuous row of balconies formed a monotonous appearance on the exterior of the building. As a solution, architects of the «105» series developed design variations for balconies and entrances. Different kinds of materials and techniques were applied to façade design: marble and granite stone particles, colorful decorative concrete applications (Kurbatov, Pisarskoy, 1978, p. 66). Unfortunately, as the time passed, some of the buildings' façade paint and image resolution have faded.



Figure 3.6 : The «105» series with national ornament on the side façade (www.kloop.kg; Pisarskoy, Kurbatov, 1986).

3.1.2 Experimental and individual design

Apart from the standard design housing that was massively built in the city, there were also experimental and individual design housing projects. In comparison to standard design series, the number of experimental and individual design housing was small, since each project was designed separately and required more labor force, budget and time costs.

Individual design was once the only type of housing design. Every project was unique on its own and never was repeated again. The city construction developed according to individual design projects until the Fatherland War. The after-war mass urban housing replaced individual design and spread on an all-union level. Individual design projects never formed a majority of housing units in Soviet housing sector being too much cost and time consuming. Nevertheless, owing to Stalin's great passion for exclusivity and luxury, there are some great housing samples constructed during his reign.

The outstanding sample of early Kirghiz Soviet architecture is a three-storey house on the most charming boulevard of the city – Dzerzhinskogo (renamed Erkindik) (Fig. 3.7). The boulevard is famous for beautiful alleys and tall trees, monumental architecture of Stalin’s period and most importantly the great people that used to reside in these buildings. Designed by a collaboration of prominent architects of the period S. Saakyan, P. Ivanov, A. Albansky and built in 1940, the building is emblematic Stalinist architecture – pompous facade, balconies, arches and high ceilings (Muksinov, Khramova, p. 36).

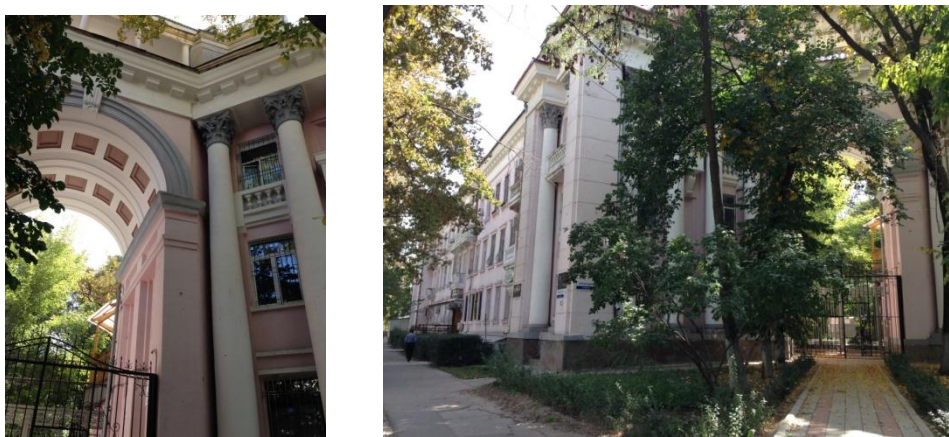


Figure 3.7 : Residential building on Dzerzhniskogo boulevard.

In many cases, it is hardly possible to catch a good shot of a building because of the trees that cover over the façade. However, this is exactly how the image of the capital is formed: an ensemble of architecture and nature. The elite houses on Dzerzhinskogo Boulevard were dedicated to the nobility, artists, academicians, important political elite and national heroes. Names of these outstanding residents were written on stone plates on the facades of the buildings (Fig. 3.8).



Figure 3.8 : Stone plates with the names of residents – national heroes.

Experimental construction was becoming a new tendency in housing architecture of 1970s. It was used as a way to apply new techniques, challenge high resistant materials and try interesting architectural solutions apart from standard design series (Kurbatov, Pisarskoy, 1978, p.59). In order to raise housing quality, new housing projects developed according to several criteria: reconsideration of area and number of rooms, application of new materials and generation of attractive designs.

The pursuit of new architectural style started with concentration on the façade composition. Designed by E. Pisarskoy in 1974, 208-apartment “Ocean” residential block was decorated with steel ornaments. The building received its name because of the city’s largest fish store with the same name that took place on the ground floor of the building. Located on the intersection of city’s main streets Manas and Chui, it was a popular place and only seafood store in Frunze.

The “Ocean” was a revolutionary project in experimental construction (Fig. 3.9). The building was a frame-and-panel system. Unlike the large panel constructions where panels are both load-bearing and separating elements, in the frame-and-panel constructions panels are non-load-bearing structure. The weight of the building is carried by beam and column (Kurbatov, Pisarskoy, 1978, p.60; Anistratov, Petrov, 1982, p. 5).



Figure 3.9 : Steel decoration on the balconies of the side façade brings elegance and protects the windows from bright southern sun.

In Frunze, the frame-and-panel housing architecture initiated in 1970s with the construction of 45-apartment-single-core apartment blocks – one in fourth microdistrict and another in the city center on Soviet Street (architects E. Pisarskoy, engineer I. Snychkov) (Fig. 3.12). Structural characteristics of frame-and-panel buildings proved themselves sufficient for construction in high seismic zones of

Frunze. Due to quite wide bay of 5.4 m, they provided a possibility to form large open spaces without impediment and were suitable for commercial use on ground floors. Therefore, most important and large department stores of Frunze were located on the ground floors of the frame-and-panel housing units. For citizens' convenience, they took place on the main streets of the city (Kurbatov, Pisarskoy, 1978, p. 67). Among these projects were famous nine-storey “Ocean”, “Issyk-Kul”, “1000 Melochey” and a beautiful ensemble on Mossovet (Fig. 3.10; 3.11).



Figure 3.10 : 9-storey-high 36-apartment housing units in the fourth microdistrict and the one on Soviet-Moscow streets intersection are constructed according to frame-and-panel technique. Photo of the author, 2013.



Figure 3.11 : Frame-and-panel residential buildings “Issyk-Kul” and “1000 Melochey” department stores. Photo of the author, 2013.

Another successful sample of experimental construction is a frame-and-panel apartment building called “Issyk-Kul” (Fig. 3.13). Following the tradition, “Issyk-Kul” was also named after the store located on the ground floor of the building. Like the previous frame-and-panel buildings, “Issyk-Kul” took place on one of the main streets called Soviet. Thus, nearly all main arteries of Frunze consisted of new experimental construction buildings.

Frame-and-panel systems were gallery-access and point-access. One to four-room apartments had double orientation, which provided efficient ventilation and lighting. Areas of rooms and balconies became larger than in standard design series and had no pass-through rooms, providing larger space in respect to ten – eleven square meters per person. Clearly, the comfort rate significantly increased (Kurbatov, Pisarskoy, 1978, p. 67-68; Nusov, 1971, p. 124). However, the construction of frame-and panel housing did not proceed further on because it was not cost-efficient.

While focusing on a higher quality and sophisticated solutions for the individual planning, the architects were trying to figure out efficient models in order to continue mass production. Some of the successful individual projects were further applied more than once (Kurbatov, Pisarskoy, 1978, p. 72).

1980s could be described as a period of interesting housing projects. Architects put themselves on the road of discoveries and experiments. Trying to solve weak points of the standard design series, they applied all their effort to design attractive façade compositions, convenient plan solutions and stable constructions.

Reinforced concrete 5-9-12-storey housing block on Chui Avenue in Vostok-5 microdistrict (Fig. 3.12) (architects B. Lebedev, N. Baibekov, A. Nezhurin, 1985) and an 18-storey monolith construction tower on Soviet Street (Fig. 3.13) (architects B. Lebedev, I. Kombarbaev, A. Nezhurin, N. Baibekov, 1983) were an attempt of architects to bring variety into monotonous architecture of the housing districts by forming attractive compositions.



Figure 3.12 : 5-9-12-storey residential building in Vostok-5 microdistrict.

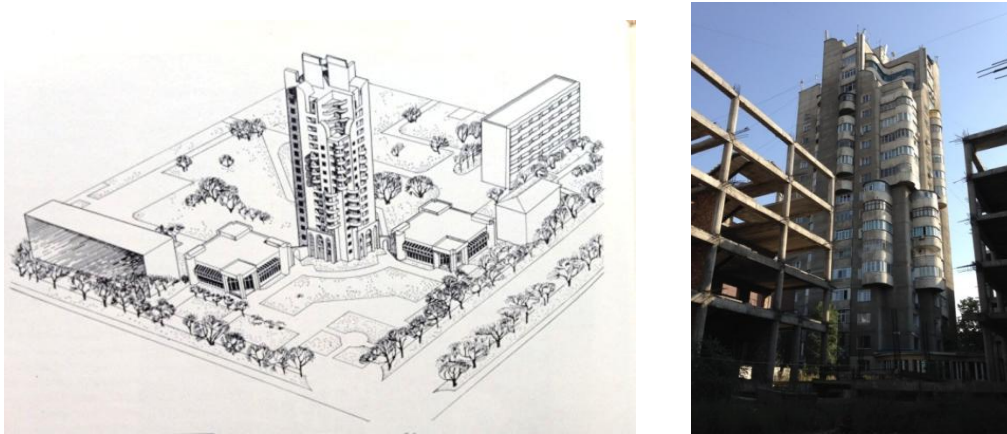


Figure 3.13 : 18-storey residential building on Soviet-Kiev street intersection.

An award-winning project of 100-apartment 18-storey tower on Soviet Street became a symbol of the city center (Pisarskoy, Kurbatov, 1986, p. 218-219). Unfortunately, recent construction around the tower ruined the visibility of building's façade. The territories around the building designed to be green open space are currently occupied with new construction.

Experimental housing proceeded to the South of Frunze. “Southern gates” is a unique residential project that fully responds to its name (Fig. 3.14). The blocks across the street from one another, 123 apartments each were built on the Southern point of Frunze – the welcoming entrance to the city from the mountainous villages. It was an attempt to make a difference between the low-rise countryside and the urban city scale. Balcony decorations made this ensemble representative and festive. The architects reached their aim – the ensemble served indeed as a gate to a modern capital city (Kurbatov, Pisarskoy, 1978, p. 72-73).



Figure 3.14 : Residential buildings “Southern gate” in ninth, tenth microdistricts.

Besides its urban functions as a “city gate”, the housing blocks provided comfortable conditions of living in individually planned apartments. The ground floor hosted multi functional utilities: bookstore, grocery store, cafeteria and children playrooms. There was even a solarium on the roof and a decorative swimming pool on the backyard (architects R. Mukhamadiev, A. Soltobaev, Yu. Tagirov, engineer O. Suleimenov) (Kurbatov, Pisarskoy, 1978, p. 73). Solarium was utopic for the Soviet period when anything luxury was considered “capitalistic” and in many cases forbidden.

Because of restrictions and political events, some bright ideas were never realized. While mass urban housing construction was mainstream in Frunze, architects tried to discover new ways of experimental housing. Together with “Kirgizgiprostroy” State Planning Institution in 1963 – 64 they developed a project for a microdistrict on the southeast of the city, which consisted of all necessary types of building, including various housing units each different from another. The main aim of the project was to develop the best possible housing structure and design. However, the project was never built; therefore, the idea of the “perfect house” was left as a hypothesis only (Kurbatov, Pisarskoy, 1978, p. 68).

Nevertheless, experimental design continued in a smaller scale. In 1967, five-storey experimental design brick housing unit was constructed on Frunze Street that consisted of 55 apartments (architect A. Albanskiy). Essentially, the building was a part of a big experimental housing project. The architect was determined to solve mistakes of previous apartment designs through structural and planning corrections: increasing kitchen size, using floor heating, developing better interior design solutions. The changes affected the exterior of the building as well: staircase was taken outside the building, balconies surrounded the building almost by perimeter, colors of façade were carefully chosen to make a pleasant composition (Kurbatov, Pisarskoy, 1978, p. 69). Thus, most of the complaints and demands regarding visual and comfort characteristics of Frunze housing were solved and satisfied.

On the Southern border of the city up where Soviet streets takes it beginning, we can find a housing project with ambitious design built in the end of 1980s (Fig. 3.14). It was one of the final projects of Soviet architecture in Frunze.

Frunze had to correspond to its status of a capital city. Due to mass construction, after-war migration and industrialization, it grew in size. In last few decades most of the housing projects were designed high-storey to satisfy demographical growth and provide optimal urban space distribution. The state planning system helped to organize and regulate the standards of construction. Besides housing, all branches of construction were constantly under government control and revision (Kurbatov, Pisarskoy, 1978, p. 73).



Figure 3.15 : Experimental construction residential building on the south of Frunze.

Systematical construction was a tool to solve continuous housing shortage. Housing construction was given a priority. As a result, a housing unit was announced as a core element in “construction” of socialism. Frunze’s urban system developed according to “three steps” scheme: housing group – housing microdistrict – housing district (Kurbatov, Pisarskoy, 1978, p. 73). The system of urban “three steps” was successfully implemented in the capital of Soviet Kirghizia.

3.1.3 Microdistricts

The after-war Frunze housing strategies dramatically changed switching from individual low-storey housing to large-scale mass construction. It started with formation of small housing groups after war. Mass construction of 1960s generated first residential microdistricts. Microdistricts were small housing districts equipped with all necessary infrastructures such as schools, kindergartens, administrative and cultural centers, department stores and sport fields within walking distance from residence blocks. A major large panel factory in Frunze served as a platform to hold series construction in a larger scale - big microdistricts kept rising on the South of Frunze (Fig. 3.16; 3.17). Slowly replacing single-storey suburban settlements with

more comfortable residential panel blocks, quality of housing visibly increased by the end of 1970s (Muksinov, Khramova, 2010, p. 50-51).



Figure 3.16 : Third residential microdistrict. Photo from Archive, 1967.



Figure 3.17 : Southeastern residential microdistrict, Frunze. Photo from Archive.

In 1963, a team of architects supervised by E. Pisarskoy developed and applied a major project for a large residential area as big as 500-hectar-area on the southeast of Frunze. It consisted of nine microdistricts with a total population of 100 thousand people. The residential area had a local center with well-equipped cultural, educational, sport and trade facilities. The housing units were four and five-storey standard design apartment blocks (Pisarskoy, Kurbatov, 1986, p. 147-152; Nusov, 1971, p. 74).

In the development of microdistricts, the importance was given to sufficient amount of green areas, pedestrian and bicycle routes, children playgrounds and open space public zones (Pisarskoy, Kurbatov, 1986, p. 152). Public transportation was provided around the microdistrict, never entering it – therefore not polluting the air and not

causing noise or traffic accidents. Parents felt safe letting their children play outside (Fig. 3.18; 3.19).



Figure 3.18 : Beautiful alleys of first microdistricts. Photo from Archive, 1970.



Figure 3.19 : Southeastern residential microdistricts of Frunze.

In order to use territorial resources of Frunze for further housing construction, “Kirghizgiprostroy” developed projects for reconstructing Eastern regions of the city with existing low-rise settlement around industrial zones. Thus, six microdistricts were reconstructed and named Vostok-1, Vostok-2, Vostok-3, Vostok-4, Vostok-5, and Vostok-6¹¹. New up to 12-storey-high, large panel residential blocks replaced single-family old houses (Pisarskoy, Kurbatov, 1986, p. 152-53). Seven new microdistricts Zapad-1 to Zapad-7¹² were constructed on the West of the city. The Western “Zapad” region microdistricts are considered a better residential area rather than the Eastern one. Perhaps it is due to the typology of housing and location

¹¹ “Vostok” stands for “East” in Russian. The microdistricts Vostok were located on the East of Frunze.

¹² “Zapad” stands for “West” in Russian. The microdistricts Vostok were located on the West of Frunze.

because most of the buildings were constructed out of brick, which is generally more preferable by citizens of Bishkek. Besides, the settlements formed a quite and cosy residential neighbourhood close to city center.

3.2 Housing Architecture in Sovereign Kyrgyzstan Capital Bishkek

With the fall of the USSR, Kyrgyzstan's economy switched from steadily developing centralized planning to trade-oriented unstable and chaotic. Soviet system of government controlled construction management slowly came to its logical end. According to new organization scheme, the right to form the architecture of a building no longer belonged to state planning institutions but to a private customer. New system affected site plan, block typology, image of a building, engineering, and ownership status. This led to diversification of city appearance, but it also caused chaos and lack of style in architecture.

Housing pattern of Bishkek is composed of buildings mainly from two periods – Soviet and Post-Soviet. Apartment blocks that were built during Khrushchev and Stalin form the majority; however, there is new construction developing within dynamic trade-oriented economy as well.

While in Soviet Frunze, major part of the housing was built with government or cooperative support, in contemporary Bishkek it is carried on by private initiatives. Small architectural offices and design studios replace large project planning institutions; individual designs substitute standardized mass construction.

City center keeps functioning according to a grid system that was established at the early stages of city's foundation. The grid system is considered convenient for Bishkek in respect to climate, ventilation of the city from the mountains and existing architecture. Main arteries of the city are still Manas, Baitik Baatyr (former Soviet) streets from South to North and Chui Avenue from East to West. However, city keeps expanding. The municipality ordered to prolong the main streets up to the city borders and even further. Since population and transportation density has grown in past two decades, widening and prolonging streets allowed the city to finally “breathe” and function accordingly.

There are new settlements along prolonged roads. Some of them are built after road construction, but most of them already existed and, in fact, were the reason of the

road prolongation to provide transportation access. Further, in this chapter, the researcher will discuss more about such settlements.

2000 was an important year for Bishkek; it was a starting point for architectural growth. By the end of first decade of independency, young country achieved somewhat economical and political stability. During this period, architecture steps into a new phase. More attention is paid to the identity of the city image – to green areas and to appearance of the buildings. The exterior and interior, form and structure become the base of the building's competitiveness (Khramova, 2011, p. 105).

Unlike Soviet housing which was famous for its standardized designs, Post-Soviet era focuses on “anti-standardization”. Trying to create individual projects completely different from one another in order to escape dull and monotone looks, architects end up ignoring the basic construction and planning standards, which causes inconveniences such as poor quality, absurd locations and absence of architectural style.

3.2.1 Apartment blocks

Post-Soviet housing can be defined as more comfortable. Relationship between the owner and the architect changes. Both seek for higher standards of life. It can be seen in many aspects, but first of all it affected the size of a housing unit.

Living spaces become wider and more “high class” oriented. Apartments up to 300 square meters in size are designed for each family member to own a room, even a bathroom. Thus, privacy and personal space matters, which used to be problematic in Soviet apartments, are better solved now. However, this type of housing can be barely affordable by ordinary citizens. An average price of a newly built apartment is twice as much as of an apartment of the same size built during Soviet period. The difference in price can be explained by several reasons: room size, material use, security and comfort – all of the factors are either bigger or better. Since new apartments can be very big in size and constructed from high-technology expensive materials, there is no maximum limit to the price of the apartment.

New Post-Soviet housing type is concentrated on multi-storey apartment blocks. Vertically oriented housing is more practical while population of the city is getting denser every year. Apartment blocks provide larger living spaces, underground garage, service rooms, well-secured courtyards, and glazed windows with

anticipation. In a new housing scheme, there are no apartments on the ground level due to safety and noise isolation. The ground floors are occupied with stores, rented for offices or restaurants. In Bishkek it is popular to place a trendy bar or a fashion boutique on the ground floor of an “elite” housing block, because this type of buildings usually have attractive, in local terms, façade design and beneficial location in the center of the city.



Figure 3.20 : New apartment blocks on Ibraimova and Bokonbaeva streets with trendy stores on the ground floors. Photo of the author, 2013.

The location preferences of new housing construction can be explained with convenient connection to the existent public utilities and advantageous location among other districts in terms of transportation and neighbourhood quality. Like in most of the capital cities, price for the apartments is in a big way affected by location: the closer to the city center, the higher the price. Even if the numbers sound unaffordable to an ordinary citizen of Bishkek, the market keeps offering this type of housing; so, there is probably a pending demand.

In most of the cases, apartments are put on sale before the foundation of a building is even laid. They are sold in “shell and core”, so that each owner designs the interior according to one’s taste and preferences. However, after purchasing an apartment for a quite high price, very few citizens of Bishkek can afford to spend another sum to lay the floor, the walls, the ceiling and finally furnish the new apartment. That is one of the main reasons of hesitation before purchasing a newly built apartment.

Along with new construction that is going on all over the city, Bishkek is still a city of “stalinka”, “khrushchevka” and standardized design look-alike apartment blocks. Mass housing campaign that began after the Great Fatherland War lasted for twenty years; however, standardized construction continued till the last years of the Soviet

Union and now the product of Khrushchev's housing fever is exhibited on many streets of Bishkek. Mass housing reached its goal – it provided major part of population with housing. In addition, it left an architectural heritage in every Soviet city making them all look identical.

Residential districts take place mainly in the central, southeast and southwest parts of Bishkek – areas assigned for housing in Soviet period. Back then, apartment buildings were built in small and large groups on the dedicated areas, well connected to public utilities. Construction that interrupted existent inhabited area was rare. Unlikely, nowadays there are too many cases when a new building is positioned in the middle of the courtyard, park or playground, therefore destroying well-proportioned plan of the area and public interaction spaces. This type of housing is especially popular in microdistricts. Being much higher and wider, new houses cause uncomfortable situations such as difficulties in connection to public utilities, eliminating and harming green zones, blocking natural light and panoramic views of the surrounding old buildings.

Microdistricts have been designed according to a certain plan with accurately calculated area necessary for a housing unit, the open spaces around, roads and green areas. Microdistricts were not planned for further integration of the new housing within. Every other day there is a trial case opening by residents of the houses whose territories have been illegally occupied by yet another new construction. However, the cases never end in favor of the charging party.

The city has changed. So has its architecture. In pursuit of creating an attractive façade and leaving grayness of Soviet era behind, contemporary architects apply colorful design. In some cases there is an over dose of color detected.

Architects try to develop a unique design for each of their new projects. However, most of them lack style and carry no harmony with the surroundings. The preferences and budget of the customer matter more than a sense of harmony and regulations of the construction code.

Nowadays architects apply different techniques and set free their imagination. The market offers various kinds of construction materials. After long period of Soviet isolation, Kyrgyzstan finally became open to the world market. Now any desired

material is available, which was impossible during Soviet period when only local materials had to be applied.

Gaining long-awaited opportunity to experiment with endless material and technique variety, architects started imitating postmodernism, constructivism, and high-tech. Sadly, new designs are on the edge to fall into eclecticism trap.

In 1990s, housing architecture is moderate in size and proportion. The buildings are four and five-storey high. Post-and-beam structure with brick filling slowly replaces large panel construction and gives more options for apartment plan design solutions. Number of rooms in the apartments raises up to five, which was an incredibly rare case during Soviet period.

The project of the building illustrated below was designed by architect Oleg Lazarev in late 1980s (Fig. 3.21). It was constructed only after the crash of the Soviet Union in 1990s. The idea of the project was to create facade variations playing with geometrical figures on balconies and roof shapes. Moderate in height and color palette, the building had all chances to become a model project of early Post-Soviet architecture. Unfortunately, due to poor implementation and misrepresentation, it was not constructed as architect of the project desired. Further, the look got ruined with gigantic structures attached to the building and used for commercial purposes.



Figure 3.21 : Residential buildings of 1990s. Architect O. Lazarev.

Another feature of housing architecture of early 1990s is its harmony with the existing built environment. Being considerably well proportioned in height, new buildings are well balanced in facade color and design (Fig. 3.22).



Figure 3.22 : Residential buildings of 1990s. Razzakova – Bokonbaeva streets intersection, Bishkek. Architect O. Lazarev.

One of the interesting samples of Post-Soviet housing is so-called “Wave” residential block on Baitik Baatyr Street (architect A. Klishevich, 1998) (Fig. 3.23).

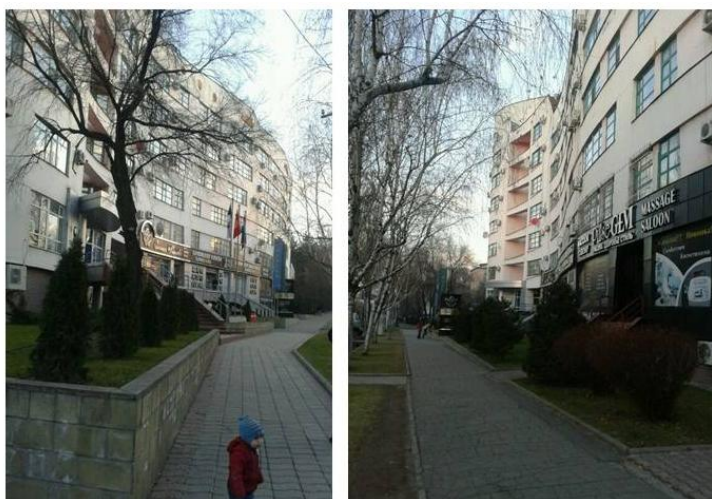


Figure 3.23 : Residential building “the wave”. Soviet street, Bishkek. Architect Klishevich. Photo by Ainura Bosterieva, 2013.

The building got its name from the curvy shape it has. The building takes place on former Soviet street which has always been one of the main arterias of the city. Due to the advantageous location and big size of the apartments, most of them are given for rent to be used as private offices. The same characteristics make it unaffordable as a housing unit.

Housing of second Post-Soviet decade continues to develop towards comfort: rooms become wider, number of bathrooms increases, privacy and security matters get solved. New housing is surrounded by steal fence, separating all open-air facilities such as playground, parking lot from the surroinding. The courtyard becomes a private zone with forbidden entrance to non-residents. Thus, housing is more isolated than it was during Soviet period.

Designed by architects M. Otunchiev and O. Baigozhoev, the projects take place in the central part of the city with high-density population. The residential block is located among existing buildings, which causes poor vehicle access and limited area for a courtyard. The project pays off with spacious apartments: a gigantic 27 square meter kitchen, a master bedroom with a personal bathroom and a large living room with round walls – a new approach, since Soviet housing architecture never offered any geometrical forms other than 90-degree walls.



Figure 3.24 : Residential building of 2010s located on Soviet street. Architects M. Otunchiev and O. Baigozhoev. Drawing from architects' archive.

Old generation prefer living in Soviet houses considering them to be safe and practical. Perhaps, there is a feeling of nostalgia for good old Frunze combined with gratefulness to the Party for giving the opportunity to every citizen to be an owner of an apartment. However, according to the questionnaire results, 8 out of 10 young citizens of Bishkek and 7 out of 10 among their parents, who have spent their youth in Soviet housing, are not eager to spend their whole lives in identical looking series housing. Standard design series are very predictable. By the code number of series any citizen of Bishkek is able to describe how that apartment scheme looks like, how small the kitchen is, how many balconies it has and whether bathroom is separated from toilet. Many tenants are not satisfied with the “identity” of their apartments and they try to replan them by breaking the walls, thus widening and re-functioning the rooms. Reorganized Soviet apartments are another type of Post-Soviet housing.

Another tendency is to build multi-storey housing units in the old settlements with low-rise single houses. This kind of construction occurs mostly in the city center. Companies buy the land, destroy existing house and build an apartment block instead. As a result, huge buildings rise in the middle of single house neighbourhood, which causes a series of physical and social issues due to dramatic difference in

height. New housing is constructed chaotically, ignoring the risks of high seismic zones, the structure of old settlements, the regulations and norms.

3.2.2 Single houses

With the fall of the Soviet Union, a large part of population in-migrated from suburbs to the capital city. Bishkek was suddenly crowded with people looking for better jobs and opportunities. They started settling on outskirts of the city in unsanitary conditions, illegally occupying public territories. Surprisingly, the invaders were not fought nor rejected by municipality, so they continued settling on the invaded lands.

During inner political conflicts in 2005 and 2010, Bishkek had to welcome another wave of furious invaders. Temporary «boz-ui» and saman houses arose on the outskirts, taking the city in a circle. Thousands of “homeless” people occupied area of future parks and started construction on territories that were reserved for parks. Few people know that those lands were assigned for parks on purpose due to high-risk seismic characteristic of the soil in the particular area of the city.

The illegal settlements formed “novostroyka”. There are about 50 of them around Bishkek (Muksinov, Khramova, 2010, p. 73). They occupy 30% of Bishkek’s territory and have population of about 250 thousands. Temporary clay and saman huts became a permanent housing. “Novostroyka” settlements are squatters of Bishkek. They do not have basic public utilities such as water, electricity, or gas. There is no transportation, nor any kind of infrastructure. Obviously, there are no hospitals, neither administrative nor educational facilities. Furthermore, families of “novostroyka” cannot send their children to school since they do not have any registration or residence permit in the city.

Like any kind of squatters, unsanitary and uncontrolled lifestyle that exists in “novostroyka” poses a serious threat to social situation of a city. Furthermore, residents of “novostroyka” proved themselves as a potential social danger being politically active group in demonstrations and meetings during recent inner political conflicts.

Post-Soviet legal single house construction is fully private investment. Territories that were assigned for multiple-storey construction according to the master plan of 1970, in 2000s were given to the private single-storey cottage construction. Those in power used this situation in their own interests.



Figure 3.25 : Saman houses in “novostroyka” on outskirts of Bishkek.

Richer developers invested in housing on the better territories around municipal parks and other green areas, close to mountains where the quality of air is much better. Forming separate settlements, this type of luxury housing is built mainly by political and financial elite (Muksinov, Khramova, 2010, p. 73- 74)

4. COMPARISON

In order to understand better the difference between housing architecture during Soviet and Post-Soviet periods, this chapter provides a comparison based on samples typical to each period. It refers to a research in one geographical region during specific period. Clearly, housing comparison is a potentially large field of study, which can be divided and subdivided into numerous chapters. Housing comparison proposed in this study is done according to certain architectural, economical and social criteria, which will help to identify structural, design and practical features of the investigated housing units. First, housing is compared in terms of site plan by investigating the situation of buildings on the map. Then, passing to a larger scale, housing block typology is investigated using the apartment block plans. Next, we approach to even a larger scale and zoom to housing unit typology on a plan. Fourth factor refers to construction system differences between housing of two periods. Fifth describes the images of the building comparing the appearance and material use. Finally, the comparison covers a social factor which is last but not least criteria in defining the distinction among Soviet and Post-Soviet housing architecture. Thus, this chapter allows to form a possible “perfect housing” and “least preferable housing” types in time scope of these two periods through eyes of Bishkek’s citizens and architects.

Before passing to physical and social characteristic of housing architecture, the researcher would like to provide a short summary of financial and political aspects. While in Soviet Kirghizia, housing distribution policy was based on socialistic doctrines and housing was granted for specific achievements, professional experience and number of children in a family, housing in sovereign Kyrgyzstan is a subject to economical profit and political games. Citizens of Bishkek have to purchase their housing with their own funds, not depending on government anymore. Luckily, many Kyrgyzstanii live in the housing that they have merited during Soviet Union. Others have to save up for years to become a homeowner. As an advantage, citizens have opportunity to choose between old Soviet and new housing. This

chapter will help to figure out the pros and cons of both types from a position of architects and residents of Bishkek.

4.1 Site Plan

Location and position of an architectural object is crucial at the very first steps of planning, as well as throughout the exploitation of the building. This important decision-making step defines transportation and communication accessibility, visibility, open area distribution and social interaction among neighbours.

Soviet period:

Soviet architecture developed according to masterplan and residential districts were an important part of it. Apartment blocks formed a clearly planned site plan with wide public and semi-public open spaces that were used as courtyards, children playgrounds and, if necessary, parking lots for the residents. Soviet courtyards were small versions of public parks. They were places for social interaction within neighbourhood, which has been an important aspect in socialistic Frunze.

On the site plan below, the nine-storey apartment buildings of the «105» standard design series form an “S” block combination. There is a spacious courtyard between two “S” blocks. The buildings are located on the sufficient distance from each other, enough to provide privacy. Besides, in this position none of the buildings leaves shadow onto each other blocking natural light or ventilation. The access is provided via automobile and pedestrian roads that are connected to streets with public transportation.

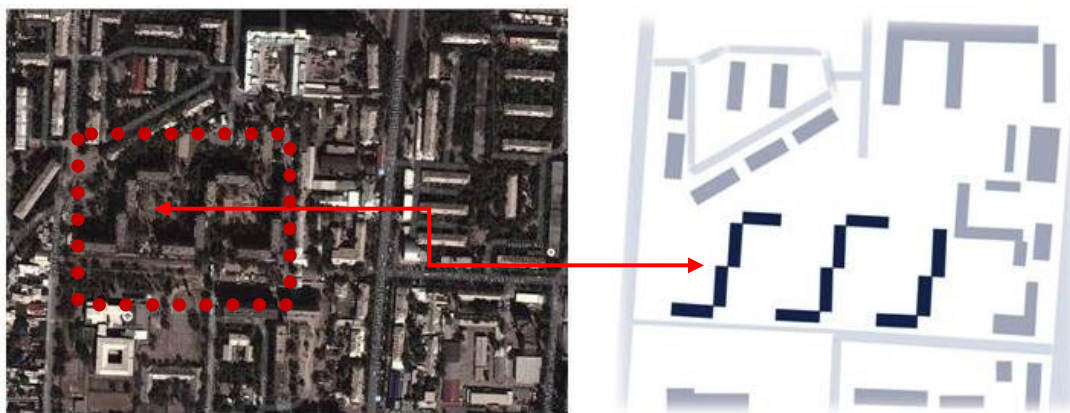


Figure 4.1 : “Yug-2” microdistrict. A site plan of the «105» series apartment blocks.

Post-Soviet period:

Housing of XXI century forms a different picture. Individual blocks are either isolated from the surrounding or roughly interfere into the existing environment. In most of the cases new housing blocks have no courtyard, therefore no playground. Houses are surrounded by steel fence in order to provide residents maximum security which simultaneously transfers into isolation. There is no space for open parking lot but most of new houses have an underground garage in the basement.

On the site plan below, a new residential building occupies a spot inbetween two houses. Eventhough the new building is not exactly in the courtyard of the existing apartment blocks, it does not have a courtyard of its own since there is not enough space for it. The situation is very typical for contemporary Bishkek, when an apartment block is constructed on a very small territory in the city center. In this case, the architects managed to provide a playground, which is surrounded by fence and separated from the house, making it the least preferable place for playing. New projects often take place in already existing residential area and they have to adjust to the site plan, creating uncomfortable situations for tenants of the houses and residents in the neighbourhood.

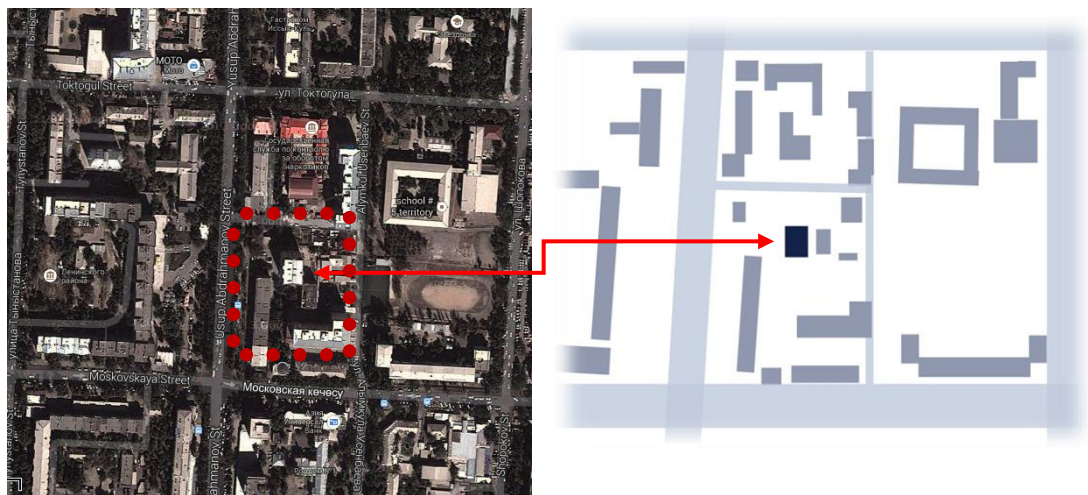


Figure 4.2 : Residential building built in 2013 on Soviet Street. A site plan.

Another new building was constructed right on the territory of courtyard, destroying children playground and causing further damages (Fig. 4.3). Located in fifth microdistrict, it is not the only example of unthoughtful planning that ruins the well-planned structure of a residential district. The existing settlement consists of four-storey «1-464AC» standard design apartment blocks. Soviet architects and planners carefully calculated distances between houses, building height and length, proportion

between built and unbuilt environment, and green area distribution. Nowadays, huge nine and ten-storey housing blocks interfere into rational system and crash it. They block natural light and ventilation, as well as the beautiful mountainous view.

Unlikely that architects or tenants of these new buildings realize that their house will have poor vehicle access. The building is stuck in the courtyard between other houses which is not only inconvenient but also dangerous in terms of fire truck access impossibility.

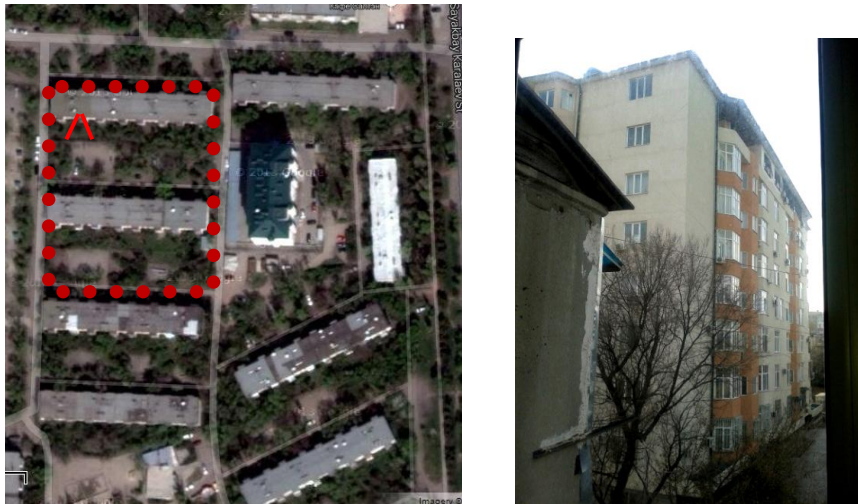


Figure 4.3 : A site plan and a view from the window of an old residential building.

Site plan was carefully and systematically designed for residential districts during Soviet period. It initiated with development of a masterplan that defined the structure of the whole city. Housing groups formed microdistricts. They have set optimal balance in space distribution, vertical and horizontal proportions of the buildings, and provided comfort in terms of accessibility and public interaction. However, Post-Soviet housing strategies follow trade-oriented ambitions of the customers. As a result, in planning of new housing the priority is given to the commercially profitable territories, not the availability of the site, harmony with the surroundings, nor the construction code.

4.2 Housing Block Typology

The block typology is defined in respect to demographical and climatic situation of the city. Since Bishkek is located in mountainous region, it has hot summers and cold snowy winters. Besides, it is located in high-risk seismic zone. Therefore, every

project has been developed by cooperation of architects and engineers taking into consideration all geographical, structural and social parameters.

Soviet period:

Soviet housing construction was more concentrated on apartment block construction rather than single houses. With industrialization, housing units started growing in height, which led to construction of standard design series and individually planned apartments. There are gallery-access, single and multiple core point-access systems, and a double-loaded corridor system for dormitory type housing. Gallery-access system was applied on very few projects, since it was not very practical in terms of climatic characteristic of the region. Point-access system gained more popularity and was applied in mass housing construction. The majority of housing during Soviet period was constructed according to standard design scheme, below are the most popular «105» and «1-464AC» standard design series block typology.

The plan of a typical «105» series apartment block is an explicit structure composed of several *point-access* cores. Each core consists of a hall, which leads to two or three apartments: a one-room, a two-room and a three-room. Axes of first «105» series were 2.7 and 3.6 m, later they were extended to constant 3.6 m and 3.6 m in order to widen kitchen and bedroom space. Vertical circulation within the building is possible by means of stairs in five-storey blocks, and nine-storey blocks provide a passenger elevator option. Buildings vary in length and number of cores accordingly.

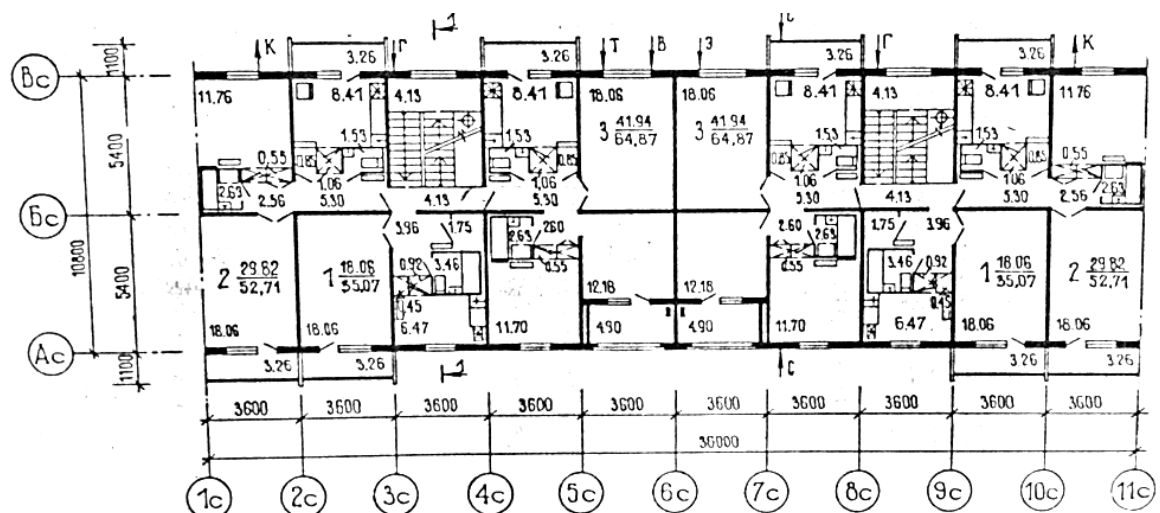


Figure 4.4 : Block typology of the «105» series. “Kyrgyzgiprostroy” archive.

Number of apartments in the «1-464AC» series buildings varies from 32 to 64. Vertical access is provided through stairs. Buildings of the series applied in Frunze were four-storey high, yet on all-union level the «1-464AC» was mostly five-storey high. Considered low enough, the buildings do not have an elevator, but the steps of the stairs of this series are famous for being mild and easy-to-walk. In fact, the height of the steps derives from low 2.5 m ceilings. The core is usually placed on the northern or western side of the building, leaving the southern and eastern sides for apartments (Kurbatov, Pisarskoy, 1978, p. 64).

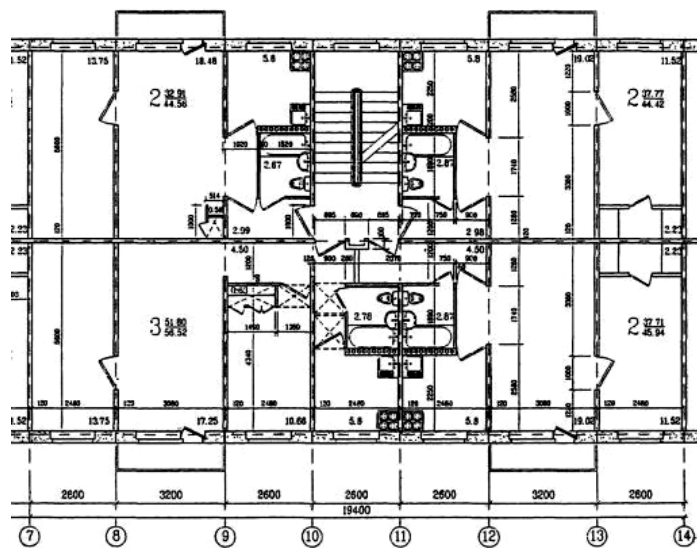


Figure 4.5 : Block typology of the «1-464AC » series (www.russianrealty.ru).

An 11-storey housing block designed by architect Sovetbek Abyshev is a symmetrically planned *double-loaded corridor* system (Fig. 4.6). An experimental award-winning project was constructed during last years of Soviet era in 1989 on the southern outskirts of Frunze. Long dark corridors did not gain popularity among tenants. They preferred familiar point-access blocks and believed that they were safer and more private rather than long corridors with endless number of apartments on both sides of it.

A bright representative of *point-access single core* system is an 18-storey block in the center of the city on intersection of main streets Soviet and Kiev (Fig. 4.7). The building has a single central core that consists of a staircase, a passenger and a service elevator. It is the highest building constructed in the capital so far.

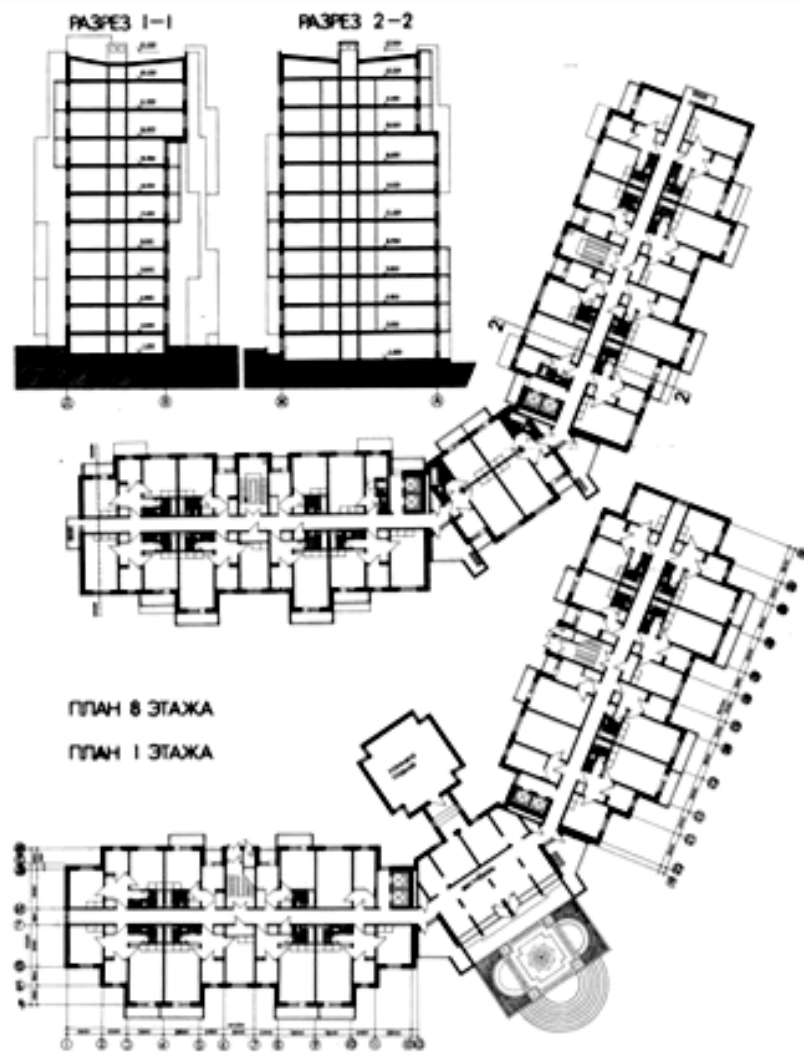


Figure 4.6 : Residential building on the south of Soviet Street. Plans and sections.

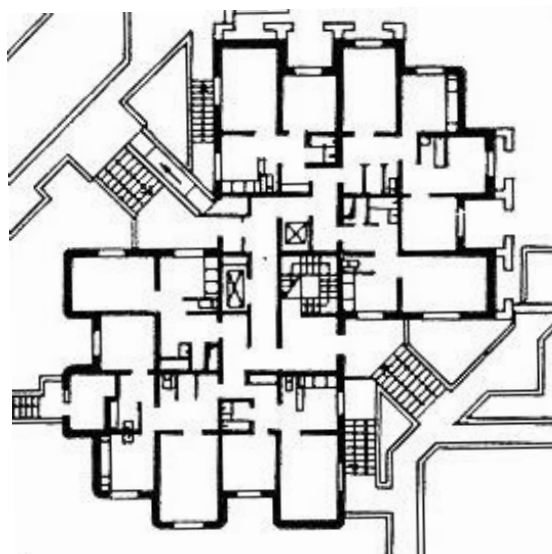


Figure 4.7 : Floor plan of single-core residential block (Pisarskoy, Kurbatov, 1986).

Post-Soviet period:

Post-Soviet housing is planned mainly as a point-access system, most of the times having a small number of cores. First decade Post-Soviet housing is represented with moderate height buildings of four and five-storeys. Whereas, housing of XXI century is generally built nine storeys and higher due to expensive land and prestige factor of a tall building.

This particular building was designed by architect Oleg Lazarev in 1990s (Fig. 3.40). It is a point-access multiple-core structure. This system was popular and convenient. Most of the buildings designed during the first decade of Post-Soviet period were up to four or five storey-high. The shape of the building developed rather horizontally than vertically. The building has three cores and two apartments around each core on every floor. The apartments are relatively big in size.

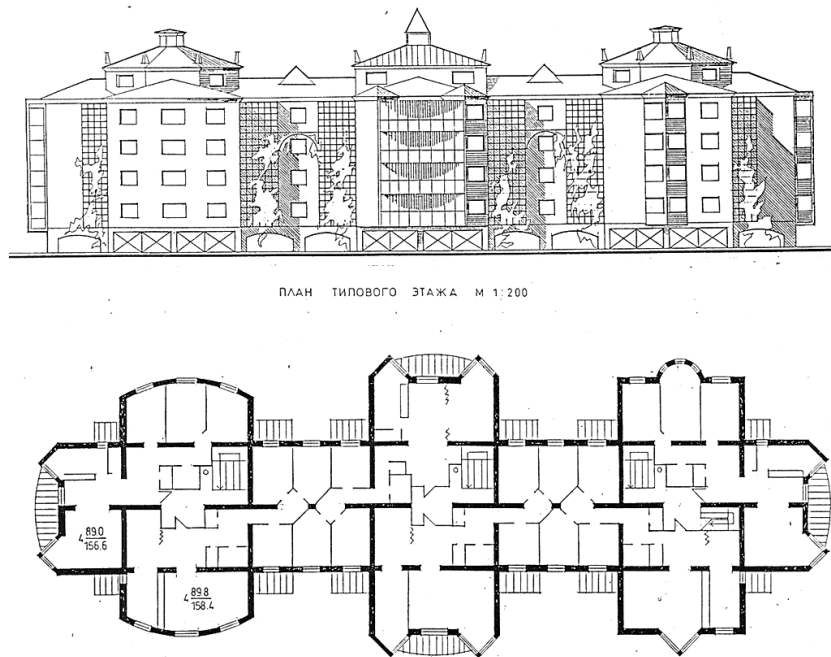


Figure 4.8 : Floor plans and a facade of a residential building on Razzakov street.

A revision of recently constructed apartment blocks showed that there is a tendency for point-access single-core system. Equipped with elevators, buildings of this type are generally 10-storey high. The construction could go higher, however, gas supply is provided only until the 10th floor. If it were not for this limitation, constructors would proceed higher, ignoring the high-risk seismic zone danger. Below is a sample of single-core structure apartment block built in 2010s by architects Oroz Baigizhoev and Murat Otunchiev (Fig. 4.9). Vertical circulation in the building is provided by

passenger elevator and stairs. Each floor has three apartments, two and three rooms each. The typology of the building is common for Bishkek's housing architecture of last years.

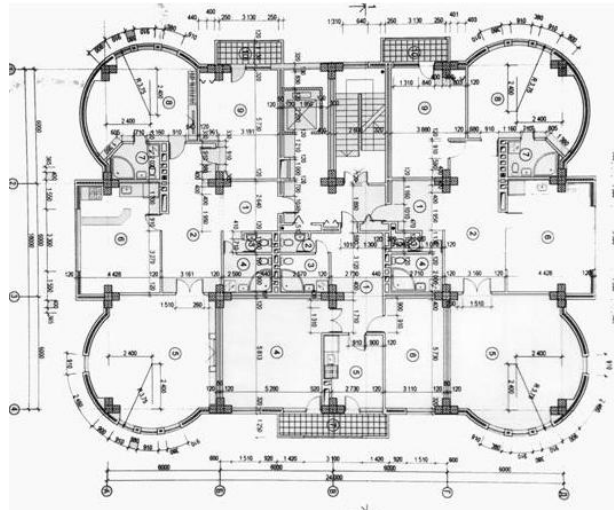


Figure 4.9 : Plan of a single-core residential buildings on Soviet Street (Drawings from the archive of architect O.Baigozhoev and M.Otunchiev).

Block typology showed more variety in Soviet architecture. Architects have experimented with several possible types such as gallery-access, double-loaded corridor, single and multiple core point-access systems. Taking in consideration climatic and seismic characteristics of the region, they concluded that the most suitable type would be a point-access system, so they applied it in mass housing construction of standard design series. Post-Soviet architects practice only point-access system in apartment block design. Their choice can be explained either by the belief that the point-access system have already proved itself good during Soviet construction or because they want to apply a model most familiar and accepted by citizens, therefore economically safe to implement and sell.

4.3 Housing Unit Typology

Soviet period:

Typology of standard design housing units of Soviet period derives from its name – standard. It is the most stable and never changing scheme. The plan of any standard design series apartment is fixed. It applies to all of the apartments of the type.

Single-room apartment's area of the «105» large panel standard design series is 33-35 square meters. The typical scheme is below.

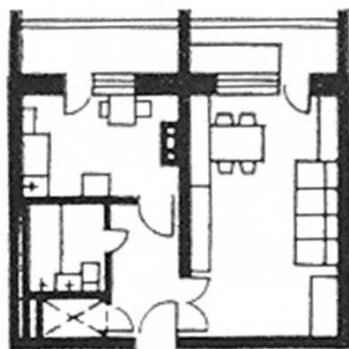


Figure 4.10 : Housing unit typology of a single-room apartment of the «105» series.

Due to single orientation of one-room apartments, the living room and the kitchen both have windows only along one side. Bathroom of the apartment is joint, which is one of the most disliked features by citizens of Bishkek. Luckily, joint bathroom is present only in single room apartments of the series; the two and three-room flats have bathroom and toilet separate.

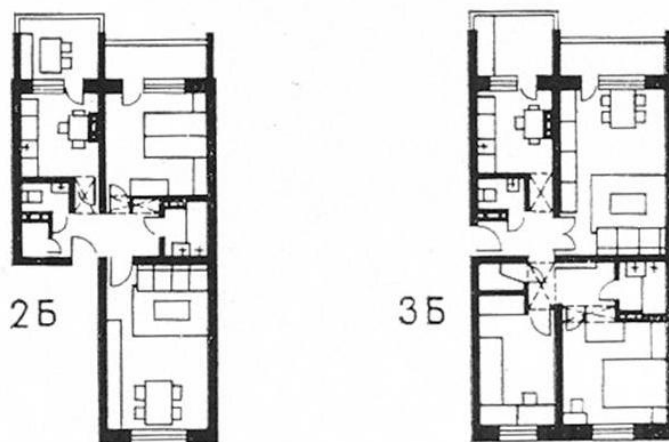


Figure 4.11 : Housing unit typology of 2 and 3-room apartments of the «105» series.

After applying axis scheme of 3.6 m instead of 2.7 m, kitchen of the «105» series became larger - 6.65 square meters. There are two balconies along side kitchen and living room in nine-storey buildings, whereas in five-storey blocks there is usually a single balcony from a living room. Balconies are quite wide in size – up to five square meters each. This feature is especially important for small size apartments where every extra square meter is extremely valuable.

Two and three-room apartments are 53 and 65 square meters in size, respectfully. Apartment layout is very practical: wide separate rooms, no pass-through spaces, storage room and spacious balconies. The space was solved on an optimum level.

The «1-464AC » series have configuration of one, two and three-room apartments with area of 30, 43 and 58 square meters, respectfully, which is about 20% smaller than the area of the «105» series with the same room number. There is no corridor in the apartments of «1-464AC » series and living room is used as a pass-through room that connects entrance hall to the bedrooms (Fig. 4.12). The bathroom in «1-464AC » series is joined with toilet, the kitchen is petite – less than six square meters, and there is only one balcony despite the number of rooms. Ceiling height is as low as 2.5 m. Taking in consideration all characteristics listed above, it is clear that the «1-464AC» standard design series have not been the most preferable housing type. The «1-464AC » series was widely used in mass housing construction campaign carried by Khrushchev and, in fact, the series was named after the leader – “khrushchevka”. For its tiny apartments, low ceilings and dull façade it was called “khrushcheby” or “trushcheby”, which stands for “slums” in Russian slang.

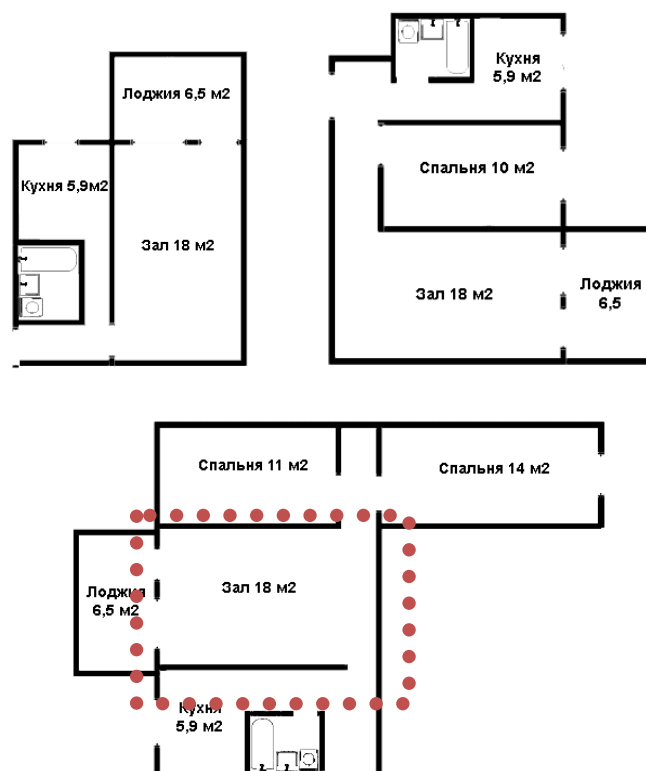


Figure 4.12 : Plan of the one, two and three-room apartment of the «1-464AC» series. A three-room apartment has a pass-through living room.

In individual design apartments of Soviet period, all rooms including kitchen and bathroom are larger in size and better in proportion in comparison to standard design series. Individually planned apartment provides its dwellers desired characteristics: wide entrance hall, separate bathroom from toilet, spacious kitchen and no pass-through rooms.

Architects of 18-storey residential building Nezhurin, Baibekov, Bushuev, and Grinstein designed compact apartments individually for small size families. Each apartment faces a different direction. An important feature of Soviet apartments is to provide natural light and ventilation into kitchen.

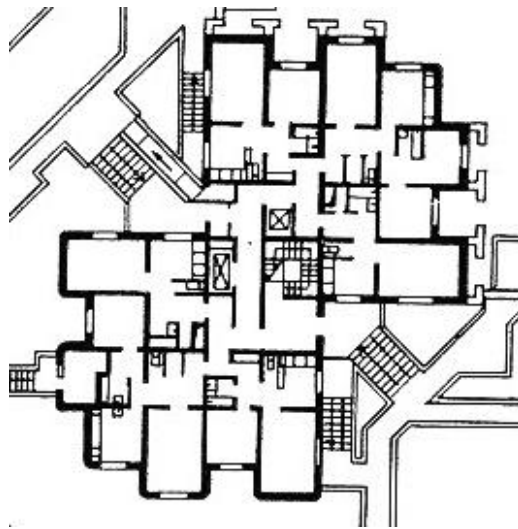


Figure 4.13 : 18-storey single-core residential block on Soviet-Kiev Street.

Post-Soviet:

Housing unit type after the fall of the Soviet Union has a completely different scheme. The rooms have grown in size and number. Apart from “stalinka”, an average Soviet apartment’s area was rarely higher than 70 square meters. A Post-Soviet apartment offers wider rooms, especially concentrating on a size of kitchen – a project below demonstrates a kitchen of 26 square meters, which is bigger than a 18 square meter living room in the most popular Soviet «105» standard design series.

Round-shape walls are introduced in Post-Soviet architecture. After mass construction of rational rectangular forms, any innovation is considered phenomenal.

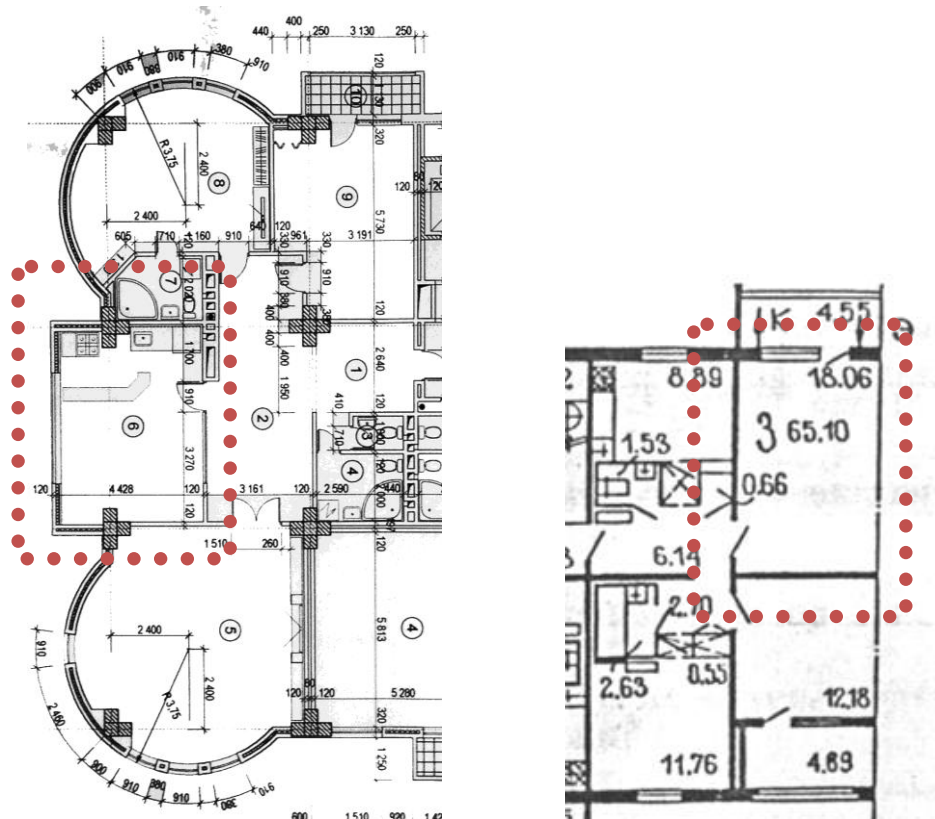


Figure 4.14 : The size of a kitchen in Post-Soviet apartment is as big as a living room in the «1-464AC» series.

New terms such as “dublex apartment” and “penthouse” are introduced to housing market of Bishkek. There is a tendency for more comfortable housing.

While in socialistic Frunze, housing industry was concentrated around providing a roof for every citizen and filling the after-war housing shortage, trade-oriented and full of variety Bishkek is busy selling living space for a better price.

4.4 Construction System

Choice of a certain construction system depends on several factors: seismic and climatic characteristics of the region, soil type, function of the building, dimensions of the structure, technology and equipment, and economical restriction of the project.

Soviet period:

Housing during Soviet period was constructed from various local materials: natural wood, clay, saman, stone and brick. With industrialization, reinforced concrete was introduced to the Soviet construction market. Prefabricated reinforced concrete panel and frame-and-panel construction methods were among the most popular in housing

sector. With the products of large panel manufacture factories there have been a great number of housing blocks constructed during mass housing campaign. Large panel construction showed better characteristics for seismic resistance and construction speed in comparison to local materials. The large panels were produced on factories and applied on site. It was a more cost-efficient system than a frame-and-panel, which was used in experimental design housing blocks. Prefabricated panel construction reduced labor force using all possible technological equipment of the time.

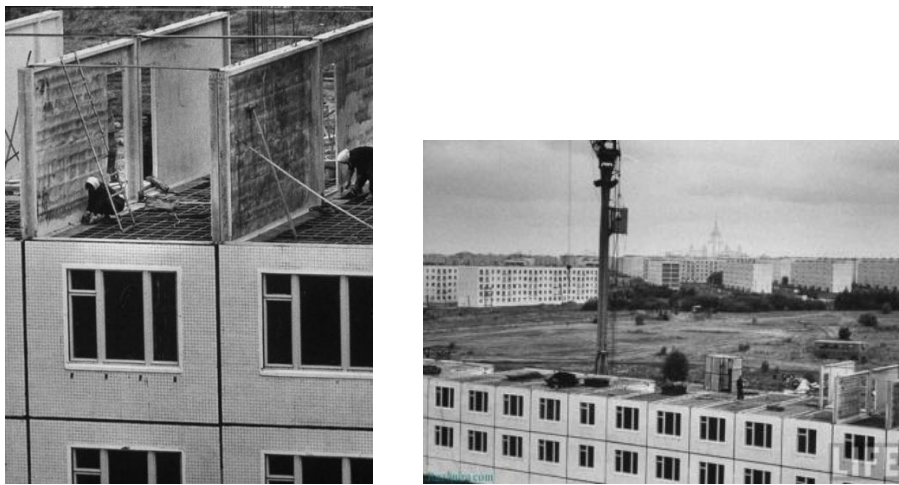


Figure 4.15 : Large panel construction on site.

Reinforced concrete large panel system was applied in construction of the «105» and «1-464AC» standard design series, which formed the majority of housing units in Frunze. The «98» series was a brick structure, whereas construction of «1k-308» series initiated with brick structure and later changed to monolithic reinforced concrete frame with brick fillings. The frame-and-panel system was used in experimental construction of individual design projects such as nine-storey residential buildings on Moscow-Soviet street, “Ocean” and “Issyk-Kul”. Most of the individually designed projects, such as “stalinkas” and early Soviet architecture samples were brick and stone structures. Local materials like saman, clay and wood were used in construction of low-storey single-family houses.

Post-Soviet:

The majority of new housing in Bishkek is monolithic reinforced concrete frame with brick fillings. The low-storey houses are brick construction; however, settlements on the outskirts of the city are built out of clay and saman.

Survey showed that citizens of Bishkek have worries about seismostability of new buildings. This is because the authorities that control quality and stability of construction have lost their reliability. Citizens have full trust in seismostability of buildings that were constructed during Soviet period, since the government control over construction considering all risks was very strict.

Large panel construction continued during first years after the Soviet Union crash. Economical, practical and stable, the system is in fact perfect for geographical, seismic and economical characteristics of the region. However, questionnaire results show that citizens of Bishkek have a stronger devotion to brick structures for its thermal capability. In Post-Soviet architect – client relationship, the preferences of the client are important. Therefore, brick is widely used in construction of housing in Bishkek.

4.5 The Image of the Building

Besides its structural characteristics regarding stability and durability, planning details both in large and smaller scales, economical and social aspects of space distribution, there is also an image of the building involved in the design process. Not only it is a formation of a façade of a particular structure, but it is also an introduction of city's "face" formed during one specific era. The architectural language used in generating this "face" is crucially important.

Soviet period:

Soviet housing architecture forms a picture of rational and modest buildings. Perfectly symmetrical standard design series, they were mainly reinforced concrete panel structures. The color of Soviet housing was gray. Even if some facades were brutal brick or painted in white, in general gray prevailed in the image of Soviet residential districts.

Architectural style was largely controlled by Soviet communist government. In 1954, Khrushchev announced a resolution to simplify design and avoid detailed decoration in building construction (Petrov, 2008, p. 55-58). Ever since, most of the projects were redesigned following the resolution of a leader and cancelling any "extra" architectural detail. Today we can see how it influenced the image of the city,

especially when people get lost trying to find their own house among identical blocks.

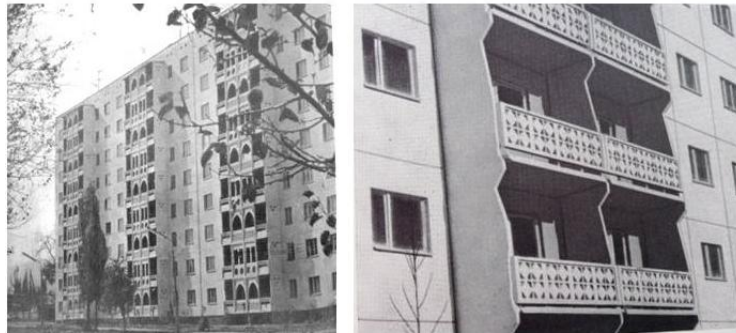


Figure 4.16 : Front façade and balcony variations of the «105» series building.

In order to diversify the monotony, architects came up with variations of balcony designs and façade ornaments (Fig. 4.16). While designing the balconies, they skipped particular climatic properties. Bishkek is a city of hot summers and very cold winters when temperature can go as low as -34C. In order to use balconies in winter, there had to be window glazing, but there was not. Precipitation and low temperatures forced citizens to glaze their balconies in order to avoid heat loss. As a result, patchwork of glazed balconies looks absurd and ruins the image of the buildings. Unfortunately, this is a fate of majority of Soviet residential buildings. Soviet architects and planners designed solid constructions, stable and economical. They took in consideration seismic characteristics of the region, as well as the orientation of a building in order to provide proper ventilation and natural light. However, skipping a detail like window glazing in the original design led to failure in comfort and image of the buildings.

Below are photographs of residential building “Issyk-Kul” (Fig. 4.17). The one on the left is taken in 1982 with the original state of the balconies. Photo on the right is from 2013. Residents chaotically glazed authentic balconies of the building, thus, ruining both the image of the building and of Soviet street.

The balconies of large panel housing blocks show all possible glazing techniques, shapes and materials (Fig. 4.18).

Apart from improvised glazing, commercial banners, poor glazing and attached structures spoil image of other residential buildings built during Soviet period in the central part of Bishkek (Fig. 4.19).



Figure 4.17 : “Issyk-Kul” residential building on Soviet Street.



Figure 4.18 : Balconies of large panel «105» standard design series. Four balconies glazed in four different ways. Photo by Bektour Iskander, 2013.



Figure 4.19 : Apartment blocks on Chui - Soviet streets. Photo of the author, 2013.

There are samples of Soviet housing architecture that preserved their authentic image. Those are mainly individual design housing projects built during Stalin’s reign in neo-classical style. These buildings are situated on Dzerzhinskogo Boulevard that has been a valuable and prestigious district throughout history of Bishkek.



Figure 4.20 : Residential building on Dzerzhinskogo Boulevard.

While in other parts of the world, a corner apartment was considered as an advantage for having extra windows along the façade, Soviet architects did not consider this option during mass housing construction – side façade of standard design series buildings merely ever had windows. Individual and experimental design housing projects had a different approach independent from mass housing strategies: all four facades were used accordingly.

In some special cases houses were decorated with mosaics dedicated to promotion of socialism or a site plan of microdistrict. Ornaments and mosaics took place on the side façade of both standardized buildings as well as individual design construction; they formed beautiful compositions that reflected national identity and communist spirit (Fig. 4.21; 4.22; 4.23).



Figure 4.21 : Side façade of residential blocks constructed in 1960s.



Figure 4.22 : Residential building on Chui avenue with mosaic decoration on side facade. Photo of Oksana Kapishnikova, Oksana Shatalova, 2013.



Figure 4.23 : Side façade decoration. Southern microdistricts of Frunze.

Post-Soviet:

Despite present variety of materials and techniques, it has been a challenge for Post-Soviet architects to form an attractive image for residential buildings. While majority of architects blindly follow preferences and demands of the client, others seem to have no taste of their own.

A desire to escape gray monotone appearance is clear and reasonable. However, experimenting with colors has gone far beyond expectations. Bright and striking, new façade proposals leave a big question mark about competence of architects.



Figure 4.24 : Residential buildings constructed in 2010s in Southern part of Bishkek. Photo of Ainura Bosterieva, 2013 and Elitka.kg.

There is a tendency to build huge apartment blocks in existing low-storey settlements; especially in the city center with well-developed infrastructure and valuable land.





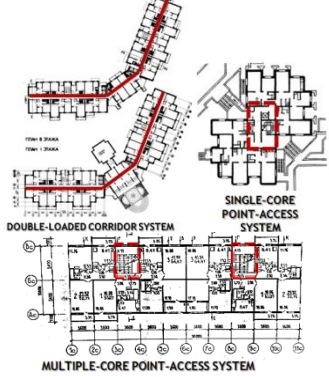
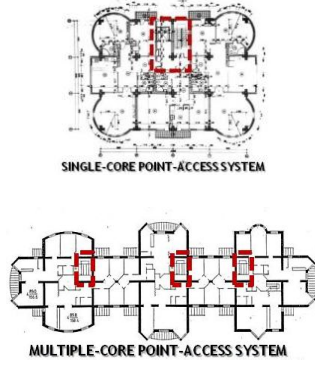





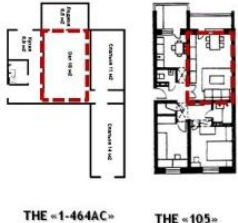


Figure 4.25 : Old settlements are left under the shadows of new giant blocks.

The buildings illustrated below are highly favored by citizens of Bishkek: a number of commercial videos have been filmed in front of them; trendy restaurants and boutiques open on the ground floors. The fancy buildings are located across the street mirroring each other. Among Post-Soviet samples of housing architecture, these particular ones are considered as the most attractive so far. Material and color selection, location on prestigious historical Dzerzhinskogo boulevard make apartments in these building be ridiculously high priced.



Figure 4.26 : Residential buildings on Dzerzhinskogo Boulevard. Photo by Ainura Bosterieva, 2013 and Martin Voelker, 2012.

Conclusion: Comparison provided in this chapter is summarized graphically with short commentaries in the chart below.

SITE PLAN		HOUSING BLOCK TYPOLOGY		IMAGE OF THE BUILDING	
SOVIET	POST-SOVIET	SOVIET	POST-SOVIET	SOVIET	POST-SOVIET
		 <p>DOUBLE-LOADED CORRIDOR SYSTEM</p> <p>SINGLE-CORE POINT-ACCESS SYSTEM</p> <p>MULTIPLE-CORE POINT-ACCESS SYSTEM</p>	 <p>SINGLE-CORE POINT-ACCESS SYSTEM</p> <p>MULTIPLE-CORE POINT-ACCESS SYSTEM</p>		
<ul style="list-style-type: none"> - Sufficient distance between buildings - Courtyard, social integration 	<ul style="list-style-type: none"> - Too close to other buildings - No courtyard, isolation by fence 	<ul style="list-style-type: none"> - Point-access system - Double-loaded corridor - Gallery-access system 	<ul style="list-style-type: none"> - Single and multiple core point-access system - No corridor, no gallery-access system application 	<ul style="list-style-type: none"> - Color of Frunze was “gray” - Balcony design variation as the only solution for monotony 	<ul style="list-style-type: none"> - Color overdose in Bishkek - Lack of style
CONSTRUCTION SYSTEM		HOUSING UNIT TYPOLOGY			
		 <p>THE «1-464AC»</p> <p>THE «105»</p>			
<ul style="list-style-type: none"> - Large panel, frame-and-panel, brick - Factory production, applied on site 	<ul style="list-style-type: none"> - Reinforced concrete frame with brick filling 	<ul style="list-style-type: none"> - Mainly standard design series with optimum space solutions - Economical design 	<ul style="list-style-type: none"> - Individual design - Kitchen size could be as big as living room size of a standard design apartment 	<ul style="list-style-type: none"> - Ornaments as promotion of socialism and national identity to fight grayness 	<ul style="list-style-type: none"> - New construction materials - New façade images

5. CONCLUSION

This chapter offers a review of the most important context, and brings out its key objectives. It also offers an analysis of examined periods and investigated housing samples, and finally provides a general conclusion on housing architecture of Bishkek.

The study investigated housing architecture of capital city of Kyrgyzstan Bishkek in Soviet and Post-Soviet periods. It provided valuable information on how housing architecture and housing habits of citizens of Bishkek changed through history, highlighting two very important and recent periods: Soviet and Post-Soviet. Post-Soviet is considered a period that has initiated after the fall of the Soviet Union. The research provided information on recent changes and development of housing sector in the capital city, identifying the scale of Soviet influence on formation of Bishkek's housing architecture. Together with a historical background of housing in the region, this study also collected and analyzed data on current state of housing sector in the city. Taking into account the work mentioned above, the study aims to serve as a database for further research.

Introductory chapter provided information on thesis statement, method and principles that guided researcher throughout the study. It raised questions that this study tried to answer. The main research question sounded as following: **What are the main characteristics and difference between housing architecture in Soviet Frunze and Post-Soviet Bishkek?** Third chapter gave a broad explanatory data on each period, underlying the advantages and disadvantages of the projects. Soviet period was presented in terms of standardized design series, experimental and individual design projects. State Planning Institution “Kirghizgiprostroy” conducted design, planning and construction process of all housing in Soviet Frunze.

Industrialization led to a constant progress in construction sphere. Trying to achieve the best possible design for a housing unit, Soviet architects continued to apply and share new models on all-union level. Even though the designs were standardized projects, each new series was developed to be more improved and efficient than the

previous one. Thus, the «1k-308» brick series developed after the «213» and was recognized as a better version of it. The «98» later substituted the «1k-308» series. The large panel «1-73» series followed and filled the gaps in the design of the previous «1-464AC» series. Moreover, the same «1-73» served as a platform for a design of the phenomenal «105» series, which remained in a history of Frunze's housing architecture as the most rational and practical one (Anistratov, Petrov, 1982, p. 5; Pisarskoy, Kurbatov, 1986, p. 212-213).

Apart from standardized, there were also individual and experimental design housing projects. The term “experimental design” derives from the name of it – architects tried to experiment with new construction techniques and materials. The most common model of experimental design was frame-and-panel housing, which was a success as an apartment plan layout and façade design but it was not economically efficient to be applied in mass construction. Individual design projects are those that have been developed outside of standard scheme, therefore, have not been a part of mass construction. Individual projects were rarely reapplied again. Housing units that were individually designed usually took place on main streets of the city. They provided comfortable housing conditions, had attractive façade design and convenient location in the central part of the city. Despite the socialistic and communistic dogma that promoted equality, it is important to mention that only political and cultural elite could be owners of individual design housing.

Post-Soviet period housing consisted of apartments and single houses. All of the apartment projects are individually designed. Design and construction duties are not carried by single institution any longer. “Kirghizgiprostroy” State Planning Institution continues to develop projects for housing, industrial and other construction sectors, however, private architectural design studios and construction companies began to compete in dominance on local housing market. It is possible to define Post-Soviet housing with two words: comfort and chaos. Despite this contradiction in terminology, Post-Soviet apartments are indeed comfortable and their location can be absolutely chaotic. The housing conditions provided by new apartments are higher in comfort than those of Soviet period are, so are the prices.

The other research questions were:

- How and why did mass housing construction start in the Soviet Union?

- What are the housing preferences of citizens of Bishkek?

Mass construction initiated after the Great Fatherland War due to acute housing shortage. It lasted for about twenty years. The Party started an all-union campaign with a goal to provide a separate apartment to every family. Standardized construction was the best possible tool to achieve it. City architecture got affected by mass housing construction and today many residential districts look alike. The majority of housing during mass construction was built according to standard design series and the most popular in Frunze were the «105» and «1-464AC».

The answer to next question was provided in chapter three and four where the research covered general characteristics of housing architecture during Soviet and Post-Soviet periods, underlining the pros and cons in the eyes of the residents. To explain the picture better, the study exposed samples typical to each period and gave explanatory information regarding design principles, social standards and economical background. Previous chapter provided detailed comparison on these samples concluding it with explanatory table. The study covered two specific periods in one capital city. It showed how one period affected the housing sector of another, its principles, distribution and architecture. Clearly, there is a difference between housing architecture of Soviet and Post-Soviet periods. There is positive experience of past that contemporary Bishkek should apply. At the same time, architects and municipality have to face and find solution for illegal settlements, awkward construction in the middle of courtyards and lack of identity in architectural design.

While collecting data for the research, a lack of theoretical sources on Post-Soviet architecture has been detected. This study aims to fill in a gap in architectural literature about Bishkek during Post-Soviet period. The research focused on housing architecture; however, not only housing but also architecture of Bishkek and Kyrgyzstan in general needs to be researched and published. With this study, the researcher aims to contribute to written sources on architecture of the city and the country, and provide information that can serve as a database for further research in the area. Along with the changes in urban image of Bishkek, it will be possible to update and edit information with new data. As a contemporary and citizen of Bishkek, the researcher looks forward to continuing investigation in the field and finding a unique identity for architecture of the capital city.

REFERENCES

- Anistratov, V., Petrov, N.** (1982). 50 years to State Planning Institute “Kirghizgiprostroy”, Kyrgyzstan, Frunze
- Gentile, M., Tammaru, T.** 2005. Housing and Ethnicity in the Post-Soviet City: Ust'-Kamenogorsk, Kazakhstan, University of Albany, New York
- Gülderoğlu, Yu.** 1995. Konut Mekanı Kavramının Tipolojik Temelleri, İstanbul Teknik Üniversitesi Mimarlık Fakültesi Baskı Atölyesi, İstanbul
- Imankulov, D. and Filatova, T.** (2011). Historical and Cultural Landscape of Bishkek, Kyrgyz State University of Construction, Transportation and Architecture, Bishkek.
- Ivanova, A.,** 1973. Voprosy Ispolozovaniya Territorii v Proektakh Generalnykh Planov Gorodov, Arkhitektura SSSR, No.8, p.26-28, Moscow
- Kagler, R.S.** 1992. Soviet Housing: Culture and Architecture, Rice University, Houston.
- Karimov, Sh.,** 1967. Construction and Architecture in Soviet Kirghizia, Arkhitektura SSSR, SSA, Moscow.
- Khan-Magomedov, S.** 1987. Pioneers of Soviet Architecture: the Search for New Solutions in the 1920s and 1930s, Rizzoli, New York
- Khodzhaev, D.,** 1980. Ekonomika, Gradostroitelstvo, Arkhitektura, Arkhitektura SSSR, No.2, p.1-3, Moscow
- Khodzhaev, D., Kochetkov, A., Listengurt, F.** 1977. Sistema Rasseleniya v SSSR, Ekonomika, Moscow
- Kogan, L.** 1967. Urbanization – Communication – Microdistrict, Arkhitektura SSSR, SSA, Moscow.
- Komov, A.** 2003. How to Build a Soviet Capital City, Project Russia №30 – New Capitals, Moscow.
- Kurbatov, V., and Pisarskoy, E.** (1978). Architecture of Frunze, Kyrgyzstan, Frunze.
- Kuzmina, T., Smirnov Yu.** Osobennosti funktsionalnogo zonirovaniya territorii g. Frunze s uchetom vetrovykh harakteristik // Inofrm. List No.3 157(3934). Ser. 67.25.03/ KyrgyzINTI. Frunze, 1986, p.4
- Lisitsian, M., Novikova, E., Petunina, Z.** 1973. Interior Design of Public and Residential Buildings, Stroyizdat, Moscow.
- Moizer, F.** 2003. To build your own “I”: searching for a national identity.
- Muksinov, R. and Khramova, N.** (2010). Architecture of Bishkek. Traditions and Modernity, Kyrgyz-Russian Slavic University, Bishkek.

- Muksinov, R., Smirnov, Yu.** 2008. Architecture of Contemporary Urban Housing and Living Environment in Kyrgyzstan, Vestnik KRSU, Tom 8 №9, Bishkek
- Nusov, V.** 1971. Architecture of Kirghizia since Ancient Times till Current Days, Kyrgyzstan, Frunze.
- Pisarskoy, E. and Kurbatov, V.** (1986). Architecture of the Soviet Kirghizia, Stroyizdat, Moscow.
- Prokhorova, N.** 2011. Main Stages and Conditions of Development of Architecture in Kyrgyzstan in the Beginning of XX Century, KazNTU Khabarshisi №4, Almaty.
- Ritter, K.** 2013. Soviet Modernism exhibition, Wien.
- Shaw, D.** 1982. The Soviet Urban General Plan and Recent Advances in Soviet Urban Planning,
- Shkvarikov, V.** 1967. Soviet Urban Planning, Arhitektura SSSR, SSA, Moscow.
- Smirnov, Yu.** 2005. Architectural Organization of Natural and Built Environment: Monography, KRSU, Bishkek
- Smirnov, Yu.** 2009. Urban and Ecological Aspects in Creating the Environment of Bishkek, Kyrgyz-Russian Slavic University, Bishkek.
- Smirnova, O.** 1967. Development Problems of New Cities, Arhitektura SSSR, SSA, Moscow
- Smith, M.** 2010. Property of Communists: The Urban Housing Program from Stalin to Khrushchev, Northern Illinois University, DeKalb, Illinois
- Smolyar, I.** 1976. Realizatsiya Genralnykh Planov Kak Osnova Upravleniya Razvitiem Gorodov, Arkhitektura SSSR, No.5, p. 13-17, Moscow
- Tursunov, A.** 2005. Urban Development in Kyrgyzstan, Vestnik KRSU, Tom 5 №3, p. 3 – 6, Bishkek
- Url-1** <<http://www.kloop.kg>>, date retrieved 10.12.2013.
- Url-2** <<http://www.salut.kg>>, date retrieved 06.12.2013.
- Url-3** <<http://www.bishkekkurulush.kg>>, date retrieved 10.12.2013.
- Url-4** <<http://www.elitka.kg>>, date retrieved 06.12.2013.
- Url-5** <<http://www.skyscrapercity.com>>, date retrieved 10.12.2013.
- Url-6** <<http://www.ayguninsaat.com>>, date retrieved 10.12.2013.
- Url-7** <<http://www.art-initiatives.org>>, date retrieved 10.12.2013.

APPENDICES

APPENDIX A: Survey Questions

APPENDIX A

1. What is the type of housing you live in?
 - a) Apartment built during the Soviets
 - b) Apartment built in sovereign Kyrgyzstan (after 1991)
 - c) Single house
2. If you live in a Soviet apartment, what type of apartment is it?
 - a) Standard design series (please indicate which one)
 - b) Individual design
 - c) Experimental design
3. How did you obtain the housing unit?
 - a) Family fortune
 - b) Government grant for professional achievements
 - c) Private purchase
4. How many people live together with you?
5. How many rooms are there in your apartment / house?
6. Do you have your own room?
7. What floor is your apartment at?
8. How long have you been living in your apartment / house?
9. How long do you plan living in your apartment / house?
10. Do you like the type of housing you live in?
11. Would you like to change the place you live in?
12. Which one would you prefer living in, an apartment built during Soviet or Post-Soviet period?
13. Why have not you changed housing so far?
 - a) Because you enjoy the neighborhood
 - b) Because the location is very convenient
 - c) Because you cannot afford to change it
 - d) Because your family does not want to
 - e) Because you don't trust new housing construction for its seismic reliability
 - f) Because you like the room planning in your apartment
 - g) Because you feel secure
14. Why would you want to change housing?
 - a) To have your own room (private space)
 - b) To live in a freshly built house
 - c) To live in a city center
 - d) To live away from the city noise
 - e) To live
15. New (Post-Soviet) housing units, what do they mean for you?
 - a) Higher social status
 - b) Better housing conditions
 - c) Security

- d) Better social amenities (children playground, parking lot)
 - e) Lack of style
 - f) Expensive housing
 - g) Inadequate site plan
16. Does your house have a fence around it?
17. How do you feel about it? Do you like it, the fence?
18. Does your house have a parking space?
19. Is this space enough?
- a) Yes, it is.
 - b) No, it is not. My guests and I do not have a place to put our cars.
 - c) I do not own a car, so I do not care.
20. Do you feel safe in your apartment / house?
21. Where would you rather like to live
- a) In the city center
 - b) In the microdistricts
 - c) Outside the city close to the mountains
22. Is your balcony glazed? If not, have you glazed it?
23. What is the location of your house / apartment building?
- a) On the main street;
 - b) On the secondary street with low traffic;
 - c) Inside the microdistrict with private vehicles access only
24. How you replanned your apartment?
- a) Yes, in order to enlarge kitchen or living room, I have “destroyed” the walls;
 - b) No, I am satisfied with the plan of my apartment;
 - c) I would like to replan it, if I had enough finance / fantasy / administrative approval
25. Is construction system important to you in choosing housing?
- a) Yes, I prefer brick, because_____
 - b) Yes, I prefer panel buildings, because_____
 - c) Yes, I prefer modern technologies (steel construction, light concrete blocks, etc.), because_____
 - d) No, it is not an important criteria for me as much as_____

CURRICULUM VITAE



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