Right to the city

Building identity through education in post conflict Mosul

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Politecnico di Milano
Architectural Design
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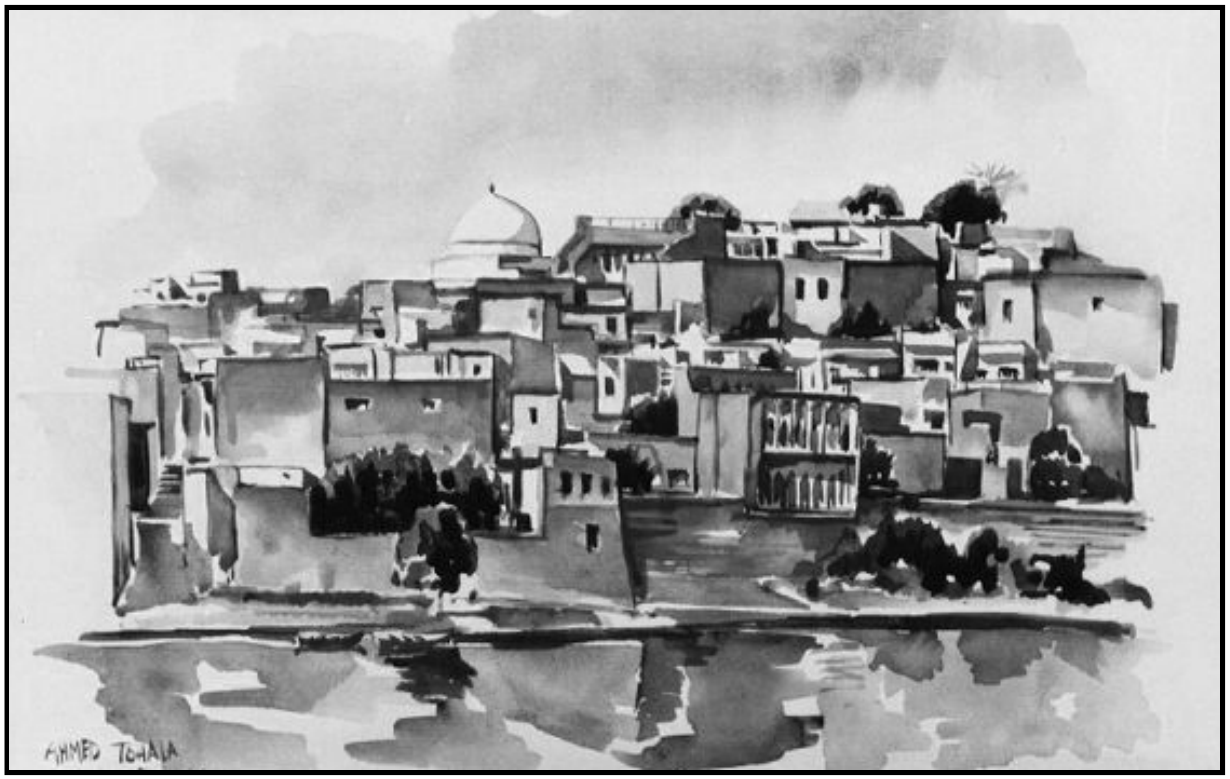
INDEX

MOSUL

HISTORICAL EVOLUTION


AHMED TCHALA

The Ancient Era
1813 B.C. 656 A.C.

1813 b.c. - 330 b.c.
The foundation of the old assyrian empire and ninaveh.

The land between the two rivers is located in a wide area between the Tigris and Euphrates rivers. These two rivers extend from Armenia, where the origin is precisely from the Nivat mountain range, known as the Qalashin Mountains, and the two rivers are separated, where the Euphrates face to the west and Tigris to the east until they mix in one stream called Shatt al-Arab and then pour into the Persian Gulf. The land surrounded by the two rivers was called it's upper part in Mesopotamia, it's southern part in the countries of the Chaldeans, and the section located on the shores of Tigris in Assyria is which is bordered to the north by Armenia and the east by Madi. Many historians have mentioned that Mesopotamia, or today's Iraq, is the first home of urbanization. the land of Mesopotamia was the origin of the world's most ancient civilizations starting from the Sumerian, Akkadian, Babylonian till the Assyrian. As well the Urbanization evolvement in Mesopotamia has taken place many years before the birth of Christianity. many cities have been built in Mesopotamia and it was probably the first developed city in the history of civilizations.

The ancient historians did not write much about the Assyrians, except for some stories that can be described as fictional representations rather than historical facts. Based on the ancient historian narratives, that King Ninus founded the Assyrian kingdom between India till the Mediterranean. Ninus established the city of Nineveh[1] and took care of its architecture and decorations, and after he settled there, he began to launch raids on the neighboring tribes. The historical fact that scholars have reached through the ancient monuments discovered, that cities in the period of the Assyrians were independent in their administration until king Ashur was able to bring together the administration of Nineveh and Arbil together. After that, the conflicts between the Assyrian kingdom in the north and the Chaldean kingdom in the south increased until the Assyrians gained their popularity and administrative independence, they did not stop at this point but continued to control the Chaldean countries and Mesopotamia.

The Assyrian kingdom reached its zenith during the reign of King Tiglath-Pileser I, Tiglath-Pileser III, and Also during the era of the Sargonians, which began in the year 722 BC, and it began with King Sargon then king Sennacherib who take care of the capital Nineveh. After that, Ashurbanipal take the lead in 667 BC, and he was the last powerful Assyrian king who built monuments, castles and he died in 627 BC. After the death of Ashurbanipal the Assyrian kingdom went through severe turmoil, and the capital Nineveh went through a disappearance, and the state of Assyria became extinct. At this time, the governor of Babylon, Nabopolassar, declared his independence in Babylon and allied with the king of the Medes in the east to overthrow the Assyrians, so they besieged Nineveh until they occupied and destroyed it in 608 B.C at the era of king Ashur-uballit II the last king of the assyrian kingdom[2]. by the time, the city has been partially rebuilt again by the remaining Assyrians in the era of the Chaldean state but it did not receive its old attention as it was.

1 SULEIMAN SAIGH, Histoire De Mossoul 1923

2 SULEIMAN SAIGH, Histoire De Mossoul 1923.

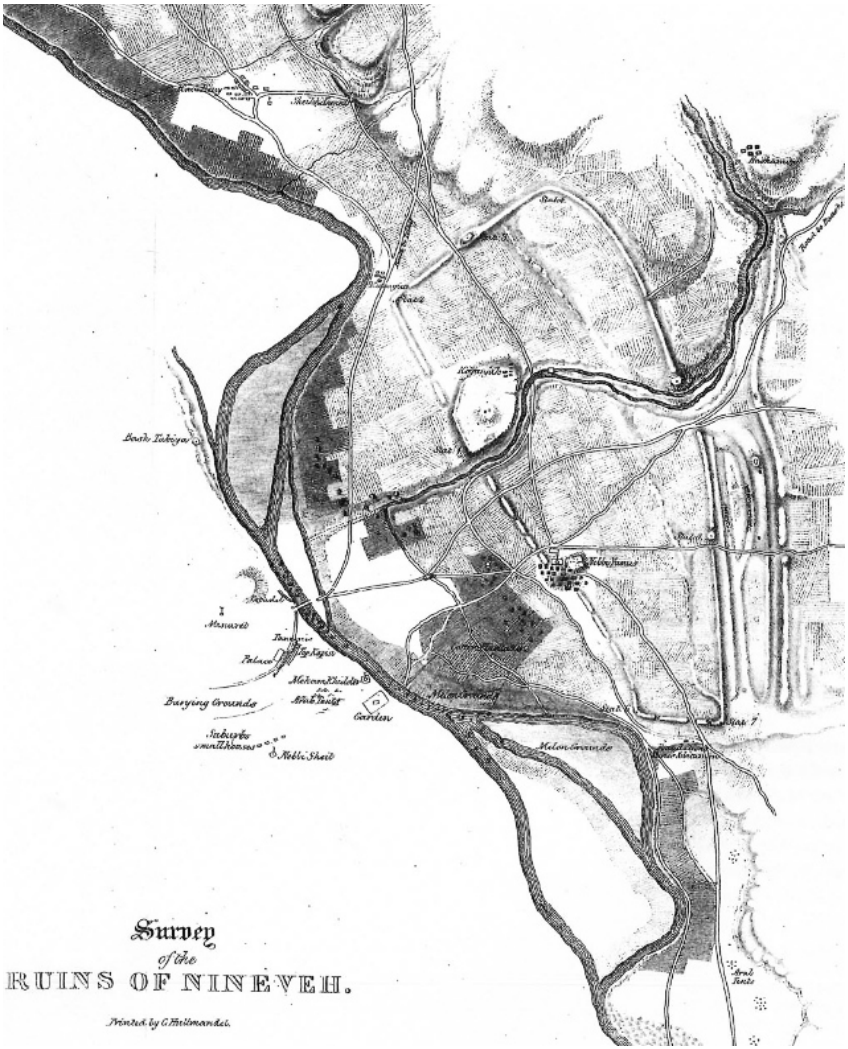


Fig. 1.01 Survey of the ruins of Nineveh vol2, Claudius J.Rich.

The city of Nineveh had an essential role in the Assyrian empire, it served as a capital and regional center during the middle and early neo-Assyrian periods. Nineveh had a very strategic location at the north part of Mesopotamia, where was the location of one of the main east-west trade routes at the confluence of the Tigris and Khosr rivers[3] (fig 1). During the reign of Sennacherib in 704 BCE, Nineveh gained strong value as it became the capital of Assyria. During the same era the city was enclosed within a great wall, Along the walls were located 18 gates for entering the city and they were flanked with colossal human-headed bulls carved from blocks of gypsum alabaster[4], some of those gates are restored till present like Mashki Gate (fig 1.03), Nergal Gate (fig 1.04), Adad Gate (fig 1.05), Shamash Gate and Halzi Gate. The outer perimeter of the city was covering nearly eight miles and consists of the two great mounds, kouyunjik (more than half a mile long by a quarter broad) and the mound of the Prophet Jonah,which is considerably smaller in size, and the flats within the walls at the foot of these mounds, wherein dwelt the bulk of the people (fig 1.02). Toward the east where Tigris river there was another large rampart outside the main city walls and it seems never to have been completed[5].

The Quynjiq mound (fig 1.06), in between the walls of Nineveh consists of several monuments that have been discovered by excavations done by the British Museum in 1927, and they are dated back to different eras. In the middle of the mound were located five buildings, the temple of Nabu, the temple of Ishtar, probably Bit-nathi for Ashur-rabi II, the site of the palace of Ashurnairpal, and the vaulted tombs. Part of this group was the temple of Nabu, away to the southeast. of this, across a little valley, lay the foundation of the temple of Ishtar, while in the valley itself from North to South lay the site of Ashurnasirpal palace, the Bit-nathi, and the early vaulted tombs. In the southwest of the mound are located the great palaces of kouyunjik which belongs to the great king Sennacherib and it has a dimension of approximately 650 x 630 ft and it's decorated with many sculptures from all of its sides. in the northern part of the mound located another great palace of Ashurbanipal which was discovered with the remains of its library[6].

In relation to mosul, the Arameans historians revealed that it has a traces which date back to the Assyrian Empire (fig 1.08), the city was called at that time by The Arameans "Al-Oboury Fort", meaning the castle on the other side of the Tigris River referring to the Assyrian fortress, in addition to a group of forts built by the Assyrians to block the attacks of the enemies from the western side[7]. The Qulayat area in Mosul on Tigris River is the site of those ancient forts, as historians suppose, and it was named in relation to these forts.

330 b.C. - 636 a.C.
The old settlement of el mosul.

After the end of the Assyrian Empire by the hands of the Chaldean state in 612 BC, the state of Chaldeans continued until the year 539 BC and they were eliminated by the Persians. The state of Persia lasted until the year 330 BC and was replaced by the Greek empire, as there was severe enmity between the two states and the

3 Marco Iamoni, The Prehistoric Roots Of Nineveh 2017.
4 Lucas Petit, Bonacossi Daniele, Nineveh, The Great City. Symbol Of Beauty And Power 2021.
5 Campbell Thompson, The Buildings On Quyunjiq, The Larger Mound Of Nineveh 1934.
6 Campbell Thompson, The Buildings On Quyunjiq, The Larger Mound Of Nineveh 1934.
7 SULEIMAN SAIGH, Histoire De Mossoul 1923

Fig. 1.03
Mashki Gate.

Fig. 1.04
Nergal Gate.

Fig. 1.05
Adad Gate.

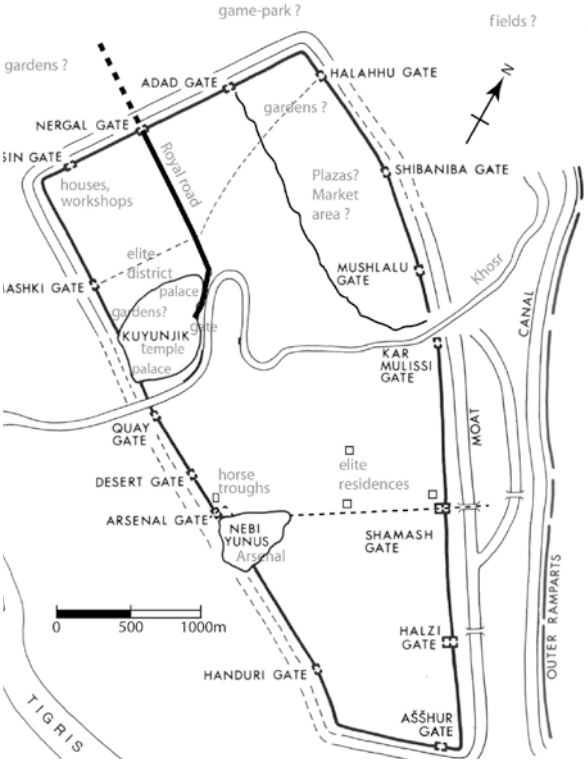


Fig. 1.02 Plan of old city of ninaveh and its gates.

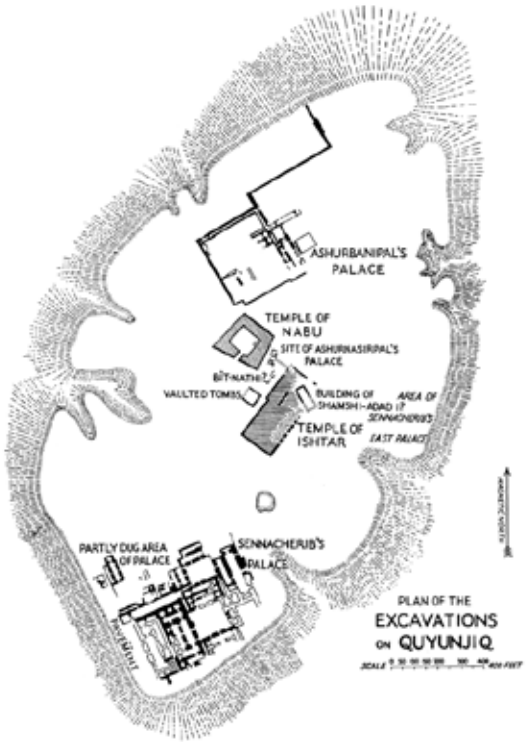


Fig. 1.06 Plan of the exacavations on Quynjiq.

Persians were eliminated through Alexander the Great, who continued his rule until 311 BC and was replaced by the Seleucids who followed the Greek empire and continued until the year 245 BC. During the rule of these empires, there was no change in the condition of the city of Mosul, as it was an empty land since the Assyrian state. However, during the era of the Greek empire, the ancient Citadel of Mosul and its forts were discovered through the Greek armies that were discovering the Tigris River and the surrounding cities, but at that time these castles and fortresses were demolished[8]. Among those ancient cities that were surrounding Mosul, the city of Nimrud which is an ancient Assyrian city located south of Mosul by 30 kilometres, north of the point that the river Tigris meets its tributary the Great Zab by 10 kilometers. It was between 1350 BC and 610 BC, a major Assyrian city, founded by The Assyrian king Shalmaneser I during the Middle Assyrian Empire[9].

The rule of the Seleucids ended by the hands of the Archaians or the Parthians in 250 B.C. which are a tribes of Persian origin. During the rule of the Archaians, there were great wars and conflicts between them and the Romans who were controlling part of Mesopotamia. With regard to Mosul, it has been mentioned that the Archaians were the first to build the city of Mosul by the king Ortban III betwen 18-41 A.C. as a part of the Adiabene district and it was called at that time by “Nordshire”. The Parthian kingdom was divided into provinces or small kingdoms, and each kingdom had a king who ruled it, and these states continued until after the birth, and Adiabene was one of the most famous of these kingdoms due to Its distinguished location and it had an important role in the politics of the Parthian kingdom[10]. In the year 208 A.D, a dispute occurred between the king of the Archaic empire, Olghash IV, and the king of the kingdom of Adiabene, which led to the destruction of Mosul, and it was called at this time Nawardshire and remained in ruin until the Sassanid Persians seized power, however, the nature of the planning and structure of the destroyed city had not been recognized.

The Sasanian Persians seized power from the Archaians in the year 226 A.D, also there were many conflicts between them and the Roman Empire. During the rule of the Sassanid Persian Empire, the Christians took the city of Nineveh as their home at the beginig of the 2nd century after birth[11], because of its agricultural location and a desire to be adjacent to the Monastery of Yunnan located on a mound next to the western wall of Nineveh, which was existed since the fourth century A.D and after the Islamic conquest it became the mosque of the Prophet Yunus. Historians also reported that most of Nineveh inhabitants at this time were Christians, and the city of Nineveh was part of Adiabene cities, and it was very well built.

The Sasanian rule was full persecution, killing, and displacement of Christians, from here the seeds of Mosul origins appeared through the Christian settlements in which they grew up, as Rabban Isho’-yahbh established his own monastery in the year 570 A.D on the other bank of the Tigris River, and the site of this monastery is now The Mar Isaiah Church12 (fig 1.11).

Since that time, Christians flocked to this part of the land

8 SULEIMAN SAIGH, Histoire De Mossoul 1923.
9 Martijn Houtsma, First Encyclopaedia Of Islam 1993.
10 SULEIMAN SAIGH, Histoire De Mossoul 1923.
11 Sarre, Friedrich, and Ernst Herzfeld, Archäologische Reise Im Euphrat-Und Tigris-Gebiet 1920.
12 Edmund Bosworth, Historic Cities Of The Islamic World 2008.

Fig. 1.08 Imaginary view for ninaveh by Austen Henry Layard.

Fig. 1.07 Imaginary view for Sennacherib palace.

Fig. 1.09 Al nabi Yunus mosque.

of Mesopotamia and built their homes, so Mosul at this time was occupied by Christians and some peasants from the Persians, and it was called at this time the Al-Oboury fortress. When Kasri the Second took over the Persian Empire, he built other houses besides the monastery area, so the population increased, and the city structure at this time extended on the banks of the Tigris River, and the main axis of the city was parallel to the Tigris river.

636 a.C. - 656 a.C.
The beginning of the Arab settlements in Mosul.

The Arab tribes appeared in Mesopotamia since ancient times during the rule of the Assyrians and what followed, but their numbers increased significantly during the reign of King Nebuchadnezzar, as he relied on them to build palaces, so Babylon was one of the greatest countries in the world during his reign13. The Arabs used to live in the city of Al-Hirah, which was located near Baghdad, but the conditions of the Arabs were not stable, as they were frequently invaded and displaced even after their numbers increased.

The Kingdom of Al-Hirah was formed by Amr bin Adi in 268 AD and continued until the Islamic conquest, when it was destroyed by Khalid bin Al-Walid. And before the Islamic conquest, Arabs also lived in Hatra (fig 1.12), a great city located to the right of the Tharthar River, south of Mosul, 85 kilometers away from it. The city was characterized by being built very precisely, and its buildings have distinctive roofs and doors (fig 1.14). The city had 60 towers connected to its walls, and between each tower and another there were nine small towers, so the city was heavily fortified.

13 SULEIMAN SAIGH, Histoire De Mossoul 1923.

The city of Mosul is considered an Arab city, and it was not founded by the Romans or the Greeks, but the Arabs did not plan it as they planned and built Basra, al-Kufa and Baghdad, where Mosul was a small city before the Arabs inhabited it. The Arabs were the ones who launched the name Mosul, which is an Arabic word meaning the forum, meaning the site that connects one place to another. The Arab settlements began in Mosul after the tribes that inhabited the city of Hatra moved to it. Arab settlements began on the banks of the Tigris River, complementing the Christian settlements (fig 1.13). The structure of the city of Mosul was subsequently affected by the structures of the cities that were inhabited by Arabs before the founding of Mosul, so we find that there is a convergence between it and the city of Hatra, and this confirms that Mosul is of Arabic origin.

Fig. 1. 12 Plan for Al Hatra city where Arabs used to stay before moving to Mosul.

Fig. 1. 14 Archeological remaining from hatra city.

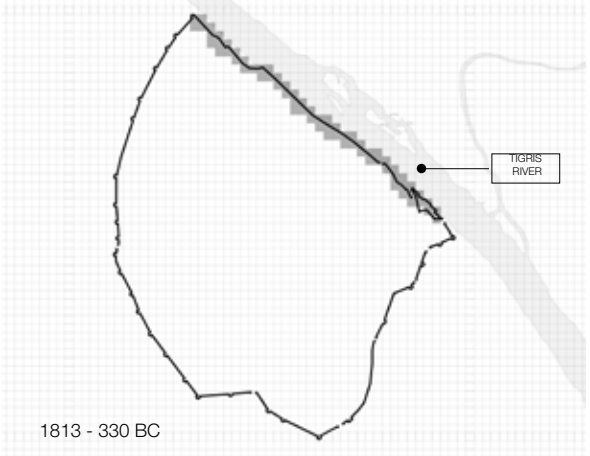


Fig. 1.10 The position of the Assyrian fortress for defending Nineveh.

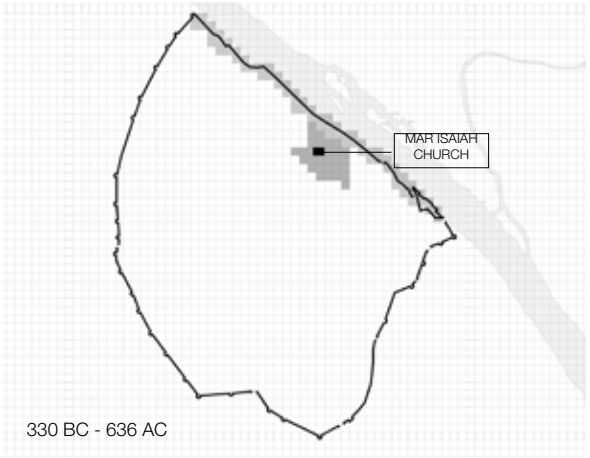


Fig. 1. 11 The position of first Cristian settlements at Mosul.

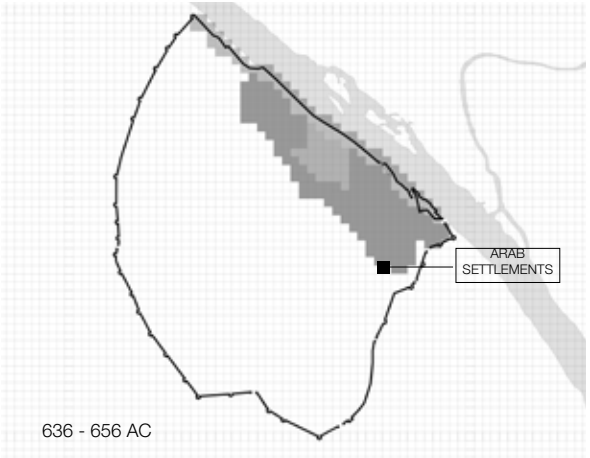


Fig. 1. 13 The position of Arabs at Mosul alongside the tigris river.

Mosul as an Islamic City
656 A.C. 1918 A.C.

656 b.c. - 744 b.c.
Ommayah Period

After the Muslim conquest, the settlement became a garrison town -Misr - under the caliphate of Omar ibn Khattab's caliphate and was given a Friday mosque. The term "garrison town" was formulated because it served as a settlement focal point for the Arabs/Muslims, separating them from the indigenous population.

The historic Islamic city is traditionally a walled city with a citadel (Qal'at) located outside the city center, usually on a hill or near water. The main Friday mosque (Jami) is located in the heart of the city, and the bazaar (souq or qaysaria) surrounds the mosque and extends along the main streets leading to the city gates. It almost corresponds to the structure of Mosul at the time of the Umayyads. The streets of the city were paved, and fortified walls were built around them "surrounded an approximately 300 Hectare town in an irregular semi-circular shape, attached to the elevated bank of the Tigris" during the brief rule of Marwan II (744-750 AD). Mosul in this period was less than half the size of its east bank neighbor in ruins, ancient Nineveh, when Carsten Niebuhr visited it at the end of the 18th century AD. "[14]

Moreover, during the reign of Marwan II, known as the Master "Builder" of Mosul, the city had "around 50,000 inhabitants, twice as populous as modern Rome but ten times less populous than Baghdad".The Ship Bridge, which is considering the only bridge over the Tigris until the 20th century AD, the Qaysaria (covered market), and the Ummayyad Mosque, from which the Al-Nouri Mosque inherited, are all attributed to this era. At this time, towns like Mosultypically had only one congregational mosque, the Friday Mosque, which could have housed the entire male population of the city.

744 b.c. - 894 b.c.
Abbasid Caliphate

Due to the growth of the city as one of the most important trading hubs in Asia and the immigration of more Arabs, the structure of the city began to take shape from east to west during this period, with the main road extending from BAB AL GISR to BAB AL BAYD.

Mosul "is the metropolis of this region," according to al-Muqaddasi, a tenth-century geographer. "It is a splendid city, beautifully built, highly renowned, and of great antiquity, it is possessed of excellent markets and inns, and is inhabited by many personages of account, and learned men; nor does it lack a high authority in the traditions, or a celebrated doctor of the law. From here come provisions for Baghdad, and thither go the caravans of al-Rihab. It has, besides, parks, fruits, very fine baths, magnificent houses, and good meats: all in the entire town is thriving."

894 b.c. - 1257 b.c.
Zengid Dynasty

Mosul reached the height of its power during the rule of the Zangid Dynasty in the 12th century AD. Bab Sindjair became increasingly influential as the city's main gateway during this period, shifting the city's main axes. Imad al-Din

14 Novacek K, 2017

Zengi rose to power and established himself as the Atabeg of Mosul and Aleppo. His reign is considered the golden age of Mosul. During this period, numerous mosques, shrines, schools, ribats - Sufi huts - and hospitals were built in Mosul. He also strengthened the city walls by doubling them, adding large towers to reinforce them, building the citadel Bash Tabyia (the northernmost point of the city), and deepening the trenches. (figur 2.4).

According to Ernst Herzfeld and Nikita Elisseeff, Nur al -Din's son continued his father's work and had the new Grand Mosque of Mosul, the Al-Nouri Mosque, as well as a madrassa and the Al-Hadba minaret built in 1170 AD. The oldest and most visible layer of architecture in the old city of Mosul probably dates from the 12th to 13th centuries AD. In the 13th century, Mosul had 3 congretional mosques, 36 souqs, 28 schools, and 18 dar-hadiths madrasas[15], 8 churches, and an astonishing number of 210 hammams16 Mosul was conquered and sacked by the Mongols in the second half of the 13th century and was later ruled by the Ilkhanate and Jalairid Sultanates. The Mongol invasion of the region decimated Mosul's population, and the city's urban expansion was stifled. Mosul was plagued by political insecurity for centuries, and its once-thriving trade markets and rich hinter land were destroyed. During the Atabeg period, the population that lived outside the southern city walls retreated insi de them. The north of the city was deserted, theonly inhabited neighborho being those around Al Nouri and east of the river.

15 Kemp P, 1979

16 Fethi I, 1977

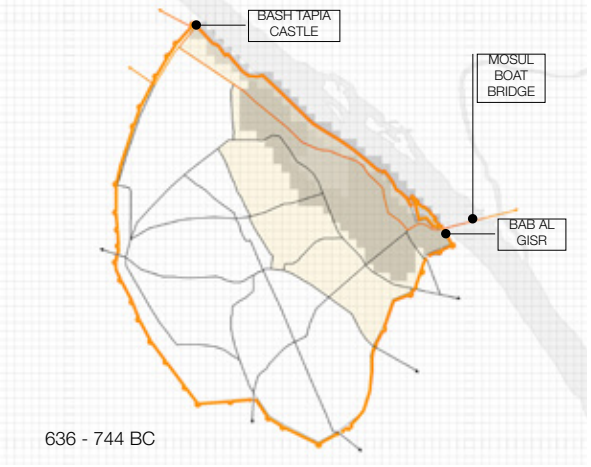


Fig. 1. 15 The structure of mosul at the ommayeh period.

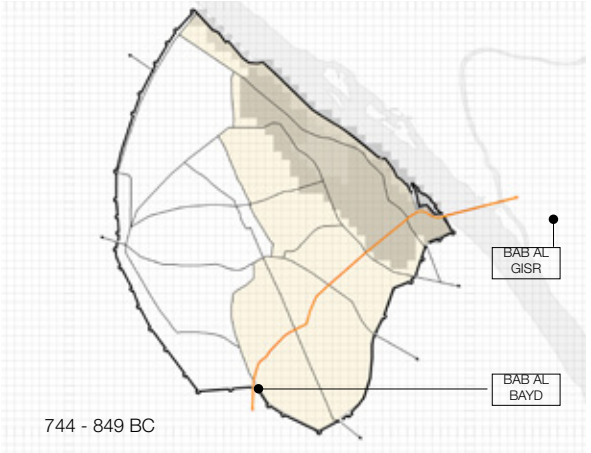


Fig. 1. 17 The structure of mosul at the ABBASID period.

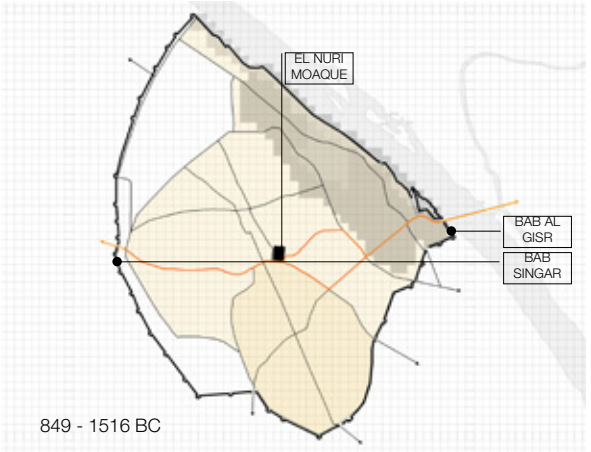


Fig. 1. 18 The structure of mosul at the ZENGID period.

Ottoman Empire
1257 b.c. - 1918 b.c.
Mosul as an Islamic city

Despite being conquered by the Ottomans in 1517, Mosul was considered mostly a garrison city, so no investment was made, and it was not until another hundred years later that the city saw a period of growth and revival. The Ottoman Mosul, which had shrunk significantly during the Mongol invasions, expanded once more outside the city walls, this time to the southwest and southeast. As a result, Mosul was rebuilt and refurbished as the region's commercial and administrative center. Then, the old city which was surrounded by a wall until the nineteenth century retained the medieval city plan, architecture, and layout of its historic nucleus, to which Ottoman buildings were added. Once again, the city grew. Nonetheless, all the improvements and structures constructed during this period were merely political acts undertaken to gain prestige and influence. (Figure) "By 1820, Mosul had about 25 Friday mosques, the most of those had been established under the Jalilis, either from scratch or on the site of an old masjid – smaller mosque"17 . It was most likely during Ottoman rule that the Bazar around Al Nouri mosque lost its importance and gradually subsided to the streets in the vicinity of the new Sarai neighborhood, which became the main qaysaria of Mosul.

The Sarai appears to have moved within the Islamic city over the centuries. During Ottoman rule, the Islamic city's urban spatial organization required the Sarai to be located on the defensive wall's border, either inside the city's precinct, as in Antalya, or outside, as in cities throughout the Middle East and North Africa. Mosul's Sarai was located within the city walls until the late 1800s, when it was relocated to the far south, outside the city. The first Ottoman Sarai, as seen for a brief period, was located on Citadel (Qal'at) Island, with its maiden facing the island.

The Sarai was relocated to the city's south during Jalili's rule. This is when Suq al Sarai – the qaysaria next to the Sarai – became the city's main qaysaria, where one could find the most important inns with construction dating back more than 900 years. Mosul Old City has a variety of architectural styles. Mosques, shrines, and churches are examples of public architecture in the city, reflecting the artistic styles of the eras in which they were built.

Mosul's unique riverfront panorama with monumental buildings is another example, as are the Ottoman inns and bazaars to the south. According to the 2016 UN-Habitat profile of the city, Mosul had some 486 Islamic monuments and historic mosques as well as 32 ancient churches and 6 monasteries.

17 Kemp P, 1979

Fig. 1. 19 The Al_Nouri Mosque.

Fig. 1. 20 Al Hadba Minaret seen from alleyway.

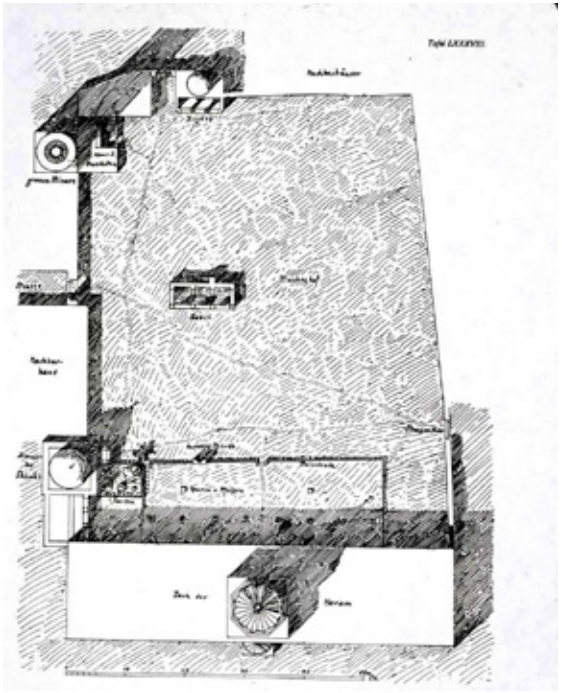


Fig. 1. 21 The Al-Nouri Mosque.

Fig. 1. 16 Mosul boat bridg river.

Mosul as an Islamic City
1918 A.C. - PRESENT

The 20th Century
1918 b.c. - Present.
From Kingdom to Iraq Republic

After World War I and the defeat of the Ottoman Empire, Mosul became part of British rule from 1918 to 1926, including Baghdad and Basra. The British carried out major infrastructure projects throughout Iraq, such as building roads, bridges, and railways. But eventually halted developments for lack of sufficient revenue. During this time, Mosul received a water supply and electricity system, the railroad and railway station were completed, and the main street of Mosul's Old City, Nineveh Street, a commercial street with many shops and multi-story buildings, was cut through the historic bazaars. a new bridge was built over the island of Qal'at, which was completely leveled and connected with the city.

Mosul then became the capital of the province of Nineveh after it joined the newly formed country of Iraq in 1926. The city expanded during the royal rule, which lasted until 1958, and the defensive wall was demolished around 1933. New districts were built within the old city, in the abandoned northern section, and outside, in the southwestern and southeastern sections.

Al Shaziani and Al Farooq Streets, which were
created by structuring and enlarging existing roads between the 1930s and 1950s, became the Old City's north-south artery."The opening (or the widening) of these roads didn't affect the morphology of the urban fabric, but certainly created a new system of relation with the Old City, its hinterland, and the wider urban area that expanded outside the wall and beyond the river."18 With the establishment of the Republic of Iraq and the regime of Saddam Hussain Mosul grew and modernized, expanding along the eastern bank of the Tigris. The most significant period of Mosul's expansion was after the 1970s when many works were conducted under the 1975 French Master Plan

The 5th Bridge, connecting the East Bank to new trends west of the Old City, was considered the only major change the Old City experienced before the recent conflict. This highway cuts through the northern part of the Old City, separating it from its citadel Bash Tabyia and other important Atabeg structures from the 12th and 13th centuries, such as Shaykh Fathi mosque, madrassa Al-Nuriyya, and Mashhad (shrine) al-Imam Yahya ibn al-Qasim.

In recent decades, many modern buildings with concrete and other modern materials are built within the Old City, whereas many historical houses have been decayed or destroyed mainly because of the inability of the owners to restore them or because of a desire for modernity. However, the city's toughest blow came under Daesh rule, (al-Dawla

18 Pini D, 2019

al-Islamiya fi Al-Araq wa al-Sham) which deliberately destroyed some of its significant public buildings, the old town seems to have preserved its morphology despite the destruction caused and subsequent operations to resume the city in 2016 and 2017.

The contemporary city of Mosul, which encompasses both the west and east banks, is now one of Iraq's most important cities. It is Nineveh's capital of northern Iraq, the second-largest city in Iraq after Baghdad, and Iraq's largest. The town consists of 251 quarters (mahala) nowadays on the two sides of Tigrish, with 91 districts on the Western Bank (the old town and neighborhoods) and 160 neighborhoods on the East Bank, according to the UN-Habitat profile of Mosul 2016.

Despite the destruction brought by the conflict and subsequent operations to retake the city in 2016 and 2017, the Old City seems to have preserved its morphology, even if its buildings (represented mostly by 18th and 19th-century residential architecture) were heavily damaged.

Fig. 1. 23 Ramparts of Mosul.

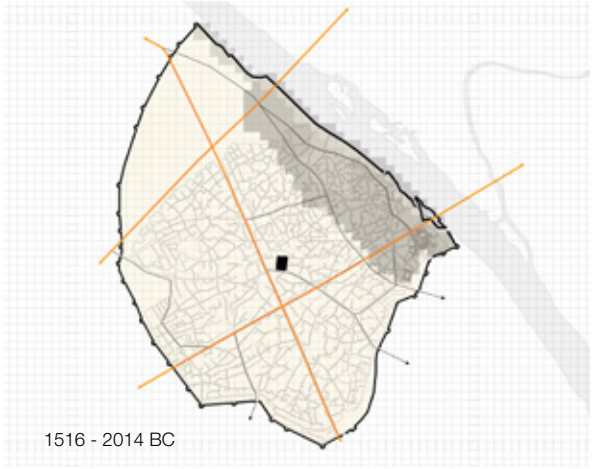


Fig. 1. 25 Contemoprary structure of Mosul.

Fig. 1. 26 Drone View of Al Nouri Complex after its destruction in 2017.

Fig. 1. 27 Mosul from the air.

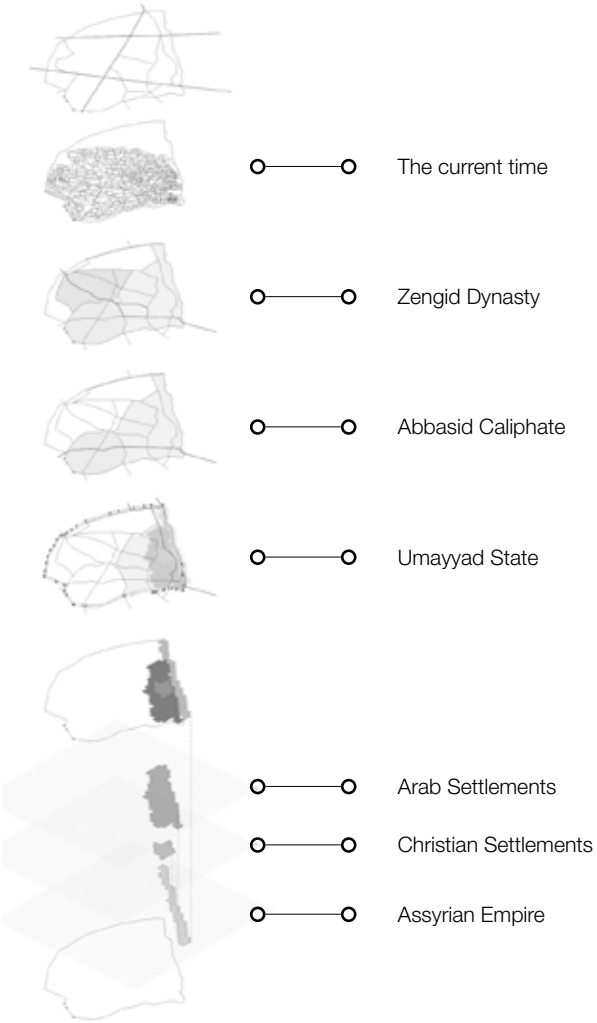


Fig. 1. 28

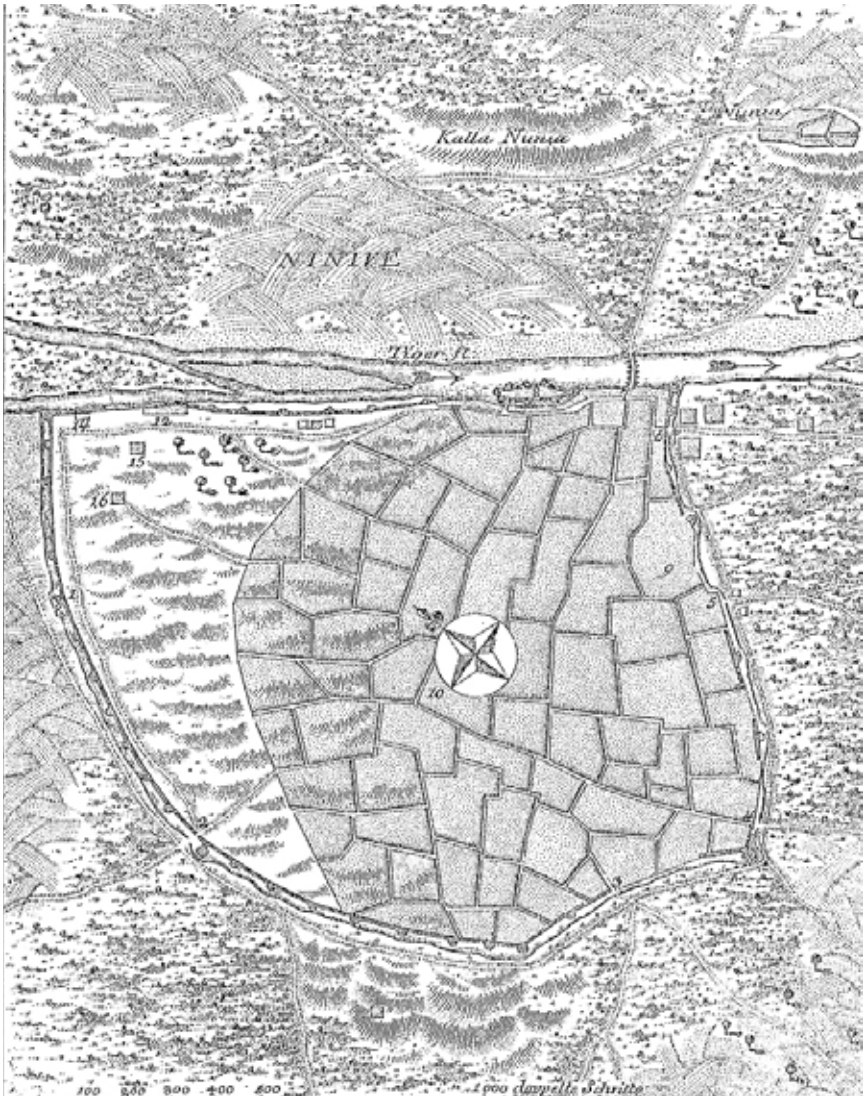


Fig. 1. 29 Mosul map in 1778.

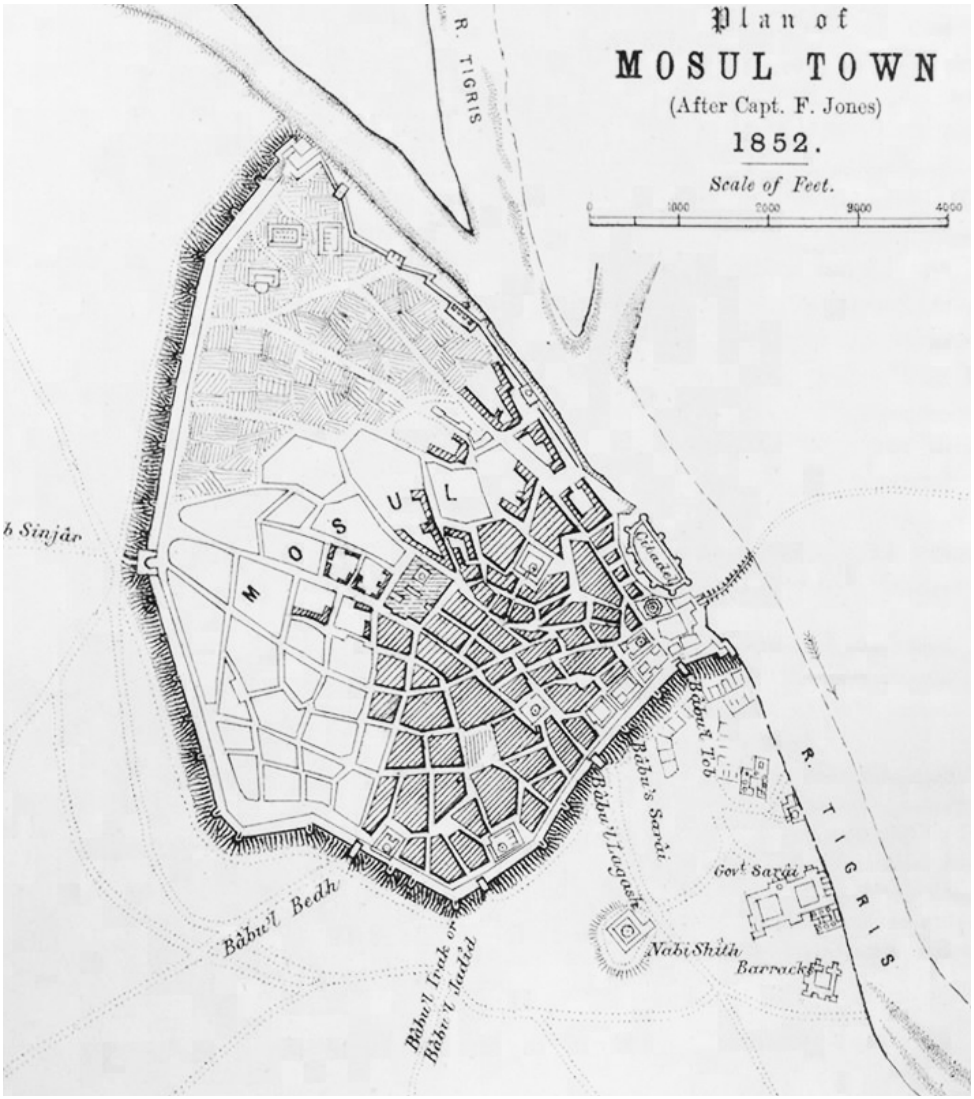


Fig. 1. 30 Mosul map in 1852.

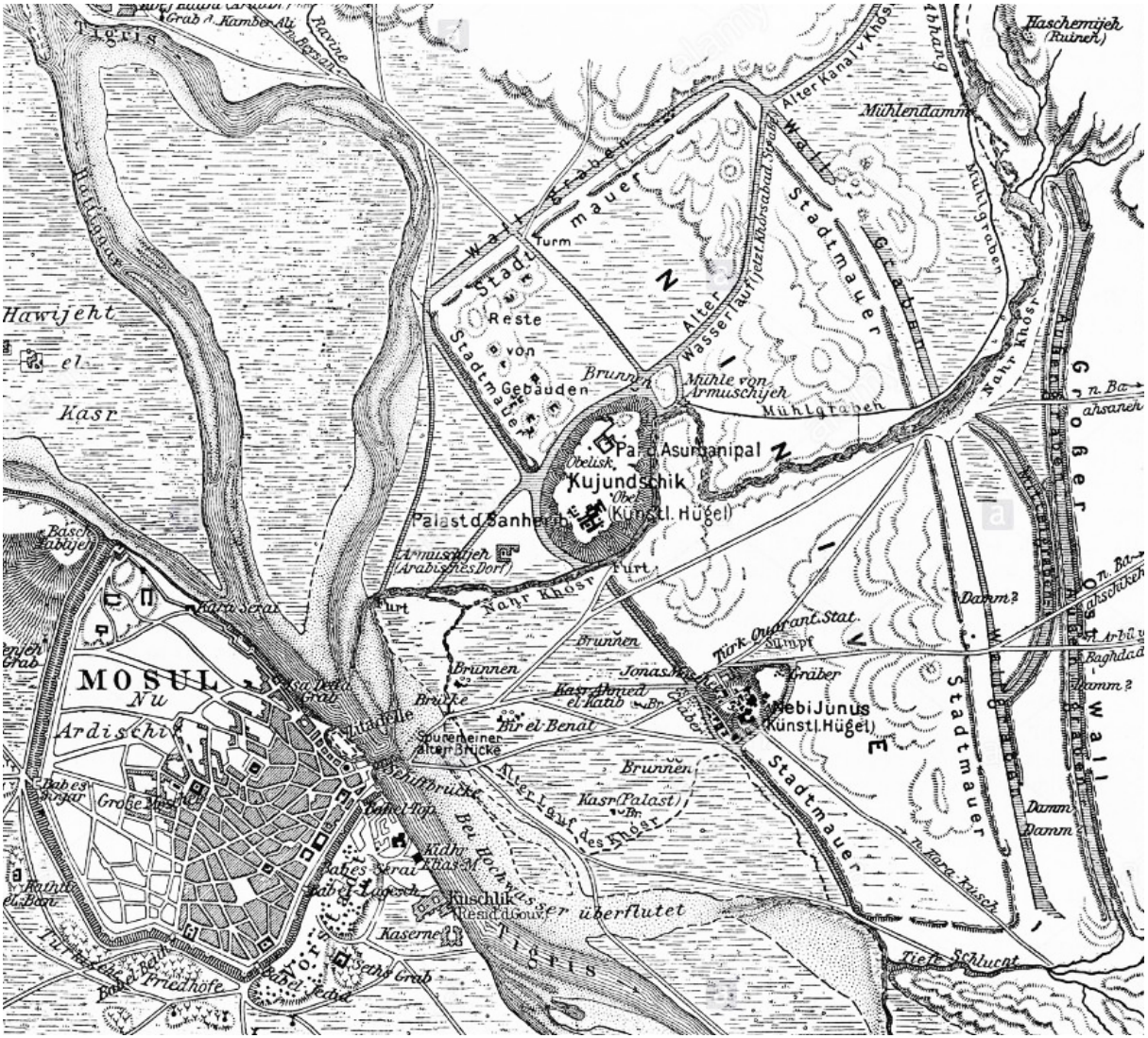


Fig. 1. 31 Mosul map in 1900.

Fig. 1. 33 Mosul map in 1919.

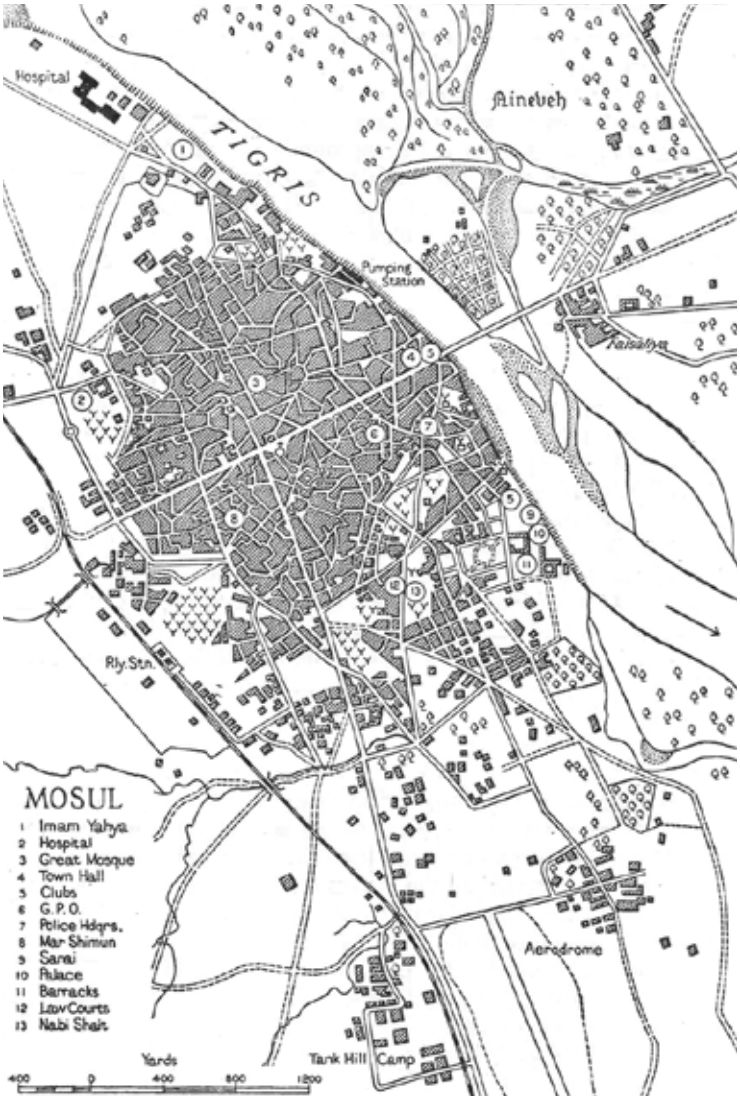


Fig. 1. 34 Mosul map in 1944.

MOSUL

TERRITORIAL ANALYSIS

Territory
Country, Governorate, and City Profiles

Iraq Country Profile

Iraq is one of the easternmost countries of the Arab world. The country it's bordered to the north by Turkey, to the east by Iran, to the west by Syria and Jordan, and to the south by Saudi Arabia and Kuwait (Fig 27). The total area of Iraq is 437,072 square km, of which 432,162 square km of the land surface. Moreover, Iraq has a tiny sliver of coastline of approximately 58 km along the northern end of the Persian Gulf. For administrative purposes, the country is divided into eighteen governorates, of which three (Arbil, Dahuk, and As Sulaymaniyah) are gathered in an autonomous region in the north and the other fifteen governorates are in central and southern Iraq. This division corresponds roughly to the rainfed northern agricultural zone and the irrigated central and southern zone.

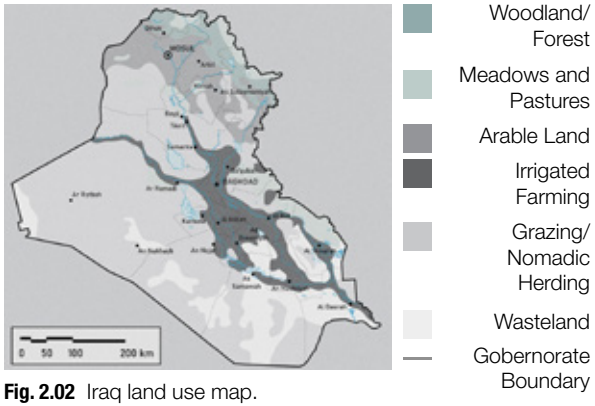


Fig. 2.02 Iraq land use map.

Four physiographic regions can be identified analysing Iraq's topography. Wide sandy expanses lie in the desert zone of the country, towards its west and southwest regions being part of the Syrian Desert. The northern part is dominated by uplands, including the watersheds of the Tigris and Euphrates rivers to the Syrian border. The northern highlands constitute the third region, characterized by a series of elevation rises interspersed with steppes, giving way to mountains that reaches 4,000 m high near the Iranian and Turkish borders. Lastly, the fourth region unfolds along the lower Tigris and Euphrates rivers, the alluvial plain. The area, which is a large delta, includes lakes and marshlands, extending from north of Baghdad southward towards the Persian Gulf. About 13 per cent of Iraq's land surface is classified as arable, with permanent crops covering 0.78 per cent of the overall land

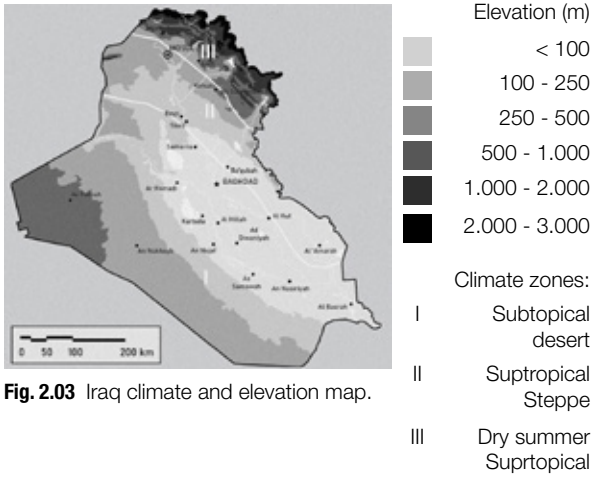


Fig. 2.03 Iraq climate and elevation map.

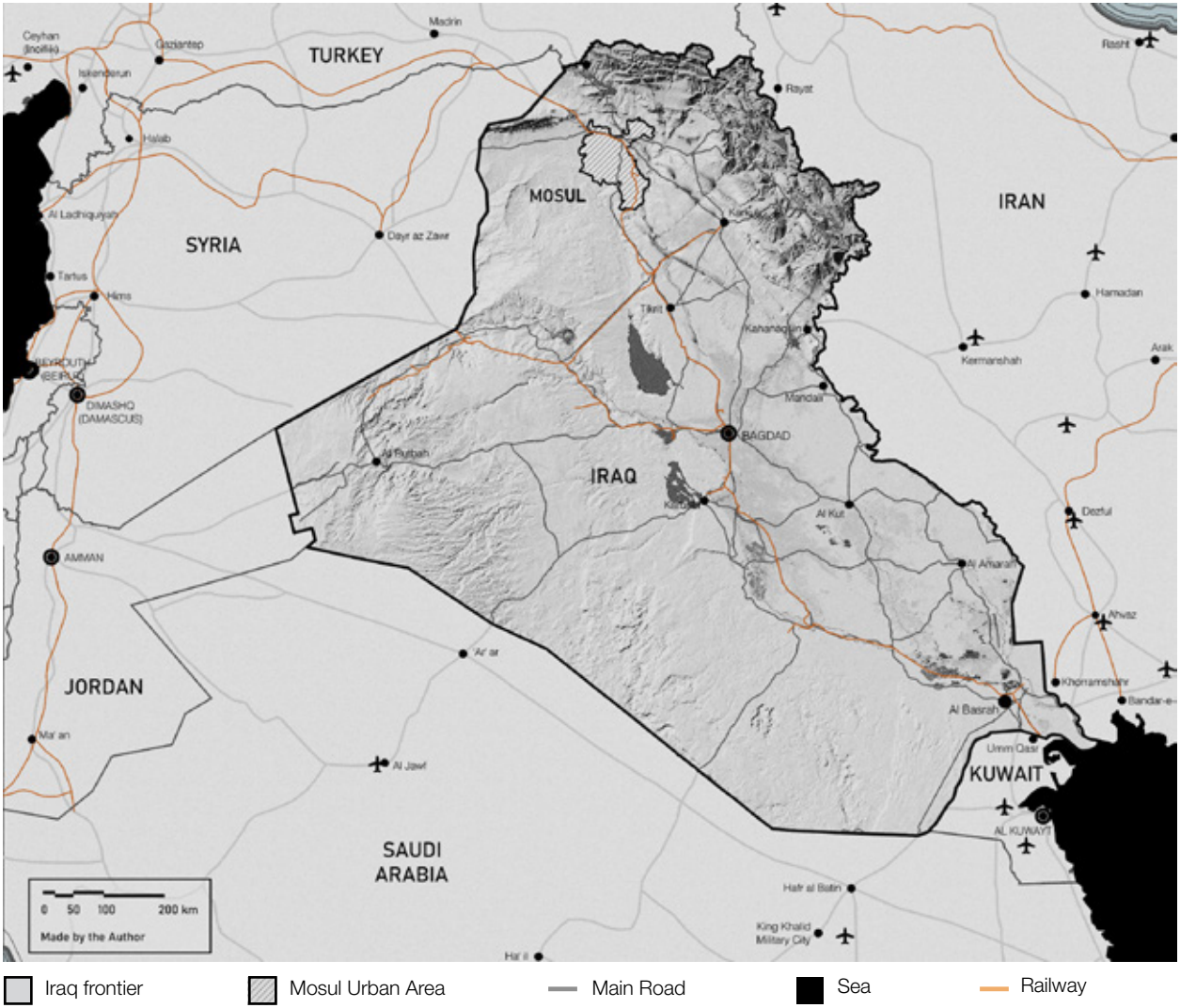


Fig. 2.01 Geopolitical map of Iraq and main infrastructure system.

surface1 (Fig 28).

The climate in Iraq is mainly of the continental, subtropical semi-arid type, with the north and north-eastern mountainous regions having a Mediterranean climate (Fig 29). Rainfall is very seasonal and occurs in the winter from December to February, except in the north and northeast of the country, where the rainy season is from November to April. Average annual rainfall is estimated at 216 mm, but ranges from 1 200 mm in the northeast to less than 100 mm over 60 percent of the country in the south. The current population of Iraq in 2021 is 41,179,350, with an overall increase of 2.97 percent in the last ten years (Fig 30).

The population is predominantly centred in the alluvial plain and the northeast, leaving the western and southern desert regions very sparsely inhabited. The two official languages of Iraq are Arabic and Kurdish which, in terms of ethnicity, Kurds and Arabs constitutes the majority. Ethnic minorities include Turkmen, Sunni, Shabak, Chaldeans, Assyrians, Armenians (Fig 31).

Nineveh Governorate Profile

Located in northern Iraq, Nineveh is the third largest and second most populated governorate, home to the ancient Assyrian city of Nineveh (Fig 32). The province is divided into nine districts: Sinjar, Telafar, Tilkaif, Al-Shikhan, Hatra, Al-Ba'aj, Akre, Al-Hamdaniya, and Mosul.

Agriculture, especially cereal production, is a key component of Nineveh's economy. The governorate

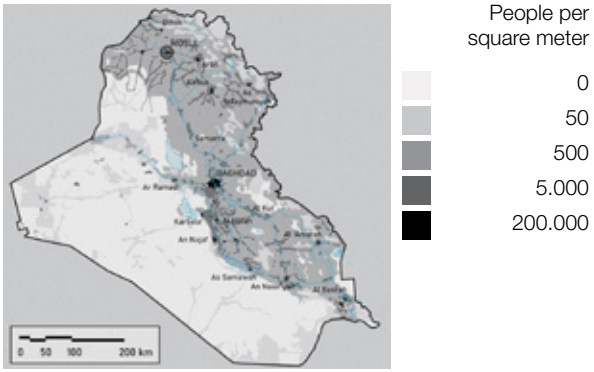


Fig. 2.04 Iraq demographic density and distribution map.

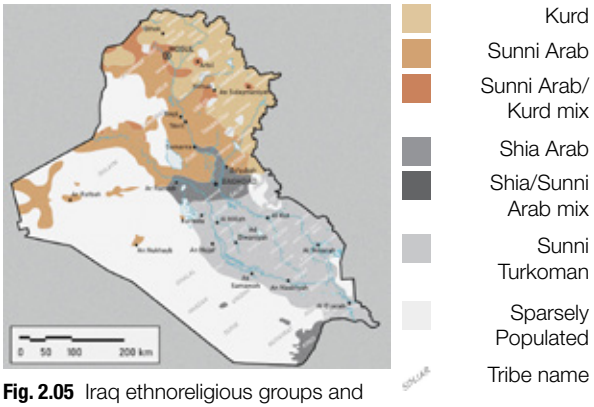


Fig. 2.05 Iraq ethnoreligious groups and major tribes map.

1 Federal Research Division, Country profile Iraq (Washington DC: United States Library of Congress, August 2006), 4-6.

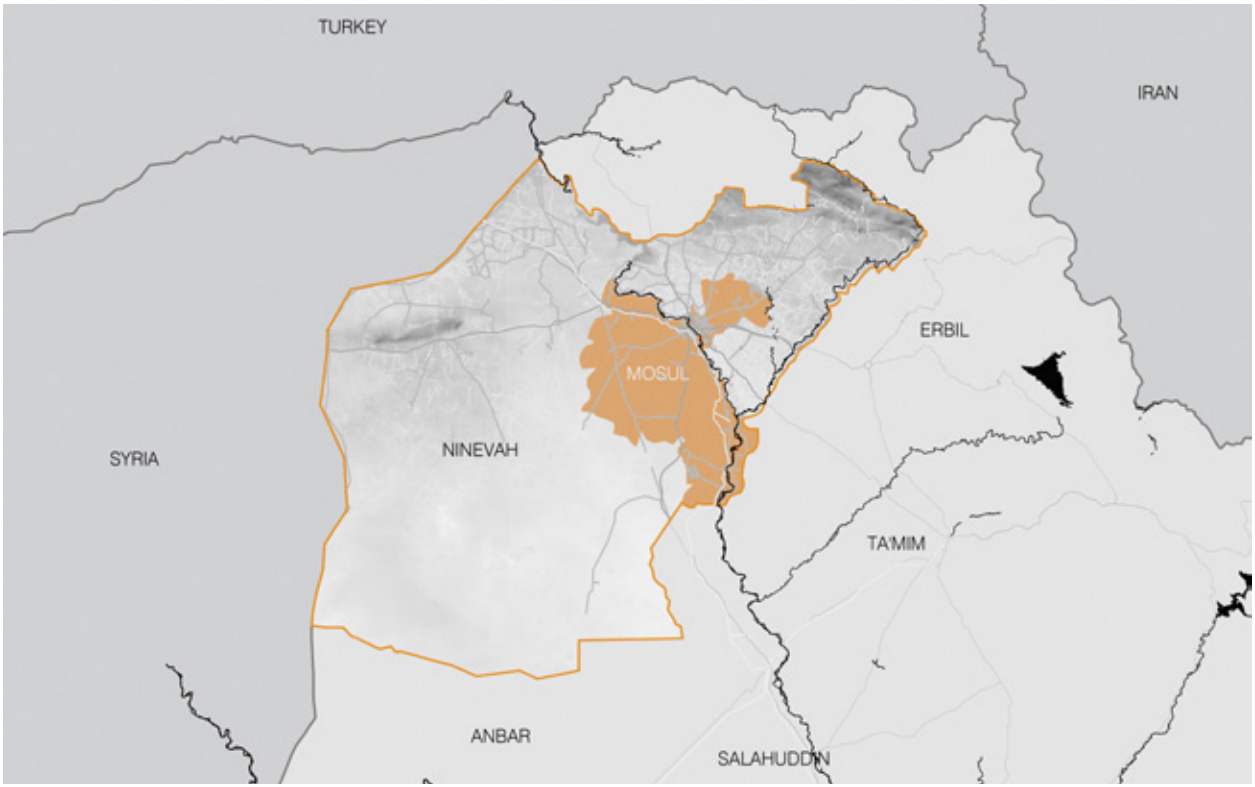


Fig. 2.06 Geopolitical map of Nineveh governorate.

produces sugar cane, sunflower, vegetables and herbs. Nineveh is an ethnically, religiously, and culturally diverse territory, with large populations of Arabs, Turkmens, Assyrians, Kurds, and Yazidis both in towns and cities, and in their own specific villages and regions2.

Mosul City Profile

The city of Mosul is the provincial capital, one of the Iraq's principal cities located approximately 250 miles north of Baghdad. Mosul District is the most populated of Nineveh's nine districts with a population of about three and a half million, making it the second largest city in Iraq in terms of population.

The city is installed in a valley, the historical center of Mosul occupies the left bank and the ruins of Niniveh are on the right. The city has several titles known to it, such as 'um al-Rubaien', because of the mild weather in the spring and autumn, or 'Al Fayhaa', which means paradise or heaven.

The Mosul agglomeration is surrounded by a network of small towns. The largest towns are located on the main roads that link Mosul to other important cities. The highway 1 connects Mosul to Bagdad, the highway 2 to Irkil and the road 80 to Kirkuk. This axis are important for the circulations inside the city itself and for the commercial and cultural connection to the region and toward other important cities of Iraq. Mosul is also connected at a bigger scale by two airports, the International airport of Mosul and the Bashiqah airport, and by a train station.

Located on the banks of the Tigris River, became notorious for the picturesque historic and religious sights, with relicts of centuries of ancient civilisations right outside the city borders.

2 Inter-Agency Information and Analysis Unit, Ninewa Governorate Profile (Baghdad: IAU, November 2010), 1.

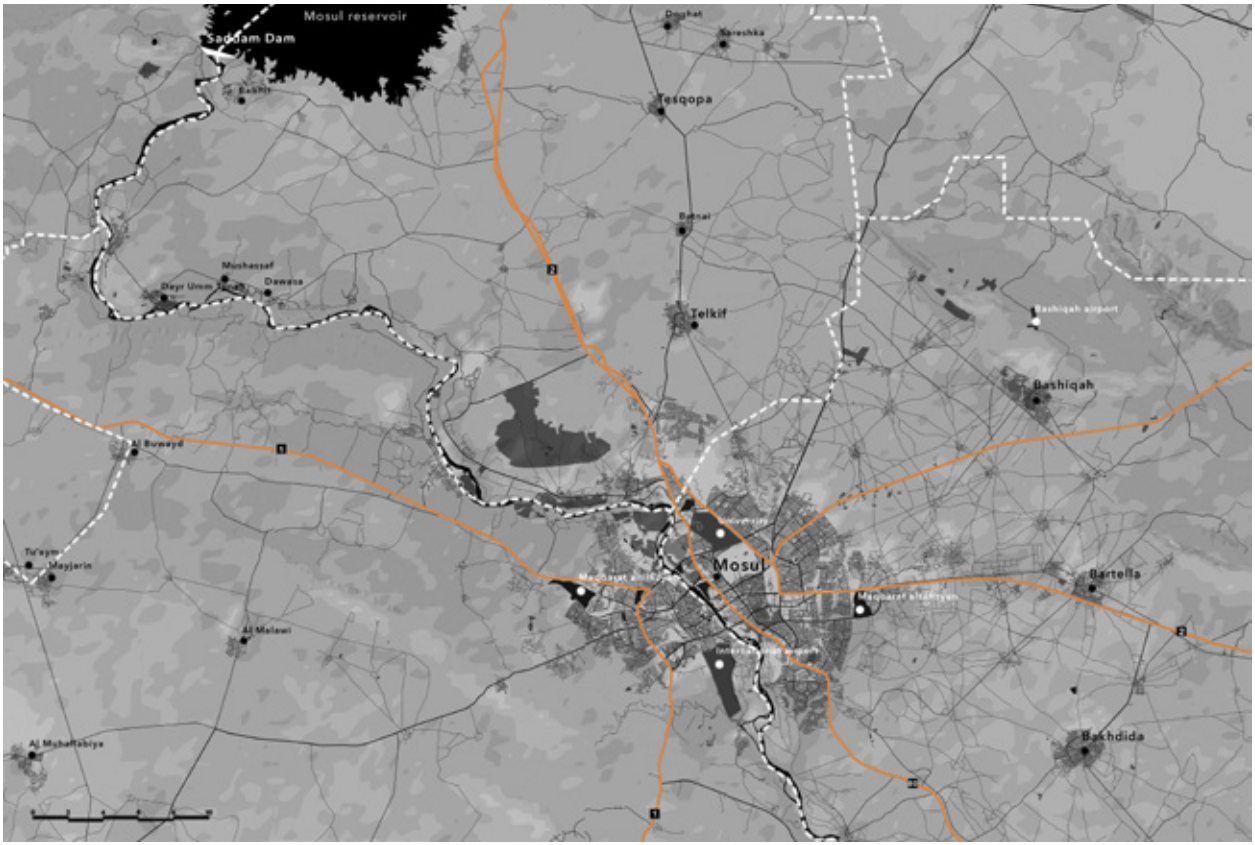


Fig. 2.07 Map of the Mosul region, the reservoir created by the dam occupies a large area upstream of the city.

Territory
The Tigris River

Fig. 2.08 Iraq. Mosul. Mosul bazaars and river scenes on the Tigris, The Tigris , 1932, Wash day, women washing clothes in the river.

The region of Mosul receives its water provision from the Tigris River. This river, long of 1750 kilometers, is created by the melt of the snow in the Esaster Turkey. In Mosul, the Tigris River flows from the South to the North at the average discharge of 1,014 m3/s and a maximum of 2,779 m3/s. This importance of the discharge and the periodic floods make the borders humid and auspicious for the agriculture. Numerous smaller canals irrigate the fields located further from the river bed.
Historically the Tigris iver is a very important commercial connection between Turkey, Iraq and Syria. This waterway was very important for the exchanges between Mosul and Bagdad. The exports and imports from the two cities contributed to their economical expansion.

The Tigris Uses

It is easy to understand the etablishment of the urban fabric considering the flooding area. Mosul is built at proxomity of very fertile lands, in the precise area that does not risk to be submerged by the water (see fig. XX). The river provides water for all the activities of the city but does not represent

Fig. 2.09 Washing wool on the banks of the Tigris River in Mosul, Iraq, 1932 the Tigris banks women activities.

a direct threat for the buildings and the habitations. The river banks always had a very important role in the city. With the drying of the climate of Mosul, the management of this ressource has became even more important. The river is crossed by 5 bridges and different ferries services.

The uses of the river are multiples, they include irrigation, laundry and fishing. It also played an important social rolespecially for women. The water in Mosul was considered as proper for domestic and and drinking uses but nowadays some hydrographic studies shown the important impact of the war on its quality. «This deterioration of the river water quality in the city of Mosul is due [...] to discharge of sewage and to hospitals effluents».3

The Saddam dam

Because of its uneven debit, the Tigris is dammed in multiples locations in Turkey and in Iraq. Two of the four dams located in Iraq are situated in the Mosul region. The first one, the Saddam dam, is the largest dam in Iraq.

3 Reem A.A. Al-Shanona, 2020 The environmental status of the water of Mosul

Built in 1981 and located upstream of the city of Mosul, the structure has a full capacity of 11.1 cubic kilometers and produces electricity for 1.7 millions of inhabitants the region. For this reason, the infrastructure was a strategic element during the war with ISIL. In addition to the energetic problematics, the failure of the bam would represent a lethal danger for 1.5 millions people. The wave would reach 54 m high and reach Bagdad within hours.
The structure is described as very weak by multiple experts that try to raise the awarness and the support of local politics about this immediate danger. The sedimentation of the bottom of the dam is provoking a increasing pressure. Different works of consolidation have been realized but the threat of a failure is still existing. The dam is stabilizing the river and acheives a flood cycle that is more constant, allowing a more permanent occupation of the land and a decreased risk of innondations. However, the Mosul dam gained the reputation of «the most dangerous dam in the world» and its potential collapse is considered as dangerous as «a nuclear bomb».4

A Diverse Agriculture

The Tigris is a powerfull river that does not have a fixed contour. The banks are very fertile areas that also include temporary islands. The majority of this green lands is used for agriculture and the swamps are tranformed in pools for aquaculture. Mosul was recongized as «one of the most the most fertile cities in Iraq, and many scholars believe the legendary Hanging Gardens of Babylon were built near the city».5 Even is the war, and more specifically the use of chimical weapons, radically changed the situation, the agricultural production remains very diverse and important.

Some initiatives are taken by the municipality to restaure the agriculture and the eco-system, planting seeds. The challenges are not only environmental but also economic as the decreased agriculture production forces Mosul to import from Turkey and Iran many items such as poultry, dairy, grains and meat. «We don't want to rely solely on oil and want to support our local farmers and improve our agriculture production to export food rather than having to import.»5

The main historical food productions in Mosul are zucchini, onions, honey, wheat and potatoes and many families grow grapes in their backyards. Nineveh stills the largest producer of wheat in Iraq with «500 Ton of wheat and barley in 2018»5 and 65 per cent of its total area dedicated to fields and agriculture.

The Aridity in Mosul

In the West of the Mosul agglomeration the climat is arid. There are fewer green areas and the network of the towns is less dense. It is very obivious looking at the map (see fig. XX) that the road system is also less compact. The agriculture and the occupation of the land is generally less important than in the East side of the city. The East part is more irrigated and has a quite dense system of roads and towns. The majority of the fields are concentrated on this region, around the river and the Bashiqah airport.

More recently the city suffered «major natural disasters including droughts and locust swarms» that contributed to deep the disparity and complexify the agriculture production. The «environmental damage by the Islamic State (IS) has contributed to its deforestation, turning it into a semi-arid city.»6

4 Barbare Bibbo, 2016, Mosul Dam collapse 'will be worse than a nuclear bomb', Aljazeera

5 Hassan Ali Ahmed, 2020, Mosul sowing seeds post-Islamic State, Al Monitor

6 Hassan Ali Ahmed, 2020, Mosul sowing seeds post-Islamic

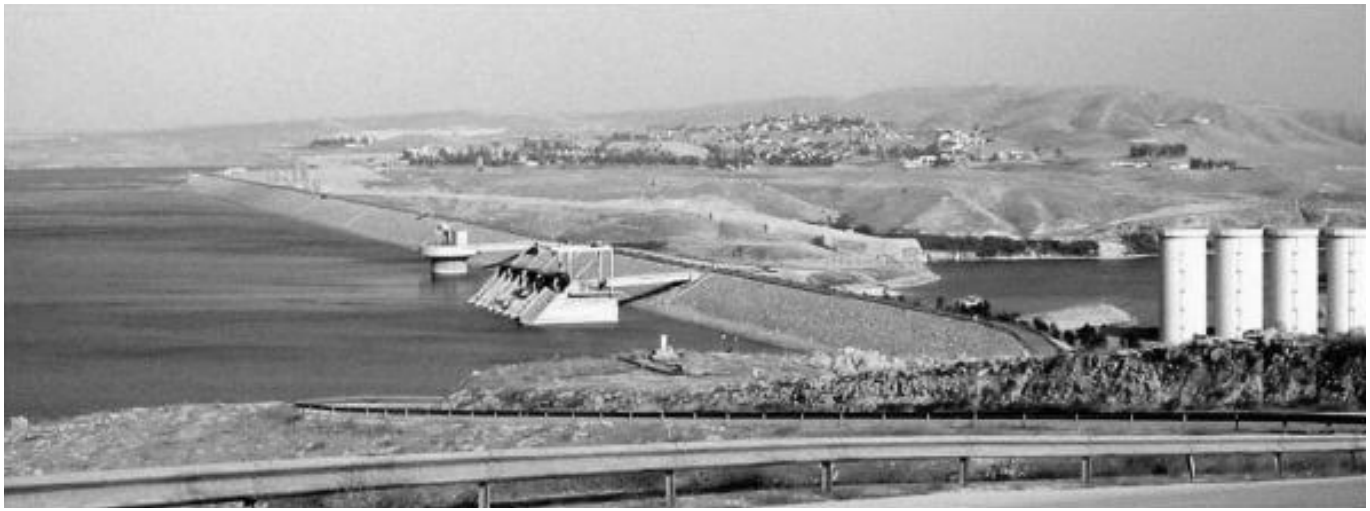


Fig. 2.10 The Mosul dam, 2011,Completed in 1984, the dam suffers from structural problems that caused the U.S. Army Corps of Engineers to once call it 'the most dangerous dam in the world,' an accusation rejected by Iraqi authorities.

Fig. 2.11 The Tigris banks, 2020, the Tigris banks close to Mosul with the fields and green areas.

Fig. 2.12 The Tigris banks, 2020, the Tigris banks close to Mosul with the swamps.

The Damages of the War

The war against ISIL disturbed a lot the food production system and the agriculture beyond the shift of the climate.

The first damage has been the destruction of many farms around Mosul. The second was the interruption of the Niniveh Directorate irrigation system and the third, the destruction of the biodiversity and the pollution of the water and soil that continue to impact the region.

This destructions also provoked a lost in the traditional agriculture techniques and the local authorities are active to reintroduce this activies. «The reviving of the honey production contributes directly to the revival of the agricultural sector and local markets, also providing more jobs in the city.»7

State, Al Monitor

7 Hassan Ali Ahmed, 2018, Mosul Recovery: A National campaign to remove harmful plants, Mosul Eye

Fig. 2.13 The Mosul surrounding, 2014, the surrounding of Mosul is composed of agriculture lands and a network of small towns connected by highways.

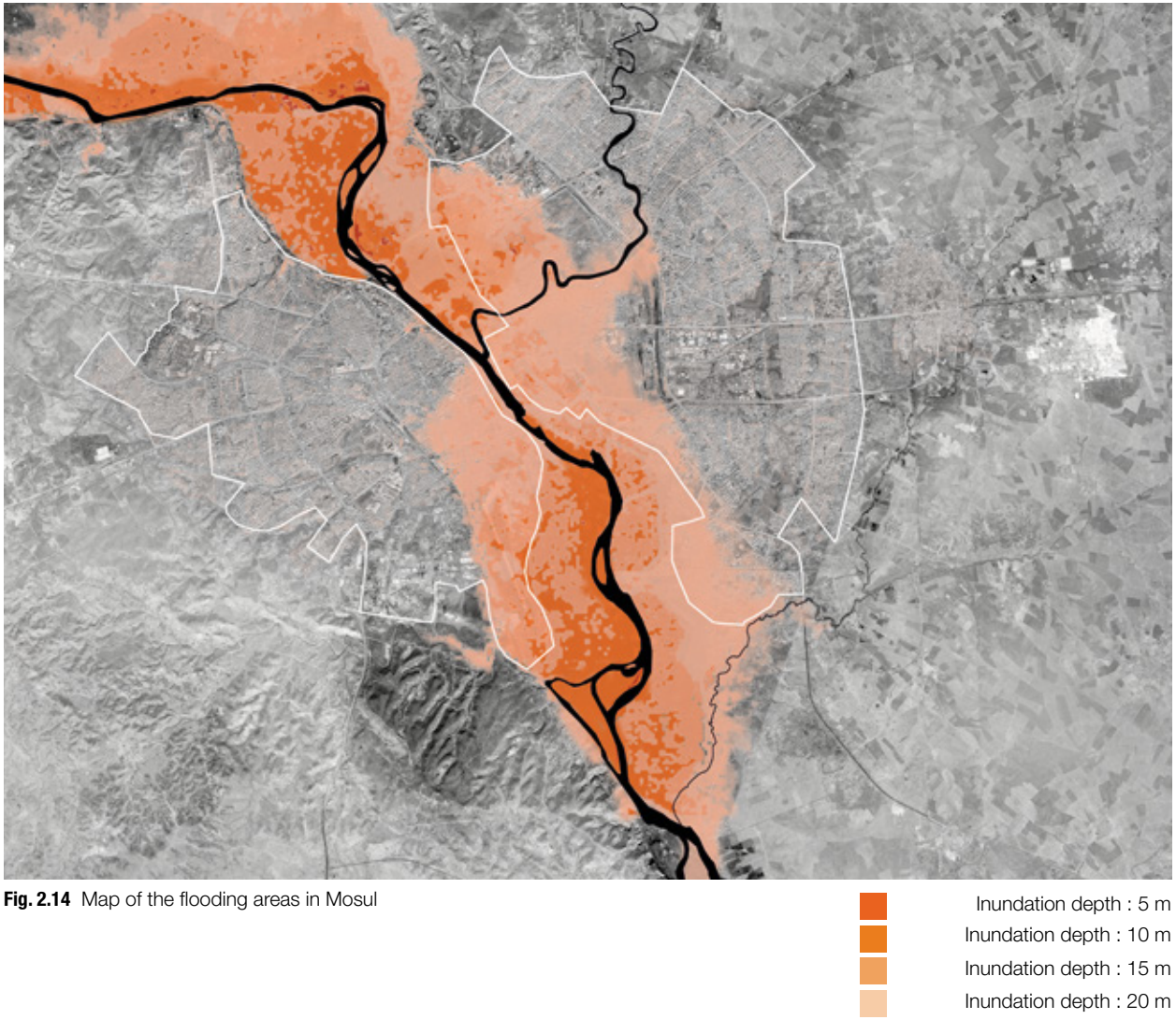


Fig. 2.14 Map of the flooding areas in Mosul

Fig. 2.15 Map of the Mosul surrounding and the green fertile areas created by the floods of the Tigris

Territory
Urban Morphology

Due to its geographical position, Mosul has served as an outstanding commercial centre at various times in its history. The export of oil, agricultural, mineral, and industrial goods are the most recent sources of income, with oil as a primary contributor to local economic development since the 1920s. Mosul district is also particularly known for its pharmaceutical industry and sulphur extraction and manufacturing.

Mosul has a hot climate with extremely dry hot summers (record high 49°C) and moderately wet, relatively cool winters (avarage low 12°C). The city is officially divided into eight administrative sectors, however, the city is widely perceived to be divided in two distinct parts, a right bank and a left bank, separated by the Tigris River with five main connecting bridges.

Mosul city is renowned for its cultural, social, religious, and ethnic diversity. Historically, it had a mixed population of Arabs (mostly Muslim Sunnis); Kurds (mostly Sunnis); Turkoman (both Sunnis and Shi'ites); Shabak (Shi'ites); Assyrians, Arman, Chaldean (Christians); and Yazidis. Demographic information, however, is a sensitive matter in Iraq in view of the country's sectarian and ethnic conflict. There is a scarcity of accurate statistical evidence on the city's ethnoreligious composition.

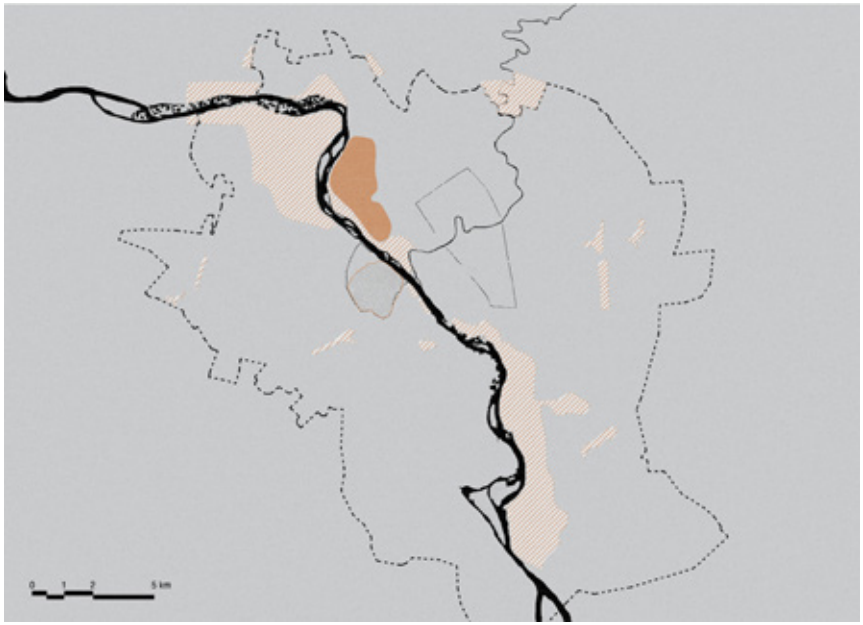
Currently, the city population is estimated to be 1.683 million in 2021. Like in other parts of Iraq, Nineveh suffered large-scale displacements of its population long before the wave of displacements inflicted by ISIL. Many Christian families were forced to leave as Iraq descended deeper into ethnic and sectarian conflict, especially in 2008, becoming a target for the city's armed militias. However, despite the migration flows, the city's population did not decrease and according to the Nineveh Directorate of Statistics, the people who moved to Mosul after the former regime's collapse (after 2006 particularly) outnumbers the amount of people who left.

Local residents stated that some of the newcomers to the city became radicalized and later joined Al-Qaeda, participating in the ongoing sectarian conflict. A few even took on a leading role in the fight helping ISIL take over the city in June 20148.

The living conditions of the citizens of Mosul declined dramatically with the rising costs of basic goods and services (particularly education, healthcare, gas, food and drinking water) which made everyday life extremely difficult. People spending is mainly reduced to food since they can't afford anything more, and unemployment has risen with the majority of the remaining jobs terribly low paid.

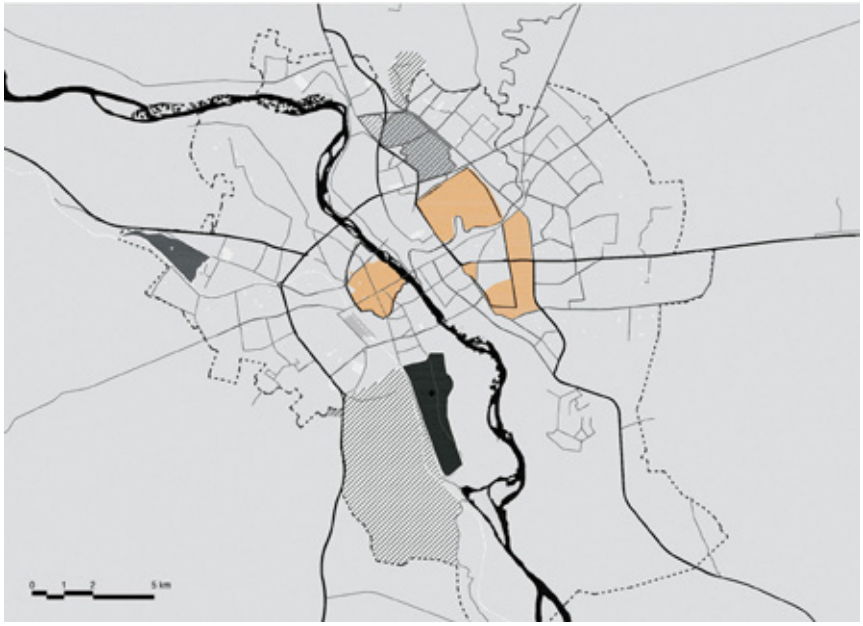
Many facilities for education, health care, water, sanitation, electricity, and communications services are currently destroyed or significantly limited by ISIL. It is estimated that between 50 and 75 per cent of the city's governmental buildings are destroyed. This will exacerbate the challenges of future stability, rebuilding, and growth in Mosul.

8 United Nations Human Settlements Programme in Iraq, City Profile of Mosul (Nairobi: UN-Habitat, October 2016), 21-22.



Forest
Green Area
River
Municipality Boundary

Fig. 2.16 Geen areas



Historic Herritage
Educational University
Educational Schools
Government
Airport
Train Station
Military
Cemetery
Municipality Boundary

Fig. 2.17 Public facilities

Fig. 2.18 Urban expansion

Fig. 2.19 Road infrastructure

Surrounding Settlement
Informal Settlement
Historic Centre
Municipality Boundary

Fig. 2.20 Urban settlements

ISIL Supporters
Turkmen Shia
Christian
Kurdish & Shabaks Shia
Turkmen Sunni
Arab Sunni
Municipality Boundary

Fig. 2.21 Ethnoreligious prevalence (pre ISIL)

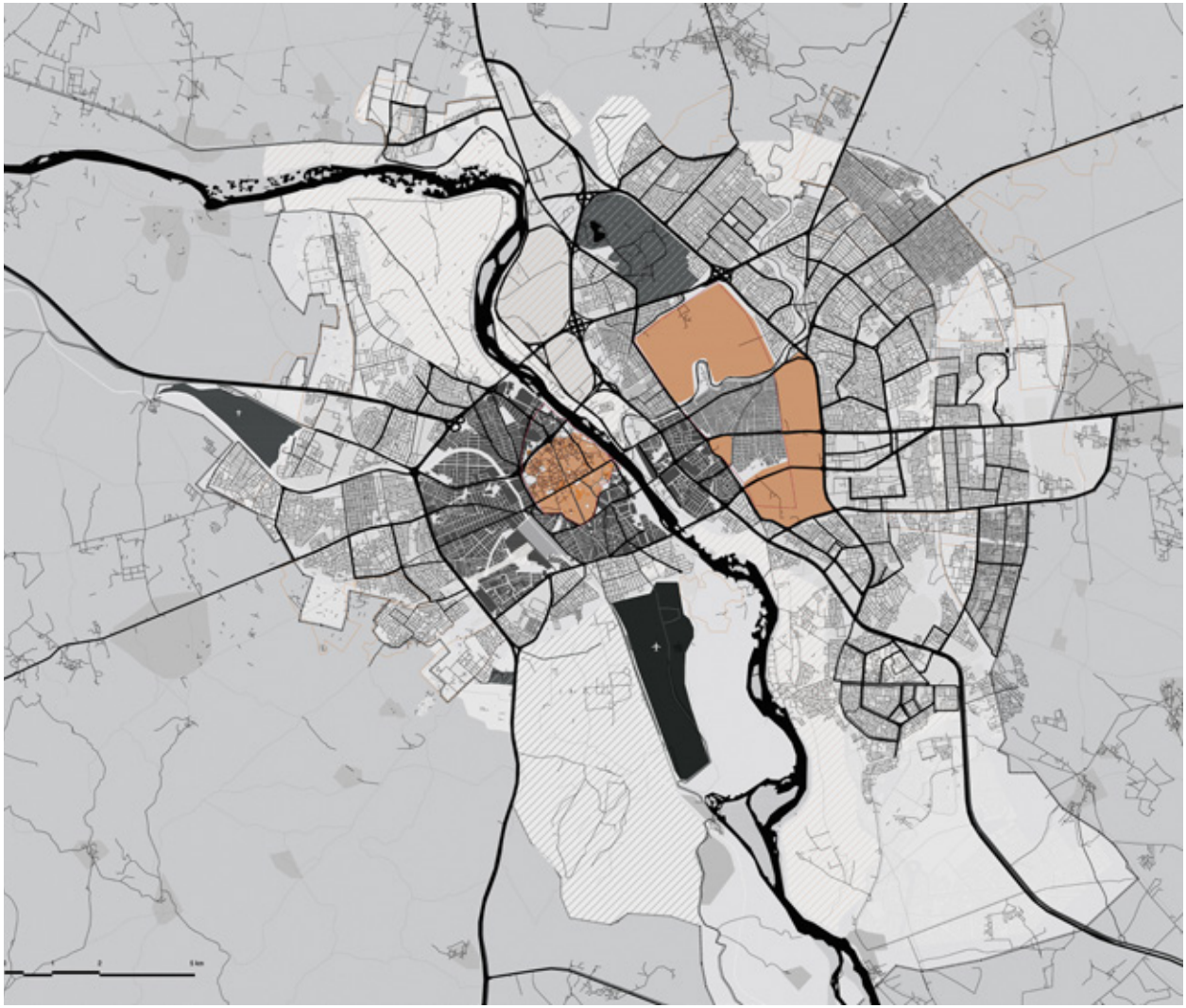


Fig. 2.22 Morphological map of Mosul.

MOSUL

URBAN ANALYSIS

The Islamic City
Study Cases

The Islamic cities, even if they were shaped by different Histories, share similar architectures and urban features. We will study four different study cases to understand better what are their similarities and variances, Aleppo, Bagdad, Damascus and Mosul.

The first aspect that we can observe is the shape of the urban implantation. Usually the location of the city depends on the disponibility of the ressources such as water. The geographic topography is also very important from a strategic point of view. Finally the commercial roads and the proximity to powerfull other cities are playing an important role.

Another important aspect of the Islamic cities is the recurrence of architecture elements such as the souk, the enclosure wall, the mosque, the courtyards, the cul-de-sacs etc.

Fig. 3.01 Satelite view of Aleppo and its surrounding.

Fig. 3.02 Satelite view of Damascus and its surrounding.

Fig. 3.03 Satelite view of Bagdad and its surrounding.

Fig. 3.04 Satelite view of Mosul and its surrounding.

Aleppo

The city of Aleppo is located in an area that fills the requirements in water and offers a good strategic configuration.

Located in Syria, the city is the most populated of the country with around 5 millions of inhabitants. «Aleppo is characterized with mixed architectural styles, having been ruled by, among others, Romans, Byzantines, Mamluks and Ottomans»[1]

«Various types of 13th and 14 th centuries constructions, such as caravanserais, caeserias, Quranic schools, hammams and religious buildings are found in the old city. The old city is characterized with its large mansions, narrow alleys and covered souqs.»[2]

«Being subjected to constant invasions and political instability, the inhabitants of the city were forced to build cell-like quarters and districts that were socially and economically independent.»[3]

Fig. 3.04 Qal'a Halab, Aleppo, General view from west, Syria, XX century, Sir Keppel Archibald Cameron Creswell.

Fig. 3.05 Map of the old city of Aleppo with the main traditional islamic architecture features.

1 Yacoub, Khaled (16 July 2010). «Travel Postcard: 48 hours in Aleppo, Syria». Reuters. Retrieved 11 March 2012

2 «Aleppo». Middleeast.com. Archived from the original on 16 March 2012. Retrieved 11 March 2012.

3 «Alepposeife: Aleppo history». Historische-aleppo-seife.de. Archived from the original on 26 March 2018. Retrieved 11 March 2012.

Damascus

Capital of Syria, Damascus is a major center for culture in the Middle East with around 2 millions of inhabitants.

The Barada River flows in Damascus and provides water to the metropolitan area. The city is located at the intersection of large commercial routes, the North-South that links Egypt with Asia and the East-West that connects Lebanon witht the Euphrate valley.

The region around Damascus is called the Goutha, an irrigated land that provides cereals, fruits and vegetables.

«Thus the city today is based on a Roman plan and maintains the aspect and the orientation of the Greek city, in that all its streets are oriented north-south or east-west and is a key example of urban planning.»[4]

The old city of Damascus is protected by walls and gathered the traditional elements of the islamic architecture such as mosques, madrasas, khans, citadel and souk. Because of its diverse History the city also hosts numerous churches.

Fig. 3.06 General view of the Umayyad Mosque, Damascus, 1900/1907, Friedrich Sarre.

Fig. 3.07 Map of the old city of Damascus with the main traditional islamic architecture features.

4 Ancient City of Damascus, 2013, UNESCO

Bagdad

Bagdad is located in Iraq, near the Tigris river, close to the ruins of Babylon. Founded in the 8 th century, the city has always been very important in the region for its political, economical and cultural influence. It also plays a central role in the Islamic world and has a very diverse population.

Bagdad produces 40 % of the country's gross domestric product and its population varies around 6 to 7 millions even if the recent Iraq war reduced significantly this number and destroyed a lot of built heritage.

Its «antique buildings are located in the heritage area, surrounded by old suqs, narrow alleys and traditional Baghdadi houses that were largely built during Ottoman times. Old Rusafa has a long historical span of well over a thousand years, and it has become a complex urban organism.»[5] «The complex urban structure and form in the city centre of Baghdad has provided an example of how to create privacy and a healthy environment for its people.»[6]

Fig. 3.08 A general view of Baghdad, 1923, Agence Rol.

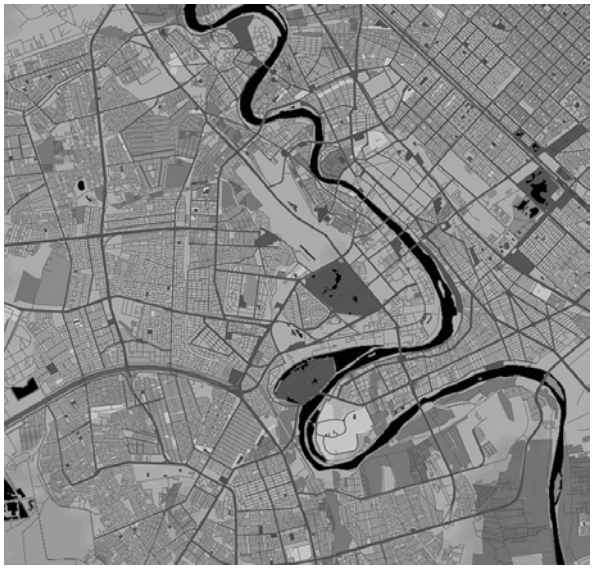


Fig. 3.09 Map of the old city of Aleppo with the main traditional islamic architecture features.

5 Yacoub, Khaled (16 July 2010). "Travel Postcard: 48 hours in Aleppo, Syria". Reuters. Retrieved 11 March 2012

6 Mazin Al-Saffar, December 2020, Bagada, the city of cultural heritage and monumental Islamic architecture

Mosul

Mosul is located in Iraq, on the Tigris River, close to the ruins of Niniveh in an area that was regularly flooded, creating a humid and very fertile soil.

Historically, the city is an important producer and exporter of marble and oil. The surrounding region is also rich in fields and agricultural productions.

The location of the city, at the intersection of important trade routes and the diversity of its culture, promoted the city as one of the most important of the Islamic world. The old city is extremely rich of historical buildings such as mosques, castles, churches, monasteries and schools.

«The Old City of Mosul, with its various historical building and sites, may be considered as the result of interchange of values throughout hundreds of years, and is a testimony to Iraq's rich cultural diversity in its tangible and intangible forms..»[7]

Mosul was heavily impacted by the Iraq war (see part XX). Many of the built heritage was destroyed and all of the city activities was affected.

Fig. 3.10 Iraq. Mosul. Looking S.E. showing Tigris river in the distance, 1932.

Fig. 3.11 Map of the old city of Damascus with the main traditional islamic architecture features.

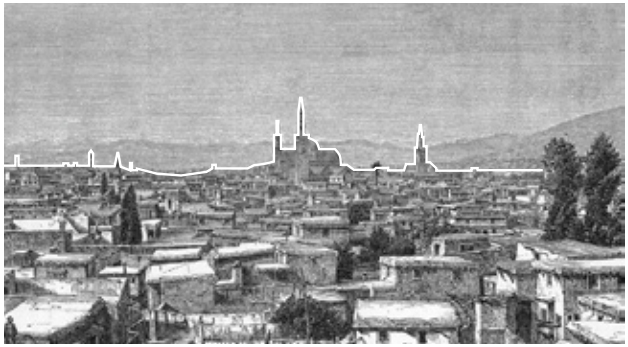
7 Old City of Mosul, August 2018, UNESCO

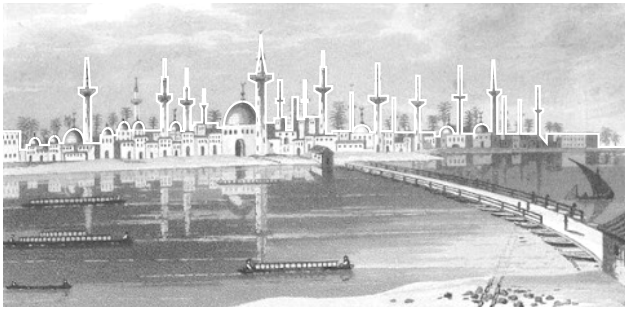
Skyline analysis

The skylines of the Islamic cities also share some common features. The traditional circular plan can be observe by the presence of the a nucleus element such as a mosque or a citadel surounded by smaller elements like minarets or towers (see fig. XX,XX,XX).

The Islamic cities are also gathering a high concentration of vertical landmarks and more generally a dense quatity of monuments and architecturally important buildings that rythme the skylines.

The visible compacness of the Islamic cities is also explained by the Shari'ha rules that recommend to the muslims to «hold on firmly together the rope of God» (Qur'an 3:103). The close and dense human settlements respect the concept of «ummah», a community that share their religious activies.





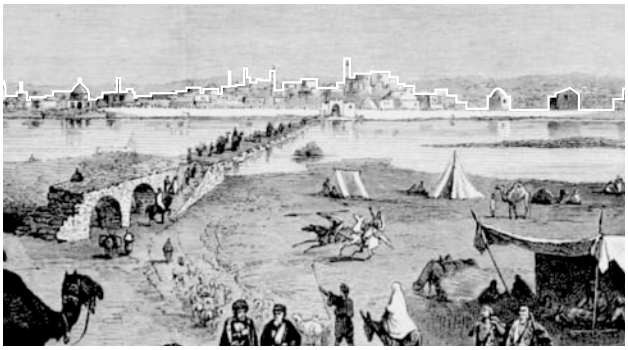


Fig. 3.12 Ottoman Aleppo, Syria, 1685. (Osmanlı Halep'i, Suriye, 1685).

Fig. 3.13 Damascus general view, taken from the Christian Quarter Date 19th century.

Fig. 3.14 Iraq. Baghdad. Tigris river and old city.

Fig. 3.15 Iraq. Mosul. Looking S.E. showing Tigris river in the distance, 1932.

City Analysis
The Historical Center

Mosul, as presented before, can be seen as an example of islamic city. The historical city has been developed on the right bank of the Tigris River and presents the traditionnal features of the Islamic architecture mixed with influences of its very diverse communities.

Since its creation, the city of Mosul has been ruled by many civilisations that left their traces in the urban settlement and in the architecture. The layers of History remain visible and the recent extension of the modern city toward the West conserve the historical nucleus.

The historical city of Mosul presents a high concentration of mosques, churches and synagogs, that proves the long past of cohabitation between the religions and forms a network of high value monuments.

«Moreover, Mosul, and particularly its Old City, is the physical representation of the cultural diversitythat characterized Iraq. Throughout 2500 years, Mosul was the melting pot of diverse cultures and groups, representing Iraq's pluralistic identity and co-existence among its various ethnic, linguistic, and religious groups.»[8]

The historical center

Mosul has two important historical poles, the ruins of Niniveh, on the right river bank, and the historical center of the left river bank.

«In subsequent centuries, the old city, surrounded by a wall until the 19th century, retained the medieval architecture and layout of its historic nucleus to which Ottoman buildings were added. Until very recently, Mosul was one of the most populous urban centers of the region, and, it was known for its places of knowledge and learning, commerce and exchanges. Its Old City was distinguished by its medieval city plan, the concentration of Islamic buildings spanning the 12th to the 19th century, religious buildings of other religious communities (particularly Christian), Ottoman domestic architecture and an extraordinary multifarious ethnic and religious mixture of inhabitants.»[9]

8 Iraqi State Board of Antiquities and Heritage, 2018, Old City of Mosul

9 Iraqi State Board of Antiquities and Heritage, 2018, Old City of Mosul

Fig. 3.16 Ruins of Nineveh with Mosul in the background, 1929.

The Urban Implantation

Courtyards (page XX)
Important feature of the Islamic architecture, the courtyards are numerous in the historical center of Mosul

Buildings (page XX)
The historical center of Mosul has a very dense urban fabric mixing housing, religious monuments and commercial activities

Streets (page XX)
The street network is divided in three categories, the main axis, the secondary streets that are also very commercial and the tertiary streets that are more introverted and narrow

Implantation (page XX)
The historical center of Mosul expanded from the left river bank of the Tigris toward the West

Tigris river (page XX)
The Tigris river is an important element for the development of the city and for its implantation

Fig. 3.17 Axonometric plans of the historical center of Mosul, showig the different layers of the urban fabric

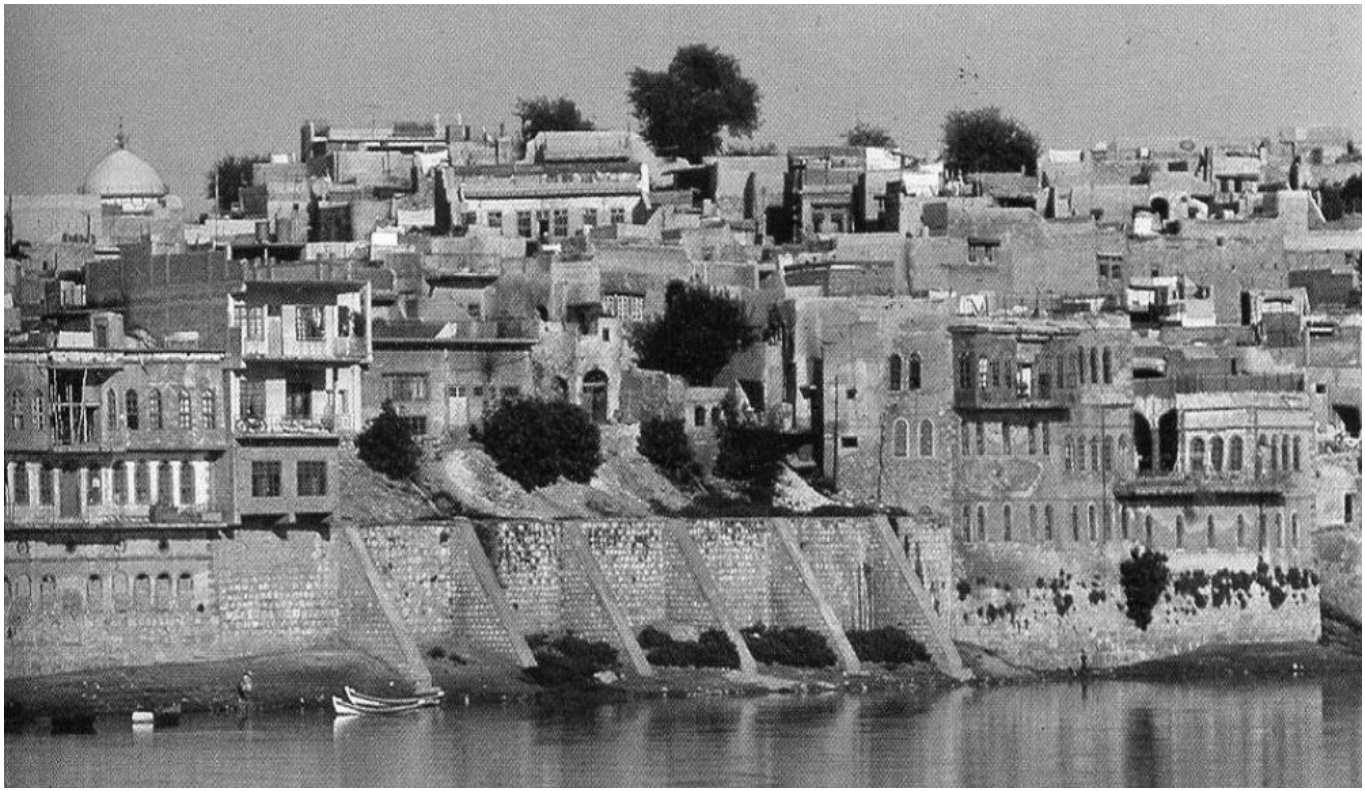


Fig. 3.18 Old city of Mosul on the Tigris river, 2006.

Fig. 3.19 Map of the building in the historical center of mosul

Fig. 3.20 Map of the streets in the historical center of mosul

Urban Analysis
The Built Enviroment and the Streets

The streets network

The streets of Mosul have a complex development that connects the neighborhoods.

The streets can be classified in three main categories. First the main axis that link the historical city to its surroundings, the first one from North to South and the second one from East to West.

The secondary streets delimitate the blocks of buildings. They are very important for the social and commercial life. Most the of shops of the city are located along their course (see fig. XX). As the high density of the city does not allow a lot of free floor areas, the streets are also important for the community as they represent the main public spaces.

Inside the blocks, the tertiary streets are more narrow and intricated, they are not as commercial than the secondary but provide more introverted spaces. The most ancient part of the historical city, located in the East, has the hightest street density and is the result of the spontaneous expansion of the urban fabric toward the West. This development did not follow a legal planning and resulted in a very complex arrangement.

Fig. 3.21 Map of the density of the steets in the historical center, the urban fabric that borders the Tigris river is the more dense , historically it is the first area that was developped and expanded toward the West.

Fig. 3.22 Map of the shops o f the historical shops of Mosul, they are mainly located along the main axes and the secondary streets.

The Cul-de-Sacs

The cul-de-sac organization is a traditionnal feature of the Islamic cities. They are very widespread for housing neighborhoods, often narrow, they provide an introverted urban spaces.

The histocal center of Mosul has multiple exemples of this configuration also called dead ends (see fig. XX).

«The Old City of Mosul, with its intricate labyrinth of small streets used to be a very well preserved heritage environment. In contrast to other towns in Iraq, it had been little affected by modernization, and retained much of its traditional ethnic and religious heterogeneity. The network of streets, alleyways and cul-de-sacs represented one of the best examples of the spontaneously-grown pattern of cities in the Middle East.»[10]

The Courtyards

The courtyard is another very important feature of the Islamic architecture and part of the islamic traditions and lifestyle. Very present in the historical center of Mosul, it provides an introverted alternative to traditionnal spacement between the buildings.

Fig. 3.23 The cul-de-sac or dead-ends configuration is present and easy to identify in the Mosul historical center.

Fig. 3.24 Maps of the courtyards of Mosul and their important in the city, specially in a very dense urban fabric.

10 Iraqi State Board of Antiquities and Heritage, 2018, Old City of Mosul

Fig. 3.25 Market street in West Mosul, Iraq, 2017, crowded street of the second category with a lot of commercial activities.

Fig. 3.26 Street view of an alley near Imam Awn al-Din Mashhad in Mosul, with water drainage and the remains of a historic exterior, 1983, very narrow and intimate street of the third category.

Urban Analysis
Analysis by Neighborhood

Historical Divisions

The historical center of Mosul is divided in historical neighborhoods that traditionnally correspond to the different corporations of workers. Nowaday this divisions are not effective anymore but the identity of each of them remains.

Historically the neighborhood of the city were administrated separetly, giving them a lot of autonomy and independance.

The Effects of the War

The independance and the introversion of each neighborhood was re-inforced during the war with ISIL. The instability of the spatial occupation and the progressive liberation «neighborhood by neighborhood» encouraged the auto-sufficience and the isolation.

During the war the neighborhoods of the center were the first ones to be evacuated, only 10 % of their inhabitants were not displaced. This area also suffered the worst damages during the war.

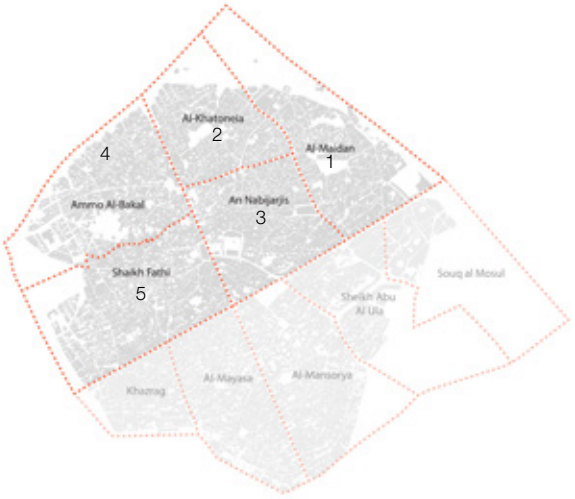
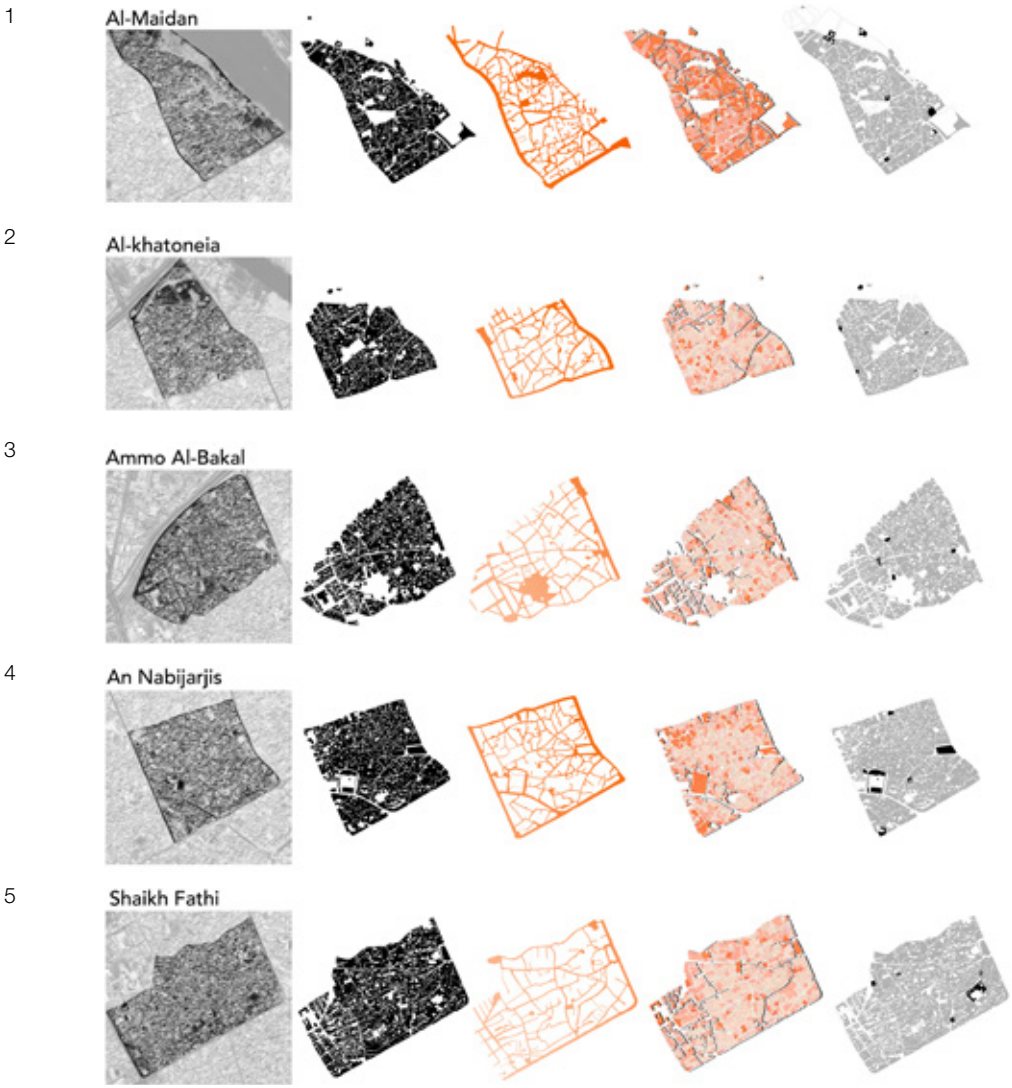


Fig. 3.27 Map of the historical neighborhood divisions of the historical center of Mosul.


SATELITAL VIEW
URBAN FABRIC
STREETS
DESTRUCTION
MONUMENTS
1
Al-Maidan
2
Al-khatoneia
3
Ammo Al-Bakal
4
An Nabijarjis
5
Shaikh Fathi

Christian Neighborhood

During the Iraq war against ISIL, the religion diversity of the old city was compromized. The most drastically touched areas were the ones occupied by christians and jewish. «ISIS gave Christians in Mosul four options: leave, convert to Islam, pay a tax or be killed.»[11]

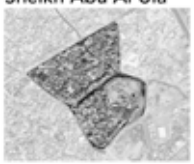
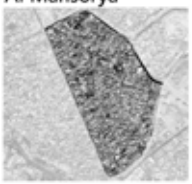
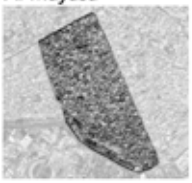
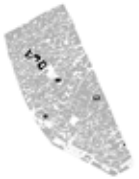
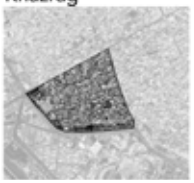
«“That’s because we gave concessions and lived as Dhimmi second-class citizens. This is no longer valid today, especially since the view of the Muslim neighbors is inferior towards the Christians in the land that we have been living in for 2,000 years. We still use Aramaic, the language of our ancestors. It is difficult to feel that you are not welcome in your land.”

Dhimmi is the Islamic term used to refer to Christians and Jews. It means “protected person”— someone tolerated as a second-class citizen.»

This events created a lot of tensions and fractured the agreement between the communities, re-inforcing the spatial boundaries.

Fig. 3.27 Map of the historical neighborhood divisions of the historical center of Mosul.

11 Christians of Mosul, Iraq, Still Displaced, August 2019, The Tablet

	Satelital view	Urban fabric	Street	Destruction	Monument
6	Souq Al Mosul 				
7	Sheikh Abu Al Ula 				
8	Al-Mansorya 				
9	Al-Mayasa 				
10	Khazrag 				

Architectural Analysis
The Monuments

A Cultural Diversity

Because of its location and history, Mosul is a very diverse city that gathers numerous communities such as Arabs, Assyrians, Kurds, Armenians, Turkmens, Kawliya, Yazidis, Shabakis, Mandaeans, and Circassians. Many religions coexist together, the mains are Sunni Islam, Salafi movement, Christianity, Shia Islam, Sufism, Yazidism, Shabakism, Yarsanism and Mandaeism.

This variety leads to the multiplicity of heritages and monuments dedicated to different ethnicities.

«Moreover, Mosul, and particularly its Old City, is the physical representation of the cultural diversity that characterized Iraq.»[12]

A Religious Diversity

As previously mentionned, Mosul brings together many different religions that have built their own cult buildings around the old city. The most widespread monuments are the mosques, followed by the churches and finally the synagogues (see fig XX).
«The Old City of Mosul was a physical reflection of this diversity due to its abundant shrines dedicated to various religious figures, some of whom are revered by the three monotheistic religions, as well as its numerous, churches, mosques, madrassas and cemeteries.»[12]
This abondance of monuments is also a reflect of the cohabitation History between the religions and a testimony of the importance and the richness of Mosul.

«During the reigns of the Mongol and Turkic dynasties, as well as the early Ottoman period, Mosul was further improved by the building of numerous mosques and madrassas, especially in the southern part of the town. Later on, shrines were built for the prophets al-Khidr, Seth and Daniel. The existence of the graves of five Muslim prophets in Mosul gave the town the honorable title of 'the town of prophets'.»[12]

12 Old City of Mosul, August 2018, UNESCO

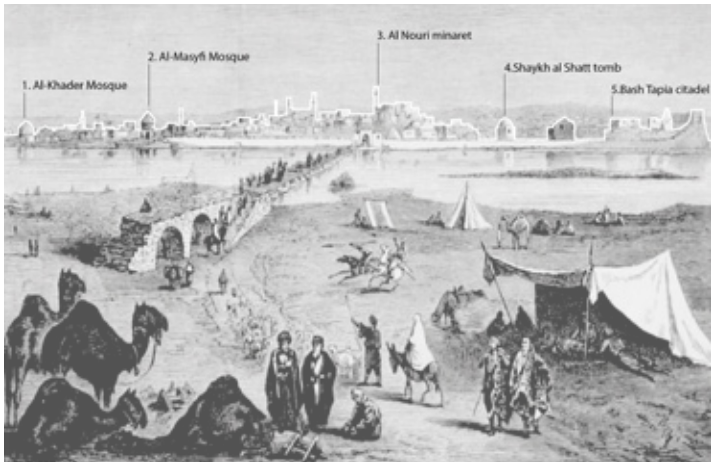


Fig. 3.29 Skyline of Mosul.

Fig. 3.30 Plan of Religious building in the historical center of Mosul.

THE WALL

«In subsequent centuries, the old city, surrounded by a wall until the 19th century, retained the medieval architecture and layout of its historic nucleus to which Ottoman buildings were added.»[13]

This wall is nowadays partially destroyed and only visible in some parts of the city. Its influence on the urban development remains impactful.

THE CITADEL AND DOORS

«Additionally, Mosul still has the remains of the so-called Citadel of Bashtabia that is also thought to have been built sometime during the 12 century AD, though various sources attribute earlier possible dates to the site. Bashtabia is known to have played an important role in the various invasions and sieges of Mosul.»[13]

The doors also played an important role in the economical and social life of the city, they were key location for shops and commercial trades.

13 Old City of Mosul, August 2018, UNESCO

Fig. 3.31 Map of the monuments of the old city of Mosul .

Typological Analysis
Representative Structures

The Islamic World And The International Trade

Starting from the 8th century, the Islamic world has played an important role in the international trade. Placed in a strategical point between Asia and Europe, the Middle East was controling the commercial paths such as the «silk road» until 16th century. Many luxurious products imported to Europe from India and Asia were transiting by the Middle East.

The Islamic world has beneficiated during centuries from this exchanges and many cities of the region have been developed thanks to them. Cities like Damascus and Bagdad were resting points for the caravanes crossing the desertic areas of the region. This dominant position in the intercontinental trades influenced the urban fabric of this cities and created specific typologies.

When Europe discovered new roads overseas to reach India going around Africa, the region lost its monopoly. After the 16th century, the old commercial roads remained importants at a regional scale and commercial activities contrinued to be vitals in the urban life of the Islamic cities.

Fig. 3.32 A caravan traversing Shemen Beach in Haifa, 1 January 1887.

Fig. 3.33 Urban survey of the souk, The urban renewal project for the city of Mosul, Section E and F (Report proposals and directives).

The Souq

The markets of the Islamic cities were often divided in areas according to the type of sold products. The central market of the city was dedicated to international export, while a more local market provided merchandise for the inhabitants. In the early decades of the Islamic cities, the markets were more informal and the products were direclty displayed on the ground. Ambulant vendors were moving around the most dynamic areas of the city such as the mosques or the gates.

After some years, informal markets evolved into permanent structures providing separation between each shops. The morphology of the souk grew to become an urban element where small partitions of the space create an economic network in the city.

The Khan

An example of transformation of those informal markets into permanent structures is the khan. This building, organised around a central courtyard, is composed by a serie of shops. Each unit is connected to the courtyard by an entrance and is generally composed of two rooms. One as a display area for the products and the other for storage and production.

Fig. 3.34 Iraqi market souk in Mosul City northern Iraq, 1932.

Fig.. 3.35 Urban survey of the souk, The urban renewal project for the city of Mosul, Section E and F (Report proposals and directives).

The Mosque

The mosque or masdjid in arabic, which means «place of prosternation», is a pillar of the urban organisation of the Islamic cities. Their importance both the in religious and urban aspect is underlined by their central position in the city.

It is the convergent point between the religious, educational, social and commercial network of the city. Historically, the commercial neighborhood, the souq, and buildings dedicated to the learning of the Quran were built around the mosques.

The main mosque of the city also plays a specifique role in the religious system of the Islam. Those mosques pace the life of the inhabitants. Also called «friday mosques» they are hosting the friday collective prayer at noon, the most important of the week,mandatory for men. They also have a social and political scope in the life of the comunities as a civic assembly, following the friday prayer where the different political leaders meet.

The Architecture Features

The mosque is not a sacred building in itself and does not contain any sacred objet. Its religious importance is given by the rituals organised between its walls. In facts, there are not a lot of architectural requirements in the construction of a mosque except for a clear demarcation of the interior space, no need for an enclosure, and a frontal element marking the direction of Mecca.
Some internal elements are traditionnal of a mosque. The main space is the prayer hall where the muslims meet on fridays. The prayer hall contains elements such as the mihrab, or minbar, that have an important role in the rituals. The mihrab, is a niche set into the wall facing Mecca. It is often decorated and has a central location in the mosque. The pulpit called minbar is the place where the imàm does the friday sermons. It is generally placed near the mihrab in a way that the prayers can face Mecca and the minbar a the same time.

In mosques men and women are separated. If the men use the main prayer hall, women have to pray in
the makhphil. This dedicated space for woman is usually seperated by stairs or a fence from the main prayer hall and has a different entrance.

Some external features can also be identified in most of the mosques such as the minaret and the dome that usally cover the center of the prayer hall. The minaret is a slender element that can be located in one of the corner of the mosque or beside. It is from that tower that the muezzin gives the call for the prayer.

The Madrasa

Founded around the fifth century the madrasas were generally built near a mosque. The madrasa is a building combining a social and religious and educationnal purposes. This religious schools dedicated to transmit the theology of Islam were also teaching the islamic laws, history and sciences. Traditionally this building was composed of study rooms, prayer halls and dormitories as student were generaly living in the madrasas.

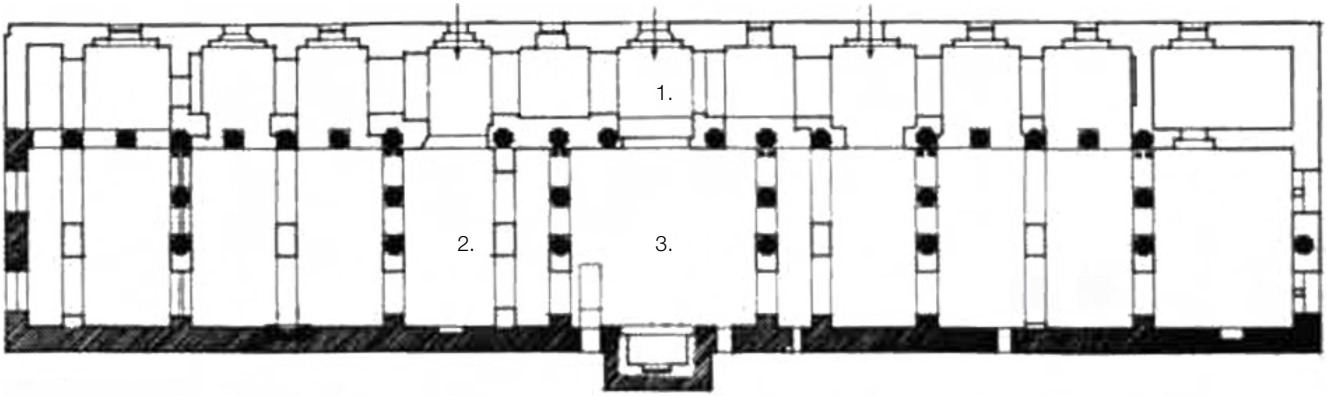


Fig. 3.36 Layout plan of Al Nouri Mosque Complex and layout plan of the Prayer Hall at the beginning of the 20th century, 1920.

1. Prayer hall
2. Minbar
3. Mihrab

Al-Nuri Mosque

The Mosul main mosque call Al-Nuri is located in the historical center of the city and works as a landmark for the inhabitants. It was built in 1172 and was founded by atabeg ruler Nur al-Din Mahmud Zengi. That mosque in very recognizable by its brick minaret which dominates the city from its 45 meters.

According to the historical studies, it appears that the mosque was originally surrounded by the souq. The main building that hosts the prayer hall follows a rectangular plan and is divided by a series of arches and columns that pace the space. In the northern part a big courtyard is bordered by a madrasa and a school. The mosque has been modified and rebuilt through the History. In 1942 the mosque was dementeled by the Iraki government to rebuild it based on another plan. The minaret was also reinforced after the bombing of Mosul during the war betwenn Iran and Irak in the eighties. The most recent episode is the destruction of the mosque by ISIL few weeks before the liberation of the city. Only the central dome and few arches are still standing today. In 2020, the UNESCO organised a competition to rebuild the mosque.

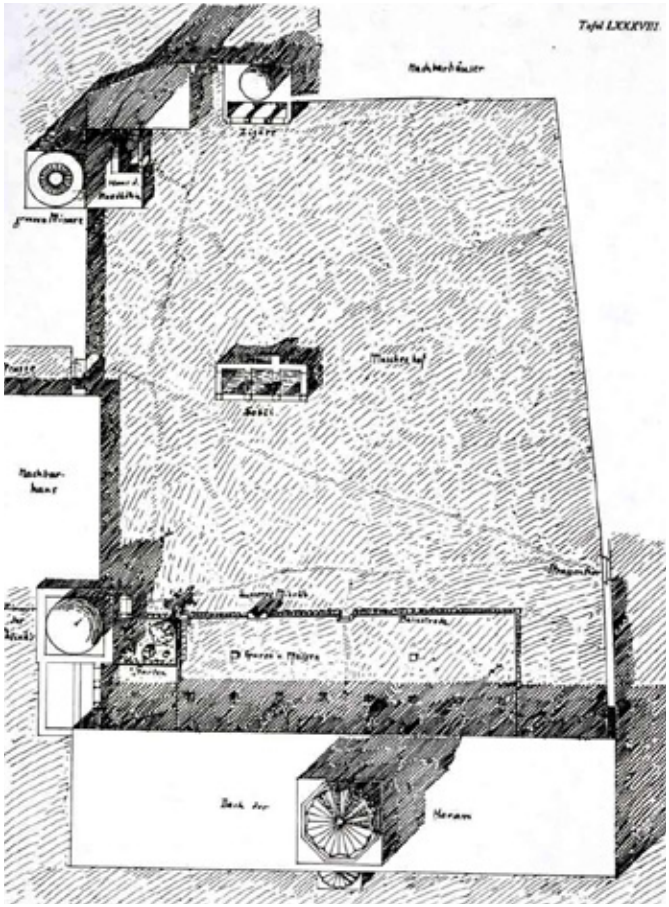


Fig. 3.37 Layout plan of Al Nouri Mosque Complex and layout plan of the Prayer Hall at the beginning of the 20th century, 1920.

Fig. 3.38 The Mosque of al -Nuri with the al -Hadba' Minaret, from the South-East, in its original state, i.e. before its demolition in 1942.

The Hammam in the Ottoman culture

The hammam or hot bath is a typical element of the ottoman culture. During the Ottoman period, they were spread around the empire. Nowadays, the remains of hammams can be found in Middle East and North african countries. The hammam is the complex hosting various activities completing the bath. Their architecture changed during the history depending on the cultural environment. The hamman was inspired by the Roman thermes. The oldest known hammam was found in Bassorah in the South of Irak.

The hammams have separated sections for men and women. They became very popular in the Ottoman cities and remain as one of the traditionnal elements of the Islamic cities. If the first hammams were only composed of the three rooms and baths at different temperatures, they evolved in larger structures. In the second part of the Ottoman period, it was common to find beauty treatments in hammams such as massage, exfoliation, hair remova, henna and even dentists.

The hammam became a social place where people were meeting with friends concluding business trades and gossiping while eating and drinking or bathing.

Fig. 3.39 Iraqi market souk in Mosul City northern Iraq, 1932.

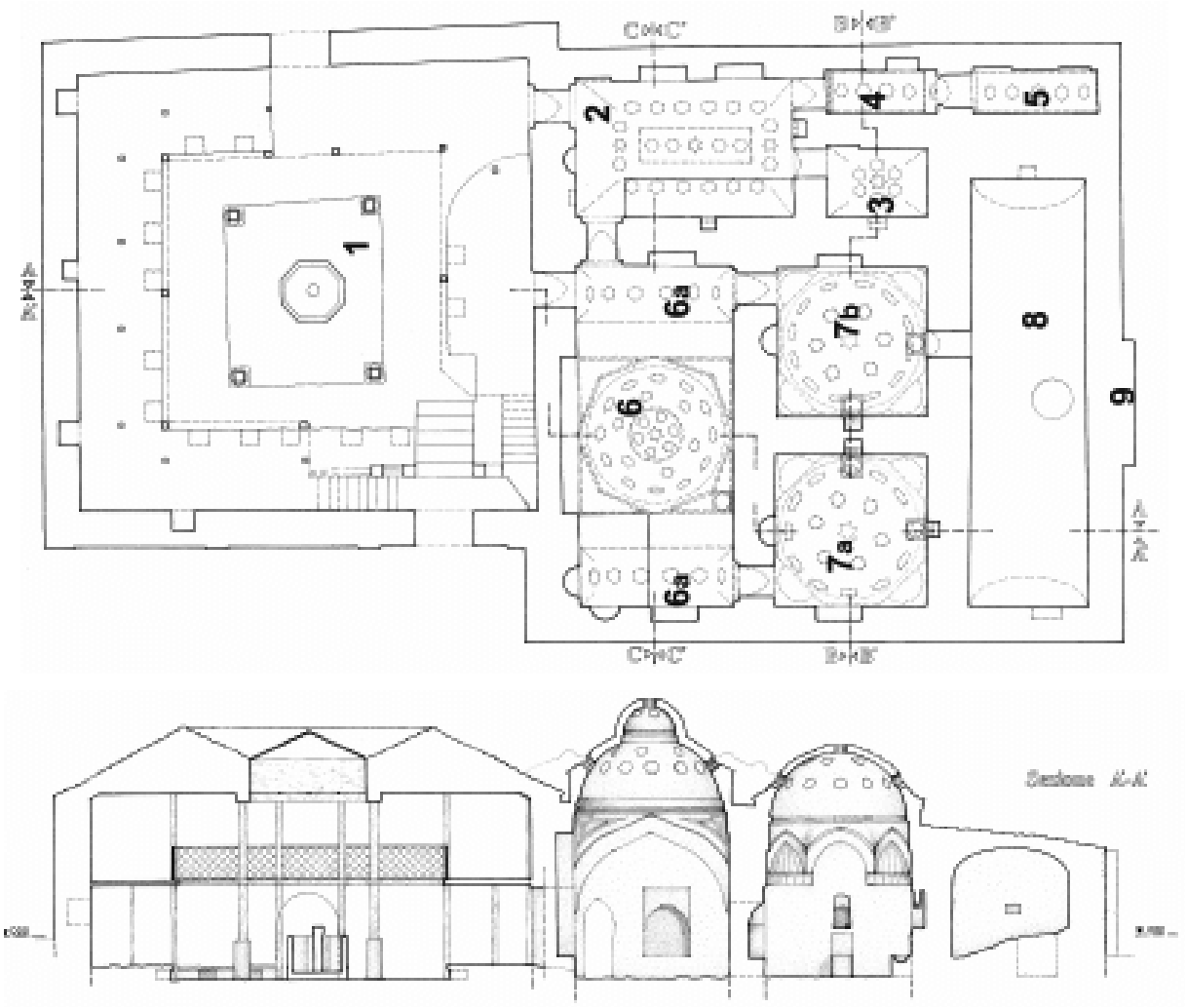


Fig. 3.40 The Turkish Baths in Elbasan: Architecture, Geometry and Wellbeing Roberto B.F. Castiglia, Marco Giorgio, Bevilacqua.

Residential blocks

In the historical Islamic cities, residential blocs occupied the largest surface. Those blocks were composed by an agglomeration of housing units built next to each other. The houses, built wall to wall, created wide introverted urban elements that composed the urban fabric. The residential blocks were extremely dense and inward-oriented. The houses were accessible though a network of narrow streets and dead ends created by the residual space available between each unit. The morphology of the residential blocks and the tortuous access ensured a preservation of the privacy.

Residential Units

The residential units are introverted and protected from the exterior. The houses are composed by a central courtyard toward which all the rooms are oriented. This courtyard brings light and air inside the houses. The external walls are blind and ensure the division between each unit. Those houses are usualy composed of two or three floors with an accesible roof.

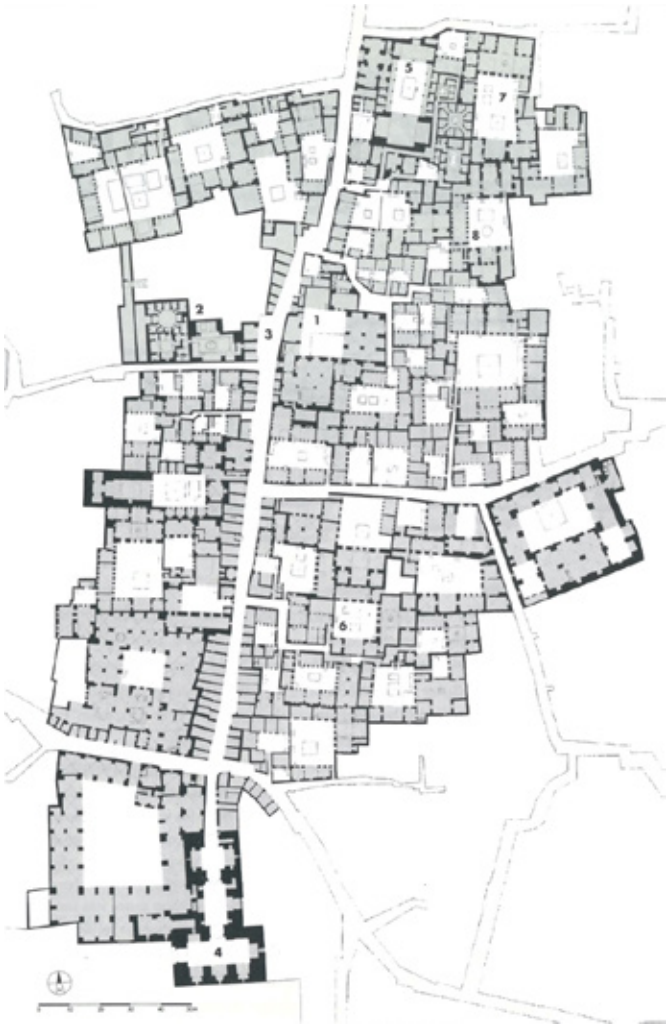


Fig. 3.41 Urban form in the arab world past and present.

Fig. 3.42 Iraq. Mosul. Looking S.E. showing Tigris river in the distance, 1932.

Termporal Analysis
The Impact of the War

The siege of Mosul

In 2014, Mosul, was taken by the Islamic State in Iraq and the Levant (ISIL). During two years ISIL ruled the city. It was in Mosul, in July 2014, that Abu Bakr al-Baghdadi (ISIL Leader) made a public appearance, inside the Al-Nuri mosque, to pronounce «caliphate» in Iraq and Syria.

During the occupation of the city the population decreased from 2.5 millions inhabitant to 1.5 millions. Most of the refugees that escaped the city fearing the upcoming siege of Mosul stayed in camps or were trapped in fighting lines between the Iraki army and the ISIL combatants. The ones who stayed «lived through hell on earth, enduring a level of depravity and cruelty that is almost beyond words»[14] declared the United Nations high commissioner.

A volontary destruction of Mosul's history

A massive destruction of the building heritage has been caused by the battle for the liberation and the bombing but the occupation of the city also contributed to it. ISIL began, almost immediately after they took control of Mosul, to destroy hundreds of historical monuments such as mosques, tombs, churches, and even non-religious ancient sites. Beside the ideoligical reasons behind this destructions, those actions were an easy way to capte the world's attention.

The Al-Mufti mosque, the Nabi Yunis Tomb-Mosque, or the Al-Nuri Minaret and great mosque have all been parts of this deliberate destruction and theft of the cultural heritage. However, the monuments were not their only targets, some of the most important artifacts of the museum of Mosul have been destroyed or stolen to be sold in order to finance the war. In the the library of the university of Mosul, 3 millions of books have been burnt. This loss of knowledge, artefacts, and artworks is immeasurable.

"The first step in liquidating a people is to erase its memory. Destroy its books, its culture, its history"[15]

The Battle of Mosul

In October 2016, almost two years after the capture of the city, the movements to liberate Mosul began to emerge. Different Iraki forces participated to the liberation of Mosul, (Iraqi Security Forces ,Peshmerga fighters, Popular Mobilization Forces) ,helped by U.S. and its allies, providind soldiers, and airstrikes support. The battle of Mosul started in its eastern suburb (Fig.0 November 2016).

After five months of war, the estern side of the river was liberated (Fig.0 February 2017). After April 2017 the area controlled by ISIL decreased a lot as they were surrounded in the historical city. Because of the maze shape of the historical center, the liberation had to be made house by house, street by street. On the 22 June 2017 in a last provacation, ISIL organised the explosion of the Al-Nuri mosque. One month later, the Iraki prime minister declared the liberation of Mosul.

14 Zeid Stress, July 2017, Accountability and reconciliation key to heal Iraq's ISIL wounds

15 Milan Kundera,1979; The Book of Laughter and Forgetting

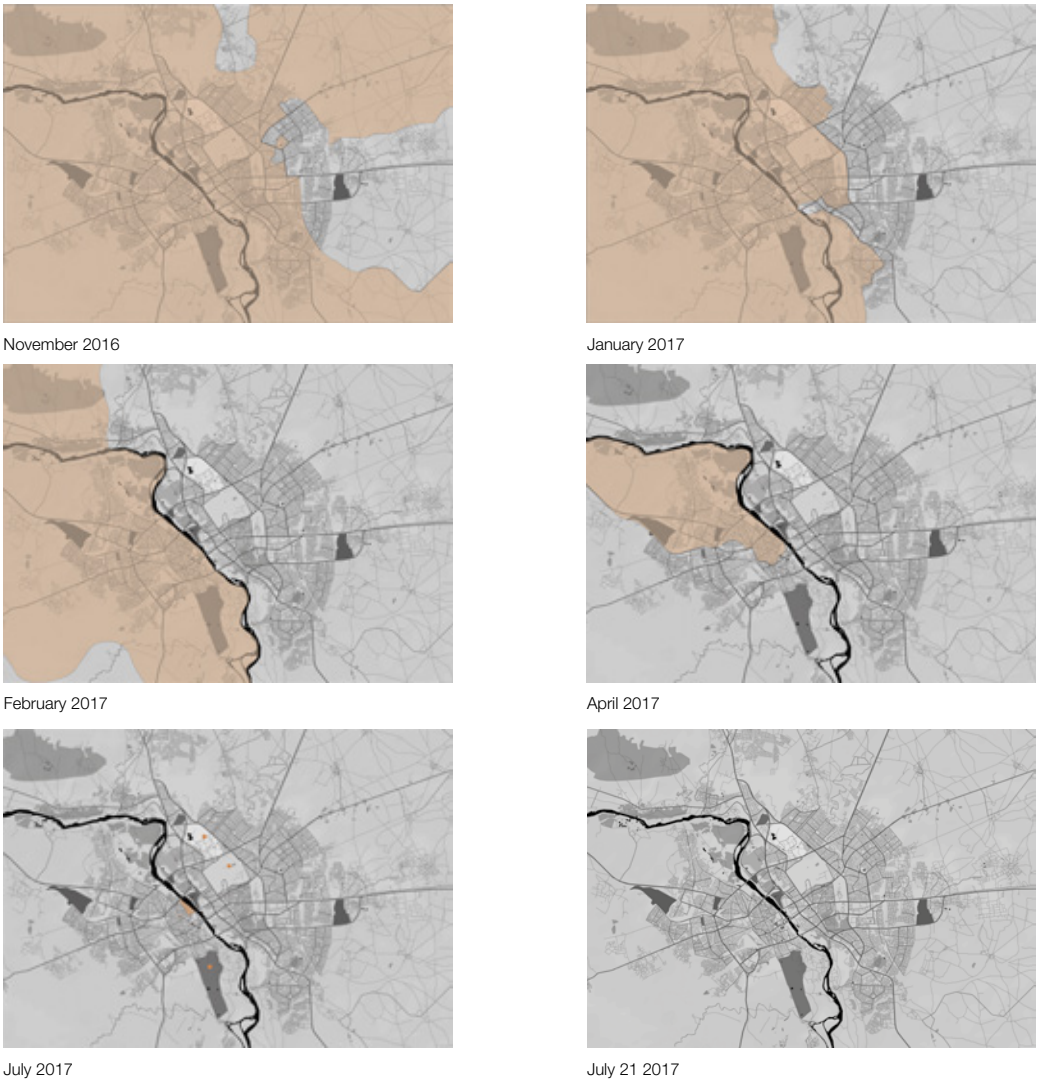


Fig. 3.43 Maps of Mosul showing the spatial progress of ISIl from november 2016 to July 2017.

In July 2017, after 8 months of warfar between ISIL and the Iraqi forces, Mosul was liberated. The conflict left the city with very severe damages, mostly in the historical center and on the side of the Tigris River. The United Nations estimated the destruction of 5,000 buildings in the Old City center. The urban identity and the history of Mosul have been severely endangered by the war.

A Destroyed City

The destructions are impacting the built heritage at every scales and made most of the constructions dangerous and unsuitable for any use. The destroyed monuments are diverse : churches and monasteries, mosques, minarets, libraries, archeological and medieval sites such as Niniveh ruins etc.

The lost of this heritage «is defined as a war crime against the people of Iraq, whose heritage is a symbol and medium of identity, history and memory. These destructions are linked to the suffering and violence on human lives, and weaken the society over the long term.»[16]

The destructions are affecting the city in all of its activities as the cultural, religious, residential, educational and commercial buildings are touched. The touristic actitivies, large source of revenues for the Mosul are also suspended. The city had «no basic services, no food, no water and no fuel.»[17]

Fig. 3.44 A view of a commercial street of Mosul after the libertation , August 2017.

Fig. 3.45 A depiction of the devastation in Mosul after the Battle for Mosul, 9 th July 2017.

Fig. 3.46 A general view of the destruction in Mosul's Old City, 9 th July 2017.

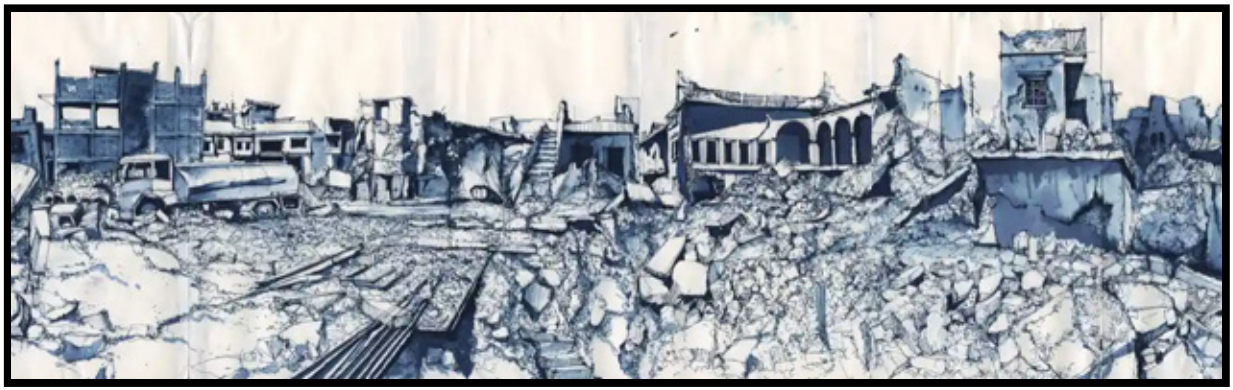
16 Director-General of UNESCO condemns new destructions in the ancient city of Nineveh, Iraq, 2016, UNESCO

17 Iraq: UN refugee camp opens twelfth camp as displacement escalates in West Mosul, 2017, UNESCO

Fig. 3.47 Map of the building damages in the historical center of Mosul.

MOSUL

Metodological Approach



Premises_Theory & History of Restoration

Progenitors of Restoration

The following chapter is dedicated to the exploration of reconstructon issues in the scope of both urban and architectural scale reconstruction. The handful ideas will be illustrated on the examples of various case studies, the approaches for the long-term post-war reconstruction as well as for a single building or a single neighbourhood.

For a delicate and full analysis of the case studies that are illustrated in the further sub-chapters, it is necessary to understand the roots and the backgrounds of the reconstruction and restoration theories - the principles and approaches developed by the architects and historians during the times when reconstruction has just inititated to gain its value and importance in history, when it was a new science.

Before the 19th century he interventation on behalf of a preexisting building was set in continuity with it, both as an answer to functional demands and as an architectonical expression. Even the most important

refurbishment plans were ment to create something new, and not to reproduce what was before; after the 19th century the interventations on behalf of a preexisting building was oriented to the transmission to the future: the past is considered different from the present; values that are considered the most meaningful were granted.

The most important influencers and theorists foor this change in the position toward srestoration approaches were John Ruskin, Eugene Viollet-le-Duc and Camillo Boito, whose ideas are shorty illus-trated below.

John Ruskin_Conservative Approach

John Ruskin maintained that architecture provided a nation with memory; nations could live without architecture and worship without architecture, but could not remember without architecture. In order to gain from the knowledge of the past and protect one's own memories, modern man should recognize the architecture of the past as modern man's inheritance and preserve it as a living memory of the past.
In his works "Seven Lamps of Architecture" 1849 and "The Stones of Venice" 1853 he introduced his approach towards restoration practice.

"For, indeed, the greatest glory of a building is not in its stones, not in its gold. Its glory is in its Age, and in that deep sense of voicefulness, of stern watching, of mysterious sympathy, nay, even of approval or condemnation, which we feel in walls that have long been washed by the passing waves of humanity."[1]

Eugène Viollet-le-Duc_Stylystic Approach

Viollet-le-Duc began developing his theories of restoration and preservation. In 1854 he published his ten-volume "Dictionnaire raisonne de l'architecture francaise du XIe au XVIe siecle", setting forth his theories on restoration and preservation.

"To restore a building is not to maintain it, repair it or remake it: it is to re-establish it in a complete state which may never have existed at any given moment."[2]

1 Ruskin, J,Seven Lamps of Architecture, New York: Cosimo Classics2007.
2 Viollet-le-Duc,E, Dictionnaire raisonne de

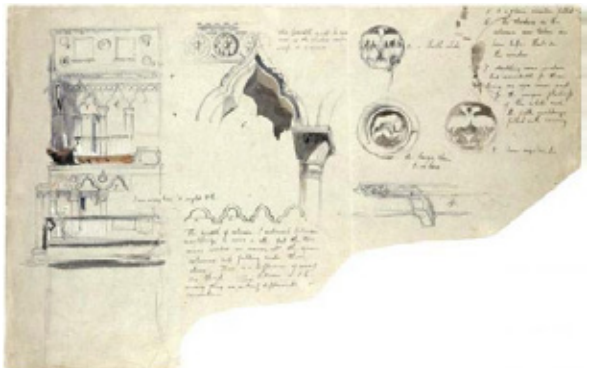


Fig. 4.01 ***John Ruskin_studies for “The Stones of Venice”***

Fig. 4.02 ***Viollet-le-Duc_ Pierrefonds before restoration***

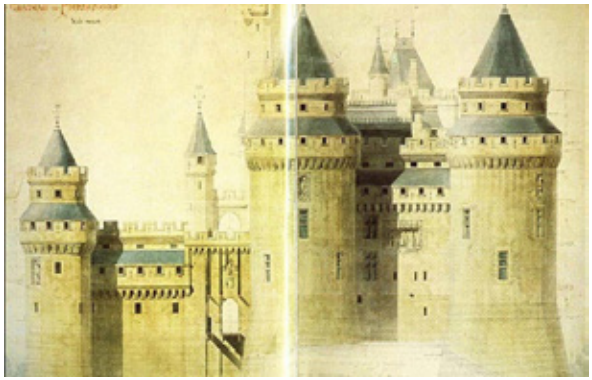


Fig. 4.03 ***Viollet-le-Duc_ Pierrefonds after restoration***

Fig. 4.04 ***Camillo Boito_ Milano Porta Ticinese***

"After evaluation of the monument value and message, the restoration should clarify the message completing the missing part to reach a style uniformity, eventual reconstructing the damage portions or removing the addition."

Camillo Boito_Philological Approach

Boito searches for an intervention method that makes sure authenticity comes to no harm. His theoretical approach is known as "Philological Restoration", and establishes seven fundamental principles towards guaranteeing the preservation of the documental value of a historic building. Unlike Ruskin, he accepts the practice of restoration, however calls it a "necessary evil".

A central role is played by historical value: all findings made during the restoration process must remain visible and identifiable. In this sense, the artistical value of the entire site is subordinate to that of the parts found. He puts the following question on the table of discussion: it is better to restore using the same style and materials, or it is better to clearly show the additions?

"Additions or renovations must be completed with a different character to the one of the monument, noting that, if possible, the aspect of the new forms must not steal too much attention with their artistic aspect."[3]

After WW2 a great number of european cities, having become the victims of long-lasting bombing campai-

l'architecture francaise du XIe au XVIe siecle, Books On Demand2015

3 Boito, C, 1886, in Pane 2009: 150

gns, were left in ruins. A widespread destruction all over countries participated in the war reduced the cities to rubble, including masses of housings, schools, hospitals, infrastructure systems, and cultural monuments.[4]
Everyone after the war participated in the reconstruction process - decent urban reconstruction became the most foremost goal ever faced not just by planners and town authorities, but as well as by citizens, property owners, workers. A never-ending list of questions of how to approach the reconstruction pose an intimidating challenge for planners and policy makers. Starting by, simply, how to clean the debris and what to do with them, ending by if historic cities should be rebuilt in a way to retain their historic character, and if so, do all historic buildings have to be rebuilt the way they were before the war?
In 1975s a new wave of scholarly interest in what historic cities had experienced during the war and postwar reconstruction in Western Europe emerged. By the mid-1980s, scholarly work on reconstruction was being done all over Europe.[5] *Most of this work consists of detailed studies of developments in single cities or countries, or comparisons between the cases.*

Provided that reconstruction is an individual phenomenon strictly related to the specific context conditions and policies, international debates and discussions gave the opportunity to urban planners, architects and scholars all over the planet to share their knowledge and experience, to argue about various issues and approaches, its results and consequences.

In this chapter we will address some of the approaches and theories emerged during these debates in the post-war european countries, discuss its opportunities and limits on the example of several case studies.

On one hand, the post-war reconstruction in Europe was led by the idea that war provided us with new unique opportunities to reform the city and the society. The question is not just to re-built of what was before, but to take the opportunity to redesign, rewrite the city from scratch - to change and to make radical changes. So this is like the tabula rasa, a flat land where the planners could do what they wanted - erase the streets, demolitions of boulevards and the neighbourhoods - in other words, they stood for the radical change and radical redesign. This approach assumed that the reconstruction provided the opportunity to redesign the city not simply in terms of forms, but in terms of how it works; in terms of economy, in terms of society. We can look at the examples of the cities of Rotterdam and its reconstruction plan by Cornelis van Traa of a completely new built city centre, where the new density and a new transportation network is set, or the example of Hamburg, where the reconstruction process initiated during the war when planners were thinking in terms of not "re-building" or "reconstructing" the old city but in terms of "building new cities" and trying out new ideas over the debris of old, unplanned and dull cities.
On the other hand, if we take french wartime rebuilding process as an example, we will note that the two-direction approaches are working simultaneou-

4 Diefendorf, J, Rebuilding Europe's Bombed Cities, Palgrave Macmillan UK, 1990.
5 Diefendorf, J, Urban Studies Vol26 N1, 1989, p.129.

sly and even find a mixture of technocratic and beurocratic modernism with a conservative aesthetic. This can be explained by the fact that from the planner's point of view they wanted to modernize the transportation network and create modern housing in the damaged cities, while the government stood for promoting regional architecture that would affirm and convey profound french values.[6]

Therefore, those two approaches were sometimes bringing conflicts, for instance, as in the Loire valley, when the roads were facing the desire to be broadened, they had to demolish historic buildings sacrificially. However, sometimes the projects managed to stay in accord with two-dimensional concerns. Another example is that, in pursuit of the prominence of historical path, the outcome can result in the excess mimicry. Speaking of the city of Warsaw, which historic centre was reduced to ruins by the systematic campaign of destruction - 700 out of 957 monuments were destroyed, where the planners, trying to rebuilt and to create the narrative of the polish history and identity, reproduced the exact historical polish facades of the old city centre based on the old paintings and taken there before.

These post-war examples express the potentials and the spectrum of approaches for reconstruction. In fact, during the reconstruction period after the World War II, it is noted an increasing number of design experiments objected at rediscovering those qualities of the physical environment through a renewed relationship with local history and traditions.

Moreover, the theme of reconstruction is becoming extremely important in the architectural field still nowadays. The complexity of contemporary life as

6 Diefendorf, J, Rebuilding Europe's Bombed Cities, Palgrave Macmillan UK, 1990, p.7.

Fig. 4.05 Carlo Maggiora, from "Zibaldone", 1947. Debates on the reconstruction of Florence

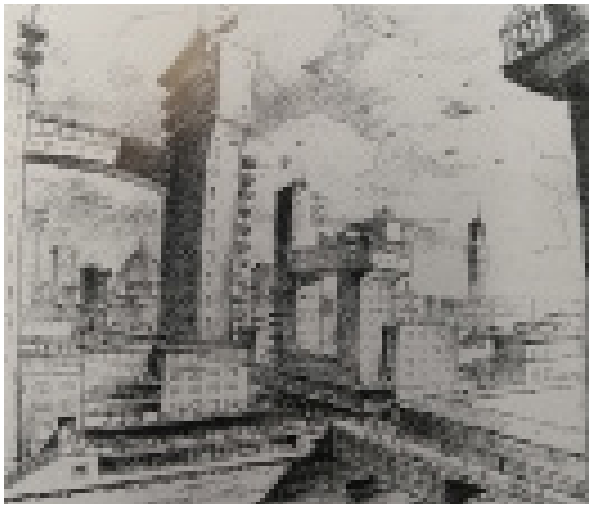


Fig. 4.06 Carlo Maggiora, from "Zibaldone", 1947. Debates on the reconstruction of Florence

well as of the physical and climatic realities changes provide constant involvements and alterations of the cities. Every city we see today is the result of the yearly processes of reconstruction. Nowadays, cities are demonstrating a tendency to lose their urban identity in favour of a homogenization of forms and spaces. So, the problems of how to transmit the memory and values of the places, how to safeguard the identity of the place during the reconstruction process become more and more essential in the contemporary debates. Establishing the preliminary strategies to transmit the memory and values represented by places therefore becomes an essential skill in ensuring that this intangible heritage can be maintained and conveyed.

"The future depends in part on us, as we depend in part on the past: tradition is this perpetual flow and being modern is to consciously feel that we are participating, as active elements, in this process".[7]

Also, political and economic instabilities that in some Middle Eastern regions have caused an imbalance in social dynamics, rendering the architectural heritage of many historical cities into a state of emergency. The city of Mosul has suffered severe damages from a series of deliberate acts of violence due to the war against ISIS. The destructions mostly affected the Old City, the historical centre.[8] *This demands a design action capable to restore the identity of the place, to avoiding the limits of imitation of the historical standard towards a more experimental approach that would ensure a dialogue between the architectural project and its context, and as such the appropriateness of its outcome in terms of urban identity, , whereby the word reconstruction identifies a gesture aimed at a rehabilitation of the architectural artifact in its physical and symbolic condition.*

So, this chapter aims to illustrate and discuss the methodological design approaches involved in architectural reconstruction or transformation processes of the cities both in Europe after the World War II and in the Middle East that deal with the reconstruction modalities after the destruction period, the establishment of a new relationship between the new urban fabric and the historic one, between the urban fabric and the monuments and other aspects that characterize the settlement-related specialities of various contexts.
The biggest problem Stefano Bianca encountered in the city is the integration between the modern urban fabric and the historic one.

"Once it is established a relation between both urban fabrics allowing both for development of the new town and for rehabilitation of the old town, the remaining problems will be discussed with a greater chance of success." [9]

"A city (especially a historic centre) contains the 'spirit' of a culture because it acts as a collective memory for its own society and it shows the attitudes and common patterns of life, hence becoming the source of identity. If the urban fabric

7 Rogers, E. N. 1958. Esperienza dell'Architettura, 2nd ed., Milano: Skira, pag. 254.

8 UN-Habitat and UNESCO, Initial Planning Framework for the Reconstruction of Mosul, 2018.

9 Bianca S. Urban Form in the Arab World, 1st ed., London, Thames and Hudson, 2000.

is destroyed, the sense of wholeness disappears, especially in traditional Islamic cities, where single buildings were always conceived as part of a comprehensive fabric." [10]

The cases presented in this chapter aimed to help us to formulate a methodology in the reconstruction approach to the city of Mosul focusing on the relationship between previous urban structure and reconstruction modalities. In other words, we analyse the selected case studies aiming to focus on the questions of whether the interest in preserving and maintaining rather than altering the historic fabric depends on the understanding of what shaped the form of that city and sets the future rules. Or, on the other hand, whether the decision is taken pushed by the research to recognise the neccesity for architecture that is capable to respond to the contemporary needs, the new functions and new aesthetic demands. The outcome of any reconstruction operations can generally be classified within a spectrum whose limits may be summarized as an excess of mimicry, otherwise, as being excessively self-referential (with self-referential meaning an intentional or coincidental lack of reference to the existing urban fabric and built environment). As such, the case studies presented here are categorised in four sections, based on the reconstruction plans' treatment of the historic urban structure and historic identity of each case.

The first section introduces the cases that tend to redraw exactly the previous urban elements on the examples of the city of Saint Malo in France and Munster in Germany. The reconstruction plan for both cities assumes the extreme and deliberate preservation of the urban fabric, according to the principle of "how it was, where it was".
However, despite the fact that today this approach would be considered prudent, there are specific reasons that made this approach of sur place et a l'authentique prevail over others in both cases.
From _sheet 01 St. Malo *we see the city of intra-muros arrangement, which rendered it impossible to create something completely new and treat the city as tabula rasa. Moreover, St. Malo, having always been a city of one author, with its urban and stylystic coherence and homogenuity, would not allow an architect to "carry on with the already defined plan of his dreams"[11] but rather to face the problem with devotion and selective respect. Following this logic, it seems that the reconstruction of St. Malo has earned its purpose, the "face" of the city is recognisable. In case of Munster the objectives of reconstruction were shaped by the economic reasons. In* _sheet 02 Munster *we see that the starting point of the reconstruction was whatever left from the previous urban fabric, there was no possibility for a new infrastructure system or for a modern urban plan.*

The second category stands for the cases that respect the previous urban fabric, it shows the attempts of d deliberate reading and understanding of the urban structure followed by some pivotal modifications and alterations. On one hand, the methodological approach for Dresden and Florence treats the previous urban fabric and previous volumetric compositions as models for the newly introduced elements. The precedents are setting the standards for future designs

10 Bianca S. Urban Form in the Arab World, 1st ed., London, Thames and Hudson, 2000.

11 Mamoli, M, Trebbi, G, Storia dell'Urbanistica L'Europa del Secondo Dopoguerra, Editore Laterza 1997, p. 98.

that strictly respects it. Initiated from some replicas in the end the attempt adopted was to "reproduce" rather than the reconstruct precisely what was existing before - "to reproduce the space where the citizens could recognize themselves" prevailed. For instance, in _sheet 03 Dresden *we can note the maintenance of the main street and public open spaces organisation, the dimensions in terms of street width and height is respected. However, the building blocks are altered by leaving the inside empty to enable a better quality of the residential areas and avoid the chaotic organisation of the previous times. This refusal of "how it was, where it was" but accurate respect of the historical urban structure made it possible to combine the traditions with modern social aspects - the proposals, evoking the erstwhile cityscape in terms of volumetric arrangement, familiar typology and shapes, however with introduction of new modern design element.*
On the other hand, the strategy of decisive modernisation and tabula rasa treatment can be seen in cases of Rotterdam and Frankfurt. _sheet 05 Rotterdam *shows the extent to which the city was destroyed–a complete central void, almost no traces of the previous streets arrangements. Nevertheless, the basic urban composition and elements are still readable, though the implication of major changes took place. In* _sheet 06 Frankfurt *the project for Area of Dom-Romerberg-Bereich shows a radical way of "re-establishing" the urban fragments by combining the pioneering beliefs of modern design and respect to the old tradition.*

The third section illustrates the case studies that attempt at proceeding with the interpretation of the previous urban structure. The reconstruction plan for the severly damaged city of Warsaw initially assumed the transformation of the city into a large modern town with a metropolitan status - it was still intended to remain the capital of Poland.[12] *We can see in* _sheet 07 Warsaw *how the planners, led by the guidlines of determining the proper proportions between recreation of the historic city and transformation of that city, tried to transcribe the exisitng urban fabric of the city. The careful selection of what of the historic city to be preserved what what can be abolished and substituted with the constructions of urgent demand, together with the assetive insertion of new city axis (such as East-West Thoroughfare) and indenspensable modifications of some areas resulted in a urban reconstruction plan, that is able to provide guidelines for the further growth of the city and consolidate the strong emotional links of the inhabitants with their homeland.*
During the exhibition of the plan in Chicago in 1946, L. Mumfird wrote:

"In the new plans of Warsaw, the facts of modem social life constitute the backbone of the whole structure .... In the plans of the Warsaw Bureau for the Reconstruction of the Capital, the architects begin at the foundations, and basing themselves on nature and man's essential needs, find an expression of the epoch."[13]

Other attempts at critical interpretation of the urban fabric is illustrated by the two french examples of Maubeuge and Le Havre. In both cases first, the ele-

12 Diefendorf, J, Rebuilding Europe's Bombed Cities, Palgrave Macmillan UK, 1990, p.88.
13 Mumford, L, 'Warsaw Lives Again' (1946).

ments to be preserved to serve as the models and to set the rules for the further urban fabric are selected and adopted. For instance, in _sheet 08 Maubeuge *Andre Lurcat, keeps the surrounding city walls and the main central axis of the city, while abandons the typical intra muros plan and goes for a modern utopian perspective design on the inner city. Similar approach is taken by Auguste Perret in* _sheet 09 Le Havre, *where, be means of several trials, the historic axis and alignment are selected to be saved and the new design calling for the new urbanity and monumantlity is implemented for the entire city. The absolute architectural unity, due to both cases being the work of a "single author", established a great composition and illustrates the potentiality of the plan-project relationship approach that can solve the city in architectural terms.*

Ultimately, the radical view over reconstruction pocess is discussed on the proposals of Le Corbusier that, though remain only theoretical, are clearly illustrating the possibility of passing from theoretical models towards concrete projects and opportunities for intervention in real life. His reconstruction plans for _sheet 10 St. Die & _sheet 11 La Rochelle, *start from the almost complete tabula rasa situation, proposing a radical reorganisation of the cities, led by the modernist ideas of zoning, infrastructure hierarchy, fucnctional space division etcetera.*

Thus, we see that prior to address any reconstruction project it is necessary to formulate precautionary strategies aimed to transmit the memory and values represented by places. It becomes an essential skill in making sure that this intangible heritage can be maintained and conveyed. First of all, on the example of the cases we see how it is necessary to identify what is salvageable, and, therefore, should be restored and maintained. Then, the preliminary analysis of the urban structure and its generative principles allows architect to insert clearly new parts. However, whether it is a language or a plan, the new insertion is not characterised by mimicry or copy-past the old to the new, but by identifying the invariable character of the city and interpreting it. This chapter intended to have a look at the treatment of the morphological and typological invariants of urban fabric, the way the planners read it and re-propose, preserving the information stored in the form of urban environment and urban fabric and transform it to adapt for the future demands.

List of Cases

Urban Reconstruction in Europe

Exact Redrawing of Previous Urban Elements

St. Malo, France
Munster, Germany

Respect of Previous Fabric

Florence, Italy
Dresden, Germany
Totterdam, The Netherlands
Frankfurt, Germany

Interpretation of the Previous Urban Fabric

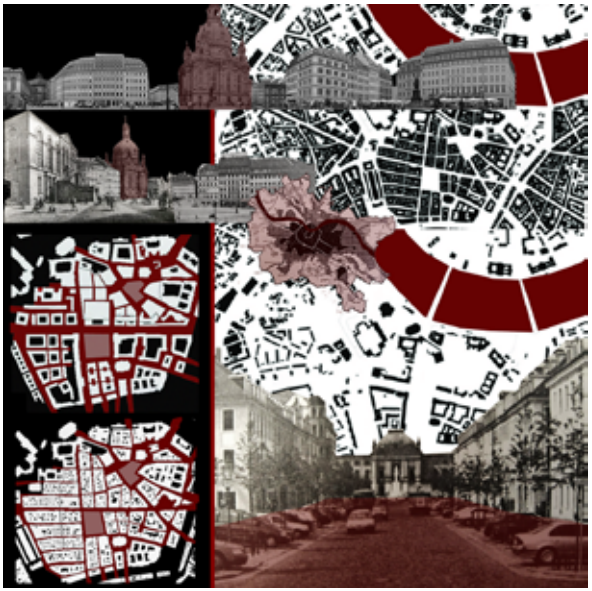
Warsaw, Poland
Maubeuge, France
Le Havre, France

Denial of the Previous Urban Fabric

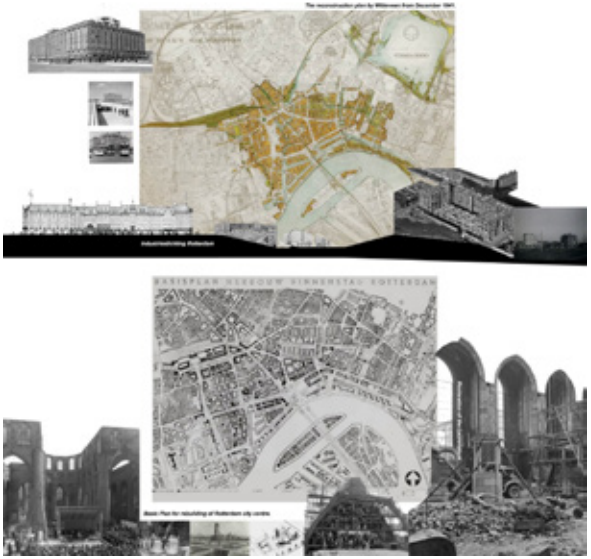
Saint-Diè, France
La Rochelle, Pallice, France

Fig. 4.07 ***Map locating the case studies.***

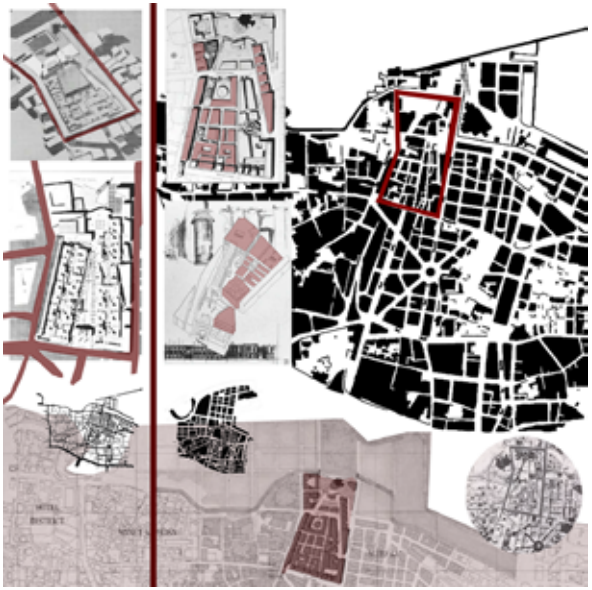
111 01 St. Malo, France



112 02 Munster, Germany

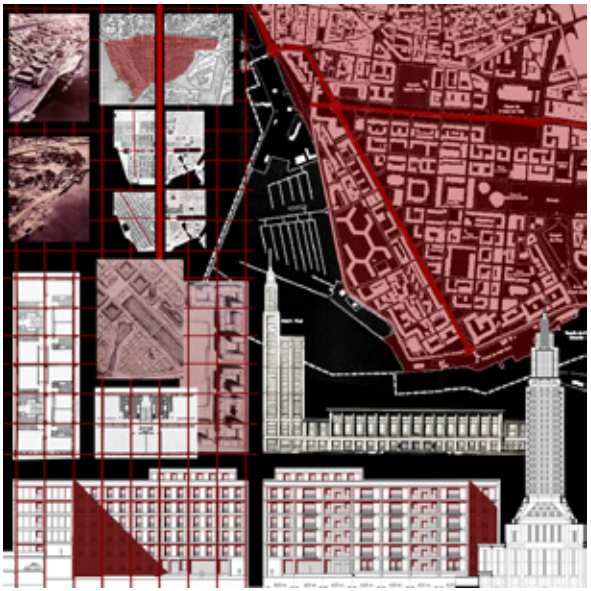


113 03 Munster, Germany

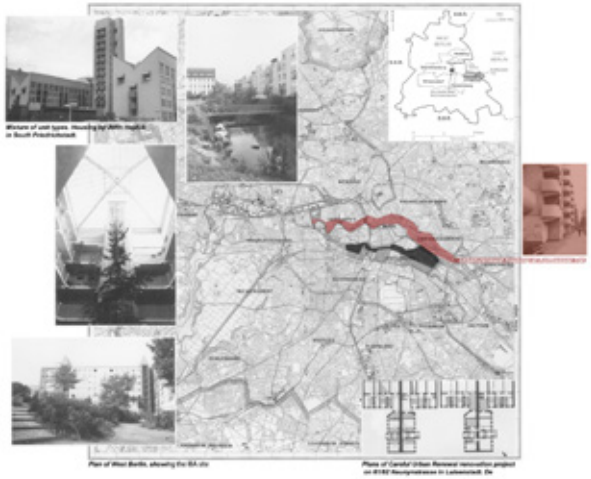


114 04 Munster, Germany

115 05 *Munster, Germany*



116 06 *Munster, Germany*



Exact Redrawing of Previous Urban Elements

SAINT MALO, FRANCE 1960s Louis Arretche

The ancient city of St.-Malo located on the Brittany coast of the English Channel, was turned into ruins during the WWII. By 1960 it had been entirely reconstructed by an architect Louis Arretche. Initially, the main criterion for the rebuilding was standing for the "maximum conservation" of the monuments, such as old city walls, rampats and castle that were considered recoverable. However, this strictly conservative attitude extends towards the general startegy for the historic centre.

Starting from the remains - facades and riuns - the previous alignments were confirmed: the buildings, even of little remains, were reconstructed sur place et a l'identique. Starting from these permanences, the rest of the road and street system readable by the old traces, was maintained with slight modifications, such as the expansion of principal roads, the elimination of alleys and small courtyards of old buildings in favour of large blocks permeable to pedestrians via covered walkways.

The reconstruction project, aimed at revival of the traditional silhouette of the townscape, esablishes several parameters to which each building has to adapt in order to ensure the unity of the whole: slate for the covers, grey stones visible on the facades etcetera. The work made by Louis Arretche in Saint Malo is significant since it marks a critical step towards more careful reflections not only aimed at the simple repair of lost assets but at a reconstruction of the urban image as a whole, the preservation of the genius loci of the townscape.

Fig. 4.09 St. Malo before the destruction.

Fig. 4.10 St. Malo after the destruction.

Fig. 4.11 Reconstruction plan of St. Malo by Arretche.

MUNSTER, GERMANY 1960s

Munster, a gothic city of the Westpfalia region, during the WWII lost 90 percent of its historic centre. Nowadays, it looks exactly like an old gothic city – it is hard to say that it ever suffered throughout the war. The gothic structure is remained – the continuity of spaces, homogeneity in the typology - everything makes an impression of an undoubtful "historic" city. However, this example of a "historic" city is a mere product of a reconstruction process started after the WWII and completed in the 60s.

The first reconstructon plans, "Idenkizze" and "Altstadtplanung", presented in 1947, were aiming "to preserve the ancient urban planning system."
But the city plan does not remain identical. Indeed, it has some variations – the chief planner Bartman intended to treat "the old urban layout with the respect of feelings of our lives today". So, it is noted that in the new plan the roads, traced from scratch, are much more numerous in terms of modifications and enlargements. Also, for the buildings that enclose and give the shape of some persuasive spaces, the substantial difference between the pre-existing and reconstructed was required.

The objective of the reconstruction excluded the replicas of the derivation of forms of the past, which led to all the possibilities for the interpretation of the genius loci of the city. The controlled conservation of the layout plan but the allowance of the individual stylistic modifications and interpretations turned in to the "replicas of quality" rather than of the previous physical state.

Fig. 4.12 *Munster 1939 before the destruction.*

Fig. 4.13 *Munster 1945 after the destruction.*

Fig. 4.14 *Munster 1960 after the reconstruction.*

Respect of Previous Urban Fabric

DRESDEN, GERMANY 1990s

The reconstruction of Dresden, where about 85% of the historic city was destroyed, was led by the main principle of conveing the history to the future generations. Here the term "retention" can be added that refers to the power of memory keeping and supplement of continuity. The city's "redesigning" includes the interaction between the urban spaces and built environment - the focus of municipal development was the creation of urban spaces of variety and flexibility of use.

"More important than the contour of the building is the space between the buildings. This is the area that actually determinates the city's livability, a precondition for the inhabitants to identify with their neighbor-hoods."

In the Altstadt the Frauenkirche is not intended to be the sole monument to dominate the wide area. The aim is to rather recreate the entire organism that it was part of, based on the still recognisable old wall system. The latter is consists of both the historical streets and buildings and the buildings of "modern design", respecting the horizontal and vertical regulations, allowing the main landmark of Frauenkirche to be at the focus of an appropriate framework.

The particularity of the Dresden's approach is by reconstruction of the few of the replicas of the original buildings to define the standards and the proportions of for the new additions. Replicas are integral part of the entire ensemble, they serve as models.

Fig. 4.15 *Pre-war Dresden's Altstadt (Frauenkirche in red).*

Fig. 4.16 *Destroyed Dresden's Altstadt.*

Fig. 4.17 *Reconstructed Dresden's Altstadt (Frauenkirche in red).*

FLORENCE, ITALY 1950s

The city of Florence, not being an exception, was badly damaged by the WWII. For the areas surrinding Ponte Vecchio the competition was launched. The dabate about "either to do same as the pre-war state, or introduce new elements" was on going. In the end the attempt adopted was to "reproduce" rather than the reconstruct preciesly what was existing before - "to reproduce the space where the citizens could recognize themselves" prevailed.

The definitive project considers the pre-existant urban fabric although with some corrections, such as remove the traffic in the north south in anticipation for the pedestrialization etcetera. The building mass is arranged in such a way to restore the long continuous building curtain along via Por Santa Maria. Around the church of S. Stefano and other areas the new edifices re-establish and re-propose the original spatial balance.

The similarities with Dresden approach are notable: the area between the buidings are one of the focal points of the architects chasing the aim of reconstruct the typical atmosphere and sensation of the city. The relationship between heights, volumes, enclosures is maintained in the new proposals. The refusal of "com'era e dov'era" made it possible to combine the traditions with modern social aspects - the propsals, evoking the erstwhile cityscape in terms of volumentic coomposition, familiar typology and shapes, however with introduction of new modern design element.

Fig. 4.18 Areas around Ponte Vecchio, pre-war state.

Fig. 4.19 Areas around Ponte Vecchio, destructed buildings.

Fig. 4.20 Areas around Ponte Vecchio, definitive project.

ROTTERDAM, NETHERLANDS 1946s Cornelis van Traa Proposals by Kleihues & Rossi

Rotterdam, having been bombed in May 1940, tackled its reconstruction in the most rigorous and consistent manner and allowed new ideas concerning functional planning. It had never been renowned for its urban beauty, which is why so much of the city was treated as tabula rasa *for a new, better, more beautiful world. The entire plan was considered much more of an economic matter than an aesthetic one.*

Rotterdam wanted to become the only metropolitan city of Netherlans, so the used Modernism as the major one. Modernism in all its aspects to become a huge metropolitan city. The ultimate goal – skyscraper. The american metropolis.

The Basic plan by Cornelis von Traa implied the pioneer ideas for planning, that is, a regular grid, zoning etcetera. The idea of the old city triangle was abandoned more fully. The street pattern was transformed into a more regular grid of major traffic arteries. An important intervention was the realignment of Coolsingel in the direction of Schiedamsedijk that was a so-called 'window on the river', from where people could experience the proximity of the river and the docks.

Also, the Basic Plan was so flexible that the street pattern evolved from city centre courtyards into the revolutionary, pedestrian Lijnbaan shopping development. However, what is more interesting about Rotterdam is the projects developed by various architects for the area of Kop van Zuid dockland in 1982.

Kleihues

Fig. 4.21 *Rotterdam before the destruction.*


Fig. 4.22 *Rotterdam after the destruction.*


Fig. 4.23 *Reconstruction plan, Basic Plan by Cornelis von Traa.*

The plans of Kleihues represent a relatively small scale developments connected to the various public spaces of the Stadshavens. The names he to the various housing- and green domains express an aimed consideration for identity for these places, exemplary the "Maasprospect", 'Ville rudimentaire", "Konings nieuwsgierigheid" (Kings Curiosity) and "Plaats van Herinnering" Place of remembrance). This demonstrates the reading of Kleihues of the former docklands and his attempt to translation of the latter to a new image by the means of addressing to the pre-existing typology and morphology of the place.

Rossi

The contrast which Rossi achieves by proposing a large scale, homogeneous scheme for the docklands and at the same time differnetiating various types of small scale architecture exemplifi es the relevance of the project not just in light of "a reading of the city" but also as a final goal which "only the urban life could shape" (Barbieri & Weeber, 1982, p. 55).

Rossi focusses on the plan as a goal for setting an image of the Stadshavens, an own domain with a clear organization, and the small scale infill of this structure, which was defined by his reading of Rotterdam Zuid.

Fig. 4.24 Kop van Zuid dockland before transformation.

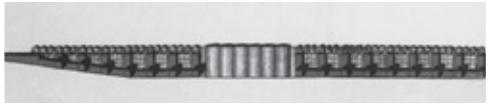


Fig. 4.25 Proposed facade by Keihues.

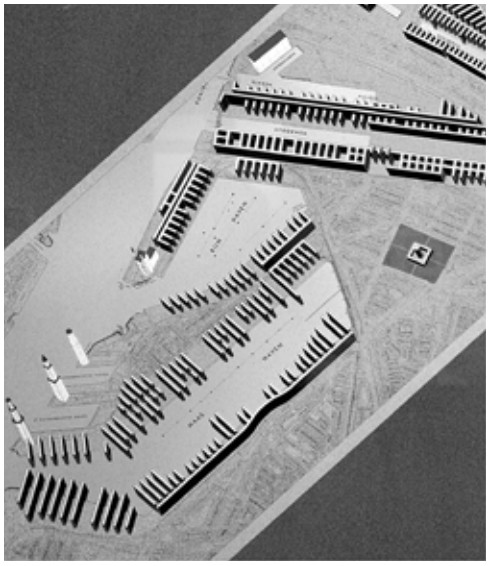


Fig. 4.26 Overview of Rossi's vision for Zuid.

FRANKFURT, GERMANY 1950s

As a result of heavy attacks of March 1944, Frankfurt meets heavy losses, especially in the historic centre. Immediately the questions of whether to return to the gothic and baroque direction of the traditional cityscape or to put the latter aside and make a new city are put to discussion. Provided Frankfurt being a "birthplace' of West German State, the americanized model of decisive modernization stands out in favor - to "start everything from scratch" means to create a new civil society.

The removal of the rubble goes together with the removal of some witness materials that features the historic city. The realization of major arteries and the reinforcement of the existing one begins to enable a better access to the centre; all the secondary roads are widened; buildings are merged into larger units suppressing the narrow alleys of the gothic design. With the new network the structure of the centre, though still based on the previous layout, is transformed into a powerful transport system.
The area of Dom-Romerberg-Bereich is chosen to become the new "centre of city culture". The competition is launched in 1980. The winning solution by Bangert, Schlotz, Schultes & Jansen combines the allusions of old and new systems, manages to establish a dialogue with the city with a sort of "irony", to re-establish the forms of traditions and that to meet the modern needs for entertaiment; it demosntrates a great attempt to re-type the interrupted routes of tradition with a strong respect to the historical authenticity of the city and a sense of refoundation destined to last.

Fig. 4.27 *Frankfurt before the WWII.*

Fig. 4.28 *Reconstruction plan Fluchlinienplan, 1948.*

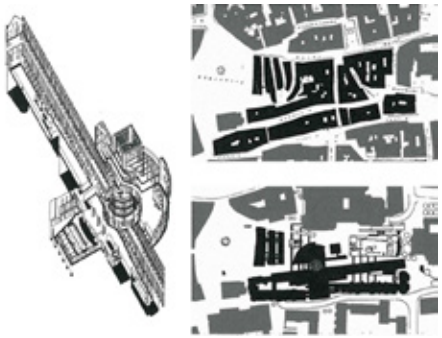


fig. 4.29 Project axonometry for Dom-Romerberg-Bereich

fig. 4.30 Area of Dom-Romerberg-Bereich before anf after the WWII

Interpretation of Previous Urban Fabric

WARSAW, POLAND 1945-1949

Warsaw almost completely destroyed during the War, the destruction went beyond elsewhere in terms of qualitative features, the reconstruction aiming to re-tore the pre-war state and role of the city had no precedents or comparisons in Europe.
The first plan of 1945 focuses on the reconstruction of the infrastructure with the realisatin of the new axis east-west. The backbone of the road network consists of Marszalowska street extended to the no-eth and widened up to 60 meters in section, that acts as a new north-south parallel. With the second plan of 1949 the new residential projects are realised in the centre along the Marszalowska street. Some of the old buildings are resuming the 19th century composition of the facades, but being modernized. They play between the re-proportion of the traditional character of the street and the style of "social realism".

The philological reconstruction of the Old Town, Old Market Square in Warsaw resulted in the excess if mimicry. It was designed on the basis of iconography - the frontal facades were rebiult by the study and copy of Canaletto paintings of the old town and other archival materials, where the materials were not availiable, the fronts were designed by "analogy". It is clearly understandable the desire of polish authorities to transmit the national historic polish forms of architecture to the future generations, however it is evident that this appraoch rises the visual solely architectural nature of the city above the historical, economic and social components of memory that architecture stores.

Fig. 4.31 *Warsaw before the WWII, 1938.*

Fig. 4.32 *Warsaw after the reconstriuction, 1955.*

Fig. 4.33 *South front of the Market Square, fragments remained after the war; after the reconstruction.*

Fig. 4.34 *The Market Square, before the war; after the reconstruction*

MAUBEUGE, FRANCE 1958 Andre Lurcat

The small French city of Maubege on the Belgium border was seriously bombed during both World Wars. André Lurçat sets the reconstruction purposes according to the principles of rational urban planning – the fact that the intra muros *part can be rebuilt according to the previous footprint is immediately refused. Instead, while retaining the surrounding historic walls, the inner urban layout will be changed in order to enhance the functional division and solve the precedent accessibility problems. Some activities will be taken out of the perimeter walls to constitute the new access to the historic city and at the same time to establish the new entire central structure.*

In his perspective of designing a utopian city from which inequalities would be absent, Lurçat went so far as to raise the right bank of the Sambre and lower the left bank. A network of streets is recreated without taking into account the old one.

The new urban plan is extremely detailed – it defines and establishes the position and volume for each building to be built and, moreover, the activity to be held in there. The composed plan of Maubeuge is based on the zoning and a wast provision of green areas respond to the concept of cite jardin urbane*. Maubeuge demonstrates that is it possible to go for innovative choices in planning of the historic land by establishing the institutional structures and making dialogue with the citizens.*

Fig. 4.35 ***Pre-war plan of Maubeuge.***

Fig. 4.36 ***Proposed reconstruction plan of Maubeuge by Lucrat.***

LE HAVRE, FRANCE 1964 August Perret

Located on the English Channel in Normandy, the city of Le Havre was subjected to severe bombings during the WWII. Its reconstruction is exceptional for its unity and integrity, a landmark of the integration of urban planning traditions and a pioneer implementation of modern development in architecture, technology and town planning.

Perret combines the reflections of the earlier urban fabric and the new ideas of town planning and construction techniques, in particular the use of prefabrication and modular construction grid.
Two pre-existing principle axis are kept, the new modular grid is contructed based on the fragments of ancient urban fabric and isolated buildings saved from destruction.

" the main remaining routes that create the basis of the axis and frame the general layout" (Le Havre Auguste Perret et La Reconstruction, Claire Etienne-Steiner 1999)

Chasing the goal of associating a new urbanity and monumentality ncessary for the port city, the team of Perret managed to adapt the town's urban fabric to the new needs without completely neglecting the hitorical component of the town development.
From the experience of Le Havre, the new concept is emerging, which is the enlightment on the organisation process of a city planning as a single process, cascade design - starting from urban criteria to the internal constructive and formal details.

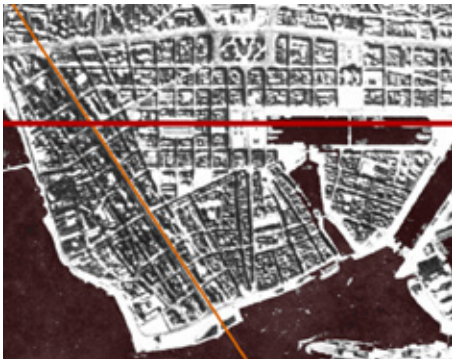


Fig. 4.37 Le Havre before the destruction.

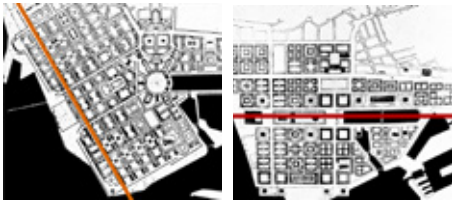


Fig. 4.38 Attempts of architects of Perret's team: Le Donne e Lagneau; J. limbert.

Fig. 4.39 Adopted plan by A. Perret.

Denial of Previous Urban Structure

SAINT-DIE, FRANCE 1945 Le Corbusier

One of the Le Corbusier work was Saint-Die, that was never implemented, however it is useful to see the spectrum of approaches that the architect were trying on the experimentative reconstruction ground. St. Die is the town on the eastern part of France, close to Lion, that was bombed in 1944.

Starting from the tabula rasa *situation, Le Corbusier proposes a radical reconstruction of the city, a plan based on the principles, that was discussed on the Athens Charter by the CIAM in 1933, based on zoning, the traffic separation, Work Housing Leisure Circulation. He envisioned a total break with the prewar configuration of Saint- Dié. The city centre is imagines as a sequence of* unite d'habitation *that condense the largest share of the residence and are arranged into the civic centres.*

The most innovative part of Le Corbusier's plan for Saint-Dié was the city center, a huge pedestrian plaza that would occupy the land on the north bank of the Meurthe River, that reflects the issues discussed by CIAM, where they argued that large cities required a center to provide a forum for public gatherings as well as a focal point for buildings with cultural functions.

The Cathedral remains the only trace of the ancient structure, remains the point of reference for the composition of the centre.

Fig. 4.40 Plan of St.-Dié before 1944. The area shaded in orange was destroyed

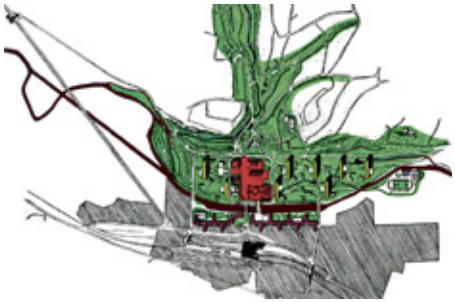


Fig. 4.41 Urban plan for St.-Die, Le Corbusier. (red-city centre, green-park, magenta-factories, yellow-unites, blue-water, grey-not destroyed)

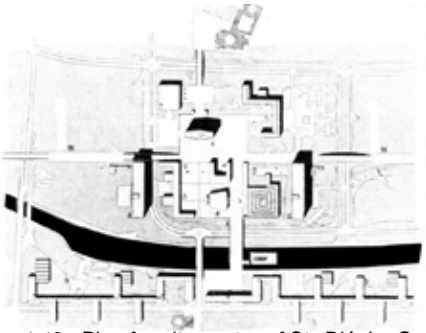


Fig. 4.42 Plan for city centre of St.-Dié, Le Corbusier

LA ROCHELLE, FRANCE 1945 Le Corbusier

In 1945 Le Corbusier receives the assignment for the reconstruction of La Rochelle, the seaport city in the south-west coast of France.

The proposed plan both inserts the organizational schemes of the territorial scale and proposes to recover the ex-base of submarines as a new large commercial port. While blocking the urban expansion around the nucleus of the historic centre, the plan concentrates in the destroyed area of La Pallice and the potentiality for its reconstruction.

The latter consists of industrial and commercial zones occupying the port area and the new residential areas arranged parallelly to the axis joining the Old Town and the port. In the plan Le Corbusier tries to apply his tools that concern the fictionalizations, the implication of zoning, the separation of areas, separation of pedestrian and vehicle streets etcetera. The composition consists of ten unites d'habitation, *skyscrapers and the implementation of horizontal and vertical gardens.*

The essence of the decisions taken by Le Corbusier, and which he succeeded in having adopted by the victims, the Municipal Council, the Prefecture and the Ministry, are as follows: The industrial city will be a "Green" city (decision which implies certain arrangements of private property).

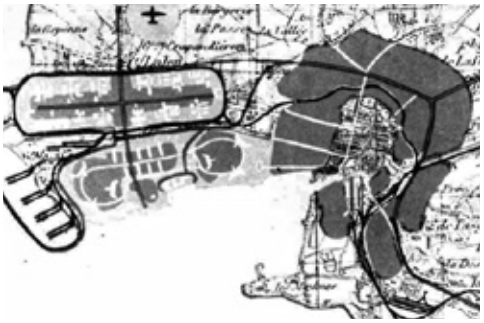


Fig. 4.43 *First sketch of Le Corbusier for La Rochelle-La Pallice*

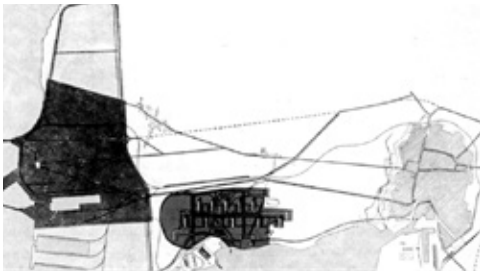


Fig. 4.44 *Furtherattempt of Le Corbusier for La Rochelle-La Pallice*

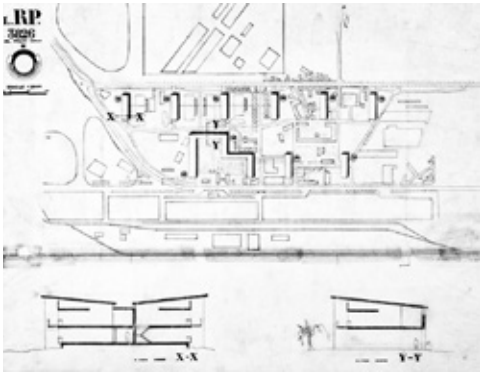


Fig. 4.45 *Furtherattemp of Le Corbusier for La Rochelle-La Pallice*

Case Studies of Urban Reconstruction and New Constructions in the Middle East

The knowledge of the culture and history of the context is a fundamental condition of any reconstruction process. The ability to analytically comprehense the physical environment, the principles that generated it, its physical structure etc. is a necessary tool for establishing an architectural intervention in the historic process.

Thus, as Western observers, we might not be fully capable of interpreting the Islamic cities and architectures by operating with solely the knowledge of the Western urban developments and recosntrcution phenomena. Thus, there is a certain interation between what we build and what we believe in, a man builds its own environment.[1] Islam has its own cultural traditions that we are making an attempt to interpret.

"Tradition means the chain of revealed truth, wisdom and knowledge, which is transmitted and renewed generation by generation, thus linking various successive layers of temporal existence to the primordial reality which originated them."[2]

Therefore, this chapter of the book is aimed at studying some cases that are of the Islamic context, the understanding of the physical environment in the cities of the Middle east. Accordingly, th practice of reconstructions and new constructions that were operated in those models characterise the architecture and the methodology used in this specific context. The case studies discussed in this chapter represent both urban reconstruction and new constructions that we tend to read as reconstructions by grasping some aspects of the modality these cases constitute for, such as the treatment of typological elements, historic urban morphology as well as social and cultural aspects.

In order to see some process of urban reconstruction in the Middle East, we observe the projects participating in the competition of 1993 for the Souq of Beirut _sheet 01 Beirut *and try to see how architects made an attempt to establish the relation between the modernity and tradition, between the progressive and the historical. The common feature of all the selected projects is the recuperation of the previous road structure in order to define the urban fabric of the new architecture. By preserving some constants, such as the road system and the traditional Beirut's Souqs organisation, the architects managed to identify the strating point of their designs and to establish the relation between the traditional character of the place and the new elements, that are aimed to satisfy the contemporary needs. The tendency to preserve the original urban structure and the critics l interpretation of the building typology with a different degree of extremes is noted in all of the selected proposals: while, for instance, Guido Canella's group tries to hybridise the found typological invariants, Aldo Rossi's group implicitly introduces some new signature elements, scu has Zigguratt tower etc. The common observation here is that the typological character of the Beirut's Souqs, which is the linear continous arrangement, is not criticlly altered but rather preseved, interpreted, or elevated.*

"This theoretical approach allows a gradual reconstruction for pieces and buildings without forcing the city into a rigid and often purely speculative planning."[3]

1 Bianca S. Urban Form in the Arab World, 1st ed., London, Thames and Hudson, 2000.

2 Bianca S. Urban Form in the Arab World, 1st ed., London, Thames and Hudson, 2000.

3 Giacomelli, Milva. 2008. Architetti italiani per la Siria

The next group of cases illustrates the new construction projects in Egypt and Algeria developed by an egyptian architect Hassan Fathy and a french architect Fernand Pouillon respectively. While studying Fathy's works we aimed to undertand the language that Fathy managed to build, that of being in continuity with history and tradition and, at the same time, to create a new architecture with a strong identical character. The vernacular expressions that Fathy evolved to set the solution for the problems faced in the proposals for the villages _sheet 02 New Gourna & _sheet 03 New Bariz *demonstrate the better ways of solving some urgent problems with architcture, whether its a housing problem, climatic prblem etc. In both projects we find the continuity with the past, the chain of detectable forms and its repetition, while, at the same time, we are able to identify the modern principples and transformations. Using the technique of composition, Fathy operates with the traditional elements by identifying it, selecting it for a particular use and, finally, justifying it. The buildings in Fathy's works are the personal interpretation of his memories, that are strongly lonked to the context. In* _sheet 02 New Gourna *the hierarchical organisation of piblic spaces, the materials and forms used by Fathy reflect the Old Gournii village and the lifestyle of its inhabitants. At the same time, Fathy attempts to harmonize the social structure of the inhabitants by an approapriate architectural settings. The same can be said on* _sheet 03 New Bariz, *where the elements used by Fathy are like extracted from the original context, re-interpreted and assebled again for a new demand. So, the theory that we learn fin Hassan Fathy is that of the respect of regionalism. However, it does not mean the regional regionlism - for instance, Fathy is not afraid to mix the elements from Upper and Lower Egypt, - the purpose is to understand and interpret the context in which an architect is working and to respect what is essential for the context and the users. In fact, Fathy was saying:*

"It is said that if you put anything into the landscape that does not repect the natural environment, you can be punished either by nature or by man."[4]

Fernand Pouillon with his works in Algeria during the 19530s altered the vision towards architecture there - if before the algerian architecture was more characterised by so-called "prefecture" architecture, that is "exported" without adaptation from the west, Pouillon brought about the practices of regional architecture, lookimg for an architecture for a specific country, that would be between the tradition and modernity. [5]

The residential complexes of Diar es Saada and Diar el Mahccoul _sheet 04 Diar es Saada & _sheet 05 Diar el Mahccoul *both represent the plans that are designed by a modern movement architect - based on horizontal vision of space, clearness in shapes and functional division.*

However, at the same time, Pouillon tries to establish a conversation with the historical past of the context. Pouillon was saying:

e il Libano nel ventesimo secolo. Firenze: Maschietto Editore, pag. 114.

4 Rastorfer, D, The Man and His Work, In Hassan Fathy. Singapore: Concept Media, 1985, p.28.

5 Bonillo, J, L, Fernand Pouillon, architecte mediterraneen, IMBERNON2001, p.62

"Historical Algiers, Algiers of Casbah, it's a city marked by the occupation of the Ottomans and, also, conserves the testimonies of arab spanish architecture."[6]

So, having take into account, the districts of Diar es Saada and Diar el Mahccoul formed by the monumantal bastions, which is the sort of reminicent of the strong Turks, while inside, the patios, the squares and gardens are the allure to Spain with their ceramics, arcades, fountains etc.
The strong presence of two cultures - Ottoman and Islamic Spain - is read in all the designs. The "Islamic" qualities were expressed more explicit in the simple confort quarters, where the position of blocks and the small size of openings emphasise the fortification-like effect and where the public squares are more numerous.
Another housing complex described in _sheet 06 Climat de France *, intended for a more marginalised Muslim population in Algeria, reflects the points of differentiations of spaces for men and women by following the historic devices. More than two hundred shops on the ground floor, evenly distributed within the area and integrated with the residential typology, symbolise the role of service to the person. In the upper part of the complex there is a religious construction, the Mosque. The main square known as the two hundred columns constitutes the core of the neighbourhood.*

Thus, as mentioned before, the knowledge of the context is becoming an irreplaceble tool for intervene in a conscious way and comprehense the generative logics of the area. The knowledge of the context comes mainly from in-depth study of history, evolution of of forms and solutions, witnesses of habitual settlement methods. We noted that on the examples of Pouillon and Fathy, whose proposals were based on the study of regional and vernacular achitectural forms and then, interpreting it, each using thier own methodology.
From the knowledge of local social patterns, the typical rhythm of solids and voids of the urban fabric, the hierarchy of courtyards etcetera the new interpretation of those layouts shall occur, for instance, as we saw in the works of Fathy and the way he was transcribing the typical gourni dwellings to the new layout. Therefore, the process of reconstruction can adopt those ways of spatial use that are tend to re-create long-standing typological elements that have characterized the architecture of a given context and lead us to a new interpretation of them.
In our case, working in the city of Mosul, this could mean to accept the main compositional and generative principles that set the organization of spaces in Islamic architecture. The objective of the project stands in preserving and recognising the cultural identity of the community within the city, by means of some strategies - through the recovery of fragments of the urban fabric by taking into consideration the local specifics of spatial composition, organization and typologies and, ultimately, through the act of re-proposing them in a new, updated version.
In fact, the role of architecture itself is quite significant, because the construction, influences spaces and contexts within the city, however, at the same time it is influenced by the historical, cultural, social and architectural experiences that characterized the

6 Dubor, B, F, Fernand Pouillon Architetto delle 200 colonne, Electa 1986, p.48

place in which it stands.

List of Cases

ReconstructionandNewConstructionsintheMiddle East

Urban Reconstruction

Projects for the Souq of Beirut, Lebanon

NewConstructionsReadasUrbanRecosntructions

New Gourna, Egypt H. Fathy
New Baris, Egypt H. Fathy
Diar es Saada, Algeria F. Pouillon
Diar el Mahçcoul, Algeria F. Pouillon
CLimat de France, Algeria F. Pouillon

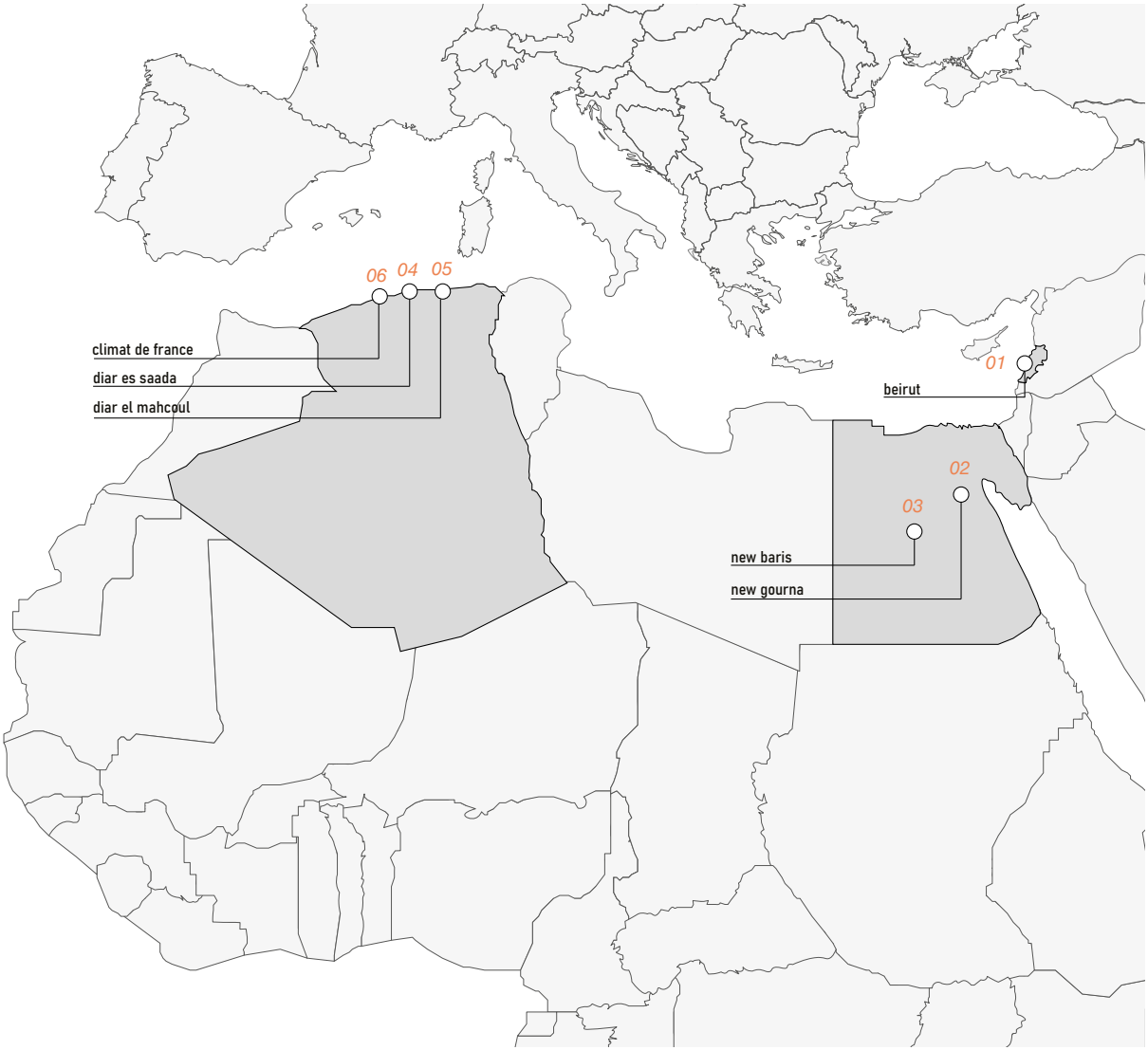
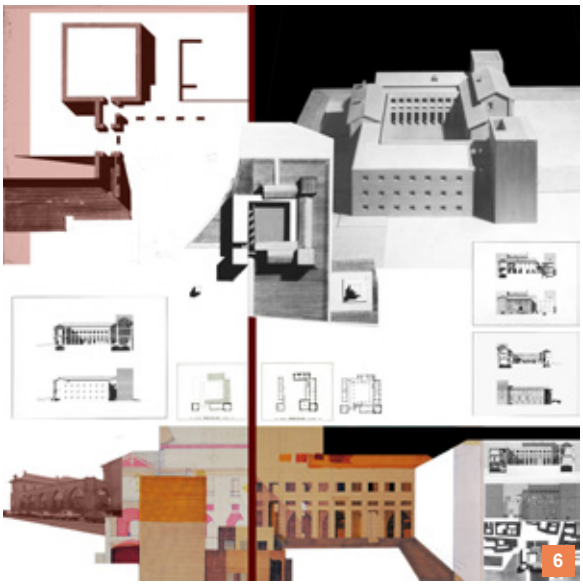


Fig. 4.46 ***Map locating the case studies.***

153 *Exner, Koldighus Castle.*

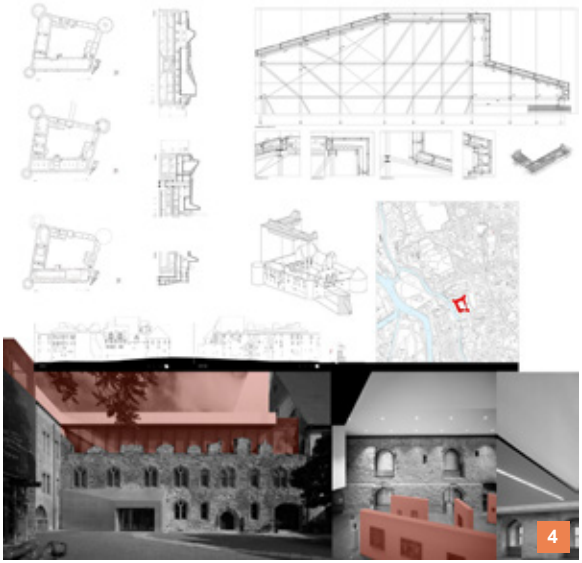
154 *Bruno, Rivoli Castle.*

155 *Giorgio Grassi, Sagunto Theatre.*

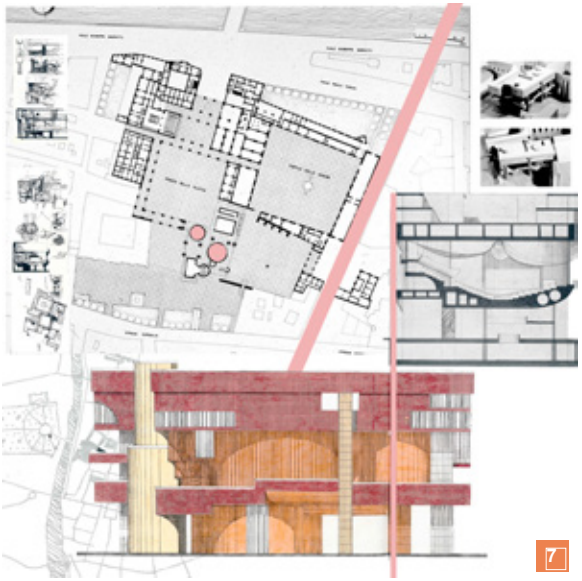


156 *Grassi, Abbiategrasso Castle.*

157 *Herzog & de Meuron, Caixa Forum.*

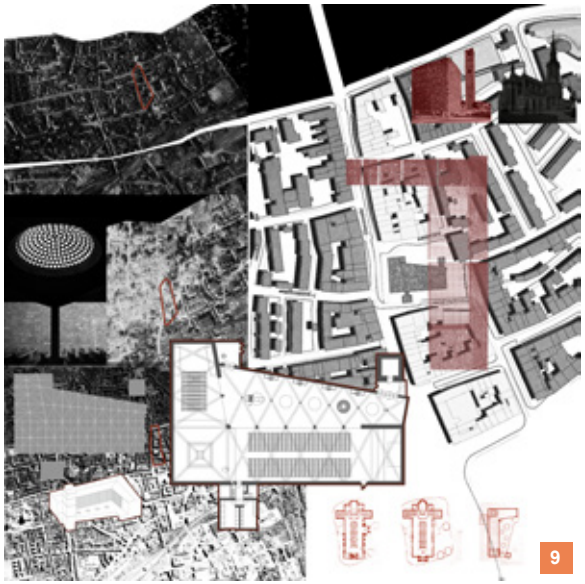


158 *Nieto & Sobejano, Moritzburg Museum.*

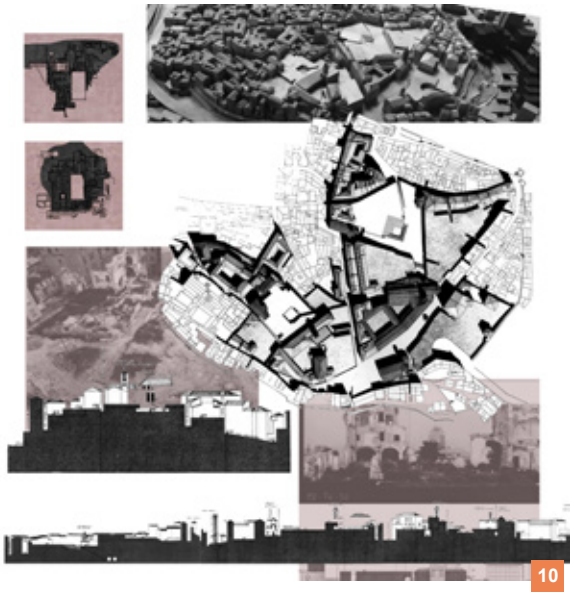


159 *Carlo, Paganini Theatre,Parma.*

160 *Byrne, Machado de Castro Museum.*

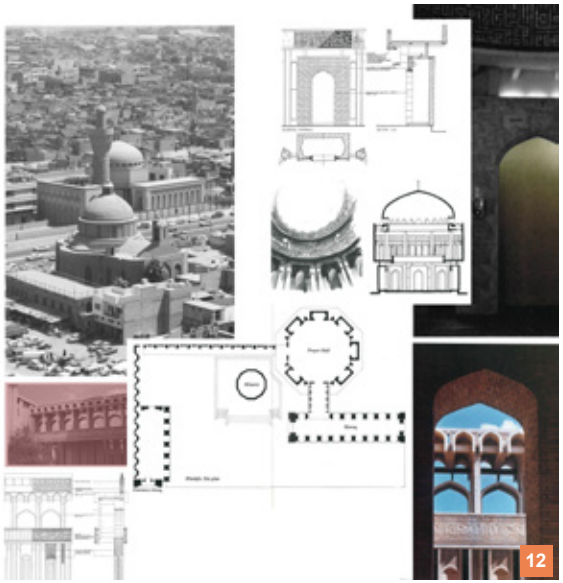


161 *Maria Schwarz's, St Anna Church.*



162 *Bruno, Rivoli Castle.*

163 *Giorgio Grassi, Bastione di porta Volta.*



164 *Kulhafa mosque,Kulhafa mosque.*

BEIRUT, LEBANON 1994 Competition Projects

After the civil war of 1975-1991 in Lebanon, but the souq was relatively far from the battlefieldNow it stays as the witness of the first stages of the war, acts like a collective memory. The souq developed here as a mosaic, mosaic of linear elements running along the northern southern axis.

Here the projects for the Competition 1994 for the Souq of Beirut developed by italian architects are discussed. The competition called for the reinterpretation of the souk, for the contemporary needs without the loss of memory .

Fig. 4.47 Project site for the competition of the reconstruction of Beirut's Souk, 1993.

Fig. 4.48 Proposed plans for the reconstruction of Beirut's Souk, 1993, 1 - Rossi, 2 - Polesello, 3 - Semerani, 4 - Canella.

Rossi

Aldo Rossi used the typological approach–restoring the urban fabric with various degrees of modifications of the individual components. In his proposal the old street pattern is preserved and a number of the new landmarks are added, such as ziggurat tower. These new elements are like signature elements that create tension between the existing built environment. He treats the existing urban patterns and typologies not like replicas but like the field for the re interpretation of them.

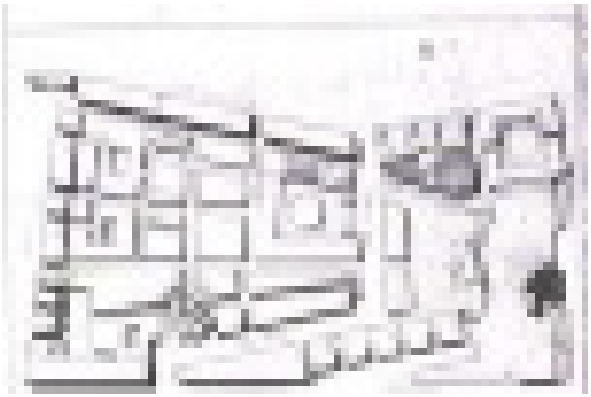


Fig. 4.48 *Aldo Rossi, masterplan for the reconstruction of Beirut's Souk, 1993.*

Polesello

The project of Polesello aims to emphasize the unity of the place and bring to light the monuments of the city. The city is derived of signs in a figurative and composite way. Polisello re-proposes, evokes and sometimes invents these signs.
He is inspired by the design of Piranesi, in which the different parts (city-planimetry and architecture-plants) have different scales "as if it were a question of using different station points to see two problems and two different scales within which a single "thing", a single architecture. The souk complex is designed according to the principle of orthogonal geometric order that can exist independently of its uses, and the "accidental" elements that characterize the souk. The parts of the new city must be marked by new and absolute forms, establishing a new sign and symbol.

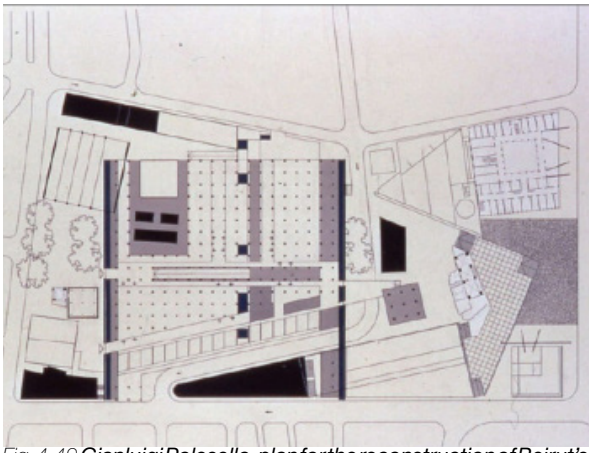


Fig. 4.49 *Gianluigi Polesello, plan for the reconstruction of Beirut's Souk, 1993.*

Semerani

Luciano Semerani also proposed a collage with appearance of the new elements, especially in the north part, while the south seems to obey the rules of the urban fabric and the typical typology. The eastern side creates the impermeable wall that recreates the spirit of a souq being like a porous, open patchwork.

Canella

The same concept of a critical interpretation can be observed in the project proposed by Guido Canella. The plant resumes the trend of the pre-existing structure that is obtained by the repetition of the original layouts of the souks as an ordering element of the project. Within the building typologies, facades, covers that are tryiing to be coherent with the typical variability of Beirut, other different typologies are grafted, recombining spaces and forms that defined the characters of the mosque, madrasa, khan and souk.
The Jamil souks, al Tawili, ayass and the existing buildings of the Arwan souk are preserved while the new hybridized typologies are introduced- the first typology represents a building that is linearly arranged along a partially covered pedestrian path, while the second consists of a three-storey body covered by pitched roofs that is arranged on a large elongated court. The attempt was to balance the composite potential of commercial activities through the linearity of the souks, to its uniqueness and specialization, by hybridization of the main typological invariants.

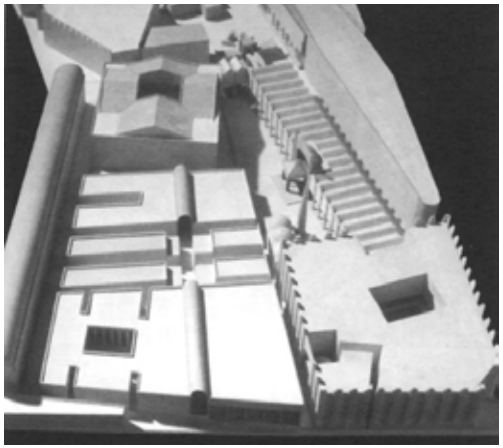


Fig. 4.50 Luciano Semerani, physical model of the project for the reconstruction of Beirut's Souk, 1993.

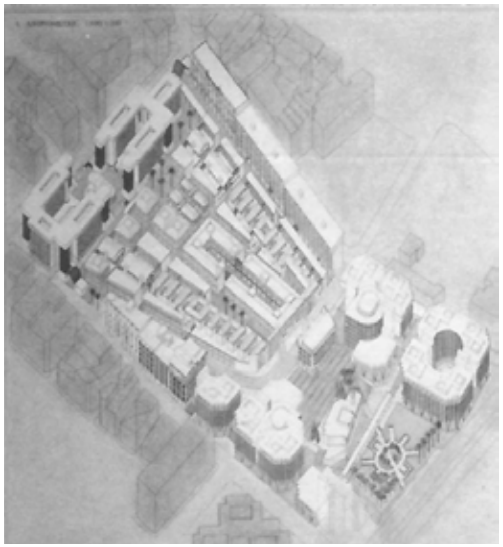


Fig. 4.51 Luciano Semerani, physical model of the project for the reconstruction of Beirut's Souk, 1993.

New Constructions Read As Urban Recoonstruction

NEW GOURNA, EGYPT 1952 Hassan Fathy

The old Gourna was a community of five hamlets built across the West Luxor, the place of ancient cemetery of Thebes. In 1946 Fathy was engaged into the design for the New Gourna to relocate the population and prevent robbing the tombs. Initially planned for 900 families, only one fifth of the project is built.

The design represents the combination of socialist and utopian visions: the rural economy, the traditional family dynamics, the clan structure are recognized and put into a formula to transform the Gourii into a harmonized social structure devoted to folk art and surrounded by appropriate architectural settings. In the designed plan there is and architectural hierarchy that is read by the system of open spaces: the main route widens up and brings to the public square with the access to all the public facilities. The housing is planned as irregular allotments that enables the variation of housing plans and the angular network of streets. Village design is led through an ascending scale of spaces – starts from private courtyards to the semi-public neighborhood street, to the larger avenue, to the village square and then to the open fields of Nile Valley. This plan replicates the uplanned villages in the region.
The identity of the New Gourna is related to similar villages and settlements in the region, however, it possesses its own character. The planning intentions of Fathy were to use locally available materials and techniques, which imparts a vernacular character to the place's architecture but also promotes its sustainability, resistance to climatic extremities and economy.

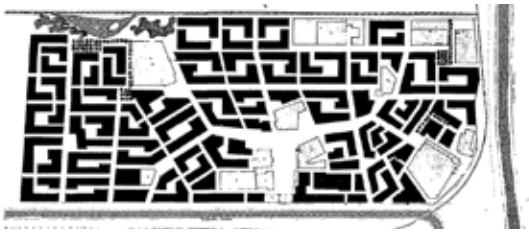


Fig. 4.52 New Gourna, masterplan by H. Fathy, 1948.

Fig. 4.53 New Gourna, masterplan implementation by H. Fathy, 1948.

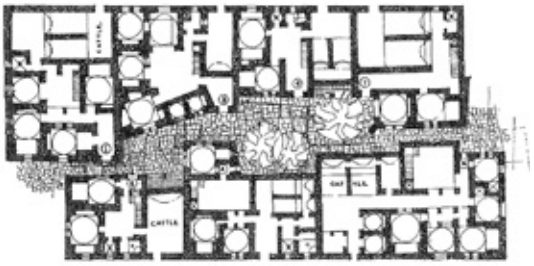


Fig. 4.54 New Gourna, village street with broken vistas by H. Fathy, 1948.

Fig. 4.55 New Gourna, the village outskirt.

NEW BARIS, EGYPT 1965 Hassan Fathy

In 1965 Fathy designs the plan for the residential neighbourhoods of New Baris village in Egypt. New Baris has the largest reservoir for water, therefore, the government's masterplan called for a central village and six satellite hamlets. Fathy was to design the central one that would serve for 250 families of farmers and as a commercial and social centre for the hamlets and the Old Baris.

In preparation for the design Fathy studied the towns on the region, where people, due to the climate conditions, were building their houses close to each other in order to shade the street. He adapted this technique. His neighborhood is a variation of a starting model, that is broken up and then rebuilt in preserving the inner rules. The basic model is compared with the place reality and modified, according to precise criteria that meet the intention of the project itself. Analogy is the tool that Fathy uses to assign a role to each architecture within the whole.

The same process is taking place in the public building designs. The Souq is the epicenter of the project as well as other administrative and social buildings. These collective spaces are the result of a memory of shape and topological operations.
Also the materials, the constructive and technological decisions have an analogic relation with their starting models, and after their interpretation.

New Baris is an experiment in a community-oriented design as well as aesthetic investigations of an architect.

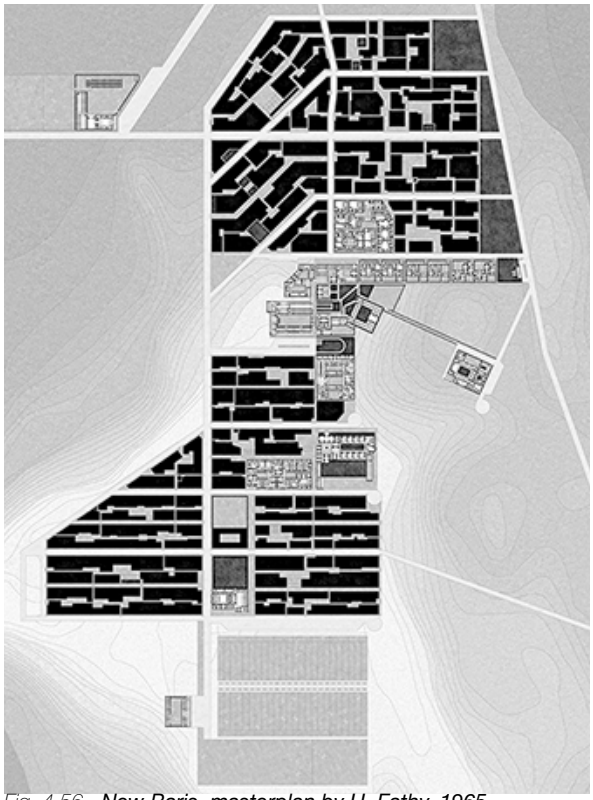


Fig. 4.56 *New Baris, masterplan by H. Fathy, 1965*

Fig. 4.57 *General view of the Souq*

Fig. 4.58 *Cells of the Souq*

DIARES SAADA, ALGERIA 1953-54 Fernand Pouillon

The complex implantation is along a main axis of perspective. This axis is generated by an angle of 54° related to the crossroads of the ridge path (According to Sayen (2014)

The development is divided into upper and lower parts by an "S" crossing the entire field following the contour lines. (figuar X) It allows on one side, to solve the problem of mechanical accessibility to the buildings, having regard to the irregular shape of the land. On the other hand, participate in the organisation of the ground plan while being economical in earthwork (Sayen, 2014). All buildings of the housing estate are either perpendicular or parallel to the axis. With a single dominant orthogonality and different buildings from each other, it produces sequences of spaces varied both by their plan configurations and by the created voids.

The ground plan much favoured by the modern movement architect who followed the Athens Charter 1933, is based on a horizontal vision of space, an aerial view. According to Pouillon, architecture is viewed by pedestrians and not by aviators. This means that the composition of urban spaces should refer to the height of the human eye, which embraces the architectural object by surrounding it. This is an interpretation of Choisy's lesson on the Acropolis of Athens. He discovered that, to understand the arrangement of the buildings, we must look at the complex through the viewer's eye: everything is arranged in relation to him by following viewing angles.

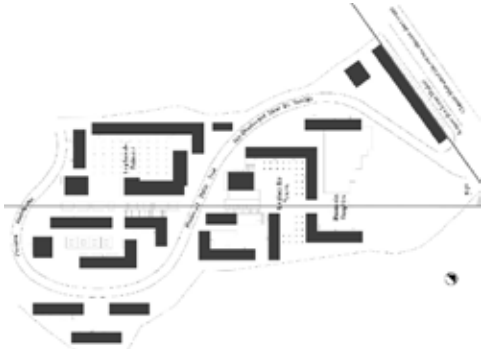


Fig. 4.59 *Overal Model*

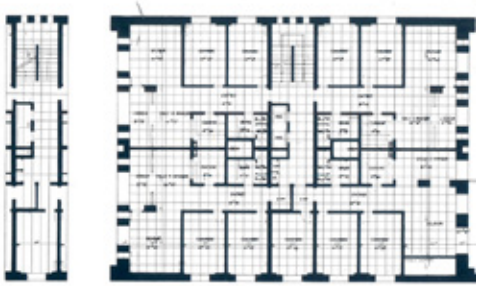


Fig. 4.60 *Masterplan. 1) Apartment Interior. 2) Apartment Prototype.*

Fig. 4.61 *Masterplan. 1) Apartment Interior. 2) Apartment Prototype.*

DIAR EL MAHÇCOUL, ALGERIA 1955-56 Fernand Pouillon

Pouillon thus designed his housing projects with direct reference to cities. He understood the city as a network of public spaces, each public space bearing a different character that could not be explained by clear-cut typologies. A crucial issue for the architect was to establish the right relationship between buildings and public spaces as one defined the other.

The "Islamic" qualities were expressed more strongly in the simple confort quarters, where the placement of blocks and the smallness of openings enhance the fortification-like effects and where the public squares—some planted with palm trees—are more numerous figure X

The communal facilities, such as the markets and the church (now transformed into a mosque), bring a deliberate contrast to the architectural unity of the housing blocks. The market in the simple confort quarter is a rectangular space surrounded by a low brick arcade, formed by cross-vaulted units; its center is planted with palm trees (Fig. 71). The market of the confort normal area again uses the arch to mark its difference from the residential functions, but here the arch is less accentuated, less "vernacular"; it is a stylized low arch that sits on an orthogonal arcade. The church, the former St.-Jean-Baptiste, was placed in the European section. A concrete structure defined by vertical thin elements, it was covered by four cross-vaults, open at the sides. Its bell tower referred to North African minarets with its square form and tripartite organization. No provisions were made for a mosque.

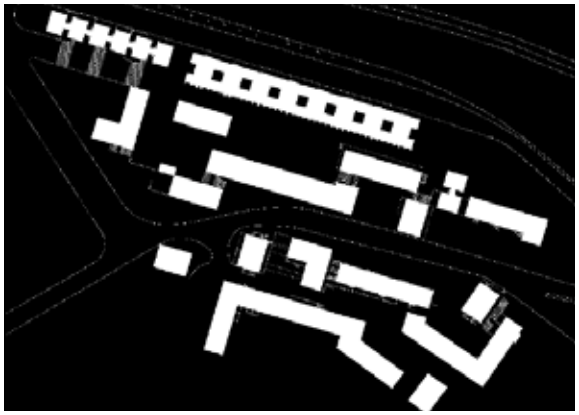


Fig. 4.62 *Master plan.*

Fig. 4.63 *The Market and the upper square.*

Fig. 4.64 *Detail of the building that separates the two squares.*

CLIMAT DE FRANCE, ALGERIA 1955-57 Fernand Pouillon

Climat de France, intended for the population of most marginalized Muslim, and exemplary for various reasons. a complex of public housing that for the first time benefits from such thorough research of quality, highlighted, among other things, from: a) the choice of land, in slope, in a remarkable position on the sea; b) the general articulation set on two orthogonal axes, the one, identified by the series of stairways departing from the located mosque at the top of the composition, which leads to the lower part of the complex, at the end of which a cornering building seems to contain the whole as a dam; the other represented by the large square monumental, of incredible proportions, which is the main stage of the city; c) the breakdown in distinct neighbourhoods, structured in streets and squares dotted with towers; d) the diversity and consistency of structures of the buildings, built always on the alignment of a street or a square in the way to get open perspectives in direction of the sea, defined by buildings linear with or without internal courtyard, from blocks to a courtyard, from connected bodies, by a succession of buildings joined between them framing the view of the sea, or from towers, while the square monumental and equipped with a front exterior closed like a fortified enclosure, and a double internal skin consisting of a brick façade connected to a stone colonnade from a succession of terraces; e) the identification of the routes main by monumental stairways, of doors related to the seala of the single building and of the whole neighbourhood, and hypostyle halls.

Fig. 4.65 ***Master plan***

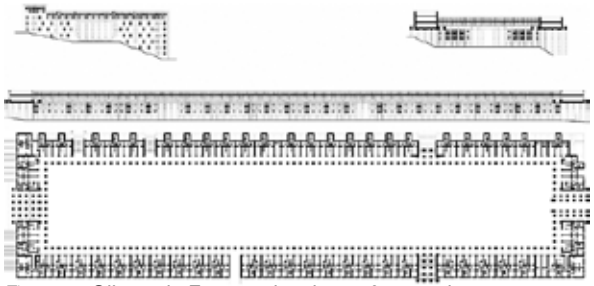


Fig. 4.66 Climat de France, drawings of 200 columns

Fig. 4.67 ***general view of 200 columns***

n the architectural field, especially when the consideration of the design process has to take into account the existing legacy, It became essential to consider the concept of reconstruction which has shifted towards a critical reflection around some design processes involved in the relationship between memory and invention. Therefore, the historical awareness of architecture has always been a fundamental factor to influence architects carrying on the creative process of design. This chapter is aimed at discussing the variety of operative approaces on designing the pre-existing architectural heritage, furthermore, the possible applicable methodology. Considering the reconstruction as a process of transformation in continuity, it becomes necessary to identify the design proposal by taking into account the historical elements. As the Ernesto Nathan Rogers pointed out:

"At times the present represents a continuity without marked divergences from the period which preceded it, and at times the present represents the normal evolution of time and is not marked by conflict.".[1]

Moreover, before addressing the reconstruction projects it is esential to identify the meaning of the word reconstruction, whereby it means an action aimed at the rehabilitation of an architectural artefact in terms of both its physical and symbolic order. However, the intention of reconstruction is not in merely achieving the stylystic and aesthetic unity, but to respect the valid contributioin of all the periods of times. In order to make sure that the restoraton project does not misiterpret the historic facts stored in a building, a careful and analytical decisions on every physical intervention has to be taken. As such, the case studies presented below are categorised in three thematic sections according to the approaches towards the physical interventions, which are Intervention On Buildings, Building Expansion and New Constructions. Even though the driving force may vary, we are interested in the operative methodologies for these interventions and the ability of them to maintain and emphasize the historical value of an artefact by means of various physical interventions.

The first group, Intervention On Buildings, suggests the case studies where the intervention takes blace within the boundaries of the original historic structure - the original perimeter and physical frame is maintained while the new additions and constructions are integrated and occur on the existing structures. For example, we see a framed structure that has been constructed to fit within the original walls of riuned castle but intact to it in the_*sheet 01 Koldighus Castle. This choice proposes both an narrative meaning, a viewer has the possibility to easily perceive the different periods of history that the castle underwent, and a physical protection and maintenance of the riuned medieval walls of the castle. Therefore, the design sticks to having a light and flexible structure which provide higher convertibility and enables a spatial experience of the visitors, guising them through the riuns and the history. As it was to be a museum, it is obvious that the most important exposition object here is the Koldighus Castle itself.*
A similar approach of exhibiting the riuns themselves and allow them to narrate their story was taken

1 *Rogers, E. N. 1958. Esperienza dell'Architettura, 2nd ed., Milano: Skira, pag. 254.*

by Andrea Bruno in his work for Rivoli Castle illustrated in _sheet 02 Rivoli Castle*. Following the concept of "leaving the castle in its unfinished situation of its own" Bruno places the new modern additions in a very delicate and smart manner, very time emphasising the incomplete, the undressed situation: the unfinished atrium is enhanced with new materials, installed the panorama that cuts out from the great brick wall of the Castle, as well as the walkway over the great vault of room, putting the past and the present in a strong dialogue. In Rivoli, the historic building and contemporary forms interact together, while the frescoes dialogue with the work of contemporary artistworks exhibited in a castle.*
A more brave but no less delicate solutions are shown in _sheet 03 Caixa Forum & _sheet 04 Moritzburg Museum*, where the architects placed a new modern large-scale construction within the perimeter of ruined walls of the original building, that serve as the giudeline and rule for these modern additions. In both cases the angular modern geometry of the new structures contrasts with original existing shapes. immediately from the first look to the facade a viewr can read a clear message that is being conveued by the architects - the history goes on. The new fragments added to the buildings continue the process of changes that feature in the story of the edifice.*

A different progressive strategy to intervene an architectural artefact is characterised by the physical expansion of the original structure, the alteration of its initial plot and shape. However, "progressive" does not intend to mean to "abandon" history but to be "transformative", bring the meaning of new ideas, findings and opportunities and to keep alive the historic value, read it, understand it and interpret it.
In fact, history is a part of continuous "process of transitions" throughout different states.
To start with, we address the works of Giorgio Grassi for the Roman Theatre in Sagunto, shown in _sheet 05 Sagunto Theatre*. Here it was essential for the architect to understand the typology of the architectural object to be reconstructed. The impressiveness of Roman architecture is not that much in its decorarive aspect, but constructive: It has clear rules regarding the dimension and composition of individual elements. [2] And Sagunto Theatre is not an exception. The methodology of Grassi can be described as a logical construction of architecture, where the type is studied and classified. The new addition is rectangular clear and straight-forward, but at the same time, contextually justified. The dialogue between old and new is maintained, where the new tries to learn from the old without mimicring it. For instance, observing the layout of the theater shows us tht symmetry plays a crucial role in a Roman architecture: the U-shaped scane fronts, niches, staircases etcetera are positioned in a symmetrical layout. So, the frequent use of symmetry in here is not coincidently but based on the studies of an archetype.*
Another project by Grassi demonstates that a new expansion to the building can transform the latter into a new typology, in particular case of _sheet 06 Abbiategrasso Castle*, a courtyard typology, without lossing the heritage value of the artefact. The completion of the castle with the new body overlooking the tree-lined square - seemed to be the most suitable not only to complete the existing building in an architectural terms, but also for the optimal fun-*

2 Vitruvius (1960), Ten books on architecture. New York: Dover publications, Inc.

ctioning of the town hall offices. The historic essence of the castle is still preserve - the fronts of the old building can still be read in its entirety, even as a whole, from the courtyard through the dense spans that mark the new stone backdrop.
To take a further look to the expansion by adding new volumes to the pre-existing structures we address the project by Aymonino for Paganini Theatre and the project by Byrne for Machado de Castro Museum, discussed in _ sheet 07 Paganini Theatre & _ sheet 08 Machado de Castro Museum *respectively. The new added volumes here, that are positioned on different levels, are visually "pure" and "clear" elements, that let the viewer to easily read the overlaps of historic and modern. The new volumes respect the existing structures and adapt to the exisitng layout of the urban settings: in Paganini Theatre the upper floor corresponds to the same perimeter of the arcade on the ground floor and to the two urban alignments, in Machado de Castro Museum, where the new volumes were meant to correct the rupture of scale between the modern and historic parts of the city.*

Finally, the last group of case studies entitled New Constructions illustrates the substitutive approach by constructing a new building on a historic plot. The priority that is taken by the following cases is not to know everything about the selected historical site, but to be able to sense which aspects of the history are important to maintain the meaningful continuity with the past. For instance, _sheet 09 St. Anna Church shows the project by Schwarz of restoring the destroyed neo-gothic church by the means of building a new one instead of working with the preservation of the existing, but to convey the atmosphere of the original one: the spirit, the volumentric composition that characterised gothic architecture is maintained.
A further step in reinterpreting the past is achieved by Gardella for his project in Genoa. From _sheet 10 Faculty of Architecture we see the plan of the only realised portion of the project, that is placed as a connecting link in a chain which was trimmed by the war. Gardella is convinced that the new city and the old are necessary for each other, that they should integrate and blend in such a way that the traces of the old city and the historical buildings are «exalted, that their qualities are highlighted».[3]
Proposal by Grassi that is also intended to act as the link between old and new is shown in_sheet 11 Bastione di Porta Volta where the new structure, situated between the historic city gates of Milan and the castle, interrupts the post-unitary gutting of the axis via Volta-viale Ceresio and then returns to indicate with its acute angle the shape of the fortification of the walls in the direction of the castle.
The ultimate case study, _sheet 12 Kulhafa Mosque, represents the project for the mosque in Baghdad, which is composed as an assembly of various parts all generated by its main guideline - the minaret. Space and volume, the subject matter of architecture, are matters of perception, not fact. [4]
The project goes in corrspondence with the traditional values of islamic culture but constructs the narrative of the place - the height introduces a new scale

3 Mugnai, F, La giusta distanza dalle cose. Due opere di Ignazio Gardella, Firenze Architettura2017
4 Kanan,M., 1990. Post-Islamic classicism: a visual essay on the architecture of Mohamed Makiya.. 1st ed. 26 Westbourne Grove ,London: Sagi Books, p.45.

missing in the four-part ensemble, brick patterns on the surface of the boundary wall echo the arch forms of the no longer there riwaqs, telling to the viewers that the new scale is no foreigner to the old.

As such, we see that the ways of operating with continuity with the past can be recognised in various architectural examples of both european and islamic contexts. In general, the selected projects aimed to emphasize the salvageable remains, involving them in a conceptual structure that sets the relations between the historical presence and the new intervention not in terms of opposition, but as composed unity, revealing the conglomeration of different times. in spite of different strategies and methodologies in physical treatmeant and construction techniques the notion remains the same - a conceptual gap between the existing and the new, whether in compositions or in structural consolidations, is emphasised, involving them in composing a unique entity.

List of Cases

Architectural Reconstruction

Intervention on Buildings

Exner, Koldighus Castle
Bruno, Rivoli Castle
Herzog & de Meuron, Caixa Forum
Nieto & Sobejano, Moritzburg Museum
Giorgio Grassi, Sagunto theatre

Building Expansion

Giorgio Grassi, Abbiategrasso Castle
Carlo Aymonio,Paganini Theatre
Byrne, Machado de Castro Museum
Maria Schwarz's, St Anna Church

New Constructions

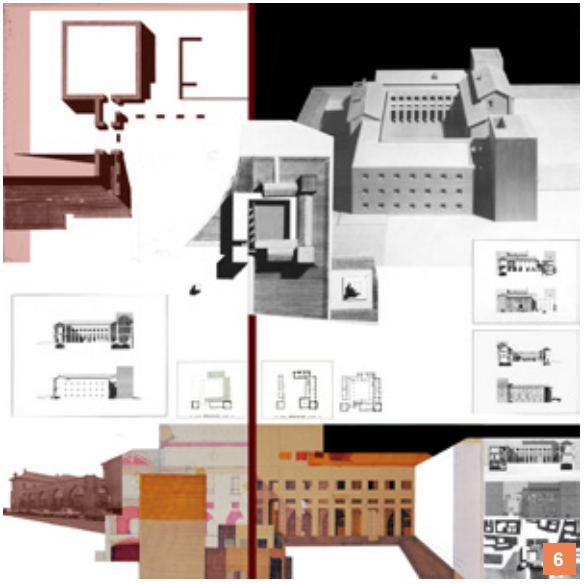
Ignazio Gardella, Faculty of architecture of Genova
Giorgio Grassi, Bastione di porta Volta
Mohamed Makiya, Kulhafa mosque

Fig. 4.68 ***Map locating the case studies.***

187 *Exner, Koldighus Castle*

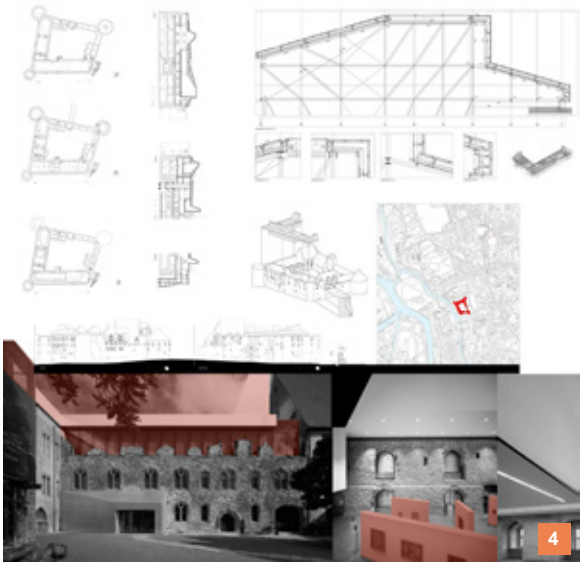
188 *Bruno, Rivoli Castle*

191 *Giorgio Grassi, Sagunto Theatre*

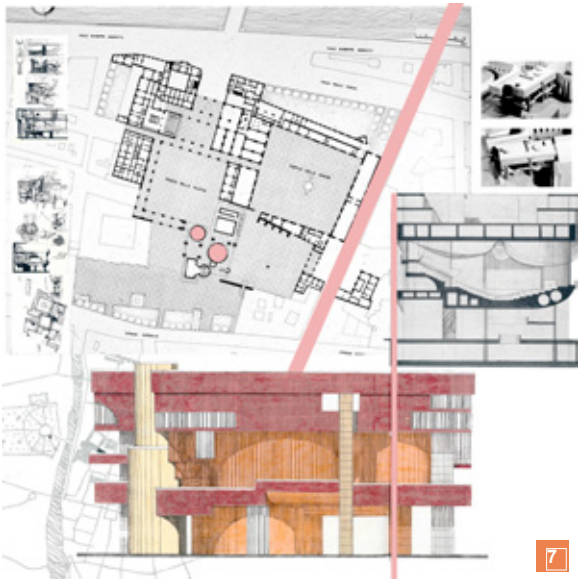


192 *Grassi, Abbiategrasso Castle*

189 Herzog & de Meuron, Caixa Forum

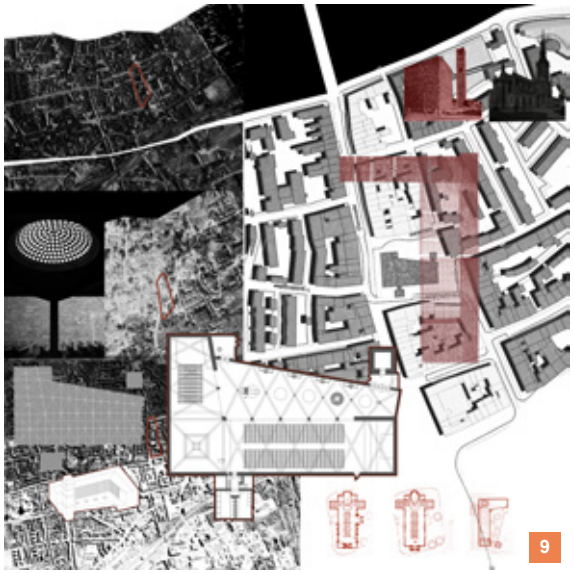


190 Nieto & Sobejano, Moritzburg Museum

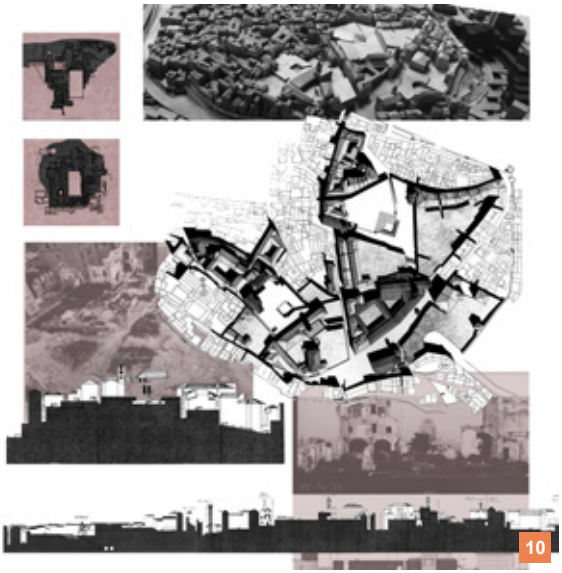


193 Carlo, Paganini Theatre,Parma

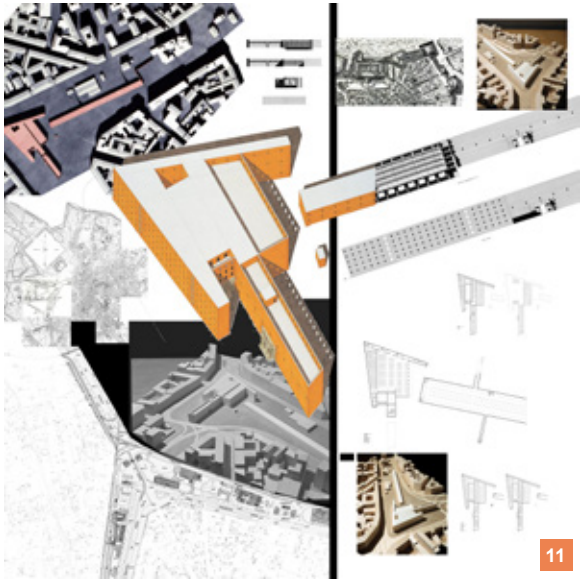
194 Byrne, Machado de Castro Museum



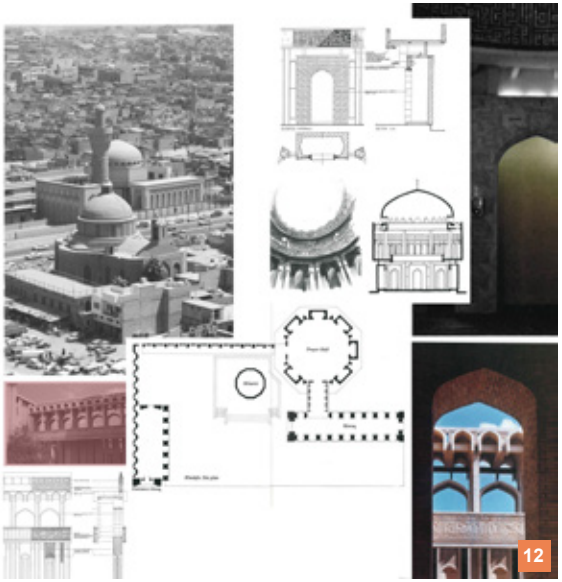
195 *Maria Schwarz's, St Anna Church*



196 *Bruno, Rivoli Castle*



197 *Giorgio Grassi, Bastione di porta Volta*



198 *Kulhafa mosque,Kulhafa mosque*

Intervention on Buildings

KOLDIGHUS CASTLE, JUTLAND, DEMARK
1984 Johannes Exner

Sometimes the historical trace of the preservation and converntion of building provide the strong identity of historic buildings. In this cases, no matter the during the Christian period or gothic period, Koldighus castle all remained its specific trace during the historical changes. And during the conversion of Royal Danish Museum Strategies, architects aimed at a solution that makes conservation serving useful purpose becoming possible by embedding or enclosing the remaining brickwork in a newer construction, a practical renewal of the original brickwork has been done but without any attempt to plaster the brickwork. While for the interior there is a free hand.

Thus the proposal is worked out by protecting the ruins with a simple structure supporting a roof and walls. This is approved by the building committee because the proposal maintains the ruins untouched. The exterior of the castle is being given a general form which corresponding to the time before the fire, whereas the ruins appear mostly in the interior.

As it was to be a museum, it was obvious that the most important exhibit was Koldinghus itself, and the difference historical periods and events would have to be emphasized architecturally in the various parts of the building.

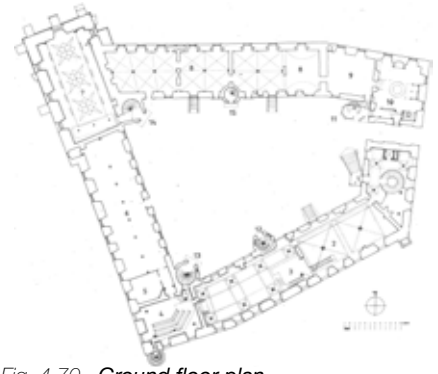


Fig. 4.70 Ground floor plan.

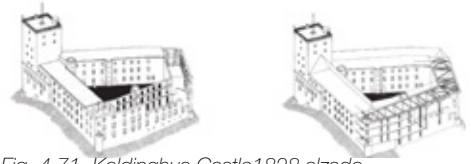


Fig. 4.71 Koldinghus Castle1828 alzado

Fig. 4.72 Intervention on the existing structure.

Fig. 4.73 View from interior seeing the material combination and untouching new structure.

CASTELLO DI RIVOLI,TURIN,ITLAY
1960-present Bruno

The Castle was destroyed during a war and rebuilt by Juvarra during the 18th Century. With time, the Castle went to rack and ruin, and renovation plan started in 1960's, under the direction of Andrea Bruno. Leaded by the concepts of building recovery and reuse, of respect for the building had developed memory and the legacy of the past, of collaboration between public and private that allowed the actual recovery of the artifact. Bruno's work not only revitalized the Castello for the modern age but combined and elevated the designs of his predecessors. The long-unfinished atrium was not completed, but enhanced, introducing visitors to the structure's layered history before they even pass through the museum itself.

The goal of Bruno during this restoration plan, was to leave the castle as unfinished as Juvarra left it, leave the stones as if there were stuck in time, use materials that could give the impression of « reversibility » in order not to distinguish the actual man workshop from the former one. his restoration is a rare case of one giving back to the nuclei, it's original goal: an art gallery. The goal declared by Bruno was to "bring the building back to the unfinished situation of its own of the unfinished construction site of Juvarra, so that everything belonging to the past time was kept in his historical and artistic authenticity ". For instance, an elevator has been placed where a staircase was planned to be but never put under construction.

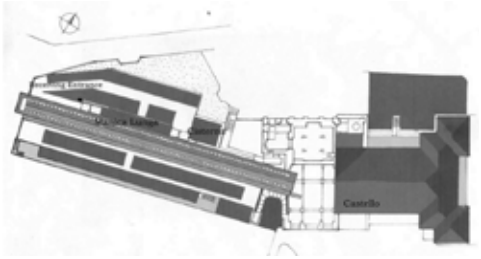


Fig. 4.74 ***Plan.***

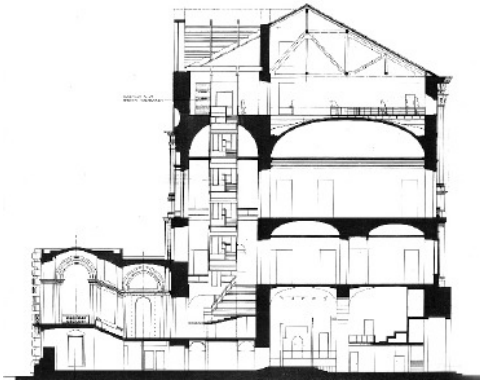


Fig. 4.75 ***Section.***

Fig. 4.75 ***Exterior intervention.***

CAIXA FORUM , MADRID, SPAIN
2001 Herzog & de Meuron

The CaixaForum Madrid building is at Mediodía electric power station, which has been renovated and extended. The principal architectural aim was to create a new public space. Therefore, the former gas station, close to the building, disappears, and the lower supporting wall is eliminated, thereby the building gives the impression of being floating on air. Herzog & de Meuron designed a largely new 7-story building, retaining only the brick facades of the existing building. In order to conceive and insert the new architectural components of the CaixaForum, the separation and removal of the base parts of the building no longer needed initiated. The removal of the base of the building left a covered plaza under the brick shell, which now appears to float above the street level. This sheltered space under the CaixaForum offers shade to visitors. This allowed to solve the problem of the narrowness of the street and the placement.

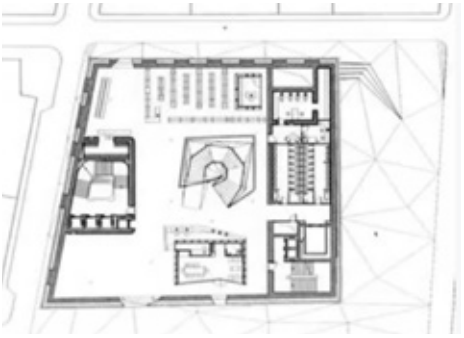


Fig. 4.76 ***St. Malo before the destruction.***

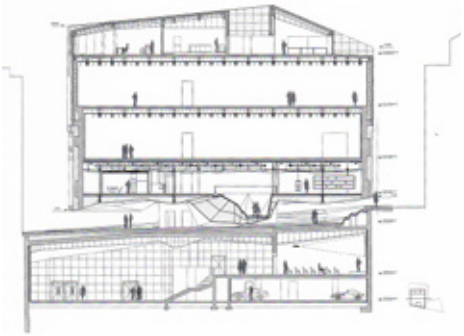


Fig. 4.77 ***Section showing the circulation for additional volume.***

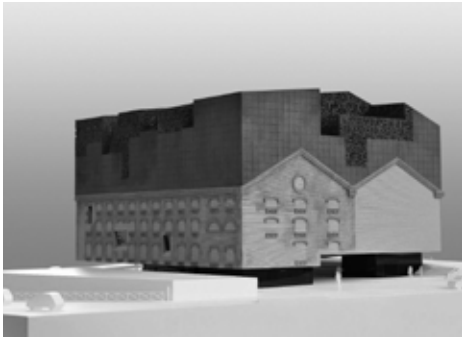


Fig. 4.78 ***Relationship of existing building and intervention***

Moritzburg Museum, HALLE, GERMANY
2008 Nieto Sobejano Arquitectos

The ancient castle of Moritzburg in the city of Halle is a very valuable example of Gothic military architecture, typical of Germany at the end of the 15th century. Its turbulent history has inevitably been reflected in the many alternations it has undergone over the years. But despite these, the building still keeps the original structure of its main architectural features: the surrounding wall, three of the four round towers at the corners and the central courtyard.The partial destruction of the north and west wings in the 17th century during the Thirty Years War left the castle with the image of a romantic ruin which it has kept over the centuries to today. Except for a stillborn project by Karl Friedrich Schinkel in 1828, until now no integral work has been planned to alter and enlarge the ancient ruin for the art museum housed there since 1904. A very notable collection of modern art - mainly of German Expressionism - that includes works painted by Lyonel Feininger in the city of Halle has now been enlarged with the Gerlinger donation, one of the most valuable private collections of the Die Brcke Expressionist group.
Nieto Sobejano Arquitectos's design for enlargement is based on a single and clear architectural idea. It involves a new roof, conceived as a large folded platform, which rises and breaks to allow natural light to enter, and from which the new exhibition areas hang.

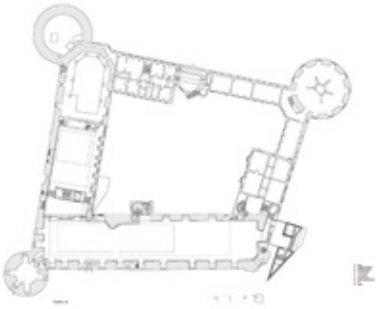


Fig. 4.79 ***Ground floor plan***

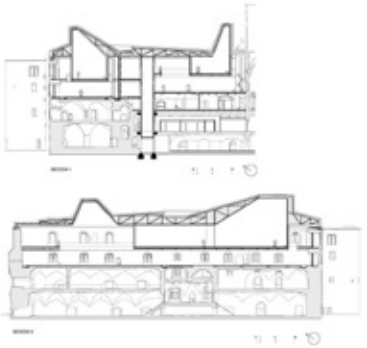


Fig. 4.80 ***Munster 1945 after the destruction***

Fig. 4.81 ***View showing the dialogue with the historical elements***

Building Expansion

SAGUNTO THEATRE, VALENCIA, SPAIN
1985 Giorgio Grassi

When architects are trying to consider the design approach to the historical building, there are several things need to be taken into account, for example, evaluate the preservation value, define weather is should be conserver or restored, also the limit in the physical damage which might got the value for change some part. In Sagunto theatre, to consolidate the remains; to demolish the additions from the twentieth century became Grassi's first concern. Attempting to enforce the verdict, however, caused a new problem: how to eliminate all the added elements without destroying the original historic fabric?

The creators of the project argued three specific points to defend their work:
"1) That a large number of interventions had taken place at the monument since 1930. Grassi and Portaceli suggested that between 80% and 90% of the building was already reconstructed and 'false'. The estimate of 80–90% is probably exaggerated, while the perception of 'falseness' is perhaps accent tufted. because most of the original fabric was not visible behind the restorations.
2) The importance of the use of the building: the project intended to return the space to the citizens.
3) Typology: Grassi argued that Roman theatres were dissimilar to Greek theatres, and the image of Sagunto was confused because of its appearance as a Greek structure." According to Grassi it was 'un teatro alla greca [a Greek shape Theatre]'.

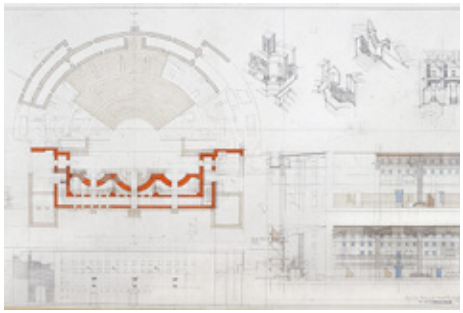


Fig. 4.82 *Sketch by Grassi.*

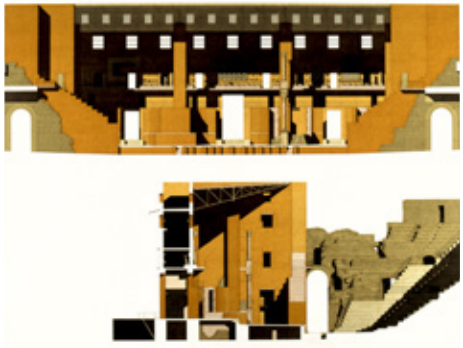


Fig. 4.83 *Section and Elevations.*

Fig. 4.84 *View from theatre.*

ABBIATEGRASSO CASTLE, MILAN, ITLAY
1970 Giorgio Grassi

Beyond a stylistic analysis in the strict sense, with respect for example to the evidence we have of Visconti architecture in the Duchy of Milan, the monumental value of the castle of Abbiategrasso can be traced, first of all, to its civil significance and then its location with respect to the historic center of the city and the other monuments that it preserves. Lastly, the artistic value of the monument remains because, if on the one hand it is indisputable, on the other it cannot be denied that the markedly viscount character of the work is to be attributed in the first place to the very recent renovations, which mainly concern the large terracotta mullioned windows on the ground floor. But just as there were then valid reasons for such a decisive intervention.

The courtyard typology - and therefore the completion of it with the new body overlooking the tree-lined square - seemed to be the most suitable not only to complete the existing building architecturally, but also for the optimal functioning of the town hall offices and relations. that bind the different divisions in which it is organized. In fact, the arcade on the ground floor corresponds to an equal perimeter path covered on the upper floor; this is overlooked by the various divisions of the municipal offices, the secretarial rooms, the mayor, the councilors and the council etc.

It was possible to realize this double path by raising a second facade, in stone and double order, placed in front of the fronts of the old building.

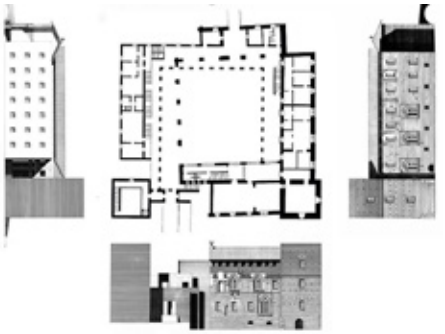


Fig. 4.85 *Sections and plan.*

Fig. 4.86 *Sketch of composition idea.*

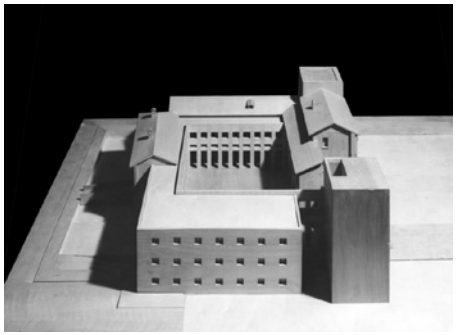


Fig. 4.87 *Model.*

PAGANINI THEATRE,PARMA, ITALY

Competition opened in 1964 with the aim of recovering the Reinach theater, later Paganini, which was destroyed on 13 May 1944 following a bombing.

The development of the project follows logical phases that start from the urban study of the pre-existing city up to the reconstruction of the two public squares (Piazza della Pilotta, Cortile delle Vasche) and a theater that performs several functions, from opera and comedy to various shows. The project was born on two alignments: Pilotta and Prefettura, in whose superimposition there is the theater, several rooms and a picture gallery.

The areas are developed on different heights in order to create a continuous path between the various public spaces, similar to that obtained on the ground floor.

The volumes of the building were designed structurally and visually as "pure" elements, easily reading the successive overlaps on the façade.in which it is organized. In fact, the arcade on the ground floor corresponds to an equal perimeter path covered on the upper floor; this is overlooked by the various divisions of the municipal offices, the secretarial rooms, the mayor, the councilors and the council etc. It was possible to realize this double path by raising a second facade, in stone and double order, placed in front of the fronts of the old building. The main purpose of this doubling is to give the internal square.

Fig. 4.88 **Plan.**

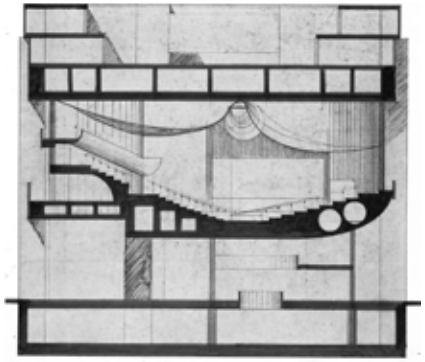


Fig. 4.89 **Sketch of the section.**

Fig. 4.90 **Model showing the volumetric idea.**

MACHADO DE CASTRO MUSEUM, COIMBRA, PORTUGAL
2004 Byrne

The National Museum Machado de Castro (Museu Nacional de Machado de Castro) is an art museum in Coimbra, Portugal, named after the renowned Portuguese sculptor Joaquim Machado de Castro. It first opened in 1913 and its latest renovation (2004-2012), which included the addition of a new building, was awarded the Piranesi/Prix de Rome Prize 2014.

The National Museum Machado de Castro is a place of intense sedimentation and historical superimposition over two millennia where lies the Roman Forum Aemininum, the Romanesque church of S. Jo de Almedina, the gallery of Terzi.
The lucid acceptance of contemporary criticism of these sequences, whence the constant mingling of "container" and "content", is the primary feature of the project in order to correct the rupture of scale and historical context caused by random juxtapositions: two elemental volumes define a flooded neutral space, illuminated by diffuse light to show the temporal sequence of the fragments of the 18th century apse of the Tesoureiro Chapel.

The gallery occupies the entire volume of the trapezoidal shape, rising to four levels and creating a platform (the terrace of the restaurant) where it lays the rectangular volume of transparent and translucent glass that at night becomes a sort of lantern light. The lower volume adapts to the existing layout of the streets, the stone cladding is not mimetic, but consistent with the solid matter of the surrounding buildings

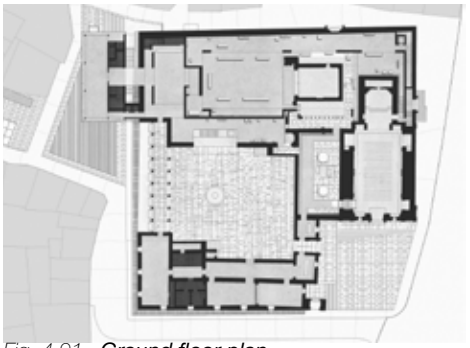


Fig. 4.91 ***Ground floor plan.***

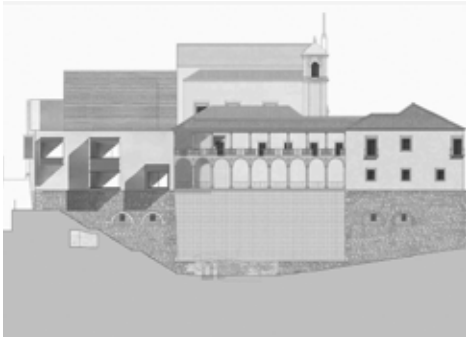


Fig. 4.92 ***South elevation.***

Fig. 4.93 ***Street view.***

ST.ANNA CHURCH, DUREN, GERMANY
1951 R. Schwarz

According to Maria Schwarz's, the conceptual task for Schwarz was not the building of a new church.

3 attempts:
So plan A was approximate reconstruction in concrete which attempted to create a continuity with the old building by planning a basilic-like space and a hall that were based on the body and style of the old church, B was a reduced and altered revision of A. Both of them the pillars were set on the old foundations, and the position and size of the chapel that had housed the relic of the head of St. Anna was copied exactly.

While the failure of conserve it as it was according to architect's words: it was no longer possible to reproduce the old building's harmonious proportions. The dimension of concrete pillars created a completely different picture. Plan C, Architect's subjective force. The consisted of walls became the triggering idea which lead to the place of a block-like ground plan which still somehow followiang the old plan's trace. Responding to the present: They didn't reconstruct the neo-Gothic, not only because the material means of doing so were not available, but also because they aware that they should treat the spirit of gothic in completely different way, architecturally. Also MS contrasted the use of stone there, and its static, archaic quality of construction and spatial effect, with the use of steel and concrete. Therefore these materials express forces in compression and tension, so that a different atmosphere is created.

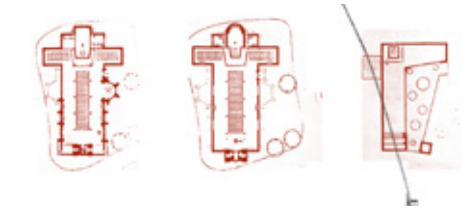


fig 4.95 3 attempts

fig 4.96 The orientation of the church

fig 4.97 left: old church, right: new church

fig 4.98 Interior view seeing the cupola

FACULTY OF ARCHITECTURE OF GENOVA, ITALY
1960s Ignazio Gardella

In the late Sixties Ignazio Gardella designed a university citadel in the ancient heart of Genoa which had been transfigured by the bombings, transporting to the urban scale the sympathetic dialogue between ancient and new that characterizes his work. This article explores the compositional procedures of the architect at work on the ancient city and traces the intimate connection between the archetype of the Palace of Knossos and the Genoese project. Among collapsed cupolas, fragments of porticos and bell towers standing out above the ruins of the most ancient center of Genoa, René Clément's film camera follows the black and white fresco, often in controlee, of the post-war period in the film Le mura di Malapaga (1949). In the movie, a precarious population build its everyday life by appropriating the luxury spaces which survived on the hill of Castello 2, opened by World War II bombings and overhanging the landscape of the 'carugi'. Twenty years later, Ignazio Gardella paid multiple visits to the same places in order to grasp the 'nature' of the place in the project, on the occasion of the drafting of the Detailed Urban Plan for San Donato and San Silvestro, with the double aim of providing the University of Genoa with new spaces and addressing the reconstruction of the ancient city centre. The city that emerges from the report of Gardella's surveys (1969-70) is a far cry from the Neorealist hues, transformed by the gaze of the architect. The photos by Gardella and his collaborators are operative instruments for the project.

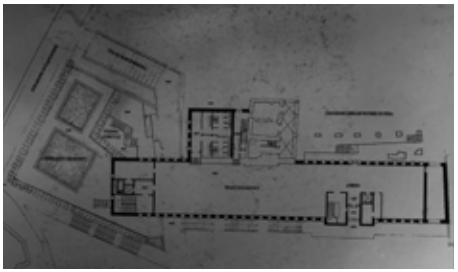


Fig. 4.99 *Plan at level +44.20.*

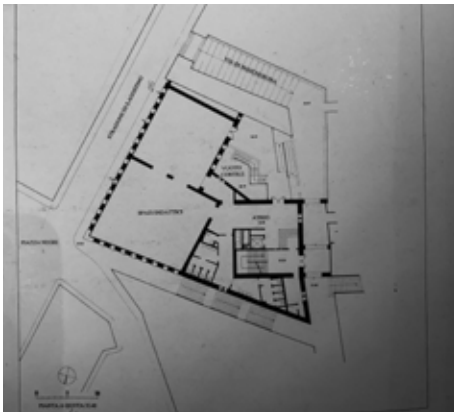


Fig. 4.100 *Plan at level +32.40.*

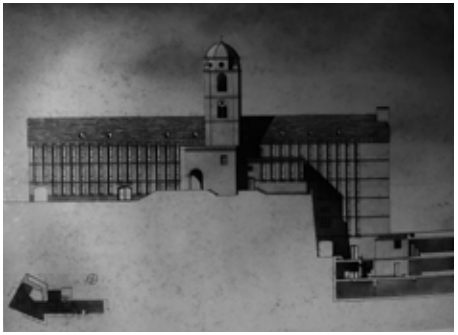


Fig. 4.101 *South elevation.*

BASTIONE DI PORTA VOLTA, MILAN, ITALY
1984 Giorgio Grassi

This project starts from the hypothesis, already advanced by the public administration, of transferring the Sormani municipal library to the business center area.

As in the libraries for the Polytechnic and the Valencia Campus, it was desired that the institutional task emerged first of all in the construction of the architectural figure of the building; we wanted the library to be immediately recognizable to the visitor in its specific quality, is that the architecturally dominant element were the books themselves. Hence the choice of placing the book deposit at the center of the composition and at the center of this, at full height, the atrium, the card room! etc., that is, the main element of distribution of the different parts, so that both the destination of the building and the quantity / quality of what it is intended to keep was immediately perceptible. Here too, therefore, a building with a roughly central plan, developed around a full-height atrium, literally covered with books and surrounded, especially on the long sides, by the actual deposit. Except that, in this case, the planimetric conditioning imposed by the geometry of the old bulwark determined a particular adaptation of the scheme: an adaptation that also conforms to the particular conditions of use and management of a public library (the large reading room, the sections by subject, loan conditions, ancillary services In this preliminary project, the building is expected to have a mixed structure and perimeter walls of exposed brick.

Fig. 4.102 Site plan.

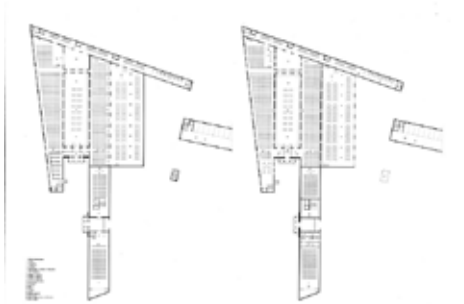


Fig. 4.103 Ground floor plan.

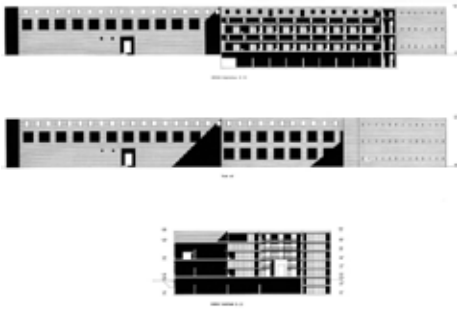


Fig. 4.104 Section and elevations.

KULHAFA MOSQUE, BAGHDAD, IRAQ
1960-63 Mohamed Makiya

Seen as a whole, the building is not one mass. It does not convey the feeling of some singular thing, welded together to give the impression of a gigantic powerful organism. The Khulafa Mosque is a composed assembly of parts. Parcelled out within the site, the composition always returns to its focus and generating principle, the minaret. New objects are placed and sized with reference to it. The site is too small for a dome to be 'sat upon' a massive rectangular building in the usual way. Therefore, the right-sized dome (in relation to the minaret) becomes a whole building unto itself. Symbol takes over from function. Now the dome can become larger than it would otherwise have been. The structural material is concrete, proudly expressed in the columns and canti levered ring beam supporting the dome. Recessing the ground-floor perimeter of the prayer hall makes the usable interior even smaller, but what counts is the contrast with the now expanding sky-like dome. Space and volume, the subject matter of architecture, are matters of perception, not fact. The dome is clad in yellow brick, matching that of the cupola of the minaret. When the Awqaf complained that the dome was covered in Christian crosses which looked like measles, the architect pointed out that he had simply copied the pattern from the 1,000-year-old cupola. Sixteen years later I lost a simila rgument over the Kuwait State Mosque to an official of the Ministry of Public Works. Times had changed: in 1963 the Awqaf had backed down on the dome.

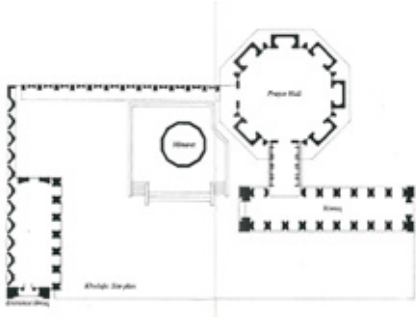


Fig. 4.105 *Khulafa Mosque, site plan.*

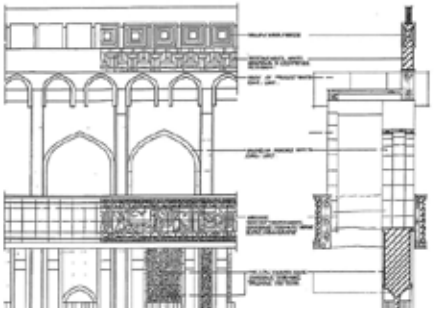


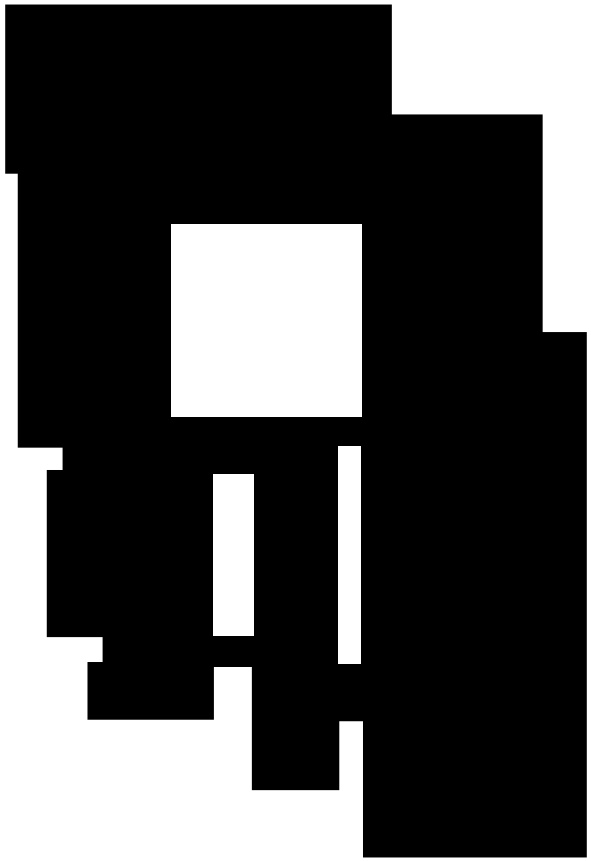
Fig. 4.106 *A symphony in brickwork.*

Fig. 4.107 *Khulafa Mosque, 1963: Overlooking old Baghdad in the 1960s, with the Latin Church in the foreground.*

PROJECT PROPOSAL

MOSUL

EDUCATIONAL CENTER



Right to the city
Constructing Society

The cities have within their network a wide variety of spaces that from their area contribute and generate an influence on the city and its inhabitants. In the end, the definition of a city is the sum of all these collective spaces, which often based on their quality, inclusivity and democratization can come to define the quality that a city can have and thus exercise the “right to the city”, defined by Henri Lefebvre, as a right to urban life and democratic decision. It is from this, that we stop to think, that pieces of these can, at a certain point, become more relevant in a community, or at least assume more responsibilities within urban life. Road systems, green spaces, housing constructions, or collective facilities come to have great relevance within the processes of urban development. It is the latter, the public facilities, which, in addition to becoming symbols for the architecture of the city and looking after the basic needs of the community, are centers that represent principles of the collective consciousness of cities.

Agustín Hernández (2000), a Mexican architect and urban planner, understood facilities as “Those endowments that the community understands as essential for the functioning of the social structure and whose coverage must be guaranteedcollectively” (p.88), seeing it as an element that can provide essential services in the community, while at the same time guaranteeing the democratization of quality of life in society. Interpreting in turn the quality of these can be measured based on four fundamental principles. First of all, it should not be based specifically as a business, seeking to generate economic resources in the short term. Precisely because its existence comes from generating a public good, covering basic needs that not all citizens could afford (pay). Second, this element must be understood as a collective space, being accessible to all individuals regardless of their social and cultural groups. Third, its distribution within the city must be homogeneous, and strategic within the dynamics and key points of the city, appearing as an efficient support in society, solving its current and new needs, guaranteeing equity. And finally, as a fourth principle, its flexibility must be capable of responding promptly to the changing needs of its users and inhabitants. It is this efficiency, which in turn reafirms the existence and quality of a collective space.

Fig. 5.01 SESC 24 de Maio, Ciro Miguel, 2019

An example that has had a great impact on the Brazilian community is the creation of the Social Service of Commerce (SESC), a non-profit institution that carries out its activities in the areas of education, health, culture, leisure and assistance. To guarantee and ensure high coverage within the cities in which it carries out its work, it is essential that the architecture and composition of these spaces facilitate the development of said activities, while, in turn, providing a space of comfort and accessible to its users. As an example of one of the buildings that seeks to materialize the values of SESC, we can see the project Sesc 24 de Maio (2017), São Paulo, by Paulo Mendes da Rocha. This project was responsible for unifying, in a building in a state of abandonment, a variety of socio-educational, cultural, sports and even public health activities, in the heart of the city. The creation of such diverse uses, in such a complex area, has generated a renewal in the sector, providing the community with a unified meeting point, impacting its surroundings, and being fully accessible. Having the opportunity to rise in height, it distributes a series of services in these, being able, in turn, to give the first floor the freedom to be free, giving the opportunity to urban life to enter the building. As a project, it was sought that the main objective was to show what future life in the metropolis could be, articulating a variety of basic and necessary services, being accessible to the city.

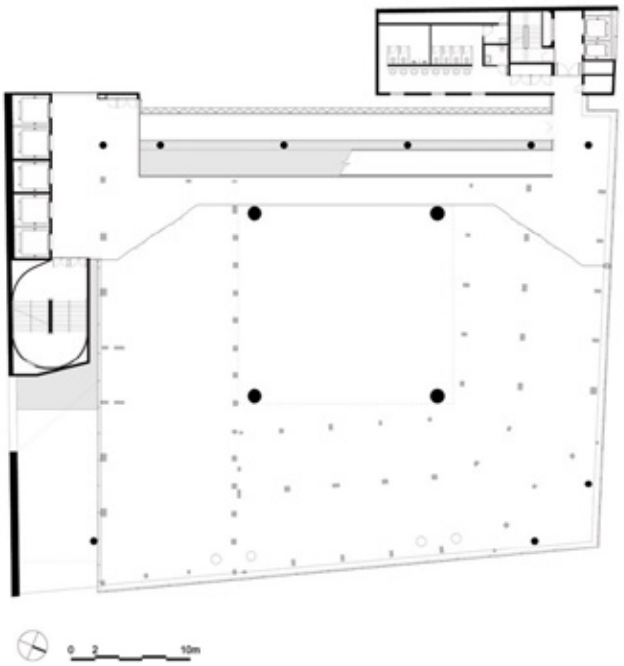


Fig. 5.02 5th floor plan Sesc 24, Paulo Mendes da Rocha + MMBB, 2017

Fig. 5.03 Sesc 24 de Maio, Nelson Kon, 2017

Fig. 5.04 Sesc 24 de Maio, Nelson Kon, 2017

The understanding of this space as part of the community to be worked on, in order to generate an effective integration with its surroundings, the city. This integration can happen in a better way, as long as there are premises in the planning and design process, such as its status as an “object” in the city, as a result of quality and architectural study or differences in magnitude or formality compared to the set of surrounding buildings, which allows it to become a symbol that makes it possible to recognize and situate itself in the city, providing a satisfactory sensation, originating from the feeling of security, but also consolidating a sense of belonging, identity and rootedness, allowing it to participate in the construction of city and citizenship as a symbol. This construction is equally possible from planning, and as previously emphasized, strategically equitable distribution in the city. As elements that are distributed and pose part of a city, they must have a quality in their spatiality, achieved by the architect, that allows citizens to receive an accessible and quality service through their floors. Starting from this, they are elements that have the responsibility of responding to a series of basic uses of habitability inside, searching, causing the least number of conflicts with the environment, respecting neighbors and public space.The quality of these approaches in the process of developing a facility project is fundamental because, in the long run, the sum of the properties of these elements is what leads to guaranteeing the right to the city. It is through architecture that this right to the city, its construction, and citizenship can be generated, starting from the design and adaptation of facilities.

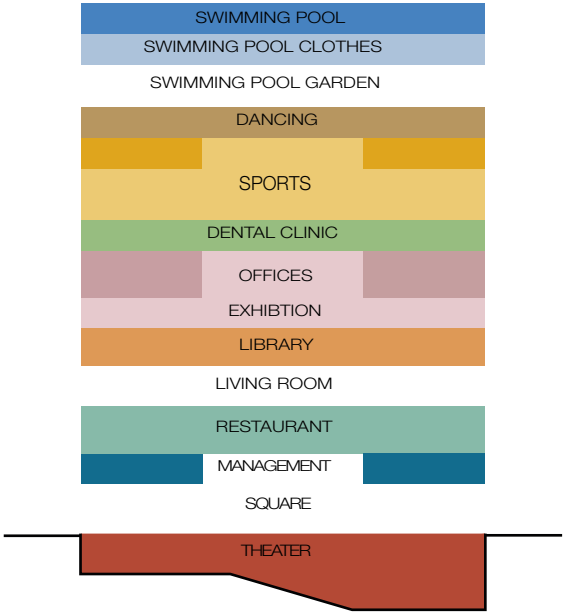


Fig. 5.05 Program diagram, Paulo Mendes da Rocha + MMBB, 2017

Educated City
Building through education

The capacity of a population to project and build its public complexes with quality and equality, being accessible to all its members, reflects the degree of civic culture of this society. It is difficult to contemplate a social construction, if it does not show effects on the space, and it is in this that the planning and generation of educational spaces, whether they are schools, educational centers, gardens, or universities, show the citizen culture of a society. Understanding the great capacity for consistency, influence, and public constitution (among others), that educational actions have, makes this class of elements excellent public spaces, fulfilling and guaranteeing in a certain way the right to the city that is needed by the society. Therefore, the educational building is constituted as a fundamental part of the broader system within the city, in charge of bringing together relations of a society, and therefore it is the ultimate goal of the physical planning of the city. In this way, the educational equipment is established, through these criteria, with the teaching staff, their pedagogy, and with the urban environment, where the physical space becomes the main tool for the construction of the educational service.A space whose ultimate goal is construction through education guarantees collective knowledge in society. This institutionalization of education generates a way of thinking and a way of acting at the same time collective, directing, and grouping citizens. Generating spaces for education becomes a constructive act of training. Build knowledge, coexistence, production, academic, cultural, with a search to build freedom. These properties of education strongly depend on how it materializes in a city. It must be influencing citizens and be easily accessible in order to have an impact and credibility on citizens.The consolidation of educational facilities can in turn develop an urban and social contribution, being used to promote development in certain areas, optimizing the existing environment, through the integration of elements with complementary uses such as sports spaces, libraries, work areas, etc. . Also, be part of urban renewal, guaranteeing an improvement in the sector, born as an alternative to improve the existing infrastructure, guaranteeing the necessary and established basic standards.

Fig. 5.06 Qatar National Library, DLS Estudio, 2018

An educational building acts as an articulator of social development, taking into account that as a common good, it seeks to promote actions that guarantee the democratization of opportunities. The location and uses must respond to this principle. Its location must be established based on demand, regarding its coverage and services required in the city. Thus, several levels of intervention are proposed, in which the project becomes integrated, and responds with a variety of services, on the scale that is needed. Adding to this, the coupling of different social services for the use of the community (libraries, auditoriums, sports areas, etc.), generates a boost for community development. Taking into account what has been said previously, we can identify a building in the city of Bogotá that, in search of generating and guaranteeing the construction of education in it, responds and brings to light what was previously said. The Virgilio Barco Public Library (2001), designed by the architect Rogelio Salmona, arises as a search by the mayor's office to generate a network of public libraries, which would have the capacity to guarantee access to them by all the communities of Bogota. In addition, this project was intended to promote the generation, recovery and sustainability of public space, improving it and dignifying living conditions in the city. The project begins by settling in a lot classified as a waste dump, changing the face of the sector from the beginning and opening the doors to it to contribute to the urban space of the city. As a program, the building is based on the public library, but annexed to it, a series of spaces focused on learning are generated, from study and reading rooms, newspaper libraries, an auditorium, music rooms, and as elements that reinforce these interactions are generated outside, a cafeteria theater and exhibition halls.

"Transforming public space into a place for reading in Bogotá has been our missionary commitment from the Ministry of Culture.… We seek to make all Bogota citizens creators and readers with a commitment"

Nicolás Montero, secretario de Cultura, Recreación y Deporte. (2022)

The Virgilio Barco Library undoubtedly became a catalyst for the city at an educational, social and urban level, developing educational activities for any public, based on the right to the city and thus promoting cultural inclusion.

Fig. 5.07 Virgilio Barco Library, BibloRed, 2022

Due to its collective nature, the school building is a fundamental piece of urban and social development, which is why it must be conceived as part of a larger system, which is the city. It must recognize its relevance as a promoter of changes towards a fairer and more equitable society, and at the same time as an element that generates activity and permanent impacts. This is a vital first step to begin the construction of actions that contribute to the improvement of urban conditions and the quality of life of citizens, finally consolidating itself as an instrument and symbol of coexistence and social inclusion.

Fig. 5.08 Virgilio Barco Library, Simon Bosch, 2001

Jamia
Islam & knowledge

"Seeking knowledge is a duty upon every Muslim male and female."
(Prophet Muhammad, Sunnah Ibn Majah, 224)

There is no other religion or institution that places as much importance on education as Islam. In this, the search for knowledge is a duty and a right for all its followers, to the point of being considered a sin not to be in constant learning. This duty does not fall solely on a certain social class or gender within this religion, it is an obligation for men, women, rich, poor, old or young. It is based on this premise that many civilizations over the years have been created and developed.In light of the verses of the Koran (Fundamental Book of the Muslim religion) where most of the testimonies of Muhammad, the preacher sent by god on Islam religion, are focused on knowledge (Ilm). Muslim rulers have given considerable support to education and its institutions, insisting that every Muslim have access to it. All this intention to generate knowledge and spread it to leave its mark on their societies and cities, starts from their temples, the Mosques.As a society, the Muslim community had its origins as a nomadic Arab culture, made up of various groups, with various authorities and clans. Being a society so divided into tribes, conflicts and power struggles within this nomadic life were constant. It is there, when Islam arrives as a dogma to unify and help the nomads to stop fighting each other, and start fighting together as a people. As a result of this, the development of a collective spirit, social integration needs and the need for elements such as water, and the understanding of agriculture, led these tribes to become sedentary. With a series of adjacent and overlapping spaces, responding to this still notable delimitation and division between tribes, it was possible to define what would be the territorial structure of a traditional Islamic city. These small spaces controlled and managed by these small tribes would be known as KHITTA, where there was autonomy and freedom when making decisions. Understand that each of the territories, interior spaces, streets, blocks (rhiba), were owned and controlled by their users, with no possibility of external intervention, so that their structure changed over time, based on the needs of their users. members, without following any order or common structure.groups, with various authorities and clans. Being a society so

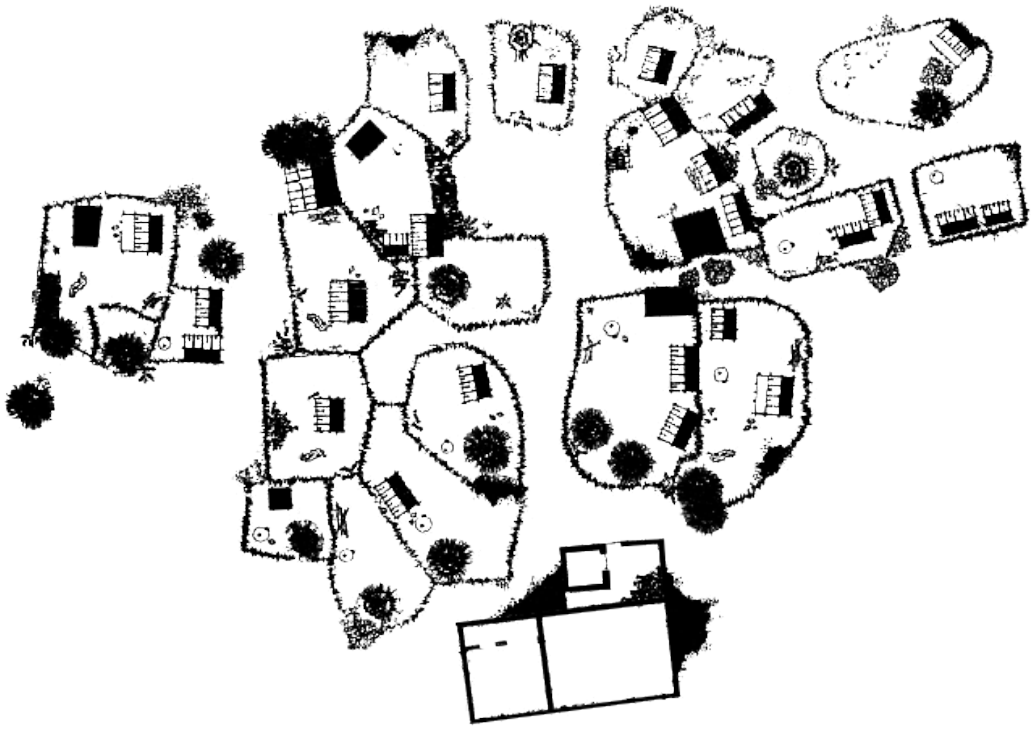
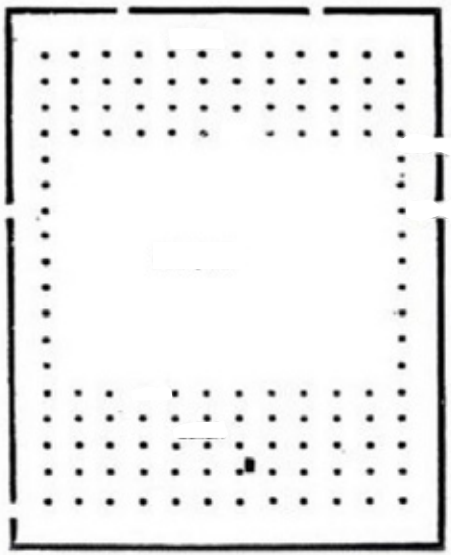


Fig. 5.09 Typical semi-sedentary settlement in the Atlas mountains, composed of hedges enclosing individual spaces, which are filled with simple huts. From Urban Form in the Arab World, Stefan Bianca, 2000

divided into tribes, conflicts and power struggles within this nomadic life were constant. It is there, when Islam arrives as a dogma to unify and help the nomads to stop fighting each other, and start fighting together as a people. As a result of this, the development of a collective spirit, social integration needs and the need for elements such as water, and the understanding of agriculture, led these tribes to become sedentary. With a series of adjacent and overlapping spaces, responding to this still notable delimitation and division between tribes, it was possible to define what would be the territorial structure of a traditional Islamic city. These small spaces controlled and managed by these small tribes would be known as KHITTA, where there was autonomy and freedom when making decisions. Understand that each of the territories, interior spaces, streets, blocks (rhiba), were owned and controlled by their users, with no possibility

of external intervention, so that their structure changed over time, based on the needs of their users. members, without following any order or common structure.In order to guarantee stability and order within the tribes, demarcations and structuring of central communal spaces were generated, which as elements would provide the service of integration, covering political and religious issues. These new constructions, known as “Masdjid”, would have as a principle to respond to the religious bases of Islam, facing Mecca, without having a formal typology, only seeking to guarantee habitability for its users. Each tribe defined the use and management that was given to this space, seeking to satisfy their needs, generating in turn effects in their environment, either with the democratic order of the Khitta or formal effects, such as the encouragement of trade in their environment. It was this space within the Islamic civilization, which served as the basis and anticipated what years later would be formalized with mosques.for its users. Each tribe defined the use and management that was given to this space, seeking to satisfy their needs, generating in turn effects in their environment, either with the democratic order of the Khitta or formal effects, such as the encouragement of trade in their environment. It was this space within the Islamic civilization, which served as the basis and anticipated what years later would be formalized with mosques.Mosques have become a great influence in Islamic civilization over the years, becoming the main space for socialization. A place that focused on its function of religion, but was adapted and served as more utilities. His role in education was enormous, when it came to spreading it in the Muslim world and abroad. Associating mosques with education, knowledge and culture has been one of its main constants over the years, becoming the school or any educational center, an annex to this religious temple. From its first formalizations, this can be made evident, just look at the first temple built, Al-Masjid An-Nabawi. Construction carried out in the year 622 BC, in the city of Medina (Saudi Arabia), by the hand of the Holy Prophet, Muhammad. Having as a base, among so many elements, the Roman structure, and its basilicas, which through a flexible and versatile space, the religious, political and social relations functions were gathered in a single space. The construction of this began from a central courtyard of great proportions, surrounded by porticoes on three sides of its perimeter and with a hall of columns, in turn being influenced by the markets of the Roman basilicas. In principle, it was only sought to guarantee a covered prayer area, such as a courtroom.



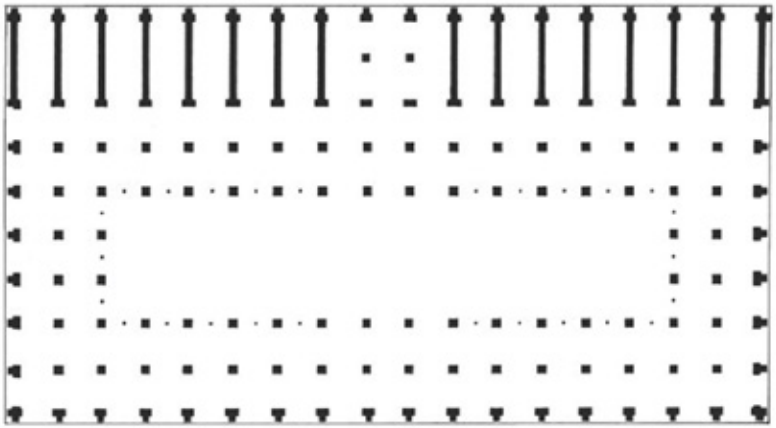


Fig. 5.10 Masjid Nabawi Third Expansio Plan. From hajj & hplanner, 2019

Fig. 5.11 Basílica Júlia Argan. From A origem provincial do Fórum de Trajano,2003

Fig. 5.12 London Roman Basilica and Forum. From Historic Uk, 2022

Fig. 5.13 Masjid Nabawi Plan. From hajj & hplanner, 2019

Existing relationship between the morphology proposed by the structure of the Roman city and the creation of mosques and their transformation since the first construction of Mohammed.

Since its construction, the need to generate and expand its capabilities has not stopped. New spaces were emerging, beginning with lodging spaces for its workers, expansions of its areas and meditation sites, as a result of the great growth of the city and believers of Islam. These expansions and impact generated by this temple, encourage the learning and study of the fundamental faith of Islam by many, understanding this space as a social center of constant learning. With the argument of learning, we sought to know the world around us, and understand it based on the concept that man was created only to know.

"Whoever follows a path in pursuit of knowledge, Allah will make easy fro him a path to paradise. No people gather in one of the houses of Allah, reciting the Book of Allah and teaching it to one another, but the angels will surround them, tranquility will descend upon them, mercy will envelop them and Allah will mention them to those who are with Him. And whoever is hindered because of his bad deeds, his lineage will be of no avail to him.'"

(Prophet Muhammad, Sunnah Ibn Majah, 225)

Words of Muhammad, taken from the book of Sunnah (which with the Koran are the two primary sources of God's revelation), which serve to generate motivation in the Islamic people, trying to encourage study in their faithful, while at the same time there was a search to provide this space (mosques), which was constantly expanding, with all the necessary resources to facilitate learning. Learning that was sought, as an effect of relationships in workshops, debates, forums, which in a certain way strengthened the Muslim community, while they were enlightened.

Fig. 5.14 Several groups of theologians many seated some writing in the courtyard of the al-Azhar Mosque, From Age Fotostock, 1887.

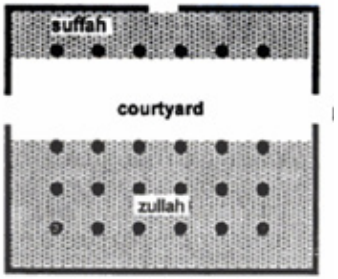


Fig. 5.15 Masjid Nabawi First Plan. From hajj & hplanner, 2019

The constant morphological change from the first approach of the mosques, to the current state of Al-Masjid An-Nabawi. The expansion of its land, redesign of the structure, catastrophes (fires), are part of the various formations of this site.

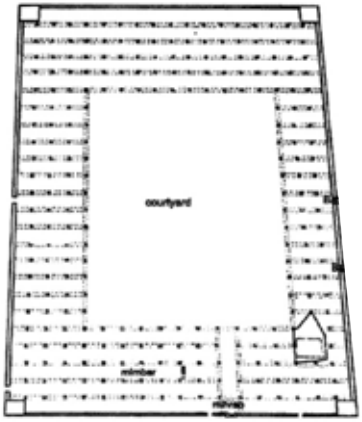


Fig. 5.16 Masjid Nabawi Fourth Expansion Plan. From hajj & hplanner, 2019

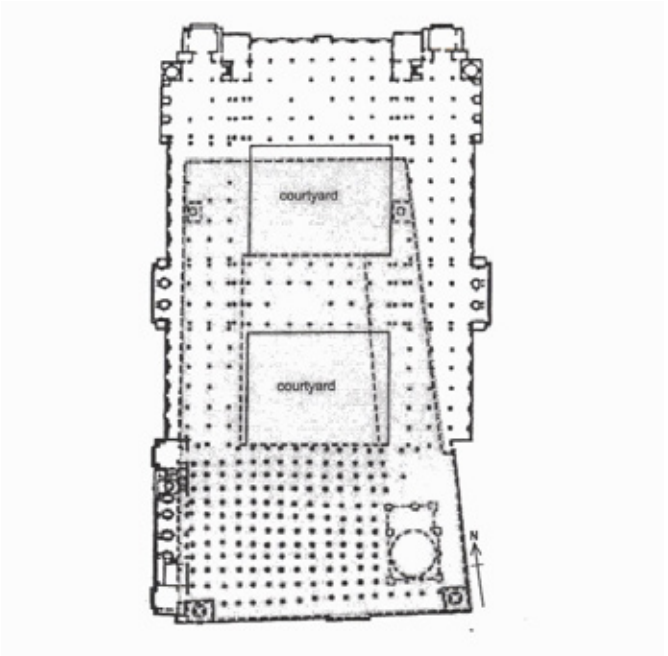


Fig. 5.17 Masjid Nabawi First Major Saudi Expansion Plan. From hajj & hplanner, 2019

Fig. 5.18 Muslims rest and pray inside of Masjid Nabawi. From Mawardi Bahar, 2015

The mosques that were formed later began to follow these dogmas with respect to education, and in turn they evolved, implementing tools and spaces that facilitated their mission as educators. Creation of rooms and study halls, adjacent to not interfere with the sacred and worship space, as is the case of the where the children carried out their classes, hand in hand with teachers at the north entrance this. Similarly, these establishments were equipped with housing for scholars, students or poor travelers. The incursion of these surrounding spaces was largely thanks to a variety of WAQFS, the name given to property donations, to use their profits for the causes of Islam, of Allah.

Libraries also began to appear in the mosques, as part of endowments by the various caliphates, all strongly betting on culture and education. Spaces such as these allowed the collection of extensive material, such as the example of the Mosque of Córdoba, which, together with the Umayyad Caliphate of Spain, managed to generate a catalog of around twenty thousand and forty thousand volumes, including the main works written (even unique) on medicine, mathematics, philosophy or literature, allowing the city to be classified as a Muslim epicenter in the West. Similarly, in Fez (Morocco), the Al Qarawiyyin Mosque (WAQFS), came to have a total of 320,000 handwritten works, this in order to nurture educational spaces, which at one point in its history, to the mosque passing into the background, and education acquired priority in this space, transforming into a school.

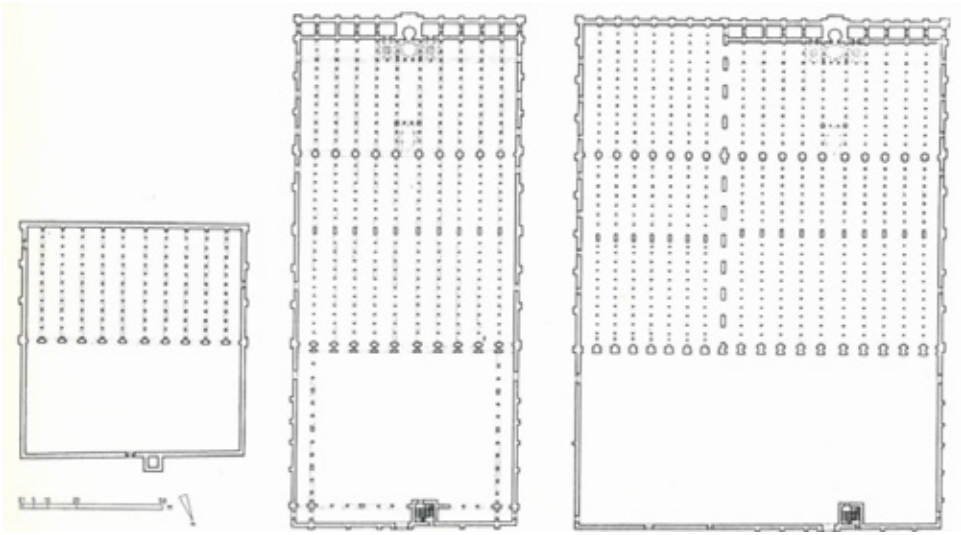


Fig. 5.19 Interior ol the Umayyad Mosque in Cordoba (785-96 I AD). From Urban Form in the Arab World, Stefan Bianca, 2000

The constant expansion of the Cordoba mosque, not only as a result of the increase in faithful and prayer spaces, but for the storage of the literary catalog of which this mosque had.

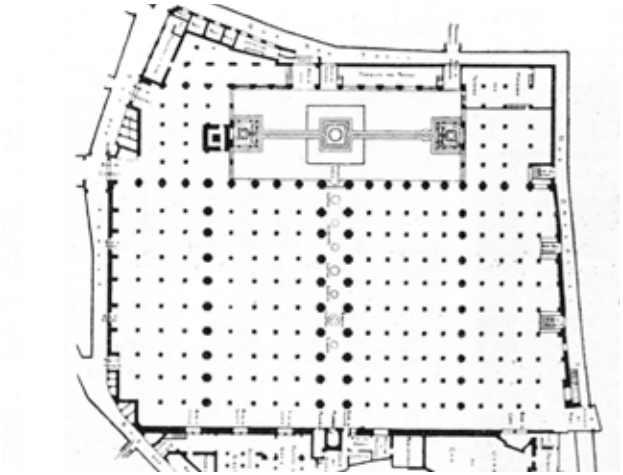


Fig. 5.20 Qarawiyyin Mosque. From Museum with no Frontiers, 2022

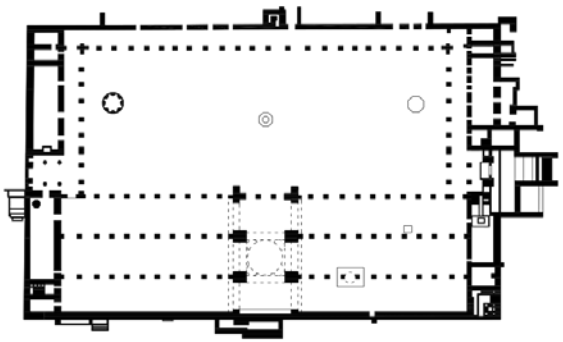


Fig. 5.21 Plan of the Great Mosque of Damascus. From Katia Cytryn, 2009

With the mosques reaching such a level of knowledge and the very low number of schools in this period, a series of establishments appeared that began to focus only on social and religious characters. Places that had the capacity to offer “professional learning” space and housing for students were categorized as MADRASAS. These “religious collages” were the result of the desire to train new generations of teachers and servants of Islam, who could develop political and religious functions. Said constructions preserved many similarities with the characteristics that the mosques, starting from a central courtyard, regularly defined, with one of its faces (Iwans), oriented towards Mecca, and from which a combination of several prayer rooms and housing units they were distributed. A perfect representation of this principal of space is the Sultan Hassan Mosque, located in Cairo (1362 AC), with a central symmetrical courtyard, with four Iwans on each side, and between them student accommodation in the corners. Also, we can see spaces like Madrasas in bigger complex, like the endowment built by the Sultan Qalaun (1285 AC), a structure than thight up a series of spaces, generating a bigger and multifunctional construction for the city.

The constant progress and interest in generating knowledge led to the emergence of universities in the Islamic world, which in turn came to complement the already established libraries and mosques. Mosques such as Al Azhar (970 BC), in Cairo, Egypt, whose quality as a center of advanced education acquired more responsibility over the years, were the result of the academic approach within Islamic knowledge, supported by the Fatim Caliphate, becoming power in the study of law, to the point of continuing in operation. Or like the Al Qarawiyyin mosque itself, which after having a high number of students and literature in its catalogue, its religious education system expanded towards linguistics, grammar, law, music, medicine and science. astronomy, integrating itself to the Moroccan education system and later being renamed Al Qarawiyyin University. (1965)

Fig. 5.22 Four facades (Iwans) on the central courtyard. From Mohammed Moussa, 2014

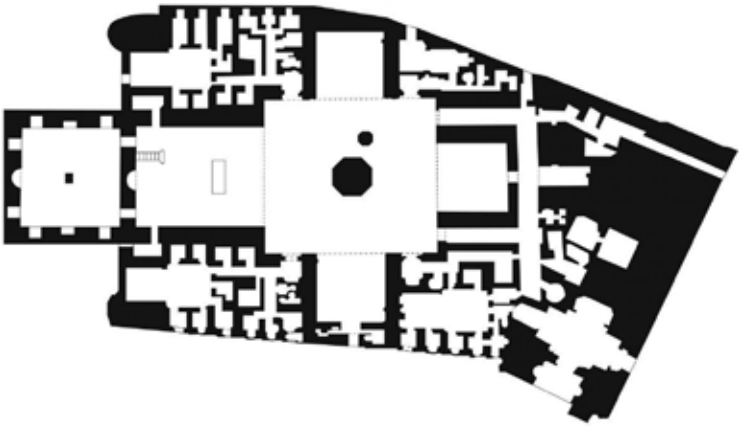


Fig. 5.23 Madrasa and Mosque of Sultan Hasan, From Museum with no Frontiers, 2022

Starting from the central coourtyard, evidencing its symmetry, the housing spaces for students, candidates to be leaders or religious teachers within the Islamic world are distributed.

Without a doubt, the culture of Islam and its manifestations have always been linked to education, from its origin, coming to define the Mosque, symbol and sacred place, as a center of learning for its faithful. This relationship between Islam and education is so powerful that in the Arabic language (language used in the Koran, and where it was seen for the first time), the word JAMIA (jama'ah), which in principle could translate " gathering", can refer to the word "MOSQUE" as well as "UNIVERSITY". In the eyes of Islam, these are two spaces that go hand in hand, two activities that form the basis of a Muslim society.

Fig. 5.24 The endowment compound bui lt by Sultan Qalaun in 1285 AD in Cairo on the site of the lormer Fatimid palace. From Urban Form in the Arab World, Stefan Bianca, 2000

Typology
Shaping the project

The understanding on how to land a project on a city with the characteristics of Mosul, a typical Islam city, with such a diverse structure, and at a point irregular, can be a turning point into the development of a project. Understanding its urban print, and how it has been evolving around the years is key, to landing a matching point between what has been done, and what is yet to come.

Mosul, a city that originated on the west side of the Tigris River, from the settlements of the destroyed ancient city of Assyrian, capital of Nineveh. A civilization that gave humanity some sights of this cultures in the begging, starting with the influence of the style and forms of civilizations Sumer of Akkad, they ended up generating their own distinctive style, highlighting above all, the orthogonality of its plans, becoming mostly rectangular, for a long time in the history of its empire. The example that perhaps stands out the most, and for which there is more evidence of this civilization is the fortress of Sargon II (705 BC), a quadrangular palace with a series of empty spaces that responded to the same geometry. Rising a few meters from the level, it was completely isolated from its surroundings and the use of long ramps and large stairs were essential, being the only way to access the palace. Its functionality varied greatly, in principle being the palace from which Sergon II ruled, but in turn, this space had administrative spaces, religious temples, and housing. These areas were always generated around the variety of patios that this complex had, serving in turn as an element that improved the habitability of these areas, due to the few existences of windows. The dimensions of these patios denote to the eye, the relevance that these areas had, highlighting in principle the throne room or the main access.

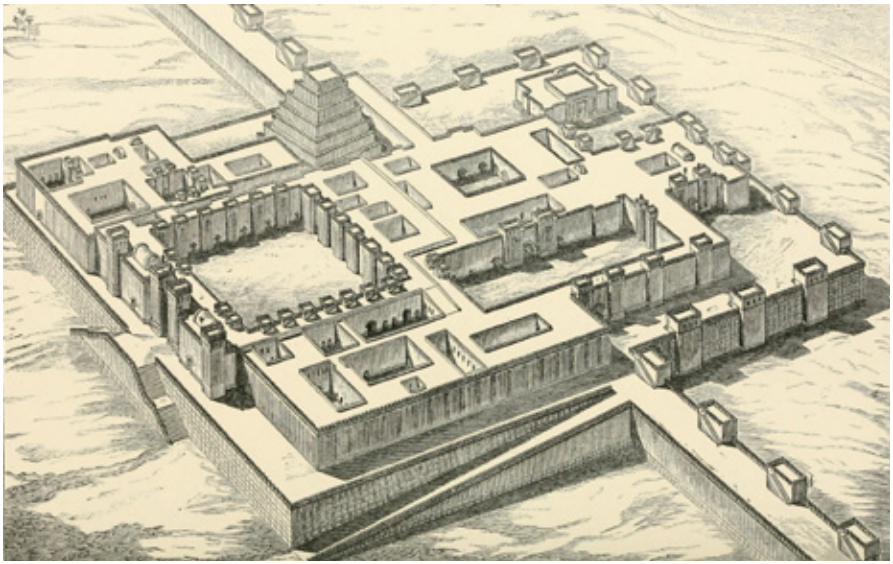


Fig. 5.25 Model of Palace of Sargon at Khorsabad. From John Henry Wright , 1905

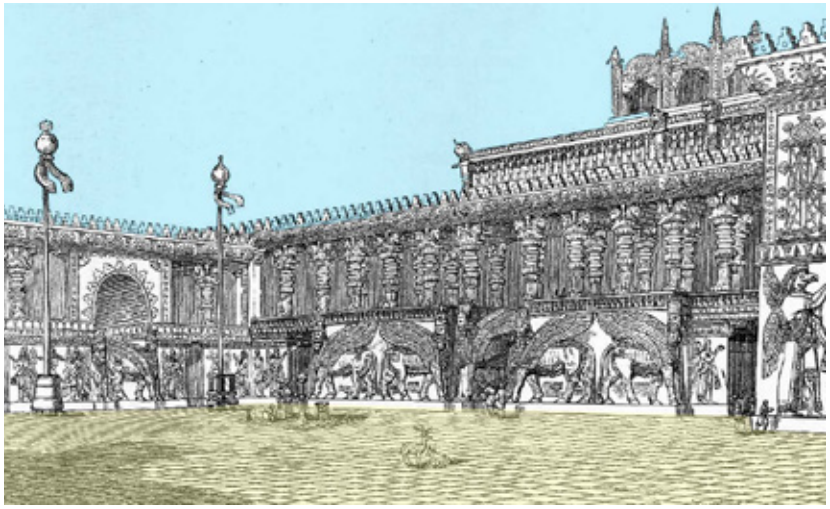


Fig. 5.26 Fortress Sargon II, Interior of the “Great Courtyard”. From The University of Chicago, 2022

Taking the Assyrian empire as a starting point, Mosul was established as a city, generating a fortification wall, a paved road structure, a market, and the Umayyad Mosque (by the last Umayyad caliphate in Mosul), of which the Al Nouri Mosque he would take his mihrab, after its destruction. This series of features and elements match perfectly with the features of a historical Islamic city, explained previously, a city near a body of water, walled, with a mosque in the heart of the city in the center of the metropolis, with housing developing around him, in free space. Over time, these city relations, and their exponential growth, generate the multiplication of religious centers, with this a generation of commerce and educational spaces. From this point, a typology of the city begins to be understood and taken as a starting point, as a tool to land in it.

From the hand of the atabeg (governor) Nur al-Din Mahmud Zengi, the Al Nouri Mosque Complex was founded, choosing for it a large, dilapidated piece of land in the center of Mosul. Al Nouri and Al-Mujahidi would become catalysts within the city. Since its creation, the Al Nouri Mosque has become a central and key site in the urban life and development of the Old City. Its existence encouraged the creation of schools and madrasas in its surroundings, as well as housing and commerce, generating life and dynamism in its surroundings. In the end, this mosque became one of the main elements that influenced the generation of connections, streets in the city. Mosul was originally characterized by a system of streets leading from the wall entrances towards the Al Nouri Mosque. In turn, in this system the connection of this space with the Tigris River and the commercial part located in the south (being influenced by the other mosque “Al-Mujahidi”) was always important, denoting relevance towards the east and south side. of the city, from the center in turn. These systems were created on a purely pedestrian scale, developing a plan with a high level of complexity. Within this complex and dense system that was generated within the city, the need for open spaces was evident and necessary, which is why architectural complexes began to play this role, through courtyards or squares in mosques, markets (khans), or residential areas. It was possible to read how the city consisted, in a certain way, in the relationship and connection of this series of openings (not literally), coming to have a covered system. A system that little by little spread deep into the residential neighborhoods, where each one had a built-in circulation, the effect of the progressive division of semi-private, dead-end streets, shared by neighbors, generating second

degrees of urban distribution in the city. It is a system that organically gives a certain closure to the configuration of the city plan. From these small private systems to the edges of old Mosul, the dynamics and culture shaped the Muslim character of the city.

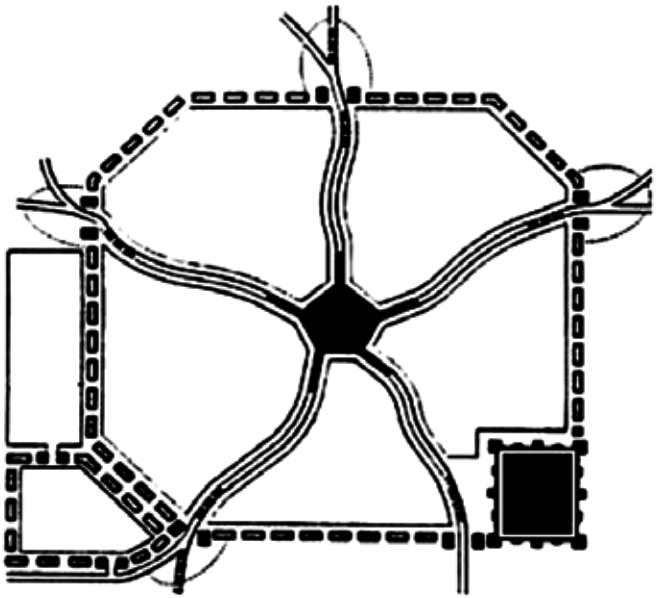


Fig. 5.27 Historic islamic city diagram. From Eugen Wirth, 2015

Fig. 5.28 Old City of Mosul from the 8th until the 19th century AD. From Akg images, 1900

It is from this reunion with the understanding of the city of Mosul, a field of study, and the origin of its typological characteristics, based on Islam, that the generation of a project that responds to these and enriches them, in turn, is proposed.

Starting with the reaffirmation of the location of the project, which is even being supported by the need to generate educational and learning spaces in a city with a low number of schools, we can understand the importance that, in principle, the location in the center of the city has. old Mosul. Understanding in principle how this space would generate direct contact with the main mosque of the city (Al Nouri Mosque), this being one of the main pieces for the territorial ordering of the city, and how said sanctuary has a historical relationship with study centers and learning (madrasahs and schools). In addition, the search to generate an expansion in the city of Mosul over the years has generated the creation of new routes and connections in the city. These routes, being more modern and having interests based on seeking to improve the road infrastructure, in favor of an economic improvement in the sector, break with the tissue that was generated from the beginning and the city preserved. It is from this those two scars arise, mainly in Old Mosul. One being Nineveh Street, horizontally, and Al Shaziani Street, vertically. One seeks to generate the connection from east to west, reaching the point of generating a bridge over the Tigris River, and the other becomes the artery from north to south of the city, in the same way, seeking easy access and exit from the city, giving it easy access to the commercial area of the south. It is precisely Al Shaziani Street, an axis that goes hand in hand with the Al Nouri Mosque since it follows from the synthesis of previous streets that the temple influenced. In this way, the project seeks not only to generate a logical and cultural relationship with the mosque but also its integration within the city, with a location within an urban system that responds to current needs, guaranteeing accessibility. and democratization

Fig. 5.29 Mosul plan. Nineveh Street/ Al Shaziani Street. Made by author

Fig. 5.30 Picture of the center of Mosul about a century ago. From Irfaa Sawtak, 2017

Understanding its composition in space in turn requires an understanding of the typology that this project must adopt. Considering its neighbors, their culture, and tradition, you should have a variety of properties that allow you to respond to your context. Seeing the urban tissue of Mosul, and its history, we see the relevance of the courtyards in its architecture, in its culture. The relevance of this element within the tradition of the Islamic city is essential for its use in a project that seeks and intends to generate freedom of orientation, the principle of equality, social integration, and cultural appropriation from Islam.

In principle, it is important to understand it as an element that serves as a guarantor for a habitable space. In a city like Mosul, located in the upper Mesopotamian region of Iraq, temperatures can be very high (varies from 48 degrees), and in the same way with a humid climate, for this reason, the existence of courtyard, or open areas are necessary for air circulation in these. In addition, due to the dense nature of these cities, spaces like these allow greater use of natural light.

But beyond seeing this space as a basic principle of habitability, we must understand the relevance that courtyards have in this society, seeing how it was embedded in its public spaces. Key social spaces, meeting. It can be evident in a variety of examples, which serve as a guide to apply to projects. In most architecture in Islamic cities, whether public or private, we can find the courtyard as a constant pattern. To study it and understand why it becomes a pattern, we can take the ancient Mesopotamian civilizations as the origin. As we saw previously, in the Assyrian empire, the palace of Sagon II, the use of patios was evident. Spaces that formed a hierarchy in the project, based on their proportions, gave a larger scale to main circulation areas, such as the entrances, and from there, distribute to the various facilities of the palace. It is remarkable in principle when seeing how the main access is the one that accompanies the so-called “great patio” and how from there small patios are distributed, corresponding to houses, temples, etc. Think of it as a patio that enhances spaces and provides orientation.

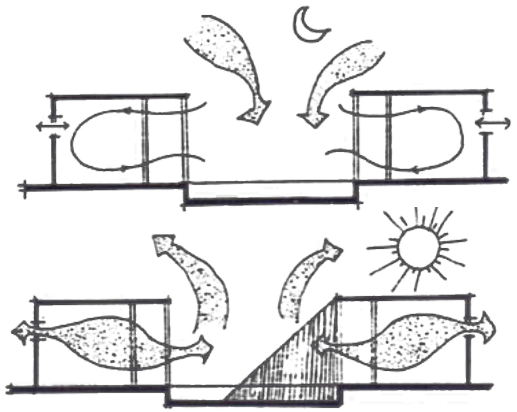


Fig. 5.31 Indoor courtyards (green architecture). From BY archlens, 2020.

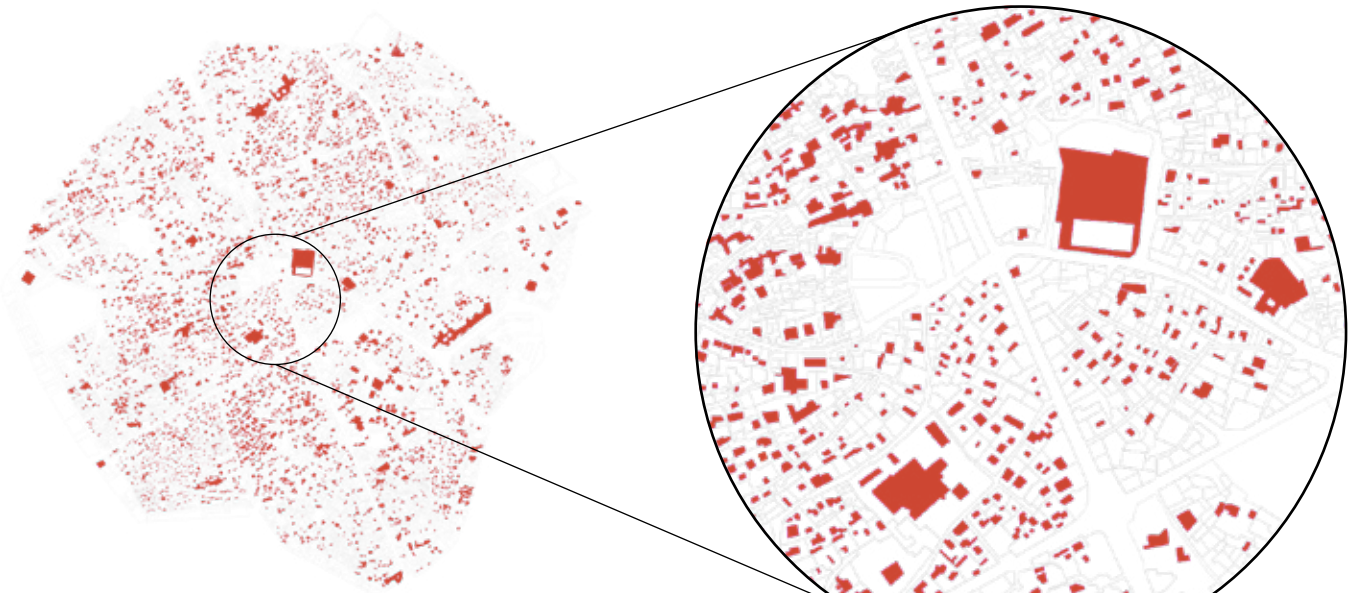


Fig. 5.32 Picture of the center of Mosul about a century ago. From Irfaa Sawtak, 2017

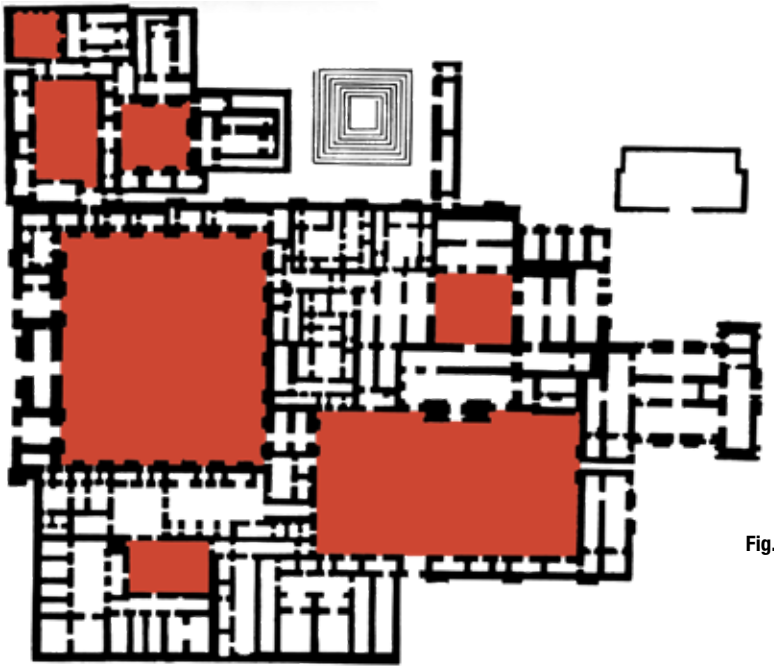


Fig. 5.33 Fortress Sargon II. Made by author.

See how in the city of Fez al-Bali, the great central courtyard of the Qairawiyin mosque becomes the main public space of society, and how from this a series of different elements are developed and complemented. From madrassas, public baths, caravanserais, and housing, they arise from the effect of a space that serves as the heart of the city. An area that is easily accessible and habitable, in a way, becomes a mothership that distributes to its surroundings. In principle, it corresponds to its dimensions, but the role it plays with the mosque is also fundamental. It is not a space per se, but it complements the dynamics of the mosque, as in one way or another it has happened since their beginnings, seeing it reflected since the creation of the Mosque of Medina (622 BC), created by Muhammad, where the courtyard could occupy 60% of the property.

But it is important, and to round off the conception of courtyard in the Islamic city, to denote as equal an element that does not only belong to the great state or public buildings. The courtyard, in principle, has its origin in the dwelling, seen in the center of a house, or as an element shared by a group of houses. It becomes a space that organizes the sector, and again, distributes. Its origin within the home is born from the search for habitability, but within groups of houses, in neighborhoods, as a communal space, it is the way to generate security, privacy, but at the same time it generates the notion of society and property.

It is with this, that as a starting point the courtyard becomes the essential element, within the Islamic culture, to develop the project. It becomes the heart of the project, being the basis of it and being thought of as the catalyst, from which a series of spaces will be formed.

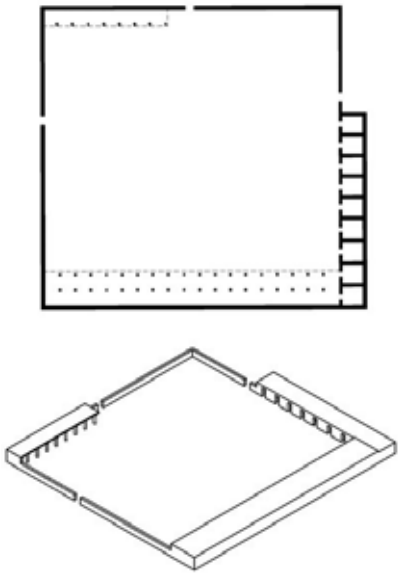


Fig. 5.34 Plan and perspective of the first version of Al Masjid An Nabawi. From OzugurUrey 2013

Fig. 5.35 Courtyard analysis of the traditional city centre of Fez al-Bali. Made by author.

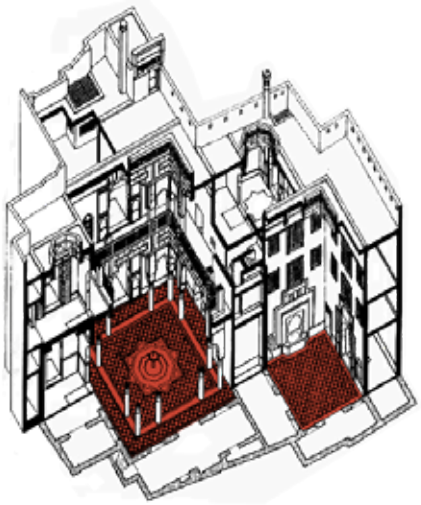


Fig. 5.36 Typical Islamic house, Double courtyard, Axonometric Section. Made by author

Fig. 5.37 Typical Islamic house, Double courtyard, Ground floor. Made by author

Understanding what in a way will be and work as the heart of the project, and with the conception of a series of spaces developing themselves around this central space, we face the issue of connecting this, in a way “private” (closed) space, with the rest of urban tissue that’s the city of old Mosul answers to. Understand how the served spaces will match with the rest of the city. To plan and develop these connections, it is key to understand how urban connections and public-private relations have been generated in an Islamic city.

We can, within this analysis, begin to see how the most “intimate” spaces in the city, with more “privacy” connect and develop with the urban structure, the family residential unit. It is seen how the distribution of the spaces of the house is granted from the central patio. A perimeter circulation around it distributes each of the rooms. What is interesting about this is to see how life reaches this patio, because as we can see, the circulation does not have a major highlight from the entrance, even extending to the urban street. This happens because access to the privacy of the house becomes more tangible from the semi-public space that has been forged by the community. Although it exists as an element in the “outside” of the house, the notion of private or intimate continues to exist, due to how these streets, corridors, were formed. These connections became, in a certain way, filters from the urban scale of the city to the houses. The neighborhoods have total power over these environments, taking the streets as their own, turning them into “private” corridors, building on them, generating, building on the public.

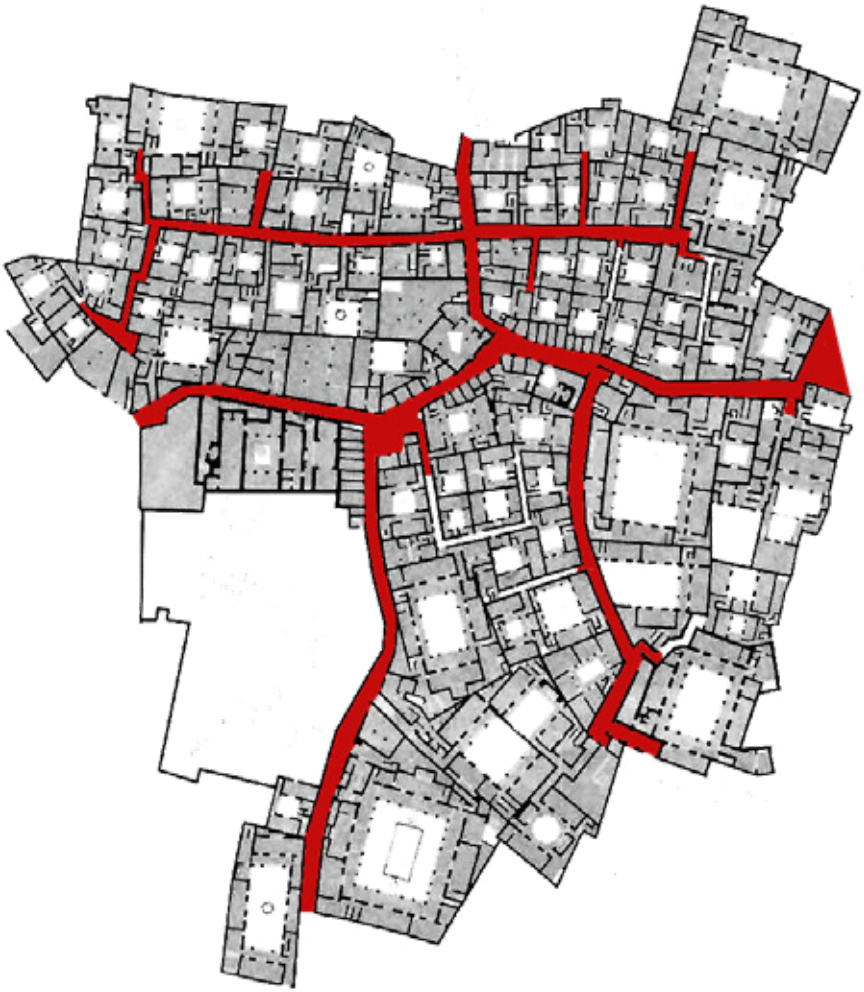


Fig. 5.38 Plan of the residential district of Mokhfiya in Fez, composed of several housing clusters. Made by author.

Show how the streets are covered in a certain way, it would seem peculiar in these areas, but it is a phenomenon that in a certain way the main system of the city is already carrying in its most public parts and around the city. The evidence of this is the Suq, commercial streets, originating from the temporary occupation of public land for the market. Said commercial dynamics generated a change in the character of the streets, formalizing their use a little more, generating changes in its structure, while in turn changing the usual dynamics of an avenue. The streets became covered spaces, meeting places with a different rhythm, not just circulation. It is important to highlight that these commercial processes were born linked to the mosques in most cases, because, after all, they were a result of these and their dynamics. A space for a congregation is seen, such as the mosque, with its central courtyard and various attached activities, it is connected to the rest of the city and its uses through a system that in the end acquires in one way or another the character of space the time it is important, to appreciate this element of connection and see how it evolved, to use the Umayyad mosque in the old city of Aleppo as a reference, in principle it arises from an environment of the main mosque of the city and adapts to a previously established system. (the Roman), forming a structure, and becoming a social space that communicates with the rest of the city. In addition, it is interesting to see how in a certain way it acquires a character, a rhythm, unfolding within the urban system.

Fig. 5.39 Interior aleppo´s souk. From Thomas Rinaldi, 2011

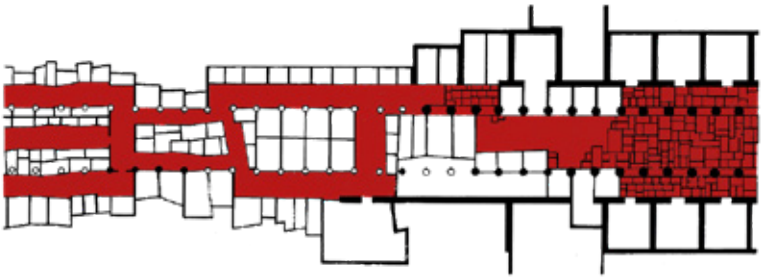


Fig. 5.40 The transformation process from Roman colonnaded avenue to the later suqs, in Aleppo.

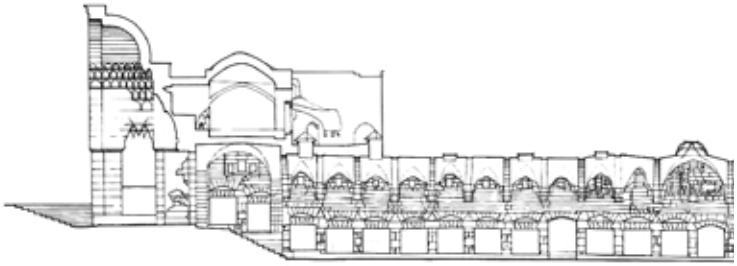


Fig. 5.41 Souk al Qattanin, longitudinal section. From i2ud, 1982

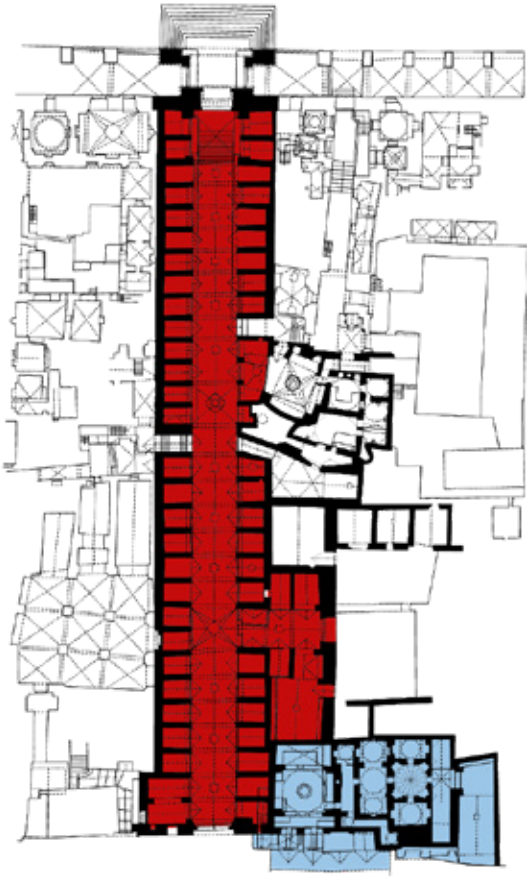


Fig. 5.42 Souk Al Qattanin and Al Aqsa mosque plan. Made by author.

Seeing the inclusion and relevance of this series of elements in the public and private spheres, it is interesting to find where these spaces connect and relate as a single project, with a diversity of uses. We saw examples of these and raised in Mosques, which due to its growing number of followers, saw the need to expand and join areas to the ritual space. It becomes at the same time clearer in the madrassas, where not only religion defined the project, but also the creation of housing, study spaces, libraries, etc. We can see this relationship of uses in the one previously seen in the Fatimid Great Palace (1285 BC), in Cairo, where a madrasa, responding to its religious principles, with spaces such as the iwan or the courtyard itself, organically congenial with a hospital. and mausoleum, being able to create a single complex with a diversity of uses and spaces.

Another reference that we can see is the Maristan Arghun (12th century) in Aleppo, a space that is not classified as a temple of Islam, a hospital, but instead keeps the style and principles of its architecture. Equipped with a central courtyard, from which internal corridors emerge, distributing and giving access to a series of independent spaces, concerning the privacy needs of the complex. With this series of corridors and more intimate spaces, the project continues to be a public space that opens up to a larger system, defined by the urban structure. In the end, it is these connectors that filter the flow and life within the enclosure, going back to what happened in the most residential areas of the city.

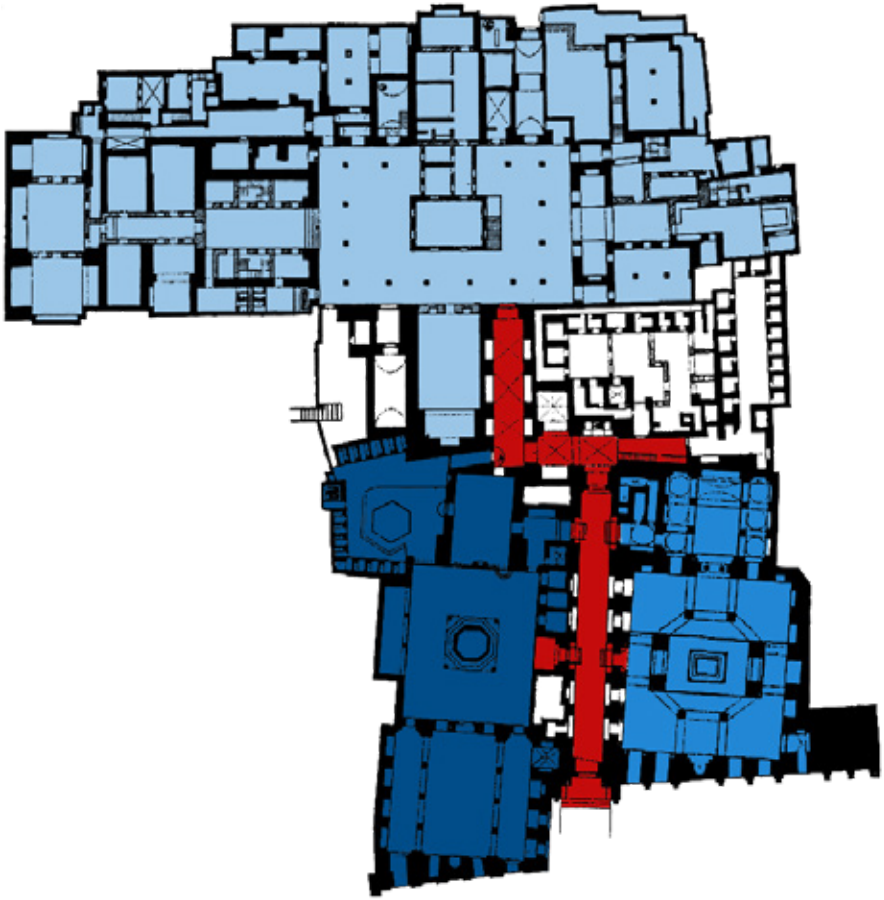


Fig. 5.43 Fatimid palace distribution, consisting of Madrasa, Mausuleom and Hosptial in the end, tighten up by a straight corridor that distributs to each of these spaces. . Made by author.

Mosul's **Education**

"The teachers were bringing weapons into the classroom and teaching us how to use them," Ahmed, student under Isis ruled school.

After the war, the city of Mosul was facing a deplorable school situation. Since the takeover of the city by Isis, in June 2014, the educational system has changed completely. Beyond the desecration of colleges and universities, the end of military bases, the impact that was left on the future of Iraq, the children, was traumatic. Around 990 schools were closed by the Isis paramilitary group, leaving the few that remained open to their power. The curricula of these were radically altered, supporting the ideology of Isis, establishing educational dogmas from Kindergarten to collage. Studying in a war zone meant for these children, crossing fire and exposing themselves to the cruelty of war, every day trying to get to school. Studying in spaces that did not have adequate maintenance, in contact with weapons, exposing himself day by day.

The established dogmas, not only belonged to a cultural and religious character, the war was already part of the teaching. Learning to use weapons, and use lethal elements as means of study, was the training that the children who continued to attend the schools were acquiring. The loss of innocence, and the manipulation that was generated in these centers was creating ideologies about the students, who, mowed down by the environment, were following in the footsteps of this terrorist group. From colleges to universities, students, regardless of social or economic level, were enlisting in this group, leaving education aside.

Fig. 5.44 The library of the University of Mosul was destroyed in battle and turned into an ISIS facility. From Kyle Almond, 2017.

“From the time ISIL changed the education system, installing their own curriculum and printing their own textbooks, 90 per cent of people stopped letting their children attend school because they were being taught to fight, to kill and to become monsters, so only ISIL’s own children turned up. There used to be between 30 and 50 people in a class but, under ISIL, I only had four or five students per class.” Student Abdulrahman, 19 yeras old student.

Leaving education aside was the alternative that many students and parents decided to take, seeing what was happening. Having to choose between studying or living was the option that a large part of the population of Mosul had to face. Two empty educational years within the experience of these young people. Traumatic years for the society of Mosul, whose future is compromised, whose access to education is delayed. In Iraq, the conflict left around 3.5 million children without an education.

Education was taken from them, destroying not only the physical facilities and their city, but the ideology of what education means. This war was not only a destruction of the city, but of its culture and identity. Going back to school and taking back all the stolen time is not a simple step. In the first place, it is equivalent to reestablishing and guaranteeing an adequate and habitable space to learn, but at the same time the immense work of restoring the tranquility and security of what an educational center means.

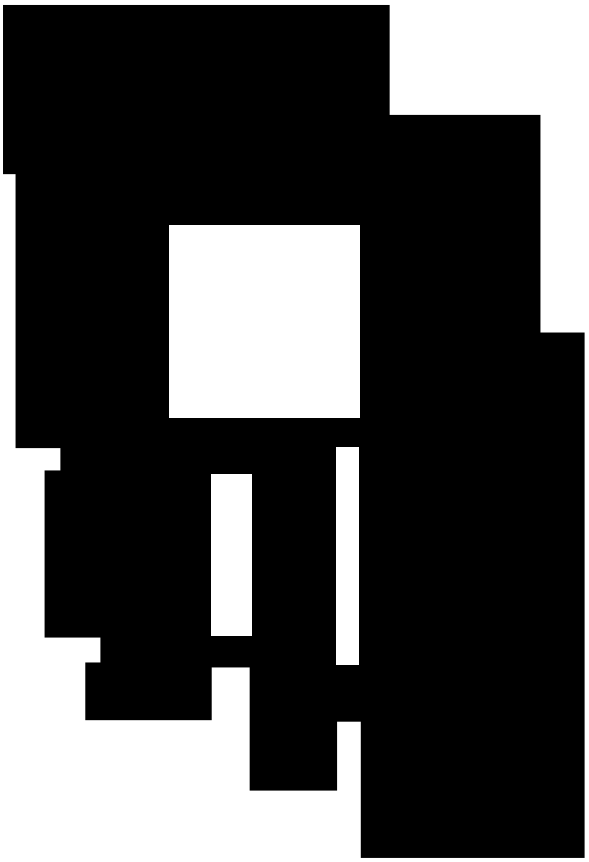
Architecture as a means of reconstruction, with education as a premise, is a tool that can have great potential for the Mosul community. Provide an open space for the community, which has the ability to provide the values and elements lost in the war, without the intention of erasing the history of the city, but with a healing intention and opportunity for the future.

Fig. 5.45 An Iraqi boy sits at a desk at a school in Mosul's eastern Gogjali neighbourhood, as scores of schools resumed their activities . From Dimitar Dilkoff, 2017.

Fig. 5.46 Students in Mosul going back to school- From Chris McGrath, 2018.

MOSUL

EDUCATIONAL CENTER



Project
Site

In search of returning an education and a decent life to the young people of the city of Mosul, it is important to analyze the current educational system, which the city has. This study seeks to understand how educational spaces are distributed in Mosul, and to identify the spaces that lack these, to use them as main focuses when understanding the needs of certain sectors in the city.

Having a notion of the distribution of schools in old Mosul, we can begin to understand the area of influence that each of these can have on their surroundings (a circumference is proposed that responds to a radius of 200 meters, this being a distance optimal use of these spaces on foot, guaranteeing their accessibility). At the time that the total area of the city in the area of influence by schools can be identified, it is clearer to appreciate the spaces with the greatest need for educational facilities.

Within the areas lacking a school service, there is a sector that draws particular attention, due to its centrality in the city, its relationship with Al Shaziani avenue and because it contains in its area the great mosque of Al Nouri, the main temple of the Islamic religion in the city. This area and specifically the mosque, was the focus of conflict and destruction, mainly in 2017, in the battle for Mosul, becoming partially in ruins. Not only was a religious temple lost, with a heavy historical character for the city, but at the same time a place of citizenship, of meeting, with an immense cultural and social value for the community of Mosul.

This being a space that needs educational equipment, which in turn has an efficient relationship and connectivity within the city system, being accessible to the rest of the city and with an immense cultural character, on the part of the Al Nouri mosque, this space has immense potential for the generation of a project that goes towards the reestablishment and resurgence of the city. A project open to the community, combining a variety of elements, in favor of education and interactions, while seeking to preserve the local identity, being part of the urban fabric and daily life of Mosul.

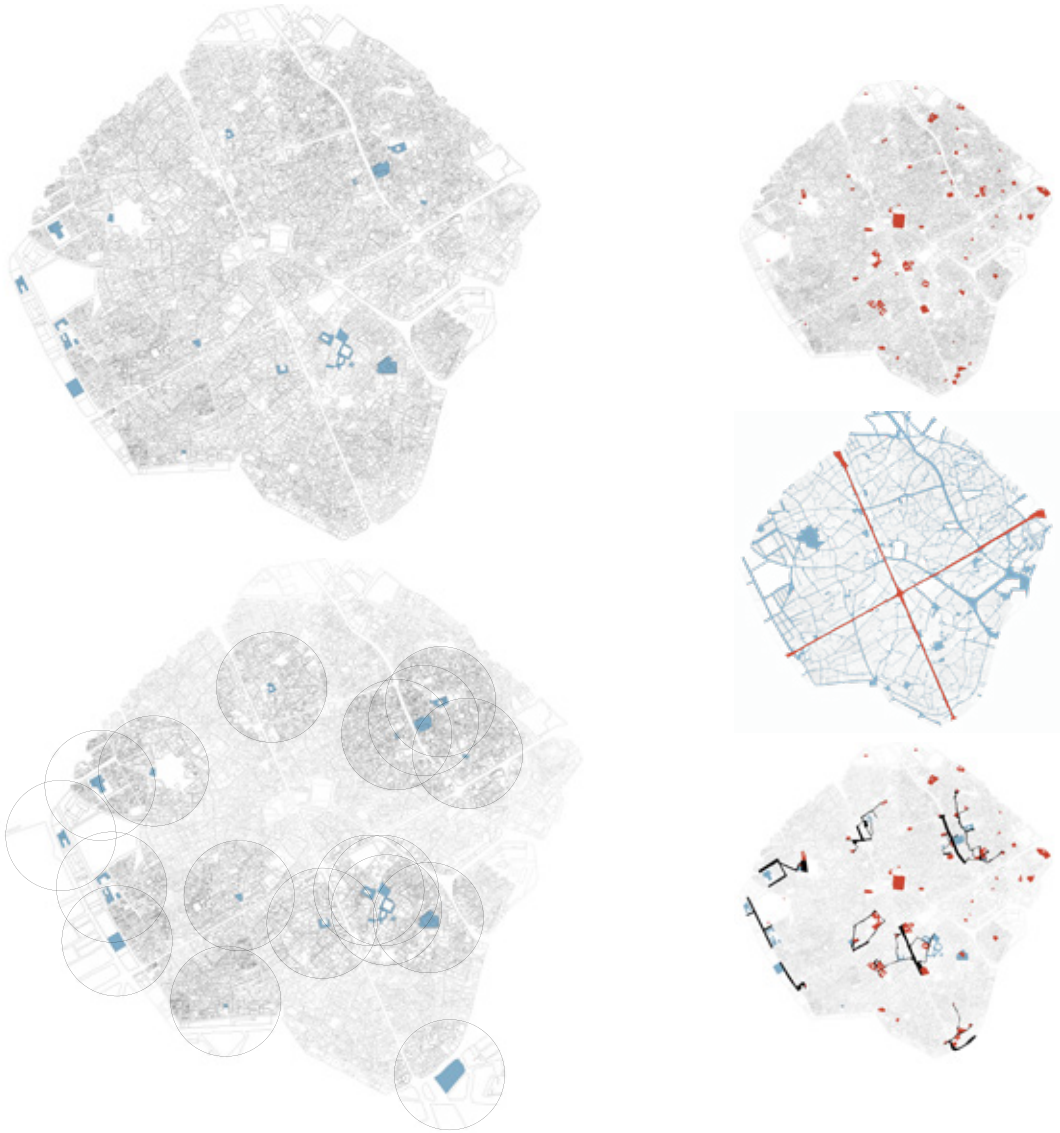


Fig. 5.46 Students in Mosul going back to school- From Chris McGrath, 2018.

Fig. 5.46 Students in Mosul going back to school- From Chris McGrath, 2018.

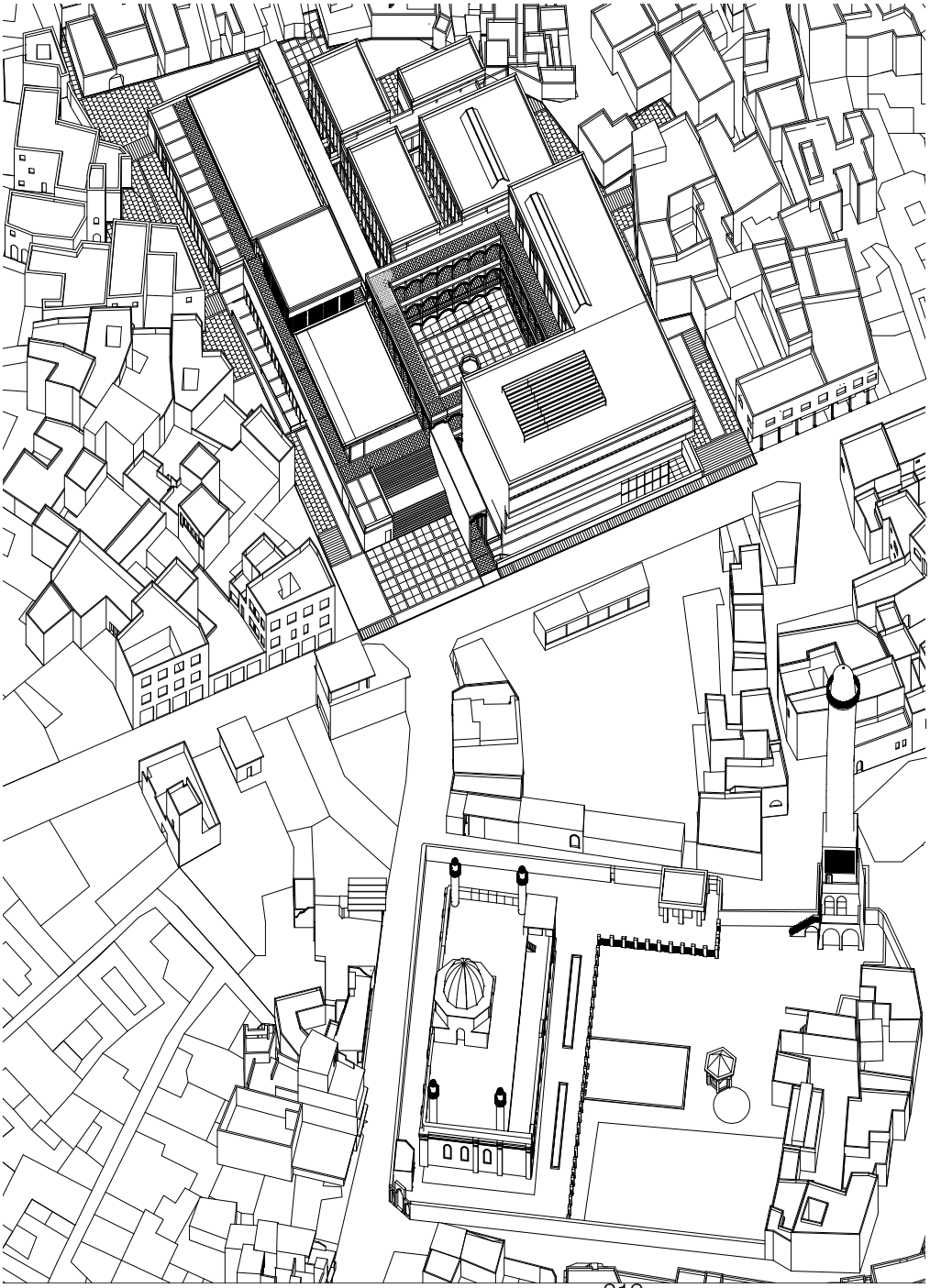
Fig. 5.46 Students in Mosul going back to school- From Chris McGrath, 2018.

Fig. 5.46 S

Educational **Center**

Obviously, and as has been said previously, the generation of this project will not be able to eliminate the wounds left by the war, or transform what it meant for Mosul and its inhabitants, but it can serve as a means and basis for the generation of a reconstruction, necessary in society. From this educational center it is not only intended to create a restoration of the urban structure of Mosul and its buildings, but beyond that, it seeks to generate social change, starting from providing opportunities and spaces to be able to think of a better future, as a society. . Generate a space that responds to the lack of school zones in the city, but through its structure and ideal of promoting spaces that facilitate learning, it seeks to open the panorama and extend the tools that this building can have, reaching more people, regardless of age, stratum or gender. The project will become a tool of the community, for the community, empowering them for the reconstruction and conservation of their city and culture.

Starting from the relevance that a project like this can have in the city, it is crucial to develop, in the first instance, its relationship with the environment, precisely starting from the notion of reconstruction, respecting the past and identity of the city. Being located in front of the great Al Nouri mosque, the main center of worship and with great value for Mosul, the project reinforces its need to respond to and honor the identity of Islamic culture, which is forging its structure and the way in which this will be available. In addition, the relationship that exists with the urban space, being located on Al Shaziani Avenue, ensures and strengthens the notion of an open and accessible space for the community.



Understanding the context and through architecture, design actions begin to be generated, which, like the context, are essential to connect with aspects of Islamic culture, thus strengthening the roots that the community may have with the space. It is precisely from the community that the project begins to be thought of, the understanding of community, meeting and socialization can bring Islam in the architectural and spatial sphere. The courtyard, an element that exists from Muslim homes to large temples (mosques), has been a key piece in the history of these communities, this being the center and promoter of activities of past Islamic civilizations. Starting from such a significant element, it is sought and proposed to start developing the elements that can make up this educational center.

Within the conception of this great central space, it is important, due to its very nature of permeability and accessibility, to seek to generate a relationship with the environment. An axis that is capable of providing a connection, without becoming a barrier to urban space. A circulation is generated that accompanies the project from start to finish, with a passage inside the courtyard. Using as a notion, the characteristic of a Suq, which precisely arises from the establishment of a large courtyard, usually being a Mosque, and from there it unfolds as a covered street, which leads into more private contexts of the city. The project seeks precisely to be able to connect from Gran Vía, passing through a courtyard of the project, until reaching a more residential area.

Having a clear main connection, it seeks to generate at the same time, ramifications and distributions that arise from this main axis, which runs through the entire project, accompanied by the courtyard, which as a central element, and of main interaction, can tigth up the project in a way efficient. Starting from this, perpendicular main corridor axes are generated, which in turn generate a circulation that accompanies the perimeter of the courtyard. It is important to emphasize how the existence of arches and columns, inherited from the Roman colonization, within the Islamic culture are constant within this system from which the project is generated. They are elements that denote an integration within the system.

It is from this main structure that the volumetry, of what the spaces and work areas of the project will become, takes shape and develops in relation to its surroundings. From this arises a long element that accompanies the corridor from

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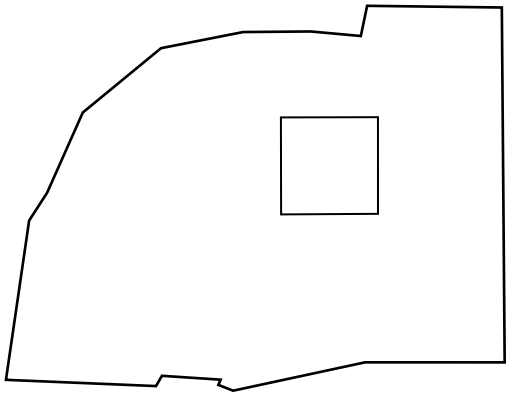

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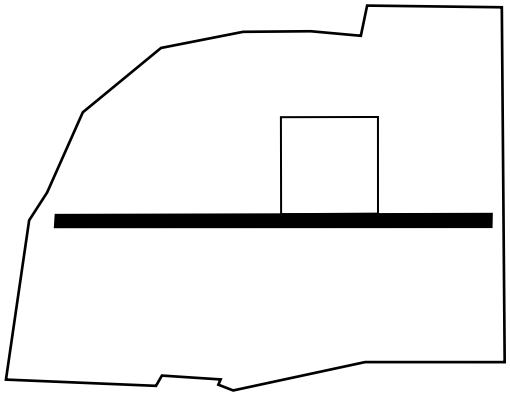

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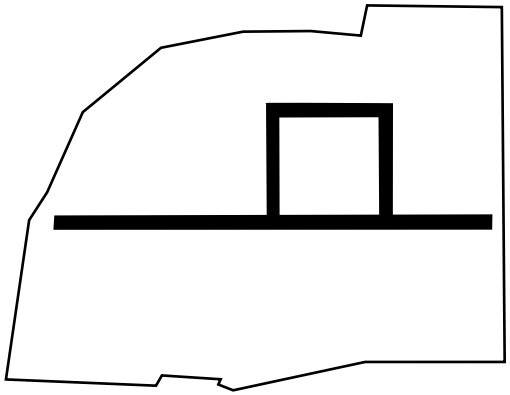

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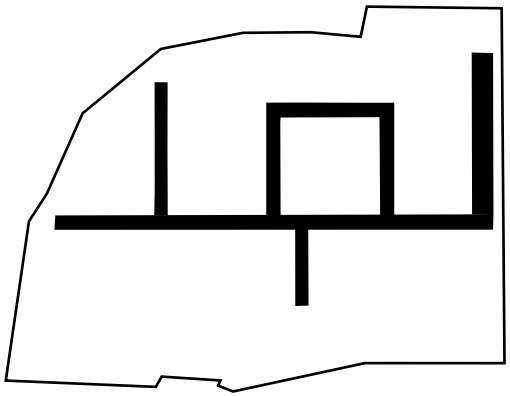
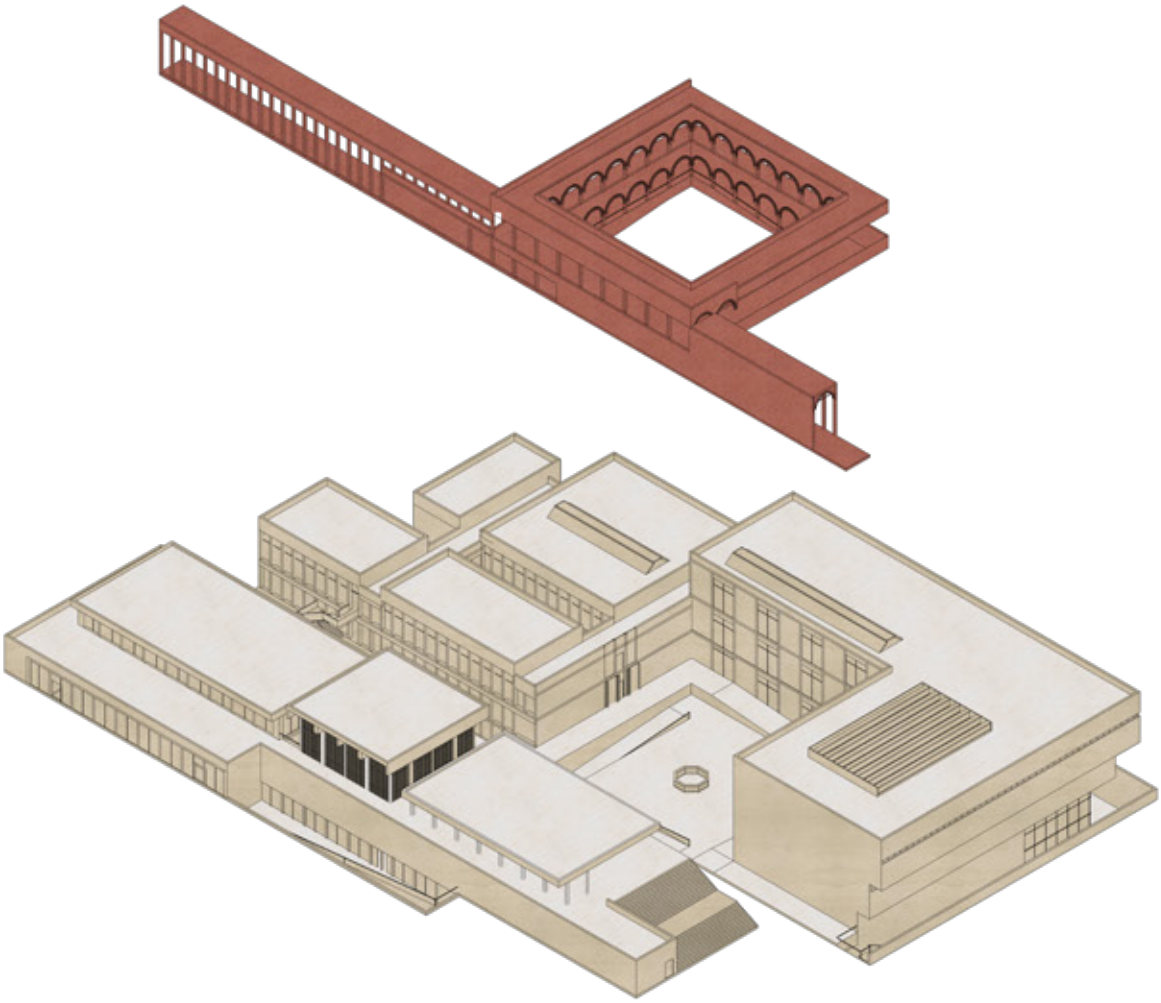


Design Steps

beginning to end, and other spaces that unfold around three sides of the internal patio. In this way, the generated volumes acquire a constant connection and relationship through the patio, but at the same time each one operates and develops independently. The heights and characteristics of these vary, in search of responding to surrounding elements, in search of harmony with the environment. It is in a certain way, the main facade of the project, which acquires a more diverse character from the rest of the project, generating a setback in the ground level, while, at the same time, a void is generated, evidencing the existence of a level lower in the project. This response to the main facade seeks, in addition to seeking a response to a characteristic element of Arab culture such as the mashrabiya, being an element of great proportion within the urban and that seeks to be attractive, it is desired to avoid becoming an element heavy on the road, which at the same time guides the user to access it.

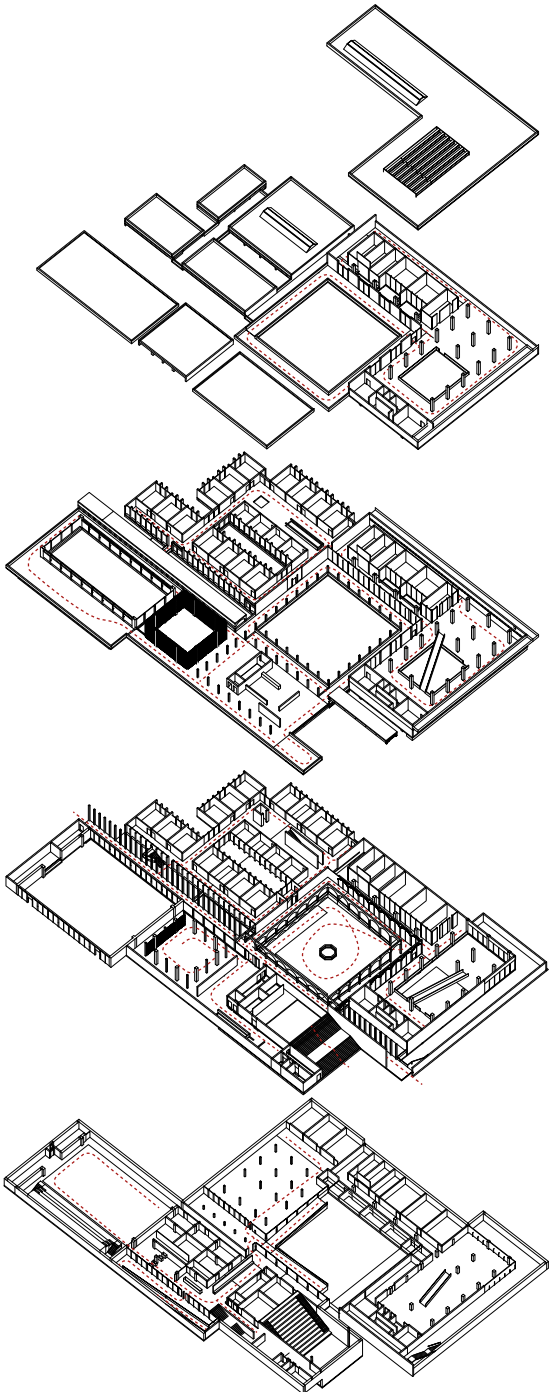


Main circulation structure abstracted from the pproject

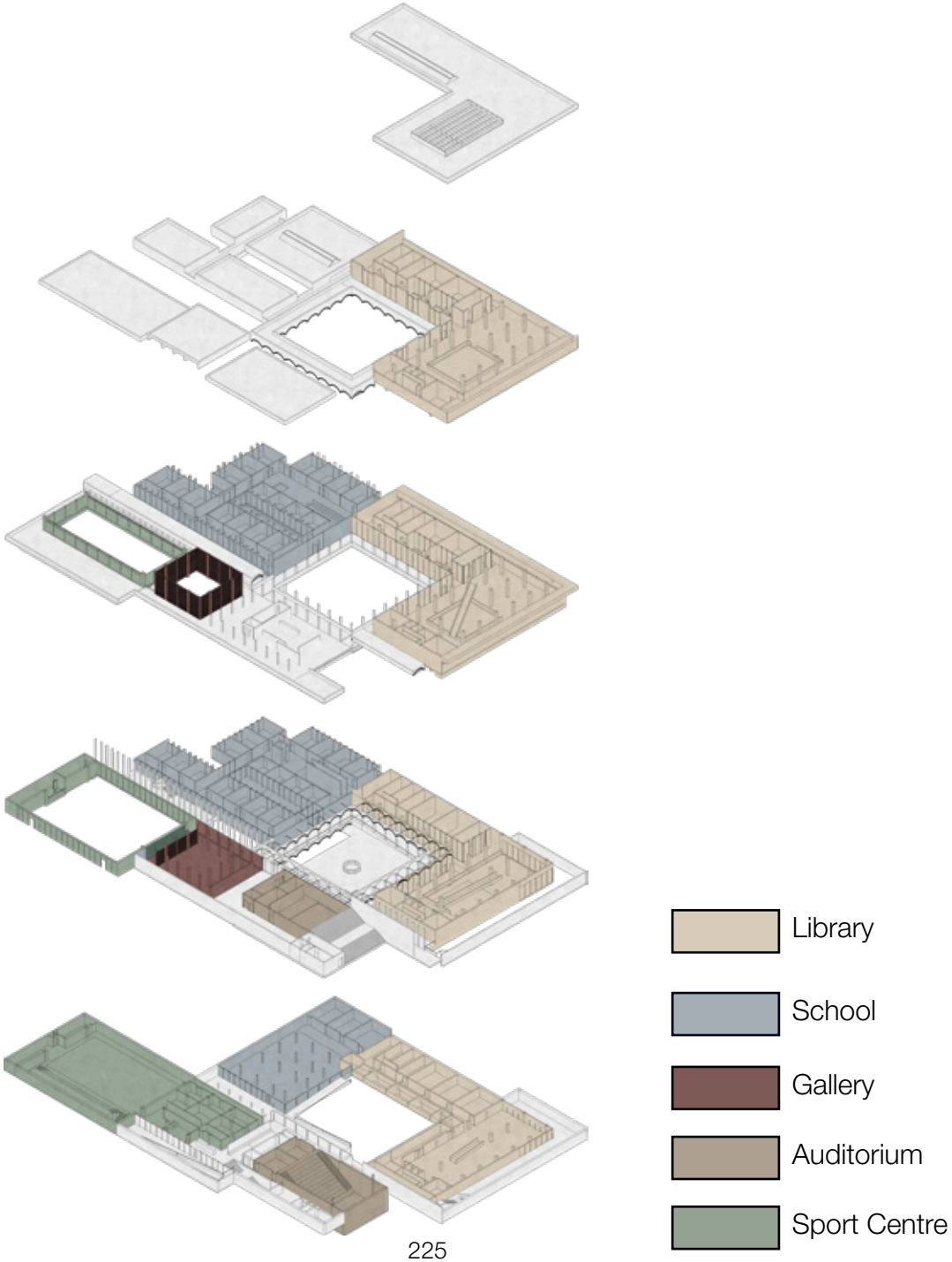
The way in which the project will be developed in a functional way responds in principle to activities focused on education, basing it on a first use as a school. Said space, in search of the tranquility and urban dynamics of the rest of the project, is located on the northwestern side, being between the two axes defined in principle by the circulation system, and with a facade towards the interior of the main patio. .

The need for a library within a culture that seeks not to forget and preserve its identity is fundamental. For this reason, its layout is located on the main façade, with the volume between the street and the central courtyard. This space reaches larger dimensions, seeking to guarantee not only access by students, but by any citizen willing to make use of it.

Finally, in the large bar located in the south of the project, there is a display of spaces, such as the sports center, a gallery, and a theater, which seeks to diversify the activities and uses that the project may have. Opening the landscape, and giving more tools to a larger variety of citizens in Mosul.



Circulation


Library
School
Gallery
Auditorium
Sport Centre

Materiality
Identity

Mosul, and in general the Islamic culture, is characterized by having, to a large extent, a materiality that comes from the earth. In principle, the Islamic community uses the implementation of despicable materials as a technique. This having its origin in a culture that developed as a nomad, ignoring the need for elements of long durability or resistance. In addition, starting from the mud, techniques were generated that responded to the most accessible elements at the time of construction, consisting of land and water, being constant in comforts with desert climates and near the river within their lives. In addition, structures inherited by means of materials from the earth, such as adobe, allowed to generate fresh spaces, for the hot climates of West Asia.

The passage of time, the settlement, and the advance in technologies generated, first of all, the need to generate lasting spaces, and in turn, the facilities to be able to generate new types of construction with new elements. Elements such as stones, plaster and ceramics enter Islamic architecture, in order to guarantee its durability, not only for its structural rigidity, but also as cladding and waterproofing elements.

Understanding the bases from which the materiality and identity of Islamic architecture is governed, more specifically in Mosul, and in the search to make this a sustainable project that promotes local materials, a series of materials are taken into account that seek to preserve the architectural and cultural style of the city. The project's main material is the use of limestone, a material that, in addition to being too affordable in the area where Mosul is located, has a variety of tones, making it very flexible. In addition, the materiality and texture that this stone carries can be adopted in a certain way, more to the context and exterior of the city.

In turn, within the patio area, in the search for a dialogue to be generated with the various expressions of limestone previously named, the material by which it is defined is granite. Rock used in various squares in religious centers, which serve in this project as characterization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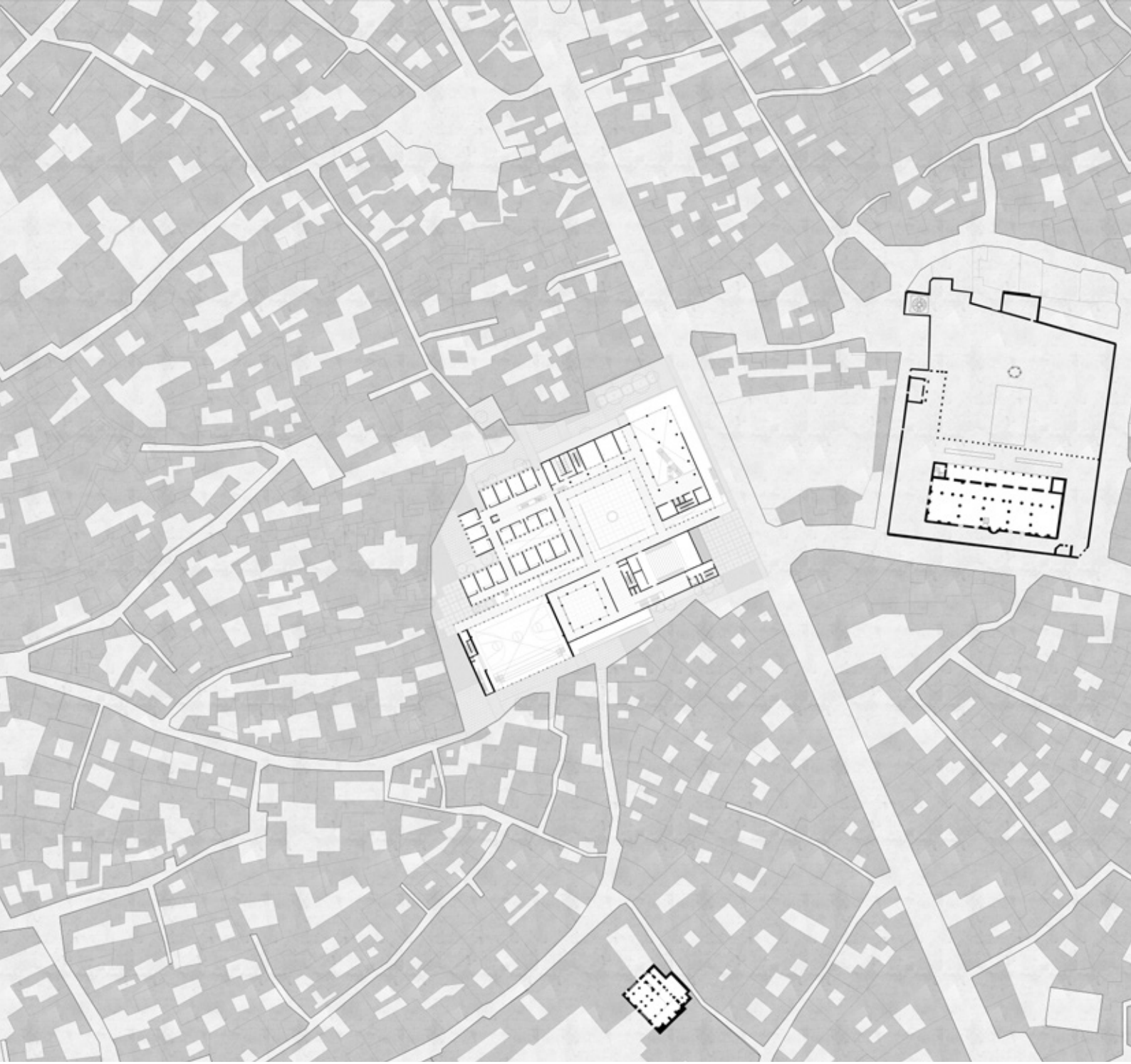
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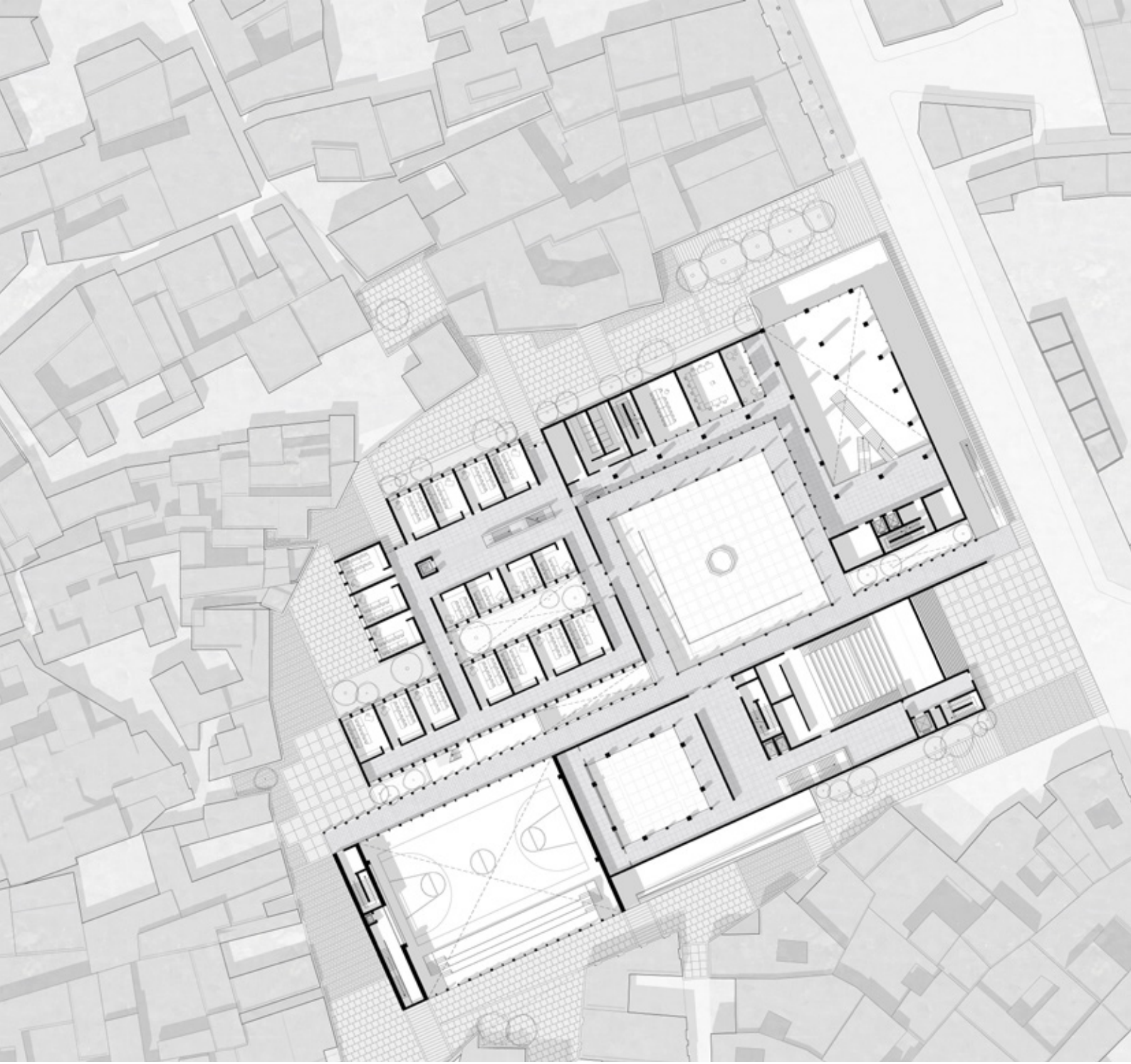
100

Location Ground Floor Plan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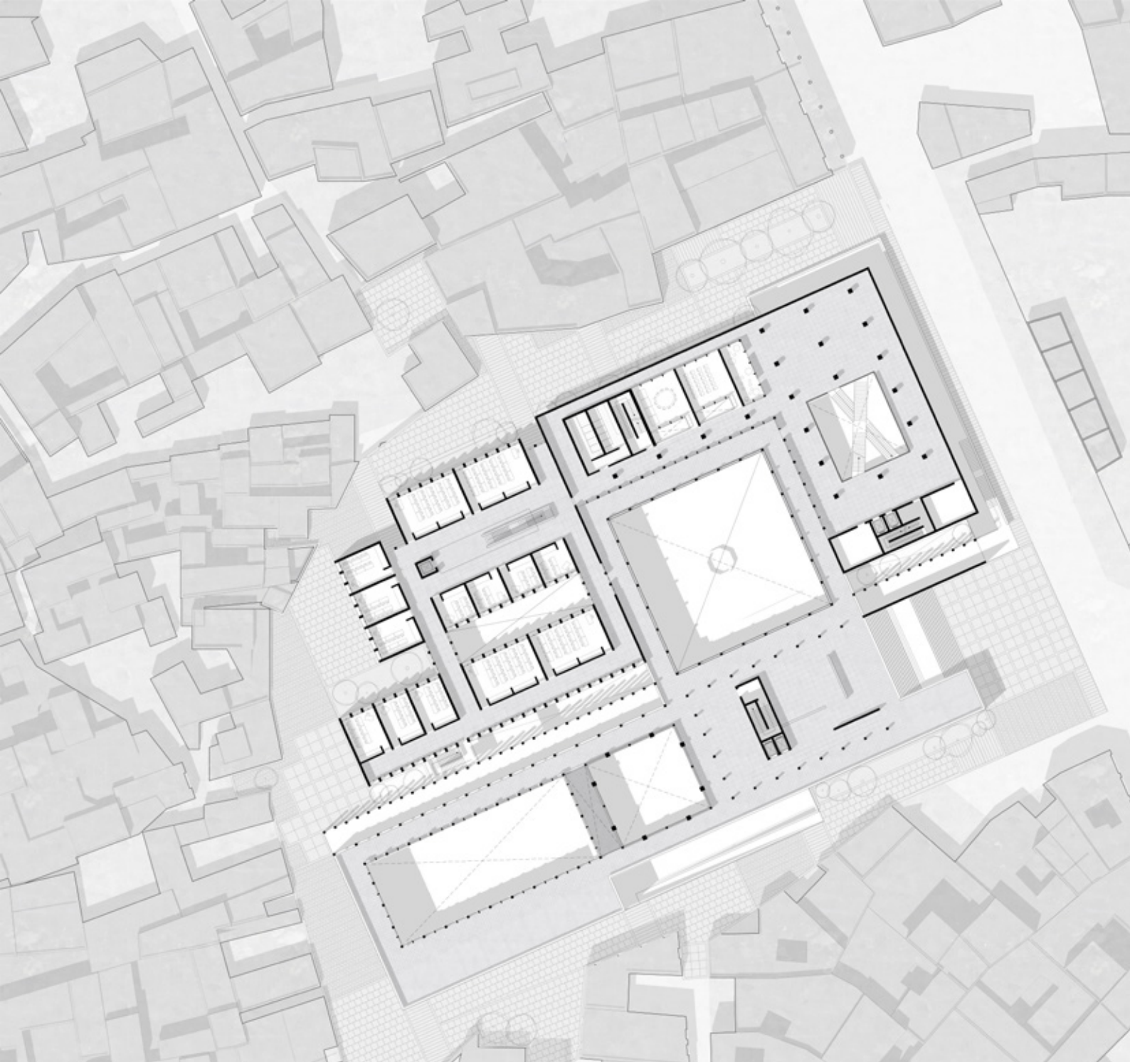
Ground Floor Plan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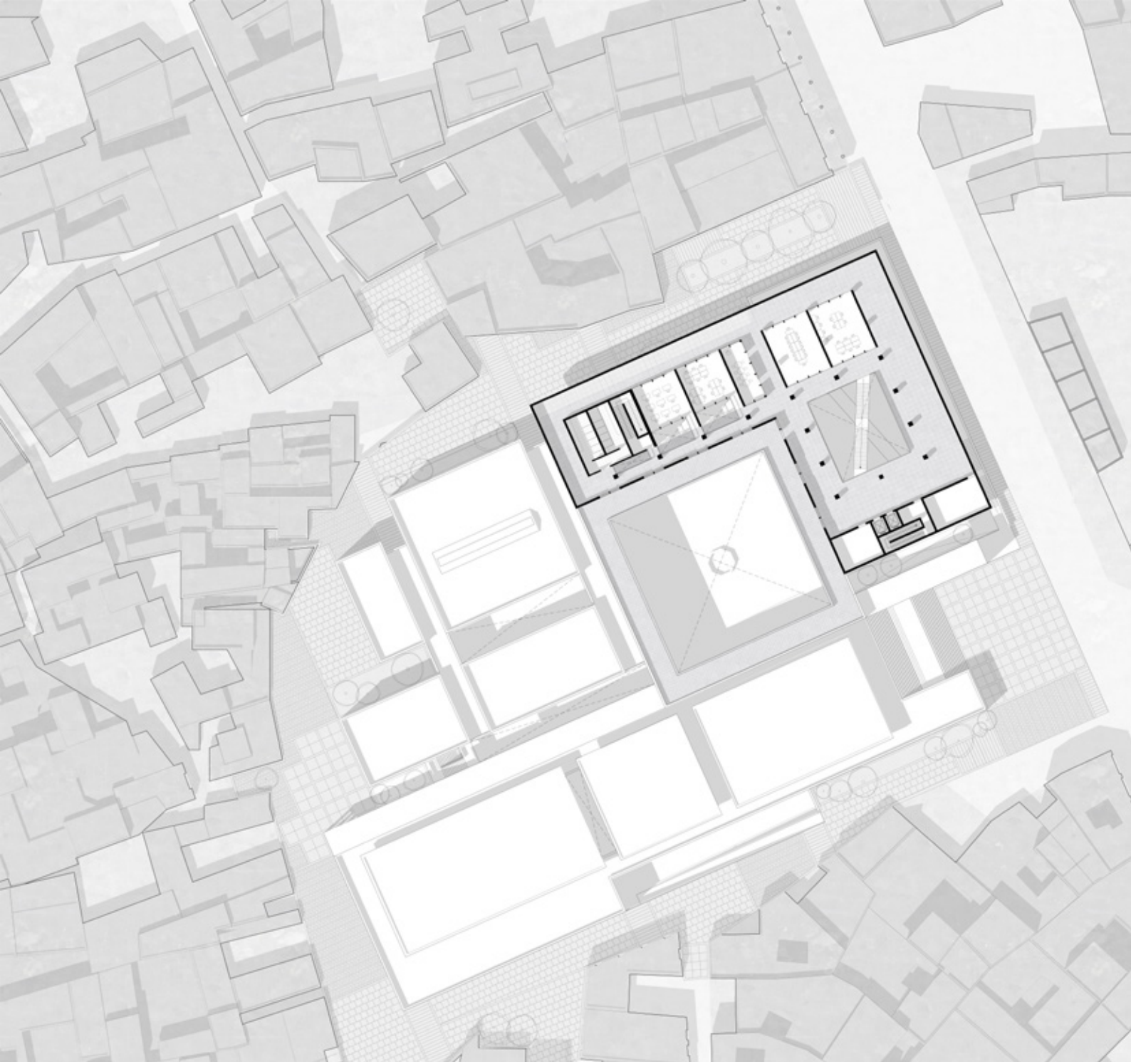
First Floor Plan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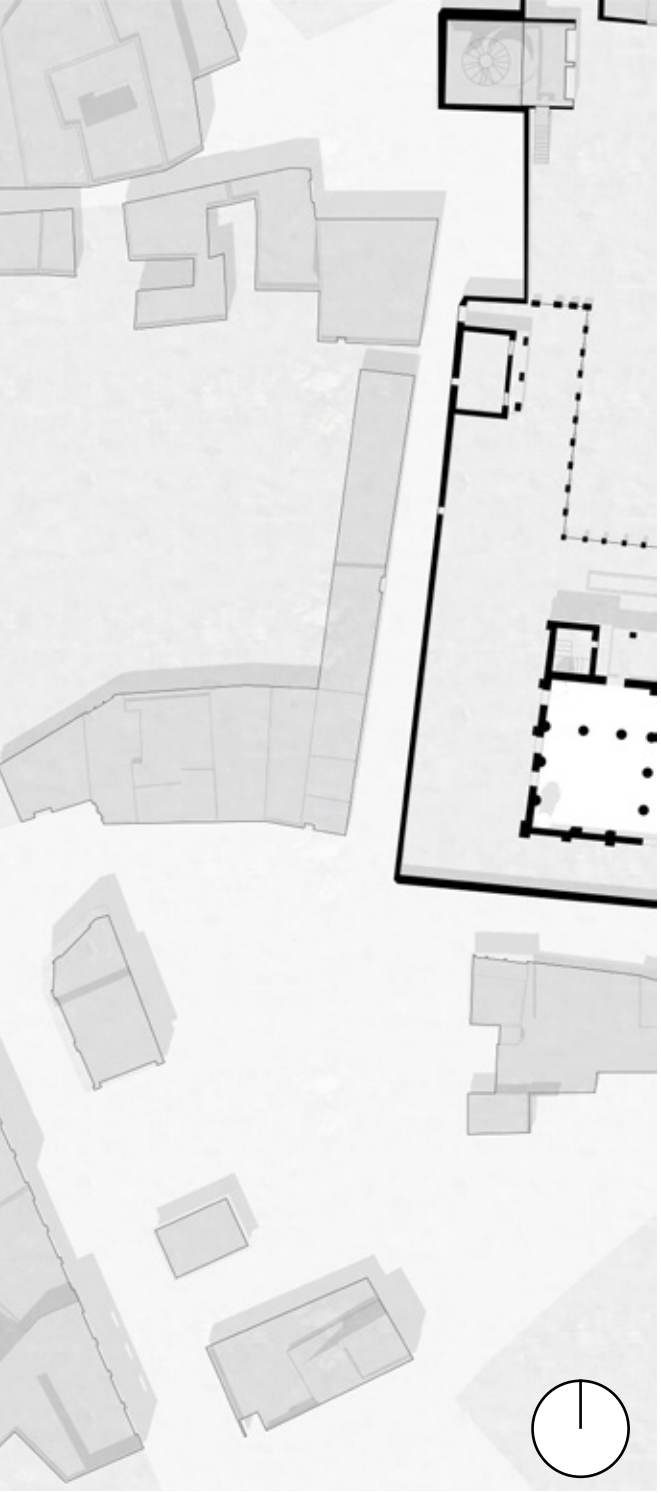
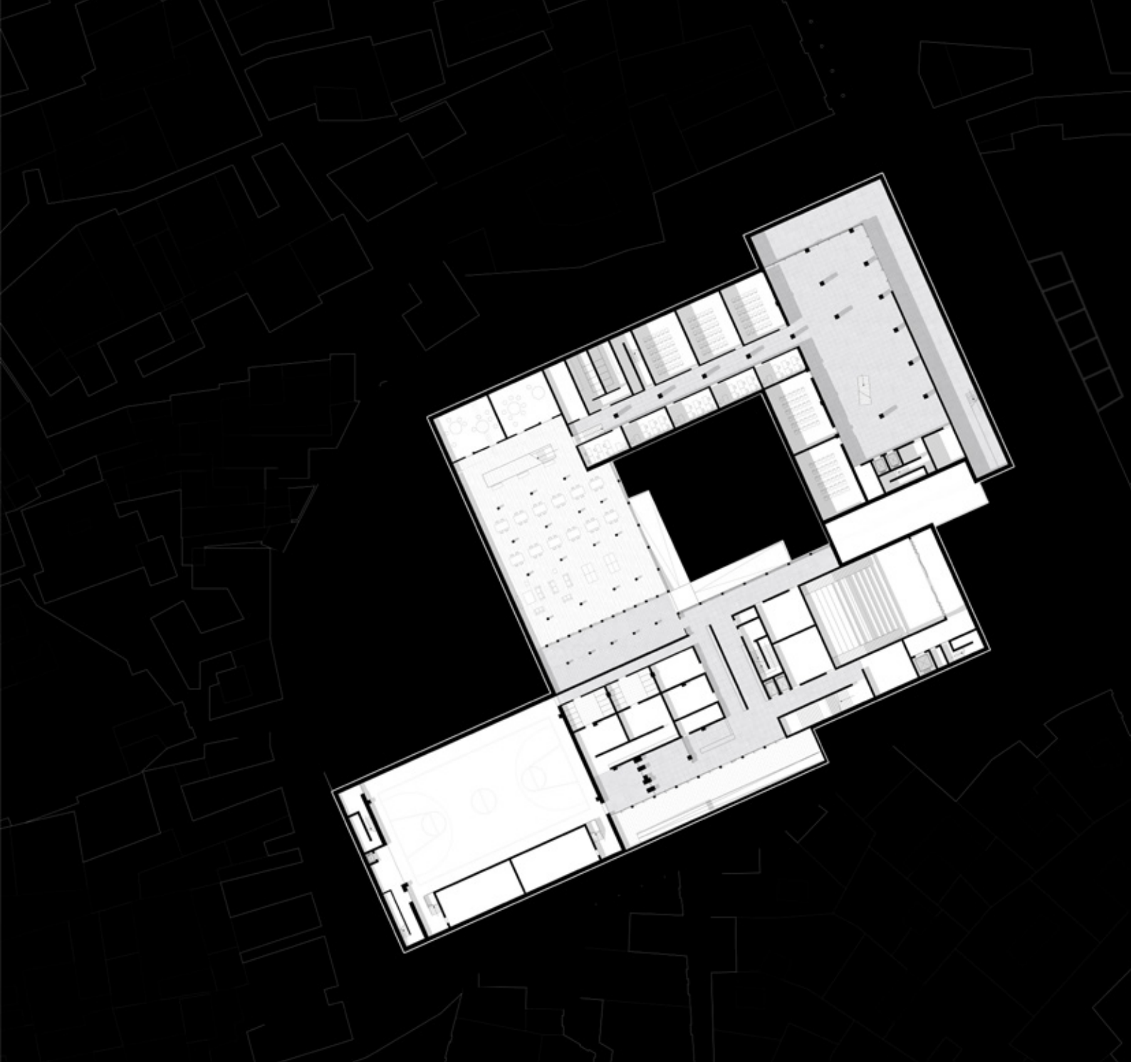


Second Floor Plan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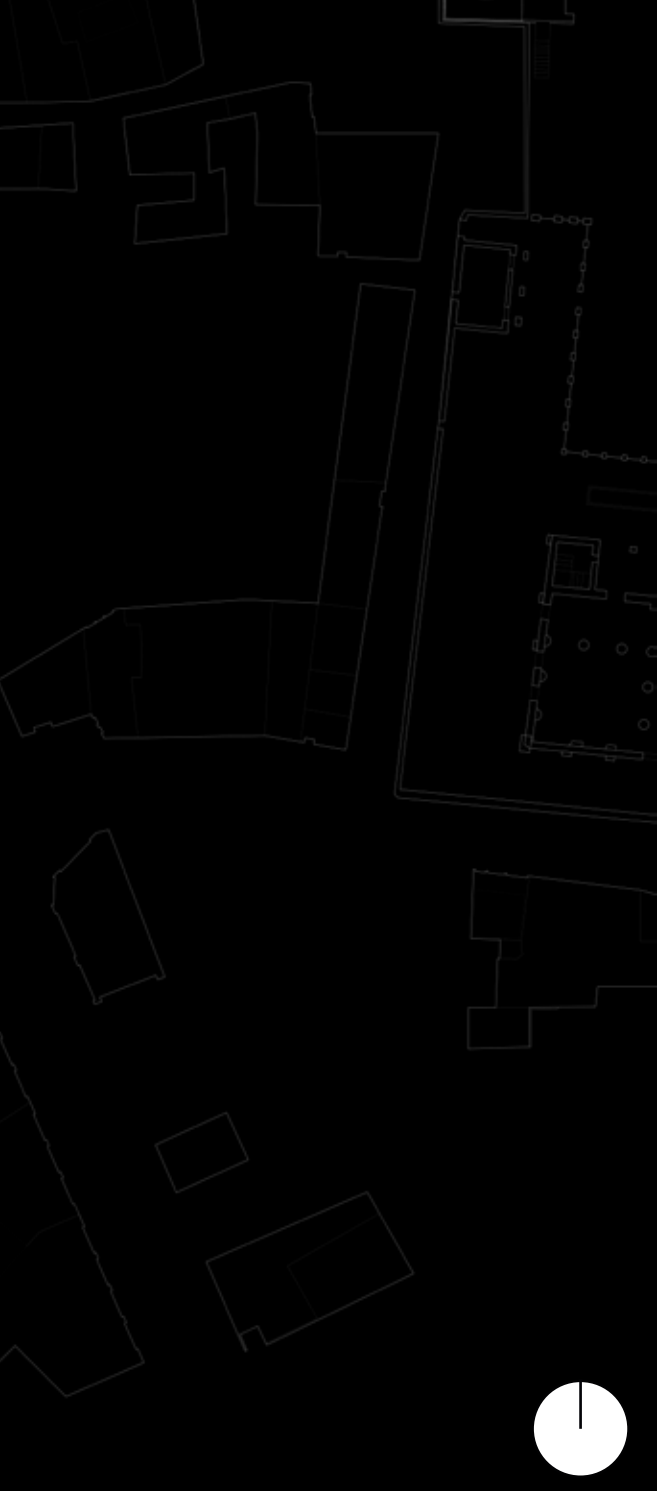
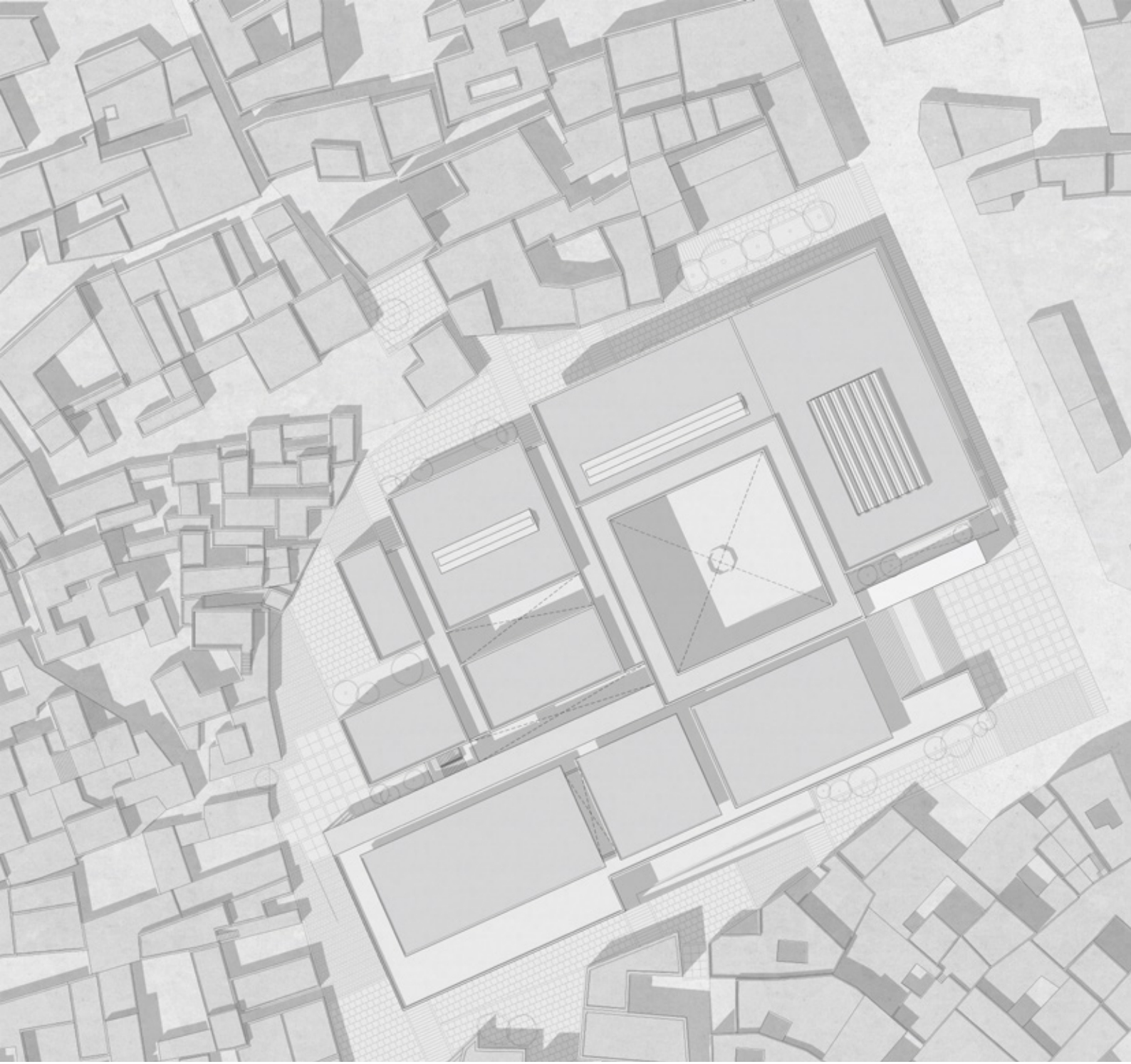


Underground Floor Plan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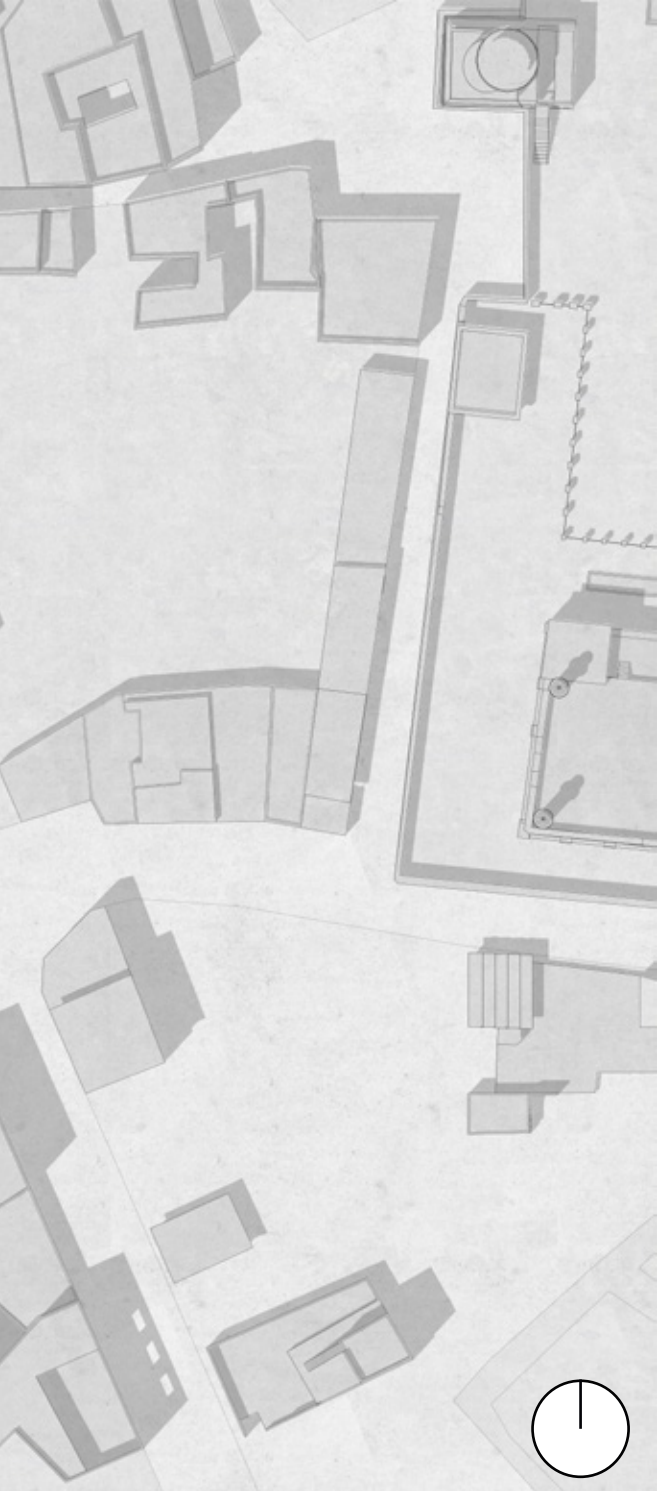
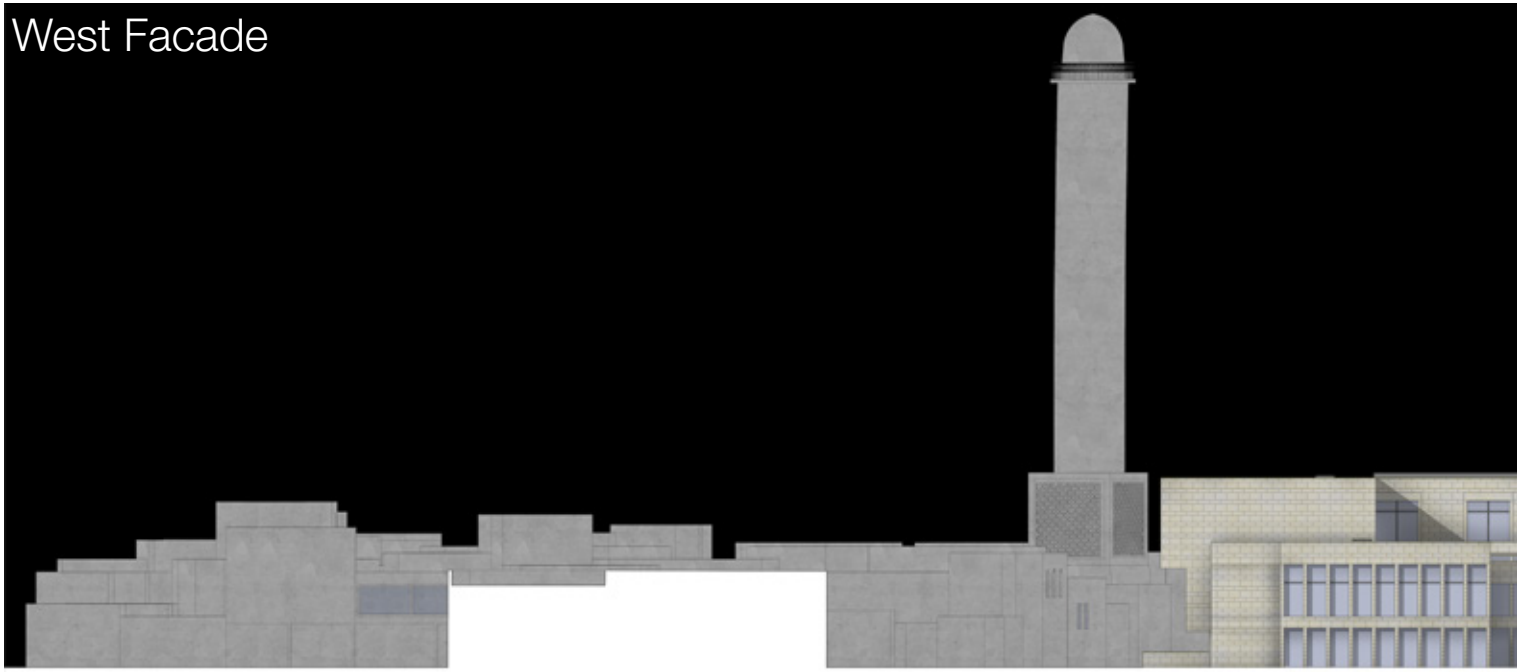


Roof Plan

East Facade

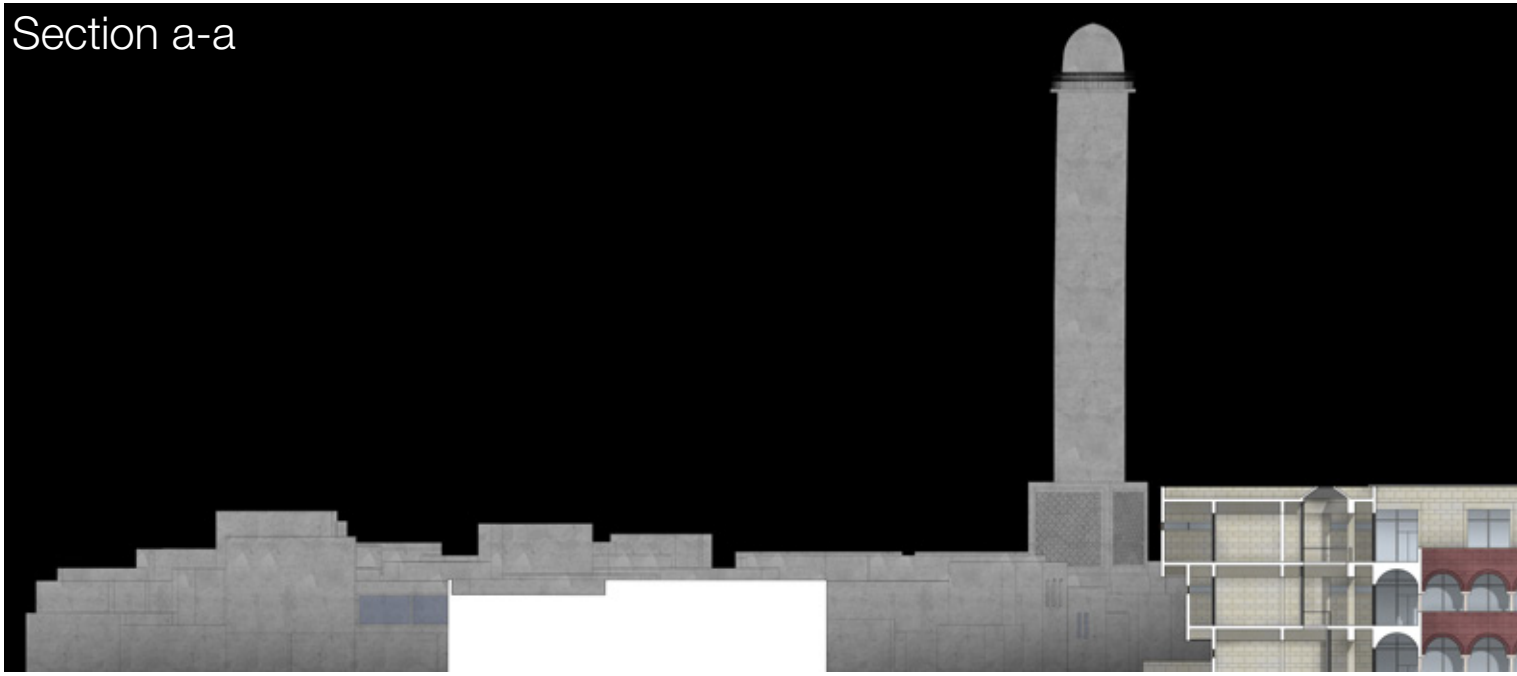
North Facade

West Facade



South Facade

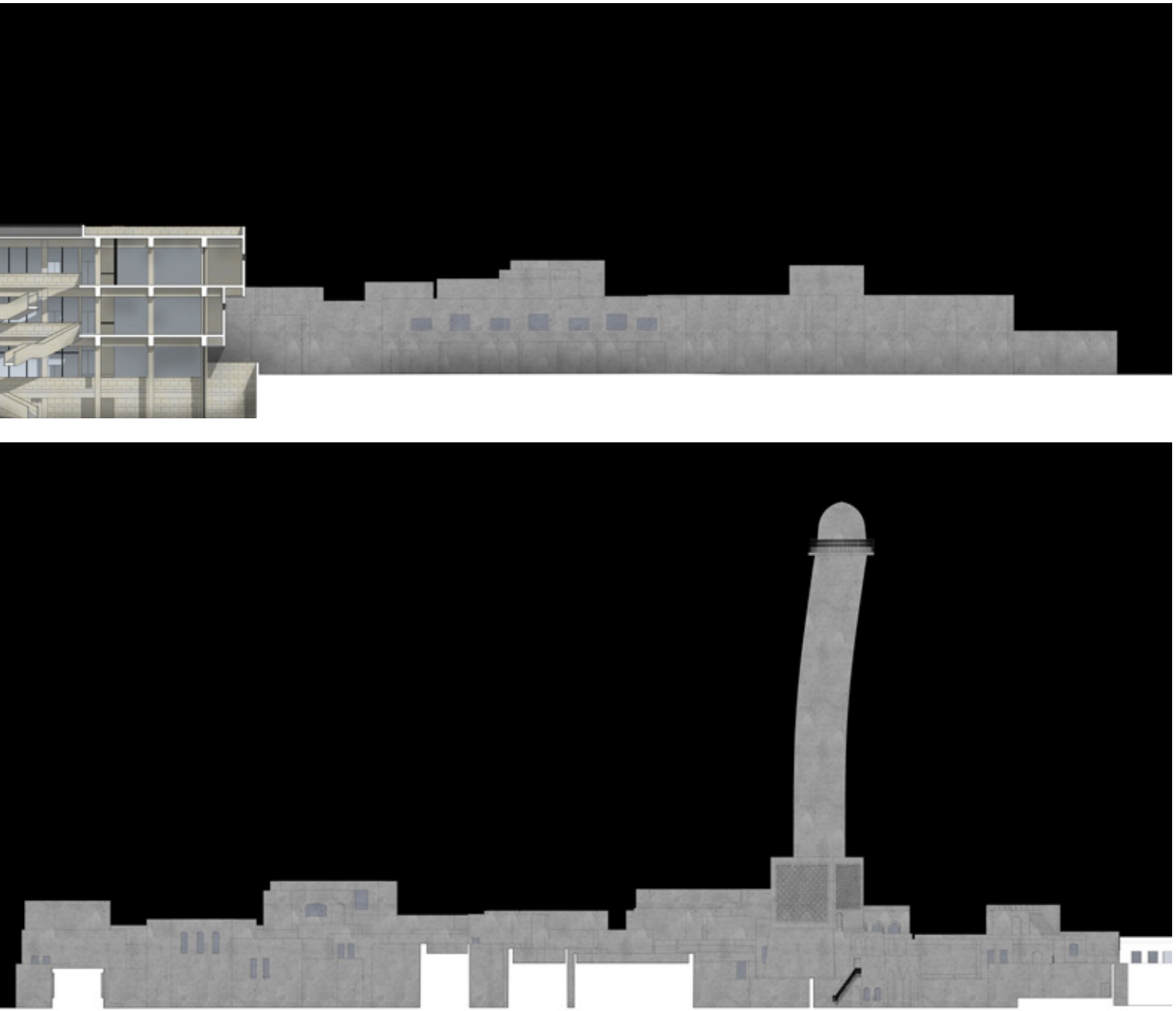
Section a-a



Section b-b

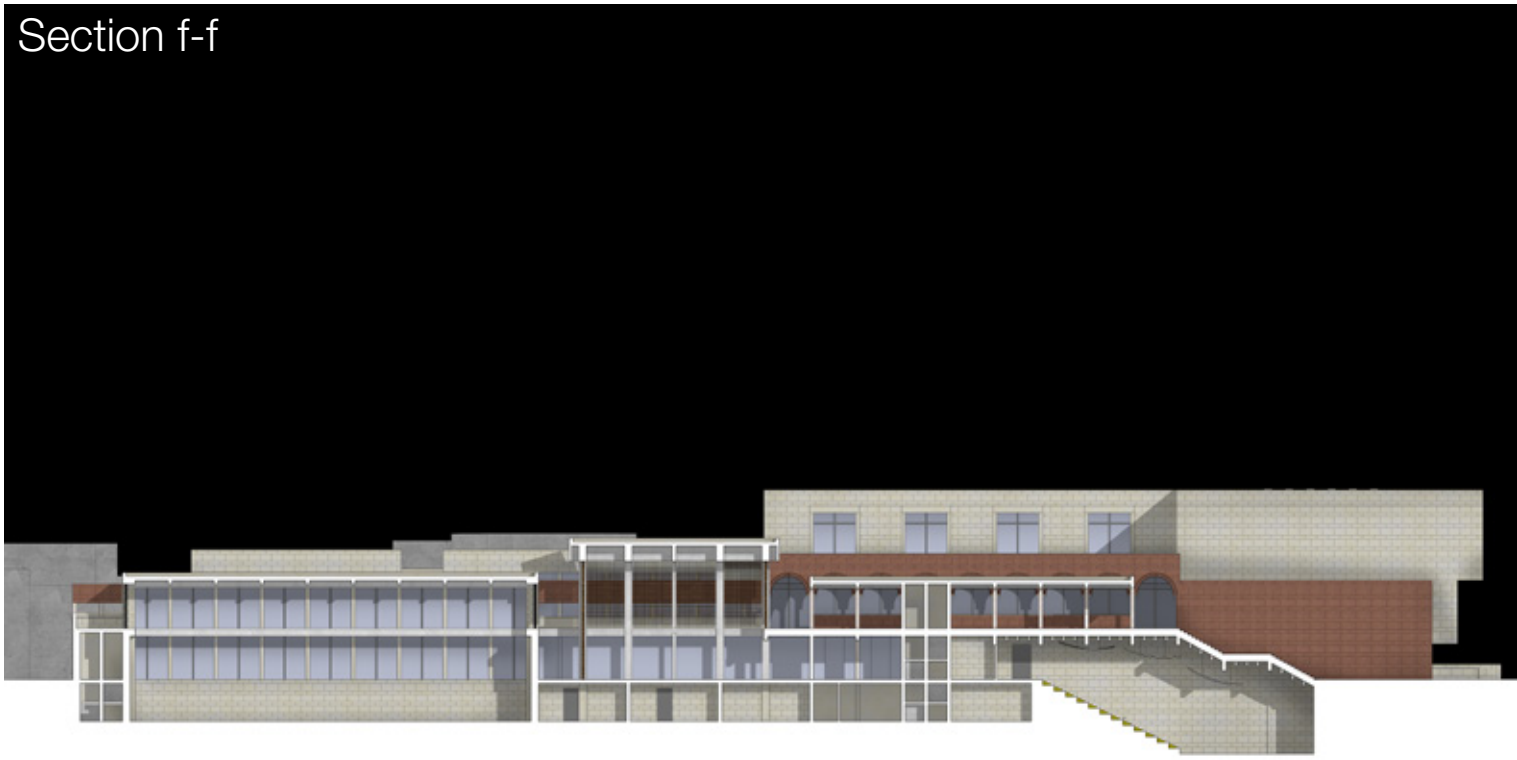
Section c-c

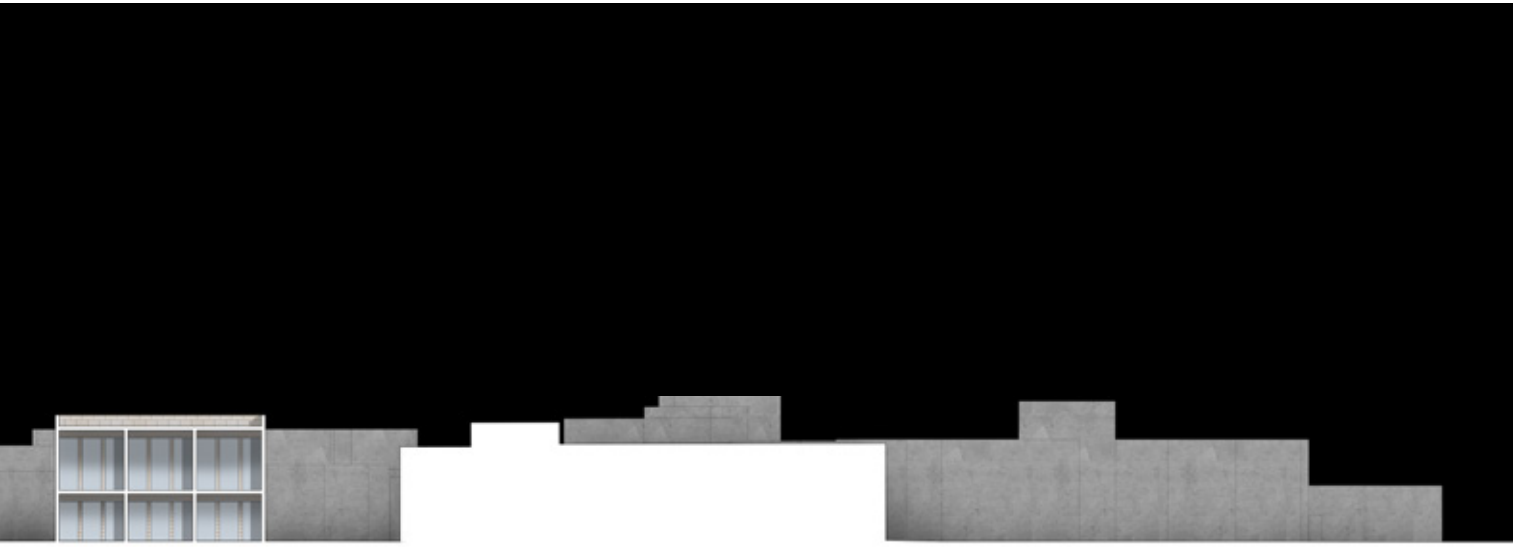
Section d-d

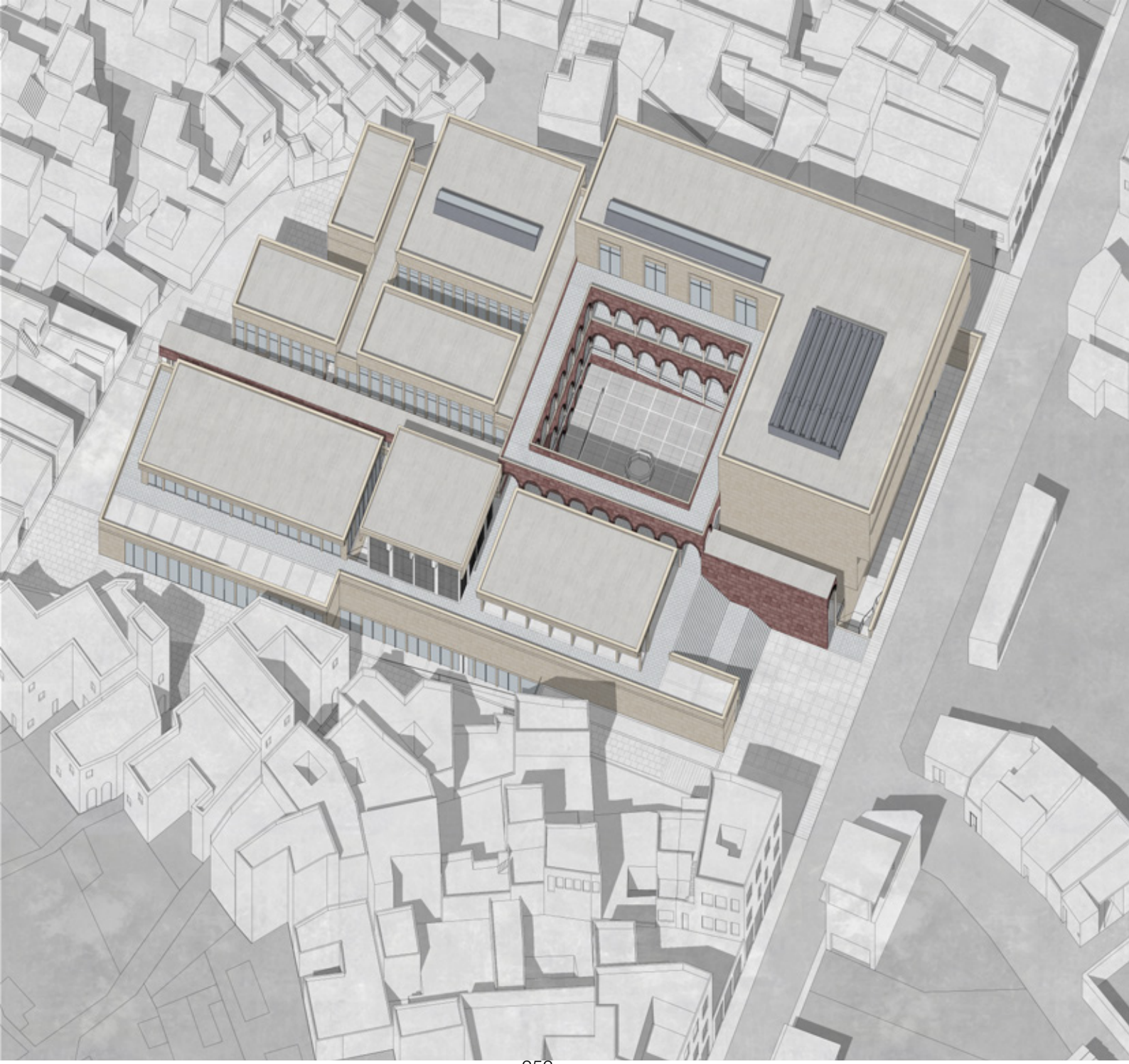


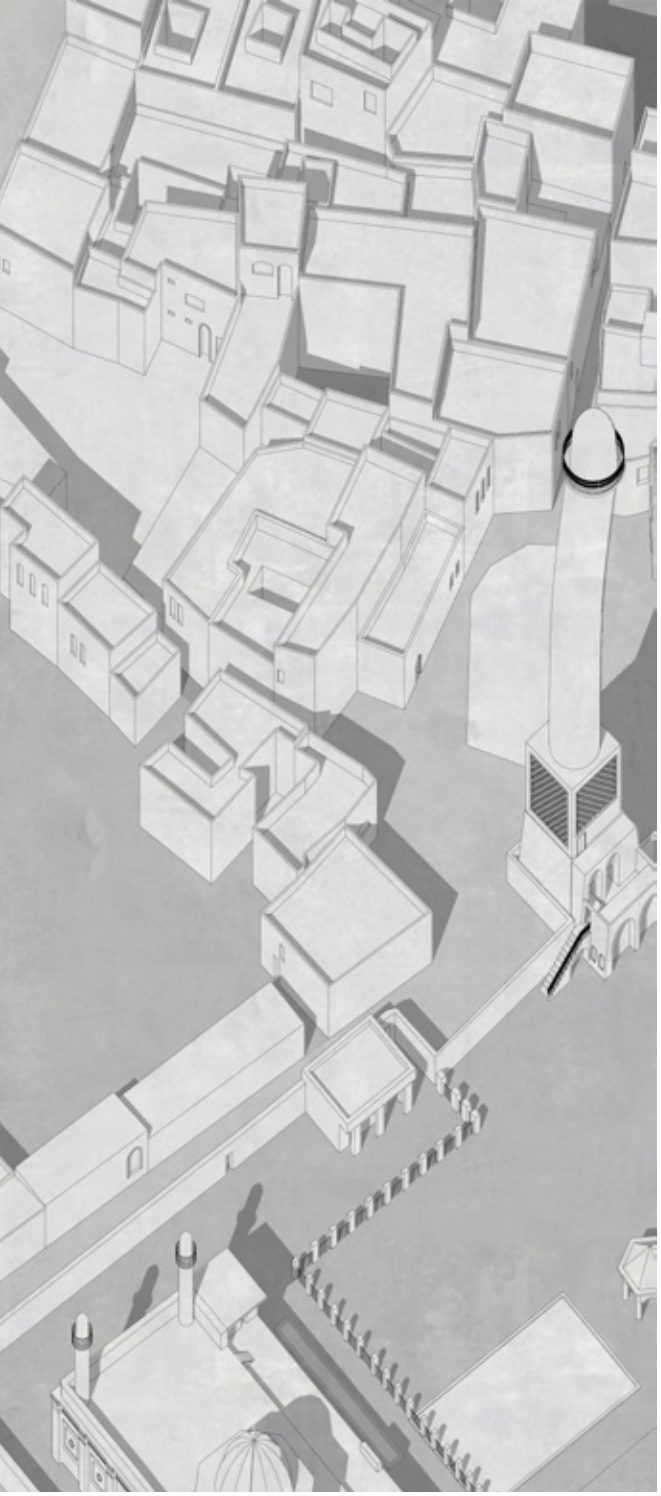
Section e-e

Section f-f

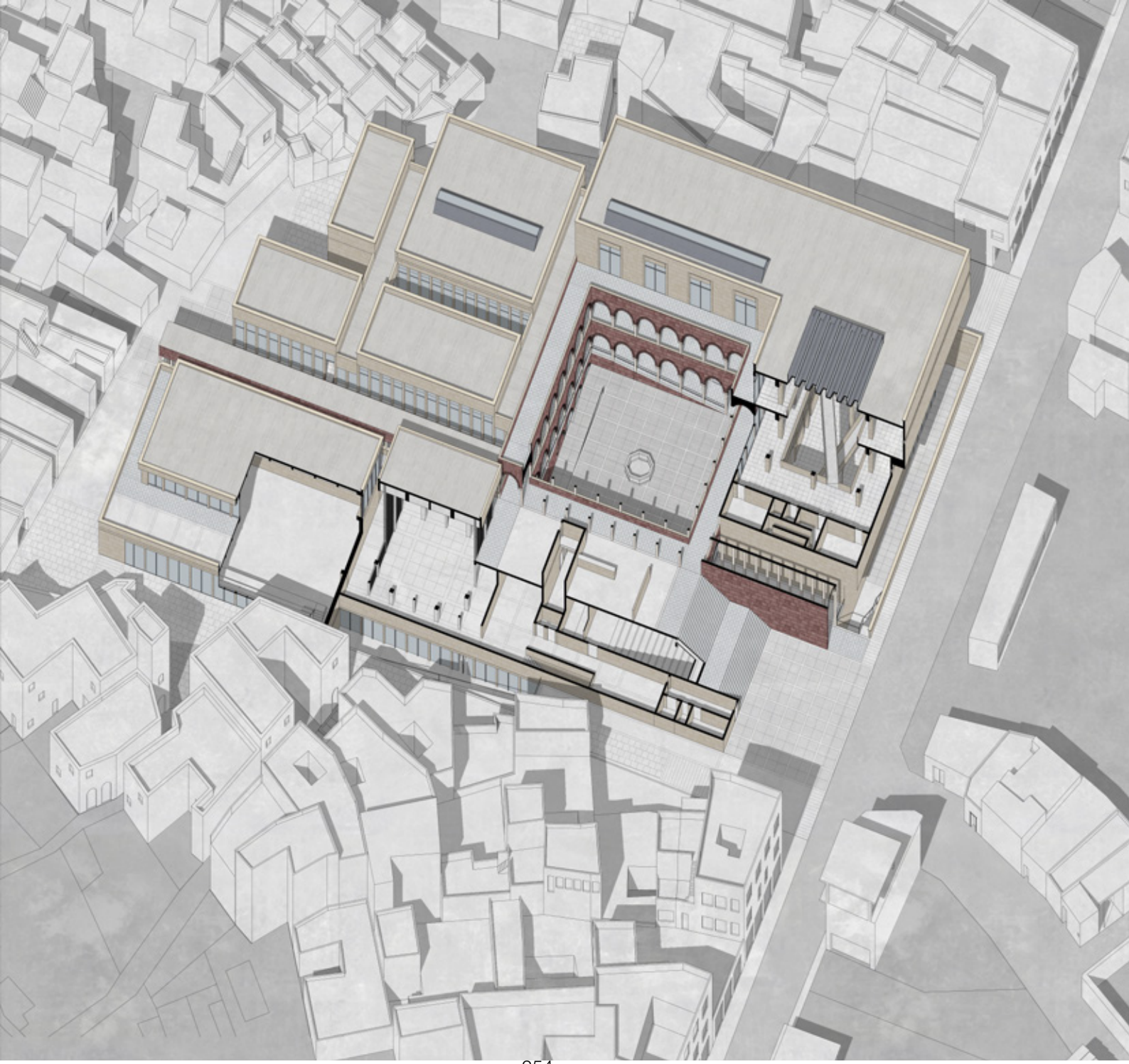


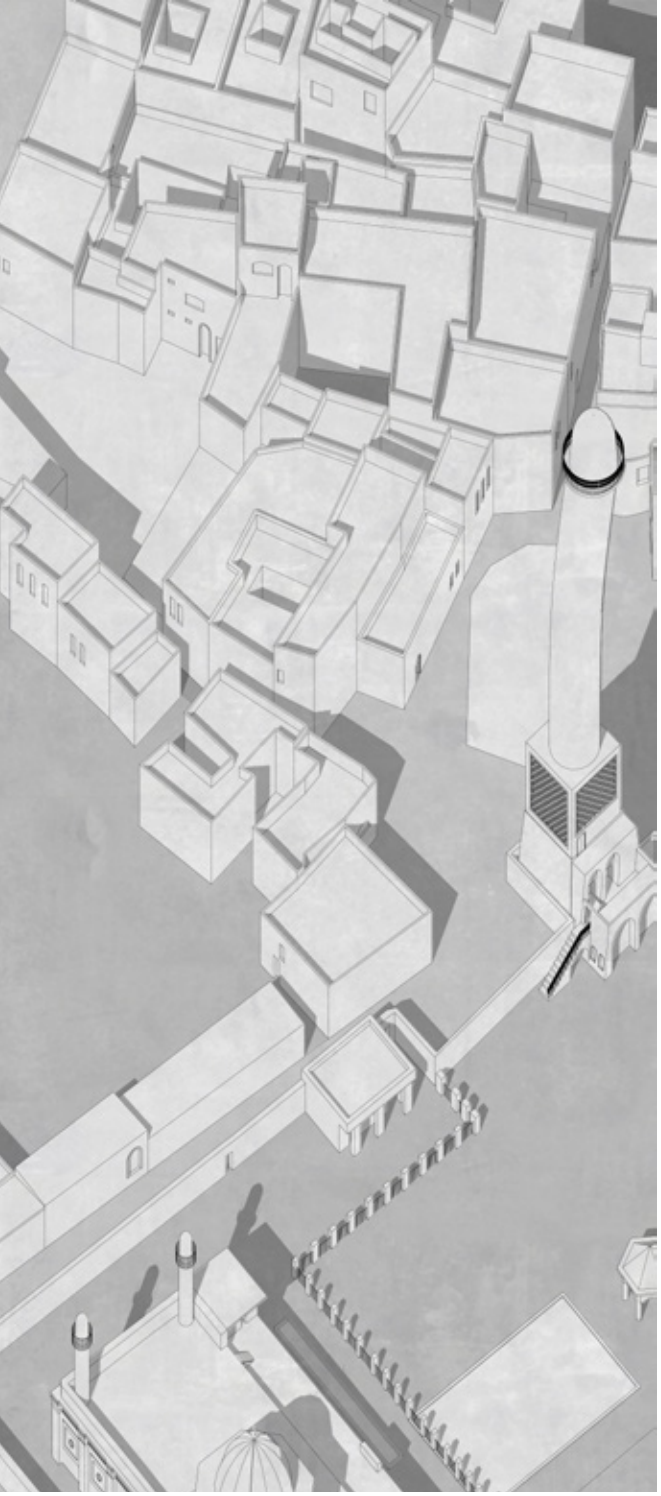






Monometric Axonometry





Sectioned Monometric Axonometry

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Note:

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Chapter I

Chapter II

Chapter III

Chapter IV

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Fig. 4.28 - Mamoli, M, Trebbi, G, ivi, p. 176.
Fig. 4.29 - Mamoli, M, Trebbi, G, ivi, p. 184.
Fig. 4.30 - Mamoli, M, Trebbi, G, ivi, p. 184.
Fig. 4.31 - Mamoli, M, Trebbi, G, ivi, p. 114-115.
Fig. 4.32 - Mamoli, M, Trebbi, G, ivi, p. 114-115.
Fig. 4.33 - Retrived from https://shibbolethsp.jstor.org/start?entityID=https%3A%2F%2Fshibidp.polimi.it%2Fidp%2Fshibboleth&dest=https://www.jstor.org/stable/40101617&site=jstor.
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Fig. 4.41 - Mamoli, M, Trebbi, G, ivi, p. 219.
Fig. 4.42 - Mamoli, M, Trebbi, G, ivi, p. 219.
Fig. 4.43 - Mamoli, M, Trebbi, G, ivi, p. 221.
Fig. 4.44 - Mamoli, M, Trebbi, G, ivi, p. 221.
Fig. 4.45 - Retrived from http://www.fondationlecorbusier.fr.
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Fig. 4.60 - Fernand Pouillon. Architetto delle 200 colonne_Electa. 1987. P.53.
Fig. 4.61 - Fernand Pouillon. Architetto delle 200 colonne_Electa. 1987. P.55

Fig.4.62-FernandPouillonCostruzione,Città,Paesaggio.2018.P.39.
Fig. 4.63 - Fernand Pouillon. Architetto delle 200 colonne_Electa. 1987. P.67.
Fig. 4.64 - Fernand Pouillon. Architetto delle 200 colonne_Electa. 1987. P.68.
Fig.4.65-FernandPouillonCostruzione,Città,Paesaggio.2018.P.42.
Fig. 4.66 - Fernand Pouillon. Architetto delle 200 colonne_Electa. 1987. P.110.
Fig. 4.67 - Fernand Pouillon. Architetto delle 200 colonne_Electa. 1987. P.112.
Fig. 4.68 - Made by the Author.
Fig. 4.69 - Made by the Author.
Fig. 4.70 - Retrived from https://eumiesaward.com/work/412
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Fig. 4.83 - Verhoeven,L.C.A,Learning from a building, Roman theatre, Sagunto 2019.P14.
Fig. 4.84 - Verhoeven,L.C.A, ivi.P17.
Fig. 4.85 - Verhoeven,L.C.A, ivi.P21.
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Fig.4.87-Retrivedfromhttps://divisare.com/projects/337661-giorgio-grassi-restauro-e-riabilitazione-del-castello-di-abbiategrasso-come-sede-municipale.
Fig.4.88-Retrivedfromhttps://divisare.com/projects/337661-giorgio-grassi-restauro-e-riabilitazione-del-castello-di-abbiategrasso-come-sede-municipale.
Fig. 4.89 - Retrived from http://carloaymonino.blogspot.com/2007/11/concorso-per-la-ricostruzione-del.html.
Fig. 4.90 - Retrived from http://carloaymonino.blogspot.com/2007/11/concorso-per-la-ricostruzione-del.html.
Fig. 4.91 - Retrived from http://carloaymonino.blogspot.com/2007/11/concorso-per-la-ricostruzione-del.html.
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Fig. 4.95 - Gijsbertsen,J.Q.C, ivi.P71.
Fig. 4.96 - Gijsbertsen,J.Q.C, ivi.P15.
Fig. 4.97 - Gijsbertsen,J.Q.C, ivi.P89.
Fig. 4.98 - Gijsbertsen,J.Q.C, ivi.P76.
Fig. 4.99 - Loi, M.C,Ignazio Gardella:architettura 1998.P71.
Fig. 4.100 - Loi, M.C, ivi.P153.
Fig. 4.101 - Loi, M.C, ivi.P61.
Fig. 4.102 - Retrived from https://divisare.com/projects/338036-giorgio-grassi-biblioteca-comunale-nel-sito-di-porta-volta-a-milano.

Fig. 4.103- Retrived from https://divisare.com/projects/338036-giorgio-grassi-biblioteca-comunale-nel-sito-di-porta-volta-a-milano.
Fig. 4.104 - Retrived from https://divisare.com/projects/338036-giorgio-grassi-biblioteca-comunale-nel-sito-di-porta-volta-a-milano.
Fig.4.105KananMakiya,Post-islamicclassicism,avisualessayonthe architecture of mohamed makiya.P45.
Fig. 4.106 Kanan Makiya, ivi.P47.
Fig. 4.107 Kanan Makiya, ivi.P40.